Planning and Zoning Commission
Hearing Date: December 19, 2024
Canyon County Development Services Department

PLANNING DIVISION STAFF REPORT

CASE NUMER:	**RZ2021-0053**
APPLICANT/REPRESENTATIVE:	**MASON AND ASSOCIATES, INC**
PROPERTY OWNER:	**Thornton Gallup LLC**
APPLICATION:	**Rezone**
LOCATION:	**14180 Gadsden Ln., Caldwell** **Also referenced as a portion of the NE ¼ of Section 3, T4N, R3W, BM, Canyon County, Idaho.** **Parcel R34479 (31.39 acres)**
ANALYST:	**Michelle Barron, Principal Planner**
REVIEWED BY:	**Carl Anderson, AICP, Planning Supervisor**

REQUEST:
The applicant, Will Mason, Mason & Associates, Inc., representing Thornton Gallup, LLC, requests an amendment to the official zoning map in order to rezone the property from Agricultural "A" to Single Family Residential "R1".

PUBLIC NOTIFICATION:

Neighborhood meeting conducted on:	**May 5, 2021**
JEPA notice sent on:	**July 31, 2023**
Agency and Full Political notice:	**November 19, 2024**
Neighbor notification within 600 feet mailed on:	**November 19, 2024**
Newspaper notice published on:	**November 19, 2024**
Notice posted on site on:	**November 19, 2024**

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1. BACKGROUND:

The parcel was created by an administrative land division in 1994 (LS2004-139).

The application was originally submitted under Pioneer Homes. At the end of 2021, the application was amended to the current applicant, Thornton Gallup, LLC. The property is currently located within the Agricultural zone, with a 2020 and 2030 future land use of Residential. The land owner applied under the 2020 Comprehensive Plan.

The applicant is applying for a Rezone without conditions but has provided a concept plan for a future subdivision with 23 residential lots and public roads. **(Exhibit A3)**

The applicant has had a Phase One Environmental Assessment completed **(Exhibit A5.2 and A5.7b),** as well as a NP1 study since the parcel is in a Nitrate Priority area. **(Exhibit A5.1)** The applicant has also provided resources regarding ground water analysis in the area. **(Exhibit 5.3)** In response to neighbor concerns regarding endangered species, the applicant reached out to the United States Fish and Wildlife Services and provided information on endangered species. **(Exhibit 5.5)**

During their review, the Highway District No. 4 discovered that parcel number R34482012 was owned by Canyon County and is in the way of an access for the proposed development. More information is provided in the analysis section of Table 3 criteria 07-07-05(1)F below.

In 2024, the land owner of parcel R34480010 applied for a private road through this parcel to be able to obtain a building permit. In the future plan for the development, this road will become a public road to serve the development.

2. HEARING BODY ACTION:

Pursuant to Canyon County Ordinance Article 07-06-01 (3) requests for comprehensive plan changes and ordinance amendments may be consolidated for notice and hearing purposes. Although these procedures can be considered in tandem, pursuant to Idaho Code section 67-6511(b), the commission, and subsequently the board, shall deliberate first on the proposed amendment to the comprehensive plan; then, once the commission, and subsequently the board, has made that determination, the commission, and the board, should decide the appropriateness of a rezone within that area. This procedure provides that the commission, and subsequently the board, considers the overall development scheme of the county prior to consideration of individual requests for amendments to zoning ordinances. The commission, and subsequently the board, should make clear which of its findings relate to the proposed amendment to the comprehensive plan and which of its findings relate to the request for an amendment to the zoning ordinance.

Pursuant to Canyon County Ordinance Article 07-06-01 (4)B if an amendment to a zone or zone boundary is approved, then the approved amendment shall be effective immediately upon written approval and shall be established and clearly indicated, as soon as practicable, on the zoning map or maps adopted as part of this chapter. The board shall, when considering an application for an amendment to the zoning ordinance, consider the comprehensive plan and other evidence gathered through the public hearing process.

The commission should consider the procedures outlined above within Canyon County Ordinance 07-06-01(3).

OPTIONAL MOTIONS:

Approval of the Application: "I move to approve RZ2021-0053, THORNTON GALLUP, LLC finding the application **does** meet the criteria for approval under Article 07.07.05 of Canyon County Zoning Regulations, **finding that**; [*Cite reasons for approval*].

Denial of the Application: "I move to deny RZ2021-0053, THORNTON GALLUP, LLC finding the application **does not** meet the criteria for approval under Article 07.06.05 of Canyon County zoning Regulations, **finding that** [*cite findings for denial based on the express standards outlined in the criteria & the actions, if any, the applicant could take to obtain approval (ref.ID.67-6519(5)*].

Table the Application: "I move to continue RZ2021-0053, THORNTON GALLUP, LLC to a [*date certain or uncertain*]

3. HEARING CRITERIA

Table 1. Zoning Amendment Criteria Analysis

HEARING CRITERIA (07-06-05(1)): The commission shall review the particular facts and circumstances of each proposed zoning amendment and make a recommendation regarding the same to the board. The presiding party shall make its review in terms of the following standards and shall find adequate evidence regarding the following criteria when evaluating the proposed zoning district boundary amendment:				
Compliant			**County Ordinance and Staff Review**	
Yes	**No**	**N/A**	**Code Section**	**Analysis**
☒	☐	☐	**07-07-05(1) A.**	**Is the proposed zone change generally consistent with the comprehensive plan;**
			Staff Analysis	The proposed zone change is generally consistent with the Comprehensive plan. The Future Land Use Map from the 2020 Comprehensive Plan designates this parcel as Residential. The proposed development aligns with the following goals and policies: **Chapter 1. Property Rights:** **Policy 1.** No person shall be deprived of private property without due process of law. **Policy 8**. Promote orderly development that benefits the public good and protects the individual with a minimum of conflict. **Chapter 2. Population:** **Goal 1.** Consider population growth trends when making land use decisions. **Policy 2.** Encourage future high-density development to locate within incorporated cities and/or areas of city impact. **Policy 3.** Encourage future population to locate in areas that are conducive for residential living and that do not pose an incompatible land use to other land uses. **Chapter 4. Economic Development:** **Policy 7.** Canyon County should identify areas of the county suitable for commercial, industrial and residential development. New development should be located in close proximity to existing infrastructure and in areas where

				agricultural uses are not diminished. **Chapter 5. Land Use** **Goal 1.** To encourage growth and development in an orderly fashion, minimize adverse impacts on differing land uses, public health, safety, infrastructure and services. **Goal 4.** To encourage development in those areas of the county which provide the most favorable conditions for future community services. **Goal 5.** Achieve a land use balance, which recognizes that existing agricultural uses and non-agricultural development may occur in the same area. **Goal 8.** Consider adjacent county land uses when reviewing county-line development proposals. **Policy 1.** Review all residential, commercial and industrial development proposals to determine the land use compatibility and impact to surrounding areas. **Policy 2.** Encourage orderly development of subdivisions and individual land parcels, and require development agreements when appropriate. **Residential:** This policy recognizes that population growth and the resulting residential development should occur where public infrastructure, services and facilities are available or where there is a development pattern already established. 1. Encourage high density development in areas of city impact. **Chapter 11. Housing Component** **Goal 1.** Encourage opportunities for a diversity of housing choices in Canyon County. **Policy 1.** Encourage a variety of housing choices that meet the needs of families, various a and incomes.
☒	☐	☐	**07-07-05(1) B.** ***Staff Analysis***	**When considering the surrounding land uses, is the proposed zone change more appropriate than the current zoning designation;** In consideration of the surrounding land uses, the proposed zone change to "R1" is more appropriate than the current zoning designation of "A". There are 48 subdivisions in the area with 711 lots with the average lot size of 1.78 acres. There are also 4 subdivisions going through the subdivision process with an additional 70 lots with the average lot size of 1.53 acres. **(Exhibit B2.3 and B2.4)** The area is predominantly residential. There are several subdivisions in the area that are still zoned Agricultural, but the lot sizes and uses are consistent with a Residential designation. **(Exhibit B2.2**) The parcel is located in the Residential designation in both the 2020 and the 2022 Canyon County Comprehensive Plan. (**Exhibit B2.7)** The parcel is also located in the Area of City Impact for the City of Middleton. The zoning designation for the Future Land Use Map for the City of Middleton identifies the parcel as being in the Residential designation**. (Exhibit B2.8)** Pursuant to Canyon County Ordinance 07-10-25(1) the purposes of the "A" – Agricultural zoning district are to:

A. Promote the public health, safety, and welfare of the people of the County by encouraging the protection of viable farmland and farming operations;
B. Limit urban density development to Areas of City Impact in accordance with the Comprehensive Plan;
C. Protect fish, wildlife, and recreation resources, consistent with the purposes of the "Local Land Use Planning Act", Idaho Code title 67, chapter 65;
D. Protect agricultural land uses, and rangeland uses, and wildlife management areas from unreasonable adverse impacts from development; and
E. Provide for the development of schools, churches, and other public and quasi-public uses consistent with the comprehensive plan.

Pursuant to Canyon County ordinance 07-10-25 (3) the purpose of the "R1" zoning district is to promote and enhance predominantly single-family living areas at a low density standard.

Adjacent Existing Conditions:

Direction	Existing Use	Primary Zone	Other Zone
N	**Residential Subdivisions**	**A**	**RR**
S	**Residential Subdivisions**	**RR**	**A**
E	**Residential Subdivisions**	**A**	**RR**
W	**Residential Subdivisions**	**A**	**R1, RR**

"A" (Agricultural), "R-R" (Rural Residential), "R-1" (Single-Family Residential), "C-1" (Neighborhood Commercial), "C-2" (Service Commercial), "M-1" (Light Industrial), "CR" (Conditional Rezone)

Surrounding Land Use Cases:

Since 2018, there have been five approved subdivisions in the area. There was a There have also been five approved rezones in the area including:
RZ2019-0040 Rezone from "A" Agricultural to "R1" Single Family Residential
RZ2019-0034 Rezone from "A" Agricultural to "R1" Single Family Residential
RZ2021-0016 Rezone from "A" Agricultural to "R1" Single Family Residential
RZ2022-0006 Rezone from "A" Agricultural to "CR-R1" Conditional Rezone - Single Family Residential
RZ2022-0009 Rezone from "A" Agricultural to "C1" Neighborhood Commercial (Exhibit B2.2)

See Staff Analysis of 07-06-05(1)D&C for additional review.

☒	☐	☐	**07-06-05(1) C.**	**Is the proposed zoning map amendment compatible with surrounding land uses;**
			Staff Analysis	The proposed zone change to "R1" is compatible with surrounding land uses. Pursuant to Canyon County Ordinance 07-02-03, land uses are compatible if: a) they do not directly or indirectly interfere or conflict with or negatively impact one another and b) they do not exclude or diminish one another's use of public

				and private services. A compatibility determination requires a site-specific analysis of potential interactions between uses and potential impacts of existing and proposed uses on one another. Ensuring compatibility may require mitigation from or conditions upon a proposed use to minimize interference and conflicts with existing uses. The surrounding land uses are predominantly residential. There are several subdivisions in the area, many that were created with a Conditional Use Permit several years ago. The process that was in place left the zoning designation Agricultural even though the use was changed to residential. The parcel is surrounded by residential subdivisions. The lot sizes range from .32 acres to 6.33 acres. The average subdivision lot size is 1.78 acres. There is a portion of the parcel that is an irrigation drain that lies on the west side of the property that may house wildlife according to the applicant's letter of intent **(Exhibit A2).** They do not plan on disturbing this area. An agricultural use in this area could prove difficult because of the residential nature of the area. See Staff Analysis of 07-06-05(1)D&B for additional review.
☒	☐	☐	**07-06-05(1) D.** ***Staff Analysis***	**Will the proposed zoning map amendment negatively affect the character of the area? What measures will be implemented to mitigate impacts?** The proposed use will not negatively affect the character of the area. Any necessary measures to mitigate impacts are detailed below. **Character of the Area:** The character of the area is predominantly residential. There are several subdivisions in the area that are still zoned Agricultural, but the lot sizes and uses are consistent with a Residential designation. (**Exhibit B2.2)** With the lot sizes ranging from 1 acre to 1.24 acres, this development is similar to neighboring development. There is minimal productive agriculture in the area as this area of the county, within the Area of City Impact for Middleton, which has been designated in the Canyon County Comprehensive Plan Future Land Use Map as well as the City's Future Land Use Map as residential. **(Exhibit B2.7 and B2.8)** The City of Middleton entered into a Pre-Annexation agreement with the developer recognizing that the City will be progressing out toward this area and will require annexation once the City becomes adjacent. According to the applicant's letter of intent, the City requested easements be put in place for future Water and Sewer connections. **(Exhibit D4 and A2).** See further review in Table 3 Area of City Impact.

☒	☐	☐	**07-07-05(1) E.**	**Will adequate facilities and services including sewer, water, drainage, irrigation and utilities be provided to accommodate the proposed zoning map amendment;**
			Staff Analysis	The project will have adequate sewer, water, drainage, irrigation, and utilities to accommodate the proposed zone map amendment based on the analysis contained herein. Individual septic systems are requested for each lot. This parcel is within the Northeast Canyon Nitrate Priority area. An NP1 study has been conducted for the site **(Exhibit A5.1)** and Southwest District Health issued an approval letter with conditions (Four proposed lots will need extended treatment systems, Maximum house size permitted is a four (4) bedroom house (300 gallons per day), if lots are added, the study must be resubmitted and/or amended, and Secondary dwellings are not approved for this proposed subdivision without resubmitting and amending the NP study.) (**Exhibit D12**) **Water:** Individual wells are requested for each lot. Notice was given to the Idaho Department of Water Resources of this proposed development, but no comments were received in regards to potable water. A comment was received by IDWR confirming that this parcel is not in a floodplain. The applicant has provided information from Idaho Department of Water Resources monitoring well closest to the proposed development that show the water levels vary from year to year and that this area is not of concern by IDWR. (Exhibit X) They have also included in their presentation materials slides from "Treasure Valley Aquifer System" presented September 3, 2014. **(Exhibit A5.7c)** **Drainage:** Individual lot owners will be responsible for retention and treatment of storm water runoff including the application of perimeter lot berming to prevent direct lot discharge into irrigation facilities. The drainage along the proposed roads will be reviewed at the Preliminary Plat stage. (**Exhibit A2**) **Irrigation:** The parcel is served by Black Canyon Irrigation District. The parcel has a valid water right for 20.52 acres. The applicant is proposing a lateral reroute that has been reviewed by Black Canyon Irrigation District. No discharge of excess water will enter the established drainage system according to the applicant. **(Exhibit A1.2a**) (worksheet)Black Canyon Irrigation District submitted a letter with direction on compliance with required easements, approval of construction drawings, obtaining a Bureau of Reclamation license agreement and other requirements as noted in **Exhibit D2.** The Army Corp of Engineers submitted a letter stating that there are no waters of the United States, including wetlands within the project area. (**Exhibit D1**) **Utility:** Utilities are available to the parcel as there is currently a residential structure on the parcel.

☒	☐	☐	**07-07-05(1) F.**	**Does legal access to the subject property for the zoning map amendment exist or will it exist at the time of development;**
			Staff Analysis	The subject property does / does not have legal access for the zoning map amendment and/or will exist at the time of the development. See review and analysis detailed below. Legal access does exist to the parcel. In 2024, the land owner of parcel R34480010 applied for a private road through this parcel to be able to obtain a building permit. In the future plan for the development, this road will become a public road to serve the development. During their review, the Highway District No. 4 discovered that parcel number R34482012 was owned by Canyon County and is in the way of an access for the proposed development. The Highway District said that the county road Freezeout Road is built partially on this parcel. With coordination through Development Services, the Canyon County Prosecuting Attorney's office, the Board of County Commissioners and Highway District 4 have come to an agreement to transfer ownership of this .04-acre parcel to the Highway District 4 for Right of Way. The ownership of this parcel has been transferred to Highway District 4**. (Exhibit F)**
☒	☐	☐	**07-07-05(1) G.**	**Does the proposed zoning map amendment require public street improvements in order to provide adequate access to and from the subject property to minimize undue interference with existing or future traffic patterns created by the proposed development? What measures have been taken to mitigate road improvements or traffic impacts; and**
			Staff Analysis	The proposed zone map amendment will require public street improvements in order to provide adequate access to and from the subject property in order to minimize undue interference with existing and/or future traffic patterns created by the proposed development. Any necessary measures to mitigate road improvements and/or traffic impacts are detailed below. Highway District 4 has submitted comment letters for this project. The August 24, 2023 letter stated that the 23 proposed residential lots will generate approximately 218 new vehicle trips per day, about half of the 500 trips/day threshold which would require a traffic impact study. The approximate 20 peak hour trips from the development are not anticipated to have significant direct effect on the public roadway intersections at Freezeout/SH 44 or Freezeout/Willis Rd. **(Exhibit D7.1)** The applicant is proposing public road infrastructure to access the proposed development. The applicant has been working with Highway District 4 and have been provided updated requirements in a letter dated December 3, 2024. The applicant will continue to work with the Highway District 4 to resolve any issues at the time of platting. **(Exhibit D7.2)** **The following measures will be implemented to mitigate impacts:**

				As per the Highway District 4 letter dated August 24, 2023, **(Exhibit D7.1)** the collection of transportation impact fees at the time of access permit will provide mitigation of any cumulative effects of the new vehicle trips. The public roads will be paved within the development to reduce any dust that would otherwise occur with a gravel roadway.
☒	☐	☐	**07-07-05(1) H.**	**Will the proposed zoning map amendment impact essential public services and facilities, such as schools, police, fire and emergency medical services? What measures will be implemented to mitigate impacts?**
			Staff Analysis	The proposed uses is not anticipated to impact essential public services and facilities including, but not limited to schools, police, fire and emergency medical services. Any necessary measures to mitigate impacts are detailed below. The services will not be negatively impacted by such use, and/or require additional public funding in order to meet the needs created by the requested use. **Schools:** Middleton School District was noticed on July 31, 2023 and again on November 19, 2024 and no response was received. Kuna School District commented and stated that they had no comment. (**Exhibit D10)** **Police:** The Canyon County Sheriff Office was noticed and no comment was received. **Fire protection & Emergency Medical Services:** Canyon County Emergency Services was noticed and a comment was received by Christine Wendelsdorf, Emergency Management Coordinator that stated the need to check into the parcel potentially being in the floodplain. **(Exhibit D6)** The Idaho Department of Water Resources did confirm that the parcel is not in the floodplain **(Exhibit D8)** The Middleton Rural Fire District responded on August 28, 2023 and stated that the development will be served by the Fire District with a response time of 7 minutes under ideal driving conditions to the proposed entrance off Freezeout Road. **(Exhibit D11)**

Table 3. Area of City Impact

CCCO 09-09-01: Middleton Area of City Impact (Plans and Ordinances) Ordinance				
Compliant			**County Ordinance and Staff Review**	
Yes	**No**	**N/A**	**Code Section**	**Analysis**
☒	☐	☐	**09-09-13**	**Applicable Ordinances**: The Canyon County zoning ordinance (Chapter 7 of CCCO) and the Canyon County subdivision ordinance (Chapter 7, article 17 of CCCO) shall apply in the Middleton area of city impact.

			Staff Analysis	**Area of City Impact:** The City of Middleton did not respond with any comments to the County. There is a statement in the Letter of Intent provided by the applicant, **Exhibit A2,** regarding discussion with the City of Middleton and their desire for a Pre-annexation agreement being entered into and the request for easements to be provided for future City sewer and water services. According to the Letter of Intent, the City Engineer has reviewed the proposed Preliminary Plat and believes the right-of-way easements will accommodate future City water and sewer. A Pre-annexation agreement was entered into with the City of Middleton. **(Exhibit D11)** The City of Middleton's Area of City Impact is in subjection to the Canyon County Code of Ordinances with the request that comments from the City be considered as part of the decision. Since there were no comments received directly from the City of Middleton and a pre-annexation agreement was entered into, planning staff has determined that the City has no objections to this proposal.

4. AGENCY COMMENTS:

Agencies including the Canyon County Sheriff's Office, Canyon County Paramedics/EMT, Middleton Fire Protection District, Black Canyon Irrigation District, Highway District No. 4, Middleton School District, Greater Middleton Area Recreation, Idaho Transportation Department, COMPASS, Idaho Power, Intermountain Gas, Canyon County Engineering, Canyon County Building Department, Canyon County Code Enforcement Department, Idaho Department of Water Resources (Water Rights), Canyon County Soil Conservation District, Southwest District Health, Department of Environmental Quality, Environmental Protection Agency, Idaho Fish and Game and the City of Middleton were notified of the subject application.

Staff received agency comments from Highway District 4, Army Corp of Engineers, Black Canyon Irrigation District, Canyon County Soil Conservation District, Emergency Management Coordinator, Middleton Fire Protection District, Idaho Department of Water Resources, and Idaho Transportation Department.

Comments were also received from Kuna School District and the City of Nampa from the Full Political Noticing that takes place when a Rezone is applied for in accordance with the Local Land Use Planning Act, Idaho Code 67-6509.

The Southwest District Health approval letter and the City of Middleton Pre-annexation Agreement were provided by the applicant.

All agency comments received by the aforementioned materials deadline are located in **Exhibit D.**

Pursuant to Canyon County Ordinance 01-17-07B Materials deadline, the submission of late documents or other materials does not allow all parties time to address the materials or allow sufficient time for

public review. After the materials deadline, any input may be verbally provided at the public hearing to become part of the record.

5. PUBLIC COMMENTS:
Staff received six (6) total written public comments by the materials deadline of December 8, 2024. Generally, of the comments received, all six (6) were opposed to the R-1 rezone proposal. All public comments received by the aforementioned materials deadline are located in **Exhibit E**.

Pursuant to Canyon County Ordinance 01-17-07B Materials deadline, the submission of late documents or other materials does not allow all parties time to address the materials or allow sufficient time for public review. After the materials deadline, any input may be verbally provided at the public hearing to become part of the record.

6. SUMMARY:
In consideration of the application and supporting materials, staff concludes that the proposed rezone **are compliant** with Canyon County Ordinance 07-06-05. A full analysis is detailed within the staff report.

7. EXHIBITS:

A. **Application Packet & Supporting Materials**
   1. Master Application
      1.1. Updated Master Application
      1.2. Original Master Application
         a. Irrigation Plan
         b. Land Use Worksheet
   2. Letter of Intent
   3. Concept Plan (Freezeout Ridge Preliminary Plat)
   4. Neighborhood Meeting
   5. Studies and additional materials provided by applicant
      5.1. Level 1 Nutrient Pathogen Study
      5.2. Phase 1 Environmental Site Assessment dated April 21, 2021
      5.3. IDWR Groundwater Levels
      5.4. IDWR Groundwater Monitoring Well
      5.5. US Fish & Wildlife Services IPaC Resource List
      5.6. Discussion regarding Conditional Rezone vs. Rezone
      5.7. Applicants PowerPoint Presentation and Supporting documents
         a. Power Point Presentation by applicant
         b. Phase I Environmental Site Assessment updated May 18, 2022
         c. IDWR Treasure Valley Aquifer System dated September 3, 2014
         d. Level I Nutrient Pathogen Study dated January 14, 2021

B. Supplemental Documents
   1. Parcel Tool
   2. Cases Maps/Reports
      2.1. Aerial
      2.2. Zoning and Classification Map
      2.3. Subdivision Map

2.4. Subdivision & Lot Report
2.5. Case Map
2.6. Case Summary
2.7. Canyon County Future Land Use Map
2.8. Middleton Future Land Use Map
2.9. Dairy, Feedlot and Gravel Pit Map

C. Site Visit Photos: December 11, 2024

D. Agency Comments Received by: Month Day, Year

1. ARMY CORP OF ENGINEERS; Received: August 23, 2021
2. BLACK CANYON IRRIGATION DISTRICT; Received: August 30, 2023
3. CANYON SOIL CONSERVATION DISTRICT; Received: November 20, 2024
4. CITY OF MIDDLETON AND FREEZEOUT PRE-ANNEXATION AGREEMENT; Received: September 23, 2021
5. CITY OF NAMPA; Received: November 19, 2024
6. EMERGENCY MANAGEMENT COORDINATOR; Received: November 20, 2024
7. HIGHWAY DISTRICT 4; Received: June 27, 2023
   7.1. Updated letter; Received: August 24, 2023
   7.2. Updated letter; Received: December 2, 2024
8. IDAHO DEPARTMENT OF WATER RESOURCES; Received: November 9, 2024
9. IDAHO TRANSPORTATION DEPARTMENT; Received: August 1, 2023
   9.1. Updated letter; Received: November 25, 2024
10. KUNA SCHOOL DISTRICT; Received: November 20, 2024
11. MIDDLETON RURAL FIRE PROTECTION DISTRICT; Received: August 28, 2023
12. SOUTHWEST DISTRICT HEALTH; Received: June 15, 2021

E. Public Comments Received by: Month Day, Year

1. DEBBIE WHITE; Received: December 9, 2024
2. JASON ROACH; Received: December 8, 2024
3. JUDY CORDENIZ; Received: November 20, 2024
4. LEANN STEPHENS & BEN SCHNEIDER; Received: December 9, 2024
5. RYAN AND JILL CHRIS; Received: December 9, 2024
6. STEVE CARNAHAN; Received: December 9, 2024
7. TASHA ROACH; Received: December 8, 2024

F. Agreement between Canyon County and Highway District 4 RE: parcel no. R34482012

Exhibit A1.1

MASTER APPLICATION

CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT
111 North 11th Avenue, #140, Caldwell, ID 83605
www.canyonco.org/dsd.aspx Phone: 208-454-7458 Fax: 208-454-6633

PROPERTY OWNER	OWNER NAME: Thornton Gallup LLC
	MAILING ADDRESS: PO Box 1495 Nampa ID 83653
	PHONE: 208.880.0539 EMAIL: dthornton@steelheadmetal.com

I consent to this application and allow DSD staff / Commissioners to enter the property for site inspections. If owner(s) are a business entity, please include business documents, including those that indicate the person(s) who are eligible to sign.

Signature: [signature] *Date:* 12.14.21

(AGENT) ARCHITECT ENGINEER BUILDER	CONTACT NAME: Will Mason
	COMPANY NAME: Mason & Associates, Inc
	MAILING ADDRESS: 924 3rd street South Ste B Nampa
	PHONE: 208-454-0256 EMAIL: wmason@masonandassociates.us

SITE INFO	STREET ADDRESS: 23442 Freezeout Rd
	PARCEL #: R3447900000 LOT SIZE/AREA: 31.41 acres
	LOT: BLOCK: SUBDIVISION:
	QUARTER: NW SECTION: 3 TOWNSHIP: 4N RANGE: 3W
	ZONING DISTRICT: AG FLOODZONE (YES/(NO))

HEARING LEVEL APPS	____CONDITIONAL USE	____COMP PLAN AMENDMENT	____CONDITIONAL REZONE
	X ZONING AMENDMENT (REZONE)	____DEV. AGREEMENT MODIFICATION	____VARIANCE > 33%
	____MINOR REPLAT	____VACATION	____APPEAL
	____SHORT PLAT SUBDIVISION	X PRELIMINARY PLAT SUBDIVISION	____FINAL PLAT SUBDIVISION

DIRECTORS DECISION APPS	____ADMINISTRATIVE LAND DIVISION	____EASEMENT REDUCTION	____SIGN PERMIT
	____PROPERTY BOUNDARY ADJUSTMENT	____HOME BUSINESS	____VARIANCE 33% >
	____PRIVATE ROAD NAME	____TEMPORARY USE	____DAY CARE
	____OTHER____		

CASE NUMBER: RZ 2021-0053		DATE RECEIVED:	
RECEIVED BY:		APPLICATION FEE:	CK MO CC CASH

Revised 1/3/21

Exhibit A1.2

015-1001frm

Master Application

Canyon County Development Services 1115 Albany Street, Caldwell, ID 83605.
www.canyoncounty.org Phone 208-454-7458 fax 208-454-6633

Owner(s) information:
Name: Pioneer Homes
Telephone: (208) 468-9200 Fax
City: Nampa State: ID Zip: 83651
Address: 719 1st S. St. B
Email: brian@pioneerhomesidaho.com
Pioneer Homes / c [signature] [illegible]
Signature: (Owners) Date

I consent to this application and agree to allow DSD Staff / Commissioners to enter the property for site inspections.

If owner(s) are a business entity, please include business documents, including those that indicate the person(s) who is eligible to sign.

Applicant: Representative / Business Name:
Name: Mason & Associates Inc.
Address: 924 3rd St. S. Ste. B
City: Nampa State: ID Zip: 83651
Telephone: (208) 454-0256 Fax: 208-467-4130
Email: wmason@masonandassociates.us
I certify this information is correct to the best of my knowledge.
William J. Mason 10/14/2021
Signature: (Applicant) Date

Additional Contact if applicable: Business Name:
Name:
Address:
City: State: Zip:
Telephone: Fax:
Email:
Engineer / Surveyor if applicable: Business Name:
Name: Will Mason Phone: (208) 454-0256
Address: 924 3rd St. S. Ste. B Fax: N/A
City: Nampa State: ID Zip 83651
Email: wmason@masonandassociates.us

Site Information: Address: 23442 Freezeout Rd. Caldwell, ID 83607 Total Acreage: ± 31.41

Tax Parcel Number(s): R3447900000

Quarter Section: NW Section: 3 Township: 4 N. Range: 3 W. Zoning: AG

Area of Impact: City of Middleton Subdivision: Lot: Block:

Check application type:

Administrative Applications

- ☐ Assisted Care Facility
- ☐ Bed and Breakfast
- ☐ Day Care Facility
- ☐ Reduction Frontage, Easement, Road Lot
- ☐ Floodplain Development
- ☐ Home Business ☐ New Application ☐ Renewal
- ☐ Land Division Administrative
- ☐ Mineral Extraction short term
- ☐ Public Service Agency Telecom >75'
- ☐ Parcel Inquiry
- ☐ Property Boundary Adjustment
- ☐ Quasi-Public Use
- ☐ Sign
- ☐ Temporary Use ☐ New Application ☐ Renewal
- ☐ Utility Facility
- ☐ Variance up to 33%
- ☐ Wind Energy System Small
- ☐ Zoning Compliance Certificate

Hearing Level Applications

- ☐ Appeal
- ☐ Comprehensive Plan Change ☐ Text ☐ Map
- ☐ Conditional Use
- ☐ Road Name Change
- ☐ Time Extension
- ☐ Variance
- ☒ Zoning Ordinance Amendment ☒ Map ☐ Text

Subdivision Applications

- ☐ Final Plat
- ☐ Short Plat
- ☒ Preliminary Plat
- ☐ Plat Amendment or Minor Replat
- ☐ Simple Changes to a Plat
- ☐ Vacation of Plat, Lot, Road, Easement

Office Use Only:	Case #:	Received by:	Date:	Fees:	Receipt #:
	RZ2021-0053 SD2021-0055	JP	10/18	$850 +$1780 $2630	

Master Application must be accompanied with an application checklist relative to application type.

Rev.11.5.10

015-360

CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT
111 N. 11th Ave. #140 • Caldwell, Idaho • 83605 • Phone (208) 454-7458
Fax: (208) 454-6633 • www.canyoncounty.org/dsd

APPLICATION FOR IRRIGATION PLAN APPROVAL

(Idaho Code 31-3805)

Applicant(s): Pioneer Homes (208) 468-9200
Name — Daytime Telephone Number
719 1st Street S. Suite B Nampa, ID 83651
Street Address — City, State — Zip

Representative Name: Brian Falck (208) 468-9200
Daytime Telephone Number / E-mail Address
719 1st St. S. Suite B Nampa, ID 83651
Street Address — City, State — Zip

Location of Subject Property: 23442 Freezeout Rd. Caldwell, ID 83607
Two Nearest Cross Streets or Property Address — City

Assessor's Account Number(s): R 34479 00000 Section 3 Township 4N. Range 3W.

Case No.: _____

This land:

☒ Has water rights available to it.

☐ Is dry and has no water rights available to it. If dry, please sign this document and return to the Development Services Department representative from whom you received it.

Idaho Code 31-3805 states that when all or part of a subdivision is "located within the boundaries of an existing irrigation district or canal company, ditch association, or like irrigation water delivery entity ... **no subdivision plat or amendment to a subdivision plat or any other plat or may recognized by the city or county for the division of land will be accepted, approved, and recorded unless:**"

a. The appropriate water rights and assessment of those water rights have been transferred from said lands or excluded from an irrigation entity by the owner; or

b. The owner, person, firm, or corporation filing the subdivision plat or amendment to a subdivision plat or map has provided underground tile or conduit for lots of one (1) acre or less, or a suitable system for lots of more than one (1) acre which will deliver water to those land owners within the subdivision who are also within the irrigation entity with the appropriate approvals:

1. For proposed subdivisions located within negotiated area of city impact, both city and county zoning authorities must approve such irrigation system in accordance with Idaho Code Section 50-1306. In addition, the irrigation entity charged with the delivery of water to said lands must be advised regarding the irrigation system.

2. For proposed subdivisions outside of negotiated areas of city impact, the delivery system must be approved by the Planning and Zoning Commission and the Board of County Commissioners with the advice of the irrigation entity charged with the delivery of water to said lands.

To better understand your irrigation request, we need to ask you a few questions. A list of the map requirements follows the short questionnaire. **Any information missing information may result in the delay of your request before the Planning and Zoning Commission and ultimately the approval of your irrigation plan by the Board of County Commissioners.**

1. Are you within an area of negotiated City Impact? X Yes _____ No

2. What is the name of the irrigation and drainage entities servicing the property?

   Irrigation: Black Canyon Irrigation District

   Drainage: Black Canyon Irrigation District

3. How many acres is the property being subdivided? ± 31.41 ACRES

4. What percentage of this property has water? ± 65%

5. How many inches of water are available to the property? 20.52 acres of water

6. How is the land currently irrigated?
   ☒ Surface ☐ Irrigation Well
   ☐ Sprinkler ☐ Above Ground Pipe ☐ Underground Pipe

7. How is the land to be irrigated after it is subdivided?
   ☐ Surface ☐ Irrigation Well
   ☐ Sprinkler ☐ Above Ground Pipe ☒ Underground Pipe

8. Please describe how the head gate/pump connects to the canal and irrigated land and where ditches and/or pipes go.
   We are proposing the new headgate be in the last box in the new reroute. located on the south side of property. The headgate goes into a weirbox that feeds our proposed pump station.

9. Is there an irrigation easement(s) on the property? ☒ Yes ☐ No

10. How do you plan to retain storm and excess water on each lot?
    Individual lots are responsible for retention & treatment of storm water runoff including the application of perimeter lot berming to prevent direct lot discharge into irrigation facilities.

11. How do you plan to process this storm water /excess irrigation water prior to it entering the established drainage system? (i.e. oil, grease, contaminated aggregates)

~~Through filtration~~ NO discharge of excess water will enter the established drainage system.

Irrigation Plan Map Requirements

The irrigation plan **must be on a scalable map** and show all of the irrigation system including all supply and drainage structures and easements. Please include the following information on you map:

1. ☒ All canals, ditches, and laterals with their respective names.
2. ☒ Head gate location and/or point if delivery of water to the property by the irrigation entity.
3. ☒ Rise locations and types, if any.
4. ☐ Easements of all private ditches that supply adjacent properties (i.e. supply ditches and drainage ways).
5. ☒ Slope of the property in various locations.
6. ☒ Direction of water flow (use short arrows → on your map to indicate water flow direction).
7. ☒ Direction of wastewater flow (use long arrows --------→ on you map to indicate waste water direction).
8. ☒ Location of drainage ponds or swales, if any where wastewater will be retained on the property.
9. ☐ Other information: _____

Also, provide the following documentation:

- ☐ Copy of any water users' association / agreement currently in effect which shows water schedules and maintenance responsibilities.
- ☐ Copy of all new easements ready for recording (irrigation supply and drainage).
- ☐ If you are in a city area of impact, please include a copy of the approvals by the city planning and zoning commission and city council of your irrigation plan.

========== **Applicant Acknowledgement** ==========

I, the undersigned, agree that prior to the Development Services Department accepting this application I am responsible to have all of the required information and site plans.

I further acknowledge that the irrigation system, as approved by the Planning and Zoning Commission and ultimately the Board of County Commissioners, must be bonded and/or installed prior to the issuance of a zoning compliance or building permit.

Signed: Pioneer Homes _____ Date: ____/____/____
Applicant / Property Owner (Application Submitted)

Accepted By: _____ Date: ____/____/____
Director / Staff

CANYON COUNTY DEVELOPMENT SERVICES
111 North 11th Avenue, Caldwell, ID 83605 Phone: 208-454-7458 Fax: 208-454-6633

GENERAL

1. How Many Lots are you proposing? 24 (4 common, 20 Residental)
2. Average Lot Size of the Residential Parcels? 1.30 Acres

IRRIGATION

1. Irrigation Water is Provided via ☐ Irrigation Well ☒ Surface Water
2. What percentage of the property has water? ± 65 %
3. How many inches of water are available to property? 20.52 acres of water
4. How do you plan to retain storm and excess water on each lot?
   Individual lots are responsible for retention & treatment of storm water runoff including the application of perimeter lot berming to prevent direct lot discharge into irrigation facilities
5. How do you plan to process storm water / excess irrigation water prior to it entering the established drainage system?
   ~~Through filtration~~ No discharge of excess water will enter the established drainage system.

ROADS

1. Roads within the Development will be: ☒ Public ☐ Private ☐ N/A

HILLSIDE DEVELOPMENT

1. Of the total lots requested, how many of the lots will contain slopes greater than 15%?
   0 Residential 0 Non-Buildable 0 Common
2. Will the proposed Road(s) be located within any area that has slopes greater than 15%
   ☐ Yes ☒ No

SUBDIVISIONS WITHIN AN AREA OF CITY IMPACT

1. Will you be requesting waivers of Subdivision Improvements from the City?
   ☒ Yes ☐ No
2. If yes, which waivers will you be requesting?
   ☒ Curbs ☒ Gutters ☒ Sidewalks ☒ Streetlights ☒ Landscaping

Exhibit A2

Mason & Associates Inc.

Professional Engineers, Land Surveyors and Planners

924 3rd St. So. Ste B, Nampa, ID 83651
Ph (208) 454-0256 Fax (208) 467-4130
Email: wmason@masonandassociates.us

LETTER OF EXPLANATION
REZONE AND PRELIMINARY PLAT
FREEZEOUT ESTATES SUBDIVISION

This is a request for a rezone and preliminary plat for parcel number R34479 located east of Freezeout Road and south of Willis Road, Middleton, Canyon County Idaho. The property is currently zoned County Agricultural. The parcel is approximately 31 acres. We are requesting County Residential (R-1) zoning. The lots will range in size from 1-1.24 acres.

Canyon County's future land use map indicates the future designation of this property as residential. This property is also in the City of Middleton's impact area and their future land use zone is residential. The City of Middleton has requested the developer enter into an agreement to annex the lots into the City as soon as the City reaches the property. The City has also asked for easements to be provided for future City sewer and water services. The City Engineer has reviewed the preliminary plat and believe right-of-way easements will accommodate future City water and sewer.

A Nutrient Pathogen Study has been completed. Southwest District Health (SWDH) and the Idaho Department of Environmental Quality (DEQ) have both reviewed the study.

A Phase One Environmental Assessment was also done and is included.

There are four subdivisions within 300 feet or less of this property, Willis Estates, Saddleback Ridge, Ranchette Estates, and North Slope Estates. Lot sizes in these four subdivisions vary from 4.88 acres to 0.36 acres. The average size lot size for these subdivisions is 1.25 acres. The request for the R-1 zone with the preliminary plat depicted lots ranging from 1-1.24 acres is consistent with the surrounding subdivision land use and lot size.

Neighbor Concerns: The neighbors have voiced their concerns for endangered species. There is an irrigation drainage area on the west side of the property. There are no plans to disturb the area that may house wildlife. Included in this packet is the United States Fish and Wildlife Services endangered species list for this specific property. Per U.S Fish and Wildlife's Information for Planning and Consulting (IPaC), this location is likely to be home to a threatened plant called the Slickspot Peppergrass. It is also likely to be home to the monarch butterfly which is only considered a candidate. There are no other plants or animals that U.S Fish or Wildlife is concerned about in this area and there are no endangered plants or animals that utilize this property. The irrigation drainage area will not be used for a building area. It will remain a drainage area.

Mason & Associates Inc.

Professional Engineers, Land Surveyors and Planners

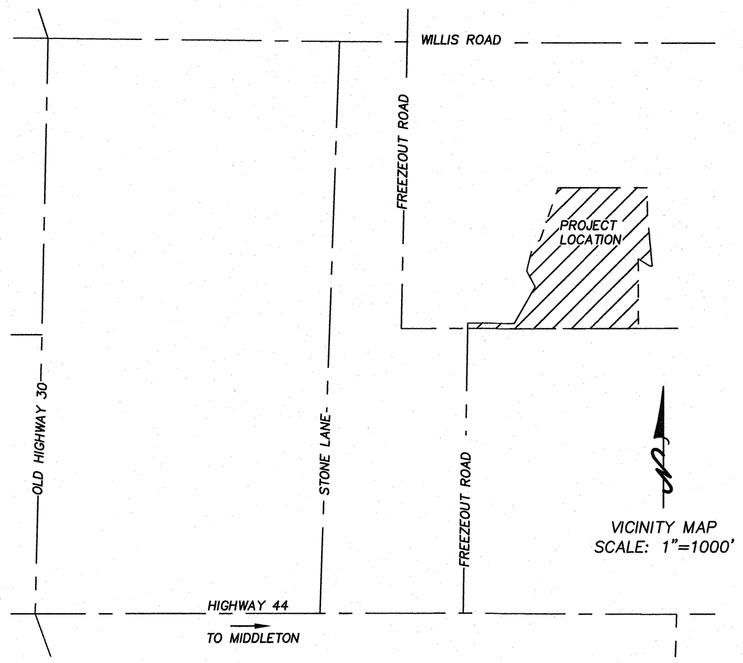
The neighbors have also expressed concern their wells are in danger of going dry. Included in this packet are the results of Idaho Department of Water Resources (IDWR) monitoring well closest to this subdivision. These results indicate water levels vary from year to year but this area is not an area of concern for IDWR. The monitoring well 04N 03W 04DCB1 is approximately 1.2 miles from this location. The highest level of groundwater recorded was in 2019.

We believe that a request for R-1 zoning is in compliance with the County's comprehensive plan and is desired by the City of Middleton. The layout fits well with the surrounding residential subdivisions.

Exhibit A3

FREEZEOUT RIDGE ESTATES SUBDIVISION
PRELIMINARY PLAT

A PART OF THE SE 1/4 NW 1/4 AND A PART OF THE SW 1/4 NE 1/4,
SECTION 3, T. 4 N., R. 3 W., B.M.,
CANYON COUNTY, IDAHO
2023



VICINITY MAP
SCALE: 1"=1000'

TO BE VERIFIED BY GRAVEL EQUIVALENCY BY GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION DRAWING APPROVAL

OWNER/DEVELOPER

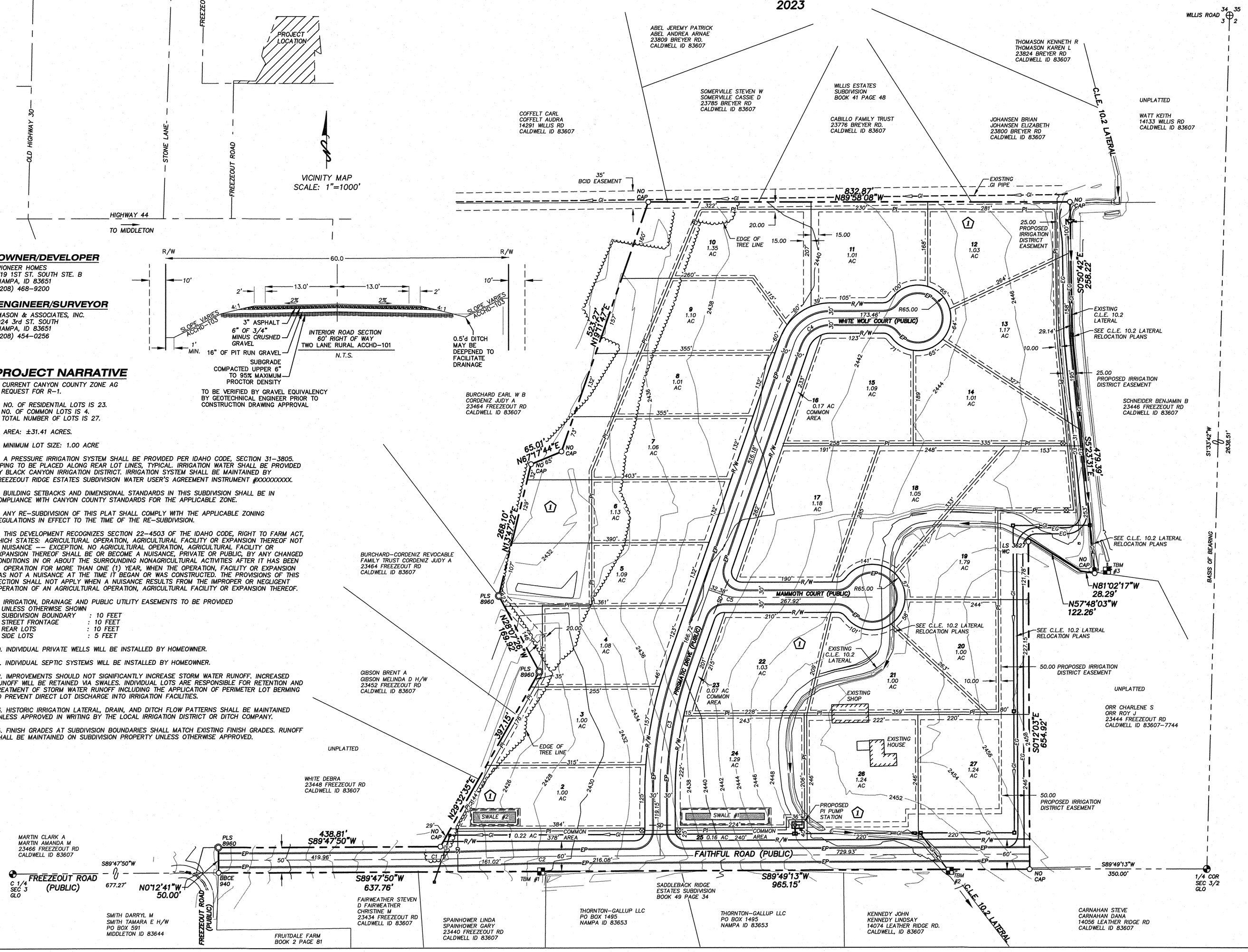
PIONEER HOMES
719 1ST ST. SOUTH STE. B
NAMPA, ID 83651
(208) 468-9200

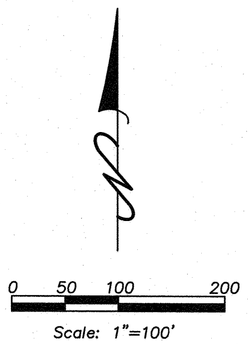
ENGINEER/SURVEYOR

MASON & ASSOCIATES, INC.
924 3rd ST. SOUTH
NAMPA, ID 83651
(208) 454-0256

PROJECT NARRATIVE

1. CURRENT CANYON COUNTY ZONE AG REQUEST FOR R-1.
2. NO. OF RESIDENTIAL LOTS IS 23. NO. OF COMMON LOTS IS 4. TOTAL NUMBER OF LOTS IS 27.
3. AREA: ±31.41 ACRES.
4. MINIMUM LOT SIZE: 1.00 ACRE
5. A PRESSURE IRRIGATION SYSTEM SHALL BE PROVIDED PER IDAHO CODE, SECTION 31-3805. PIPING TO BE PLACED ALONG REAR LOT LINES, TYPICAL. IRRIGATION WATER SHALL BE PROVIDED BY BLACK CANYON IRRIGATION DISTRICT. IRRIGATION SYSTEM SHALL BE MAINTAINED BY FREEZEOUT RIDGE ESTATES SUBDIVISION WATER USER'S AGREEMENT INSTRUMENT #XXXXXXXXX.
6. BUILDING SETBACKS AND DIMENSIONAL STANDARDS IN THIS SUBDIVISION SHALL BE IN COMPLIANCE WITH CANYON COUNTY STANDARDS FOR THE APPLICABLE ZONE.
7. ANY RE-SUBDIVISION OF THIS PLAT SHALL COMPLY WITH THE APPLICABLE ZONING REGULATIONS IN EFFECT TO THE TIME OF THE RE-SUBDIVISION.
8. THIS DEVELOPMENT RECOGNIZES SECTION 22-4503 OF THE IDAHO CODE, RIGHT TO FARM ACT, WHICH STATES: AGRICULTURAL OPERATION, AGRICULTURAL FACILITY OR EXPANSION THEREOF NOT A NUISANCE -- EXCEPTION. NO AGRICULTURAL OPERATION, AGRICULTURAL FACILITY OR EXPANSION THEREOF SHALL BE OR BECOME A NUISANCE, PRIVATE OR PUBLIC, BY ANY CHANGED CONDITIONS IN OR ABOUT THE SURROUNDING NONAGRICULTURAL ACTIVITIES AFTER IT HAS BEEN IN OPERATION FOR MORE THAN ONE (1) YEAR, WHEN THE OPERATION, FACILITY OR EXPANSION WAS NOT A NUISANCE AT THE TIME IT BEGAN OR WAS CONSTRUCTED. THE PROVISIONS OF THIS SECTION SHALL NOT APPLY WHEN A NUISANCE RESULTS FROM THE IMPROPER OR NEGLIGENT OPERATION OF AN AGRICULTURAL OPERATION, AGRICULTURAL FACILITY OR EXPANSION THEREOF.
9. IRRIGATION, DRAINAGE AND PUBLIC UTILITY EASEMENTS TO BE PROVIDED UNLESS OTHERWISE SHOWN
   SUBDIVISION BOUNDARY : 10 FEET
   STREET FRONTAGE : 10 FEET
   REAR LOTS : 10 FEET
   SIDE LOTS : 5 FEET
10. INDIVIDUAL PRIVATE WELLS WILL BE INSTALLED BY HOMEOWNER.
11. INDIVIDUAL SEPTIC SYSTEMS WILL BE INSTALLED BY HOMEOWNER.
12. IMPROVEMENTS SHOULD NOT SIGNIFICANTLY INCREASE STORM WATER RUNOFF. INCREASED RUNOFF WILL BE RETAINED VIA SWALES. INDIVIDUAL LOTS ARE RESPONSIBLE FOR RETENTION AND TREATMENT OF STORM WATER RUNOFF INCLUDING THE APPLICATION OF PERIMETER LOT BERMING TO PREVENT DIRECT LOT DISCHARGE INTO IRRIGATION FACILITIES.
13. HISTORIC IRRIGATION LATERAL, DRAIN, AND DITCH FLOW PATTERNS SHALL BE MAINTAINED UNLESS APPROVED IN WRITING BY THE LOCAL IRRIGATION DISTRICT OR DITCH COMPANY.
14. FINISH GRADES AT SUBDIVISION BOUNDARIES SHALL MATCH EXISTING FINISH GRADES. RUNOFF SHALL BE MAINTAINED ON SUBDIVISION PROPERTY UNLESS OTHERWISE APPROVED.





LEGEND

- BENCHMARK
- FOUND BRASS CAP MONUMENT
- FOUND ALUMINUM CAP MONUMENT
- FOUND 5/8" IRON PIN
- FOUND 1/2" IRON PIN
- (1) BLOCK NUMBER
- GATE VALVE
- TOPOGRAPHIC CONTOUR LINE
- PROPERTY BOUNDARY LINE
- SECTION LINE
- EASEMENT LINE
- R/W — RIGHT OF WAY LINE
- LOT LINE
- EP — FUTURE EDGE OF PAVEMENT
- GI — PROPOSED GRAVITY IRRIGATION PIPE
- EG — PROPOSED EDGE OF GRAVEL ROAD
- PI — PROPOSED PRESSURE IRRIGATION LINE
- SD — PROPOSED STORM DRAIN
- EXISTING PIPE
- EDGE TREE LINE

Curve Table

Curve #	Length	Radius	Delta	Chord Direction	Chord Length	Tangent
C1	37.69	1500.00	1°26'23"	N89°04'38"E	37.69	18.85
C2	38.30	1500.00	1°27'46"	S89°05'20"W	38.29	19.15
C3	253.63	750.00	19°22'34"	S9°30'30"W	252.43	128.04
C4	92.72	75.00	70°50'05"	S54°36'50"W	86.93	53.33
C5	25.09	75.00	19°09'55"	S80°23'10"E	24.97	12.66

TBM'S

TBM #1
FOUND BRASS CAP
CE 1/16 CORNER SECTION 3 GLO 1936
5.5' SOUTH OF SOUTH EDGE GRAVEL DRIVEWAY AND SOUTH OF THE 4TH POWER POLE
EAST END OF FREEZEOUT RD.
NAVD 88 EL=2430.90'

TBM #2
NE BOLT IRR BOX FOR THE 10.2 LATERAL 9' SOUTH OF SOUTH EDGE GRAVEL ROAD & 47' NE OF PI PUMP STATION
NAVD 88 EL=2450.83'

TBM #3
CHISELED X IN SW CORNER IRR BOX 24.6' EAST OF PROPERTY CORNER & EAST OF ANGLE POINT ON THE LATERAL ALONG THE EAST PROPERTY LINE.
NAVD 88 EL=2452.39'

NOTE: EXISTING TREES NOT SHOWN FOR CLARITY.

SHEET INDEX

PROFESSIONAL ENGINEER LICENSED 9212 STATE OF IDAHO WILLIAM J. MASON

January 25, 2023

NO	BY	DATE	DESCRIPTION
1	CS	10/24/22	REVISED PER COUNTY ENGINEER COMMENTS

REVISIONS

DESIGNED BY:
DRAWN BY: JH 3/21
CHECKED BY:
APPVD BY:

Professional Engineers, Land Surveyors & Planners
Mason & Associates
801 3rd St. South, Nampa, ID 83651
(208) 454-0256 Fax (208) 467-4100

CLIENT:
PIONEER HOMES
719 1st STREET S
SUITE B
NAMPA, ID 83651
(208) 468-9200

JOB NO. J71420
DWG NO. J71420PP
SCALE: N/A
Vert: 1"=100'
Horiz:
FIELD BOOK NO.

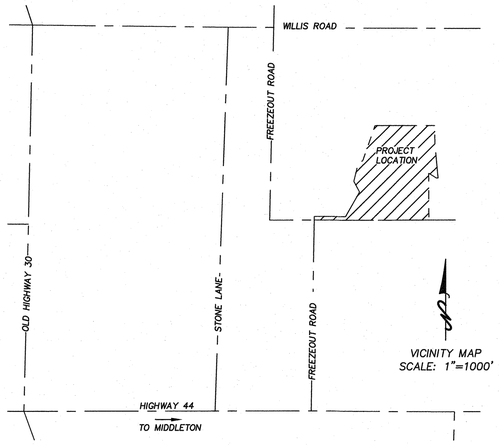
DRAWING TITLE:
FREEZEOUT RIDGE ESTATES
PRELIMINARY PLAT

Rev

SHEET NO. 1 OF 3 SHEETS

FREEZEOUT RIDGE ESTATES SUBDIVISION
PRELIMINARY PLAT

A PART OF THE SE 1/4 NW 1/4 AND A PART OF THE SW 1/4 NE 1/4,
SECTION 3, T. 4 N., R. 3 W., B.M.,
CANYON COUNTY, IDAHO
2023



OWNER/DEVELOPER
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(208) 468-9200

ENGINEER/SURVEYOR
MASON & ASSOCIATES, INC.
924 3rd ST. SOUTH
NAMPA, ID 83651
(208) 454-0256

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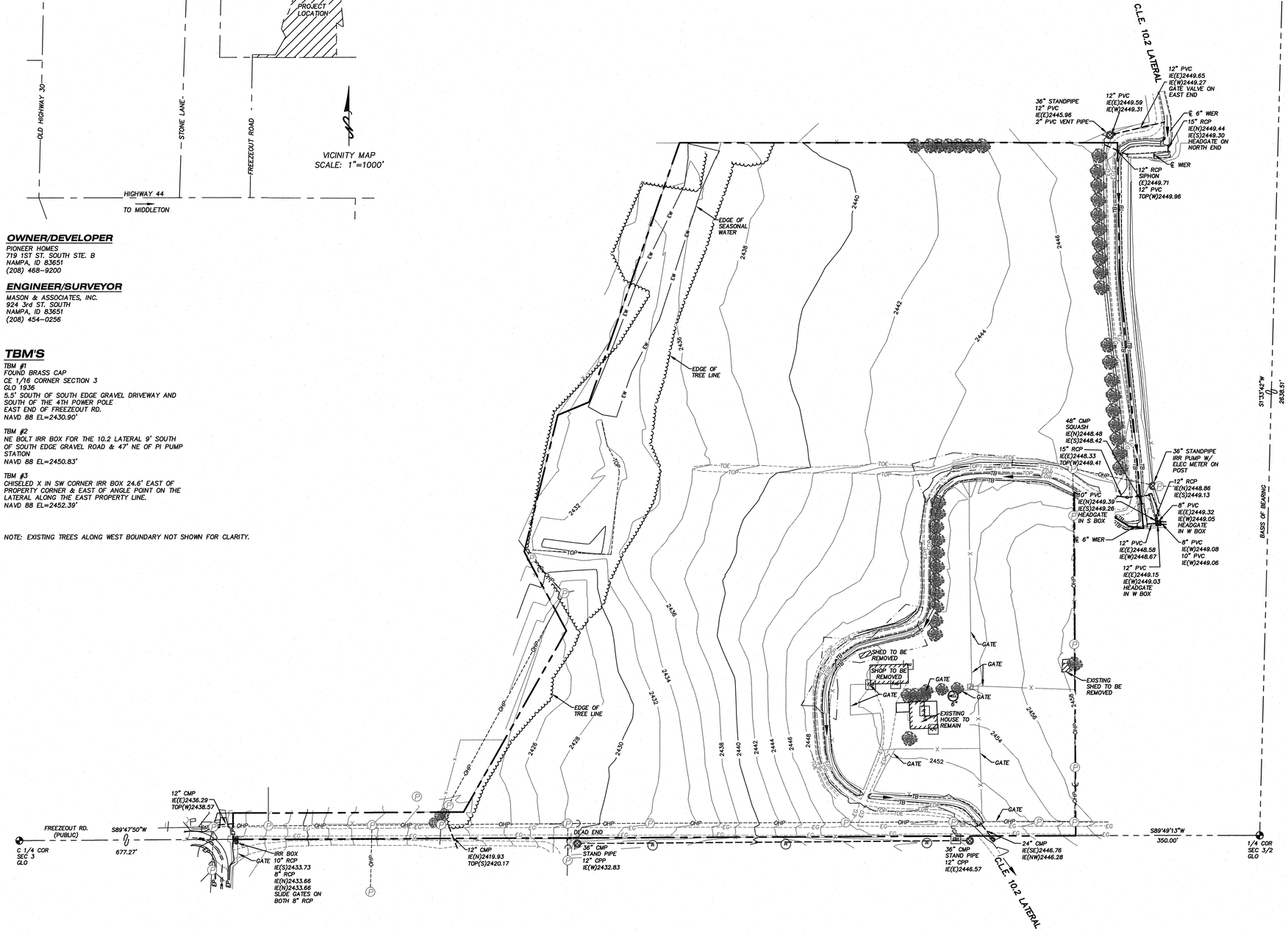
NOTE: EXISTING TREES ALONG WEST BOUNDARY NOT SHOWN FOR CLARITY.



0 50 100 200
Scale: 1"=100'

LEGEND

- BENCHMARK
- FOUND BRASS CAP MONUMENT
- FOUND ALUMINUM CAP MONUMENT
- FOUND 1/2" IRON PIN
- POWER POLE
- GUY ANCHOR
- DECIDUOUS TREE
- 36" STANDPIPE
- TELEPHONE RISER
- SIGN
- MAILBOX
- CABLE TV BOX
- ELECTRIC METER
- BUSHES
- PRESSURE IRRIGATION SERVICE
- ELECTRIC BOX
- A/C UNIT
- WELL
- IRRI. CONTROL VALVE
- FAUCET
- TOPOGRAPHIC CONTOUR LINE
- PROPERTY BOUNDARY LINE
- SECTION LINE
- EDGE OF PAVEMENT
- EXISTING EDGE OF DIRT ROAD
- EXISTING EDGE OF GRAVEL
- EDGE OF SEASONAL HIGH WATER
- TOP OF BANK
- TOP OF SLOPE
- TOE OF SLOPE
- FENCE LINE
- EDGE TREE LINE
- OVERHEAD POWER LINE
- UNDERGROUND POWER LINE
- EXISTING PIPE

PROFESSIONAL ENGINEER LICENSED 9212 STATE OF IDAHO WILLIAM J. MASON
January 25, 2023

NO	BY	DATE	DESCRIPTION
			REVISIONS

DESIGNED BY:
DRAWN BY: JH 2/21
CHECKED BY:
APPVD BY:

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Professional Engineers, Land Surveyors & Planners
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JOB NO. JY1420
DWG NO. JY1420PP
SCALE: N/A
Vert: 1"=100'
Horiz:
FIELD BOOK NO.

DRAWING TITLE:
FREEZEOUT RIDGE ESTATES
EXISTING FEATURES
SHEET NO. 2 OF 3 SHEETS
Rev

FREEZEOUT RIDGE ESTATES SUBDIVISION
GRADING, IRRIGATION, & DRAINAGE PLAN

A PART OF THE SE 1/4 NW 1/4 AND A PART OF THE SW 1/4 NE 1/4,
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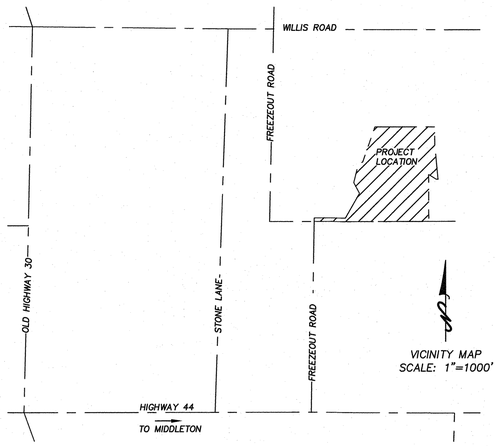
2023



VICINITY MAP
SCALE: 1"=1000'

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NAVD 88 EL=2452.39'

NOTES

1. IRRIGATION PROVIDED BY BLACK CANYON IRRIGATION DISTRICT.
2. A PRESSURE IRRIGATION SYSTEM SHALL BE PROVIDED PER IDAHO CODE, SECTION 31-3805. PIPING TO BE PLACED ALONG REAR LOT LINES, TYPICAL IRRIGATION WATER SHALL BE PROVIDED BY BLACK CANYON IRRIGATION DISTRICT. IRRIGATION SYSTEM SHALL BE MAINTAINED BY FREEZEOUT RIDGE ESTATES SUBDIVISION WATER USER'S AGREEMENT INSTRUMENT #XXXXXXXXX.
3. INDIVIDUAL PRIVATE WELLS WILL BE INSTALLED BY HOMEOWNER.
4. INDIVIDUAL SEPTIC SYSTEMS WILL BE INSTALLED BY HOMEOWNER.
5. IMPROVEMENTS SHOULD NOT SIGNIFICANTLY INCREASE STORM WATER RUNOFF. PUBLIC STREET STORM DRAINAGE SHALL BE CONVEYED VIA ROADSIDE BORROW DITCHES INTO STORM DRAINAGE DISPOSAL FACILITIES. STORM DRAINAGE FACILITIES SHALL BE LOCATED WITHIN AN EASEMENT, OUTSIDE OF THE PUBLIC RIGHT-OF-WAY. THE HOMEOWNERS ASSOCIATION, UNDERLYING PROPERTY OWNER OR ADJACENT PROPERTY OWNER IS RESPONSIBLE FOR ALL STORM DRAINAGE FACILITIES OUTSIDE THE PUBLIC RIGHT-OF-WAY, INCLUDING ALL ROUTINE AND HEAVY MAINTENANCE. INDIVIDUAL LOT OWNERS ARE RESPONSIBLE FOR THE APPLICATION OF PERIMETER LOT BERMING TO PREVENT DIRECT LOT STORMWATER DISCHARGE INTO IRRIGATION FACILITIES.
6. HISTORIC IRRIGATION LATERAL, DRAIN, AND DITCH FLOW PATTERNS SHALL BE MAINTAINED UNLESS APPROVED IN WRITING BY THE LOCAL IRRIGATION DISTRICT OR DITCH COMPANY.
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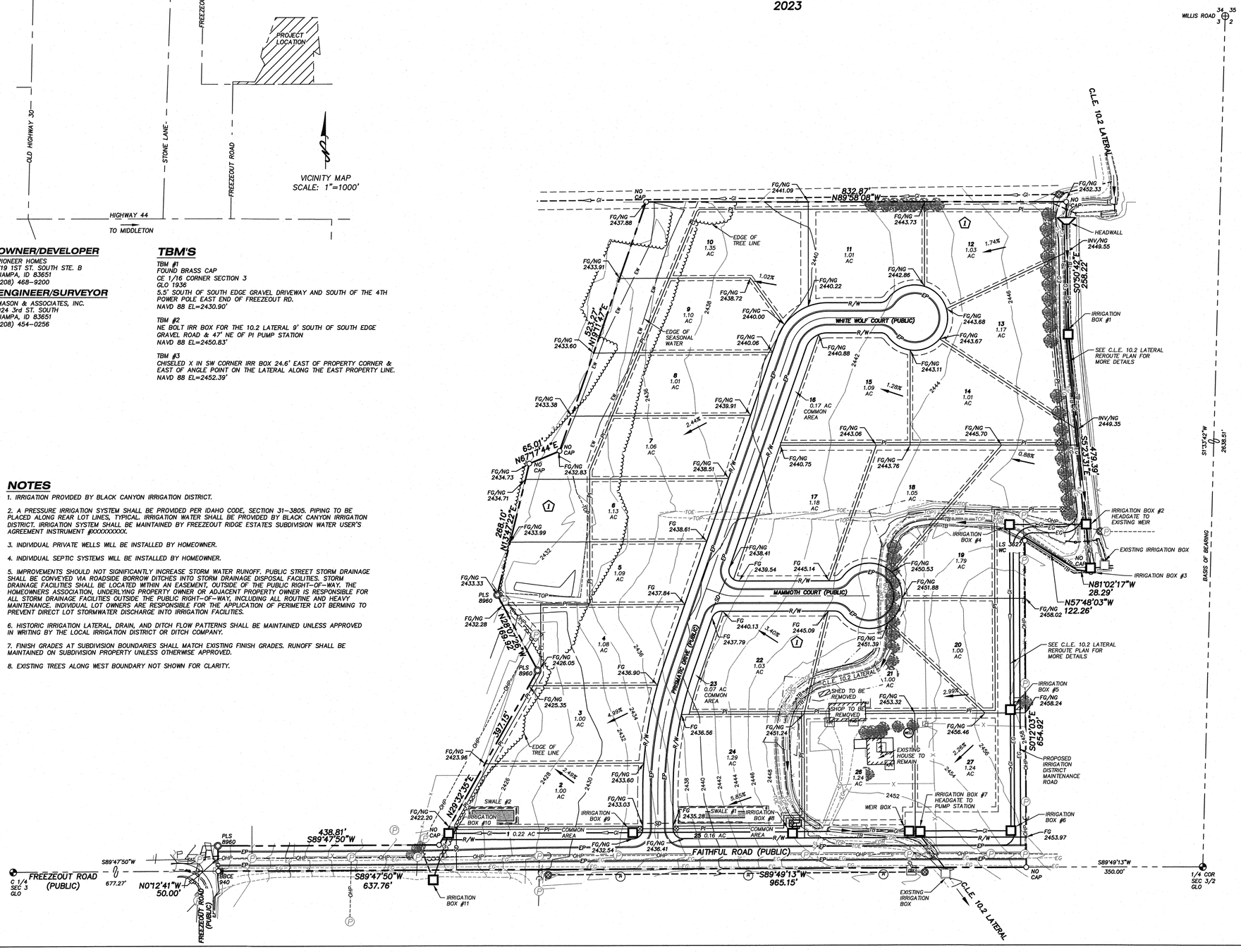
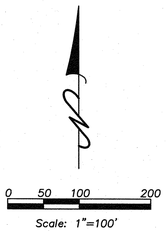
8. EXISTING TREES ALONG WEST BOUNDARY NOT SHOWN FOR CLARITY.





Scale: 1"=100'

LEGEND

- BENCHMARK
- FOUND ALUMINUM CAP MONUMENT
- FOUND BRASS CAP MONUMENT
- FOUND 1/2" IRON PIN
- FOUND 5/8" IRON PIN
- PROPOSED HEADWALL
- PROPOSED IRRIGATION BOX
- POWER POLE
- GUY ANCHOR
- DECIDUOUS TREE
- 36" STANDPIPE
- TELEPHONE RISER
- SIGN
- MAILBOX
- CABLE TV BOX
- ELECTRIC METER
- BUSHES
- PRESSURE IRRIGATION SERVICE
- ELECTRIC BOX
- A/C UNIT
- WELL
- IRRI. CONTROL VALVE
- FAUCET
- FLOW ARROW
- BLOCK NUMBER
- TOPOGRAPHIC CONTOUR LINE
- PROPERTY BOUNDARY LINE
- SECTION LINE
- EASEMENT LINE
- R/W — RIGHT OF WAY LINE
- LOT LINE
- EP — FUTURE EDGE OF PAVEMENT
- EDR — EXISTING EDGE OF DIRT ROAD
- EG — EXISTING EDGE OF GRAVEL
- EW — EDGE OF SEASONAL HIGH WATER
- TB — TOP OF BANK
- TOP — TOP OF SLOPE
- TOE — TOE OF SLOPE
- X — FENCE LINE
- EDGE TREE LINE
- OHP — OVERHEAD POWER LINE
- UGP — UNDERGROUND POWER LINE
- EXISTING PIPE
- PROPOSED GRAVITY IRRIGATION PIPE
- PROPOSED EDGE OF GRAVEL ROAD
- PROPOSED STORM DRAIN

NO	BY	DATE	DESCRIPTION
1	CS	10/24/22	REVISED PER COUNTY ENGINEER COMMENTS

REVISIONS

DESIGNED BY:
DRAWN BY: JH 3/21
CHECKED BY:
APPVD BY:

Professional Engineers, Land Surveyors & Planners
924 3rd St. South, Nampa, ID 83651
(208) 454-0256 Fax (208) 467-4130
Mason & Associates

CLIENT: PIONEER HOMES
719 1st STREET S
SUITE B
NAMPA, ID 83651
(208) 468-9200

JOB NO. JY1420
DWG NO. JY1420PP
SCALE: Vert: N/A Horiz: 1"=100'
FIELD BOOK NO.

DRAWING TITLE: FREEZEOUT RIDGE ESTATES
GRADING, IRRIGATION, & DRAINAGE PLAN
SHEET NO. 3 OF 3 SHEETS Rev

PROFESSIONAL ENGINEER LICENSED 9212 STATE OF IDAHO WILLIAM J. MASON

William J. Mason

January 25, 2023

Mason & Associates Inc.

Professional Engineers, Land Surveyors and Planners

924 3rd St. So. Suite B, Nampa, ID 83651
Ph (208) 454-0256 Fax (208) 467-4130

April 20, 2021

Dear Property Owner and Neighbor,

You are invited to participate in an onsite neighborhood meeting on May 5th, 2021 between 6:00-6:30 pm. The location of the meeting is 23442 Freezeout Road, Caldwell. For further clarification please refer to the attached exhibit.

If you are uncomfortable due to the COVID-19 you may utilize one of the avenues below to voice your concern and questions. Please be willing to offer your name and address so that your opinions can be passed along to Canyon County Development Services.

A rezone is being requested to change the current agricultural land use to residential (R-1) land use along with a preliminary plat.

Contact information:

Mail:	**Email:**	**Phone:**
Mason & Associates, Inc. Attn: Angie Cuellar 924 3rd Street South, Ste. B Nampa, ID 83651	acuellar@masonandassociates.us	(208) 454-0256 Ask for Angie

Thank you,

Angie Cuellar, Planner
Mason & Associates, Inc.

Canyon County, Canyon County Assess
Freezeout Rd

NEIGHBORHOOD MEETING SIGN-UP

CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT
111 North 11th Avenue, #140, Caldwell, ID 83605
www.canyonco.org/dsd.aspx Phone: 208-454-7458 Fax: 208-454-6633

NEIGHBORHOOD MEETING SIGN UP SHEET

CANYON COUNTY ZONING ORDINANCE §07-01-15

Applicants shall conduct a neighborhood meeting for any proposed comprehensive plan amendment, zoning map amendment (rezone), subdivision, variance, conditional use, zoning ordinance map amendment, or other requests requiring a public hearing.

SITE INFORMATION

Site Address: 0 Freezeout Rd	Parcel Number: R34479		
City: Middleton	State: ID	ZIP Code:	
Notices Mailed Date: April 20, 2021	Number of Acres: 31	Current Zoning: AG	
Description of the Request: rezone and preliminary plat.			

APPLICANT / REPRESENTATIVE INFORMATION

Contact Name: Will Mason / Brian Falk		
Company Name: Mason and Associates / Pioneer Homes		
Current address: 924 3rd Street S		
City: Nampa	State: ID	ZIP Code: 83651
Phone: (208) 454-0256	Cell:	Fax:
Email: wmason@masonandassociates.us		

MEETING INFORMATION

DATE OF MEETING: May 5, 2021	MEETING LOCATION: on site
MEETING START TIME: 6pm	MEETING END TIME: 7pm
ATTENDEES: See below	

NAME (PLEASE PRINT)	SIGNATURE:	ADDRESS:
1. Harman Memmelaar		23374 Freezeout Rd
2. Steve DeBlasio		14217 Lango Lane
3. Earl Burchard / Judy Cordeniz		23464 Freezeout Rd
4. Valerie Orr		23444 Freezeout Rd
5. Charlene Orr		23444 Freezeout Rd
6. Debbie White		23448 Freezeout Rd
7. Ben B. Schneider		23446
8. Brent Gibson		23452
9. Darryl & Tamie Smith		23417 Freezeout Rd

10.	STEVE AND DANA CARNAHAN		14057 LOATHOP RIDGE RD.
11.	STEVEN FAIRWEATHER		23434 FREEZEOUT RD.
12.	Glenn Koch		23306 " "
13.			23444 FREEZEOUT RD.
14.	TODD VARIOLD		23776 BREYER RD.
15.			
16.			
17.			
18.			
19.			
20.			

NEIGHBORHOOD MEETING CERTIFICATION:

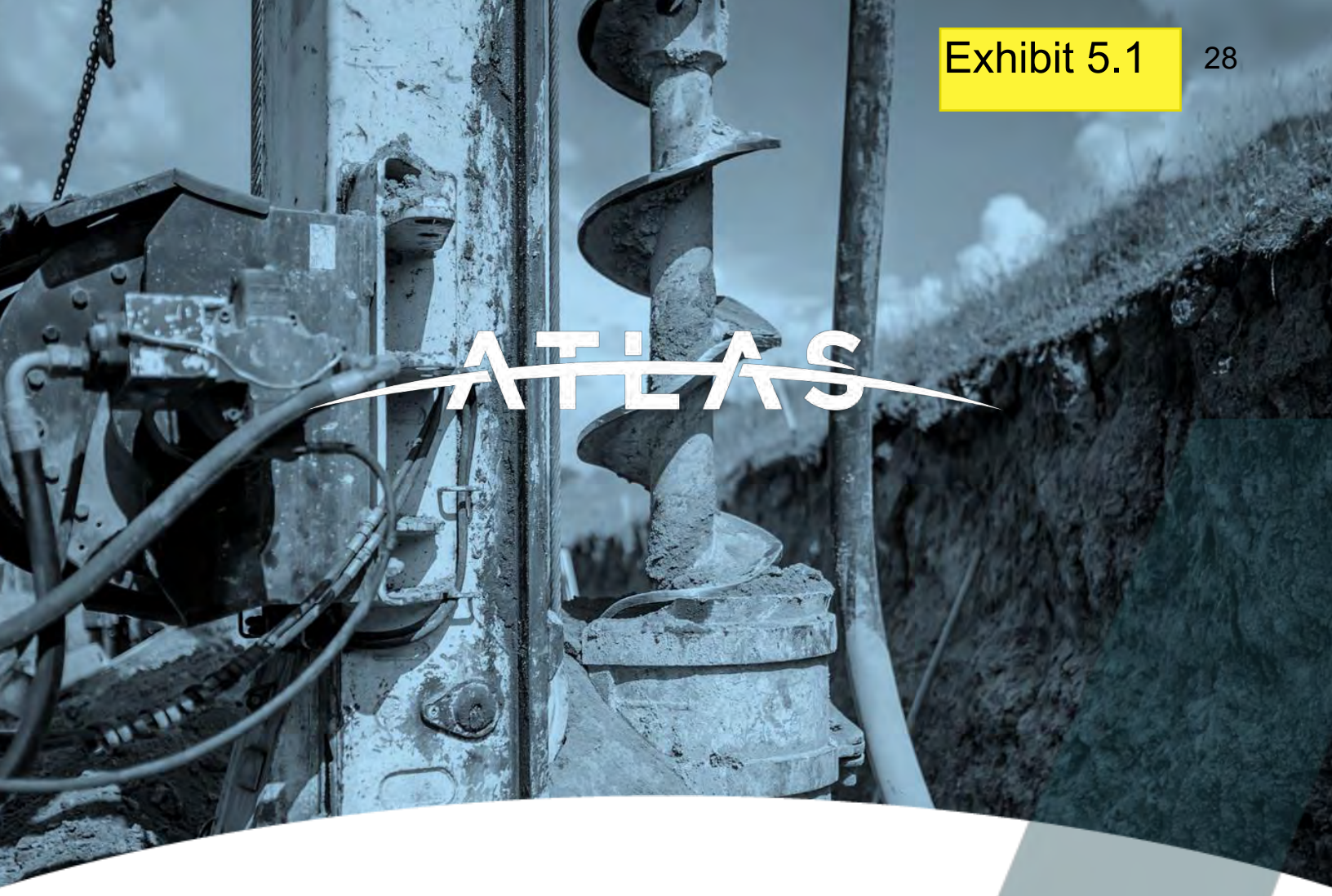
I certify that a neighborhood meeting was conducted at the time and location noted on this form and in accordance with Canyon County Zoning Ordinance § 07-01-15.

APPLICANT/REPRESENTATIVE (Please print): BRIAN FALCK

APPLICANT/REPRESENTATIVE (Signature):

DATE: 5 / 5 / 21

Exhibit 5.1 28



LEVEL 1 NUTRIENT PATHOGEN STUDY

FREEZEOUT RIDGE ESTATES SUBDIVISION

23442 Freezeout Road
Caldwell, ID

PREPARED FOR:

Mr. Brian Falck
Pioneer Homes
719 1st Street South, Suite B
Nampa, ID 83651

PREPARED BY:

Atlas Technical Consultants, LLC
2791 South Victory View Way
Boise, ID 83709

January 14, 2021
B201724g

2791 South Victory View Way
Boise, ID 83709
(208) 376-4748 | oneatlas.com

January 14, 2021

Atlas No. B201724g

Mr. Brian Falck
Pioneer Homes
719 1st Street South, Suite B
Nampa, ID 83651

Subject: Level 1 Nutrient Pathogen Study
Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Dear Mr. Falck:

In compliance with your instructions, Atlas has conducted a Level 1 Nutrient Pathogen Study for the above referenced development. Atlas researched and analyzed pertinent geologic conditions in the vicinity of the project site, and the data was used to estimate the downgradient nitrate concentration from the proposed development. Our scope of services is provided in the following report, and the components of this report are listed in the **Table of Contents**. We have provided a PDF copy for your review and distribution.

Atlas would be pleased to continue our role as geotechnical engineers during project implementation. Additionally, Atlas has great interest in providing materials testing and special inspection services during construction of this project. If you will advise us of the appropriate time to discuss these services, we will meet with you at your convenience.

If you have any questions, please call us at (208) 376-4748.

Respectfully submitted,

Ethan Salove, PE
Geotechnical Engineer

Monica Saculles, PE
Senior Geotechnical Engineer

Distribution: Fritz Durham, Idaho Department of Environmental Quality (PDF Copy); Brigitta Gruenberg, Southwest District Health (PDF Copy); William Mason, Mason & Associates, Inc. (PDF Copy).

ATLAS

CONTENTS

TABLES

APPENDICES

1. INTRODUCTION

This report presents results of a Level 1 Nutrient Pathogen (NP) Study conducted for the proposed Freezeout Ridge Estates Subdivision in Caldwell, ID. This study has been conducted to determine whether the proposed number of residential lots for the site will exhibit a negligible impact on groundwater conditions and whether a comprehensive Level 2 NP Study, as outlined by Southwest District Health (SWDH), will be required.

1.1 Authorization

Authorization to perform this analysis was given in the form of written authorization to proceed from Mr. Brian Falck of Pioneer Homes to Monica Saculles of Atlas Technical Consultants (Atlas), on October 14, 2020. Said authorization is subject to terms, conditions, and limitations described in the Professional Services Contract entered into between Pioneer Homes and Atlas. Our scope of services for the proposed development has been provided below.

1.2 Purpose

The purpose of this study is to determine the various site parameters present, which in turn will determine whether the proposed number of residential lots for the site will exhibit a negligible impact on groundwater conditions. Specifically, this study complies with requirements established by Canyon County and the SWDH for area developments in accordance with the Idaho Department of Environmental Quality (IDEQ) guidelines dated 6 May 2002.

1.3 Scope of Investigation

The scope of this study included reviewing geologic literature, assembling an inventory of available reports of wells (domestic, irrigation, or other) in the immediate area, reviewing available water resource reports, and performing a site reconnaissance of the project site. At an additional fee, Atlas will perform on-site evaluation of soils within the proposed septic system drainfield locations following approval of the preliminary plat; however, at that time, a SWDH or IDEQ representative must be present to observe and approve this work.

1.4 Warranty and Limiting Conditions

The field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for the purposes cited above. Atlas warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted professional engineering practice in the fields of site civil engineering, soil mechanics, and engineering geology, only for the site described in this report. No other warranties are implied or expressed.

These engineering methods have been developed to provide the client with information regarding apparent or potential engineering conditions relating to the subject property within the scope cited above and are necessarily limited to the conditions observed at the time of the site visit and research. The report is also limited to the information available at the time it was prepared. In the event additional information is provided to Atlas following the report, it will be forwarded to the client in the form received for evaluation by the client. There is a distinct possibility that conditions may exist which could not be identified within the scope of the investigation or which were not apparent during the site investigation.

This report was prepared for the use of Pioneer Homes, and their retained design consultants ("Client"). Conclusions and recommendations presented in this report are based on the agreed upon scope of work outlined in the report and the Contract for Professional Services between Client and Atlas Technical Consultants ("Consultant"). Use or misuse of this report, or reliance upon the findings hereof by any parties other than the Client, is at their own risk. Neither Client nor Consultant make any representation of warranty to such other parties as to the accuracy or completeness of this report or the suitability of its use by such other parties for any purpose whatever, known or unknown to Client or Consultant. Neither Client non Consultant shall have any liability to, or indemnifies or holds harmless third parties for any losses incurred by the actual or purported use or misuse of this report. No other warranties are implied or expressed.

2. PROJECT DESCRIPTION AND EXISTING SITE CONDITIONS

2.1 Project and Vicinity Description Including Site Topography and Drainage

The proposed development is located north of the City of Caldwell, Canyon County, ID, and occupies a portion of the SE¼NE¼ and SW¼NE¼ of Section 3, Township 4 North, Range 3 West, Boise Meridian. The site address is 23442 Freezeout Road in Caldwell, Idaho.

Currently, the proposed development consists of 31.4 acres of agricultural land with a residence located in the southeastern portion of the parcel. A general westerly slope is present across the site. The project site is bordered on the south by a private driveway, bordered by a small drainage swale to the west, and bordered on the north and east by existing rural residential/agricultural properties. The proposed development will consist of 20 single-family residential lots with individual wells and septic systems.

No stormwater drainage facilities are located in the vicinity of the site, and the project site does not receive off-site drainage. Stormwater drainage for the project site is achieved by percolation through surficial soils. Regional drainage is north and west towards the Boise River. A topographic map and general site map are located in **Appendix I**.

2.2 Regional Geology

The project site is located within the western Snake River Plain of southwestern Idaho and eastern Oregon. The plain is a northwest trending rift basin, about 45 miles wide and 200 miles long, that developed about 14 million years ago (Ma) and has since been occupied sporadically by large inland lakes. Geologic materials found within and along the plain's margins reflect volcanic and fluvial/lacustrine sedimentary processes that have led to an accumulation of approximately 1 to 2 km of interbedded volcanic and sedimentary deposits within the plain. Along the margins of the plain, streams that drained the highlands to the north and south provided coarse to fine-grained sediments eroded from granitic and volcanic rocks, respectively. About 2 million years ago the last of the lakes was drained and since that time fluvial erosion and deposition has dominated the evolution of the landscape.

The project site is underlain by "Gravel of Deer Flat Terrace" as mapped by Othberg and Stanford (1993). Gravel of Deer Flat Terrace extends from Lake Lowell northeast to the area just south of Wilder. 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. Deposited on the fourth terrace above the floodplain in the western Boise Valley. North of Caldwell and Middleton Tertiary sediments are exposed between terrace remnants. Terrace sediments are typically greater than 30 feet thick and mantled with loess 1-4 meters (3-13 feet) thick, contain 45% pedogenic clay and very well developed duripans. A geologic map showing the approximate site boundary is included in **Appendix II**.

2.3 Localized Geology and Hydrogeology

Based on review of Well Driller's Reports (well logs) maintained at the IDWR website for portions of three immediately adjacent sections, Atlas assessed the localized geology and hydrogeology for the site and surrounding areas. Further description of the well log research can be found in the **Well Driller's Report Review** section of this report. In general, well logs in the area show that near surface soils consist primarily of topsoil and hardpan/cemented soils that are underlain by sands and gravels with intermittent clay layers.

The well logs also showed static groundwater levels generally ranging from around 6 to 75 feet below ground surface. First encountered water was not always listed on the well logs, but based on available data and assessing depths of the first water bearing zones that were documented, first encountered water appears to range from roughly 8 to 95 feet below ground surface. In some limited instances, first encountered water wasn't noted until depths of up to 134 feet. The water depths appear to vary with location and topography.

2.4 Soil Survey Review

Atlas reviewed the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Service website for soil survey information on Canyon County. Research indicated that the project site is characterized by Elijah-Chilcott silt loams and Elijah-Vickery silt loams. Specific soils characteristics, as defined by the USDA NRCS, have been listed below for each of these soils and soil survey data from the NRCS website has been included in **Appendix III** of this report:

- **Elijah-Chilcott silt loam** – Elijah-Chilcott soils occur on terraces. These soils are classified as well drained and the most limiting soil layer has a very low to moderately low capacity to transmit water. Typical soil profiles of the Elijah-Chilcott silt loams include silt loam and silty clay loam at the surface, followed by cemented material underlain by very gravelly sand. Slopes of Elijah-Chilcott soils are typically 1 to 3 percent.
- **Elijah-Vickery silt loam** – Elijah-Vickery soils occur on terraces. These soils are classified as well drained and the most limiting soil layer has a very low to moderately low capacity to transmit water. Typical soil profiles of the Elijah-Vickery silt loams include silt loam, loam, and silty clay loam at the surface, followed by cemented material underlain by very gravelly sand or coarse sand. Slopes of Elijah-Vickery soils are typically 3 to 7 percent.

2.5 Review of Nutrient Pathogen Studies in the Vicinity of the Project Site

Atlas has filed a request for information with IDEQ and the SWDH to view nutrient pathogen studies completed near the referenced site. Atlas was provided copies of 6 such studies (outlined below). Information gathered from review of these documents is referenced within the **Hydraulic Conductivity** section of this report.

- Addendum to Level I Nutrient - Pathogen Study, Proposed Sagebrush Estates Subdivision, Canyon County, Idaho, prepared by Terracon and dated September 18, 2007
- Addendum for Level 1 Nutrient-Pathogen Evaluation, Purple Sage Estates Subdivision No. 2, SW of Purple Sage Road and El Paso Road, Portion of Canyon County parcel No. R38128010 Canyon County, Idaho, prepared by Allwest Testing and Engineering and dated December 22, 2017
- Level 1 Nutrient-Pathogen Evaluation, Sunset Ridge Subdivision, SEC of Willis Road and El Paso Road, Canyon County, Idaho, prepared by Allwest Testing and Engineering and dated July 13, 2017
- Level 1 Nutrient-Pathogen Evaluation, Willis Road Subdivision, NEC of Willis Road and El Paso Road, Canyon County, Idaho, prepared by Allwest Testing and Engineering and dated March 1, 2017
- Revised Level 1 Nutrient-Pathogen Evaluation, Purple Sage Subdivision No. 3, South of Purple Sage and West of El Paso Road, Canyon County, Idaho, prepared by Allwest Testing and Engineering and dated September 11, 2019
- Level One Nutrient Pathogen Study, Saddleback Ridge Estates, Middleton, Idaho, prepared by Applied Intellect and dated April 30, 2019

3. SITE PARAMETERS FOR LEVEL 1 NITRATE MASS-BALANCE ANALYSIS

3.1 Water Budge Parameters

3.1.1 Well Driller's Report Review

Prior to 1967 in the State of Idaho, driller's logs for wells were submitted to Idaho Department of Water Resources (IDWR) on a voluntary basis. After 1967, it became and Idaho requirement to submit logs for all wells drilled. However, the state was unable to track or enforce completion of this requirement until 1987 when well permits were also required by the state. Therefore, available records maintained by the IDWR may be incomplete for the area researched.

Atlas conducted a review of Well Driller's Reports (well logs) maintained at the IDWR website for portions of three immediately adjacent sections. A total of 31 Well Driller's Reports on file for this area were copied and are included in **Appendix IV** of this report, along with a map showing approximate well locations. Although numerous well logs are available for the site vicinity, only 17 wells provided complete pump test data. A spreadsheet showing tabulated data from these 17 well logs can be found in **Appendix IV**.

Of these wells, several did not have aquifer bottom recorded and were excluded from analysis. Well number 4 was drilled greater than 100 feet past first encountered water and was likewise eliminated from analysis. Atlas was left with 12 well logs that were used for hydraulic conductivity analysis.

From the 17 wells with complete pump test data, discharge rates ranging from 12 to 60 gallons per minute were reported. Drawdown data generally ranged from 5 to 80 feet, though some well logs reported drawdown as high as 150 feet. Soils commonly encountered included sand and gravel sediments with intermittent clay layers.

3.1.2 Hydraulic Conductivity

Atlas calculated the transmissivity of each of the wells using the following relationship provided by Razack and Huntley (C.W. Fetter, 2001):

$$T = 33.6\left(\frac{Q}{h_0 - h}\right)^{0.67}$$

Where: T = Transmissivity (feet^2/day)
Q = Pumping Rate (feet^3/day)
h_0-h = Drawdown (feet)

The hydraulic conductivity values for each of the wells were then obtained by the following relationship (C.W.Fetter, 2001):

$$K = \frac{T}{b}$$

Where: K = Hydraulic Conductivity (feet/day)
T = Transmissivity (feet^2/day)
b = Aquifer Thickness (feet)

Using the previously stated equations with the stated input data, Atlas obtained calculated hydraulic conductivity values that ranged from 7 to 181 feet/day. Atlas calculated the average hydraulic conductivity value as 65 feet/day. Additionally, based on six previous NP Studies that have been conducted within the vicinity of the project site, hydraulic conductivity values of 70 feet per day were used and approved during the IDEQ/SWDH review process. Based on this evidence, hydraulic conductivity values reflective of fine sand to coarse sand with some gravel are considered to be most reflective of the shallow groundwater flow regime across the site, and typical hydraulic conductivity rates for these sediments vary approximately from 3 to 300 feet/day (C.W. Fetter, 2001). For the mass-balance spreadsheets, Atlas used a hydraulic conductivity of 65 feet/day, which is the calculated average of the well logs and more conservative than the values used in previous NP studies.

3.1.3 Groundwater Gradient and Direction

For groundwater gradient information within the vicinity of the site, a review of the available literature developed for the region was conducted. Specifically, Atlas reviewed the map provided to Atlas by the IDEQ during the public records request. This map showed the groundwater contour elevations in the vicinity of the site. Based on these groundwater contour elevations, Atlas found that a 50 foot drop in elevation occurs in the area over a distance of roughly 10,475 linear feet. This drop in groundwater elevation yields a hydraulic gradient of 0.00477 feet/feet. A southwestern groundwater flow direction (roughly 220° Azimuth) was also determined based on this map. For this report, Atlas used a hydraulic gradient of 0.00477 feet/feet for the mass-balance spreadsheet. Atlas has presented a map of the IDEQ groundwater flow contours in **Appendix V** of this report.

3.1.4 Mixing Zone Thickness

In the mass-balance spreadsheets, the mixing zone thickness refers to the induction zone anticipated for the septic tank effluent or contaminate source. IDEQ guidance states that the value of the mixing zone thickness varies with distance from the proposed location of the septic system to the property boundary as follows:

- If distance is less than 500 feet to the property boundary, use a mixing zone thickness of 15 feet.
- If distance is between 500 and 1,000 feet to the property boundary, use a mixing zone thickness of 30 feet.
- If distance is greater than 1,000 feet to the property boundary, use a mixing zone thickness of 60 feet.

Since the distance between the closest individual septic system location to the property boundary will be less than 500 feet, Atlas used a value of 15 feet as the mixing zone thickness for the mass-balance spreadsheets.

3.1.5 Aquifer Widths Perpendicular to Flow

Atlas used a southwest groundwater flow direction (approximately 220° Azimuth) and the property site plan to determine the aquifer widths for the mass-balance spreadsheets. For the individual lots on the project site, Atlas determined that 179.20 to 362.88 feet are the aquifer widths that are perpendicular to the southwesterly flow direction. A site map with the perpendicular widths identified is located in **Appendix VI** of the report.

3.1.6 Area of Parcel, Percent of Lot Impervious, and Number of Proposed Lots

The Client described the project as 31.4 acres with 20 proposed lots that are approximately 1.00 to 1.89 acres in size. For the mass-balance spreadsheets, Atlas analyzed each of the 20 lots on 1.00 to 1.89 acres and estimated that less than five percent of the parcel would be impervious to percolation as a result of the proposed development.

3.1.7 Gallons of Septic Tank Effluent

The Client described the project as having individual septic tank systems for each proposed single-family residential lot. For the mass-balance spreadsheets, Atlas used the default value of 300 gallons per day for the septic system as the amount of effluent discharge.

3.1.8 Regional Climatology and Natural Recharge Rate

For the region, the annual average temperature ranges from 20°F to 91°F with extremes from roughly -4°F to 102°F. The region has average wind speeds of up to 11 miles per hour in spring with a prevailing direction from the southeast. The pH of surface water, groundwater, and soil in the region typically range from 7 to 9. Average precipitation for the region is on the order of 10 to 12 inches per year.

The natural recharge rate (NRR) has been estimated using the following relationship provided by IDEQ:

$$NRR = 0.0046(\text{Annual Precipitation in inches})^2$$

Using the above relationship, an annual precipitation rate of 11.45 inches yields an estimated natural recharge rate of 0.6 inches per year, and this value was used in the mass-balance spreadsheets. A copy of the research data showing the annual precipitation for the project area is included in **Appendix VII**.

3.2 Nitrogen Budget Parameters

3.2.1 Vicinity Water Quality and Background Groundwater Nitrate Concentration

Atlas reviewed well monitoring data from the IDEQ and IDWR websites for 12 wells in the project site vicinity. Of these 12 wells, only 5 of them had been monitored within the past 10 years. The most recent monitoring event for these 5 wells occurred in 2013 and nitrate concentration ranged from 2.3 to 6.3 mg/L. Atlas averaged the highest nitrate value obtained from each of the 5 assessed wells, which resulted in a nitrate concentration of 4.1 mg/L. Therefore, Atlas used a value of 4.1 mg/L as the background nitrate level for the mass-balance spreadsheets in this report. A spreadsheet showing tabulated data from these 12 well logs, as well as a map showing the well locations, can be found in **Appendix VIII**.

3.2.2 Septic Tank Effluent Concentrations

In the mass-balance spreadsheets, the value for septic tank effluent concentrations refers to the amount of nitrate (nitrate concentration) that is anticipated to be released into the groundwater system from effluent or a contaminate source. Currently, there are three types of septic tank systems: a regular septic tank system and two nitrate reducing systems:

- A regular septic tank releases a nitrate concentration of 45 mg/L in the effluent discharge.
- A 40 percent nitrate reducing system releases a nitrate concentration of 27 mg/L in the effluent discharge.
- A 65 percent nitrate reducing system releases a nitrate concentration of 16 mg/L in the effluent discharge.

3.2.3 Denitrification Rate and Nitrate in Natural Recharge Rate

In the mass-balance spreadsheets, the values for the denitrification rate and nitrate in natural recharge are preset default values set by IDEQ. Atlas used the default value of 0 for the Denitrification Rate and 0.3 mg/L for the Nitrate in Natural Recharge for the mass-balance spreadsheets.

4. LEVEL 1 NITRATE MASS-BALANCE ANALYSIS

Nitrate is the most mobile constituent of concern in domestic wastewater and has an impact on public health when the maximum contaminant level (MCL) is exceeded (nitrate-N >10.0 mg/L). For this reason, nitrate is usually the limiting factor in determining appropriate lot sizes and on-site wastewater treatment system design and placement. According to the Nutrient-Pathogen Evaluation Program for On-Site Wastewater Treatment Systems May 2002, IDEQ considers an increase of 1.0 mg/L nitrate, or less, predicted to occur at the down-gradient boundary of each individual lot as demonstrating a negligible impact. To evaluate the impact of nitrate on the groundwater system in the vicinity of the proposed project, a mass-balance approach, recommended by SWDH and IDEQ, has been performed. Note that calculations for this approach do not take into consideration actual alignment of individual wastewater treatment systems.

The mass-balance spreadsheets for down-gradient nitrate concentration of the individual lots with the smallest aquifer width perpendicular to groundwater flow for each size of lot are present in **Appendix IX**. A summary of values used in the analysis are presented in **Table 1** and results of the analyses are presented in **Table 2**.

Table 1 – Parameters Used in the Level 1 Nitrate Mass-Balance Analysis

Water Budget	Value Used
Hydraulic Conductivity (ft/day)	65
Hydraulic Gradient	0.00477
Mixing Zone Thickness (ft)	15
Percent of Parcel that is Impervious (%)	5
Septic Tank Effluent (gpd/home)	300*
Natural Recharge Rate (in/yr)	0.6
Nitrogen Budget	**Value Used**
Upgradient Groundwater Concentration (mg/L)	4.1
Denitrification Rate (decimal fraction)	0*
Nitrate in Natural Recharge (mg/L)	0.3*
Point of Compliance Nitrate Concentration Goal (mg/L)**	5.1

***Numbers represent the default values recommended by IDEQ and SWDH.**
****Upgradient groundwater concentration (mg/L) plus 1 mg/L equates to point of compliance nitrate concentration goal.**

Results of the mass-balance analysis for the individual lots with the smallest aquifer widths perpendicular to groundwater flow for each size of lot are outlined below. Mass-balance spreadsheets for 40% nitrate reducing septic systems were only prepared for the lots that were incapable of supporting a standard septic system.

Table 2 – Individual Lot Mass-Balance Analysis for Various Septic Tank Systems

Lot Area (acres)	Smallest Aquifer Width Perpendicular to Groundwater Flow Direction (feet)	Downgradient Nitrate Concentration (mg/L)	
		Standard Septic Systems	40% Nitrate Reducing Systems
1.00	228.41	5.6*	4.9
1.01	226.05	5.6*	4.9
1.04	179.20	5.9*	5.1
1.14	290.89	5.3*	4.7
1.20	326.11	5.1	N/A
1.24	262.50	5.4*	4.8
1.30	302.70	5.2*	4.7
1.34	300.99	5.2*	4.7

***Value exceeds the point of compliance nitrate concentration goal of 5.1 mg/L.**

Table 2 (cont'd) – Individual Lot Mass-Balance Analysis for Various Septic Tank Systems

Lot Area (acres)	Smallest Aquifer Width Perpendicular to Groundwater Flow Direction (feet)	Downgradient Nitrate Concentration (mg/L)	
		Standard Septic Systems	40% Nitrate Reducing Systems
1.40	313.27	5.2*	4.7
1.42	302.05	5.2*	4.7
1.46	326.11	5.1	N/A
1.50	211.51	5.7*	5.0
1.69	345.17	5.1	N/A
1.87	344.61	5.1	N/A
1.89	236.19	5.5*	4.9

***Value exceeds the point of compliance nitrate concentration goal of 5.1 mg/L.**

5. CONCLUSIONS AND RECOMMENDATIONS

Mass-balance spreadsheets for down-gradient nitrate concentration have been prepared for the individual lots with the smallest aquifer widths perpendicular to groundwater flow for each lot size. All spreadsheets are presented in the **Appendices** of this report. The results indicated that all lots were below the Point of Compliance Nitrate Concentration of 5.1 mg/L when using the 40 percent nitrate reduction septic system; however, lots 4, 7, 8, and 10 were below using a standard septic system. Therefore, the proposed development does not exceed the down-gradient Point of Compliance Nitrate Concentration of 5.1 mg/L when using a 40 percent nitrate reduction septic system or standard septic system for above mentioned lots. As a result, the development meets the criteria of a negligible impact as defined by the IDEQ.

Note that IDEQ and SWDH must review and approve the parameter values developed for this Level 1 NP Study and the mass-balance spreadsheets prior to subdivision approval. Also, note the following:

- If changes in the number of lots are desired, a revised lot layout must be provided to Atlas, and this study must be resubmitted or amended.
- This report must be submitted to the SWDH with a preliminary plat as well as the Subdivision Engineering Report (SER). Also, SWDH requires a preliminary development meeting to begin the SER process.
- To verify soil profile components at actual drainfield locations, soil exploration by test pits or borings, with approval by SWDH personnel, will be required following development of the preliminary plat.

Again, these results, as of the completion of this report, have not been reviewed by IDEQ or SWDH. Therefore, a revision in assumed hydraulic conductivity value, or other parameters used in the mass-balance spreadsheet, may be required subsequent to the SWDH and IDEQ review, and consequently, the allowable number of lots may change significantly. If so, the SWDH and IDEQ will request that this report be resubmitted or amended with revised values.

6. REFERENCES

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7. LIST OF APPENDICES

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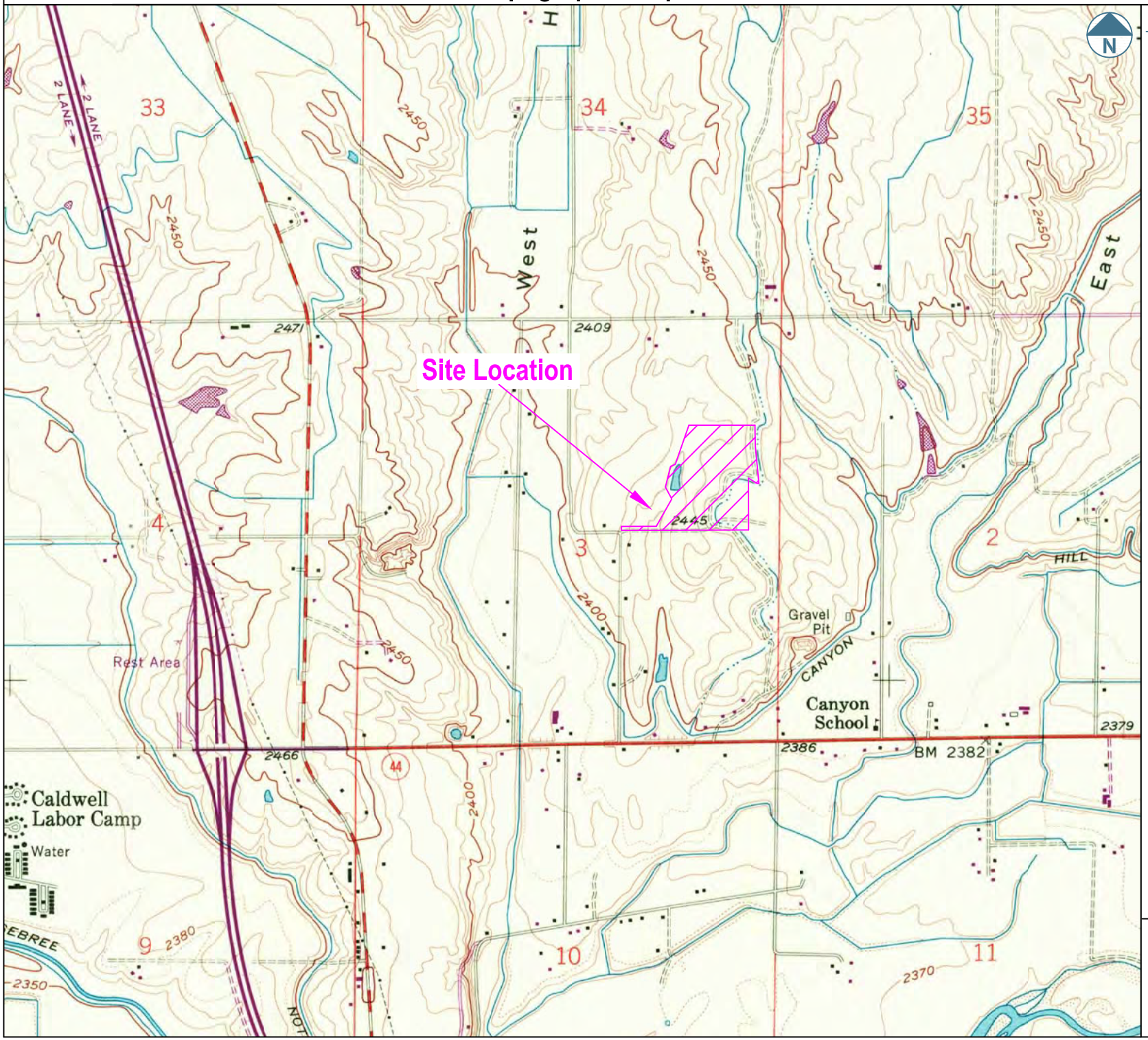
Appendix VII	Historic Precipitation/Climate Data for Project Location
Appendix VIII	Site Location with Vicinity Monitoring Wells Map and Monitored Well Data
Appendix IX	Nitrate Mass-Balance Spreadsheets for Individual Lots

Appendix I TOPOGRAPHIC MAP AND GENERAL SITE MAP

Topographic Map



MAP NOTES:

- Caldwell, Idaho
  N4337.5-W11637.5/7.5
  1958, Photorevised 1971
  10 Foot Contour Intervals
  T4N, R3W, & Section 03

LEGEND

Approximate Site Location

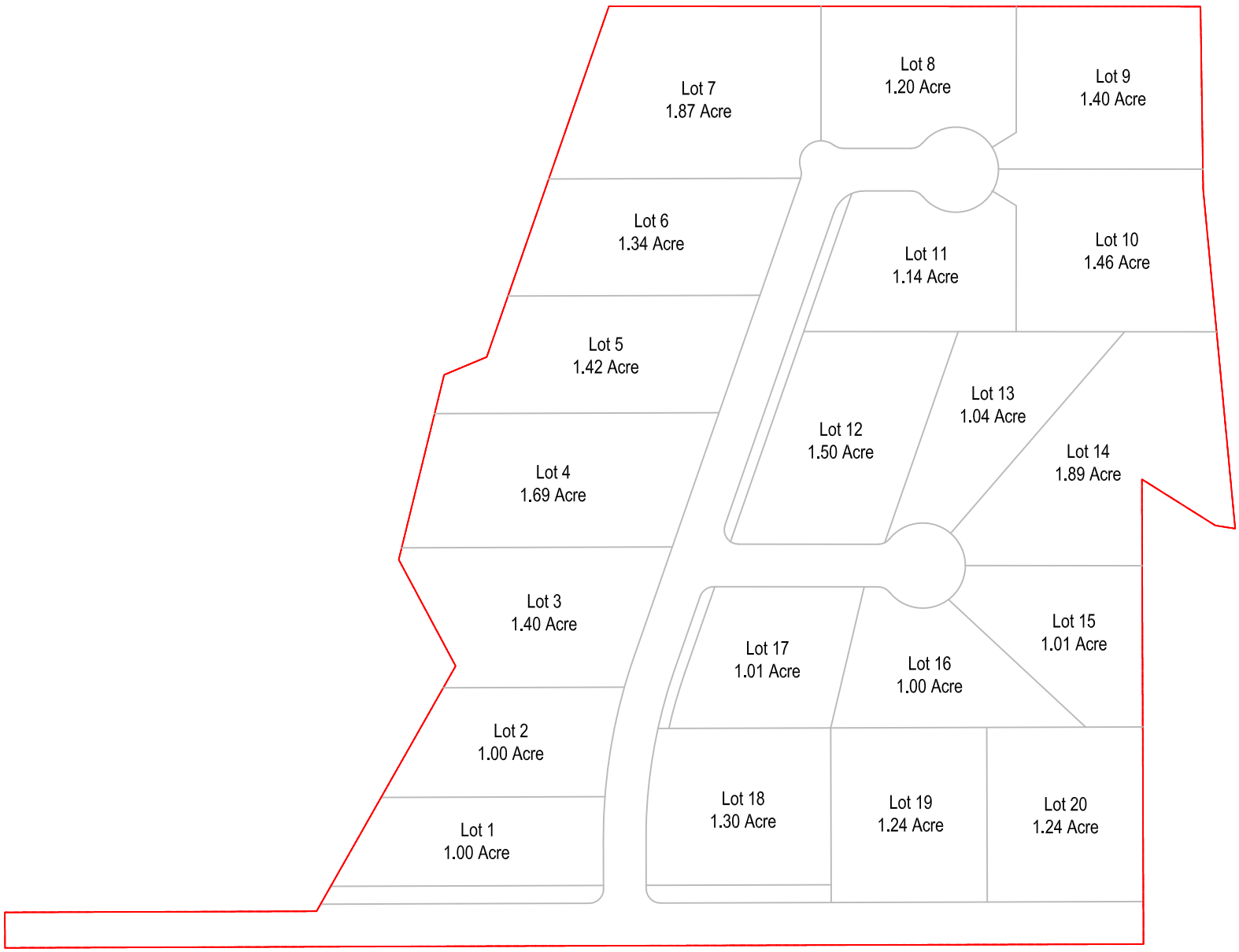
SCALE
0 0.25 0.5
(Mile)

Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS
2791 S. Victory View Way
Boise, ID 83709
Phone: (208) 376-4748
Fax: (208) 322-6515
Web: oneatlas.com

Site Map



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

SCALE

0 150 300

(Feet)

Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS
2791 S. Victory View Way
Boise, ID 83709
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Appendix II GEOLOGIC MAP WITH APPROXIMATE PROJECT SITE LOCATION

IDAHO GEOLOGICAL SURVEY
MOSCOW • BOISE • POCATELLO

GEOLOGIC MAP SERIES, SCALE 1:100,000
OTHBERG AND STANFORD

GEOLOGIC MAP OF THE BOISE VALLEY AND ADJOINING AREA, WESTERN SNAKE RIVER PLAIN, IDAHO

BY KURT L. OTHBERG AND LOUDON R. STANFORD

1992

MAP UNITS

SEDIMENTARY

QUATERNARY SEDIMENTS

Alluvium and Colluvium

Deposits of floodplains, alluvial fans, side-stream terraces, and landslides.

Qa ALLUVIUM OF BOISE AND SNAKE RIVER — Sandy cobble gravel upstream grading to sandy pebble gravel downstream. Mostly channel alluvium of the Boise and Snake rivers. Thickness 6-14 meters (20-46 feet). No pedogenic clay.

Ql LANDSLIDE DEPOSITS — Highly variable rock and soil masses varying from transported coherent blocks to unsorted, unstratified colluvium. Includes scar area at the head of the landslide. Derived from slumps, slides, and debris flows. Most slides represent slope failures within basaltic tuff (Tbt) and surface soils of granitic rocks.

Qfg ALLUVIAL FAN GRAVEL — Sandy pebble and cobble gravel where formed from reworked Tennile Gravel (QTsg) and sand and granule gravel where formed from weathered granite (g). Primarily formed by Pleistocene debris flows and local high-energy streams during times of greater runoff (Pierce and Scott, 1982). Loess 1-2 meters thick discontinuously covers surface of gravel. Patterned ground present. Amount of pedogenic clay and presence of duripans varies.

Qas SANDY ALLUVIUM OF SIDE-STREAM VALLEYS AND GULCHES — Medium to coarse sand interbedded with silty fine sand and silt. Sediment mostly derived from weathered granite and reworked Tertiary sediments. Thickness variable. Minor pedogenic clay and calcium carbonate.

Qfs SAND OF INCISED ALLUVIAL FANS — Medium to coarse sand interbedded with silty fine sand and silt. Mostly reworked Tertiary sediments deposited in local alluvial fans. Thickness 1-15 meters (3-50 feet). Pedogenic clay 10-20%; duripans locally present.

Qds SAND OF DRY CREEK TERRACE — Medium to coarse sand interbedded with silty fine sand and silt. Remnant of ancestral Dry Creek valley. Pedogenic clay 10-20%; duripans locally present.

Qtfg GRAVEL OF ALLUVIAL-FAN REMNANTS — Dark gray, poorly sorted, sandy pebble and cobble gravel. Gravel clasts subangular and subrounded. Thickness 3-6 meters (10-20 feet). Mapped only where channel deposits of ancestral Squaw Creek cap remnants of a large alluvial fan in southwest corner of map.

Bonneville Flood Deposits

Consists primarily of fine-grained sediments of the Bonneville Flood slack waters that inundated the Snake River Valley and the lower Boise Valley. Includes gravels deposited in high-energy flood channels. The surface of sediments deposited by the Bonneville Flood show minor accumulations of pedogenic clay and calcium carbonate. Slack-water sediments bury loess and soils of older surfaces.

Qbgc CLAY OF BONNEVILLE FLOOD SLACK WATER — Light tan silty clay 1-2 meters (3-7 feet) thick. Deposited by slack water of Bonneville Flood upstream from Parma. Buries gravel of Boise terrace.

Qs SANDY SILT OF BONNEVILLE FLOOD SLACK WATER OVERLYING TERTIARY SEDIMENTS — Thin-bedded tan silt, silty sand, and fine sand 3-6 meters (10-20 feet) thick. Deposited by Bonneville Flood slack water that flooded the valleys to 747 meters (2,450 feet) elevation (O'Connor, 1990). Buries erosion surface of fine-grained Tertiary sediments.

Qbfg GRAVEL OF THE BONNEVILLE FLOOD-SCOURED BOISE TERRACE AND BOISE FLOODPLAIN COMPLEX — Sandy pebble gravel remnants of Boise terrace mostly scoured by late stages of Bonneville Flood. Includes areas of floodplain gravel indistinguishable from scoured Boise terrace.

Qwgs SANDY SILT OF BONNEVILLE FLOOD SLACK WATER — Thin-bedded tan silt, silty sand, and fine sand 3-6 meters (10-20 feet) thick. Deposited by Bonneville Flood slack water that flooded valleys to 747 meters (2,450 feet) elevation (O'Connor, 1990). Buries gravel of Whitney terrace (Qwg).

Qwfg GRAVEL OF THE BONNEVILLE FLOOD-SCOURED WHITNEY TERRACE — Sandy pebble gravel remnants of Whitney terrace scoured by late stages of Bonneville Flood. Includes abandoned flood channels. Loess mostly removed. Local remnants of duripans similar to those on Qwg.

Qwig SANDY SILT OF BONNEVILLE FLOOD SLACK WATER — Thin-bedded tan silt, silty sand, and fine sand 3-6 meters (10-20 feet) thick. Deposited by Bonneville Flood slack water that flooded valleys to 747 meters (2,450 feet) elevation (O'Connor, 1990). Extent of slack-water sediment not everwhere concordant with interpreted extent of flood waters. Buries thin loess, duripan, and sandy pebble gravel of Wilder terrace, the third terrace above the floodplain in the western Boise Valley. Gravel thickness 3-8 meters (10-25 feet).

TERRACE GRAVELS

These gravels compose a sequence of terraces of the ancestral Boise River. The characteristic coarse channel gravels were primarily deposited on fine-grained Tertiary sediments cut during valley deepening. The light gray gravel is composed mostly of granitic and felsitic clasts derived from the upper Boise River basin in the central Idaho mountains. Qgg and younger gravels have about a 10% component of Pleistocene basalt clasts mostly derived from the Boise River canyon. Boise Valley units are also used for terrace gravels of the Snake River, but Snake River gravels have a darker color due to a component of gravel clasts derived from the Owyhee Mountains and sources to the southeast. All gravel deposits have imbricated well-rounded clasts, poor sorting, and crude stratification of beds of gravel and lenses of cross-bedded sand. These features suggest deposition in braided channels.

Qbg GRAVEL OF THE BOISE TERRACE — Sandy pebble and cobble gravel. First terrace above the floodplain. Thickness 3-14 meters (10-45 feet). Mostly mantled with thin loess.

Qg GRAVEL OF BOISE FRONT TERRACES, UNDIVIDED — Sandy pebble and cobble gravel with subangular boulders. Thickness 1-6 meters (3-20 feet) thick. Forms terraces along canyons and gulches and on flat divides near the margin of the foothills.

Qwg GRAVEL OF WHITNEY TERRACE — Sandy pebble and cobble gravel. Second terrace above floodplain. Thickness 5-24 meters (16-80 feet); thickest to the east. Mantled with 1-2 meters of loess.

Qsg GRAVEL OF SUNRISE TERRACE — Sandy pebble and cobble gravel. Third terrace above the floodplain. Thickness about 13 meters (44 feet). Mostly mantled with 1-2 meters of loess.

Qgg GRAVEL OF GOWEN TERRACE — Sandy pebble and cobble gravel. Fourth terrace above the floodplain. Buried by basalt (Qgb) east of Interstate 84. Terrace gravel overlies the gravel and sand of Bonneville Point (Tbg) to the east and fine-grained Tertiary sediments to the west. Mostly mantled by 1-2 meters (3-7 feet) of loess.

Qag GRAVEL OF AMITY TERRACE — Sandy pebble and cobble gravel grading at depth to coarse pebbly sand. Seventh terrace above the floodplain. Gravel and sand is about 10 meters (33 feet) thick. Northwest-trending, gently sloping escarpments suggest faulting of the gravel. Mantled with loess 0.5-2 meters (2-7 feet) thick.

Qdg GRAVEL OF DEER FLAT TERRACE — Sandy pebble gravel grading at depth to coarse pebbly sand. Deposited on the fourth terrace above the floodplain in the western Boise Valley. North of Caldwell and Middleton Tertiary sediments are exposed between terrace remnants. Boise River gravels also interfinger with and are replaced northeastward by Willow Creek alluvial fan sand and gravel. Gravel and sand deposit is about 10 meters (33 feet) thick. Mantled with loess 1-4 meters (3-13 feet) thick.

Qbdg GRAVEL OF DEER FLAT AND PRE-DEER FLAT TERRACES, UNDIVIDED — Sandy pebble and cobble gravel. Alluvial fan deposits of the ancestral Willow Creek interfingering and mixing downstream with channel alluvium of the ancestral Boise River. Deposited on stream-cut surface of fourth and fifth terrace above the floodplain. Tertiary sediments are exposed between terrace remnants. Mostly mantled with loess 0.5-1 meter (2-3 feet) thick.

QTtg TENMILE GRAVEL — Sandy pebble and cobble gravel grading westward to sandy pebble gravel and pebbly sand at depth. Eighth terrace above the floodplain in the eastern Boise Valley. Remnants in the western Boise Valley form the fifth terrace above the floodplain. Side slopes of remnants expose underlying Glenns Ferry Formation. Thickness is about 15 meters (50 feet). Several normal faults exposed in gravel pits and road cuts. Surface of terrace shows prominent northwest-trending gulches and gently sloping fault-line escarpments. Mostly mantled with loess 1-2 meters (3-7 feet) thick. Patterned ground prominent. Named by Savage (1958); restricted by Wood and Anderson (1981); further restricted herein to exclude the gravel and sand of Bonneville Point formation (Tbg).

TERTIARY SEDIMENTS

Tps SAND OF THE PIERCE GULCH FORMATION — Pale yellow-gray arkosic sand overlain by pebble to cobble gravel. Sand includes cross-bedded and foreset-bedded sequences. Named by W.L. Burnham and S.H. Wood (written communication-unpublished manuscript, 1989).

Tgf GLENNS FERRY FORMATION — Greenish gray poorly consolidated siltstone and fine sandstone. Distinct thick beds; indistinct thin bedding. Includes tan sandstone in Dead Horse Canyon.

Tbg GRAVEL OF BONNEVILLE POINT — Interbedded pebble and cobble gravel, pebbly sand, sand and buried soils. Mostly oxidized to yellow-orange grading to red-brown near surface. Half of the clasts weathered. Mostly channel alluvium of ancestral Boise River deposited in former valley at mountain front. Thickness about 152 meters (500 feet). Soils have B horizons with 50% clay. The upper part of the gravel contains a highly oxidized, partly cemented zone. Several normal faults exposed in gravel pits and road cuts. Patterned ground present with mound relief of 1-2 meters.

Tsf ALLUVIAL FAN DEPOSIT — Composed of poorly sorted, silty and sandy gravels with subangular cobbles and boulders in crudely stratified layers and lenses; mostly oxidized to a red-brown near the surface. Alluvial fan remnants deposited by debris flows and ephemeral streams from foothills. Up to 61 meters (200 feet) thick.

Ts SAND AND MUDSTONE OF STREAM AND LAKE SEDIMENTS — Medium- to coarse-grained arkosic sand, sandstone, and claystone. Includes interbeds of fine gravel, locally cemented, and sandy siltstone. Structures vary from large foreset beds of sand to thin-bedded claystone. Undifferentiated unit reflects a variety of stream and lake depositional environments along the northeastern and southwestern margin of the ancestral western Snake River Plain. Includes parts of the Payette, Poison Creek, and Succor Creek Formations, the tuffaceous sediments of Ferns (1989), and the Terteling Springs Formation of W.L. Burnham and S.H. Wood (written communication-unpublished manuscript).

IGNEOUS ROCKS

QUATERNARY BASALTS

Basalt lava flows primarily erupted from three sources during the Pleistocene: the northwest-southeast axis of the western Snake River Plain; Smith Prairie (Howard and others, 1982); and along the edge of the plain southeast of Boise. The basalts inundated ancestral valleys and plains. Their resistance to erosion helped preserve the terrace remnants they cap. The early Pleistocene basalt flows diverted the Boise River northward and the Snake River westward.

Qmc BASALT OF MORES CREEK — Single flow of dark gray olivine basalt about 6 meters (20 feet) thick. Fine-grained with abundant microphenocrysts of plagioclase and common microphenocrysts of olivine. Canyon-filling lava erupted from unknown vent in Mores Creek valley (Howard and others, 1982). Identified in ledges, normally submerged in reservoirs near Lucky Peak Dam.

Qgb BASALT OF GOWEN TERRACE — Four flows of medium gray olivine basalt. Hand samples and thin sections show sparse phenocrysts of olivine up 1-3 millimeters in diameter. Canyon-filling lava probably erupted in Smith Prairie (Howard and others, 1982). Buries gravel of Gowen terrace; basalt surface capped with about 3 meters (10 feet) of terrace gravel at distal end. Thickness of basalt ranges from about 3 meters (10 feet) near Boise to about 61 meters (200 feet) near Lucky Peak Dam. Mostly mantled with loess 1-2 meters (3-7 feet) thick. Pedogenic clay 35%; duripan (caliche) 0.5-1 meter thick.

Qlb BASALT OF LUCKY PEAK — Single flow of dark gray to black aphyric very fine-grained basalt. Canyon-filling lava probably erupted in Smith Prairie (Howard and others, 1982). Basalt buries gravel composing fifth terrace above the floodplain. Thickness of basalt about 37 meters (121 feet). Upper surface mostly buried by alluvial fan deposits (Qfg).

Qkb BASALT OF KUNA BUTTE — Dark gray olivine basalt flow forming irregular topography southeast of Nampa. Common phenocrysts of olivine 1-5 millimeters in diameter. Thickness unknown. Erupted from northwest end of Kuna Butte. Pedogenic clay 10-20%; duripans locally present.

Qfm BASALT OF FIVEMILE CREEK — One to three flows of medium gray olivine basalt. Thin sections show a cumulophyric texture of a few percent small interlocking olivine grains. Erupted from small vent near headwaters of Fivemile Creek. Basalt buries gravel composing sixth terrace above the floodplain. Thickness ranges from about 3 meters at the west edge of the flow to about 55 meters (180 feet) at the east. Mostly mantled with loess 1-2 meters thick. Pedogenic clay 35%; duripan (caliche) 0.5-1 meter thick. Patterned ground present.

Qmi BASALT FLOWS OF INDIAN CREEK, UNDIVIDED — Multiple flows of medium to dark gray olivine basalt. Undivided basalts generally aphyric but include flows with small olivine and plagioclase phenocrysts. Erupted from vents south and southeast of the map. Both normal and reversed magnetic polarities. Lavas flowed into and down ancestral Indian Creek and Boise River valleys. Northwest-trending, gently sloping escarpments suggest faulting of the basalt. Mantled with loess 0.5-4 meters thick. Pedogenic clay 35%; duripan (caliche) 1 meter thick.

Qbsi BASALT FLOWS OF INDIAN CREEK BURIED BY LOESS AND STREAM SEDIMENTS — Tan massive silt, light brown stratified clay, silt, and sand, and basalt 6-15 meters (20-50 feet) deep. Location of basalt based on water well logs and subcrop mapping by Wood and Anderson (1981). Pedogenic clay 10-20%; duripans locally present.

Qucb BASALT FLOWS OF UPPER DEER FLAT, UNDIVIDED — Multiple flows of dark gray aphyric olivine basalt. Reversed magnetic polarities. Probably erupted from one or more vents south of the map. Mantled with loess 1-4 meters (3-13 feet) thick. Pedogenic clay in loess 10-20%; calcium carbonate in B horizon. Loess buries duripan (caliche) 1 meter thick formed in the top of the basalt.

Qbs BASALTIC VENTS, UNDIVIDED — Olivine basalt and basaltic tephra forming dissected cones and volcanic necks near the Snake River.

TERTIARY BASALTS

Tbp BASALT OF PICKET PIN CANYON — Dark gray basalt flow with a cumulophyric texture of distinctive rosettes of white plagioclase. Position suggests inverted topography of a canyon-filling lava. Maximum thickness is 9 meters (30 feet).

Tbs TUFF AND VOLCANICLASTIC SEDIMENTS — Brown basaltic tuff and volcaniclastic sediments. Minor beds of arkosic sand, pumice, and rhyolitic ash. Up to 107 meters (350 feet) thick.

Tbv BASALT VOLCANIC ASSEMBLAGE — Contains several undivided lithologies: (1) thin subaerial lava flows, (2) thin subaqueous and other water-affected subaerial lava flows, and (3) tuff and volcaniclastic sediments. Lava up to 73 meters (240 feet) thick; overlying tuff and volcaniclastic sediments up to 61 meters (200 feet) thick.

Tbd BASALT AND ANDESITE OF GRAVEYARD POINT AREA — Olivine basalt near Graveyard Point and pyroxene andesite breccia south of Graveyard Point (Ferns, 1989).

TERTIARY RHYOLITES

Tr RHYOLITE OF THE BOISE FRONT — Pinkish gray porphyritic rhyolite, dark gray vitrophyre, and gray perlite.

Tjp JUMP CREEK RHYOLITE — Mostly gray porphyritic rhyolite and quartz latite. Plagioclase phenocrysts up to 15 millimeters. Lava flow or remobilized welded tuff.

Thr HORNBLENDE-BIOTITE RHYOLITE — Black glassy rhyolite; light gray where devitrified.

CRETACEOUS GRANITIC ROCKS

g GRANITIC ROCKS OF THE IDAHO BATHOLITH — Light gray biotite granite and granodiorite. Medium to coarse grained and equigranular to porphyritic. Includes pegmatite zones and dikes of rhyolite and basalt.

MAP SYMBOLS

- Contact: approximately located; dashed where inferred
- Fault: approximately located; dashed where inferred; dotted where concealed; ball and bar on downthrown side
- Strike and dip of bedding
- Approximate upper limit of Bonneville Flood slack water
- Sand dune fields
- Basalt sampling site

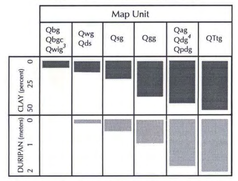
Magnetic Polarities, K/Ar Ages, and $^{40}Ar/^{39}Ar$ Ages of Basalts

Rock Unit	Field Number	Polarity	Latitude	Longitude	Age (Ma) [1] potassium-argon [2] argon-argon
Basalt of Mores Creek	MC-1	N	43°31.52'	116°3.76'	0.107 ± 0.012 [1]
Basalt of Gowen terrace	GT-4	N	43°31.33'	116°4.24'	0.572 ± 0.210 [1]
Basalt of Kuna Butte (South Side)	SS	N	43°31.51'	116°32.03'	0.387 ± 0.031 [2]
Basalt of Lucky Peak	LP-4	N	43°31.85'	116°3.66'	1.364 ± 0.210 [1]*
Caldwell lava flow	CBR	R	43°41.31'	116°41.06'	0.799 ± 0.095 [2]
Upper Deer Flat lava flow	UDF	R	43°30.29'	116°34.38'	0.922 ± 0.184 [2]
Basalt of Fivemile Creek	30-3	N	43°32.67'	116°9.38'	0.974 ± 0.098 [2]
Basalt of Fivemile Creek	FM1	N	43°30.27'	116°6.91'	
Basalt of Fivemile Creek	FM2	N	43°31.52'	116°4.45'	
Basalt of Hubbard surface	TCC-1	N	43°31.92'	116°20.20'	1.001 ± 0.098 [1]
Mason Creek lava flow	MA	NF	43°33.72'	116°28.23'	1.231 ± 0.123 [2]
Black Cat Road lava flow	BC	R	43°31.43'	116°27.15'	
East Nampa lava flow	NSS	R	43°36.23'	116°31.12'	1.165 ± 0.125 [2]
Rawson Canal lava flow	RC	R	43°34.09'	116°22.12'	

Potassium-argon and argon-argon analyses provided by the Berkeley Geochronology Center, Institute of Human Origins, University of California, Berkeley, California. Magnetic polarity results from field fluxgate magnetometer using five samples per site.

* Stratigraphic relationships indicate the K-Ar age of the basalt of Lucky Peak is too old (Othberg and Burnham, 1990).

Pedogenic[1] clay and duripans[2] on terraces.



Soil data adapted from Collett (1980), Priest and others (1972), and the University of Idaho Soil Characterization Laboratory.

Collett, R. A., 1980, Soil survey of Ada County area, Idaho: U.S. Department of Agriculture, Soil Conservation Service, 327 p., 72 sheets, scale 1:20,000.

Priest, T. W., C. W. Case, J. F. Witty, R. K. Preece, Jr., G. A. Monroe, H. W. Biggerstaff, G. H. Logan, L. M. Rasmussen, and D. H. Webb, 1972, Soil survey of Canyon area, Idaho: U.S. Department of Agriculture, Soil Conservation Service, 118 p., 59 sheets, scale 1:20,000.

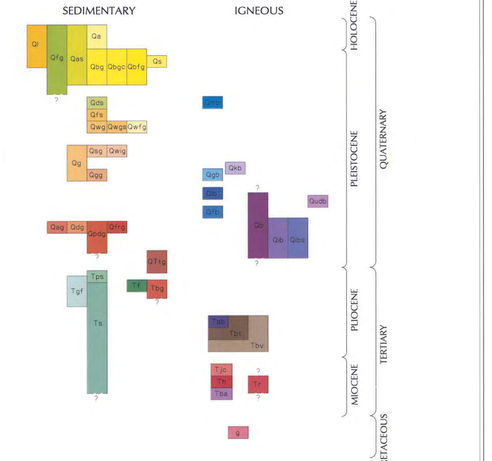
[1] Pedogenic refers to the physical and chemical soil-forming processes that act upon earth materials at the land surface.

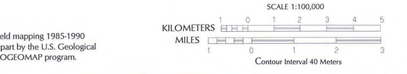
[2] Duripans are white silica- and calcium carbonate-cemented hardpans commonly called caliche.

[3] The Bonneville Flood slack-water sediments that form the surface of Qwig (gravel of Wilder terrace) bury a duripan about 0.5 meter thick that formed in the top of the gravel.

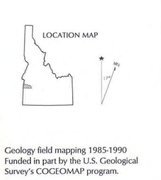
[4] The surface of Qdg (gravel of Deer Flat terrace) is buried by loess from near Lake Lowell to near Wilder. The thick duripan lies at depths of 1-4 meters (3-13 feet).

CORRELATION OF MAP UNITS





Geology field mapping 1985-1990
Funded in part by the U.S. Geological Survey's COGEOMAP program.



Approximate Location of Project Site

U.S.G.S. 1:100,000 topographic base
Projection and 10,000 meter grid, zone 11, Universal Transverse Mercator
1927 North American Datum

REFERENCES

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Howard, K.A., J.W. Shervais, and E.H. McKee, 1982, Canyon-filling lavas and lava dams on the Boise River, Idaho, and their significance for evaluating downcutting during the last two million years, in Bill Bonnichsen and R.M. Breckenridge, eds., Cenozoic geology of Idaho: Idaho Bureau of Mines and Geology Bulletin 26, p. 629-641.

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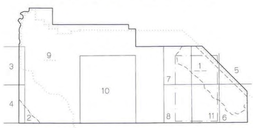
ADDITIONAL SOURCES OF GEOLOGIC MAPPING



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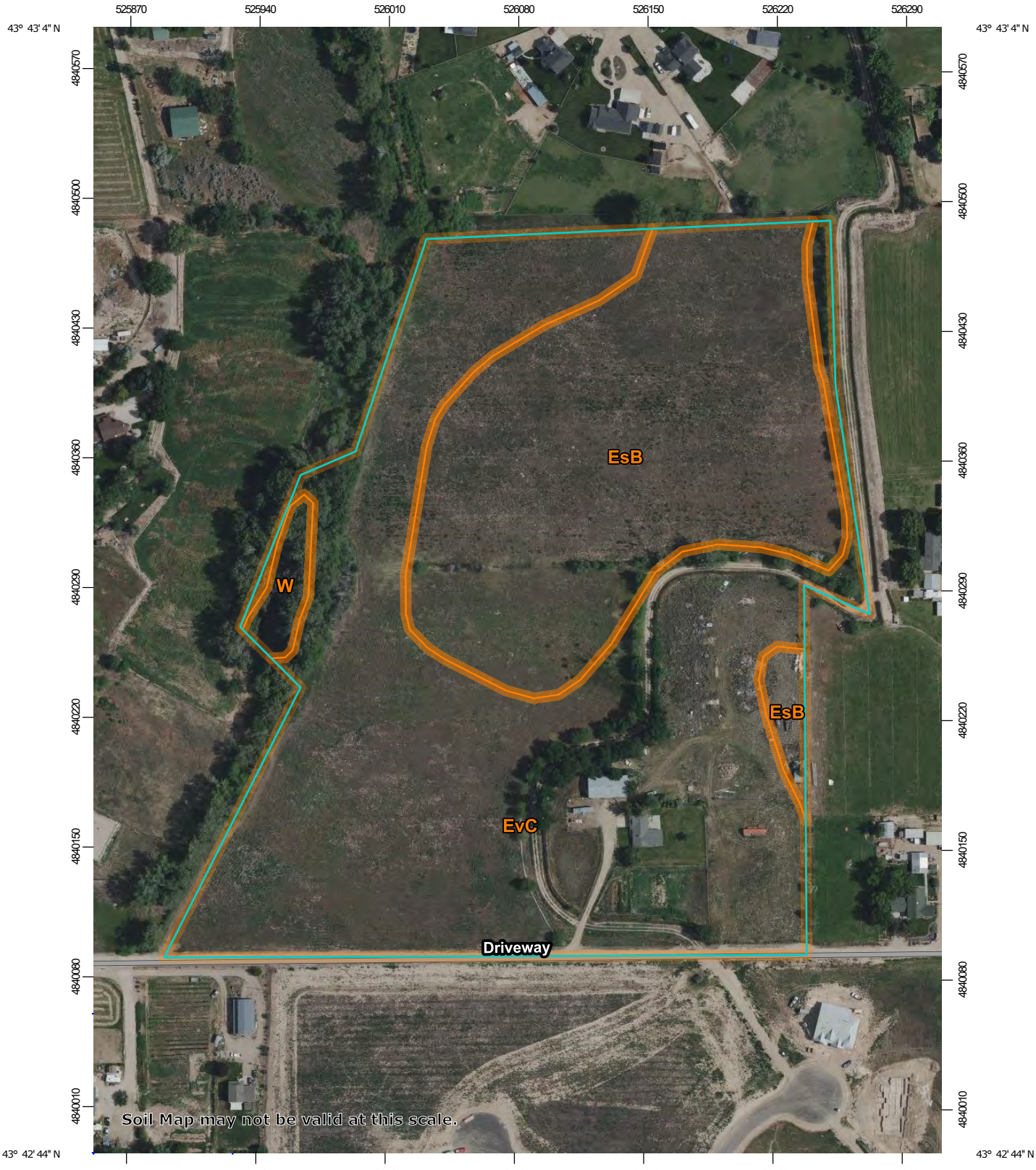
Cartography by Loudon R. Stanford on a computer-aided cartographic system at the Idaho Geological Survey
Typography by Ann G. Killen
Map reviewed by Roy M. Breckenridge, Willis L. Burnham, and Monte D. Wilson
Digital four-color separations by Optronics Specialty, Inc., Chatsworth, California
Printed by Joslyn & Morris, Inc., Boise

Published and sold by the Idaho Geological Survey
University of Idaho, Moscow, Idaho 83843

Appendix III SOIL SURVEY INFORMATION

Soil Map—Canyon Area, Idaho
(Freezeout Ridge Estates Subdivision)



Map Scale: 1:2,960 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

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
EsB	Elijah-Chilcott silt loams, 1 to 3 percent slopes	10.1	36.3%
EvC	Elijah-Vickery silt loams, 3 to 7 percent slopes	17.3	62.1%
W	Water	0.4	1.6%
Totals for Area of Interest		**27.9**	**100.0%**

Canyon Area, Idaho

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
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)

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

Data Source Information

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

Canyon Area, Idaho

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)

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

Data Source Information

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

Appendix IV SITE LOCATION WITH VICINITY WELLS MAP AND IDWR DRILLER'S WELL LOGS

Vicinity IDWR Well Locations

Figure 3

NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Well Location (#)

SCALE

0 0.125 0.25

(Mile)

Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS

2791 S. Victory View Way
Boise, ID 83709

Phone: (208) 376-4748
Fax: (208) 322-6515
Web: oneatlas.com

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0066280
Drilling Permit No. 965483-871542
Water right or injection well # 63-33545

2. OWNER:
Name Daniel McLeran / Josh Sylvester
Address 13758 Willis Rd
City Caldwell State ID Zip 83607

3.WELL LOCATION:
Twp. 5 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 35 S/E (10 acres) 1/4 S/W (40 acres) 1/4 S/W (160 acres) 1/4
Gov't Lot ____ County Canyon
Lat. 43 ° 43.3614 (Deg. and Decimal minutes)
Long. 116 °40.0740 (Deg. and Decimal minutes)
Address of Well Site 13758 Willis
(Give at least name of road + Distance to R[illegible])
City Caldwell
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 ft³)	Placement method/procedure
5&3/4bentonite	0	47	1,750LBS	overbore drypour

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6	+1.5	137	.250	steel	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 137

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method ____
Manufactured screen ☒ Y ☐ N Type 18 slot Johnson
Method of installation wash into sand

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
140	150	18		5	stainless	.250

Length of Headpipe 7' Length of Tailpipe valve 6"
Packer ☒ Y ☐ N Type 3 lip rubber K

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) 75 Static water level (ft) 75
Water temp. (°F) cold Bottom hole temp. (°F) ____
Describe access port removable well cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Test method: Pump	Bailer	Air	Flowing artesian
150	45 gpm	1/2 HR	☐	☐	☒	☐
			☐	☐	☐	☐

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	Water N
12	0	4	fill dirt		X
12	4	12	clay and cleachy		X
12	12	30	sand		X
10	30	47	sandy clay		X
6	47	57	sandy clay		X
6	57	75	sand with small gravels		X
6	75	112	gravel	X	
6	112	141	sand with clay layers	X	
6	141	150	sand	X	

RECEIVED
APR 21 2014
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 150
Date Started: Apr 8, 2014 Date Completed: Apr 10, 2014

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 Nu Acre Drilling LLC Co. No. 701
*Principal Driller ____ Date Apr 17, 2014
*Driller ____ Date ____
*Operator II ____ Date ____
Operator I ____ Date ____

* **Signature of Principal Driller and rig operator are required.**

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

Received 12-29-72

1. WELL OWNER

Name Wm. A. Jackson

Address 1223 N Michigan

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 95 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	8 inches	+1.5 feet	88.5 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

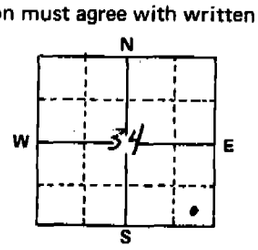
Placed from _____ feet to _____ feet

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

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



County Canyon

SE ¼ SE ¼ Sec. 34, T. 5 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 51 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature _____ ° F. Quality _____

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
20	10	1

041560

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
10	0	6	Top soil & Hard pan		X
10	6	18	Dry hard bound		X
8	18	58	Sand & Gravel		X
8	58	68	Sandy clay		X
8	68	70	Sand "clay pinch"		X
8	70	95	Sandy clay		X
8	95	120	Sand & clay Stratas	X	

10.

Work started 11-27-72 finished 12-4-72

11. DRILLER'S CERTIFICATION

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

Bill Doty Well Drilling & Development 42
Driller's or Firm's Name Number

Rt. 7 Caldwell Idaho
Address

Bill Doty 12-19-72
Signed By Date

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

Form 238-7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

61

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name James Radford

Address R5 Caldwell Ida

Owner's Permit No. _____

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
0250 inches	6 5/8 inches	+ 1 feet	79 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

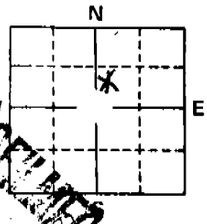
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 20 Material used in seal: ☐ Cement grout ☒ Puddling clay ☐ Well cuttings
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County Canyon

SW ¼ NE ¼ Sec. 34, T 5N N/S, R 3W E/W.

7. WATER LEVEL

Static water level 51 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature ____ °F. Quality good

8. WELL TEST DATA

☒ Pump ☐ Bailer [redacted] ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
ND	65	24

9. LITHOLOGIC LOG

106447

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	16	Top Soil & Hardpan		X
6	16	39	Sandy Clay		X
6	39	53	Fine Sand & Gravel		X
6	53	67	Good Clay		
6"	67	79	Coarse Sand & Gravel	X	
Completed Well Operation in Coarse Gravel					

RECEIVED
AUG 5 1980
Department of Water Resources
Western Regional Office

RECEIVED
AUG 6 1980
Department of Water Resources

10.

Work started Jan 25/80 finished Feb 1/80

11. DRILLERS CERTIFICATION

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

Firm Name David Kraus Drilling Firm No. 208
Address 323 Main Caldwell Ida Date Jan 5/80
Signed by (Firm Official) David Kraus
and
(Operator) David

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

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0064373
Drilling Permit No. 96257Ho-8681635
Water right or injection well #

2. OWNER:
Name Steven Levine
Address P.O. Box 400
City Middleton State ID Zip 83644

3.WELL LOCATION:
Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 3 ____ (10 acres) 1/4 NE (40 acres) 1/4 NW (160 acres) 1/4
Gov't Lot ____ County Canyon
Lat. 43 ° 43.094 (Deg. and Decimal minutes)
Long. 116 ° 41.092 (Deg. and Decimal minutes)
Address of Well Site 23854 Stone Lane
(Give at least name of road + Distance to Road or Landmark) 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 ft³)	Placement method/procedure
3/4 Bent.	0'	44'	27 bags	Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	+2	116	.250	Steel	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 116'

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method ____
Manufactured screen ☒ Y ☐ N Type Johnson
Method of installation Wash Down

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
124'	119'	18		5	SS	N/A

Length of Headpipe 10' Length of Tailpipe ____
Packer ☒ Y ☐ N Type ____

10.FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
None				

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) 15' Static water level (ft) 10'
Water temp. (°F) 56 Bottom hole temp. (°F) ____
Describe access port Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Test method: Pump	Bailer	Air	Flowing artesian
75'	50 GPM	30 min.	☐	☐	☒	☐
			☐	☐	☐	☐

Water quality test or comments: Iron 1 PH 7.5 Hardness 4

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	Water N
10"	0'	3'	Topsoil		X
10"	3'	5'	Tan Clay		X
10"	5'	32'	Gravel	X	
10"	32'	35'	Brown Clay		X
10"	35'	40'	Tan Clay		X
10"	40'	44'	Tan Clay		X
6"	44'	57'	Sand	X	
6"	57'	64'	Tan Clay		X
6"	64'	73'	Sand	X	
6"	73'	77'	Tan Clay		X
6"	77'	80'	Sandy Clay	X	
6"	80'	90'	Sand	X	
6"	90'	112'	Sandy Clay	X	
6"	112'	116'	Tan Clay		X
6"	116'	124'	Sand	X	

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WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 124'
Date Started: Jun 3, 2013 Date Completed: Jun 5, 2013

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 Adamson Pump & Drilling Co. No. 457
*Principal Driller Dave Adamson Date Jun 10, 2013
*Driller John Hunter Date Jun 10, 2013
*Operator II ____ Date Jun 10, 2013
Operator I Sam Navarro Date ____

* **Signature of Principal Driller and rig operator are required.**

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

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

Received 8-23-71 63

1. WELL OWNER

Name RON BALE

Address ROUTE #7 CALDWELL, IDAHO

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6" inches Total depth 105 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
~~6"~~ inches	~~inches~~	~~feet~~	~~feet~~
.250 inches	6" inches	+2½ feet	92 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation inches by inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☒ No Size of gravel

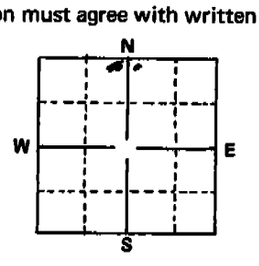
Placed from feet to feet

Surface seal? ☒ Yes ☐ No To what depth 19 feet

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



63

County CANYON

NW ¼ NE ¼ Sec. 3, T. 4 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 16 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

~~☒ Pump~~ ☐ Bailer ☒ Other

Discharge G.P.M.	Draw Down	Hours Pumped
100		2 hrs.

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8"	0	5	TOP SOIL		X
8"	5	10	HARD PAN + SAND		X
8"	10	15	SAND		X
8"	15	19	GRAVEL		X
6"	19	20	GRAVEL		X
6"	20	40	SANDY CLAY		X
6"	40	50	SAND	X	
6"	50	55	SANDY CLAY LAYERS		X
6"	55	60	SAND	X	
6"	60	64	SANDY CLAY		X
6"	64	70	SAND	X	
6"	70	85	SANDY CLAY LAYERS		X
6"	85	97	CLAY	~~X~~	X
6"	97	105	SAND	X	
6"	105	?	SAND	X	

001163

10.

Work started JULY 29, 1971 finished AUG 6, 1971

11. DRILLER'S CERTIFICATION

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

BILL DOTY WELL DRILLING 42
Driller's or Firm's Name Number

ROUTE #7 CALDWELL, IDAHO
Address

Bill Doty Sr. 8-23-71
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

Form 238-7
4/92

C

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Department of Water Resources

64

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name GOLDY EUNICE OR CLARENCE FRIEND

Address 23853 STONE LANE Caldwell 83605

Drilling Permit No. 63-93-W-0480

Water Right Permit No. _____

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: XX Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2 feet	62 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

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

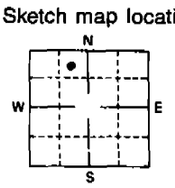
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes XX No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 20 Material used in seal: ☐ Cement grout
XX Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing XX Overbore to seal depth
Method of joining casing: ☐ Threaded XX Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

Address of Well Site 23853 STONE LANE
(give at least name of road)

NE ¼ NW ¼ Sec. 3, T. 4N N XX or S ☐, R. 3W E ☐ or W XX

7. WATER LEVEL

Static water level 6 feet below land surface.
Flowing? ☐ Yes XX No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer XX Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
25	40	1½HRS.

70651

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	14	TOP SOIL		X
6	14	26	GRAVEL		X
6	26	34	CLAY		X
6	34	45	SAND & CLAY	X	
6	45	53	SAND & CLAY LAYERS	X	
6	53	59	SAND	X	
6	59	62	CLAY		X
6	62		SAND	X	

RECEIVED
SEP 08 1993
Department of Water Resources
Western Regional Office
MICROFILMED
FEB 09 1994

10.

Work started 7-17-93 finished 8-7-93

11. DRILLER'S CERTIFICATION

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

Firm Name BILL DOTY DRILLING CO., INC. Firm No. 42

Address 106 CALLOWAY CALDWELL, ID 83605 Date 8-24-93

Signed by Drilling Supervisor _____

and

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

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

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

Received 12-15-72 WD

1. WELL OWNER

Name Logan Kerr

Address Caldwell Idaho

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

_____

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 70 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	8 inches	+2 feet	68 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

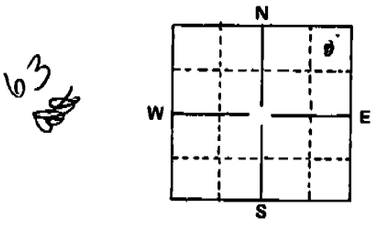
Placed from _____ feet to _____ feet

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

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



County Canyon

NE ¼ NE ¼ Sec. 3, T. 4 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 43 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature _____ ° F. Quality _____

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
20	10	1

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
10	0	6	Top soil		X
10	6	15	Hard pan & sand		X
10	15	18	Clay		X
8	18	38	Sand & clay layers		X
8	38	68	Gravel & Gravel		X
8	68	70	Clay		X
8	70	80	Sand & clay layers	X	

001156

10.

Work started 7-24-72 finished 7-28-72

11. DRILLER'S CERTIFICATION

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

Bill Doty Well Drilling & Development 42
Driller's or Firm's Name Number

Rt 7 Caldwell
Address

Bill Doty 12-14-72
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

789156 66

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

1. WELL TAG NO. D -0025835
DRILLING PERMIT NO. ____-____-____-_____-_____
Other IDWR No. _____

2. OWNER:
Name JEFF BELL
Address 1357 E. PITKIN
City MERIDIAN State ID Zip 83642

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

N / W / E / S — X

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 3, NE 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County CAYNON
Lat: : : Long: : :
Address of Well Site 14133 WILLIS RD
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 Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0'	30'	15 BAG	OVER BORE

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2'	95'	1/4	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

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

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

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
30	25	90'	6 HRS

Water Temp. 58° Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encounter 90'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	2	TOP SOIL		✓
10	2	8	HARD PAN		✓
10	8	45	CLAY - BROWN		✓
6	45	68	SANDY CLAY BROWN		✓
6	68	90	GRAVEL (PIT RUN)	X	
6	90	95	SANDY GRAVEL	X	

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DEC 27 2002
WATER RESOURCES
WESTERN REGION

Completed Depth 95' (Measurable)
Date: Started 11-19-02 Completed 11-25-02

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

Company Name GARY'S Well DRILLING Firm No. 317
Firm Official Gary W. Wilson Date 12-20-02
and
Driller or Operator JR Wilson Date 12-20-02
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0055974
Drilling Permit No. 909744-858315
Water right or injection well # 63-W-0273-001

2. OWNER: Chaney Stoffs Construction
Name Chaney Stoffs
Address P.O. Box 244
City Notus State ID Zip 83656

3. WELL LOCATION:
Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 3 ____ 10 acres ____ 1/4 NE 40 acres 1/4 NE 160 acres 1/4
Gov't Lot ____ County Canyon
Lat. 43 ° 43.077 (Deg. and Decimal minutes)
Long. 116 ° 40.507 (Deg. and Decimal minutes)
Address of Well Site 23824 Bryer Rd
(Give at least name of road + Distance to Road or Landmark) City Caldwell
Lot. 9 Blk. 1 Sub. Name Willis Est

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 ft³)	Placement method/procedure
3/8 Bentonite Chip	0	38	1200 lbs	borehole hydrated

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
[redacted]					☐	☐	☐	☐
6	+2	85	250	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 85

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method ____
Manufactured screen ☒ Y ☐ N Type Certalock
Method of installation Set with Sandline pullback

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
97	577.20	N/A		4½	PVC	N/A

Length of Headpipe — Length of Tailpipe —
Packer ☐ Y ☒ N Type none

10. FILTER PACK: none

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) 43 Static water level (ft) 47
Water temp. (°F) N/A Bottom hole temp. (°F) N/A
Describe access port well cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
50	40 gpm	60 min

Test method: Pump ☐ Bailer ☐ Air ☒ Flowing artesian ☐

Water quality test or comments: none

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	Water N
10	0	2	Top Soil		
"	2	14	Brown Clay		
"	14	19	Sandy Clay		
"	19	38	Brown Clay		
6	38	43	Clay Brown		
"	43	97	gravel	X	

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JAN 04 2010
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 97'
Date Started: 12-17-09 Date Completed: 12-18-09

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 Adamson Pump & Drilling Co. No. 457
*Principal Driller Dave Adamson Date 12-23-09
*Driller John Seton Date 12-21-09
*Operator II John Sutton Date 12-21-09
Operator I ____ Date ____

*** Signature of Principal Driller and rig operator are required.**

Form 238-7
6/07

63

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0070229
Drilling Permit No. 97L230-87787
Water right or injection well #

2. OWNER:
Name Allen & Rachelle Boshaw
Address 5 S. Honey Dr.
City Nampa State ID Zip 83687

3.WELL LOCATION:
Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 2 10 acres 1/4 NW 40 acres 1/4 NW 160 acres 1/4
Gov't Lot County Canyon
Lat. 43 ° 43.132 (Deg. and Decimal minutes)
Long. 116 ° 40.289 (Deg. and Decimal minutes)
Address of Well Site End of Canyon Lane - 1-1/4 mile north of Hwy 44 City Caldwell
(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 ft³)	Placement method/procedure
3/4 Bent.	0'	42'	23 bags	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	+2	139'	.250	Steel	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

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

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method
Manufactured screen ☒ Y ☐ N Type Alloy
Method of installation Wash Down

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
144'	149'	.018	5'	5"	SS	

Length of Headpipe 11' Length of Tailpipe
Packer ☒ Y ☐ N Type K-packer

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) 52' Static water level (ft) 51'
Water temp. (°F) 56° Bottom hole temp. (°F)
Describe access port Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Test method: Pump	Bailer	Air	Flowing artesian
70'	40 GPM	45 minutes	☐	☐	☒	☐
			☐	☐	☐	☐

Water quality test or comments: Hardness 9 PH 7.6 Iron .8

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	Water N
10"	0'	5'	Hardpan		X
10"	5'	14'	Brown Clay		X
10"	14'	33'	Sand		X
10"	33'	42'	Brown Sandy Clay		X
6"	42'	52'	Brown Sandy Clay		X
6"	52'	93'	Sand and Gravel	X	
6"	93'	97'	Clay		X
6"	97'	106'	Sand	X	
6"	106'	119'	Sandy Clay		X
6"	119'	128'	Clay w/Sand Strips	X	
6"	128'	142'	Clay		X
6"	142'	149'	Sand	X	

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NOV 12 2015
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 149'
Date Started: Nov 2, 2015 Date Completed: Nov 4, 2015

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 Adamson Pump & Drilling Co. No. 457
*Principal Driller Dave Adamson Date Nov 5, 2015
*Driller Sam Navarro Date Nov 5, 2015
*Operator II Date
Operator I Josh Young Date Nov 5, 2015

* **Signature of Principal Driller and rig operator are required.**

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

RECEIVED 69

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name JOHN BISHOP
Address RT. 7 CALDWELL IDAHO

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☒ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 71 feet
Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.280 inches	6 inches	+ 1 feet	70 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

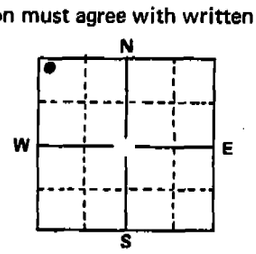
Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal? ☒ Yes ☐ No To what depth 18 feet
Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



6 2

County CANYON

NW ¼ NW ¼ Sec. 2, T. 4 N, R. 3 W

7. WATER LEVEL

Department of Water Administration

Static water level 28 feet below land surface
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Temperature _____ ° F. Quality GOOD
Artesian closed-in pressure _____ p.s.i.
Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
12	7	1

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	20	SANDY BROWN CLAY		✓
	20	52	BROWN SAND		✓
	52	60	BROWN SAND	✓	
	60	71	GRAVEL	✓	

001151

10.

Work started OCT-25-72 finished OCT-26-72

11. DRILLER'S CERTIFICATION

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

METZER WELL DRILLING 93
Driller's or Firm's Name Number

BOX 511 HOMEDALE IDA.
Address

Kenneth Metzer Nov-3-72
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

63

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Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. DRILLING PERMIT NO. __-__-__-____-____
Other IDWR No. D0042258

2. OWNER:
Name BRIAN MC MILLAN/CHRIS BELL
Address 729 BANKSIDE
City EAGLE State ID Zip 83616

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

N / W / E / S

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 2 1/4 (10 acres) NW 1/4 (40 acres) NW 1/4 (160 acres)
Gov't lot _____ County CANYON
Lat: : : Long: : :
Address of Well Site 13832 RED TIDE LN
City CALDWELL
(Give at least name of road + Distance to Road or Landmark)
Lt. 26 Blk. 1 Sub. Name NORTH SLOPE #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 Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	18	450	POUR

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 138
Was drive shoe seal tested? ☒ Y ☐ N How? air

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	138	250	STEEL	☒	☐	☒	☐
5"	131	142	250	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe 11' Length of Tailpipe _____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
142	147	20		5"	SS	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
50ft. below ground Artesian Pressure _____ lb
Depth flow encountered 140 ft. Describe access port or control devices: WELL CAP

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

Yield gal/min.	Drawdown	Pumping Level	Time
50	30	80	4 HR

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered 68

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	2	TOP SOIL		☒
10"	2	18	BROWN CLAY		☒
6"	18	22	BROWN CLAY		☒
6"	22	53	GRAVEL		☒
6"	53	68	BROWN CLAY		☒
6"	68	127	SAND CLAY STRIPS	☒	
6"	127	140	BROWN CLAY		☒
6"	140	147	FINE SAND	☒	

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WATER RESOURCES
WESTERN REGION
ORIGINAL

Completed Depth: 147 (Measurable)
Date: Started 11/17/2005 Completed 11/21/2005

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 GEORGE POST WELL DRILLING Firm No. 563
Firm Official _____ Date 11/22/2005
Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

Date: 11/22/2005 Time:9:04:35 AM

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

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State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name DON CAWARD
Address RT-7 CALDWELL IDAHO

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☒ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 82 feet
Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1 feet	78 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 18 Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings
Sealing procedure used ☐ Slurry pit ☐ Temporary surface casing ☒ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.

63

N
W E
S

Subdivision Name _____
Lot No. _____ Block No. _____

County CANYON

NE ¼ NW ¼ Sec. 2, T. 4 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 45 feet below land surface
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Temperature _____ ° F. Quality GOOD
Artesian closed-in pressure _____ p.s.i.
Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
15	10	2

041702

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	21	SANDY BROWN CLAY		✓
	21	73	BROWN SAND & GRAVEL		✓
	73	82	BROWN CLAY		✓
	82		WHITE SAND	✓	

10.

Work started MARCH-13-74 finished MARCH-20-74

11. DRILLERS CERTIFICATION

Firm Name HEITER WELL DRILLING Firm No. 93
Address BOX 511 HOMEDALE Date 3-21-74
Signed by (Firm Official) Kenneth Heiter
and
(Operator) " "

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

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.

Received 12-10-75 DWR

1. WELL OWNER

Name James Fulmer

Address Caldwell

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

_____

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6" inches Total depth 91' feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	6" inches	+ 1 feet	79' feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

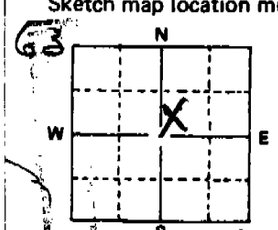
Placed from _____ feet to _____ feet

Surface seal depth 30' Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

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

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

SW ¼NE ¼ Sec. 3, T. 4N N/S, R. 3W E/W

7. WATER LEVEL

Static water level 20' feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature _____ ° F. Quality Good

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other

Discharge G.P.M.	Draw Down	Hours Pumped
40	5	3

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	1	10	TOPSOIL		X
6	10	20	HARD PAN		X
6	20	30	GRAVEL		X
6	30	40	GRAVEL INTO SAND		X
6	40	50	SANDY CLAY		X
6	50	60	SANDY CLAY	X	
6	60	70	CLAY		
6	70	80	CLAY	X	
6	80	91'	CLAY WITH SAND VEINS OF WATER IN DRY HOLE		

001160

10.

Work started 11-15- finished 11-29-75

11. DRILLERS CERTIFICATION

Firm Name D D Well Drilling Firm No. 254

Address 310 S 11 Date 1-26-76

Signed by (Firm Official) _____

and

(Operator) _____

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

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

73

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name LARRY LEMASTER

Address CALDWELL IDAHO

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☒ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 105 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1 feet	99 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

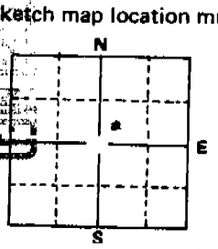
Placed from _____ feet to _____ feet

Surface seal depth 6 Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

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

6. LOCATION OF WELL

Sketch map location must agree with written location. 63



Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

SW ¼ NE ¼ Sec. 3, T. 4 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 35 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow _____

Temperature _____ ° F. Quality GOOD

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other AIR

Discharge G.P.M.	Draw Down	Hours Pumped
20	15	3

033069

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	2	TOPSOIL		✓
	2	11	HARD PAN		✓
	11	28	BROWN SAND		✓
	28	42	GRAVEL		✓
	42	96	BROWN SAND		✓
	92	105	BROWN CLAY		✓
	105		WHITE SAND	✓	

10.

Work started 7-30-74 finished 8-2-74

11. DRILLERS CERTIFICATION

Firm Name HETZER WELL DRL. Firm No. 93

Address BOX 511 HOMEDALE Date 8-6-74

Signed by (Firm Official) Ronald M Jr

and

(Operator) _____

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

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

RECEIVED
MAY 23
Department of Water Administration

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name GARY LASHER

Address CALDWELL, IDAHO

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

_____

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☒ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 105 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	8 inches	+ 1 feet	85 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

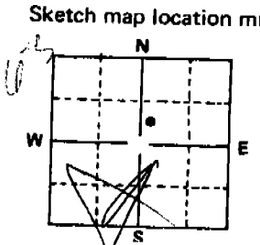
Placed from _____ feet to _____ feet

Surface seal depth 18 Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

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

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

SW ¼ NE ¼ Sec. 3, T. 4 N R. 3 W

7. WATER LEVEL

Static water level 25 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow _____

Temperature _____ ° F. Quality GOOD

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other AIR

Discharge G.P.M.	Draw Down	Hours Pumped
30	20	2

041703

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	12	BROWN CLAY		✓
	12	21	GRAVEL & SAND		✓
	21	26	BROWN SAND		✓
	26	38	SANDY BROWN CLAY		✓
	38	83	QUICK SAND BROWN		✓
	83	105	BROWN CLAY		✓
	105		BROWN SAND	✓	

10.

Work started MARCH-27-74 finished APR.-1-74

11. DRILLERS CERTIFICATION

Firm Name METZER WELL DRILLING Firm No. 93

Address BOX 511 HOMEDALE Date 4-9-74

Signed by (Firm Official) Kenneth Metzer

and

(Operator) _____

MICROFILMED

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE COPY TO THE DEPARTMENT

63

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Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. DRILLING PERMIT NO. 0 -0 -3 -9156 - ____
Other IDWR No. _____

2. OWNER:
Name Larry Meridith
Address 26190 Moonglow Dr.
City Middleton State ID Zip 83644

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

N
W E
S

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 3 1/4 (10 acres) NE 1/4 (40 acres) SE 1/4 (160 acres)
Gov't lot _____ County Canyon
Lat: : : Long: : :
Address of Well Site South Side of Red Tide .25mile
West of Canyon City Middleton
(Give at least name of road + Distance to Road or Landmark)
Lt. 27 Blk. 1 Sub. Name _____

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	0	20	750Lbs	Dry Pour

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 133ft
Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	133	.250	Steel	☒	☐	☒	☐
5"	130	135	.258	Steel	☒	☐	☒	☐
					☐	☐	☐	☐

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
135	140	.010	—	5"	SS	☐	☒
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
44ft. 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
60GPM	____	135ft	2hours

Water Temp. 57DegF Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered 42ft

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	2	Sandy Top Soil		☒
"	2	8	Brown Clay		☒
"	8	18	Tan Sandy Clay		☒
"	18	20	Gravel and Sand		☒
6"	20	50	Gravel and Sand	☒	
"	50	57	Tan Clay		☒
"	57	97	Sand	☒	
"	97	108	Tan Clay		☒
"	108	123	Sand	☒	
"	123	133	Tan Clay		☒
"	133	140	Fine Sand	☒	

RECEIVED
MAY 25 2005
WATER RESOURCES
WESTERN REGION

Completed Depth: 140 (Measurable)
Date: Started 5-18-05 Completed 5-18-05

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 _____ Date 5-23-05
Supervisor or Operator _____ Date 5-23-05
(Sign once if Firm Official & Operator)

Date: 5/23/2005 Time:5:51:11 PM

63

837844

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only 76
Well ID No. 408277
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0042283
DRILLING PERMIT NO
Water Right or Injection Well No

2. OWNER: CODY BEHREND
Name C+S Interiors
Address 5520 N WILDGOOSE
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 4 North ☒ or South ☐
Rge 3 East ☐ or West ☒
Sec 2 NW 1/4 (10 acres) ____ 1/4 (40 acres) SW 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: : :
Address of Well Site 23281 Canyon Ln
(Give at least name of road + Distance to Road or Landmark) City Caldwell
Lt 28 Blk 1 Sub Name N Slope Estates

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

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

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

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Dry granular bentonite + well cuttings	0	18	600lb	Overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 92'
Was drive shoe seal tested? ☐ Y ☒ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	92	1/4	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 7 Length of Tailpipe -0-
Packer ☒ Y ☐ N Type Figure K

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method
Screen Type & Method of installation SS Wire / Pull back

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
95	100	14		5	SS	Screen	
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
8 ft. below ground Artesian pressure ____ lb
Depth flow encountered ____ ft Describe access port or control devices:
Sanitary Well Cap

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

Yield gal./min.	Drawdown	Pumping Level	Time
40	NA	40	15 Min

Water Temp 59° Bottom hole temp. N/A
Water Quality test or comments: Clear
Depth first Water Encounter 20

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology Water Quality & Temperature	Water Y	Water N
10	0	15	Brn Clay		X
10	15	18	Gravel / Clay layers		X
6	18	33	Gravel / Thin Clay layers	X	
6	33	45	Gravel	X	
6	45	60	Clay		X
6	60	86	Fine Sand	X	
6	86	90	Clay		X
6	90	100	Corse Sand	X	

RECEIVED
JAN 12 2006
WATER RESOURCES
WESTERN REGION

Completed Depth 100 (Measurable)
Date: Started 12/8/2005 Completed 12/8/2005

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed SYLVAN ADAMSON
Company Name Domestic Pump & Drilling Firm No 483
Principal Driller Sylvan Adamson Date 1/5/2006
and
Driller or Operator II Date
Operator I Date
Principal Driller and Rig Operator *Required*
Operator I must have signature of Driller/Operator II

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63

INJECTION WELL

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

840115

Office Use Only
Well ID No. 410424 77
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 00 46577
DRILLING PERMIT NO. 894729 - 840115
Water Right or Injection Well No. 63-W-217-001

2. OWNER:
Name C+S Interiors / Abram Antonucci
Address 5520 N Wildgoose
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. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 2, ____ 1/4 NW 1/4 SW 1/4 (10 acres / 40 acres / 160 acres)
Gov't Lot ____ County CANYON
Lat: : : Long: : :
Address of Well Site 23281 Canyon Lane
City Caldwell
(Give at least name of road + Distance to Road or Landmark)
Lt. 28 Blk. 1 Sub. Name North Slope Estates

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

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

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

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Grout Bent	0	18	4 0026	Overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 22
Was drive shoe seal tested? ☐ Y ☒ N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	22	1/4	Steel	☒	☐	☒	☐
4½	22	12		PVC	☐	☒	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____
Packer ☐ Y ☒ N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ____
Screen Type & Method of Installation Factory PVC

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
42	22	20		4½	PVC	Screen	
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
Injected	30 GPM	15 Min	

Water Temp. 59° Bottom hole temp. N/A
Water Quality test or comments: None
Depth first Water Encounter 18

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	3	Soil		X
10	3	15	Brn Clay		X
10	15	18	Brn Clay + Gravel		X
6	18	42	Gravel	X	

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JUN 26 2006
WATER RESOURCES
WESTERN REGION

42
Completed Depth (Measurable)
Date: Started 6/9/06 Completed 6/9/06

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed. SHAWN ADAMSON
Company Name DOMESTIC PUMP Firm No. 483
Principal Driller [signature] Date 6/19/06
and
Driller or Operator II [signature] Date 6/19/06
Operator I ____ Date ____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

63

836321

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 4067998
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0041972
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Jeff Shelman
Address 16380 Franklin Rd. Apt. E-4
City Nampa State Id Zip 83687

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 3, NE 1/4 (10 acres) SE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: : :
Address of Well Site 23363 Tundra Ct.
City Caldwell
(Give at least name of road + Distance to Road or Landmark)
Lt. 18 Blk. 1 Sub. Name North Slope Est.

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
Permaplug	0	18	550 lbs	10" overbore dry pour

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 133-8"
Was drive shoe seal tested? ☐ Y ☒ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	133-8"	250	Steel	☐	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 5' Length of Tailpipe 0
Packer ☒ Y ☐ N Type 3-Rib

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method
Screen Type & Method of Installation Johnson Wash Dr. Vake

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
133	138	20	6" Tele		S.S.	☐	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
35		136'	3 hrs.

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: good clear color
Depth first Water Encounter ____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	4	Top Soil		X
10 & 6	4	20	Sand & clay		X
6	20	49	Sand & gravel		X
	49	67	Brn clay		X
	67	73	med Sand	X	
	73	94	Brn clay		X
	94	105	Sandy Clay		X
	105	118	Brn Clay		X
	118	121	Fine Sand	X	
	121	133	Brn clay		X
	133	138	med Sand	X	

RECEIVED
OCT 25 2005
WATER RESOURCES
WESTERN REGION

Completed Depth 138ft (Measurable)
Date: Started 9/26/05 Completed 9/27/05

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 Inc. Firm No. 522
Principal Driller Jeff Clawson Date 10/21/05
and
Driller or Operator II ____ Date ____
Operator I ____ Date ____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

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Form 238-7
11/97 JGE 03

835629 79

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by
Twp 4N Rge 3W Sec 2
1/4 SW 1/4 NW 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0041755
DRILLING PERMIT NO.
Other IDWR No.

2. OWNER:
Name MCCLURE - BLUE CANYON HOMES
Address 23444 WHALE BAY
City MIDDLETON State ID Zip 83644

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

N / W / E / S

Twp. 4 North [X] or South [ ]
Rge. 3 East [ ] or West [X]
Sec. 2 1/4 (10 acres) SW 1/4 (40 acres) NW 1/4 (160 acres)
Gov't Lot County CANYON
Lat: Long:
Address of Well Site SAME City
(Give at least name of road + Distance to Road or Landmark)
Lt. Blk. Sub. Name

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

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

6. DRILL METHOD:
[X] Air Rotary [ ] Cable [ ] Mud Rotary [ ] Other

7. SEALING PROCEDURES:

Seal/Filter Pack Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	18	400#	POUR

Was drive shoe used? [X] Y [ ] N Shoe Depth(s) 118
Was drive shoe seal tested? [X] Y [ ] N How? AIR

8. CASING/LINER:

Diameter	From	To	Guage	Material	Casing	Liner	Welded	Threaded
6	+2	118	250	STEEL	[X]	[ ]	[X]	[ ]
4.5	114	134		PVC	[ ]	[X]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]

Length of Headpipe Length of Tailpipe

9. PERFORATIONS/SCREENS:
[ ] Perforations Method
[X] Screens Screen Type

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
114	134	20		4.5	PVC	[ ]	[X]
						[ ]	[ ]
						[ ]	[ ]

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

11. WELL TESTS:
[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
40		110	2 HR

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

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	5	TOP SOIL/ HARD PAN		
	5	20	SANDY CLAY		
6	20	30	SAND/ SOME CLAY		
	30	70	SAND/ GRAVEL	X	
	70	85	SAND	X	
	85	109	SANDY CLAY		
	109	116	LAYERS SAND/ CLAY		
	116	124	HARD CLAY		
	124	134	SAND / JOINT CLAY	X	

RECEIVED
SEP 06 2005
WATER RESOURCES
WESTERN REGION

Completed Depth 134 (Measurable)
Date: Started 8/29/2005 Completed 8/30/2005

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 DAVIS WELL & PUMP Firm No. 101
Firm Official Date 9/2/2005
and
Driller or Operator Chris Davis Date 9/2/2005
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

63

835570

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 4060069 80
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0041771
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Blackhorse Construction
Address 3910 Hill Rd.
City Boise State Id Zip 83703

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 3, NE 1/4 (10 acres) SE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : **Long:** : :
Address of Well Site 23336 Tundra Ct.
City Caldwell
(Give at least name of road + Distance to Road or Landmark)
Lt. 23 Blk. 1 Sub. Name North Slope Est.

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
perma plug	0	19	550 lbs	10" overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 115'
Was drive shoe seal tested? ☐ Y ☒ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2'4"	115	250	steel	☐	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 5 Length of Tailpipe 0
Packer ☒ Y ☐ N Type 3-R16

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method
Screen Type & Method of Installation Johnson Set pull back

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
115	125	20	6" Tele		S.S.	☐	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
100		123'	2 hrs

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: Good clear color no smell
Depth first Water Encounter 78'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	4	Top Soil		X
|	4	7	Clay & Sand		X
|	7	8	Hrdpan		X
|	8	13	Sand		X
10-6	13	21	Clay & Sand		X
6	21	41	Clay		X
|	41	53	Sandy Clay		X
|	53	71	Brn Clay		X
|	71	78	Sandy clay		X
|	78	81	Sand		X
|	81	96	Brn clay		X
|	96	104	Sandy clay		X
|	104	107	med Sand	X	
|	107	115	Brn clay		X
|	115	125	med Sand	X	

RECEIVED
OCT 25 2005
WATER RESOURCES
WESTERN REGION

Completed Depth 125 ft. (Measurable)
Date: Started 8/25/05 Completed 8/26/05

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 ~~Inc~~ No. 522
Principal Driller Jeff Lawson Date 9/6/05
and
Driller or Operator II ____ Date ____
Operator I ____ Date ____
Principal Driller and Rig Operator *Required*.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

060915

81

Office Use Only
Inspected by _____
Twp____ Rge____ Sec____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63-97-W-0406-000
Other IDWR No. _____

2. OWNER:
Name Hector Villarreal
Address 3404 S. Colorado
City Caldwell State Id Zip 83605

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

N / W / E / S

Twp. 4 North ☑ or South ☐
Rge. 3 East ☐ or West ☑
Sec. 3, ____ 10 acres 1/4 NE 40 acres 1/4 SW 160 acres 1/4
Gov't Lot ____ County _____
Lat: : : Long: : :
Address of Well Site 23547 Stone Ln
City Caldwell
(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	3	25	150	pour in

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6 3/8	+2	98	.250	steel	☑	☐	☑	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 6' Length of Tailpipe 1.5

MICROFILMED JUN 2 1998

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☑ Screens Screen Type 304 stainless

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
99	104	.016				☐	☑
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
5 ft. below ground Artesian pressure _____ lb.
Depth flow encountered 96 ft. Describe access port or control devices: removable well seal/cap

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

Yield gal./min.	Drawdown	Pumping Level	Time
30	5'	10'	1 hr

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered 8'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8"	0	4	dirt		✓
"	4	8	sandy dirt		✓
"	8	9	gravel	✓	
6	9	22	sandy clay		✓
	22	30	silt		✓
	30	38	fine sand	✓	
	38	41	white clay		✓
	41	58	silty clay		✓
	58	66	clay		✓
	66	75	silt		✓
	75	76	good sand	✓	
	76	96	silt w thin layers clay		✓
	96	104	good sand	✓	
	104	105	clay		✓

RECEIVED
MAR 04 1998
Department of Water Resources

RECEIVED
FEB 13 1998
WATER RESOURCES
WESTERN REGION

RECEIVED
DEC 12 1997
Department of Water Resources

RECEIVED
DEC 05 1997
WATER RESOURCES
WESTERN REGION

Completed Depth 105 (Measurable)
Date: Started 7/7/97 Completed 7/10/97

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 Robinson Well Drilling Firm No. 490
Firm Official Ralph Robinson Date 7/10/97
and
Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

2nd Hse Sog Kerr

State law requires that this report be filed with the Director, **Department of Water Resources within 30** days after the completion or abandonment of the well.

1. WELL OWNER

Name LARRY LE[redacted]MASTER

Address CALDWELL IDAHO

Owner's Permit No. ____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☒ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 134 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+1 feet	133 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? ☒ Yes ☐ No

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation ____ inches by ____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name ____

Type ____ Model No. ____

Diameter ___ Slot size ___ Set from ____ feet to ____ feet

Diameter ___ Slot size ___ Set from ____ feet to ____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel ____

Placed from ____ feet to ____ feet

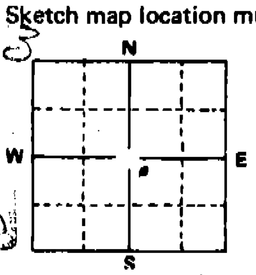
Surface seal depth 18 Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

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

6. LOCATION OF WELL

Sketch map location must agree with written location.

63



Subdivision Name ____

Lot No. ____ Block No. ____

County CANYON

NW ¼ SE ¼ Sec. 3, T. 4 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 60 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow ____

Temperature ____ °F. Quality GOOD 4ERDS.

Artesian closed-in pressure ____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other AIR

Discharge G.P.M.	Draw Down	Hours Pumped
15	20	3

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	4	TOPSOIL		✓
	4	5	HARDPAN		✓
	5	32	BROWNSAND		✓
	32	74	GRAVEL		✓
	74	80	BROWN SAND		✓
	80	110	SANDY BROWN CLAY		✓
	110	130	BROWN SAND		✓
	130	134	BROWN CLAY		✓
	134		WHITE SAND	✓	

001157

10.

Work started 3-15-75 finished 3-24-75

11. DRILLERS CERTIFICATION

Firm Name METZLER WELL DRL Firm No. 93

Address RT. 1 HOMEDALE IDA Date 8-4-75

Signed by (Firm Official) Kenneth Metzler

and

(Operator) ____

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

8362258 3

163 Form 238-7 3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. DRILLING PERMIT NO. __ - __ - -419 -53
Other IDWR No. _____

2. OWNER:
Name CORY HAMRICK
Address 9935 GANTERBURY
City BOISE State ID Zip 83704

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

N / W / E / S

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 2 1/4 (10 acres) SW 1/4 (40 acres) SW 1/4 (160 acres)
Gov't lot _____ County CANYON
Lat: : : Long: : :
Address of Well Site TUNDRA CT.
City MIDDLETON
(Give at least name of road + Distance to Road or Landmark)

Lt. 20 Blk. 1 Sub. Name NORTHSLOPE ESTATES

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	18	450	POUR

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	118	250	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 8' Length of Tailpipe _____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
123	128	250		5"	SS	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
63ft. below ground Artesian Pressure ____ lb
Depth flow encountered 120 ft. Describe access port or control devices: WELL CAP

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

Yield gal/min.	Drawdown	Pumping Level	Time
50		115	1 HR

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered 75

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	4	TOP SOIL		☒
10"	4	18	BROWN CLAY		☒
6"	18	35	BROWN CLAY		☒
6"	35	75	GRAVEL		☒
6"	75	114	SAND CLAY STRIPS	☒	
6"	114	120	TAN CLAY		☒
6"	120	128	SAND	☒	

RECEIVED
SEP 27 2005
WATER RESOURCES
WESTERN REGION

ORIGINAL

Completed Depth: 128 (Measurable)
Date: Started 09/22/2005 Completed 09/22/2005

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 GEORGE POST WELL DRILLING Firm No. 563
Firm Official _____ Date 09/23/2005
Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

Date: 9/23/2005 Time:2:19:52 PM

63 Attn: Rob Amended well log O.K. RW 5/1/06

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by 836415
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. ___ - ___ - -419 -55
Other IDWR No. REVISED 04/28/2006

2. OWNER:
Name BOB WRIGHT
Address 318
City PETRA WAY State ID Zip 83607

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

N
W E
S

Twp 4 North ☒ or South ☐
Rge 3 East ☐ or West ☒
Sec 3 1/4 (10 acres) SE 1/4 (40 acres) NW 1/4 (160 acres)

Gov't lot ____ County CANYON
Lat: : : Long: : :
Address of Well Site 14085 SILVER RIDGE RD.
City CALDWELL
(Give at least name of road + Distance to Road or Landmark)

Lt 2 Blk 1 Sub. Name SLEEPY HOLBIN

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	18	450	POUR

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	113	250	STEEL	☒	☐	☒	☐
5"	107	115	250	STEEL	☒	☐	☒	☐
4"	15	115		PVC	☐	☒	☐	☐

Length of Headpipe 8' Length of Tailpipe ____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
115	120	020		5"	S.S.	☐	☐
115	119			4"	SS	☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
58ft. below ground Artesian Pressure ____ lb
Depth flow encountered 114 ft Describe access port or control devices: WELL CAP

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

Yield gal/min.	Drawdown	Pumping Level	Time
90		100	1 HR

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered 75

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	4	TOP SOIL		☒
10"	4	18	BROWN CLAY		☒
6"	18	37	BROWN CLAY		☒
6"	37	56	GRAVEL		☒
6"	56	75	BROWN CLAY		☒
6"	75	109	SAND AND CLAY STRIPS	☒	
6"	109	114	TAN CLAY		☒
6"	114	120	SAND	☒	
			WELL MADE FINE SAND/PUT		
			4" SCREEN AND LINER IN TO STOP		
			FINE SAND		

RECEIVED MAY 05 2006 WATER RESOURCES WESTERN REGION
RECEIVED MAY 01 2006 WATER RESOURCES WESTERN REGION

ORIGINAL
REVISED

Completed Depth: 120 (Measurable)
Date: Started ~~09/29/2005~~ 4-27-06 Completed ~~09/30/2005~~

13. DRILLER'S CERTIFICATION 4-27-06
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name GEORGE POST WELL DRILLING Firm No. 563

Firm Official ____ Date ~~09/30/2005~~

Supervisor or Operator ____ Date 4-27-06
(Sign once if Firm Official & Operator)

Date: 4/28/2006 Time: 8:14:21 AM

836415

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. DRILLING PERMIT NO. __-__-__-419-55
Other IDWR No.

2. OWNER:
Name BOB WRIGHT
Address 318
City PETRA WAY State ID Zip 83607

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

N / W / E / S

Twp 4 North ☒ or South ☐
Rge 3 East ☐ or West ☒
Sec 3 1/4 (10 acres) SE 1/4 (40 acres) NW 1/4 (160 acres)
Gov't lot County CANYON
Lat: : : Long: : :
Address of Well Site 14085 SILVER RIDGE RD.
City CALDWELL
(Give at least name of road + Distance to Road or Landmark)
Lt 2 Blk 1 Sub. Name SLEEPY HOLBIN

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONTITE	0	18	450	POUR

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	113	250	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 8' Length of Tailpipe

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
~~105~~	~~200~~	020		5"	S.S.	☐	☐
115	120					☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
58ft. below ground Artesian Pressure lb
Depth flow encountered 114 ft. Describe access port or control devices: WELL CAP

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

Yield gal/min.	Drawdown	Pumping Level	Time
90		100	1 HR

Water Temp. Bottom hole temp
Water Quality test or comments:
Depth first Water Encountered 75

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	4	TOP SOIL		☒
10"	4	18	BROWN CLAY		☒
6"	18	37	BROWN CLAY		☒
6"	37	56	GRAVEL		☒
6"	56	75	BROWN CLAY		☒
6"	75	109	SAND AND CLAY STRIPS	☒	
6"	109	114	TAN CLAY		☒
6"	114	120	SAND	☒	

ORIGINAL
RECEIVED
OCT 04 2005
WATER RESOURCES
WESTERN REGION

Completed Depth: 120 (Measurable)
Date: Started 09/29/2005 Completed 09/30/2005

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 GEORGE POST WELL DRILLING Firm No. 563
Firm Official Date 09/30/2005
Supervisor or Operator Date
(Sign once if Firm Official & Operator)

Date: 10/3/2005 Time: 7:51:25 AM

SCANNED
FEB 19 2006

63

Form 238-7
11/97 JGE

844113 86

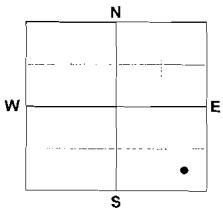
Office Use Only
Inspected by
Twp Rge Sec
1/4 1/4 1/4
Lat: : : Long: : :

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0047730
DRILLING PERMIT NO.
Other IDWR No. 63-W-228-001

2. OWNER:
Name Sidney Roberts
Address 23117 White Oak Dr.
City Caldwell State ID Zip 83605

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



Twp. 4 North X or South
Rge. 3 East or West X
Sec. 3 1/4 (10 acres) SE 1/4 (40 acres) SE 1/4 (160 acres)
Gov't Lot County Canyon
Lat: 43 42.481' Long: 116 40.606'
Address of Well Site 23117 White Oak Dr.
City Caldwell
(Give at least name of road + Distance to Road or Landmark)
Lt. 5 Blk. 1 Sub. Name Sleepy Hollow

4. USE:
Domestic Municipal Monitor Irrigation
Thermal X 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'	10 Sacks	Overbore

Was drive shoe used? X Y N Shoe Depth(s) 86'
Was drive shoe seal tested? X Y N How? Air

8. CASING/LINER:

Diameter	From	To	Guage	Material	Casing	Liner	Welded	Threaded
6"	+2'	86'	.250	Steel	X		X	
5"	80'	88'	.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
88'	98'	.020		5"	SS		X

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
55 ft. below ground Artesian pressure lb.
Depth flow encountered 65 ft. Describe access port or control devices: Cap

11. WELL TESTS:
Pump Bailer X Air Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
40 gpm	80'	80'	1 Hr.

Water Temp. 56 Bottom hole temp. 56
Water Quality test or comments:
Depth first Water Encounter 65'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10"	0	4'	Top Soil		
10"	4'	18'	Brown Clay		
6"	18'	30'	Brown Clay		
6"	30'	48'	Gravel		
6"	48'	63'	Sand		
6"	63'	76'	Heaving Sand	X	
6"	76'	83'	Sand		
6"	83'	88'	Brown Clay		
6"	88'	98'	Sand	X	

SCANNED RECEIVED
AUG 15 2007 JAN 17 2007
WATER RESOURCES WESTERN REGION

Completed Depth 98' (Measurable)
Date: Started 1/5/2007 Completed 1/8/2007

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 Date 1/9/2007
and
Driller or Operator Date 1/9/2007
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
9/82

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

87

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Darrel + Sherri Anglen

Address 8212 Blue Ridge Ln. Boise, Id. 83705

Owner's Permit No. 63-90-Z-036

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal

☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

☐ Other ______ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary

☐ Cable ☐ Dug ☐ Other ______

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other ______

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1'6" feet	54 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? ☒ Yes ☐ No

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation ______ inches by ______ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name ______

Type ______ Model No. ______

Diameter ___ Slot size ___ Set from ___ feet to ___ feet

Diameter ___ Slot size ___ Set from ___ feet to ___ feet

Gravel packed? ☐ Yes ☒ No ☐ Size of gravel ______

Placed from ______ feet to ______ feet

Surface seal depth 30 Material used in seal: ☐ Cement grout ☒ Bentonite ☐ Puddling clay ☐ ______

Sealing procedure used: ☒ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth

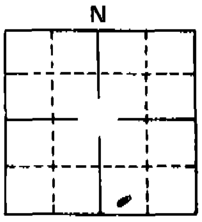
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata

Describe access port ______

6. LOCATION OF WELL

Sketch map location must agree with written location.

N

W  E

S

Subdivision Name ______

Lot No. ______ Block No. ______

MICROFILMED AUG 11 1992

County Canyon

SE ¼ SE ¼ Sec. 3, T. 4 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 18'6" feet below land surface.

Flowing? ☐ Yes ☒ No G.P.M. flow ______

Artesian closed-in pressure ______ p.s.i.

Controlled by: ☐ Valve ☐ Cap ☐ Plug

Temperature ___ °F. Quality ______

Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other ______

Discharge G.P.M.	Pumping Level	Hours Pumped
10	30'	1

080109

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	8	topsoil		✓
	8	21	silt + sand		✓
	21	22	clay		✓
	22	25	clay + sand		✓
	25	30	clay		✓
	30	32	gravel	✓	
	32	40	clay + sand	✓	
	40	45	sand	✓	
	45	54	clay		✓
	54	55	sand	✓	

RECEIVED
APR 2 1990
Department of Water Resources

10.

Work started 3/4/90 finished 3/6/90

11. DRILLERS CERTIFICATION

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

Firm Name Gem State Drilling Firm No. 277

Address 290 N. Eagle Rd. Eagle Date 3/6/90

Signed by (Firm Official) LeRoy E. Guille

and

(Operator) David L. Guille

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

Form 238-7
9/82

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

88

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

W

gw

1. WELL OWNER

Name Phillip Villarreal c/o Rick Sweaney

Address Caldwell, Idaho 83605

Owner's Permit No.

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2'6" feet	58 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

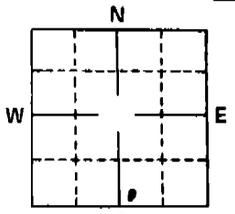
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 20' Material used in seal: ☐ Cement grout ☐ Bentonite ☒ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
SW ¼ SE ¼ Sec. 3, T. 4 N/S, R. 3 E/W.

7. WATER LEVEL

Static water level 6 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
30		2

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	20	sand & clay layers	x	
6	20	55	sand & clay layers	x	
6	55	62	clay		x
6	62	70	sand	x	

RECEIVED
MAY 14 1985
Department of Water Resources
Western Regional Office

0025933
MICROFILMED

10.

Work started 10-05-84 finished 10-05-84

11. DRILLERS CERTIFICATION

02

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

Firm Name BILL DOTY WELL DRILLING Firm No. 42
Address RT. 7 BX. 311 Caldwell, Idaho 83605 Date 1-15-85
Signed by (Firm Official) Bill Doty
and
(Operator) Bob Doty

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

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

Received 9-10-74

1. WELL OWNER

Name viking con.

Address MIDELTON ID.

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

_____

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 48 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	6 inches	+ 1 feet	47 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

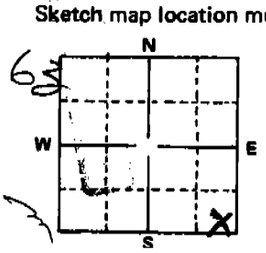
Placed from _____ feet to _____ feet

Surface seal depth 18 Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

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

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

SE ¼ SE ¼ Sec. 3, T. 4 ☐N/S, R. 3 ☐E/W

7. WATER LEVEL

Static water level 7 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature _____ ° F. Quality good

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other

Discharge G.P.M.	Draw Down	Hours Pumped
60	10	2

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	-1	10	top soil & haed pan		X
8	10	18	clay		X
6	18	30	clay into gravel	X	
6	30	40	gravel into clay		X
6	40	48	clay into light gray sand	XX	

001159

10.

Work started 5/10/74 finished 5/11/74

11. DRILLERS CERTIFICATION

Firm Name D& D WELL DRILLING Firm No. 254

Address 310 s, 11street Date 9/17/74

Signed by (Firm Official) _____

and

(Operator) _____

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

Form 238-7
1/78

DSI

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

90

1. WELL OWNER

Name Ray Johnson

Address Box 123 Middleton, IDAHO

Owner's Permit No. _____

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches +	Top feet	1 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

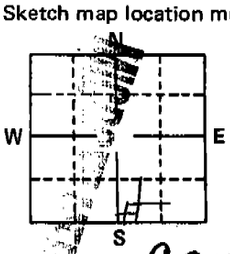
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 18 Material used in seal: ☐ Cement grout ☒ Puddling clay ☐ Well cuttings
Sealing procedure used: ☒ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port SANitary well seal

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____

County CANYON
Fruitdale Farms sec 3-4-3 Blk 45 less tax 1
SW ¼ SE ¼ Sec. 3, T. 4 (N) S, R. 3 E (W)

7. WATER LEVEL

Static water level 45 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
30	70	2

85296

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	Top	1	Top Soil		✓
6	1	5	Clay & SAND		✓
6	5	10	HARD PAN		✓
6	10	18	Clay & SAND		✓
6	18	28	GRAVEL		✓
6	28	40	Clay & streaks of SAND		✓
6	40	55	SAND	✓	
6	55	80	Hearing SAND	✓	
6	80	101	Clay & streaks of SAND	✓	

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JAN 29 19
Department of Water Resources
Western Regional Office

RECEIVED
DEC 15 1982
Department of Water Resources

10.

Work started 12-1-81 finished 12-23-81

11. DRILLERS CERTIFICATION

20

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

Firm Name Daugherty Well Drilling Firm No. 333
Address Rt 2 Wilder, Idaho Date 12-9-81
Signed by (Firm Official) Duane Daugherty
and
(Operator) Duane Daugherty

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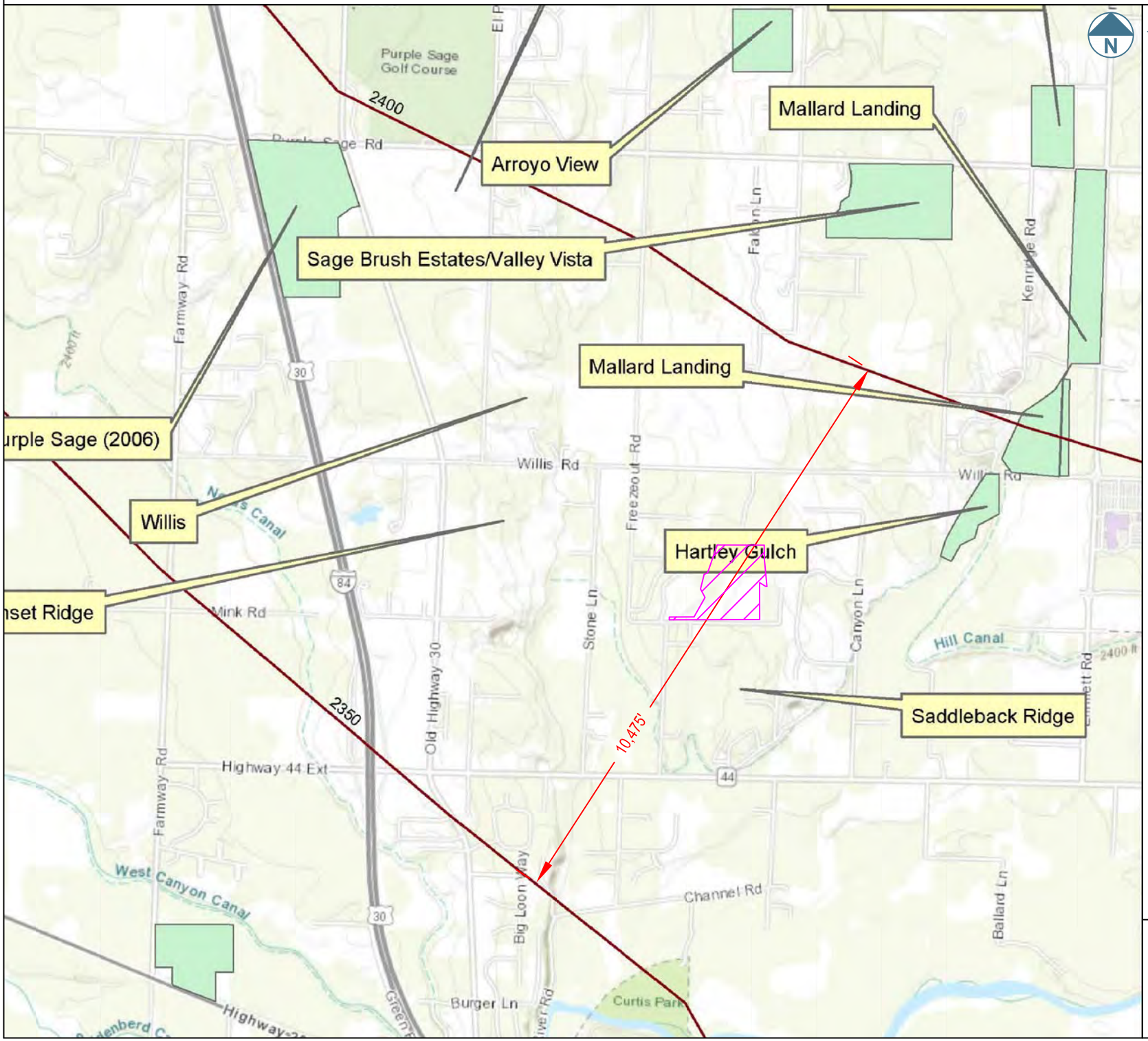
Appendix V IDEQ GROUNDWATER CONTOUR MAP

IDEQ Groundwater Contours



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

SCALE

0 0.25 0.5

(Mile)

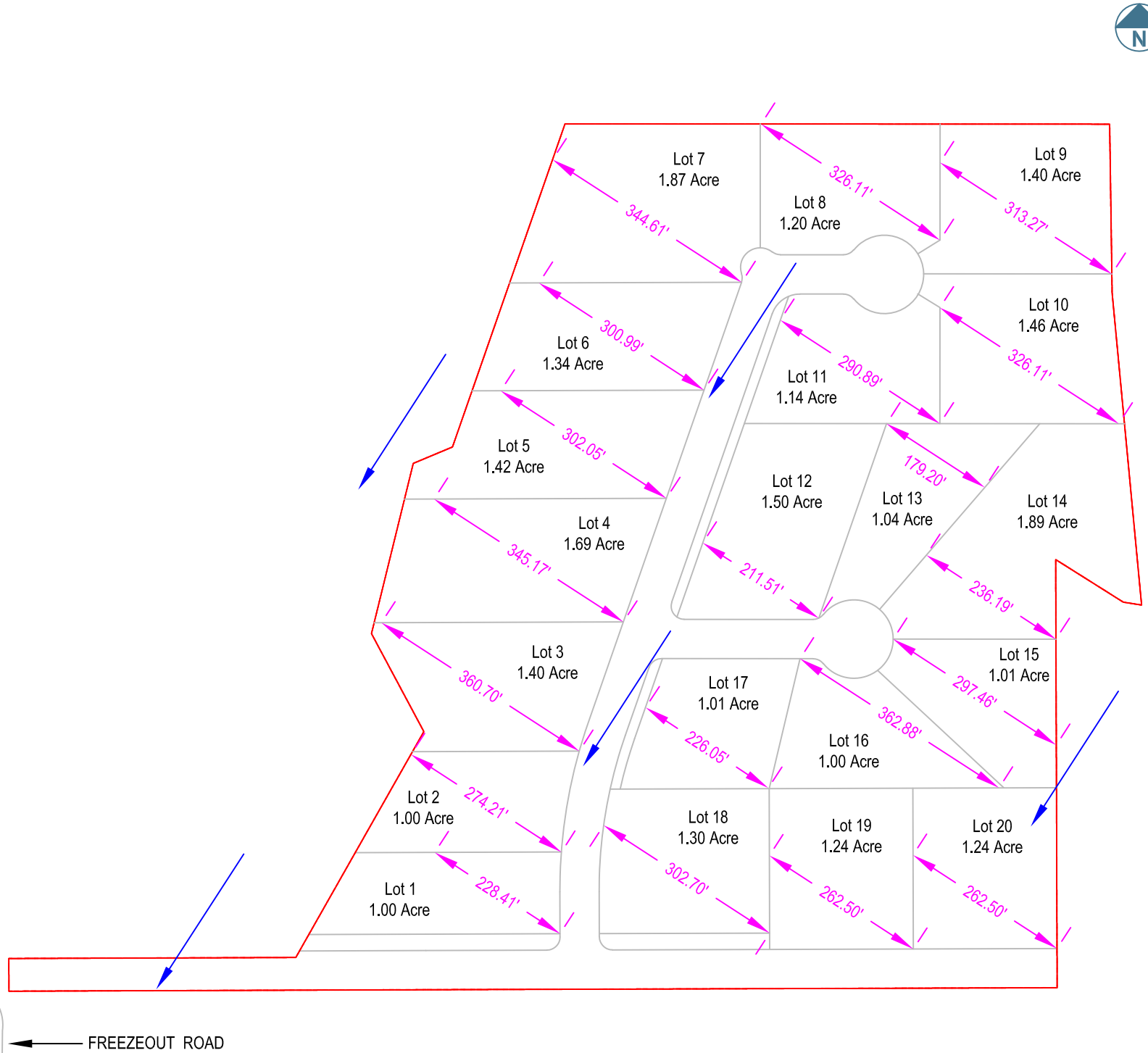
Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS
2791 S. Victory View Way
Boise, ID 83709
Phone: (208) 376-4748
Fax: (208) 322-6515
Web: oneatlas.com

Appendix VI SITE PLAN WITH AQUIFER WIDTH MAP FOR INDIVIDUAL LOTS

Site Map with Individual Lot Aquifer Widths Perpendicular to Groundwater Flow Direction



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Groundwater Flow Direction

SCALE
0 150 300
(Feet)

Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS
2791 S. Victory View Way
Boise, ID 83709
Phone: (208) 376-4748
Fax: (208) 322-6515
Web: oneatlas.com

Appendix VII HISTORIC PRECIPITATION/CLIMATE DATA FOR PROJECT LOCATION

U.S. Climate Data

Monthly Geo

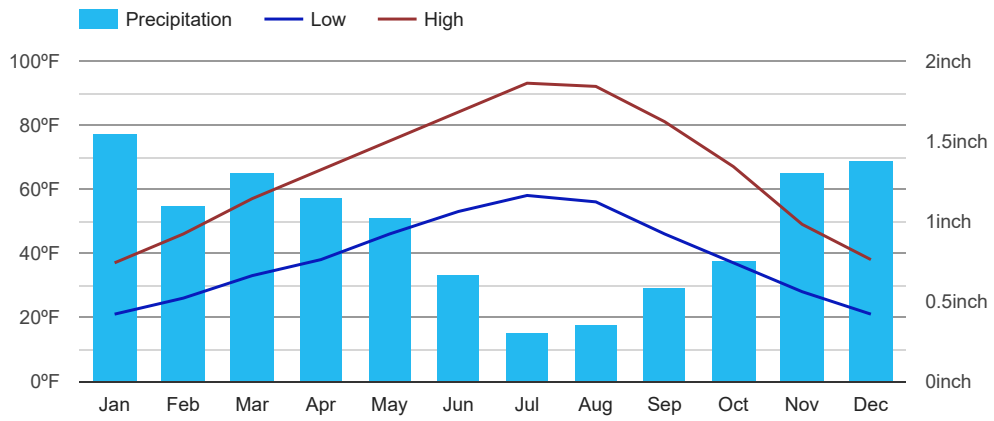
Climate Caldwell - Idaho

	Ja (January)	Fe (February)	Ma (March)	Ap (April)	Ma (May)	Ju (June)
Hi	37	46	57	66	75	84
Lo	21	26	33	38	46	53
Pre.	1.54	1.10	1.30	1.14	1.02	0.67

	Ju (July)	Au (August)	Se (September)	Oc (October)	No (November)	De (December)
Hi	93	92	81	67	49	38
Lo	58	56	46	37	28	21
Pre.	0.31	0.35	0.59	0.75	1.30	1.38

Hi : Average high in °F - Lo : Average low in °F - Pre. : Average precipitation in inch - DP : Days with precipitation - Sun : Hours of sunshine

Caldwell Climate Graph - Idaho Climate Chart



Annual high temperature	65°F
Annual low temperature	39°F
Average annual precip.	11.45 inch

Share

Station Data

Monthly averages Caldwell
Longitude: -116.636, Latitude: 43.6419
Average weather Caldwell, ID - 83605

Monthly: 1981-2010 normals

Abbreviations

Ja (January): January, Fe (February): February, ...

Appendix VIII SITE LOCATION WITH VICINITY MONITORING WELLS MAP AND MONITORED WELL DATA

Vicinity Monitoring Well Locations

Figure 6

NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Well Location (#)

SCALE

0 0.125 0.25

(Mile)

Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS

2791 S. Victory View Way
Boise, ID 83709

Phone: (208) 376-4748
Fax: (208) 322-6515
Web: oneatlas.com

Well #	Agency	WellNumber	AgencyWellName	SampleDate	Type	Name	Value	Units
A	IDEQ	25	04N03W03BACA1	19970821	Nutr	Nitrate	2.94	mg/l
B	IDEQ	26	04N03W03CABA1	19970820	Nutr	Nitrate	0.184	mg/l
C	IDEQ	27	04N03W03DDCC	19970821	Nutr	Nitrate	0.312	mg/l
D	IDEQ	2122	04N03W03AAD	20130521	Nutr	Nitrate	2.68	mg/l
	IDEQ	2122	04N03W03AAD	20130521	Nutr	Nitrate	2.3	mg/l
E	IDEQ	2126	04N03W03AAA	20130521	Nutr	Nitrate	4.2	mg/l
	IDEQ	2126	04N03W03AAA	20130521	Nutr	Nitrate	3.99	mg/l
F	IDEQ	2134	04N03W03AAA	20130521	Nutr	Nitrate	3.28	mg/l
	IDEQ	2134	04N03W03AAA	20130521	Nutr	Nitrate	2.8	mg/l
	IDEQ	2134	04N03W03AAA	20130521	Nutr	Nitrate	3.41	mg/l
	IDEQ	2134	04N03W03AAA	20130521	Nutr	Nitrate	3.4	mg/l
G	IDEQ	2151	04N03W02BCA	20130521	Nutr	Nitrate	3.4	mg/l
	IDEQ	2151	04N03W02BCA	20130521	Nutr	Nitrate	4.07	mg/l
H	IDEQ	2180	04N03W02BCA	20130528	Nutr	Nitrate	6.3	mg/l
	IDEQ	2180	04N03W02BCA	20130528	Nutr	Nitrate	6.12	mg/l
I	DEQ	587		20071025		Nitrate	0.32	mg/l
J	ISDA	6601001		19960306		Nitrate	0.01	mg/l
K	DEQ	4371591166714		20060706		Nitrate	5.05	mg/l
L	ISDA	DY16270851		20060222		Nitrate	4.9	mg/l

Appendix IX NITRATE MASS-BALANCE SPREADSHEETS FOR INDIVIDUAL LOTS

IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	228.41	Site-specific	
Parcel Area (acres)	1	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.10E+04	95.9
Effluent	4.14E+02	3.6
Recharge	5.86E+01	0.5
Total Water Volume	**1.15E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	**5.1**
Avg. Downgradient Nitrate Concentration in GW (mg/l)	**5.6**
Current/Acceptable Lot Size (Acres)	**1.0**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.54E+07	70.9
Septic Tank Effluent Nitrate Mass	1.87E+07	29.1
Recharge Nitrate Mass	1.76E+04	0.0
Total Nitrate Mass	**6.41E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.00 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	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 SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	228.41	Site-specific	
Parcel Area (acres)	1	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.10E+04	95.9
Effluent	4.14E+02	3.6
Recharge	5.86E+01	0.5
Total Water Volume	**1.15E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.9
Current/Acceptable Lot Size (Acres)	1.0

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.54E+07	80.2
Septic Tank Effluent Nitrate Mass	1.12E+07	19.8
Recharge Nitrate Mass	1.76E+04	0.0
Total Nitrate Mass	**5.66E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.00 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	226.05	Site-specific	
Parcel Area (acres)	1.01	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.09E+04	95.8
Effluent	4.14E+02	3.7
Recharge	5.92E+01	0.5
Total Water Volume	**1.13E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.6
Current/Acceptable Lot Size (Acres)	1.0

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.46E+07	70.5
Septic Tank Effluent Nitrate Mass	1.87E+07	29.5
Recharge Nitrate Mass	1.78E+04	0.0
Total Nitrate Mass	**6.33E+07**	

Instructions for Use

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.01 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	70	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	226.05	Site-specific	
Parcel Area (acres)	1.01	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.17E+04	96.1
Effluent	4.14E+02	3.4
Recharge	5.92E+01	0.5
Total Water Volume	**1.22E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l) **5.1**

Avg. Downgradient Nitrate Concentration in GW (mg/l) **4.9**

Current/Acceptable Lot Size (Acres) **1.0**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.80E+07	81.1
Septic Tank Effluent Nitrate Mass	1.12E+07	18.9
Recharge Nitrate Mass	1.78E+04	0.0
Total Nitrate Mass	**5.92E+07**	

Instructions for Use

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.01 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	179.2	Site-specific	
Parcel Area (acres)	1.04	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	8.62E+03	94.8
Effluent	4.14E+02	4.6
Recharge	6.09E+01	0.7
Total Water Volume	**9.10E+03**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.9
Current/Acceptable Lot Size (Acres)	1.0

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	3.53E+07	65.4
Septic Tank Effluent Nitrate Mass	1.87E+07	34.5
Recharge Nitrate Mass	1.83E+04	0.0
Total Nitrate Mass	**5.40E+07**	

Instructions for Use

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.04 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	179.2	Site-specific	
Parcel Area (acres)	1.04	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	8.62E+03	94.8
Effluent	4.14E+02	4.6
Recharge	6.09E+01	0.7
Total Water Volume	**9.10E+03**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.1
Current/Acceptable Lot Size (Acres)	1.0

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	3.53E+07	75.9
Septic Tank Effluent Nitrate Mass	1.12E+07	24.0
Recharge Nitrate Mass	1.83E+04	0.0
Total Nitrate Mass	**4.66E+07**	

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.04 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	290.89	Site-specific	
Parcel Area (acres)	1.14	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.40E+04	96.7
Effluent	4.14E+02	2.9
Recharge	6.68E+01	0.5
Total Water Volume	**1.45E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.3
Current/Acceptable Lot Size (Acres)	1.1

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.74E+07	75.4
Septic Tank Effluent Nitrate Mass	1.87E+07	24.5
Recharge Nitrate Mass	2.00E+04	0.0
Total Nitrate Mass	**7.60E+07**	

Instructions for Use

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.14 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	290.89	Site-specific	
Parcel Area (acres)	1.14	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.40E+04	96.7
Effluent	4.14E+02	2.9
Recharge	6.68E+01	0.5
Total Water Volume	**1.45E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.7
Current/Acceptable Lot Size (Acres)	1.1

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.74E+07	83.7
Septic Tank Effluent Nitrate Mass	1.12E+07	16.3
Recharge Nitrate Mass	2.00E+04	0.0
Total Nitrate Mass	**6.86E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.14 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	326.11	Site-specific	
Parcel Area (acres)	1.2	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.57E+04	97.0
Effluent	4.14E+02	2.6
Recharge	7.03E+01	0.4
Total Water Volume	**1.62E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.1
Current/Acceptable Lot Size (Acres)	1.2

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.43E+07	77.5
Septic Tank Effluent Nitrate Mass	1.87E+07	22.5
Recharge Nitrate Mass	2.11E+04	0.0
Total Nitrate Mass	**8.30E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.20 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	262.5	Site-specific	
Parcel Area (acres)	1.24	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.26E+04	96.3
Effluent	4.14E+02	3.2
Recharge	7.27E+01	0.6
Total Water Volume	**1.31E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.4
Current/Acceptable Lot Size (Acres)	1.2

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.18E+07	73.5
Septic Tank Effluent Nitrate Mass	1.87E+07	26.5
Recharge Nitrate Mass	2.18E+04	0.0
Total Nitrate Mass	**7.04E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.24 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	262.5	Site-specific	
Parcel Area (acres)	1.24	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.26E+04	96.3
Effluent	4.14E+02	3.2
Recharge	7.27E+01	0.6
Total Water Volume	**1.31E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.8
Current/Acceptable Lot Size (Acres)	1.2

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.18E+07	82.2
Septic Tank Effluent Nitrate Mass	1.12E+07	17.8
Recharge Nitrate Mass	2.18E+04	0.0
Total Nitrate Mass	**6.30E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.24 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	302.7	Site-specific	
Parcel Area (acres)	1.3	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.46E+04	96.7
Effluent	4.14E+02	2.8
Recharge	7.62E+01	0.5
Total Water Volume	**1.51E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.2
Current/Acceptable Lot Size (Acres)	1.3

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.97E+07	76.2
Septic Tank Effluent Nitrate Mass	1.87E+07	23.8
Recharge Nitrate Mass	2.29E+04	0.0
Total Nitrate Mass	**7.84E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.30 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	302.7	Site-specific	
Parcel Area (acres)	1.3	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.46E+04	96.7
Effluent	4.14E+02	2.8
Recharge	7.62E+01	0.5
Total Water Volume	**1.51E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.7
Current/Acceptable Lot Size (Acres)	1.3

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.97E+07	84.2
Septic Tank Effluent Nitrate Mass	1.12E+07	15.8
Recharge Nitrate Mass	2.29E+04	0.0
Total Nitrate Mass	**7.09E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.30 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	300.99	Site-specific	
Parcel Area (acres)	1.34	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.45E+04	96.7
Effluent	4.14E+02	2.8
Recharge	7.85E+01	0.5
Total Water Volume	**1.50E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.2
Current/Acceptable Lot Size (Acres)	1.3

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.94E+07	76.1
Septic Tank Effluent Nitrate Mass	1.87E+07	23.9
Recharge Nitrate Mass	2.36E+04	0.0
Total Nitrate Mass	**7.80E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.34 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	300.99	Site-specific	
Parcel Area (acres)	1.34	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.45E+04	96.7
Effluent	4.14E+02	2.8
Recharge	7.85E+01	0.5
Total Water Volume	**1.50E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.7
Current/Acceptable Lot Size (Acres)	1.3

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.94E+07	84.1
Septic Tank Effluent Nitrate Mass	1.12E+07	15.9
Recharge Nitrate Mass	2.36E+04	0.0
Total Nitrate Mass	**7.06E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.34 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	313.27	Site-specific	
Parcel Area (acres)	1.4	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.51E+04	96.8
Effluent	4.14E+02	2.7
Recharge	8.20E+01	0.5
Total Water Volume	**1.56E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.2
Current/Acceptable Lot Size (Acres)	1.4

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.18E+07	76.8
Septic Tank Effluent Nitrate Mass	1.87E+07	23.2
Recharge Nitrate Mass	2.46E+04	0.0
Total Nitrate Mass	**8.05E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.40 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	313.27	Site-specific	
Parcel Area (acres)	1.4	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.51E+04	96.8
Effluent	4.14E+02	2.7
Recharge	8.20E+01	0.5
Total Water Volume	**1.56E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.7
Current/Acceptable Lot Size (Acres)	1.4

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.18E+07	84.6
Septic Tank Effluent Nitrate Mass	1.12E+07	15.3
Recharge Nitrate Mass	2.46E+04	0.0
Total Nitrate Mass	**7.30E+07**	

Instructions for Use

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.40 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	302.05	Site-specific	
Parcel Area (acres)	1.42	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.45E+04	96.7
Effluent	4.14E+02	2.8
Recharge	8.32E+01	0.6
Total Water Volume	**1.50E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.2
Current/Acceptable Lot Size (Acres)	1.4

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.96E+07	76.1
Septic Tank Effluent Nitrate Mass	1.87E+07	23.8
Recharge Nitrate Mass	2.50E+04	0.0
Total Nitrate Mass	**7.82E+07**	

Instructions for Use

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.42 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	302.05	Site-specific	
Parcel Area (acres)	1.42	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.45E+04	96.7
Effluent	4.14E+02	2.8
Recharge	8.32E+01	0.6
Total Water Volume	**1.50E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.7
Current/Acceptable Lot Size (Acres)	1.4

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.96E+07	84.2
Septic Tank Effluent Nitrate Mass	1.12E+07	15.8
Recharge Nitrate Mass	2.50E+04	0.0
Total Nitrate Mass	**7.08E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.42 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	326.11	Site-specific	
Parcel Area (acres)	1.46	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.57E+04	96.9
Effluent	4.14E+02	2.6
Recharge	8.55E+01	0.5
Total Water Volume	**1.62E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.1
Current/Acceptable Lot Size (Acres)	1.5

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.43E+07	77.5
Septic Tank Effluent Nitrate Mass	1.87E+07	22.5
Recharge Nitrate Mass	2.57E+04	0.0
Total Nitrate Mass	**8.30E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.46 Acre Lots - Standard Septic System	Parcel Identification
1/8/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	211.51	Site-specific	
Parcel Area (acres)	1.5	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.02E+04	95.3
Effluent	4.14E+02	3.9
Recharge	8.79E+01	0.8
Total Water Volume	**1.07E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.7
Current/Acceptable Lot Size (Acres)	1.5

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.17E+07	69.1
Septic Tank Effluent Nitrate Mass	1.87E+07	30.9
Recharge Nitrate Mass	2.64E+04	0.0
Total Nitrate Mass	**6.04E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.50 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	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 SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	211.51	Site-specific	
Parcel Area (acres)	1.5	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.02E+04	95.3
Effluent	4.14E+02	3.9
Recharge	8.79E+01	0.8
Total Water Volume	**1.07E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.0
Current/Acceptable Lot Size (Acres)	1.5

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.17E+07	78.8
Septic Tank Effluent Nitrate Mass	1.12E+07	21.1
Recharge Nitrate Mass	2.64E+04	0.0
Total Nitrate Mass	**5.29E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.50 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	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 SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	345.17	Site-specific	
Parcel Area (acres)	1.69	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.66E+04	97.0
Effluent	4.14E+02	2.4
Recharge	9.90E+01	0.6
Total Water Volume	**1.71E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.1
Current/Acceptable Lot Size (Acres)	1.7

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.81E+07	78.5
Septic Tank Effluent Nitrate Mass	1.87E+07	21.5
Recharge Nitrate Mass	2.97E+04	0.0
Total Nitrate Mass	**8.68E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.69 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	344.61	Site-specific	
Parcel Area (acres)	1.87	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.66E+04	96.9
Effluent	4.14E+02	2.4
Recharge	1.10E+02	0.6
Total Water Volume	**1.71E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.1
Current/Acceptable Lot Size (Acres)	1.9

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.80E+07	78.4
Septic Tank Effluent Nitrate Mass	1.87E+07	21.5
Recharge Nitrate Mass	3.29E+04	0.0
Total Nitrate Mass	**8.67E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.87 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	236.19	Site-specific	
Parcel Area (acres)	1.89	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.14E+04	95.6
Effluent	4.14E+02	3.5
Recharge	1.11E+02	0.9
Total Water Volume	**1.19E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.5
Current/Acceptable Lot Size (Acres)	1.9

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.66E+07	71.4
Septic Tank Effluent Nitrate Mass	1.87E+07	28.6
Recharge Nitrate Mass	3.32E+04	0.1
Total Nitrate Mass	**6.53E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.89 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	236.19	Site-specific	
Parcel Area (acres)	1.89	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.14E+04	95.6
Effluent	4.14E+02	3.5
Recharge	1.11E+02	0.9
Total Water Volume	**1.19E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l) **5.1**

Avg. Downgradient Nitrate Concentration in GW (mg/l) **4.9**

Current/Acceptable Lot Size (Acres) **1.9**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.66E+07	80.6
Septic Tank Effluent Nitrate Mass	1.12E+07	19.4
Recharge Nitrate Mass	3.32E+04	0.1
Total Nitrate Mass	**5.78E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.89 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

OF THE

RURAL HOMESITE & UNDEVELOPED PASTURE

LOCATED AT

23442 FREEZEOUT ROAD

IN

CALDWELL, IDAHO

PREPARED FOR:

PIONEER HOMES
ATTN: BRIAN FALCK
719 1ST STREET SOUTH, STE. B
NAMPA, IDAHO 83651

EFFECTIVE DATE:

APRIL 21, 2021

SAGE FILE NO. 21-03640

PREPARED BY

Brenda Magnuson

BRENDA L. MAGNUSON
CAL/EPA REA#06973

AND

Kendra Szudera

KENDRA M. SZUDERA
ASSOCIATE

SAGE ENVIRONMENTAL SERVICES LLC
18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208.867.8876
SAGE.BOISE@GMAIL.COM

April 21, 2021

Pioneer Homes
ATTN: Brian Falck
719 1st Street South, Ste. B
Nampa, Idaho 83651

Re: Phase I Environmental Site Assessment for the Rural Homesite & Undeveloped Pasture Property located at 23442 Freezeout Road in Caldwell, Idaho.

Dear Mr. Falck:

The following Executive Summary provides a synopsis of our findings and conclusions for this Phase I Environmental Site Assessment Report of the above-referenced property. More detail is presented in the text of this report.

Executive Summary

Sage Environmental Services, LLC (Sage Environmental or Sage) has performed a Phase I Environmental Site Assessment in conformance with the ASTM Practice E 1527-13 for the Rural Homesite & Undeveloped Pasture Property located at 23442 Freezeout Road in Caldwell, Idaho. Any exception to or deletion from this practice is described in Section 2.3 “Scope of Services” and Section 2.5 “Limitations and Restrictions” of this report.

Findings

The findings listed below identify any possible concerns that could be recognized environmental conditions, historical recognized environmental conditions, and are de minimis conditions.

Type of Information Evaluated	Finding
User-Provided Information	No environmental concerns
Environmental Database Records	See below
Nitrate Priority Area	The Property is located just inside the Ada/Canyon County; Purple Sage Nitrate priority area. Well sampling on nearby sites have revealed nitrate levels ranging from 0.01 mg/l (west) and 0.32 mg/L (northwest), to 5.05 mg/L (northeast) and are considered elevated, but are well below the EPA and State drinking water standard of 10.0 mg/L.
Historical use Information	No environmental concerns
Site Reconnaissance	See below
Potable Water Supply/ Wells	A private well, located northeast of the dwelling, provides potable water to the home site on the Property. According the Well Construction Log we obtained from the Idaho Department of Water Resources, the domestic well was installed during 1974 and was constructed to a depth of 67 feet below ground surface (bgs). During construction, water was first encountered at a depth of 40 feet bgs.
Sewage Disposal System/ Septic Systens	An on site septic tank and drainfield system provides sewage disposal for the dwelling on the Property. It is likely that this septic system is located near the dwelling; however, we have no information about the exact location of this system.

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Hazardous Substances and Petroleum Products	Several containers of oils, lubes, household maintenance products, and a few cans of gasoline are stored inside the shop building; these materials are stored in containers of 5-gallons in size or smaller. None of these containers appeared to be leaking or have leaked. Of the nearly fifty (50) 55-gallon drums we identified on the site, two to three (2-3) of the drums and three (3) 5-gallon containers contain an unknown liquid; a small amount of staining around two (2) of the containers indicate that they may contain waste oil. During our inspection of the Property, we saw no visual indications that the site has been, or is being contaminated by hazardous waste or other hazardous substances. We did not observe any visual evidence of the historic use of hazardous materials and we observed no significant stains, odors, or unnaturally stressed vegetation (indicators that the improper use of these material has occurred).
Drums/Unidentified Substance Containers	Approximately fifty (50) 55-gallon drums are located on the Property. Most of these drums are empty or contain trash; however, two (2) to three (3) drums located in the field to the northeast of the dwelling contain unknown liquids. The two (2) to three (3) drums containing liquids have tight-fitting lids. One (1) drum has limited staining on the ground that appears to be waste oil. *This drum is located within "Area #2" on the Site Plan.* *Note: The number of drums is an approximate number because some of the empty drums are located within piles of material and debris that are difficult or impossible to see.*
Pits, Ponds, or Lagoons	Although not currently present, aerial photos indicate that Sand Hollow Creek, forms a seasonal pond or shallow pool of water near the mid-point of the western Property boundary. During inspection of the site, we observed the area on the site were the creek temporarily ponds or pools along the western boundary.
Stained Soil or Pavement	Minor surface stains are visible on the gravel drive in front of the shop building (south side). These surface stains appear to have been caused by fluid drips from parked vehicles or equipment. We observed staining on the ground beneath one of the drums and a 5-gallon container within "Area #2" (shown on the Site Plan). This staining is limited and appears to be caused by waste oil.
Vapor Encroachment Concerns	No environmental concerns

Opinions

Listed below are our professional opinions of the impact (if any) on the Property of the conditions identified in the Findings:

Type of Information Evaluated	Opinion
Environmental Database Records	See below
Nitrate Priority Area	Although it is possible that the groundwater beneath the Property may contain elevated levels of nitrates, our review of area well sampling data indicates that nitrate levels would likely be well below the EPA and Idaho drinking water standard of 10.0 mg/L. *This is not a "recognized environmental condition" or "REC".*
Site Reconnaissance	See below

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Potable Water Supply/ Wells	The presence of a private well on the Property is not a cause for concern; however, if the future use of the Property does not include the use of the well, it should be properly abandoned in accordance with the Idaho Department of Water Resources (IDWR) rules. Due to the relatively shallow depth of the well (less than 100 feet bgs), we recommend sampling of the well prior to it's continued use as a potable water source. The analyses should include bacteria (Total Coliform and E. Coli) and Nitrates.
Sewage Disposal System/ Septic Systens	The presence of an on site septic tank and drainfield system is not a cause for concern; however, if the future use of the Property doe not include the use of the septic system, it should be closed in accordance with Idaho Health Department Rules.
Hazardous Substances and Petroleum Products	In their current state, the use and storage of oils, lubes, household maintenance products, and cans of gasoline on the site are not a cause for concern and are not considered a "REC"; however, any of these materials that are no longer in use should be disposed of in accordance with Federal, State, and local rules and regulations.
Drums/Unidentified Substance Containers	Of the fifty (50)± drums located on the site, two (2) to three (3) drums located in the field to the northeast of the dwelling (area #2 on Site Plan) contain an unknown liquid. All of these drums/containers have been on the Property for an extended period of time; it is unclear if the staining around the drum/container in area #2 was caused by spills or if the container has leaked; however, it is our opinion that these drums and the soil staining is not considered a "REC" because the staining on the ground around one (1) drum and one (1) 5-gallon container appears limited to the top 6-inches of soil, a "de minimus" condition. Although not considered a "REC" the contents of the drums should be determined and properly disposed of in accordance with Federal, State, and local rules and regulations.
Pits, Ponds, or Lagoons	The seasonal pond/pool formed by Sand Hollow Creek is not a cause for concern with respect to the environmental integrity of the Property.
Stained Soil or Pavement	One of the drums and/or 5-gallon containers (area #2 on Site Plan) appears to have leaked waste oil onto to the ground. This staining appears to be waste oil and to the extent observable, the leakage appears to be have been present for some time. Currently, this staining appears to be minor (limited to the top six-inches of soil or less). This type of surface stain is considered "de minimus" and is not a "REC". It is possible that the removal of drums, containers, or piles of debris could reveal additional staining that was not observable during the site visit. Any staining extending beyond the top 6-inches of soil may require further evaluation.

Based on our review of available information, Sage Environmental has identified no “recognized environmental conditions” or “RECs” in connection with the Property. We do recommend that the contents of the drums and containers of liquids stored outside the shop should be determined and disposed of in accordance with Federal, State, and local rules/regulations.

The Client should be aware that the removal of the piles of equipment, miscellaneous materials, and debris, may reveal additional drums, containers, and/or soil staining that require further evaluation.

This report is limited to the information made available to or known to Sage Environmental at the time this report was issued. If any additional information becomes available, it will be forwarded to you for your evaluation. We appreciate having the opportunity to assist you with this project. Please feel free to contact me if you have any questions concerning this report.

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Sincerely,

Brenda Magnuson

Brenda Magnuson
Principal/Registered Environmental Assessor
Cert. #06973

Reviewed By:

Kendra Szudera

Kendra Szudera, Associate

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INDEX OF TABLES

DEFINITION OF ACRONYMS USED

ASTM:	American Standards for Testing and Materials
AST:	Aboveground Storage Tank
AULs:	Activity and Use Limitations
CERCLA:	Comprehensive Environmental Restoration, Compensation, and Liability Act
CERCLIS:	Comprehensive Environmental Response, Compensation, and Liability Information System
CERCLIS-NFRAP:	Comprehensive Environmental Response, Compensation, and Liability Information System-No Further Remedial Action Planned
CFR:	Code of Federal Regulations
CESQG:	Conditionally Exempt Small Quantity Generator
CORRACTS:	Corrective Action Sites
CREC:	Controlled Recognized Environmental Condition
DEQ:	Division of Environmental Quality
EPA:	Environmental Protection Agency
EPCRA:	Emergency Planning and Community Right to Know Act ((also known as SARA Title III)
ERNS:	Emergency Response Notification System
ESA:	Environmental Site Assessment
FOIA:	U.S. Freedom of Information Act
FR:	Federal Register
HREC:	Historic Recognized Environmental Condition
IC:	Institutional Controls
LLP:	Landowner Liability Protections under the Brownfields Amendments
LQG:	Large Quantity Generator
LUST:	Leaking Underground Storage Tank
MSDS:	Material Safety Data Sheet
NCP:	National Contingency Plan
NPL:	National Priority List
NFRAP:	former CERCLIS sites where no further remedial action is planned under CERCLA.
NPDES:	National Pollutant Discharge Elimination System
PCBs:	Polychlorinated Biphenyls
PRP:	Potentially Responsible Party (pursuant to CERCLA
RCRA:	Resource Conservation and Recovery Act
RCRIS:	RCRA Information Systems
RECs:	Recognized Environmental Conditions
SARA:	Superfund Amendments and Reauthorization Act of 1986 (amendment to CERCLA)
SQG:	Small Quantity Generator
TSCA:	Toxic Substances Control Act
TSD:	Treatment Storage and Disposal
TSDF:	Hazardous Waste Treatment, Storage or Disposal Facility
USC:	United States Code
USG:	United States Geological Survey
UST:	Underground Storage Tank
VEC:	Vapor Encroachment Condition
VES:	Vapor Encroachment Screening

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1.0 PROPERTY SUMMARY

PROPERTY TYPE:	Rural Homesite and Pasture
ADDRESS:	23442 Freezeout Road Caldwell, Idaho
LOCATION:	The Property is located along the north side of a gravel access lane for Freezeout Road, east of Freezeout Road between Willis Road (north) and State Highway 44 (south), northeast of Caldwell and west of Middleton, in Caldwell, Canyon County, Idaho.
LEGAL DESCRIPTION:	"Tax 19480 in the South ½ of the Northeast ¼ , Less Tax #97652, and situated in the Southwest ¼ of the Northeast ¼ and the Southeast ¼ of the Northwest ¼ of Section 3, Township 4 North, Range 3 West of the Boise-Meridian in Canyon County, Idaho."
OWNER OF RECORD:	Thornton Gallup, LLC PO Box 1495 Nampa, Idaho 83653
SITE SIZE/CONFIGURATION:	31.40± acres; irregular, in shape (Figure 2)
DESCRIPTION OF IMPROVEMENTS:	Site improvements are limited to the homesite (southeast quadrant of the Property) and consist of the following: One (1), 1,404 SF, single-level dwelling constructed during 1976; One (1), three-bay shop building located northwest of dwelling. This is a steel framed structure with a metal roof and exterior. In this building, the west ⅔ of the floor is dirt; the east ⅓ of the floor is a concrete slab.
DATE OF SITE RECONNAISSANCE:	April 12, 2021 & April 20, 2021 (follow-up)
DATE OF REPORT:	April 21, 2021
CONCLUSIONS:	SAGE ENVIRONMENTAL SERVICES, LLC has performed a Phase I Environmental Site Assessment in substantial conformance with the ASTM Practice E 1527-13 for the Rural Homesite & Undeveloped Pasture Property located at 23442 Freezeout Road in Caldwell, Idaho. Based on our review of reasonably ascertainable information, SAGE ENVIRONMENTAL SERVICES has no "recognized environmental conditions" or "RECs" in connection with the Property. The removal of the piles of equipment, miscellaneous materials, and debris, may reveal additional drums, containers, and/or soil staining that require further evaluation.

[1] "recognized environmental condition": The presence or likely presence of any hazardous substances or petroleum products on a Property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include "de minimis" conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of governmental agencies. Conditions determined to be de "minimis" are not recognized environmental conditions.

2.0 INTRODUCTION

2.1 General

Sage Environmental Services, LLC (Sage Environmental) was contracted by Mr. Brian Falck of Pioneer Homes (the Client) to perform a Phase One Environmental Site Assessment (ESA) of the Property located at 23442 Freezeout Road (hereinafter referred to as "Property" or "site") in Caldwell, Idaho (Figure 1).

2.2 Location & Legal Description

Location:	The Property is located along the north side of a gravel access lane for Freezeout Road, east of Freezeout Road, between Willis Road (north) and State Highway 44 (south), in Canyon County, Idaho.
Legal Description:	"Tax 19480 in the South ½ of the Northeast ¼ , Less Tax #97652, and situated in the Southwest ¼ of the Northeast ¼ and the Southeast ¼ of the Northwest ¼ of Section 3, Township 4 North, Range 3 West of the Boise-Meridian in Canyon County, Idaho."
Address:	23442 Freezeout Road in Caldwell, Idaho.

2.3 Detailed Scope of Services

This Environmental Site Assessment followed the methodology set forth in ASTM Standard Practice E-1527-13 and is based on site observations and the use of readily available information. The Scope of Work for this assessment includes the following:

- Reviewing the Federal, State, and local regulatory agency lists and databases of facilities that use, store, and/or generate hazardous substances or petroleum products, and to determine the impacts of such sites on the Property with respect to "recognized environmental conditions";
- Reviewing site information for geologic and hydrogeologic characteristics for vulnerability and other possible areas of concern;
- Reviewing available city directories (i.e. Polk's City Directories), historical maps, geological maps, available historic aerial photographs, and other records to evaluate past property uses and occupancy;
- Reviewing available information regarding the historical use of the property and the adjacent properties;
- Reviewing 50-year chain-of-title information for historical background, as requested by the client;
- Conducting an on-site inspection of the property to observe and evaluate evidence of contamination from hazardous petroleum substances or wastes (stained soil, stressed vegetation, etc.), and other potential sources of contamination, including transformers or other electrical equipment possibly containing polychlorinated biphenyls (PCBs);
- Contacting electric utilities to determine PCB content of utility-owned transformers or other electrical equipment, if necessary;
- Interviewing available people familiar with past use of the property and adjacent properties;
- Visually inspecting adjacent properties and classifying their possible effects on the subject property; and
- Documenting findings and site conditions with photographs.

2.4 Significant Assumptions

In preparing this report, Sage has relied upon certain verbal information and representations provided by State and local government employees, as well as others familiar with the Property history. Sage Environmental did not attempt to independently verify the accuracy or the completeness of that information, but we did not detect any inconsistency or omission of a nature

that would affect the conclusions in this report; the conclusions are based in whole or in part on the validity of such information.

2.5 Limitations & Restrictions

This Phase I Environmental Site Assessment is restricted to the Scope of Services outlined in Section 2.3 of this report and is restricted to observations made by SAGE during the inspection of the Property and research of standard environmental record sources. With the exception of recorded violations discovered upon routine review of environmental regulatory records, the Scope of Services did not address compliance with Federal, State or local laws, regulations, ordinances, or codes. This report also expressly excludes the collection or analysis of any samples for asbestos-containing materials, radon gas, or lead-based paint. In addition, radon screening, lead in drinking water, endangered species, indoor air quality, cultural resources, industrial hygiene, health and safety, and high voltage power lines were not included in this report. No samples of soil, air, water, asbestos or lead-based paint were collected as part of this investigation, and SAGE makes no representations or warranty regarding the presence of asbestos or lead-based paint and the quality of the air, water, or soil on the Property. This Scope of Services did not include sampling of drums, tanks, and other containers for laboratory analysis.

Phase I Environmental Site Assessments are non-comprehensive in nature and are subject to a variety of limitations, including those limitations presented below. This report is not intended to identify all potential concerns or to eliminate all risk associated with the operational responsibilities or transferring property title. SAGE did not consider other factors or site information other than that presented in this report. The agencies and individuals contacted by SAGE had only limited information concerning the Property. When necessary, SAGE made efforts to interview agency personnel and individuals with knowledge of the site, but information collected in this manner can be subject to errors, including personal interpretation and memory. Judgments that lead to conclusions and recommendations are generally made with an incomplete knowledge of the subsurface and historical conditions applicable to the site. More extensive studies, including sampling and/or chemical analysis, may reduce the uncertainties associated with this assessment. SAGE should be notified for additional consultation if the client would like to reduce uncertainties beyond the level associated with this assessment.

2.6 User Reliance

Authorization to perform this assessment was given in the form of an email request from Mr. Brian Falck, Project Manager for Pioneer Homes (hereinafter, “Client” and also the “User” of this report), on March 29, 2021. As agreed, the scope of this assessment report is limited to the matters expressly covered herein. This report is prepared for the sole benefit of the Client and persons doing business with the Client. Any other person or entity, without the express written authorization of the Client may not rely upon the information contained in this report.

3.0 SITE DESCRIPTION

3.1 PURPOSE

The purpose of this Phase I Environmental Site Assessment is to qualify for the innocent landowner defense and the Bona Fide Prospective Purchaser (BFPP) defense under 2002 Brownfields amendment to the Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA). In addition to CERCLA liability, the purpose of this Phase I Environmental Site Assessment is to identify and understand potential environmental conditions that could materially impact the operation of the business associated with the property. The purpose of the ASTM E1527 standard is to define good commercial and customary practice for conducting a Phase I Environmental Site Assessment, with the goal of identifying “recognized environmental conditions” (RECs) at the subject property.

RECOGNIZED ENVIRONMENTAL CONDITION (REC): A REC is defined in E1527-13 as "the presence or likely presence of any hazardous substances or petroleum products in, on or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment”. The term includes hazardous substances or petroleum products even under conditions in compliance with existing laws. The term is not intended to include “de minimis” conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be “de minimis” are not “recognized environmental conditions.”

3.1.2 Additional Environmental Terms

HISTORICAL RECOGNIZED ENVIRONMENTAL CONDITIONS (HRECS): A Historical Recognized Environmental Condition (HREC) refers to a past release that has been remediated to below “residential” standards and given regulatory closure with no use restrictions. HREC is defined by ASTM E1527-13 as “a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).”

The HREC category is distinct from the Controlled Recognized Environmental Condition (CREC), which applies to sites that have received regulatory closure but are still subject to controls.

CONTROLLED RECOGNIZED ENVIRONMENTAL CONDITIONS (CRECS): The term CREC is intended to clarify the level of risk these sites represent. The environmental professional is required to list any CRECs (as well as RECs) identified in the findings and conclusions section of the Phase I Environmental Site Assessment report.

The ASTM definition of CREC in the E1527-13 standard is as follows: “a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).”

BUSINESS ENVIRONMENTAL RISK: Business Environmental Risk is defined by ASTM as "a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. Consideration of business environmental risk issues may involve addressing one or more non-scope considerations.”

The common non-scope environmental business risk items referred to include:

- Asbestos
- Lead Paint
- Lead in Drinking Water
- Radon
- Wetlands
- Ecological Resources
- Endangered Species
- Cultural and Historic Resources
- Regulatory Compliance
- Industrial Hygiene
- Health and Safety
- Indoor Air Quality
- Biological Agents
- Mold

Any non-scope environmental business risk items addressed by SAGE (if required by the Lender and/or Client) is discussed in Section 9.0 “Non-ASTM-Scope Items and Additional Services”.

3.2 SITE VICINITY & GENERAL CHARACTERISTICS

The Property is comprised of a single parcel of land, 31.40± acres in size and is located in Canyon County, outside the city limits of Caldwell, Idaho. The Property is located within an area of Caldwell characterized by rural residential uses and irrigated farmland/pasture, many of which are being developed as residential subdivisions (Figure 2).

3.3 PHYSICAL SETTING

According to the USGS Quadrangle map for the site and vicinity, the Property is located on the foothill bench northeast of Caldwell. The site is generally level and lies at an elevation of approximately 2,520 feet above mean sea level. The north end of the site, just north of the C.L.E. Lateral lies 7-10 feet below the bank of the lateral. The C.L.E. Lateral irrigation ditch is the closest surface water to the site; it borders a portion of the eastern Property boundary from the north before traversing westward along the homesite, angling southward along the west side of the homesite, then finally, traversing eastward along the south end of the homesite before exiting the Property along the southern boundary. Sand Hollow Creek borders the Property along the west (Figure 3a).

3.4 Geology & Hydrology

3.4.1 Geology

We compiled information regarding generalized local hydrogeologic and geologic conditions from published technical literature. In the vicinity of the Property, groundwater data for both the shallow water table aquifer and for the deeper water supply aquifer systems were modified from Dion (1972), Squires et al (1992), and from previous investigations conducted by other consultants. Information about the surface and subsurface materials located under the Property was retrieved from Malde and Powers (1962), and Othberg and Stanford (1992), and from previous investigations conducted by other consultants.

The Property is situated within the western portion of the Snake River Plain subdivision of the Columbia Plateau Physiographic Province. Landforms consist of six terrace levels of alluvial gravel deposits. The Property is located on the foothill bench above the flood plain of the current channel of the Boise River. The shallow subsurface contains 100 to 500 feet of Quaternary-age alluvium that consists of interfingered and interlayered sand, silt, clay, and gravel; all primarily deposited by the Boise River. These fluvial and lacustrine (river and lake) sediments unconformably overlay the Quaternary-Tertiary-age Idaho Group deposits, which consist of several thousand feet of poorly consolidated clastic sediments and basaltic volcanic rock. The sediments consist of sand, silt, and clay of variable thickness and lateral extent.

3.4.2 Hydrology

In the area, two aquifers are known to exist. 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. According to a Well Construction Log for the Property, groundwater for this shallow, unconfined aquifer is probably at a depth of 40 to 45 feet below ground surface. Many domestic wells draw water from the shallow aquifers. The general groundwater flow direction in the area is to the west/ southwest towards the Boise River, although seasonal changes and localized impacts from canals and irrigation ditches can create varying flow directions. The delineated source water assessment area for the Property can best be described as an eastward trending corridor approximately four miles long and one-quarter mile wide (IDEQ, 2003).

At a depth of approximately 300 to 500 feet below ground surface, the region's principal water supply aquifer is contained within the Upper Idaho Group strata. In the vicinity of the Property, several hundred feet of silt and clay separate the water supply and water table aquifers, thereby reducing the potential for flow between the two aquifers; however, recently compiled subsurface data suggests that the boundaries between aquifer units and hydrogeologic settings are gradational and may result in hydraulic communication across the system. This appears to be most evident through pump test data obtained from the east Boise area. To date, due to an incomplete database, an adequate hydrogeologic model describing the nature and extent of the hydraulic continuity between the shallow and deep aquifers has not been fully developed. Until such a study is completed, the potential for migration between the two aquifers will remain poorly understood.

3.5 Current Use of Surrounding Area

The Property lies within a rural area of northeast of Caldwell where development is characterized by a mixture of rural residential uses and irrigated farm land, some of which are being converted to residential subdivision developments.

4.0 USER-PROVIDED INFORMATION

4.1 Title Records

A Chain of Title was not requested by the Client.

4.2 Environmental Liens or Activity & Use Limitations

We use the following resources, when available, to determine the presence of activity use limitations (AULs) or engineering controls (ECs) that may be recorded or connected to the Property title:

- Title Commitment (when provided by the Client)
- Environmental Database Records
- Environmental Questionnaire and Disclosure Statement
- Title Commitment: For this report, a Title Commitment was not provided by the Client.

Environmental Database Records: We used information obtained from the Environmental Database Records to identify those sites that were assigned a “no further action” status from the Idaho DEQ using activity use limitations (AULs) or engineering controls (ECs). We did not find deed restrictions limiting the use of the Property (AULs), nor did we find any institutional or engineering controls (ECs) listed for the site.

Environmental Questionnaire and Disclosure Statements: We used the Environmental Questionnaire and Disclosure Statement to determine the Owner’s knowledge of activity use limitations (AULs) or engineering controls (ECs) for the Property. According to the Environmental Questionnaire and Disclosure Statement, completed by Brian Falck of Pioneer Homes (the Client/User and also a representative of the Property Owner), the Property Owner has no knowledge of Environmental Liens or Activity and Use Limitations for the Property that may exist on the Property.

4.3 Specialized Knowledge

We have no knowledge of previous Environmental Site Assessments for the Property, nor do we have any knowledge of “recognized environmental conditions” that may have existed on the Property prior to the completion of this report. The Client/User, also the Property Owner, has no knowledge of previous Environmental Site Assessments for the Property, nor do they have any knowledge of “recognized environmental conditions” that may have existed on the Property.

4.4 Commonly Known or Reasonably Ascertainable Information

Under the standards as outlined in ASTM E 1527-13 “Standard Practice for Environmental Site Assessments”, the User of this report has certain responsibilities regarding notification to the preparer of this report. Specifically, the User must notify the preparer of the report of any environmental liens encumbering the Property or any specialized knowledge or information about previous ownership or uses of the Property that may be material to identifying “recognized environmental conditions”. Brian Falck of Pioneer Homes is not aware of any environmental issues in connection with the Property.

4.5 Valuation Reduction For Environmental Issues

The client has no reason to believe that the value of the Property has been reduced for any environmental issues and asserts that the purchase price reasonably reflects the fair market value of the Property.

4.6 Owner, Property Manager, and Occupant Information

The owner/manager of the Property is:

Thornton Gallup, LLC
PO Box 1495
Nampa, Idaho 83653

The site is currently unoccupied.

4.7 Reason for Performing the Phase I ESA

It is the understanding of Sage Environmental that the Property is under development by the Client. This development requires relocating and/or retiling a portion of the C.L.E. Lateral. The Bureau of Reclamation, the agency responsible for maintaining and modifying irrigation systems within the State, requires permit for such activities and this Phase I Environmental Site Assessment (ESA) report is a part of the permit requirements. This Phase I ESA also fulfills one of the requirements for the innocent landowner defense and a “Bona Fide Prospective Purchaser” (BFPP) defense subject to CERCLA liability

5.0 HISTORICAL RECORDS & ENVIRONMENTAL DATABASE REVIEW

5.1 STANDARD ENVIRONMENTAL RECORDS

The purpose of the records review is to obtain and review records that will help identify recognized environmental conditions in connection with the property. A description of the environmental databases is described in the following paragraphs:

NATIONAL PRIORITIES LIST (NPL), LISTED AND DELISTED SITES: A list of hazardous waste sites in the United States eligible for long-term remedial action (cleanup) financed under the federal Superfund program. Environmental Protection Agency (EPA) regulations outline a formal process for assessing hazardous waste sites and placing them on the NPL. The NPL is intended primarily to guide EPA in determining which sites warrant further investigation.

The inclusion of a facility in the National Priorities List does not reflect a judgment of its owner or operator or make the owner or operator take any action. It also does not assign any liability to any person or company. It serves as a source of information by identifying facilities or other hazardous substance releases that appear to warrant remedial actions.

SUPERFUND (CERCLIS): Superfund is a program administered by the EPA to locate, investigate, and clean up uncontrolled hazardous waste sites throughout the United States. We reviewed the Idaho DEQ's "Waste Remediation Site Locator", DEQ's equivalent of the EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list, a registry which lists those sites which are suspected of having received, generated, transported, or disposed of hazardous wastes prior to December 1380; or areas where hazardous wastes were suspected of having been released into the environment. The inclusion on this list is not in itself a judgment about the activities of a Property's owners or operators, but is used to identify those sites which may require further investigation because they may cause environmental or public health problems. The CERCLIS list is used by the Idaho DEQ to track potentially uncontrolled hazardous materials or hazardous waste sites. The Idaho DEQ also maintains a registry of those sites where clean up or remediation activities have taken place but no further action is planned.

RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION RCRA INFO: Hazardous waste generators, transporters, treaters, storers and disposers of hazardous waste are required to provide information on their activities to state environmental agencies. These agencies then provide the information to regional and national US Environmental Protection Agency (EPA) offices through the Resource Conservation and Recovery Act Information (RCRA Info) System. Information on cleaning up after accidents or other activities that result in a release of hazardous materials to the water, air or land must also be reported through RCRA Info.

INSTITUTIONAL CONTROL/ENGINEERING CONTROL REGISTRIES: Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site. For instance, zoning restrictions prevent site land uses, like residential uses, that are not consistent with the level of cleanup.

ICs are used when contamination is first discovered, when remedies are ongoing and when residual contamination remains onsite at a level that does not allow for unrestricted use and unlimited exposure after cleanup. The National Contingency Plan (NCP) emphasizes that ICs are meant to supplement engineering controls and that ICs will rarely be the sole remedy at a site.

VOLUNTARY CLEANUP SITES: In Idaho, DEQ's Voluntary Cleanup Program (VCP) was created in 1996 by the Idaho Land Remediation Act to encourage innovation and cooperation between the state, local communities and private parties to revitalize properties with hazardous substance or petroleum contamination. The Idaho Land Remediation Rules, adopted in 1997, detail implementation procedures for the program. The Idaho Land Remediation Act was modified in 2005 to incorporate the Community Reinvestment Pilot Initiative, a state-funded program to assist with cleanup costs of up to 10 properties whose development is complicated by contamination issues. Currently, all 10 slots in the pilot program are filled.

EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) LIST: The Emergency Response Notification System (ERNS) is a computer database containing information on reports of oil and hazardous substance releases that have occurred throughout the United States and have been reported to the National Response Center (NRC), the ten EPA Regions, or the U.S. Coast Guard. The initial notification data may be updated with information from various Federal, State, and local response authorities as appropriate. ERNS data can be used to analyze reports of releases, support emergency planning efforts, and assist decision makers in developing spill prevention programs.

STATE AND TRIBAL LANDFILL OR SOLID WASTE DISPOSAL SITES: A listing of solid waste landfills (active and closed sites) is maintained by various agencies, including the Idaho DEQ. The list of closed solid waste landfills and dumps is not necessarily complete because older landfills or dumping areas may not be known.

STATE AND TRIBAL VOLUNTARY CLEANUP SITES: During 1996, the Idaho Legislature created the Idaho Land Remediation Act, DEQ's Voluntary Cleanup Program (VCP), to encourage innovation and cooperation between the state, local communities, and private parties working to revitalize properties with hazardous substance or petroleum contamination. During 1997, DEQ developed the Idaho Land Remediation Rules that detail the implementation of the Voluntary Cleanup Program. Sites that have entered in to the Voluntary Cleanup Program are identified on the Idaho Waste Division Inventory database.

BROWNFIELDS (BMS): The EPA Brownfields Management System (BMS) stores information reported by EPA Brownfields grant recipients on Brownfields properties assessed or cleaned up with grant funding. The Idaho DEQ's Brownfields Assessment Program funds and conducts environmental assessments of Brownfield sites when a lack of environmental information has complicated site redevelopment or reuse. For each site, DEQ will produce a final report that reveals whether a site is clean, lightly contaminated, or heavily contaminated, determines the nature and extent of the contamination, identifies potential cleanup options, and estimates cleanup costs (if any). Brownfields are abandoned or underutilized properties where the reuse is complicated by actual or perceived environmental contamination. With the help of Idaho Counties, Cities, Economic Development Districts, Urban Renewal Entities, developers and brokers, DEQ is developing a comprehensive, statewide inventory of Brownfields. Sites that qualify for and are being remediated under the Brownfields program are identified on the Idaho Waste Division Inventory database and on EPA's EnviroMapper for Brownfields site. DEQ's Brownfields Assessment Program funds and conducts environmental assessments of Brownfields sites when a lack of environmental information has complicated site redevelopment or reuse. For each site, DEQ will produce a final report that:

- Reveals whether a site is clean, lightly contaminated, or heavily contaminated
- Determines the nature and extent of the contamination
- Identifies potential cleanup options estimates cleanup costs (if any).

TOXICS RELEASE INVENTORY (TRI): The Toxics Release Inventory (TRI) contains information about more than 650 toxic chemicals that are being used, manufactured, treated, transported, or released into the environment. Manufacturers of these chemicals are required to report the locations and quantities of chemicals stored on-site to State and local governments. The reports are submitted to the EPA and state governments. EPA compiles this data in an on-line, publicly accessible national computerized database.

ADDITIONAL ENVIRONMENTAL DATABASE SOURCES: For our Federal database information, we used a database operated by Nationwide Environmental Title Research Company (NETROnline) and crosschecked by SAGE, using a database (Idaho Waste Remediation Facility Mapper) maintained by the Idaho DEQ, for properties or incidents reported within the area defined by the ASTM E 1527-13 Minimum Search Distances. The NETROnline database report is presented in the addenda of this report.

A summary of those sites identified in the Environmental Database that are located within the ASTM search radii is provided in Table 1, below:

TABLE 1: SUMMARY OF ENVIRONMENTAL DATABASE SITES

STANDARD ENVIRONMENTAL RECORD SOURCE	ASTM SEARCH DIST. (MILES)	NUMBER OF SITES IDENTIFIED	IDENTIFICATION OF SITES FOUND: DISTANCE AND DIRECTION FROM PROPERTY
Federal NPL site list	1.0	0	
Federal Delisted NPL site list	0.5	0	
Federal CERCLIS list	0.5	0	
Federal CERCLIS NFRAP (no further remedial action planned)	0.5	0	
Federal CORRACTS facilities list	0.5	0	
Federal RCRA non-CORRACTS TSD facilities list	1.0	0	
Federal RCRA generators list	Subject & adj. sites	0	RCRA generators appear in the database; however, none are located within the ASTM-defined search radius.
Federal institutional control/ engineering control registries	Subject & adj. sites	0	
Federal ERNS list	Subject property	0	
State and tribal equivalent NPL	1.0	0	
State and tribal equivalent CERCLIS	0.5	0	
State and tribal landfill or Solid Waste Disposal site list	0.5	0	
State and tribal underground storage tank (UST) lists	Subject & adj. sites	0	
State and tribal leaking underground storage tank (LUST) lists	0.5	0	
State and tribal institutional/ engineering control registries	Subject property	0	
State and tribal voluntary cleanup sites	0.5	0	
State and tribal Brownfield sites	0.5	0	

5.1.1 Additional Environmental Record Sources

We routinely cross-check our database information provided by outside sources with the Idaho DEQ's "Waste Remediation Facility Mapper" program available on the DEQ website. Our crosscheck did not identify any additional sites.

We used the Idaho DEQ's "Nitrate Priority Area Mapping Tool" available on the IDEQ website for information regarding known elevated nitrate levels present within regional groundwater.

A major source of the elevated nitrates is from historic agricultural uses in the area. Our review of this map indicates that most of the Property is located just inside the Ada/Canyon County; Purple Sage Nitrate priority area. Well sampling from nearby sites have revealed nitrate levels ranging from 0.01 mg/l (west) and 0.32 mg/L (northwest), to 5.05 mg/L (northeast). These nitrate level are considered elevated, but are well below the EPA and State drinking water standard of 10.0 mg/L.

5.2 Physical Setting Sources

According to the current (2017) United States Geological Survey (USGS) "Sand Hollow, Idaho" 7.5-Minute Series Quadrangle map, the elevation of the site is approximately 2,520 feet above mean sea level. The site is generally level and lies at an elevation of approximately 2,520 feet above mean sea level. The north end of the site, just north of the C.L.E. Lateral lies 7-10 feet below the bank of the lateral. The C.L.E. Lateral irrigation ditch is the closest surface water to the site; it borders a portion of the eastern Property boundary from the north before traversing westward along the homesite, angling southward along the west side of the homesite, then finally, traversing eastward along the south end of the homesite before exiting the Property along the southern boundary. Sand Hollow Creek borders the Property along the west (Figure 3a).

5.3 Historical Use Information

We established the site history utilizing several sources of information including:

- Historic USGS Quad Maps
- Aerial Photography
- Sanborn Fire Insurance Maps
- Historical Plat Maps
- Canyon County Assessor's Office
- Recorded Land Title Records
- Polk's City Directories for Caldwell, Idaho
- Interviews and/or questionnaires completed by persons having knowledge of the Property and/or its history

The information obtained from these sources regarding past and current uses of the Property and adjoining properties may be incomplete but typically provides a general synopsis of site history.

5.3.1 Aerial Photograph Review

Aerial photography can reveal historical activities or uses of the Property not otherwise documented or observable during the reconnaissance of the site. Aerial photography can also be used to confirm information obtained from other historical sources. The effectiveness of this review technique depends on the quality of the photographs, the available coverage, and the scale of photographs printed.

We obtained aerial photos, including the earliest available and the most recent historical aerial photos displaying the Property and vicinity taken during 1954, 1969, and 1981 from NETROnline Historic Aerials. We also reviewed current and historical satellite imagery for the Property taken during 1992, 2002, 2010, and 2020 from Google Earth™. We reviewed these aerial

photos for historic information on the use of the site and adjacent properties. Photocopies of these aerial photos are presented in the Addenda of this report.

Aerial photographs only provide information on visual indications of land use. No conclusions can be drawn from the photographs alone; however, our review of the aerial photographs did not reveal any obvious signs of dumping, significant spillage, leaks, storage, disposal of hazardous substances, or land use that would necessitate further investigation. A summary of the aerial photography review is presented in Table 2, below:

TABLE 2: AERIAL PHOTOGRAPH REVIEW SUMMARY

SITE FEATURES	1954	1969	1981	1992	2002	2010	2020	COMMENTS
CROP PATTERNS	Y	Y	Y	Y	Y	Y	Y	Crop patterns and/or pasture is visible on the Property in all photos.
STREETS	N	Y	Y	Y	Y	Y	Y	The gravel Freezeout Road access lane is visible along the southern Property boundary from 1969 through 2020.
BUILDINGS	N	N	N	Y	Y	Y	Y	The dwelling is visible on the southeast quadrant fo the site in the 1981 and subsequent photos; the shop building is visible on the site in the 1992 and subsequent photos.
PAVED PARKING AREAS	N	N	N	N	N	N	N	
DRAINAGE	Y	Y	Y	Y	Y	Y	Y	The C.L.E Lateral irrigation canal is visible traversing and bordering the Property in all photos. Sand Hollow Creek is visible along the western boundary in all photos.
CIRCULAR OBJECTS (ABOVE GROUND STORAGE TANKS OR WATER TANKS)	N	N	N	N	N	N	N	
LAGOON OR IMPOUNDMENT	Y	Y	Y	Y	Y	Y	Y	Visible ponding of Sand Hollow Creek, along the western boundary, is visible in all photos.
GROUND SCARS	N	N	N	N	N	N	N	
STANDING LIQUID	N	N	N	N	N	N	N	
STACKED MATERIALS/ OBJECTS	N	N	N	N	N	N	N	
SCATTERED MATERIALS/ OBJECTS	N	N	N	Y	Y	Y	Y	Scattered materials begin to appear north and east of the homesite starting with the 1992 photo, with more materials appearing in subsequent photos.
PILES	N	N	N	Y	Y	Y	Y	Piles of material and debris begin to appear north and east of the homesite starting with the 1992 photo, with more materials appearing in subsequent photos.

(Key: Y=Yes; N=Not Observed; P=Possible, but not clearly resolved; U=Undetermined, not resolvable)

5.3.2 Historical USGS Quadrangle Map(s)

We consulted the 1970 United States Geological Survey (USGS) “Sand Hollow, Idaho” 7.5-Minute Series Quadrangle map for any buildings located on the Property. This map did not indicate the presence of buildings or other developments o the site (Figure 3b).

5.3.3 Sanborn Fire Insurance Maps

Sanborn Maps, constructed by the Sanborn Fire Insurance Company for fire insurance underwriting purposes dating as far back as the late 1800s, can show details of buildings, improvements, and land uses; however, the coverage of these maps is usually limited to older or outdated districts in established towns and cities. During our research of available Sanborn Fire Insurance maps, we found no coverage for the Property and vicinity.

5.3.4 Property Assessor Files

According to the Canyon County Assessor’s Office, the current ownership of the Property is as follows:

Thornton Gallup, LLC
PO Box 1495
Nampa, Idaho 83653

5.3.5 Recorded Land Title Records

A Chain of Title was not requested by the Client. The prior use of the subject Property was determined by SAGE ENVIRONMENTAL, with the aid of historical records and interviews with persons having knowledge of the site and its history. We also use the following resources, when available, to determine the presence of activity use limitations (AULs) or engineering controls (ECs) that may be recorded or connected to the Property title:

- Title Commitment (when provided by the Client) or Chain-of-Title report; For this report, a Chain-of-Title report dating back to 1982 was provided by the Client.
- Environmental Database Records
- Environmental Questionnaire and Disclosure Statement

CHAIN OF TITLE REPORT: The Chain of Title report indicated that the Property was sold or conveyed three times since 1982:

1982: Arthur & Bonnie Ashcraft sold/conveyed the Property to Robert & Virginia Figueredo

2018: Virginia Figueredo sold the Property to Dorothy & Melvin Bonham, and Melvin Bonham, Jr.

ENVIRONMENTAL DATABASE RECORDS: We used information obtained from the Environmental Database Records to identify those sites that were assigned a “no further action” status from the Idaho DEQ using activity use limitations (AULs) or engineering controls (ECs). We did not find deed restrictions limiting the use of the Property (AULs), nor did we find any institution or engineering controls (ECs) listed for the site.

ENVIRONMENTAL QUESTIONNAIRE AND DISCLOSURE STATEMENT: We used the Environmental Questionnaire and Disclosure Statement to determine the Owner’s knowledge of activity use limitations (AULs) or engineering controls (ECs) for the Property. According to the Environmental

Questionnaire and Disclosure Statements, Brian Falck (a representative of the Property owner and developer) has no knowledge of Environmental Liens or Activity and Use Limitations for the Property that may exist on the Property.

5.3.6 Polk's City Directories

Polk's City Directories, published by the R.L. Polk Company as a telephone/address/ business locating publication, can be useful when researching the historical occupants of the Property (by address). SAGE ENVIRONMENTAL reviewed the available Polk's City Directories at the Idaho Historical Library in Boise, Idaho; we found Polk directory coverage for Caldwell that included the Property's immediate vicinity, beginning in 2000 (earliest available) through 2020. As expected, the Property does not appear in the Polk Directory listings (the site has never been developed). The Polk Directory listings indicate that the area surrounding the Property has been used for rural residential purposes.

5.3.7 Zoning/Land Use Records

We reviewed the current and land use designations for the Property from the Canyon County Assessor. Our review of this map indicated that currently, the Property is located outside of the city limits of Caldwell, Idaho and within a Canyon County zoning area designated as "Agricultural" zoning district. According to the Canyon County Zoning Ordinance, "The purposes of the A (Agricultural) Zone are to:

A. Promote the public health, safety, and welfare of the people of the County by encouraging the protection of viable farmland and farming operations;

B. Limit urban density development to Areas of City Impact in accordance with the comprehensive plan;

C. Protect fish, wildlife, and recreation resources, consistent with the purposes of the "Local Land Use Planning Act", Idaho Code title 67, chapter 65;

D. Protect agricultural land uses, and rangeland uses, and wildlife management areas from unreasonable adverse impacts from development; and

E. Provide for the development of schools, churches, and other public and quasi-public uses consistent with the comprehensive plan." (Canyon County Code 7-10-25)

5.3.8 Historical Plat Maps

We researched historical plat maps and/or Atlases, potential resources for identifying past owners of the Property from Historic MapWorks Residential Geneaology™. The earliest map, The Standard Atlas of Canyon County, published in 1915 by George A. Ogle and Co., indicated that the Property was part of an 80-acre parcel of land owned by George Struthers. A second map, Metsker's Atlas of Canyon County, Idaho, published in 1939, indicated that the Property was part of two larger parcels owned by W.W. Waterman (west end) and Daniel W. Kennedy (east end). Neither plat map indicated the presence of buildings or other developments on the site.

5.4 Prior Use Assessment of the Property

We compiled a history of the past Property uses through our review of available maps, aerial photographs, and interviews with individuals associated with the Property. A summary of the past Property uses is presented in the following table:

TABLE 3: Prior Use Summary of Property

1939-1975	1976 - 2021
Irrigated Farm Land and/or pasture	Rural Homesite and Pasture

5.5 Prior Uses of Adjoining Properties

We also compiled a history of the past uses of the adjoining properties through our review of available maps, aerial photographs, and interviews with individuals associated with the Property. Listed below is a summary of the past uses of the adjoining sites:

TABLE 4: Prior Use Summary of Adjacent Properties

	1939	1954	1969	1981	1992	2002	2010	2020
North:	Undeveloped or Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land
South:	Rural Farm Site & Irrigated Farm Land	Rural Farm Site & Irrigated Farm Land	Rural Farm Site & Irrigated Farm Land	Rural Farm Site & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential
East:	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land
West:	Undeveloped or Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Rural Residential & Pasture	Rural Residential & Pasture	Rural Residential & Pasture

6.0 SITE RECONNAISSANCE

Brenda Magnuson of SAGE ENVIRONMENTAL conducted a site reconnaissance of the Property on April 12, 2021 and again on April 2021. At the time of the site reconnaissance, the weather conditions were mostly sunny and cool; the ambient air temperature was 43±°F (April 12th), and 60±°F (April 20th).

6.1 METHODOLOGY & LIMITING CONDITIONS

A visual reconnaissance was conducted on the Property in general accordance with SAGE ENVIRONMENTAL's standard environmental assessment procedures. This reconnaissance consisted of systematically walking the Property to provide an overlapping field of view and noting any "recognized environmental conditions" as encountered. Photographic documentation of pertinent "recognized environmental conditions" and site improvements and also adjacent property uses was made; some of which have been included in the Addenda of this report. In the case of multi-tenant commercial Properties, and the Property has five or fewer current occupants, we make a reasonable attempt to inspect and interview a representative of each tenant space. If there are more than five current occupants, we make a reasonable attempt to inspect and interview the major occupants and those other occupants whose operations are likely to indicate recognized environmental conditions in connection with the Property. For this assessment, the entire site was accessible.

The reconnaissance of the adjacent properties was performed by walking the perimeter of the subject site and observing and photographing the readily accessible and visible areas bordering or adjacent to the subject property and noting potential environmental conditions. During and after the site reconnaissance, we also evaluated adjacent parcels for their potential environmental impact to the Property. Photographs documenting the current condition of the Property are presented in the Addenda. The site reconnaissance focused on the following:

- Evaluating the presence of surface waters on the Property
- An evaluation of the materials used and stored on the Property
- Evidence of contamination by hazardous substances (stains, odors, etc.)
- The presence of aboveground storage tanks (ASTs) or visual indication of underground storage tanks (USTs)
- Evidence of buried solid waste
- Identification of transformers and other electrical equipment potentially containing Polychlorinated Biphenyls (PCBs)
- An evaluation of current land use

6.2 General Site Visit Observations

Table 5: Summary of Site Visit Observations

General Site Observations	Description
Current Use(s) of the Property	Rural Homesite and Pasture
Current Uses of Adjoining Properties	North: Rural Residential & Pasture South: Developing Residential Subdivision West: Rural Residential & Pasture East: Rural Residential & Pasture
Description of Structures & Other Improvements (Figure 4)	One, 1,404 SF, single-level dwelling constructed during 1976, located on the southeast portion of site. Three-bay shop building located northwest of dwelling. This is a steel framed structure with a metal roof and exterior. In this building, the west ⅔ of the floor is dirt; the east ⅓ of the floor is a concrete slab.
Description of Roads	Access to the Property is from a access gravel roadway/lane located along the southern boundary. This unimproved, private road extends to Freezeout Road (west), a paved, two-lane rural roadway with no curbs, gutter, or sidewalks.
Geologic, Hydrogeologic & Topographical Conditions	Most of the site is generally level and at-grade with nearby streets; the north end of the site, just north of the E.L.C. Lateral, lies approximately 7 to 10 feet below the lateral; the west end of the site, near Sand Hollow Creek, slopes slightly downward toward the creek. None of the information we obtained during the course of this assessment indicates that hazardous substances or petroleum products are likely to migrate onto the Property from nearby sites.
Potable Water Supply	A private well, located northeast of the dwelling, provides potable water to the home site on the Property. According the Well Construction Log we obtained from the Idaho Department of Water Resources, the domestic well was constructed during 1974 to a depth of 67 feet below ground surface (bgs). Water was first encountered at a depth of 40 feet bgs. A copy of the well log is included in the Addenda.
Sewage Disposal System	An on site septic tank and drainfield system provides sewage disposal for the dwelling on the Property. It is likely that this septic system is located near the dwelling; however, we have no information about the size and exact location of this system.
Hazardous Substances and Petroleum Products	Several containers of oils, lubes, household maintenance products, and a few cans of gasoline are stored inside the shop building; these materials are stored in containers of 5-gallons in size or smaller. None of these containers appeared to be leaking or have leaked. Of the nearly fifty (50) 55-gallon drums we identified on the site, two (2) to three (3) of the drums and three (3) 5-gallon containers contain an unknown liquid; stains around two of the containers indicate that they may contain waste oil. During our inspection of the Property, we saw no visual indications that the site has been, or is being contaminated by hazardous waste or other hazardous substances. We did not observe any visual evidence of the historic use of hazardous materials and we observed no *significant* stains, odors, or unnaturally stressed vegetation (indicators that the improper use of these material has occurred).
USTs or ASTs	None were identified on the Property.
Odors	None were identified on the Property.
Pools of Liquid	None were identified on the Property.

DRUMS	Approximately fifty (50) 55-gallon drums are located on the Property. Most of these drums are empty or contain trash; however, there are three (3) drums located in the field to the northeast of the dwelling that contain unknown liquids. The drums are located northeast of the dwelling (within "Area #2" on the Site Plan). The drums have tight-fitting lids and most did not show evidence of leaks; however, we did see limited staining on the ground next to the one drum (along with a 5-gallon container next to the drum) located in "Area #2" with limited staining on the ground. This staining appears to be caused by waste oil. Note #1: During our April 12, 2021 inspection, SAGE noted that three (3) drums were located at the northeast corner of the Property, next to the E.L.C. Lateral. Two (2) of the drums contained unknown liquids. Due to the proximity of the drums to the irrigation lateral and the presence of unknown contents, Sage notified the Client of this concern. The Client subsequently removed the three (3) drums. On April 20, 2021, Sage returned to the site to verify the removal of the drums and inspect the ground for evidence of spills or leaks and verified that none were present. A photo of this location is included in the Addenda. *Note #2: The number of drums is an approximate number because some of the empty drums are located within piles of debris and are difficult or impossible to see.*
UNIDENTIFIED SUBSTANCE CONTAINERS	See "Hazardous Substance and Petroleum Products" and "Drums" (above).
PITS, PONDS, OR LAGOONS	Although not currently present, aerial photos indicate that Sand Hollow Creek, forms a seasonal pond or shallow pool of water near the mid-point of the western Property boundary. During our inspection of the site, we observed the area on the site where the creek temporarily ponds or pools along the western boundary. A pile of discarded water heaters, pressure tanks, and miscellaneous equipment is located on the southeastern edge of the pond area. Evidence of contamination was not observed in this area.
STORM DRAINS	None were identified on the Property but may be part of the underground utilities/infrastructure.
STAINED SOIL OR PAVEMENT	Minor surface stains are visible on the gravel drive in front of the shop building (south side). These surface stains appear to have been caused by fluid drips from parked vehicles or equipment. Surface staining was observed on the ground beneath one (1) drum and one (1) 5-gallon container within "Area #2" on the Site Plan. This staining is limited and appears to be caused by waste oil. This stain also appears to be a surface stain limited to the top 6-inches of soil.
STRESSED VEGETATION	During our inspection of the Property, we did not see any unnaturally stressed vegetation on the Property.
SOLID WASTE	Evidence of buried solid waste disposal was not observed on the Property during our site reconnaissance; however, several piles of wood/lumber waste; concrete waste; miscellaneous equipment; 50+ tires; and other miscellaneous items are located on the home site north and east of the dwelling.
WASTE WATER	Wastewater generated on the Property has been limited to domestic-type sewage from the dwelling.
WELLS	As discussed previously, a private well, located northeast of the dwelling, provides potable water to the home site on the Property. According the Well Construction Log we obtained from the Idaho Department of Water Resources, the domestic well was constructed during 1974 to a depth of 67 feet below ground surface (bgs). Water was first encountered at a depth of 40 feet bgs. A copy of the Well Construction Log is included in the Addenda of this report.

SEPTIC SYSTEMS	As discussed previously, an on site septic tank and drainfield system provides sewage disposal for the dwelling on the Property. It is likely that this septic system is located near the dwelling; however, we have no information about the exact location of this system.

7.0 INTERVIEWS

OWNER(S):	In lieu of an interview, we submitted an "Environmental Questionnaire and Disclosure Statements" to Brian Falck, a representative of the Property owner and developer; a copy of the questionnaire is included in the Addenda of this report.
KEY SITE MANAGER:	See above.
OCCUPANTS:	Currently, no occupants.
PAST OWNERS AND/ OR OPERATORS:	We did not interview any past owners and/or occupants of the site.
LOCAL GOVERNMENT OFFICIALS:	For this report, we did not interview any local government officials with to the Property or nearby sites.

8.0 VAPOR ENCROACHMENT

In accordance with ASTM Standard 1527-13, SAGE conducted a vapor encroachment evaluation for the Property utilizing the environmental database and evaluating the contaminated properties within the ASTM-defined "area of concern" (AOC) of ⅓-mile from the Property.

Our review of the environmental databases indicated that there are no contaminated sites situated within the ⅓-mile AOC.

9.0 EVALUATION

9.1 FINDINGS

The findings listed below summarize the information we identified during the course of our inspection of the Property and our research into its history and appropriate database sources. These findings may or may not lead to the identification of any known or suspected recognized environmental conditions, historical recognized environmental conditions, and de minimis conditions:

TYPE OF INFORMATION EVALUATED	FINDING
USER-PROVIDED INFORMATION	No environmental concerns
ENVIRONMENTAL DATABASE RECORDS	See below
NITRATE PRIORITY AREA	The Property is located just inside the Ada/Canyon County; Purple Sage Nitrate priority area. Well sampling on nearby sites have revealed nitrate levels ranging from 0.01 mg/l (west) and 0.32 mg/L (northwest), to 5.05 mg/L (northeast) and are considered elevated, but are well below the EPA and State drinking water standard of 10.0 mg/L.
HISTORICAL USE INFORMATION	No environmental concerns
SITE RECONNAISSANCE	See below
POTABLE WATER SUPPLY/ WELLS	A private well, located northeast of the dwelling, provides potable water to the home site on the Property. According the Well Construction Log we obtained from the Idaho Department of Water Resources, the domestic well was installed during 1974 and was constructed to a depth of 67 feet below ground surface (bgs). During construction, water was first encountered at a depth of 40 feet bgs.
SEWAGE DISPOSAL SYSTEM/ SEPTIC SYSTENS	An on site septic tank and drainfield system provides sewage disposal for the dwelling on the Property. It is likely that this septic system is located near the dwelling; however, we have no information about the exact location of this system.
HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS	Several containers of oils, lubes, household maintenance products, and a few cans of gasoline are stored inside the shop building; these materials are stored in containers of 5-gallons in size or smaller. None of these containers appeared to be leaking or have leaked. Of the nearly fifty (50) 55-gallon drums we identified on the site, two to three (2-3) of the drums and three (3) 5-gallon containers contain an unknown liquid; a small amount of staining around two (2) of the containers indicate that they may contain waste oil. During our inspection of the Property, we saw no visual indications that the site has been, or is being contaminated by hazardous waste or other hazardous substances. We did not observe any visual evidence of the historic use of hazardous materials and we observed no significant stains, odors, or unnaturally stressed vegetation (indicators that the improper use of these material has occurred).

Drums/Unidentified Substance Containers	Approximately fifty (50) 55-gallon drums are located on the Property. Most of these drums are empty or contain trash; however, two (2) to three (3) drums located in the field to the northeast of the dwelling contain unknown liquids. The two (2) to three (3) drums containing liquids have tight-fitting lids. One (1) drum has limited staining on the ground that appears to be waste oil. *This drum is located within "Area #2" on the Site Plan.* *Note: The number of drums is an approximate number because some of the empty drums are located within piles of material and debris that are difficult or impossible to see.*
Pits, Ponds, or Lagoons	Although not currently present, aerial photos indicate that Sand Hollow Creek, forms a seasonal pond or shallow pool of water near the mid-point of the western Property boundary. During inspection of the site, we observed the area on the site were the creek temporarily ponds or pools along the western boundary.
Stained Soil or Pavement	Minor surface stains are visible on the gravel drive in front of the shop building (south side). These surface stains appear to have been caused by fluid drips from parked vehicles or equipment. We observed staining on the ground beneath one of the drums and a 5-gallon container within "Area #2" (shown on the Site Plan). This staining is limited and appears to be caused by waste oil.
Vapor Encroachment Concerns	No environmental concerns

9.2 Opinions

Listed below are our professional opinions of the impact (if any) on the Property of the conditions identified in the Findings listed in Section 9.1:

Type of Information Evaluated	Opinion
Environmental Database Records	See below
Nitrate Priority Area	Although it is possible that the groundwater beneath the Property may contain elevated levels of nitrates, our review of area well sampling data indicates that nitrate levels would likely be well below the EPA and Idaho drinking water standard of 10.0 mg/L. *This is not a "recognized environmental condition" or "REC".*
Site Reconnaissance	See below
Potable Water Supply/ Wells	The presence of a private well on the Property is not a cause for concern; however, if the future use of the Property does not include the use of the well, it should be properly abandoned in accordance with the Idaho Department of Water Resources (IDWR) rules. Due to the relatively shallow depth of the well (less than 100 feet bgs), we recommend sampling of the well prior to it's continued use as a potable water source. The analyses should include bacteria (Total Coliform and E. Coli) and Nitrates.
Sewage Disposal System/ Septic Systens	The presence of an on site septic tank and drainfield system is not a cause for concern; however, if the future use of the Property doe not include the use of the septic system, it should be closed in accordance with Idaho Health Department Rules.

Hazardous Substances and Petroleum Products	In their current state, the use and storage of oils, lubes, household maintenance products, and cans of gasoline on the site are not a cause for concern and are not considered a "REC"; however, any of these materials that are no longer in use should be disposed of in accordance with Federal, State, and local rules and regulations.
Drums/Unidentified Substance Containers	Of the fifty (50)± drums located on the site, two (2) to three (3) drums located in the field to the northeast of the dwelling (area #2 on Site Plan) contain an unknown liquid. All of these drums/containers have been on the Property for an extended period of time; it is unclear if the staining around the drum/container in area #2 was caused by spills or if the container has leaked; however, it is our opinion that these drums and the soil staining is not considered a "REC" because the staining on the ground around one (1) drum and one (1) 5-gallon container appears limited to the top 6-inches of soil, a "de minimus" condition. Although not considered a "REC" the contents of the drums should be determined and properly disposed of in accordance with Federal, State, and local rules and regulations.
Pits, Ponds, or Lagoons	The seasonal pond/pool formed by Sand Hollow Creek is not a cause for concern with respect to the environmental integrity of the Property.
Stained Soil or Pavement	One of the drums and/or 5-gallon containers (area #2 on Site Plan) appears to have leaked waste oil onto to the ground. This staining appears to be waste oil and to the extent observable, the leakage appears to be have been present for some time. Currently, this staining appears to be minor (limited to the top six-inches of soil or less). This type of surface stain is considered "de minimus" and is not a "REC". It is possible that the removal of drums, containers, or piles of debris could reveal additional staining that was not observable during the site visit. Any staining extending beyond the top 6-inches of soil may require further evaluation.

9.3 Conclusions

Sage Environmental Services, LLC has performed a Phase I Environmental Site Assessment in conformance with the ASTM Practice E 1527-13 for the Rural Homesite & Undeveloped Pasture Property located at 23442 Freezeout Road in Caldwell, Idaho. Any exception to or deletion from this practice is described in Section 2.3 “Scope of Services” and Section 2.5 “Limitations and Restrictions” of this report.

Based on our review of available information, Sage Environmental has identified no “recognized environmental conditions” or “RECs” in connection with t the Property. Although not considered a "REC", the contents of any drums and containers of liquids stored outside the shop should be determined and disposed of in accordance with Federal, State, and local rules/ regulations.

The removal of the piles of equipment, miscellaneous materials, and debris, may reveal additional drums, containers, and/or soil staining that require further evaluation.

9.4 Data Gaps & Failures

We identified four data gaps that were greater than 10 years; 1915-1939 (24 years); 1939-1954 (15 years); 1954-1969 (15 years); and 1981-1992 (11 years). Based upon the known history of the Property, these data gaps are considered insignificant with respect to the historic use(s) of the Property and any resulting environmental impacts.

The lack of Sanborn Map and Polk Directory coverage for the Property is considered a data failures. Based upon the known history of the Property, these data failures are considered insignificant with respect to the historic use(s) of the Property and any resulting environmental impacts.

9.5 Deviations from ASTM 1527-13

We did not deviate from ASTM 1527-13 “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”.

9.6 Non-Scope Issues

There may be environmental issues or conditions at the Property that parties may wish to assess in connection with commercial real estate that are outside the scope of ASTM E 1527-13. There may be other issues related to the Property or adjacent properties that are not included in CERCLA’s definition of hazardous substances (42 USC§ 9601(14)) or do not otherwise present potential CERCLA liability. Such non-scope considerations include, but are not limited to the following: radon screening, asbestos-containing material survey, lead-based paint survey, lead in drinking water, wetland assessment, interior PCB sampling, regulatory compliance, ecological resources, endangered species, indoor air quality, cultural resources, industrial hygiene, health and safety, and high voltage power lines. Addressing such non-scope issues was not requested by the client.

9.7 Qualifications of Environmental Professional & Signatures

As required by 40 CFR 312.21(d), Sage is providing the following statements as to the qualifications of the environmental professional(s) responsible for conducting this Phase I Environmental Site Assessment and the preparation of this report:

1. I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental professional as defined in §312.10 of 40 CFR312, and
2. I have the specific qualifications, based on education, training, and experience, to assess a property of the nature, history, and setting to the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By:

Sage Environmental Services, LLC

Brenda L. Magnuson, REA
Registered Environmental Assessor, Cert. #06973

10.0 REFERENCES SITED

Canyon County Assessor's Office, Public files for 23443 Freezeout Road in Caldwell, Idaho.

Big Sky Maps, 2005. Ada and Canyon County Street Atlas. Sky Maps/GM Johnson & Associated, Ltd, 2005.

Dion, N.P., 1972, "Some Effects of Land Use Changes on the Shallow Groundwater System in the Boise-Meridian Area, Idaho"; Idaho Department of Water Administration, Water Information Bulletin No. 26, 47p.

Google Earth, 1992, 2002, 2010, and 2020 aerial photographs. http://www. earth.google.com.

Idaho Department of Water Resources, Well Construction Search Application. https://idwr.idaho.gov/Apps/appsWell/WCInfoSearchExternal/.

Malde, H.E. and Powers, H.A. 1962, "Upper Cenozoic Stratigraphy of Western Snake River Plain, Idaho"; Geological Society of America Bulletin, v. 73, p1197-1220.

Metsker, C.F. Metsker's Atlas of Canyon County, Idaho. November 1939.

NETROnline: Nationwide Environmental Title Research, LLC. 1954, 1969, and 1981 Historic Aerial Photos.

Othberg, K.L. and Stanford, L.R., 1992. "Geologic Maps of the Boise Valley and Adjoining Areas; Western Snake River Plain, Idaho"; Idaho Geologic Survey Map Series. Scale 1:100,000.

R.L. Polk Company. Polk's City Directories for Caldwell, Idaho.

United States Department of the Interior, Geological Survey, 1979 and 2017. "Sand Hollow, Idaho Quadrangle, 7.5-Minute Series Topographic Maps".

ENVIRONMENTAL DATABASE SOURCES:

Environmental Response Notification System (ERNS) Database information:
http://www.nrc.uscg.mil/wbdcgi.exe

Idaho Department of Environmental Quality Waste Division Inventory (WDI)
http://www.deq.idaho.gov/Applications/WDI/

NETROnline: Nationwide Environmental Title Research, LLC. Tempe, Arizona; Environmental Database Report; http://www.NETROnline.com

RTK.NET: Right-to-Know Environmental Databases; http://www.rtknet.org/rtkdata.php

United States Environmental Protection Agency (USEPA) environmental database sources:

NPL, CERCLIS and RCRA Generators from the USEPA "EnviroMapper StoreFront":
http://www.epa.gov/enviro/html/em/index.html
http://www.epa.gov/superfund/sites/phonefax/products/.html
http://www.epa.gov/enviro/html/rcris/
http://www.epa-echo.gov/echo/index.html

CORRACTs data from USEPA website:
http://yosemite.epa.gov/RIO/OWCM.NSF/webpage

Brownfields information from USEPA website:
http://yosemite.epa.gov/RIO/CLEANUP.NSF/Sites/BF

11.0 PERSONS CONTACTED/INTERVIEWED

Name	Address	Telephone	Relationship to Site Use
Brian Falck	Pioneer Homes 719 1st Street South, Ste. B Boise, Idaho 83709	208.941.2686	Representative of Client (Pioneer Homes) Completed User Questionnaire

ADDENDA

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

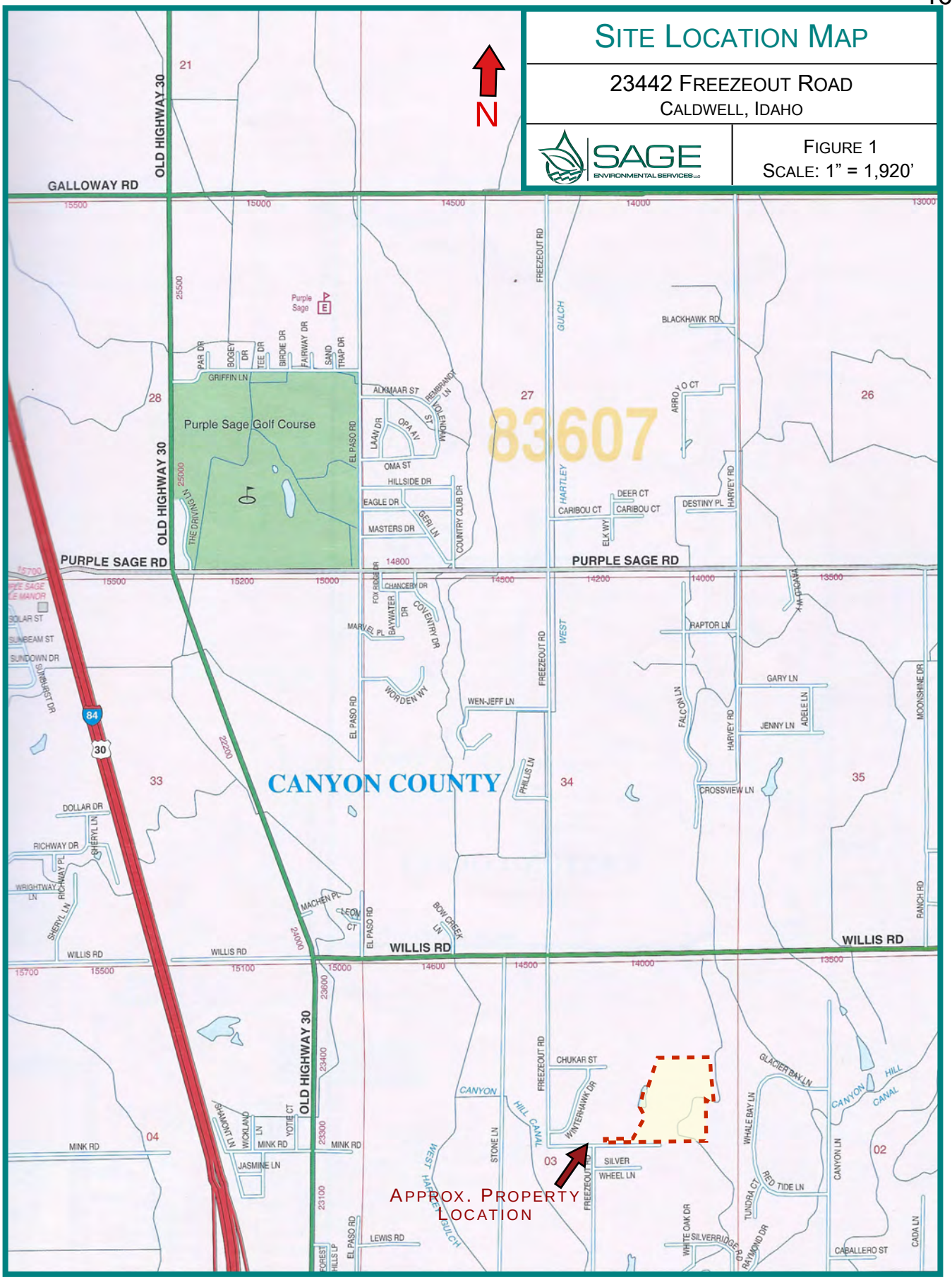
MAPS & FIGURES

SITE LOCATION MAP

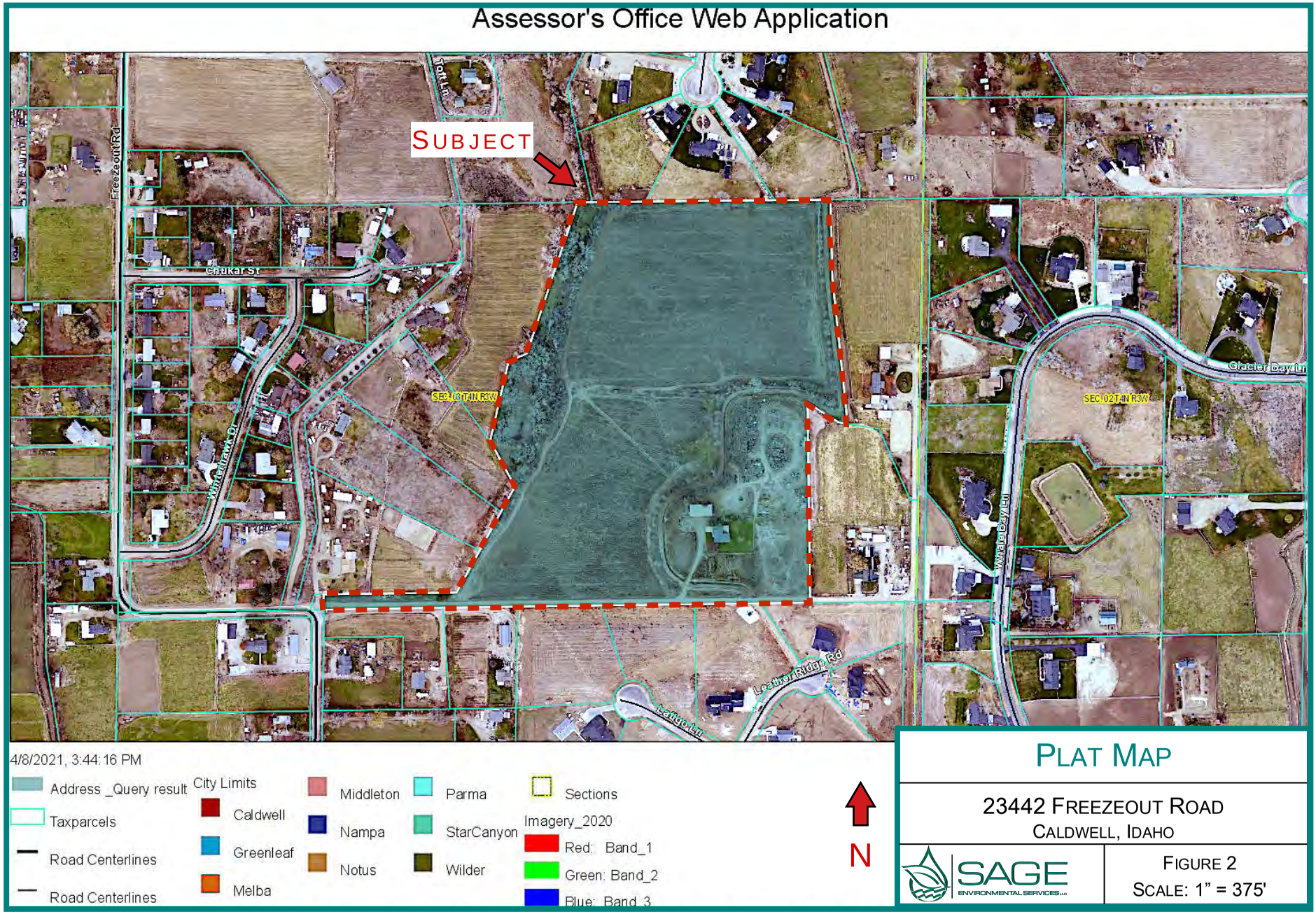
23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES, LLC

FIGURE 1
SCALE: 1" = 1,920'



18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876



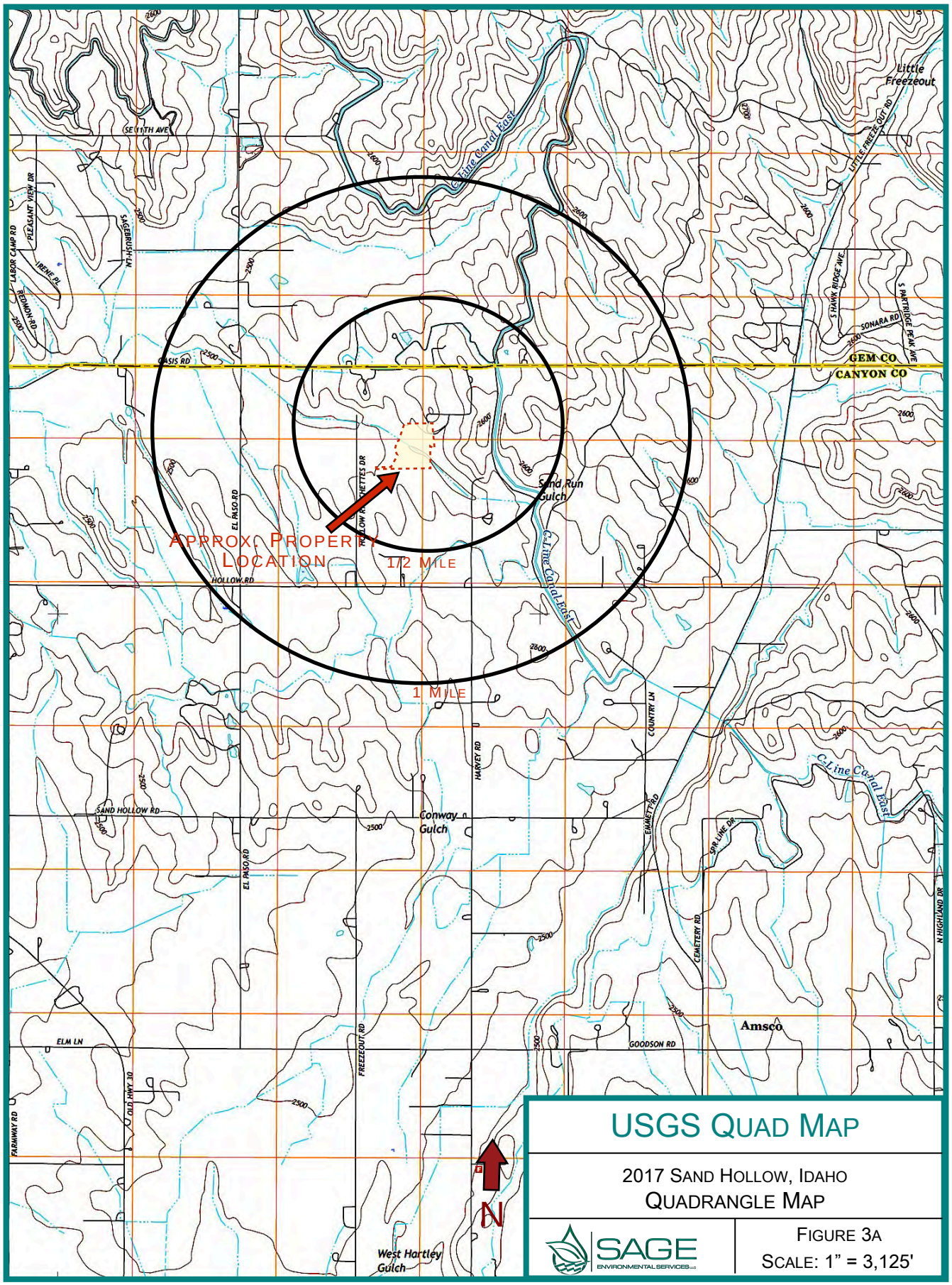
PLAT MAP

23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES LLC

FIGURE 2
SCALE: 1" = 375'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876



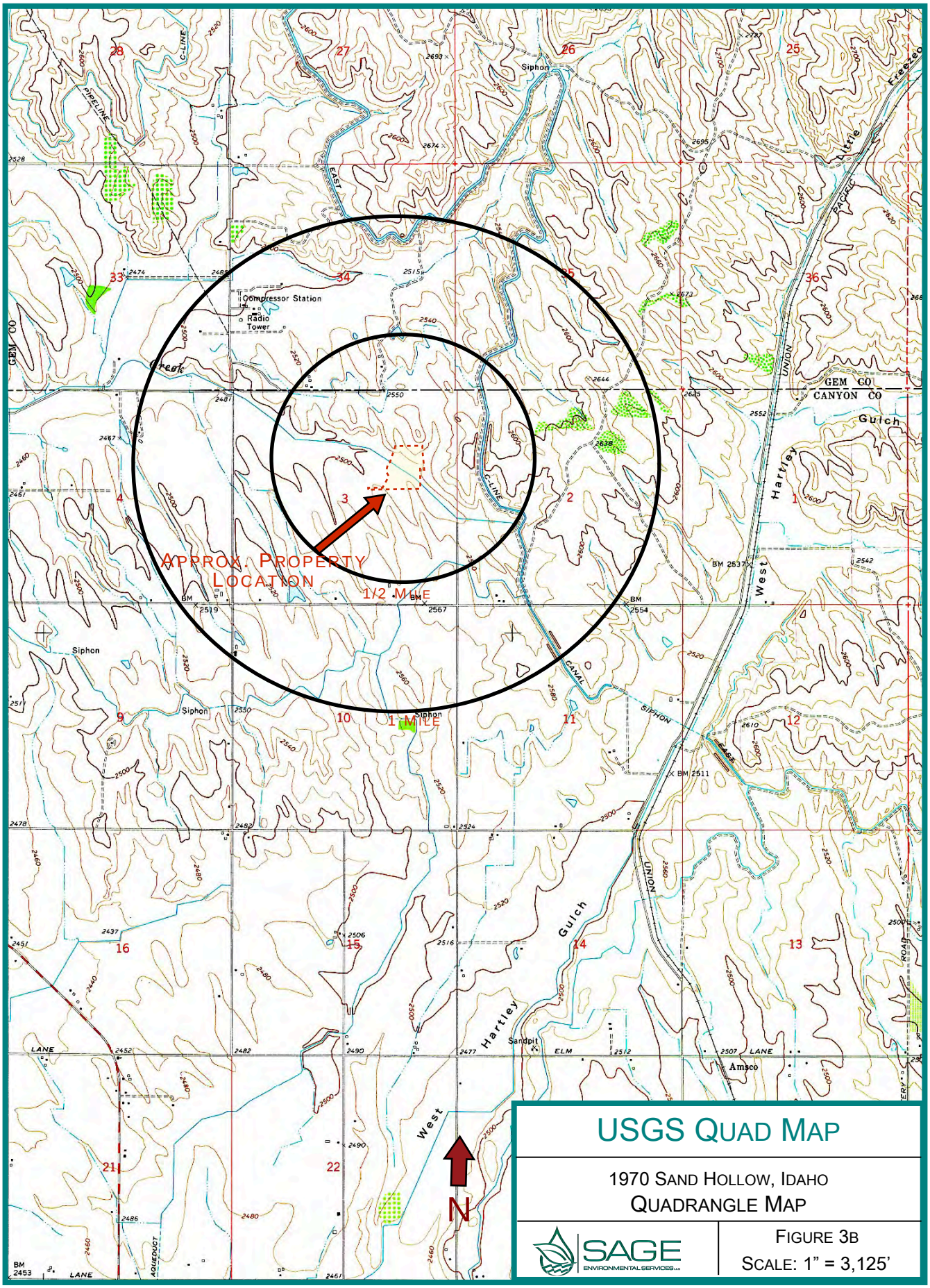
USGS QUAD MAP

2017 SAND HOLLOW, IDAHO
QUADRANGLE MAP

SAGE ENVIRONMENTAL SERVICES, LLC

FIGURE 3A
SCALE: 1" = 3,125'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876



USGS QUAD MAP

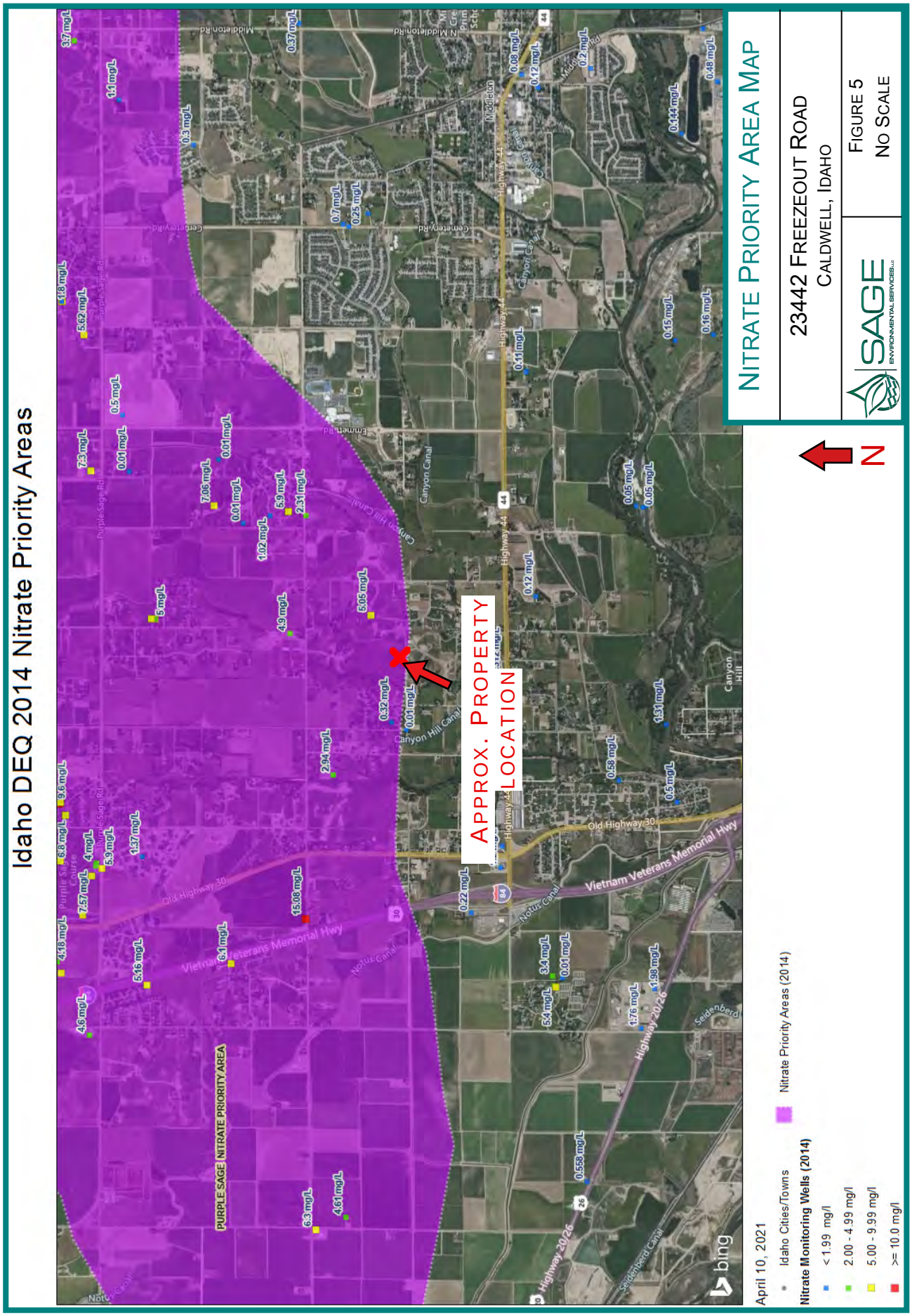
1970 SAND HOLLOW, IDAHO
QUADRANGLE MAP

SAGE ENVIRONMENTAL SERVICES, LLC

FIGURE 3B
SCALE: 1" = 3,125'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876


SITE PLAN
23442 FREEZEOUT ROAD
CALDWELL, IDAHO
SAGE ENVIRONMENTAL SERVICES LLC
FIGURE 4
SCALE: 1" = 250'
WELL =
DRUM =
N
RURAL RESIDENTIAL
SAND HOLLOW CREEK
#1
RURAL RESIDENTIAL
APPROX. PROPERTY BOUNDARY
GRAVEL ACCESS ROAD
FREEZEOUT ROAD
RURAL RESIDENTIAL SUBDIVISION
WHALE BAY LANE
RURAL RESIDENTIAL AND IRRIGATED FARM LAND
3 DRUMS
CLE LATERAL
PROPOSED REALIGNMENT OF C.L.E. LATERAL
SHED
DWELLING
GARAGE
#2
#3
#4
#5
AREA DESCRIPTIONS
#1
WATER PRESSURE TANKS, HOT WATER HEATER TANKS, DRUMS, MISC. EQUIPMENT
#2
• DOORS, WINDOWS, MISC. LUMBER, ETC.
• 2 DRUMS; 5-GAL OIL/WASTE OIL (LEAKED)
#3
MISC. BLDG. MATERIALS, DIRT, CONCRETE, FEW TIRES
#4
• 50±TIRES
• WASTE LUMBER, DIRT, SCRAP METAL, WASTE CONCRETE
• 2 GAS CANS
• 8-9 DRUMS
#5
• 50±TIRES
• MISC. HOUSEHOLD
• 6 DRUMS (EMPTY AND/OR CONTAIN TRASH


Idaho DEQ 2014 Nitrate Priority Areas
PURPLE SAGE NITRATE PRIORITY AREA
APPROX. PROPERTY LOCATION
Old Highway 30
Vietnam Veterans Memorial Hwy
Highway 44
Highway 20/26
Notus Canal
Canyon Hill Canal
Canyon Canal
Seidenberg Canal
Middleton
N
bing
April 10, 2021
Idaho Cities/Towns
Nitrate Priority Areas (2014)
Nitrate Monitoring Wells (2014)
< 1.99 mg/l
2.00 - 4.99 mg/l
5.00 - 9.99 mg/l
>= 10.0 mg/l
NITRATE PRIORITY AREA MAP
23442 FREEZEOUT ROAD
CALDWELL, IDAHO
SAGE
ENVIRONMENTAL SERVICES LLC
FIGURE 5
NO SCALE

AERIAL PHOTOS

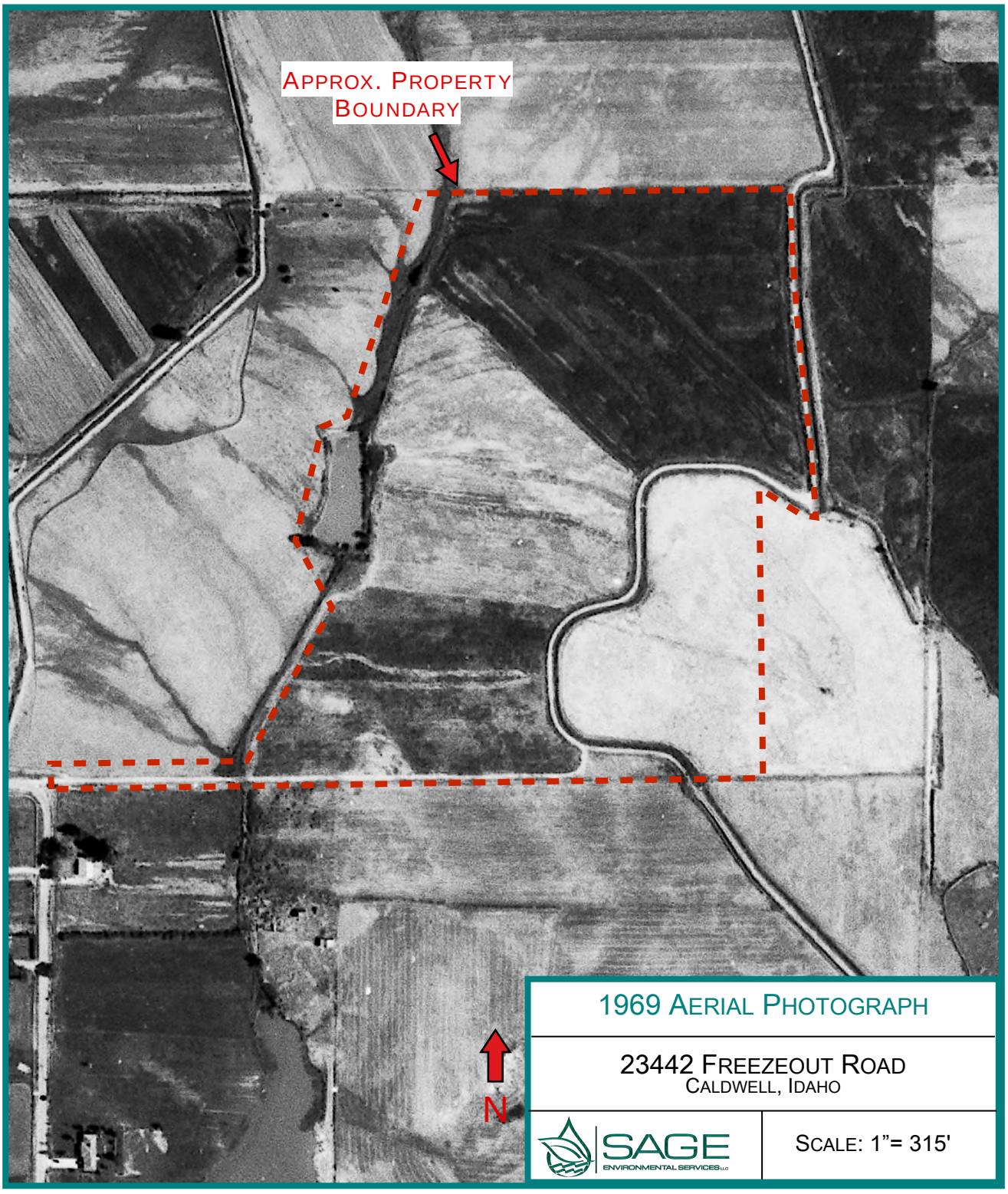
1954 Aerial Photograph

23442 Freezeout Road
Caldwell, Idaho

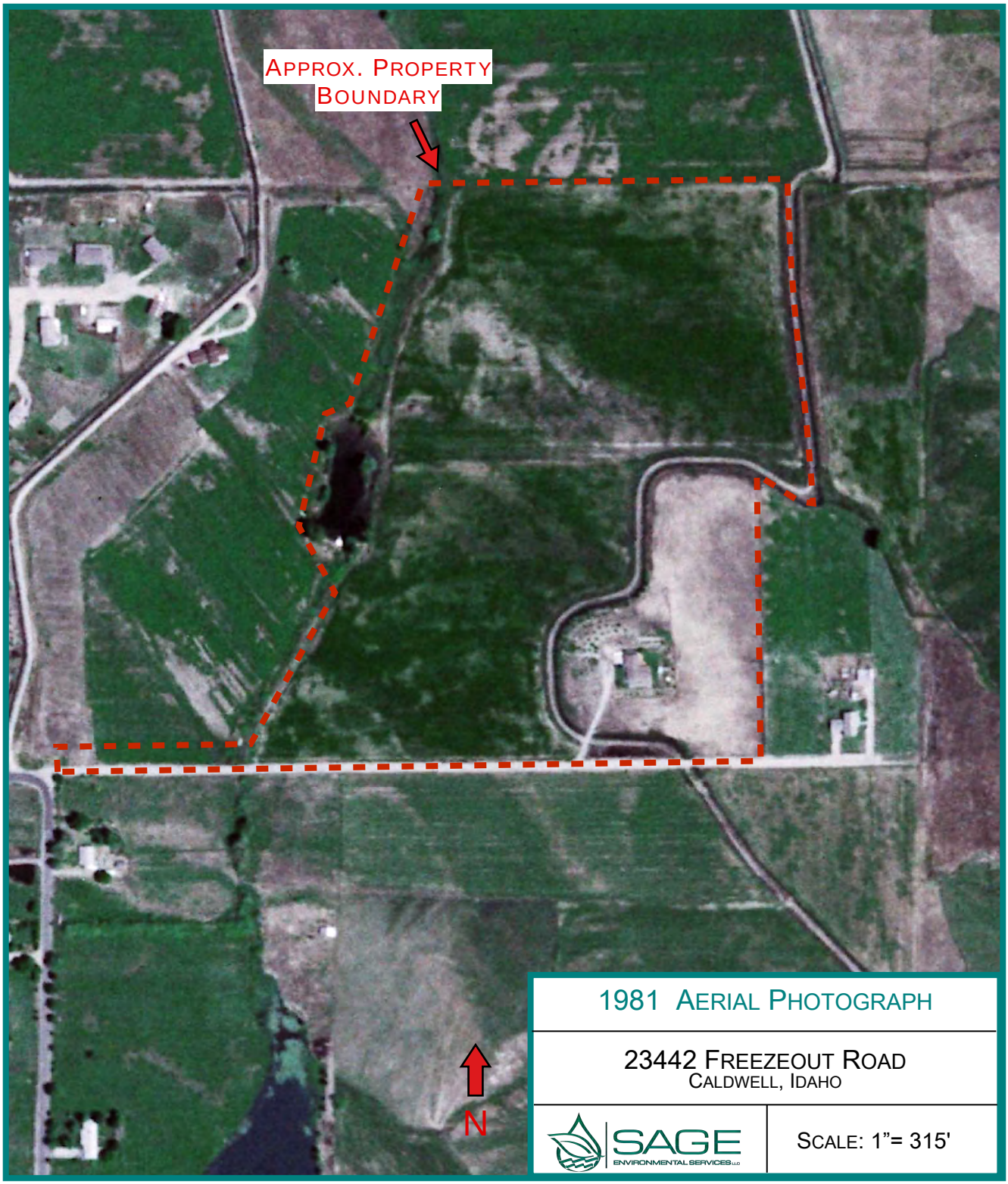
SAGE Environmental Services LLC

Scale: 1"= 315'

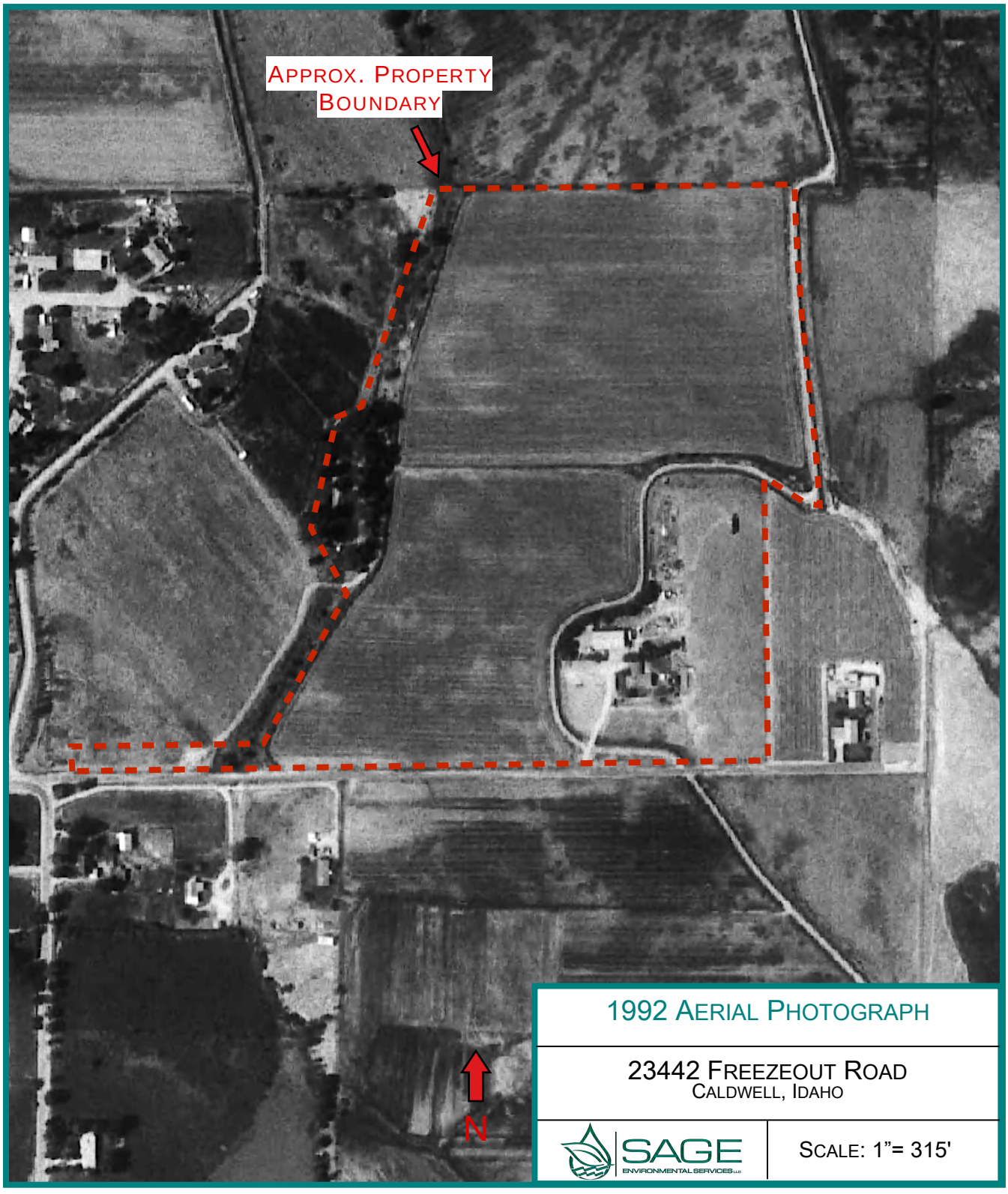
18123 N. Highfield Way
Boise, Idaho 83714
208-867-8876



18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876



18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876



1992 AERIAL PHOTOGRAPH

23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES LLC

SCALE: 1"= 315'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

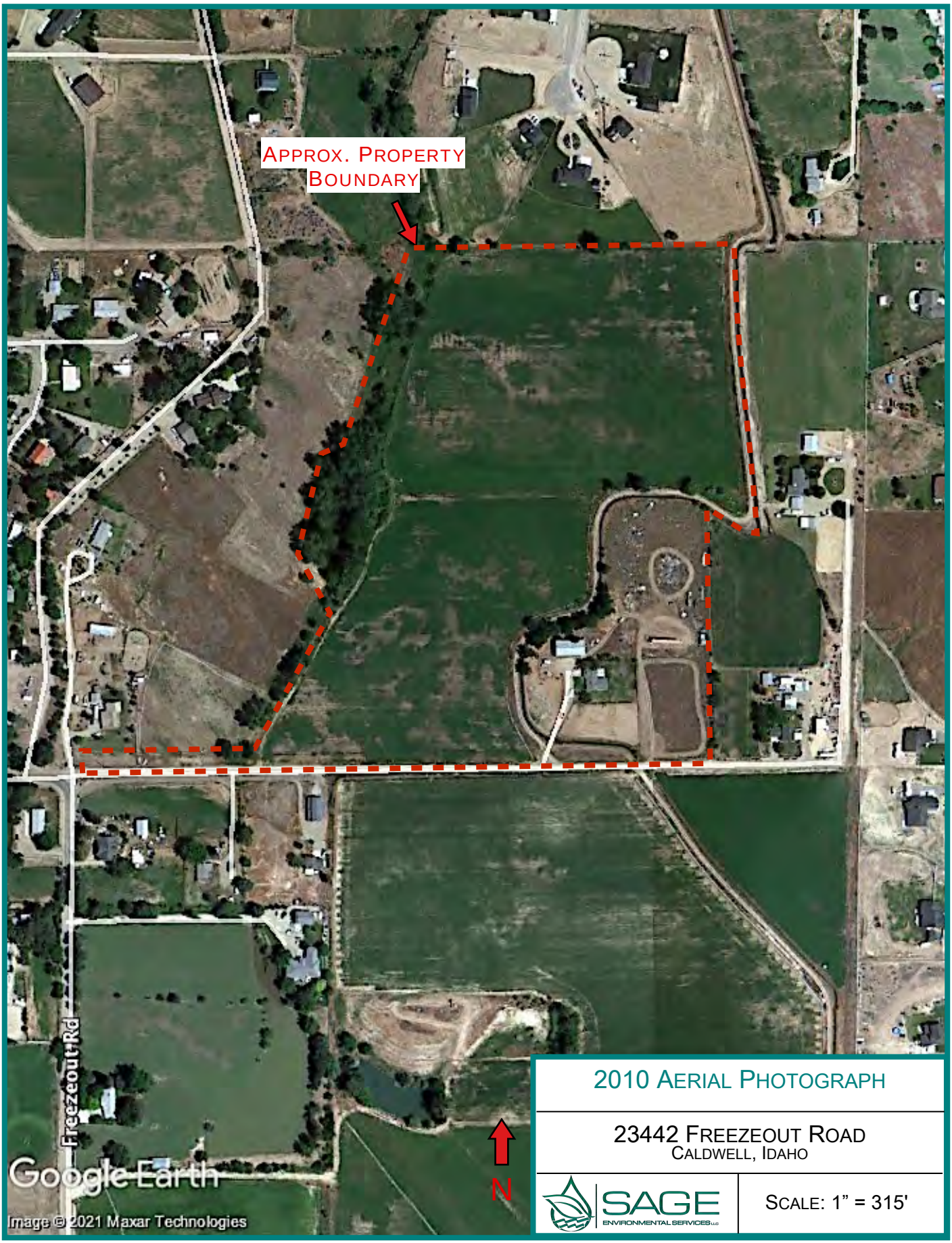
2002 Aerial Photograph

23442 Freezeout Road
Caldwell, Idaho

SAGE Environmental Services, LLC

Scale: 1"=315'

18123 N. Highfield Way
Boise, Idaho 83714
208-867-8876



2010 AERIAL PHOTOGRAPH

23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES LLC

SCALE: 1" = 315'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

2020 Aerial Photograph

23442 Freezeout Road
Caldwell, Idaho

SAGE Environmental Services, LLC

Scale: 1" = 315'

18123 N. Highfield Way
Boise, Idaho 83714
208-867-8876

Site Photos

PHOTOGRAPH #1: A VIEW OF THE PROPERTY AS SEEN LOOKING NORTH ALONG THE DRIVEWAY SHOWING THE SHOP BUILDING (LEFT) AND DWELLING (RIGHT).

PHOTOGRAPH #2: A VIEW OF THE PROPERTY AS SEEN LOOKING NORTHWEST FROM NEAR THE SOUTHEASTERN CORNER.

PHOTOGRAPH #3: LOOKING NORTH ALONG THE EASTERN BOUNDARY, AS SEEN FROM NEAR THE SOUTHEASTERN CORNER.

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
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PHOTOGRAPH #4: LOOKING WEST ALONG THE SOUTHERN PROPERTY BOUNDARY.
THE DIRT/GRAVEL ACCESS ROAD FROM FREEZEOUT ROAD IS VISIBLE ON THE LEFT SIDE OF THE PHOTO.

PHOTOGRAPH #5: LOOKING EAST ALONG THE SOUTHERN PROPERTY BOUNDARY.
THE DIRT/GRAVEL ACCESS ROAD FROM FREEZEOUT ROAD IS VISIBLE ON THE RIGHT SIDE OF THE PHOTO.

PHOTOGRAPH #6: A VIEW OF THE PROPERTY AS SEEN LOOKING NORTHEAST FROM NEAR THE SOUTHWESTERN CORNER.

PHOTOGRAPH #7: LOOKING NORTH ALONG THE WESTERN PROPERTY BOUNDARY, AS SEEN FROM NEAR THE SOUTHWESTERN CORNER.

PHOTOGRAPH #8: THIS PHOTO SHOWS THE SOUTH (FRONT) SIDE OF THE SHOP, AS SEEN LOOKING NORTH FROM THE DRIVEWAY.

PHOTOGRAPH #9: THIS PHOTO SHOWS THE WEST (FRONT) SIDE OF THE HOUSE, AS SEEN LOOKING NORTHEAST FROM THE DRIVEWAY.

PHOTOGRAPH #10: A VIEW OF THE SITE AS SEEN LOOKING WEST ACROSS THE BACK YARD, TOWARD THE EAST SIDE OF THE HOUSE.

PHOTOGRAPH #11: THIS PHOTO SHOWS THE DISCARDED HOT WATER HEATERS, PRESSURE TANKS, AND MISCELLANEOUS METAL ITEMS LOCATED AT THE SEASONAL POND AREA (WEST END OF SITE).

PHOTOGRAPH #12: THIS PHOTO SHOWS THE SEASONAL POND AREA LOCATED ON THE WEST END OF THE SITE. THIS VIEW IS LOOKING NORTH.

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PHOTOGRAPH #13: LOOKING SOUTH ALONG THE WESTERN BOUNDARY, AS SEEN FROM NEAR THE NORTHWESTERN CORNER.

PHOTOGRAPH #14: LOOKING EAST ALONG THE NORTHERN BOUNDARY, AS SEEN FROM NEAR THE NORTHWESTERN CORNER.

PHOTOGRAPH #15: A VIEW OF THE PROPERTY AS SEEN LOOKING SOUTHEAST FROM NEAR THE NORTHWESTERN.

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PHOTOGRAPH #16: LOOKING WEST ALONG THE NORTHERN PROPERTY BOUNDARY, AS SEEN FROM NEAR THE NORTHWESTERN CORNER.

PHOTOGRAPH #17: LOOKING SOUTH ALONG THE EASTERN BOUNDARY, AS SEEN FROM NEAR THE NORTHEASTERN CORNER.

PHOTOGRAPH #18: A VIEW OF THE PROPERTY AS SEEN LOOKING SOUTHWEST FROM NEAR THE NORTHEASTERN CORNER.

PHOTOGRAPH #19: LOOKING WEST ALONG THE C.L.E. LATERAL AND ACCESS ROAD.

PHOTOGRAPH #20: THIS PHOTO SHOWS THREE OF THE DRUMS LOCATED ON THE PROPERTY, NORTHEAST OF THE DWELLING IN AREA #2.

PHOTOGRAPH #21: LOOKING SOUTH ACROSS THE PASTURE, TOWARD THE HOMESITE.

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PHOTOGRAPH #22: THIS PHOTO SHOWS A PILE OF APPROXIMATELY 50 TIRES (SOME WITH WHEELS ATTACHED), DRUMS, AND MISCELLANEOUS LOCATED ON THE SOUTHEAST QUADRANT (NORTHEAST OF HOME SITE).

PHOTOGRAPH #23: THIS PHOTO SHOWS ANOTHER AREA OF DISCARDED MATERIALS; HOUSEHOLD GOODS, TIRES, MISCELLANEOUS, AND SEVEN (7) DRUMS IN THE BACKGROUND.

PHOTOGRAPH #24: THIS PHOTO SHOWS TWO (2) TRAILERS FULL OF DISCARDED MATERIALS AND LUMBER.

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PHOTOGRAPH #25: THIS PHOTO SHOWS A PILE OF DIRT, SCRAP CONCRETE, AND OTHER BUILDING MATERIALS.

PHOTOGRAPH #26: AN INTERIOR VIEW OF THE SHOP AS SEEN LOOKING EAST.

PHOTOGRAPH #27: ANOTHER INTERIOR VIEW OF THE SHOP; THIS PHOTO SHOWING CONTAINERS OF OILS, LUBES, PAINTS AND OTHER MISCELLANEOUS STORED INSIDE.

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PHOTOGRAPH #28: AN INTERIOR VIEW OF THE DWELLING AS SEEN LOOKING NORTHWEST TOWARD THE KITCHEN/DINING AREA.

PHOTOGRAPH #29: THIS PHOTO SHOWS THE WATER PRESSURE TANK INSIDE THE GARAGE.

PHOTOGRAPH #30: THIS PHOTO SHOWS TWO (2) MORE DRUMS LOCATED ON THE SOUTHEAST QUADRANT OF THE SITE.

PHOTOGRAPH #21: THIS PHOTO SHOWS THE SOIL STATING NEXT TO A DRUM AND CONTAINER, AS DESCRIBED IN THE REPORT (AREA #2).

PHOTOGRAPH #29: LOOKING WEST ACROSS THE NORTH END OF THE SITE (NORTH OF THE E.L.C. LATERAL).

PHOTOGRAPH #30: THIS PHOTO SHOWS THE GROUND WHERE THREE (3) DRUMS WERE PREVIOUSLY LOCATED (DURING OUR ARIL 12, 2021 INSPECTION). THIS AREA IS NEAR THE NORTHWEST CORNER OF THE PROPERTY, NEXT TO THE E.L.C. LATERAL.

SAGE RETURNED TO THE SITE ON APRIL 20 , 2021 AND FOUND NO EVIDENCE OF SPILLS OR LEAKS ON THE GROUND WHERE THE DRUMS WERE PRESENT.

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

ENVIRONMENTAL DATABASE

ENVIRONMENTAL QUESTIONNAIRE & DISCLOSURE STATEMENT

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

SAGE ENVIRONMENTAL SERVICES LLC
18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208.867.8876
SAGE.BOISE@GMAIL.COM

ENVIRONMENTAL QUESTIONNAIRE AND DISCLOSURE STATEMENT FOR PROPERTY OWNER

As per ASTM Standard 1527-13, in order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"), the User must provide the following information (if available) to the Environmental Professional. Failure to provide this information could result in a determination the "all appropriate inquiry" is not complete.

PROJECT NUMBER/NAME: 21-03640 **PROPERTY ADDRESS:** 23442 Freezeout Road in Caldwell, Id.

PROPERTY TYPE: Commercial Industrial Multi-Tenant (Residential) Farm Land Vacant Land

QUESTIONNAIRE COMPLETED BY:

Name: BRIAN FALCK Signature: [signature] Title:
Address: 719 1st Street South Ste B
City/State/Zip: Jampa ID 83651
Telephone: 208-991-2686
Email Address: brian@pioneerhomesidaho.com

		YES	NO	UNK
1	Are there any buildings/structures on the property? *If yes, type of construction:* 1404 sq ft house built in 1976, 2628 sqft shop built in 1987	✓		
2	Have there ever been any environmental problems at the property? *If yes, explain:*			✓
3	Has a gas station or dry cleaner operated anywhere on the property? *If yes, explain:* Not likely			✓
4	Do any tenants use hazardous chemicals in relatively large quantities on the property? *If yes, explain:* Not likely			✓
5	Have any tenants ever complained about odors in the building or experienced health-related problems that may have been associated with the building? *If yes, explain:*			✓
6	Are there any underground storage tanks (USTs) or above ground storage tanks (ASTs)? *If yes, describe # of USTs/ASTs; size; contents; date(s) Installed:*			✓
7	Have there been any USTS or ASTs located on the Property in the past? *If yes, describe # of USTs/ASTs; size; contents; date(s) Installed/removed or closed:*			✓
8	Are there or have there been any on site sewage disposal systems (septic, drainfields, drywells, etc.) on the Property? *If yes, explain:* services house	✓		

SAGE ENVIRONMENTAL SERVICES LLC
18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208.867.8876
SAGE.BOISE@GMAIL.COM

	YES	NO	UNK
9 Are there any wells located on the Property?	✓		

If yes, explain: Domestic Well behind home.

	YES	NO	UNK
10 Did a search of recorded land title records (or judicial records where appropriate) identify any environmental liens filed or recorded against the property under federal, tribal, state or local law?			✓

If yes, explain:

	YES	NO	UNK
11 Do you have any specialized knowledge or experience related to the property or nearby properties? For example, Are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you should have specialized knowledge of the chemical s and processes used by this type of business?		✓	

If yes, explain:

	YES	NO	UNK
12 Does the purchase price being paid for this Property reasonably reflect the fair market value of the property?	✓		

	YES	NO	UNK
13 If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?		✓	

If yes, explain:

	YES	NO	UNK
14 Do you know the past use(s) of the property?		✓	

If yes, describe:

	YES	NO	UNK
15 Do you know of specific chemicals that are present or once were present at the property?		✓	

If yes, explain:

	YES	NO	UNK
16 Do you know of spills or other chemical release that have taken place at the property?		✓	

If yes, explain:

	YES	NO	UNK
17 Do you know of any environmental cleanups that have taken place at the property?		✓	

If yes, explain:

	YES	NO	UNK
18 Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of contamination at the property?		✓	

If yes, explain:

	YES	NO	UNK
19 What is the reason for conducting the Phase I Environmental Site Assessment?			

If yes, explain: Required part of Bureau of Reclamation request to retroactively realign a drainage ditch.

SAGE ENVIRONMENTAL SERVICES LLC
18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208.867.8876
SAGE.BOISE@GMAIL.COM

	YES	NO	UNK
20 Have any previous Environmental Assessment Reports been prepared for the Property? *If yes, provide date when prepared and include copy or report:*			✓

PLEASE ATTACH THE FOLLOWING INFORMATION OR DOCUMENTS, IF AVAILABLE:	
* Names/phone numbers of key individuals with knowledge of the property use/history;	✓
* Map showing the boundaries of the property:	
* Copies of past environmental site assessments or other environmental reports:	✓
* Copies of Environmental permits:	
* Registrations for Underground or Aboveground storage tanks (if any):	
* Material Safety Data Sheets (MSDS) for hazardous substances used or store on site (if any):	
* Community Right-toKnow Plans pertaining to the Property.	
* Notices of other correspondence from any governmental agency relating to any inspections or violations of environmental rules retarding the property or environmental liens encumbering the Property.	
* Recorded Activity Use Limitations (AULs) (if any).	
* Chain of ~~Title~~ Title or other Title Report documents.	✓

CHAIN-OF-TITLE RECORD

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

PioneerTitleCo.
GOING BEYOND

610 S. Kimball Avenue
Caldwell, ID 83605

ELECTRONICALLY RECORDED-DO NOT REMOVE THE COUNTY STAMPED FIRST PAGE AS IT IS NOW INCORPORATED AS PART OF THE ORIGINAL DOCUMENT

2019-033320
RECORDED
07/24/2019 12:38 PM
CHRIS YAMAMOTO
CANYON COUNTY RECORDER
Pgs=3 MBROWN $15.00
TYPE: DEED
PIONEER TITLE CANYON - CALDWELL
ELECTRONICALLY RECORDED

File No. 688622 TK/

WARRANTY DEED

For Value Received **Virginia Figuredo, Trustee of the Virginia Figueredo Trust dated October 25, 2018**

hereinafter referred to as Grantor, does hereby grant, bargain, sell, warrant and convey unto

Dorothy Ann Bonham and Melvin Edward Bonham, Trustees of The Dorothy Ann Honham and Melvin Edward Bonham 2004 Revocable Trust and Melvin Bonham Jr., an unmarried man, each as to an undivided 50% interest

hereinafter referred to as Grantee, whose current address is 3905 Curran Road, Ione, CA 95640

The following described premises, to-wit:

See Exhibit A attached hereto and made a part hereof.

To HAVE AND TO HOLD the said premises, with their appurtenances unto the said Grantee(s), and Grantees(s) heirs and assigns forever. And the said Grantor(s) does (do) hereby covenant to and with the said Grantee(s), the Grantor(s) is/are the owner(s) in fee simple of said premises; that said premises are free from all encumbrances EXCEPT those to which this conveyance is expressly made subject and those made, suffered or done by the Grantee(s); and subject to U.S. Patent reservations, restrictions, dedications, easements, rights of way and agreements, (if any) of record, and current years taxes, levies, and assessments, includes irrigation and utility assessments, (if any) which are not yet due and payable, and that Grantor(s) will warrant and defend the same from all lawful claims whatsoever.

Dated: July 17, 2019

The Virginia Figueredo Trust

By: Virginia Figueredo, Trustee
Virginia Figueredo, Trustee
State of California, County of _____

This record was acknowledged before me on _____ by Virginia Figueredo, as trustee of the Virginia Figueredo Trust .

_____
Signature of notary public
Commission Expires: _____

See Attached
CA Acknowledgment

CALIFORNIA ALL-PURPOSE ACKNOWLEDGEMENT

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Nevada

On July 23, 2019, before me, Christy Marie Summer, Notary Public,
personally appeared Virginia D. Figueredo
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of State of California that the foregoing paragraph is true and correct.

CHRISTY MARIE SUMMER
Notary Public - California
Nevada County
Commission # 2251067
My Comm. Expires Jul 26, 2022

PLACE NOTARY SEAL ABOVE

WITNESS my hand and official seal.

SIGNATURE Christy Marie Summer

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of attached document

Title or type of document: Warranty Deed

Document Date: July 23, 2019 Number of Pages: 5

Signer(s) Other than Named Above:

EXHIBIT A

A part of the SE1/4 of the NE1/4 and the SW1/4 of the NE1/4, Section 3, Township 4 North, Range 3 West, Boise Meridian, more particularly described as follows:

BEGINNING at the southeast corner of said SW1/4 of the NE1/4; thence
south 89°08'36" West along the south boundary of said SW1/4 of the NE1/4 a distance of 681.58 feet to a point on the westerly boundary of the parcel described in the quit claim deed recorded as Instrument No. 945974, Records of Canyon County, Idaho; thence traversing said westerly boundary as follows:
North 14°39'26" East a distnce of 51.96 feet;
North 89°08'36" East a distance of 468.46 feet;
North 28°55'40" East a distance of 397.26 feet;
North 28°44'21" West a distance of 169.92 feet;
North 13°10'27" East a distance of 268.10 feet;
North 66°40'49" East a distance of 65.01 feet;
North 18°34'52" East a distance of 523.27 feet to a point on the north boundary of said SE1/4 of the NE1/4; thence
North 89°24'56" East along said north boundary a distance of 832.99 feet; thence
South 1°27'37" East a distance of 258.22 feet along the centerline of an existing irrigation lateral; thence
South 6°00'26" East continuing along said centerline a distance of 479.39 feet to a point on the northerly boundary of the parcel described in the warranty deed recorded as Instrument No. 729194, records of Canyon County, Idaho; thence traversing the boundary of said parcel as follows:
North 81°39'12" West a distance of 28.29 feet;
North 58°24'52" West a distance of 122.26 feet;
South 0°49'14" East a distance of 654.97 feet to a point on the south boundary of said SE1/4 of the NE1/4; thence
South 89°12'20" West along said south boundary a distance of 965.08 feet to the POINT OF BEGINNING.

EXCEPT THEREFROM the following described property hereinafter referred to as Parcel B, described as follows:

Parcel B:

Commencing at the southwest corner of said SW1/4 of the NE1/4; thence
North 89°08'36" East along the south boundary of said SW1/4 of the NE1/4 a distance of 633.76 feet to the TRUE POINT OF BEGINNING; thence
North 14°30'08" East a distance of 51.91 feet; thence
North 89°08'30" East a distance of 30.00 feet; thence
South 0°51'24" East a distance of 50.05 feet to a point on the said south boundary; thence
South 89°08'36" West along said south boundary a distance of 43.79 feet to the True Point of Beginning.

TOGETHER WITH an easement for ingress and egress over and across said Parcel B

SAGE ENVIRONMENTAL SERVICES, LLC
18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

2019-054664
RECORDED
11/12/2019 02:05 PM

00478570201900546640040046

CHRIS YAMAMOTO
CANYON COUNTY RECORDER
Pgs=4 EHOWELL $15.00
DEED
INTERMOUNTAIN LEGAL GROUP

2019-006101
RECORDED
02/13/2019 04:10 PM

00421040201900061010040040

CHRIS YAMAMOTO
CANYON COUNTY RECORDER
Pgs=4 EHOWELL $15.00
DEED
JOSEPH L MORTON III PC

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:
Intermountain Legal Group
132 SW 5th Avenue, Suite 150
Meridian ID 83642

SEND TAX STATEMENTS TO:
Virginia Figueredo
305 W Main St. Apt 210
Grass Valley, CA 95945

(SPACE ABOVE LINE FOR RECORDER'S USE)

QUITCLAIM DEED BEING RE-RECORDED TO CORRECT INSTRUMENT NUMBER 2018-055754

Rerecorded to correct Trustee name

For value received, VIRGINIA FIGUEREDO, TRUSTEE OF THE FIGUEREDO FAMILY TRUST, WHOSE CURRENT ADDRESS IS 305 W MAIN ST., APT 210, GRASS VALLEY, CA 95945, Grantor, hereby quitclaims to:

VIRGINIA Figueredo TRUSTEE OF THE Virginia FIGUEREDO TRUST DATED OCTOBER 25, 2018, AND ANY AMENDMENTS THERETO, Grantee, whose current address is 305 W Main St. Apt 210, Grass Valley, CA 95945, all of its interest in that real property situated in Canyon County, State of Idaho, described as follows:

See Legal Description on Exhibit "A", attached hereto and incorporated herein by this reference.

The true consideration for this conveyance is to transfer property to the same party.

Witness the hand of said Grantor this 1 day of February 2019

Virginia Figueredo Grantor
VIRGINIA FIGUEREDO, GRANTOR

STATE OF _____)
) ss.
COUNTY OF _____)

See Attached

On this ____ day of _____ 20__, before me _____, personally appeared Virginia Figueredo, personally known to me (or proved to me on the basis of satisfactory evidence) to be the individual whose name is subscribed to the foregoing instrument, and acknowledged that she executed the same as her voluntary act and deed for the purposes therein contained.

WITNESS MY HAND AND OFFICIAL SEAL.

_____
Notary Public
My commission expires on _____

State of Idaho } ss.
County of Canyon }
I hereby certify that the foregoing instrument is a true and correct copy of the original as the same appears in this office.
DATED 10-30-2019
CHRIS YAMAMOTO, Clerk of the District Court and Ex Officio Recorder
By _____ Deputy

STATE OF IDAHO COUNTY RECORDER COUNTY OF CANYON

Exhibit "A"

A part of the Southwest Quarter of the Northeast Quarter and the Southeast Quarter of the Northeast Quarter, Section 3, Township 4 North, Range 3 West, Boise Meridian, more particularly described as follows:

BEGINNING at the Southwest corner of said Southeast Quarter of the Northeast Quarter (CE 1/16 cor.) , monumented with a Government Land Office brass cap monument; thence South 89°12'20" West, 681.58 feet; along the South boundary of said Southwest Quarter of the Northeast Quarter; thence North 14°34'50" East 51.86 feet; thence North 89°12'20" East 468.46 feet parallel with the South boundary of said Southwest Quarter of the Northeast Quarter; thence North 28°55'55" East 397.51 feet; thence North 28°40'15" West 170.55 feet; thence North 13°12'35" East 267.66 feet; thence North 66°50'45" East 65.05 feet; thence North 18°36'25" East 523.48 feet (of record as 523.43 feet); thence North 89°25'22" East 1138.29 feet along the North boundary of said Southeast Quarter of the Northeast Quarter; thence South 0°56'31" West 988.51 feet along the East boundary of said Southeast Quarter of the Northeast Quarter; thence North 89°02"40" West 26.93 feet (of record as 27.00 feet); thence North 23°28'40" West 255.33 feet; thence North 81°34'25" West 133.16 feet; thence North 58°24'15" West 122.26 feet; thence South 0°47'40" East, 655.00 feet; thence South 89°12'20" West 965.09 feet along the South boundary of said Southeast Quarter of the Northeast Quarter to the POINT OF BEGINNING.

This parcel is subject to road easement along the South 30 feet and is subject to an easement for an irrigation lateral.

Subject to the following Exceptions:

Exception 1:

That portion of the Southeast quarter of the Northeast quarter of Section 3, Township 4 North, Range 3 West of the Boise Meridian, Canyon County, Idaho and is more particularly described as follows:

Beginning at the Northeast corner of said Southeast quarter of the Northeast quarter; thence
South 0°56'21" West along the East boundary of said Southeast quarter of the Northeast quarter a distance of 988.14 feet to a point on the Northerly boundary of the parcel described in the Warranty Deed recorded as Instrument No. 729194, records of Canyon County, Idaho; thence
traversing said boundary as follows:
North 89°03'23" West a distance of 27.08 feet;
North 23°29'23" West a distance of 255.33 feet;
North 81°34'03" West a distance of 104.87 feet; thence
leaving said boundary and bearing
North 6°00'26" West along the centerline of an existing irrigation lateral a distance of 479.39 feet; thence
North 1°27'37" West continuing along said centerline a distance of 258.22 feet to a point on the North boundary of said Southeast quarter of the Northeast quarter; thence
North 89°24'56" East along said North boundary a distance of 305.55 feet to the POINT OF BEGINNING.

Exception 2:

This parcel is a portion of the SW1/4 NE1/4 of Section 3, Township 4 North, Range 3 West of the Boise Meridian and is more particularly described as follows:

COMMENCING at the southwest corner of said SW1/4 NE1/4;

thence North 89° 08' 36" East along the south boundary of said SW1/4 NE1/4 a distance of 633.76 feet to the TRUE POINT OF BEGINNING;

thence North 14° 30' 08" East a distance of 51.91 feet;

thence North 89° 08' 30" East a distance of 30.00 feet;

thence South 0° 51' 24" East a distance of 50.05 feet to a point on said south boundary;

thence South 89° 08' 36" West along said south boundary a distance of 43.75 feet to the TRUE POINT OF BEGINNING.

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

CALIFORNIA CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Nevada)

On 2.1.2019 before me, Susan C. Williams, Notary Public
(here insert name and title of the officer)

personally appeared Virginia Figueredo

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

SUSAN C. WILLIAMS
COMM. #2112491
Notary Public - California
Nevada County
My Comm. Expires May 21, 2019

Signature Susan C. Williams

(Seal)

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a document

titled/for the purpose of _____

containing _____ pages, and dated _____.

The signer(s) capacity or authority is/are as:

- ☐ Individual(s)
- ☐ Attorney-in-Fact
- ☐ Corporate Officer(s) _____ Title(s)
- ☐ Guardian/Conservator
- ☐ Partner - Limited/General
- ☐ Trustee(s)
- ☐ Other: _____

representing: _____ Name(s) of Person(s) or Entity(ies) Signer is Representing

Additional Information

Method of Signer Identification

Proved to me on the basis of satisfactory evidence:
(●) form(s) of identification ( ) credible witness(es)

Notarial event is detailed in notary journal on:
Page # 47 Entry # 7

Notary contact: 530.273.7365

Other

☐ Additional Signer(s) ☑ Signer(s) Thumbprint(s)

☐ _____

RE-RECORDED TO CORRECT LEGAL 47874

945972

INSTRUMENT NO 947142

WARRANTY DEED

For Value Received ARTHUR E. ASHCRAFT and BONNIE L. ASHCRAFT, husband and wife,

the grantors, do hereby grant, bargain, sell and convey unto ROBERT V. FIGUEREDO and VIRGINIA D. FIGUEREDO, husband and wife,

of: 1604 W. 218th, Torrance, CA. 90501

the grantees, the following described premises, situated in Canyon County, State of Idaho, to-wit:

A part of the Southwest Quarter of the Northeast Quarter and the Southeast Quarter of the Northeast Quarter, Section 3, Township 4 North, Range 3 West, Boise Meridian, more particularly described as follows:

BEGINNING at the Southwest corner of said Southeast Quarter of the Northeast Quarter (CE 1/16 cor.), monumented with a Government Land Office brass cap monument; thence South 89°12'20" West, 681.58 feet; along the South boundary of said Southwest Quarter of the Northeast Quarter; thence North 14°34'50" East 51.86 feet; thence North 89°12'20" East 468.46 feet parallel with the South boundary of said Southwest Quarter of the Northeast Quarter; thence North 28°55'55" East 397.51 feet; thence North 28°40'15" West 170.55 feet; thence North 13°12'35" East 267.66 feet; thence North 66°50'45" East 65.05 feet; thence North 18°36'25" East 523.48 feet (of record as 523.43 feet); thence North 89°25'22" East 1138.29 feet along the North boundary of said Southeast Quarter of the Northeast Quarter; thence South 0°56'31" West 988.51 feet along the East boundary of said Southeast Quarter of the Northeast Quarter; thence North 89°02'40" West 26.93 feet (of record as 27.00 feet); thence North 23°28'40" West 255.33 feet; thence North 81°34'25" West 133.16 feet; thence North 58°24'15" West 122.26 feet; thence South 89°12'20" West 965.09 feet along the South boundary of said Southeast Quarter of the Northeast Quarter to the POINT OF BEGINNING.

*thence South 0°47'40" East, 655.00 feet;

This parcel is subject to a road easement along the South 30 feet and is subject to an easement for an irrigation lateral.

SUBJECT TO That certain mortgage, dated July 14, 1976, in favor of Home Federal Savings & Loan Association of Boise, a corporation, which said mortgage was recorded on July 14, 1976, as Document No. 778725, in the records of Canyon County, Idaho, and which said mortgage, the Grantees herein assume and agree to pay according to the terms and tenor thereof.

Together with all of the Grantors' oil, gas and geothermal rights; mineral and mineral rights appurtenant to the above described property.

TO HAVE AND TO HOLD the said premises, with their appurtenances unto the said Grantees, their heirs and assigns forever. And the said Grantors do hereby covenant to and with the said Grantees, that they are the owners in fee simple of said premises; that said premises are free from all incumbrances

and that they will warrant and defend the same from all lawful claims whatsoever.

Dated: April 30, 1982

Arthur E. Ashcraft

Bonnie L. Ashcraft

STATE OF IDAHO, COUNTY OF CANYON) ss.

On this 30th day of April, 1982 before me, a notary public, in and for said State, personally appeared ARTHUR E. ASHCRAFT and BONNIE L. ASHCRAFT, husband and wife,

known to me to be the persons who se names are subscribed to the within instrument, and acknowledged to me that they executed the same.

Notary Public.

STATE OF IDAHO, COUNTY OF

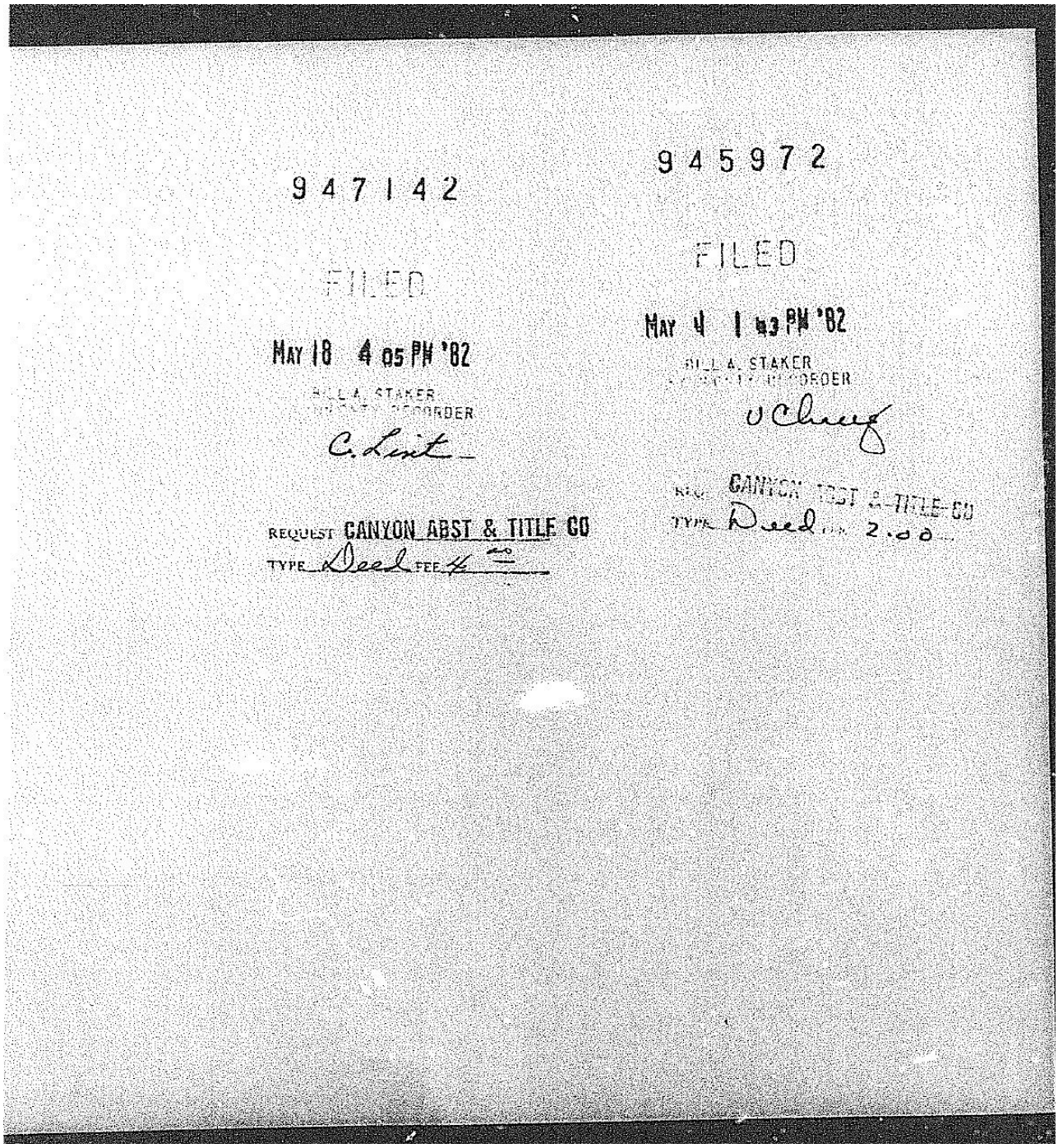
I hereby certify that this instrument was filed for record at the request of

at minutes past o'clock m., this day of 19, in my office, and duly recorded in Book of Deeds at page

Ex Officio Recorder.

By Deputy.

Fees $



947142

FILED

MAY 18 4 05 PM '82

BILL A. STAKER
COUNTY RECORDER

C. Lint

REQUEST CANYON ABST & TITLE CO

TYPE Deed FEE ~~4.00~~

945972

FILED

MAY 4 1 43 PM '82

BILL A. STAKER
COUNTY RECORDER

J Chuey

REQ CANYON ABST & TITLE CO

TYPE Deed 2.00

WELL CONSTRUCTION LOG

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

Received 9-10-74

1. WELL OWNER

Name ASH CRAFT

Address RT 1 CALDWELL

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 67 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	6 inches	+1 feet	66 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation inches by inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☒ No Size of gravel

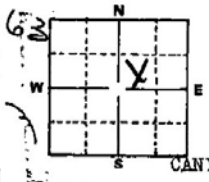
Placed from feet to feet

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

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

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name

Lot No. Block No.

County

SW ¼ NE ¼ Sec. 3, T. 4 (N)S, R. 3 (E)W

7. WATER LEVEL

Static water level 40 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow

Temperature ° F. Quality good

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☒ Other

Discharge G.P.M.	Draw Down	Hours Pumped
20	a	2

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	1	10	topsoil		x
8	10	20	to soil into gracel		x
6	20	30	gravel and sand		x
6	30	40	gravel and sand		x
6	40	50	gravel into clay		x
6	50	60	clay into gravel and sand	x	x
6	60	67	gravel course	xx	

CC1158

10. Work started 8-15-74 finished 8-19-74

11. DRILLERS CERTIFICATION

Firm Name D D WELL DRILLING Firm No. 254

Address 310 s 11 street Date 9/17/74

Signed by (Firm Official) Dave D Kim

and

(Operator)

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

QUALIFICATIONS OF ENVIRONMENTAL ASSESSOR

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

Definition of Environmental Professional and Relevant Experience Thereto, Pursuant to 40 CFR312.10

1) Environmental Professional

a) *Environmental Professional* means:

i) A person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding conditions indicative of releases or threatened releases (se §312.1(c) on, at, in, or to a property, sufficient to meet the objectives and performance factors in §312.20(e) and (f).

ii) Such a person must: (i) hold a current Professional Engineer's or Professional Geologist's license or registration from a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) and have the equivalent of three (3) years of full-time relevant experience; or (ii) be licensed or certified by the federal government, a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) to perform environmental inquiries as defined in §312.21 and have the equivalent of three (3) years of full-time relevant experience; or (iii) have a Baccalaureate or higher degree from an accredited institution of higher education in a discipline of engineering or science and the equivalent of five (5) years of full-time relevant experience; or (iv) have the equivalent of ten (10) years of full-time relevant experience.

iii) An environmental professional should remain current in his or her field through participation in continuing education or other activities.

iv) The definition of environmental professional provided above does not preempt state professional licensing or registration requirements such as those for a professional geologist, engineer, or site remediation professional. Before commencing work, a person should determine the applicability of state professional licensing or registration laws to the activities to be undertaken as part of the inquiry identified in §312.21(b).

v) A person who does not qualify as an environmental professional under the foregoing definition may assist in the conduct of all appropriate inquiries in accordance with this part if such person is under the supervision or responsible charge of a person meeting the definition of an environmental professional provided above when conducting such activities.

2) Relevant Experience

vi) *Relevant Experience*, as used in the definition of environmental professional in this section, means: participation in the performance of all appropriate inquiries investigations, environmental site assessments, or other site investigations that may include environmental analyses, investigations, and remediation which involve the understanding of surface and subsurface environmental conditions and the processes used to evaluate these conditions and for which professional judgment was used to develop opinions regarding conditions indicative of releases or threatened releases (see §312.1(c)) to the subject property.

BRENDA L. MAGNUSON, REA

Sage Environmental Services, LLC

2112 N. 33RD STREET, BOISE, IDAHO 83703
(208) 867-8876

PROFESSIONAL EXPERIENCE

Sage Environmental Services, LLC 2000-Present — Boise, ID
Owner
Complete property transfer site assessments, asbestos management plans, asbestos and lead paint surveys and radon testing. I also conduct subsurface investigations including soil sampling, groundwater sampling, and provide project oversight in the installation of groundwater monitoring wells.

Langston-Williams, Inc. 1997 - 2000 — Boise, ID
Environmental Scientist
Complete property transfer site assessments, asbestos management plans, asbestos and lead paint surveys and radon testing. I also conduct subsurface investigations including soil sampling, groundwater sampling, and provide project oversight in the installation of groundwater monitoring wells.

EnviroSearch International 1995 - 1997 — Boise, ID
Environmental Scientist
Assessed commercial properties for environmental conditions prior to property transfer, prepared asbestos management plans, conducted asbestos and lead paint surveys, and collected samples for radon analyses. I also provided technical field support to the Boise office

Osprey Environmental, Inc. 1991 - 1995 — Boise, ID
Environmental Specialist
Completed property transfer site assessments, asbestos management plans, asbestos and lead paint surveys and radon testing. Conducted subsurface investigations including soil sampling, groundwater sampling, and provided project oversight in the installation of groundwater monitoring wells.

Power Environmental Services, Inc. 1992 - 1993 — Boise, ID
Environmental Specialist
Completed property transfer site assessments and Spill Containment and Countermeasures Plans for a number of Idaho Power's hydroelectric power plants.

Boise City Public Works Department – Environmental Div: 1987 - 1992 — Boise, ID
City of Blackfoot - Water Pollution Control 1984 - 1987 — Blackfoot, ID

EDUCATION

IDAHO STATE UNIVERSITY — Pocatello, ID
Bachelor of Science: Biology- 1983

Certifications

Idaho Wastewater Operator Certificate, Class I	1986
Idaho Water/Wastewater Laboratory Operator Certificate; Class II	1986
Hazardous Materials and Hazardous Waste Seminar, Boise State University	1988
Solvent Management for Idaho Businesses, Boise State University	1989
Treatment of Metal Wastestreams - California State University, Sacramento	1990
Pretreatment Facility Inspection – California State University, Sacramento	1990
Basic Understanding and Complying with the Hazardous Waste Management Regulations	1991
OSHA Hazardous Waste Operation and Emergency Response Training Course August	1992
Idaho Groundwater Resources Course, University of Idaho Extension Office, Boise, Idaho	1993
Practices and Procedures for Asbestos Inspectors and Management Planner	1993
NESHAPS Asbestos Inspector/Management Planner Certification	1993
OSHA Hazardous Waste Operation and Emergency Response Training Course	1993
AHERA Asbestos Inspector/Management Planner Certification (updated annually)	1994

MEMBERSHIPS & APPOINTMENTS
Cal/EPA Registered Environmental Assessor (REA) Certificate #06973

EXPERTISE

- Phase One and Two Site Assessments
- Pollution Prevention
- Waste Minimization
- Water/Groundwater Sampling
- Underground Storage Tank Management
- Asbestos Inspections
- Asbestos Sampling
- Asbestos Management Plans
- Soil Sampling/Characterization

REPRESENTATIVE CLIENTS

First Security Bank of Idaho, N.A.
Bank of America
U.S. BANCORP
Seafirst Bank
Environmental Consulting Group
Washington Trust Bank
DK Commercial Real Estate
Idaho Independent Bank
Construction Lending Corporation of America
Washington Mutual Bank
Western Bank
Wells Fargo Bank
Key Bank National Association
Farmers and Merchants Bank
Washington Federal Savings & Loan
DL Evans Bank
The Clawson Group, Inc.
D.B. Fitzpatrick & Company

As well as a number of local attorneys, insurance companies, out-of-state financial institutions, developers, real estate agencies, developers, and private parties.

REFERENCES

DK Commercial Real Estate
1880 S. Cobalt Point Way
Boise, Idaho 83714
Ms. Brenda Clay (208) 371-5804

RA Schultz & Company
1524 W. Franklin Street
Boise, Idaho 83702
Mr. Richard A. Schultz (208) 343-7070

Idaho Independent Bank
8351 W. Overland Road
Boise, Idaho 83709
Contact: Mr. Charlie Kouba (208) 345-2960

Sterling Savings Bank
420 W. Main Street, Suite 205
Boise, Idaho 83702
Mr. Jeffrey Jones (208) 424-2000

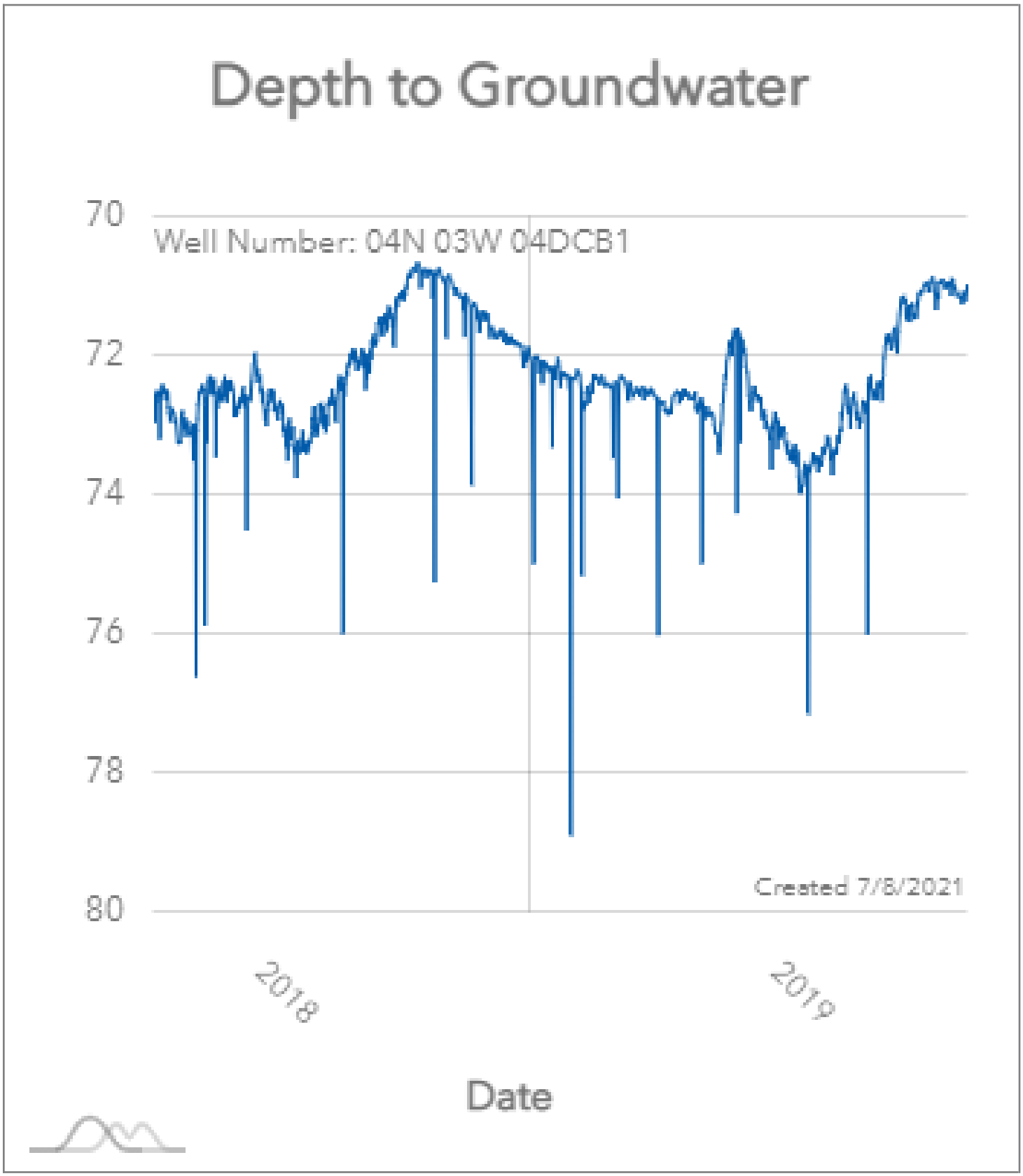
Thornton-Oliver-Keller Commercial Real Estate
250 S. 5th Street
Boise, Idaho 83702
Contact: Mr. Jerry VanEngen (208) 378-4600

Capital Matrix, Inc.
1471 Shoreline Dr., Suite 123
Boise, ID 83702
Contact: Ms. Deborah Brown (208) 383-3473
Ms. Ann Munroe

Exhibit A5.3

Groundwater Levels

Well Number: 04N 03W 04DCB1



Showing a subset of 2469 measurements, for 1964 through 2019.

Water Use	Domestic		
Well Number	04N 03W 04DCB1	**Well ID**	363470
County	CANYON	**Basin Number**	63

Year Drilled	5/31/1964	**# of Measurements**	2469
Min Well Opening	259	**Last Year Measured**	2019
Max Well Opening	293	**First Year Measured**	1964
Total Depth	293	**LSD Elevation (feet)**	2430

Disclaimer

If you have questions please send an e-mail message to HydroInfo@idwr.idaho.gov.
This page was created by the ***Idaho Department of Water Resources on 7/8/2021***.

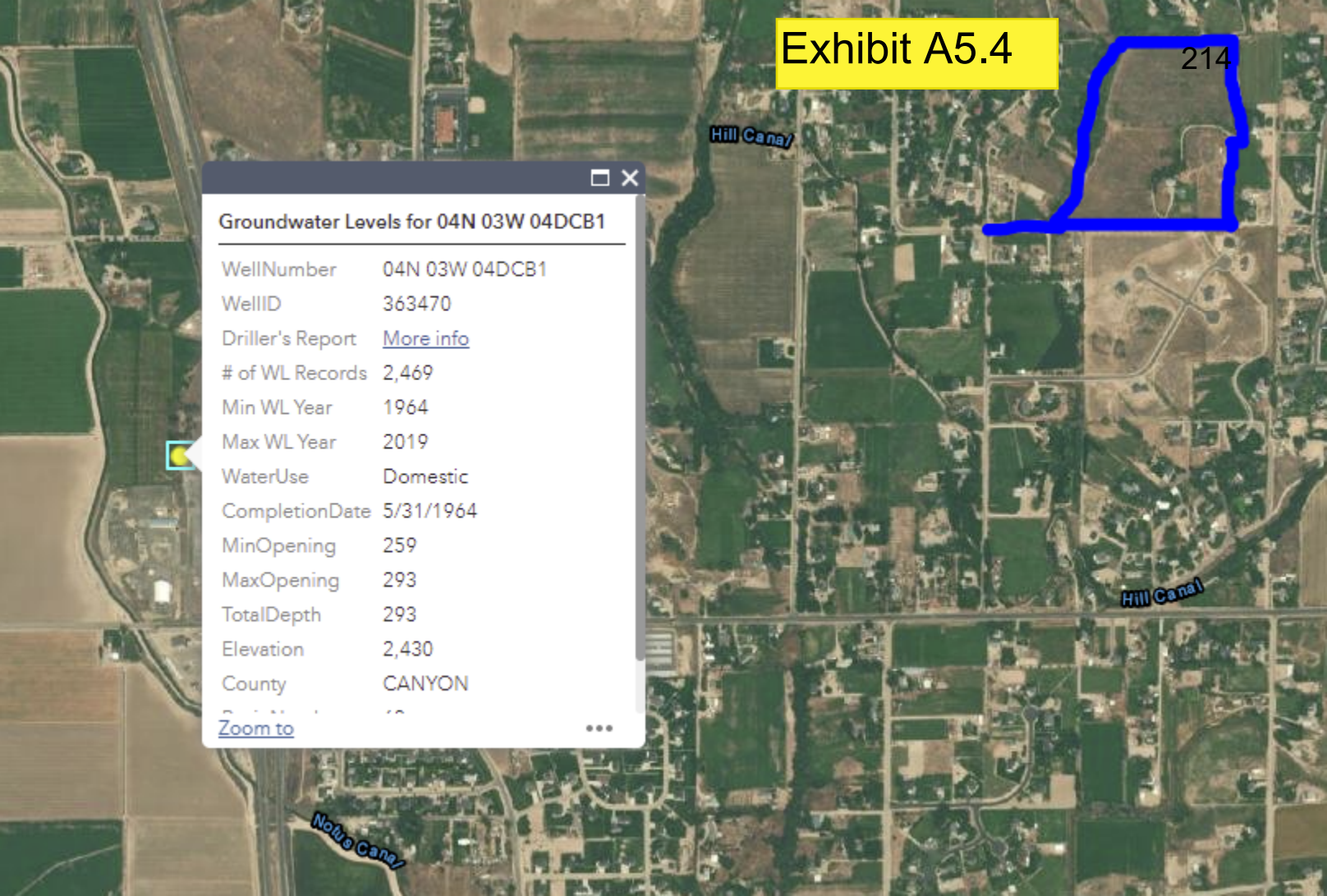


Exhibit A5.4
214
Hill Canal
Hill Canal
Notus Canal
Groundwater Levels for 04N 03W 04DCB1
WellNumber 04N 03W 04DCB1
WellID 363470
Driller's Report More info
# of WL Records 2,469
Min WL Year 1964
Max WL Year 2019
WaterUse Domestic
CompletionDate 5/31/1964
MinOpening 259
MaxOpening 293
TotalDepth 293
Elevation 2,430
County CANYON
Zoom to

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

Freezeout Ridge Estates

LOCATION

Canyon County, Idaho

DESCRIPTION

None

Local office

Idaho Fish And Wildlife Office

(208) 378-5243
(208) 378-5262

1387 South Vinnell Way, Suite 368
Boise, ID 83709-1657

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Insects

NAME	STATUS

Monarch Butterfly Danaus plexippus — Candidate
Wherever found
No critical habitat has been designated for this species.
http://ecos.fws.gov/ecp/species/9743

Flowering Plants

NAME	STATUS
Slickspot Peppergrass Lepidium papilliferum	Threatened

There is **proposed** critical habitat for this species. The location of the critical habitat is not available.
http://ecos.fws.gov/ecp/species/4027

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

THERE ARE NO MIGRATORY BIRDS OF CONSERVATION CONCERN EXPECTED TO OCCUR AT THIS LOCATION.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from

certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Michelle Barron

From: Cameron Shippy <cshippy@masonandassociates.us>
Sent: Tuesday, September 24, 2024 5:34 PM
To: Michelle Barron
Cc: Angie Cuellar
Subject: [External] RE: RZ2021-0053 Thornton Gallup LLC
Attachments: Freezout Ridge Estates NP approval Letter 6.15.2021.pdf

Michelle,

SWDH wrote a letter stating secondary dwellings are not allowed unless resubmitting or amending the NP study. There will be verbiage per SWDH requirements on the final plat stating no secondary dwelling allowed unless they meet said requirements.

There should be no need for Conditional Rezone or Development Agreement.

Thank you,

Cameron Shippy

Professional Engineers, Land Surveyors and Planners
924 3rd St. So., Suite B, Nampa, ID 83651
Phone: (208) 454-0256
e-mail: cshippy@masonandassociates.us

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Tuesday, September 24, 2024 3:34 PM
To: Cameron Shippy <cshippy@masonandassociates.us>
Subject: FW: RZ2021-0053 Thornton Gallup LLC

Also,

Has anyone spoken to you or your client about making this a Conditional Rezone? In looking at the NP1 study, it says that the study wasn't completed for secondary residences. I would need to add that to a Development Agreement to limit Secondary Dwellings. That would make it a Conditional Rezone. It is a normal condition to specify how many residential lots and an average lot size in accordance with the concept plan (the Preliminary Plat). That would also need to be a condition of a Development Agreement.

Let me know what you think,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605

Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Michelle Barron
Sent: Tuesday, September 24, 2024 3:02 PM
To: 'Cameron Shippy' <cshippy@masonandassociates.us>
Subject: RZ2021-0053 Thornton Gallup LLC

Good afternoon Cameron,

I have been working through this application and noticed that we do not have record of the applicant holding a neighborhood meeting. I can't imagine that the application would have been accepted with out proof, but I cannot locate it in the file. Do you happen to have a copy of the meeting details? There is a sign in sheet that has a spot for all of that information. I would like to add that to the file.

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

FREEZEOUT

REZONE

R1 RESIDENTIAL

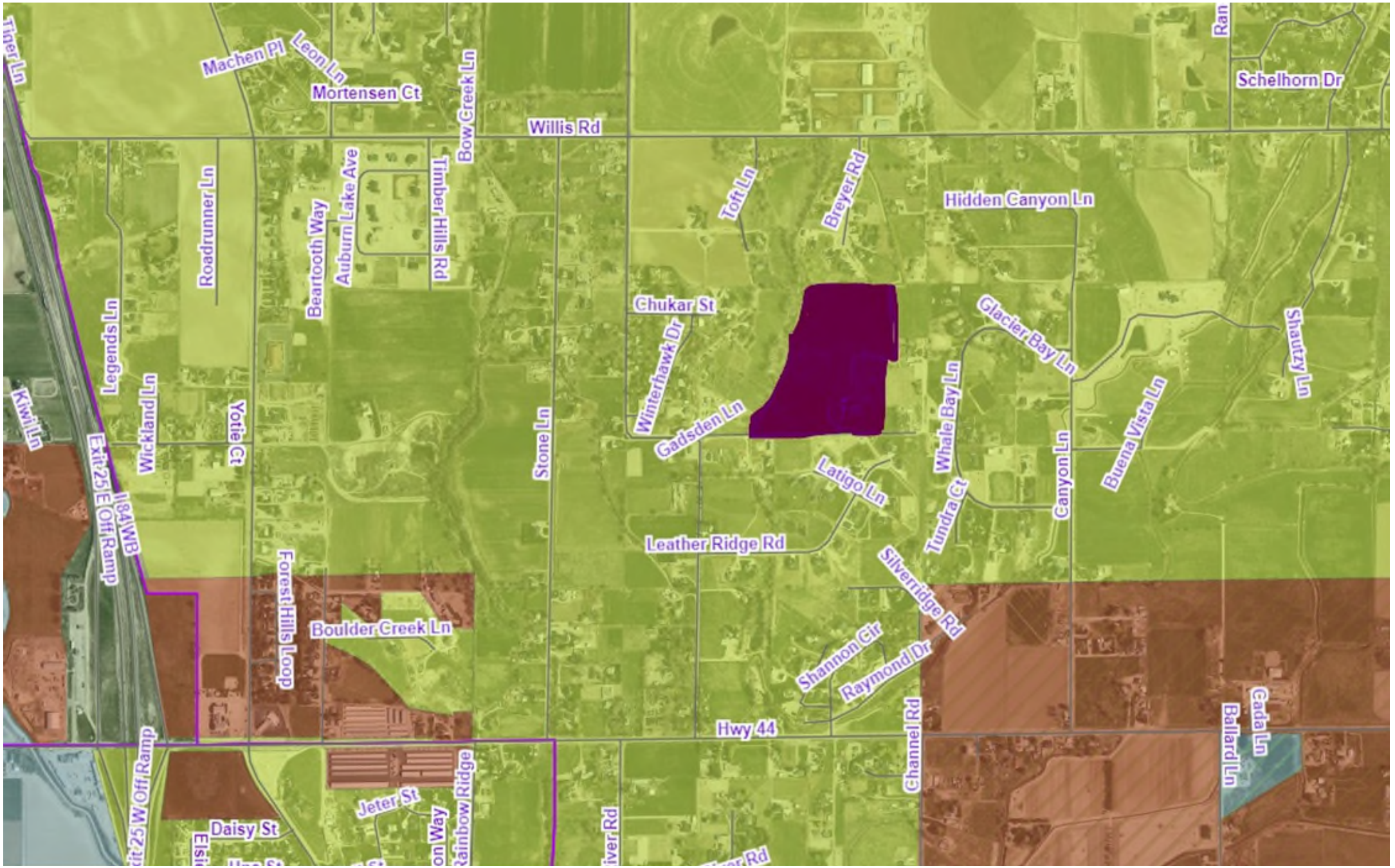
HISTORY-

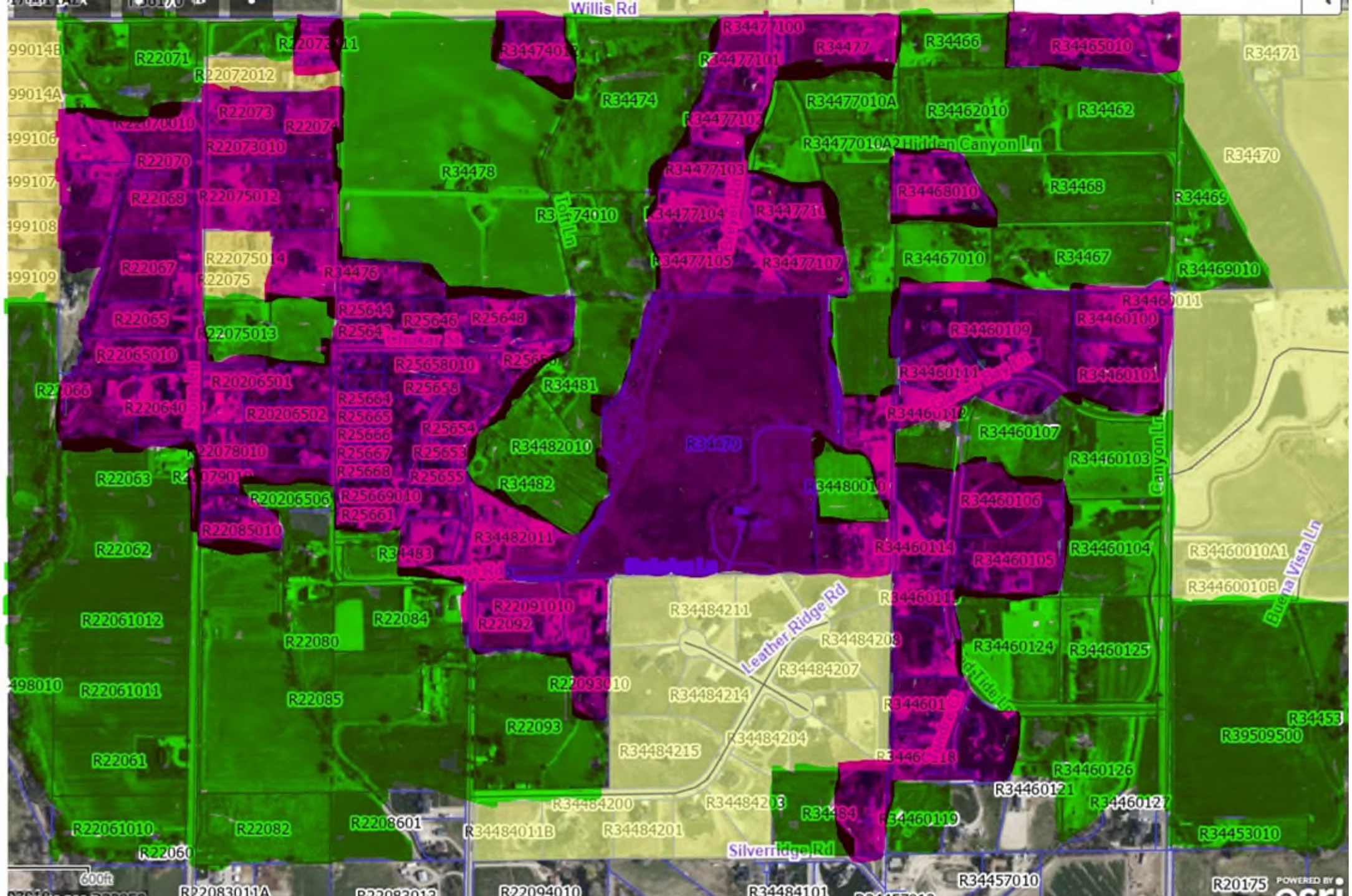
10/14/2021- Application for rezone and preliminary plat were submitted.

12/23/2022- County Engineer gave approval.

7/01/2024- Informed Application would be split. Rezone would be heard separately from the preliminary plat.

Game Bird Dr
Machen Pl
Leon Ln
Mortensen Ct
Bow Creek Ln
Willis Rd
Ranch R
Schelhorn Dr
Willis Falls Ct
Legends Ln
Roadrunner Ln
Beartooth Way
Auburn Lake Ave
Timber Hills Rd
Toft Ln
Breyer Rd
Hidden Canyon Ln
Chukar St
Winterhawk Dr
Gadsden Ln
Stone Ln
Wickland Ln
Yotie Ct
Exit 251E Off Ramp
I-84 WB
Leather Ridge Rd
Whale Bay Ln
Canyon Ln
Shautzy Ln
W 9th S
Buena Vista Ln
Greenwell Ln
Tundra Ct
Red Tide Ln
Silverridge Rd
Forest Hills Loop
Boulder Creek Ln
Shannon Cir
Raymond Dr
Hwy 44
Channel Rd
Ballard Ln
Cada Ln
W Off Ramp
Jeter St
ow Ridge


Machen Pl
Leon Ln
Mortensen Ct
Bow Creek Ln
Willis Rd
Schelhorn Dr
Roadrunner Ln
Beartooth Way
Auburn Lake Ave
Timber Hills Rd
Toft Ln
Breyer Rd
Hidden Canyon Ln
Legends Ln
Wickland Ln
Yotie Ct
Chukar St
Winterhawk Dr
Glacier Bay Ln
Shautzy Ln
Kiwi Ln
Exit 25E Off Ramp
I-84 WB
Stone Ln
Gadsden Ln
Whale Bay Ln
Buena Vista Ln
Latigo Ln
Canyon Ln
Tundra Ct
Leather Ridge Rd
Silverridge Rd
Forest Hills Loop
Boulder Creek Ln
Shannon Cir
Raymond Dr
Hwy 44
Channel Rd
Cada Ln
Ballard Ln
Exit 25 W Off Ramp
Jeter St
Daisy St
Rainbow Ridge


Willis Rd
Hidden Canyon Ln
Leather Ridge Rd
Silverridge Rd
Canyon Ln
Buena Vista Ln
R34477100
R34477101
R34477
R34466
R34465010
R34471
R34474
R34477010A
R34462010
R34462
R34478
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R34476
R34477105
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R34460107
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R34479
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R34460010A1
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R22061
R22061010
R22060
R22085010
R22084
R22080
R22085
R22093
R22091010
R22092
R22082
R2208601
R34484011B
R22083011A
R22094010
R34484101
R20175
600ft

07-06-05: ZONING AMENDMENT CRITERIA:

(1) The commission shall review the particular facts and circumstances of each proposed zoning amendment and make a recommendation regarding the same to the board. The presiding party shall make its review in terms of the following standards and shall find adequate evidence regarding the following criteria when evaluating the proposed zoning district boundary amendment:

Is the proposed zone change generally consistent with the comprehensive plan;

YES- THE ZONE AMENDMENT IS HARMONIOUS WITH THE 2030 FUTURE LAND USE MAP AS APPROVED BY THE COUNTY BOARD OF COMMISIONERS.

B. When considering the surrounding land uses, is the proposed zone change more appropriate than the current zoning designation;

YES, THIS REZONE AMENDMENT IS CONTIGIOUS TO THE SOUTH RESIDENTIAL SUBDIVISION AND ADJOINING RESIDENTIAL LAND USES THAT SURROUND THE PROPERTY.

C. Is the proposed zoning map amendment compatible with surrounding land uses;

YES.

D. Will the proposed zoning map amendment negatively affect the character of the area? What measures will be implemented to mitigate impacts?

NO- THE PROPOSED ZONE AMENDMENT WILL NOT NEGATIVELY IMPACT THE AREA. AN ENVIROMENTAL ASSESSMENT WAS COMPLETED AS WELL AS A NUTRIENT PATHOGEN STUDY. IN ADDITION THE COUNTY BOARD OF COMMISIONERS APPROVED RESIDENTIAL USES IN THIS AREA.

E. Will adequate facilities and services including sewer, water, drainage, irrigation and utilities be provided to accommodate the proposed zoning map amendment;

YES- THE PROPETY HAS IRRIGATION. SEWER, WATER, DRAINAGE & UTILITIES ARE AT THE EXISTING HOME.

F. Does legal access to the subject property for the zoning map amendment exist or will it exist at the time of development;

YES- ACCESS TO THE PROPERTY EXISTS. THE REZONE HAS BEEN REVIEWED AND APPROVED BY HD4.

G. Does the proposed zoning map amendment require public street improvements in order to provide adequate access to and from the subject property to minimize undue interference with existing or future traffic patterns created by the proposed development? What measures have been taken to mitigate road improvements or traffic impacts; and

ZONING ITSELF WILL NOT REQUIRE IMPROVEMENTS. IMPROVEMENTS WILL TAKE PLACE DURING THE FINAL PLAT AND DESIGN PHASE OF THE PROJECT. SUGGESTED REQUIREMENTS FOR THE IMPROVEMENTS CAN BE MADE WHEN THE PRELIMINARY PLAT IS ON THE AGENDA.

H. Will the proposed zoning map amendment impact essential public services and facilities, such as schools, police, fire and emergency medical services? What measures will be implemented to mitigate impacts? (Ord. 16-007, 6-20-2016)

ZONING ITSELF DOES NOT IMPACT PUBLIC SERVICES.

A FUTURE PRELIMIMARY PLAT WILL PROVIDE HOUSING.

ESSENTIAL SERVICES LIKE MIDDLETON FIRE AND EMERGENCY HAS ALREADY COMMENTED.

THE HIGHWAY DISTRICT HAS COMMENTED.

THE IRRIGATION COMPANY HAS COMMENTED.

SOUTHWEST DISTRICT HEALTH HAS COMMENTED.

THE CITY OF MIDDLETION HAS COMMENTED.

MIDDLETON RURAL FIRE DISTRICT

STAR FIRE PROTECTION DISTRICT

FIRE DEPARTMENT PRELIMINARY PLAT APPLICATION

PLEASE PRINT **Date:** 6/15/2023

Applicant Name: Pioneer Homes	Primary Contact: ☐Applicant ☐Owner ■Representative		
Address: 719 1st St. S. Suite B	City: Nampa	Zip: 83651	
Phone/Mobile: (208) 468-9200	Email Address: brian@pioneerhomesidaho.com		
Owner(s): Thornton Gallup LLC			
Address: P.O. Box 1495	City: Nampa	Zip: 83653	
Phone/Mobile:	Email Address:		
Representative: Mason and Associates	Contact Name: Will Mason		
Phone/Mobile: (208) 454-0256	Email Address: wmason@masonandassociates.us		
Billing: Name and Email:			

PROJECT INFORMATION

Subdivision Name: Freezeout Ridge Estates		
Site Location: 23442 Freezeout Rd. Caldwell, ID		
Approved Zoning Designation of Site: AG Requesting R1	Legal Description: Section 3 T4N R3W	
Total Acreage of Site: 31.41 AC	Dwelling Units Per Gross Acre: 1.16	
Minimum Lot Size: 1.00 AC	Minimum Lot Width: 125` min	
Total Number of Lots: 27	Residential: 23	Commercial: N/A
Industrial: N/A	Common: 4	Other: N/A
Total Number of Units: N/A	Single-family: N/A	Duplex: N/A
Multi-family N/A	Other: N/A	Water Services: Individual Wells
Streets: ■Public ☐Private	# Entrances: 1	Gated: ☐Yes ■No

FIRE CODE OFFICAL USE ONLY

REVIEW NOTES:

Application & Plans Received: (Date/By) 6/21/23 Dropoff-NSinclair

Permit Fee: $200.00 (Paid) Cash Credit Card Check # 14190

Fire Authority Having Jurisdiction: Middleton Rural FD

Fire District Permit # 23 MS-135

City/County Jurisdiction: Middleton / Canyon

County/City Permit #

FIRE DISTRICT APPLICATION STATUS

☐Approved ☐Approved with Conditions ☐Denied

Fire Code Official: **Date:**

(208) 286-7772
11665 W. STATE ST., SUITE B
STAR, IDAHO 83669

DATE: August 28, 2023

TO: Pioneer Homes
Mason and Associates

FROM: Victor Islas, Deputy Chief

SUBJECT: Fire District Review (23MS-135)

PROJECT NAME: Freezeout Ridge Estates
23442 Freezeout Rd., Caldwell, Idaho

Fire District Summary Report:

1. **Overview**
   a. This development can be serviced by the Middleton Rural Fire District. This development shall comply with the 2018 International Fire Code (IFC), Authority Having Jurisdiction (AHJ) and any codes set forth by the Canyon County, Idaho
   b. Scope: New Development
   c. Construction Type – VB
   d. Purposed Lots = 27 (Residential =23, Common =4)
   e. Zoning – R1 Rural Residential
   f. Any overlooked hazardous condition and/or violation of the International Building and/or Fire Code does not imply approval of such condition or violation.

2. **Fire Response Time:**
   a. This development will be served by the Middleton Rural Fire District Station 53, located at 302 E. Main St., ., Middleton, Idaho 83644. Station 53 is 3.7 mile with a travel time of 7 minutes under ideal driving conditions to the purposed entrance off Freezeout Rd.

3. **Accessibility:** Roadway Access, Traffic, Radio Coverage
   a. Access roads shall be provided and maintained following Appendix D and Section 503 of the IFC. Access shall include adequate roadway widths, signage, turnarounds, and turning radius for fire apparatus.
   b. Access road design shall be designed and constructed to allow for evacuation simultaneously with emergency response operations.
   c. All access roads in this development shall remain clear and unobstructed during construction of the development. Additional parking restrictions may be required as to maintain access for emergency vehicles at all times.
   d. Purposed access roads meet the intent of the fire code for subdivision under 30 lots.
   e. If the home sites more than 150 ft off the road way additional turnaround will be required.
   f. No parking signs will be required in all cul de sac.

Fire District Headquarters • 11665 W. State St., Suite B • Star, Idaho 83669 • (208) 286-7772 • www.midstarfire.org

4. **Addressing/Street Signs:**
    a. Addressing/building identification sign shall be placed in a position that is plainly legible and visible from the street or road fronting the property.
        i. Approved residential address numbers a minimum of six inches (6") in height and in a contrasting color shall be placed on all new buildings in such a position as to be clearly visible and legible from the street or road fronting the property.
    b. Upon commencement of initial construction of a new structure, a clear visible freestanding sign or post shall be erected and maintained in place until the permanent address numerals are attached or otherwise displaced upon the premises at completion.

5. **Water Supply:** Water supply requirements will be followed as described in Appendix B of the 2018 International Fire Code unless agreed upon by the Fire District.
    a. Fire Flow: The fire-flow calculation area shall be the total floor area of all floor levels within the exterior walls, and under the horizontal projections of the roof of a building.
    b. Fire Flow: One and two family dwellings not exceeding 3,600 square feet require a fire-flow of 1,000 gallons per minute for a duration of 1 hour to service the entire project. One and two family dwellings in excess of 3,600 square feet require a minimum fire flow as specified in Appendix B of the International Fire Code.
    c. Water Supply: Water Supply Options
        i. Municipal Water System
        ii. Private or Community well capable of supplying required fire flow.
        iii. Elevated and pressure tanks
        iv. NFPA 13D Residential Fire Sprinkler System

6. **Additional Comments:**
    a. Final inspection by the Fire District of the above listed must be completed before building permits are issued by Canyon County.

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HIGHWAY DISTRICT No.4
15435 HIGHWAY 44
CALDWELL, IDAHO 83607

TELEPHONE 208.454.8135
FAX 208.454.2008

December 3, 2024

Canyon County Board of Commissioners
and Planning & Zoning Commission
111 N. 11th Street
Caldwell, Idaho 83605
Attention: Michelle Barron

Mason & Associates
924 3rd Street South
Nampa, ID 83651
Attention: William Mason, P.E.

RE: RZ2021-005 Freezeout Ridge Estates Preliminary Plat
Canyon County Parcel R34479000 0

Dear Commissioners:

Highway District No. 4 (HD4) has received the notice of application for rezone of approximately 31.4 acres from agricultural to R-1 residential for purposes of developing a 23-lot subdivision. HD4 has previously provided comments on a preliminary plat dated March 28, 2024. (Freezeout Ridge Estates) for this parcel. The comments dated April 15, 2024 are repeated below for reference.

General
The subject property has frontage available to one public highway, Freezeout Rd, at the west end of the 50-foot wide flag lot portion of the parcel. Freezeout Rd is identified as a major collector on the functional classification maps adopted by Canyon Co and HD4. The development is proposed to be served by extension of a public road (Faithful Road) east from Freezeout Rd, and public local roads within the development.

HD4 provides the following comments on the preliminary plat dated March 28, 2024:

Right-of-Way

1. *The preliminary plat is the final work product and is intended to be relied upon to make policy decisions, Add notation on any 1 of the 3 Preliminary Plat sheets for items previously specified to be removed/relocated, below;*
    a. *Relocate all encroachments (utility, irrigation or otherwise) to be out of right-of-way of Faithful Road.*
    b. *Relocate mailboxes out of right-of -way on the east side of Freezeout Road.*

Preliminary Plat

1. *CL radius C4 needs to be 200 feet. Re-submitted changing radius to 100', adding a knuckle, without a variance, staff will present as re-submitted to HD4 Board of commissioners for approval.*
2. *Revise to move irrigation box #4 east to provide 90° crossing of Faithful Road to the irrigation lateral on the south side of the road.*

3. *Revise to provide a cul-de-sac/turnaround at the east end of Faithful Rd meeting ACCHD HS & DP (3120.020) that transitions to existing lane at east boundary, or if the portion of Faithful, east of Prismatic Drive is private, the cul-de-sac is not required. An ingress/egress easement for lots inside the subdivision or adjoining parcels that use the private lot, will be required.*

Internal Street Improvements

1. *HD4 would require a 56-foot stub street 310 feet north of ~~Yellowstone~~ Faithful Road west of ~~Big sky~~ Prismatic Drive for parcels R34482 and R34482010 preventing any land lock* ***unless*** *Canyon County can confirm there is a recorded document or recorded easement providing the access, as it is today.*

Please provide HD4 with a single hard copy and electronic copy of the plans, including supplementary materials requested above, for additional review. Also, submit a review comment sheet, which explains the changes made versus the review comments.

All other platting and improvement requirements to be in accordance with the current edition of the Highway Standards and Development Procedures Manual in effect at the time of preliminary plat consideration by the HD4 Board.

HD4 is charging additional review fees for any submittal after the 3rd review.
We recommend you perform complete in-house quality control reviews of plans and plats and supporting reports or documents, prior to submittal to avoid additional delays or additional fees for review of this and any other project submitted.

Please feel free to contact me with any questions on these comments.

-End April 15, 2024 Comments-

HD4 has no objection to the proposed rezone. Transportation impacts will be mitigated by dedication of public right-of-way, construction of public improvements, transportation impact fees, or a combination of these means.

Respectfully,

Chris Hopper, P.E.
District Engineer

File: Subdivision_Freezeout Rd- Freezeout Ridge Estates Subdivision

SOUTHWEST DISTRICT HEALTH

June 15, 2021

Brian Falck
Pioneer Homes
719 1st Street South, Suite B
Nampa, Idaho 836

RE: Freezeout Ridge Estates, Level 1 Nutrient Pathogen (NP) Study Approval

Dear Mr. Falck:

Southwest District Health (SWDH) and the Idaho Department of Environmental Quality (DEQ) received your Level 1 Nutrient-Pathogen study for review on April 19, 2021 for the proposed Freezeout Ridge Estates, located north of Caldwell, Canyon County, Idaho in SE1/4NE1/4 and SW1/4NE1/4, Section 3, Township 4N, Range 3W, Boise Meridian. The NP study was prepared by Atlas Technical Consultants, LLC, for Pioneer Homes of Nampa, Idaho.

The Property is reported to be an approximate 31-acre area of land. The proposed development includes 20 residential lots, with lot sizes ranging from approximately one (1) acre to 1.9 acres. Individual wastewater disposal systems and individual water wells for single family residences are planned.

Based on the data presented in the NP Study, Freezeout Ridge Estates 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, apart from **lots 4,7,8 and 10**, will need extended treatment systems to reduce nitrate concentrations in wastewater to 27 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, Freezeout Ridge Estates 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 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. Once an SER is submitted to our office, SWDH can review it. A pre-development meeting is required to being the SER process. During this meeting an on-site evaluation, including test holes can be scheduled.

If you have questions, please call our office at 208-899-3907 or brigita.gruenberg@phd3.idaho.gov.

Sincerely,

Brigitta Gruenberg, REHS

Brigitta Gruenberg, REHS/RS
Land Development Senior

c Monica Saculles, Atlas Technical Consultants, LLC
Angie Cuellar, Mason & Associates Inc.
File copy

HECO ENGINEERS
HOLLADAY ENGINEERING CO.

November 4, 2021

Black Canyon Irrigation District
Attention: Carl Hayes, Superintendent
474 Elgin Avenue Hwy 20/26
Notus, ID 83656

RE: Freezeout Ridge Estates – C.L.E. 10.2 Lateral Reroute

Dear Carl,

We have reviewed the improvement plans and easements for the Re-Routing of the C.L.E. 10.2 Lateral for the Freezeout Ridge Estates Subdivision in Caldwell, Idaho. The project is located on the north side of a private roadway approximately 1,000 feet east Freezeout Road one-half mile north of Highway 44. HECO Engineers believes the design engineer has addressed the comments in previous correspondence. If the Black Canyon Irrigation District (BCID) has no additional concerns, HECO Engineers recommends acceptance of the following improvement plans signed by William Mason, P.E., dated 7-22-21:

1. Sheet 1 of 7: Cover Sheet
2. Sheet 2 of 7: Details Sheet
3. Sheet 3 of 7: Plan and Profile Station 10+00 to 12+25
4. Sheet 4 of 7: Plan and Profile Station 12+25 to 16+00
5. Sheet 5 of 7: Plan and Profile Station 16+00 to 18+00
6. Sheet 6 of 7: Plan and Profile Station 18+00 to 23+00
7. Sheet 7 of 7: Plan and Profile station 23+00 to 28+00

A 50-foot wide easement for the C.L.E. 10.2 Lateral is proposed through the subdivision and includes a split easement with the adjacent property from Station 10+00 approximately 725 feet south. The 50-foot wide proposed easements are shown on the construction plans and are described and shown on the attached two Legal Descriptions. Also attached is the existing easement for the C.L.E. 10.2 Lateral for vacation purposes once the new easement is recorded and the rerouted facility is constructed and in operation. We have reviewed the three (3) attached legal descriptions and exhibits for the and find them to be acceptable and match the construction plans.

A 12 ft wide gravel access road on one side of the pipeline is shown along the C.L.E. 10.2 Lateral reroute and one gravel pull out has been provided for access to irrigation box 7 and the weir to the pump station. There is an existing BCID siphon running west north of the north property line that appears will not be affected by this reroute. In addition, there are three existing deliveries and weir structures that will be maintained and reconnected to the new piped facility.

A summary of the items to be constructed with the C.L.E. 10.2 Lateral Reroute includes:

- Construct approximately 270 lineal feet of new 24-inch PVC C905, Class 235 Pipe.
- Construct approximately 1,330 lineal feet of new 24-inch Class 125 PVC (SDR 32.5)
- Construct seven (7) cast in place concrete irrigation boxes with lids.
- Install a new cast in place inlet headwall with trash rack.
- Install two (2)-12" headgates and one weir structure.
- Construct approximately 1,400 lineal feet of 12-ft wide gravel access road and one gravel pullout.

This letter does not authorize any construction to commence until the license agreement and permits with Black Canyon Irrigation District and/or the US Bureau of Reclamation (USBOR) have been executed and returned. Plans are subject to change until a license agreement is in place.

Our review does not guarantee a problem free system. Said review is only for general conformance with Black Canyon Irrigation District standards in force at the time of the review. The project developer and engineer are responsible for providing a fully functional system that follows the intent of the BCID and the USBOR.

If you have any questions or need additional information, please contact me at (208) 642-3304.

Sincerely,
HECO Engineers

By: _____
Kent Gingrich, PE

Enclosures:
1. Copy of the CLE 10.2 Lateral Reroute Improvement Plans (7 Sheets).
2. Legal Description and Exhibit for Existing C.L.E. 10.2 Lateral Easement (3 pages)
3. Legal Description and Exhibit for Proposed C.L.E. 10. 2 Lateral Easement (3 pages)
4. Legal Description and Exhibit for Offsite Proposed C.L.E. Lateral Easement (3 pages)
5. Copy of Hydraulic Calculations for Pipe Sizing (3 pages)

Cc: Tyler Chamberlain/Black Canyon Irrigation District

04N 03W 04DCB1

Site Name:	CANYON	**Latitude:**	43.70905	**USGS Site ID:**	434233116420201
Station Type:	Water Levels	**Longitude:**	-116.70153	**Well Construction ID:**	363470
Depth:	293 (ft BGS)	**Elevation:**	2430.0	**Primary Water Use:**	Domestic

Time Series | Water Quality

Multiple Timeseries

Compiled Depth To Water

Discrete Depth to Water

700.Publish_Water_Level_Disc_DTW

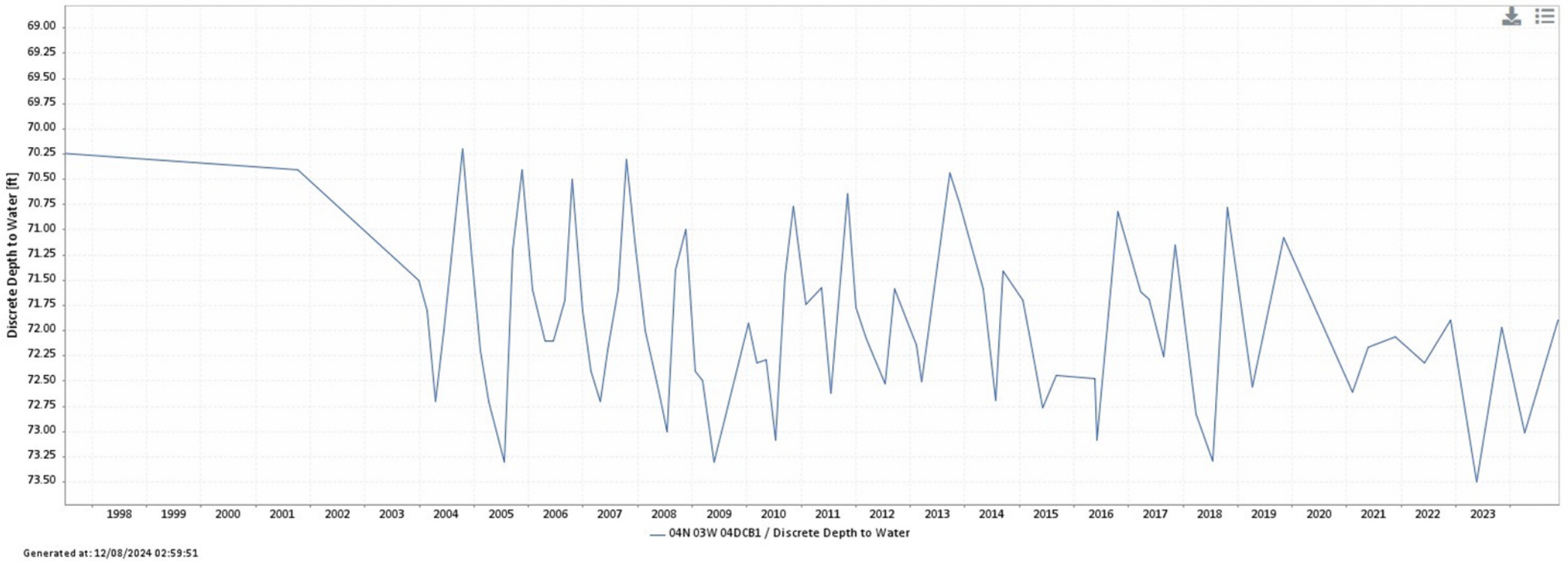
USGS Depth To Water

Documents

700.Publish_Water_Level_Disc_DTW

3 d | 10 d | 1 m | 3 m | 1 y | ∞

07/01/1997 – 11/19/2024



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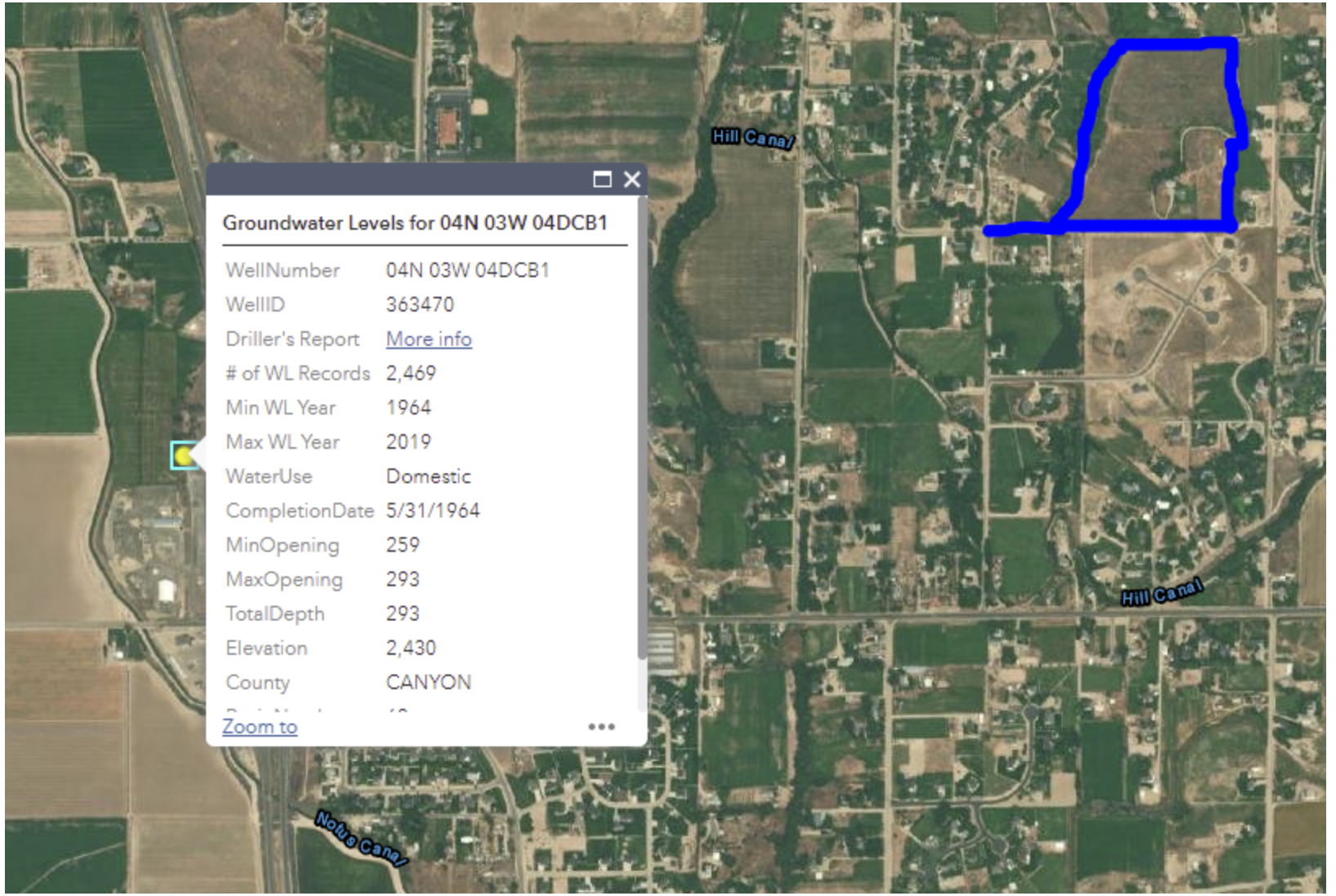
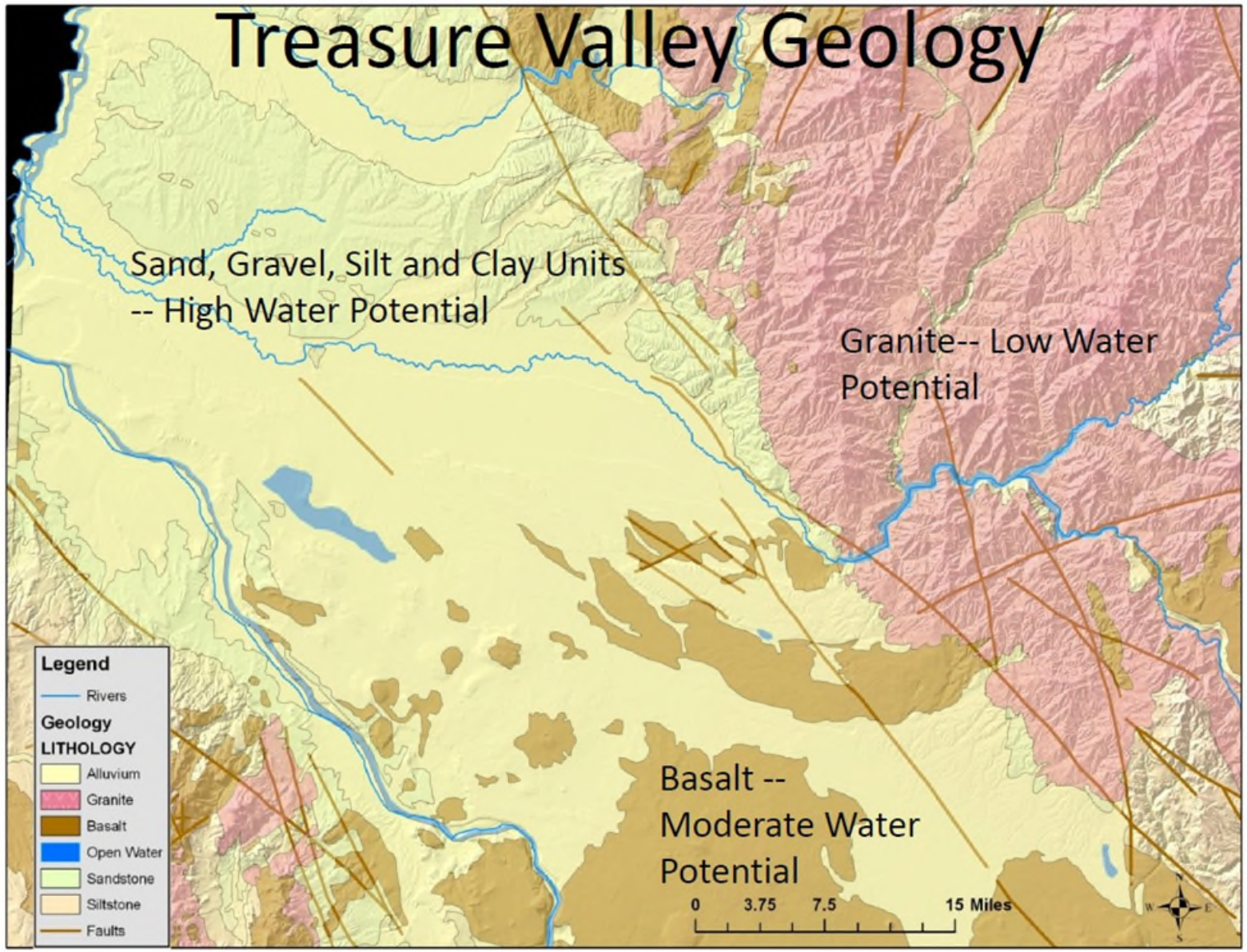
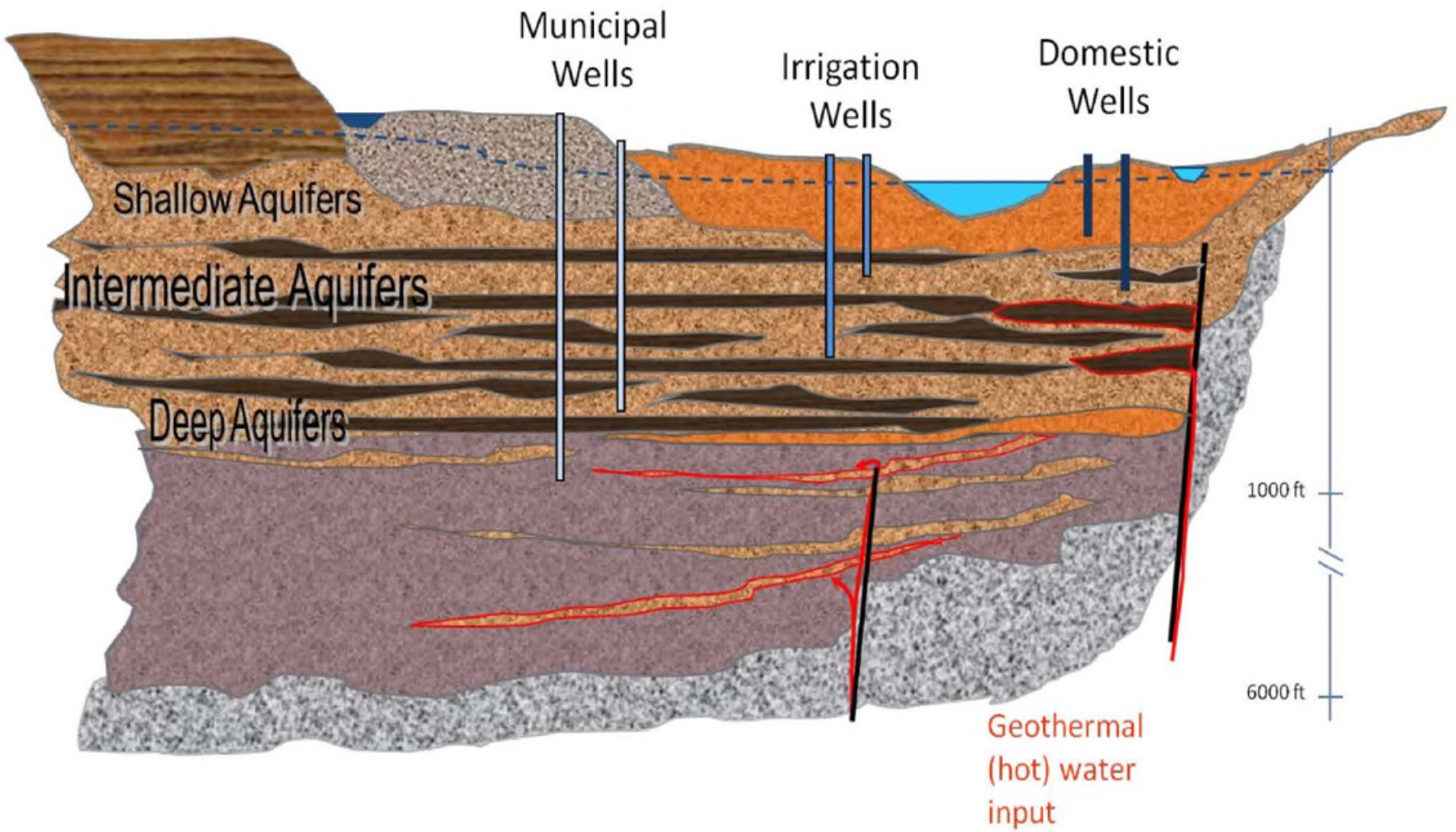
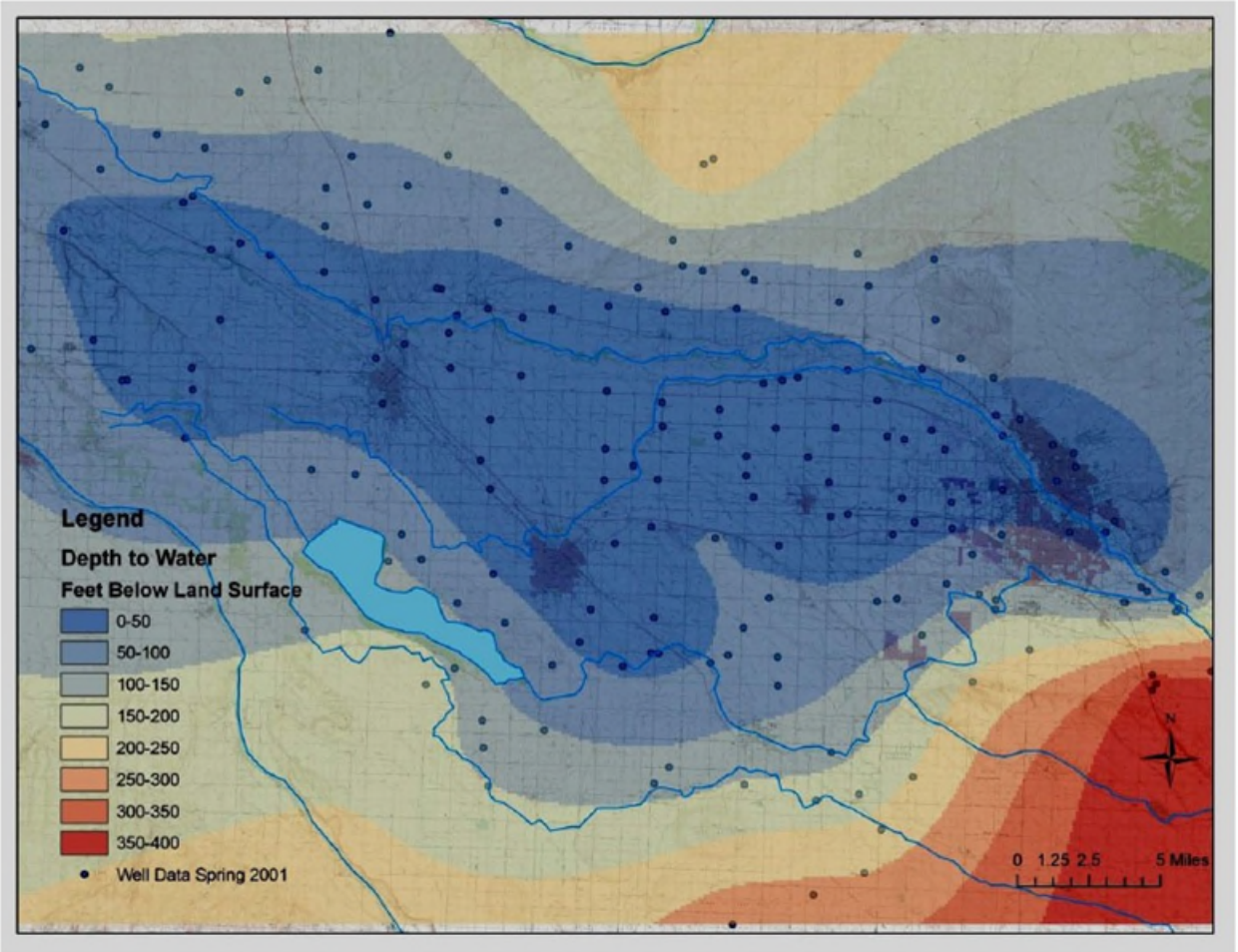

Hill Canal
Hill Canal
Notus Canal
Groundwater Levels for 04N 03W 04DCB1
WellNumber 04N 03W 04DCB1
WellID 363470
Driller's Report More info
# of WL Records 2,469
Min WL Year 1964
Max WL Year 2019
WaterUse Domestic
CompletionDate 5/31/1964
MinOpening 259
MaxOpening 293
TotalDepth 293
Elevation 2,430
County CANYON
Zoom to

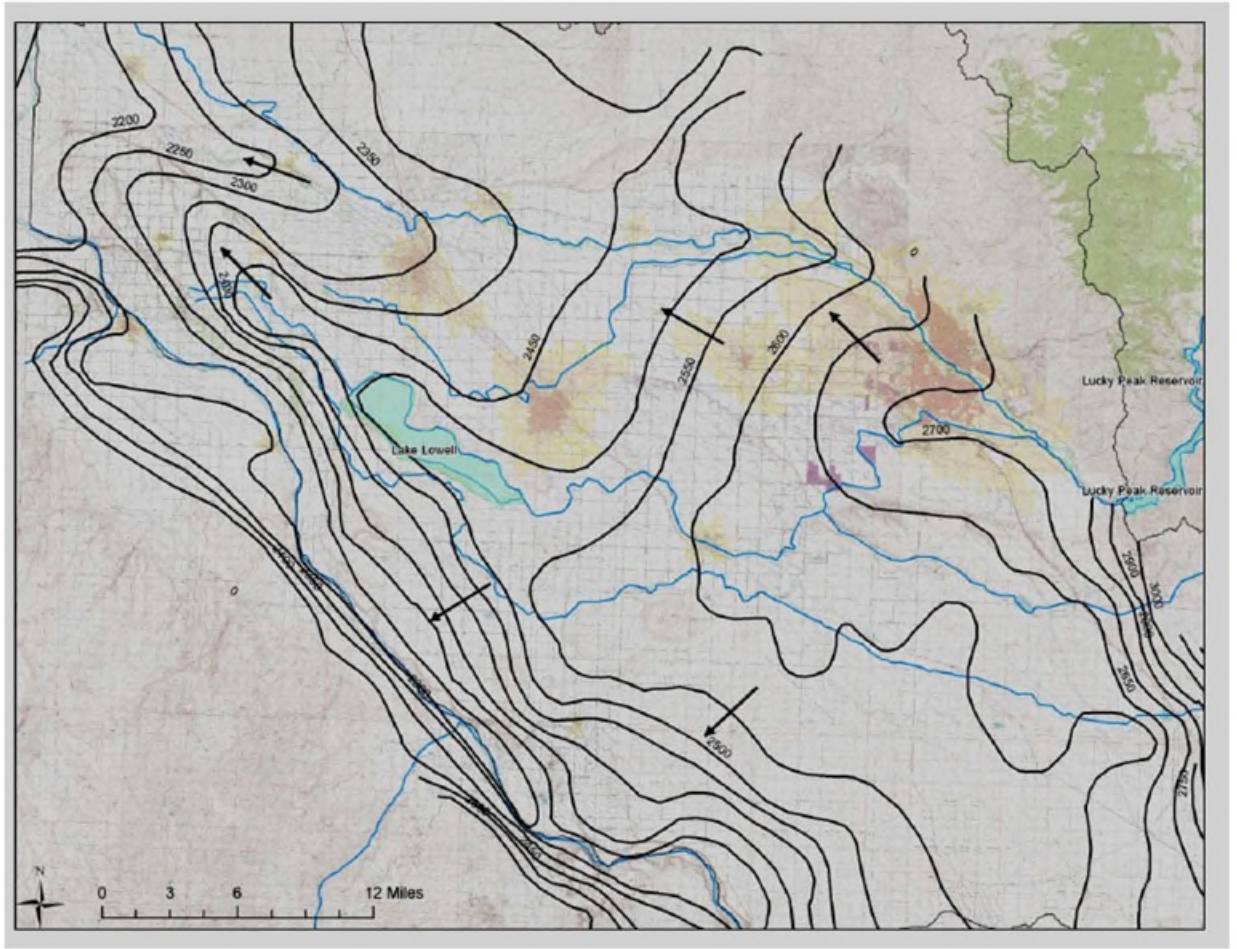

Treasure Valley Geology
Sand, Gravel, Silt and Clay Units
-- High Water Potential
Granite-- Low Water Potential
Basalt -- Moderate Water Potential
Legend
Rivers
Geology
LITHOLOGY
Alluvium
Granite
Basalt
Open Water
Sandstone
Siltstone
Faults
0 3.75 7.5 15 Miles


Municipal Wells
Irrigation Wells
Domestic Wells
Shallow Aquifers
Intermediate Aquifers
Deep Aquifers
1000 ft
6000 ft
Geothermal (hot) water input

Depth to Water

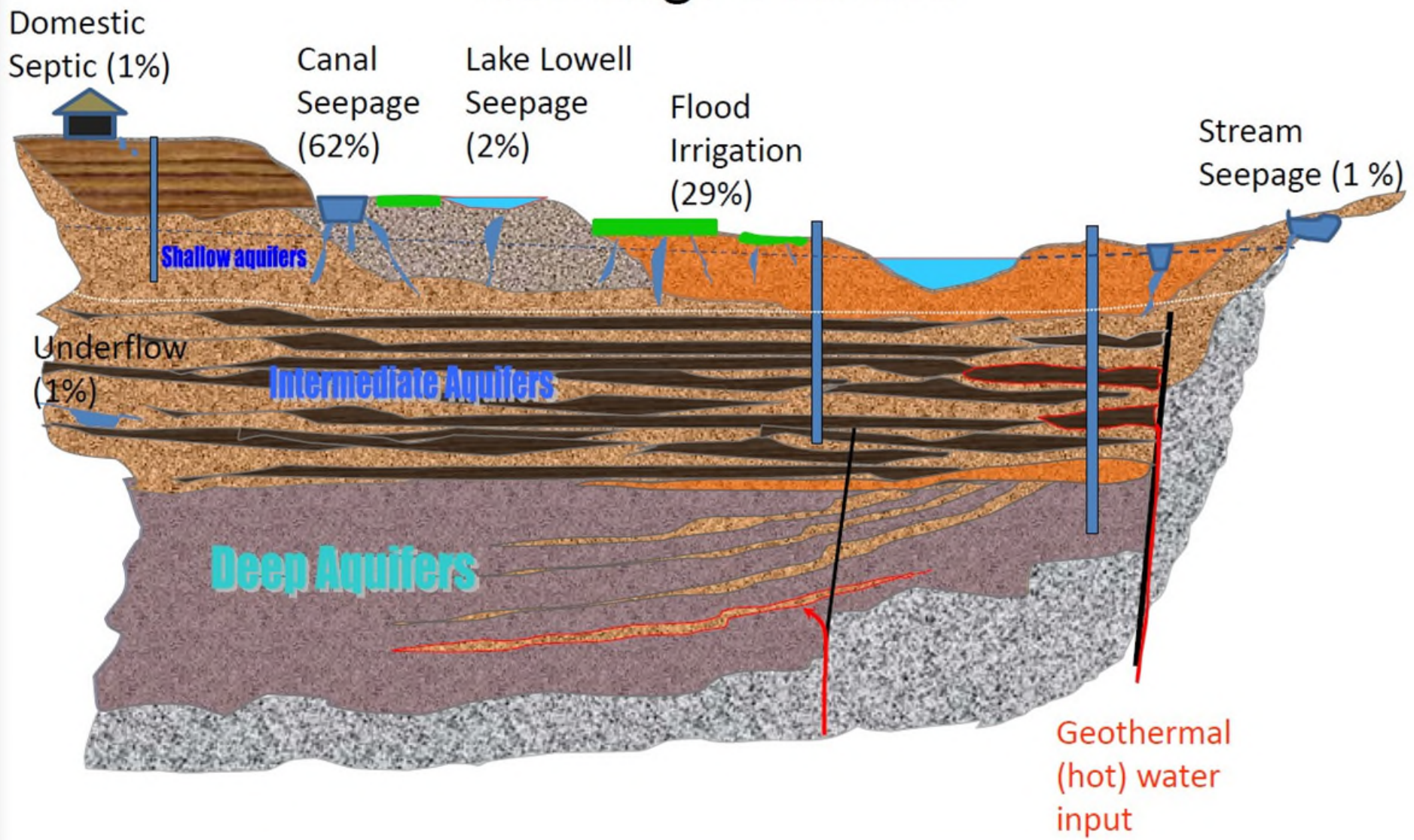


Ground Water Flow Direction

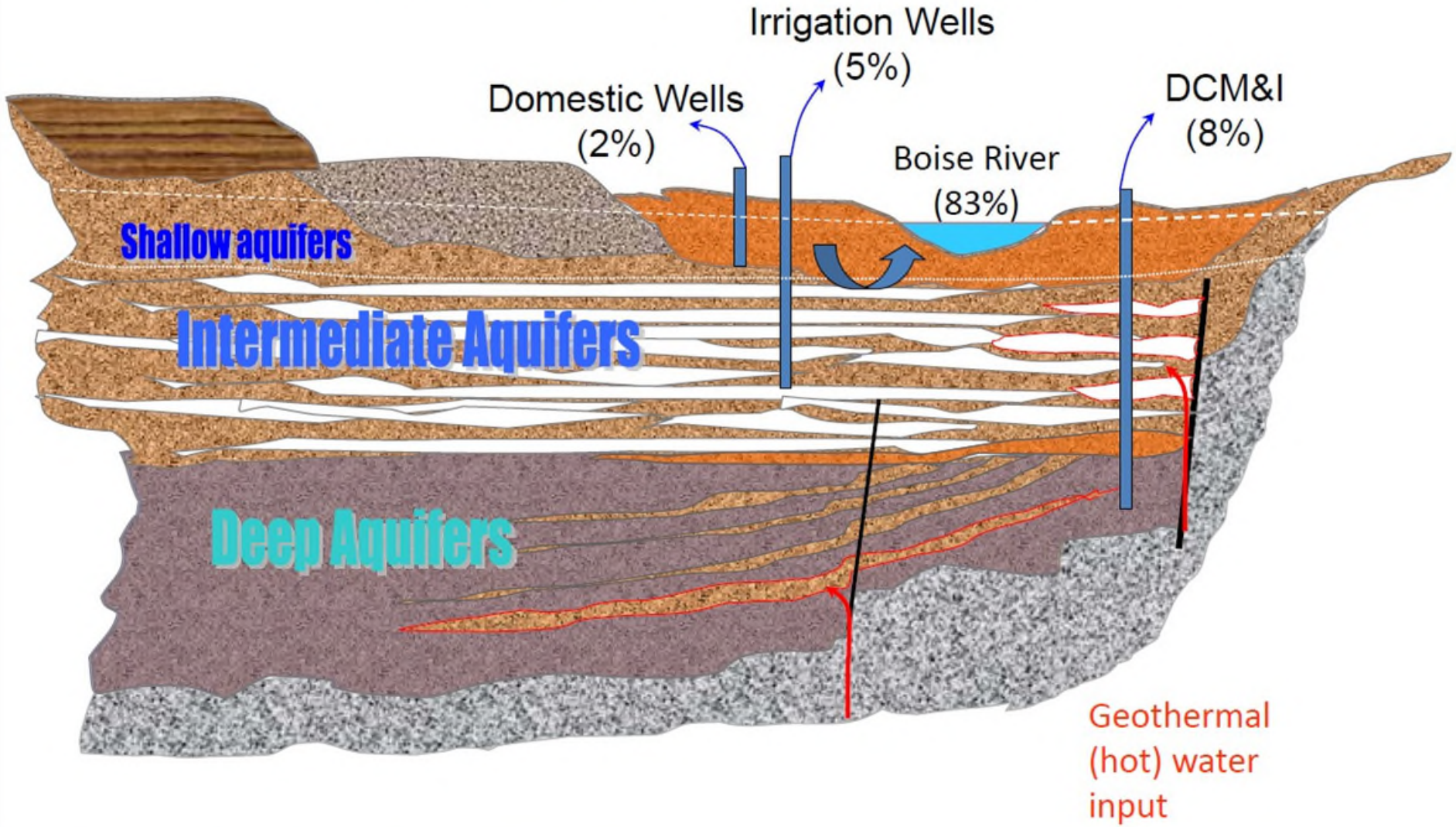


IDAHO Department of Water Resources

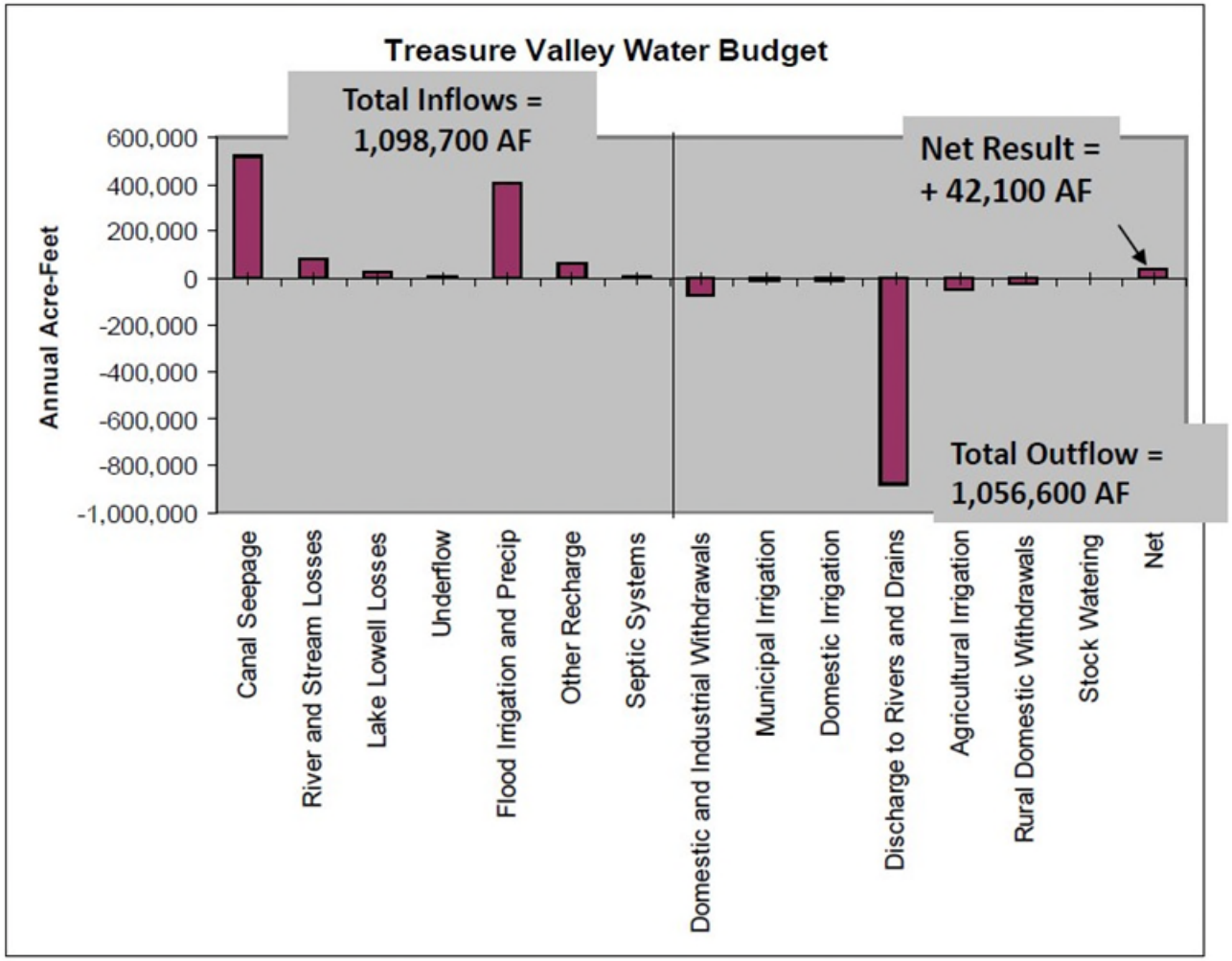
Recharge Sources



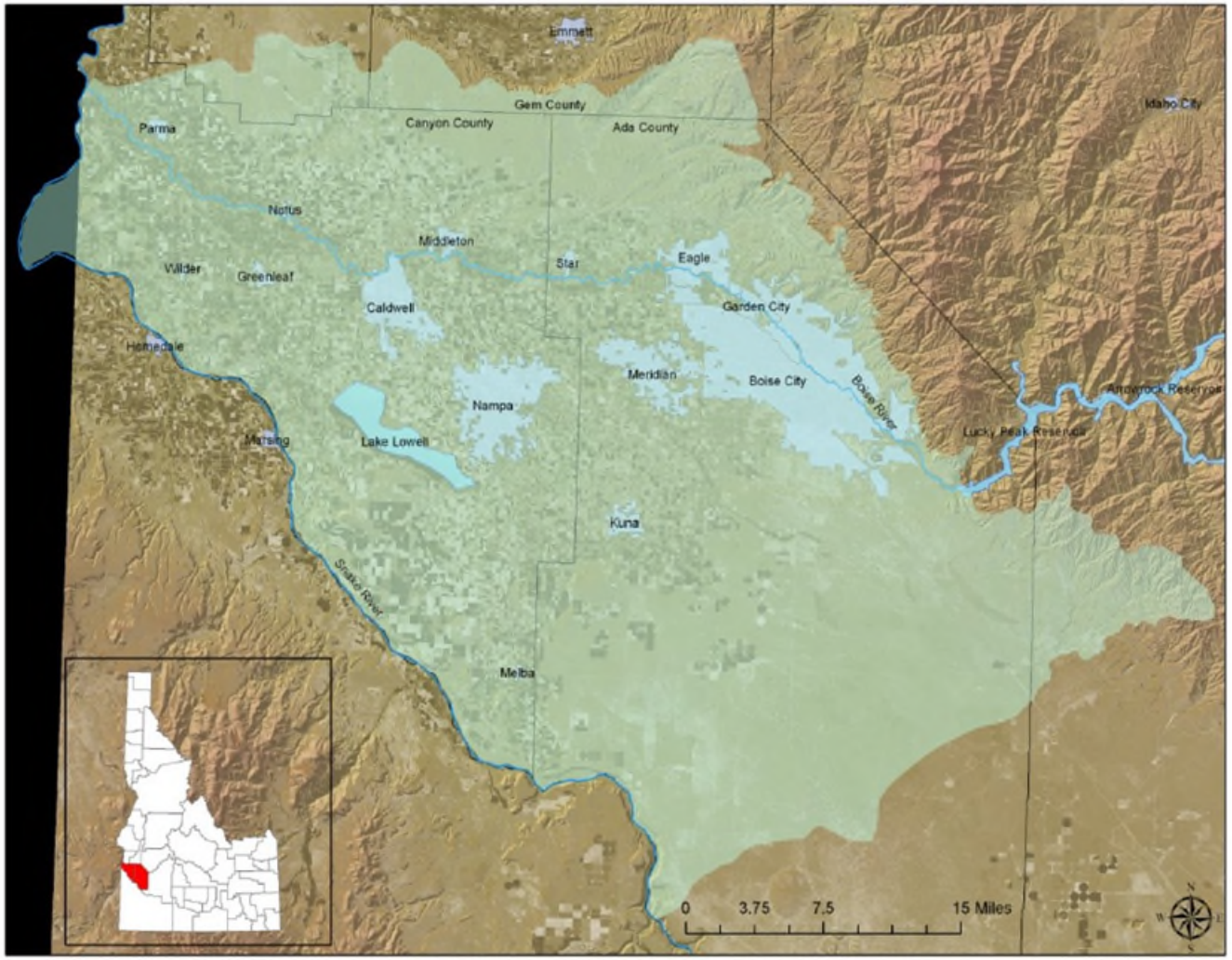
Treasure Valley Aquifers



Ground Water Budget



Treasure Valley Aquifer Boundary



- Boundary extends from Mountain Home Plateau, Oregon Idaho state line, the Snake River, and the Payette River Basin.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
(UPDATE)

OF THE

RURAL HOMESITE & UNDEVELOPED PASTURE

LOCATED AT

23442 FREEZEOUT ROAD

IN

CALDWELL, IDAHO

PREPARED FOR:

PIONEER HOMES
ATTN: BRIAN FALCK
719 1ST STREET SOUTH, STE. B
NAMPA, IDAHO 83651

EFFECTIVE DATE:

MAY 18, 2022

SAGE FILE:

#22-05740

PREPARED BY

BRENDA L. MAGNUSON
CAL/EPA REA#06973

SAGE
ENVIRONMENTAL SERVICES LLC
18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208.867.8876
SAGE.BOISE@GMAIL.COM

May 18, 2022

Pioneer Homes
ATTN: Brian Falck
719 1st Street South, Ste. B
Nampa, Idaho 83651

Re: Phase I Environmental Site Assessment (update) for the Rural Homesite & Undeveloped Pasture Property located at 23442 Freezeout Road in Caldwell, Idaho.

Dear Mr. Falck:

The following Executive Summary provides a synopsis of our findings and conclusions for this Phase I Environmental Site Assessment Report of the above-referenced property. More detail is presented in the text of this report.

Executive Summary

Sage Environmental Services, LLC (Sage Environmental or Sage) has performed a Phase I Environmental Site Assessment (update) in conformance with the ASTM Practice E1527-21 for the Rural Homesite & Undeveloped Pasture Property located at 23442 Freezeout Road in Caldwell, Idaho. Any exception to or deletion from this practice is described in Section 2.3 “Scope of Services” and Section 2.5 “Limitations and Restrictions” of this report.

Findings

The findings listed below identify any possible concerns that could be recognized environmental conditions, historical recognized environmental conditions, and "de minimus" conditions.

Type of Information Evaluated	Finding
User-Provided Information	No environmental concerns
Environmental Database Records	See below
Nitrate Priority Area	The Property is located just inside the Ada/Canyon County; Purple Sage Nitrate priority area. Well sampling on nearby sites have revealed nitrate levels ranging from 0.01 mg/l (west) and 0.32 mg/L (northwest), to 5.05 mg/L (northeast) and are considered elevated, but are well below the EPA and State drinking water standard of 10.0 mg/L.
Historical use Information	No environmental concerns
Site Reconnaissance	See below
Potable Water Supply/ Wells	A private well, located northeast of the dwelling, provides potable water to the home site on the Property. According the Well Construction Log we obtained from the Idaho Department of Water Resources, the domestic well was installed during 1974 and was constructed to a depth of 67 feet below ground surface (bgs). During construction, water was first encountered at a depth of 40 feet bgs.

SAGE ENVIRONMENTAL SERVICES LLC
18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208.867.8876
SAGE.BOISE@GMAIL.COM

SEWAGE DISPOSAL SYSTEM/ SEPTIC SYSTENS	An on site septic tank and drainfield system provides sewage disposal for the dwelling on the Property. It is likely that this septic system is located near the dwelling; however, we have no information about the exact location of this system.
HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS	Several containers of oils, lubes, household maintenance products, and a few cans of gasoline are stored inside the shop building; these materials are stored in containers of 5-gallons in size or smaller. None of these containers appeared to be leaking or have leaked. Of the nearly fifty (50) 55-gallon drums we identified on the site, two to three (2-3) of the drums and three (3) 5-gallon containers contain an unknown liquid; a small amount of staining around two (2) of the containers indicate that they may contain waste oil. During our inspection of the Property, we saw no visual indications that the site has been, or is being contaminated by hazardous waste or other hazardous substances. We did not observe any visual evidence of the historic use of hazardous materials and we observed no significant stains, odors, or unnaturally stressed vegetation (indicators that the improper use of these material has occurred).
DRUMS/UNIDENTIFIED SUBSTANCE CONTAINERS	Approximately fifty (50) 55-gallon drums are located on the Property. Most of these drums are empty or contain trash; however, two (2) to three (3) drums located in the field to the northeast of the dwelling contain unknown liquids. The drums containing liquids have tight-fitting lids. One (1) drum has limited staining on the ground that appears to be waste oil. *This drum is located within "Area #2" on the Site Plan.* *Note: The number of drums is an approximate number because some of the empty drums are located within piles of material and debris that are difficult or impossible to see.*
PITS, PONDS, OR LAGOONS	Although not currently present, aerial photos indicate that Sand Hollow Creek, forms a seasonal pond or shallow pool of water near the mid-point of the western Property boundary. During inspection of the site, we observed the area on the site were the creek temporarily ponds or pools along the western boundary. ***Update**: The seasonal pond was present at the time of our site visit on May 16, 2022.*
STAINED SOIL OR PAVEMENT	Minor surface stains are visible on the gravel drive in front of the shop building (south side). These surface stains appear to have been caused by fluid drips from parked vehicles or equipment. We observed staining on the ground beneath one of the drums and a 5-gallon container within "Area #2" (shown on the Site Plan). This staining is limited and appears to be caused by waste oil.
VAPOR ENCROACHMENT CONCERNS	No environmental concerns

OPINIONS

Listed below are our professional opinions of the impact (if any) on the Property of the conditions identified in the Findings:

SAGE ENVIRONMENTAL SERVICES LLC
18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208.867.8876
SAGE.BOISE@GMAIL.COM

Type of Information Evaluated	Opinion
Environmental Database Records	See below
Nitrate Priority Area	Although it is possible that the groundwater beneath the Property may contain elevated levels of nitrates, our review of area well sampling data indicates that nitrate levels would likely be well below the EPA and Idaho drinking water standard of 10.0 mg/L. *This is not a "recognized environmental condition" or "REC".*
Site Reconnaissance	See below
Potable Water Supply/ Wells	The presence of a private well on the Property is not a cause for concern; however, if the future use of the Property does not include the use of the well, it should be properly abandoned in accordance with the Idaho Department of Water Resources (IDWR) rules. Due to the relatively shallow depth of the well (less than 100 feet bgs), we recommend sampling of the well prior to it's continued use as a potable water source. The analyses should include bacteria (Total Coliform and E. Coli) and Nitrates.
Sewage Disposal System/ Septic Systens	The presence of an on site septic tank and drainfield system is not a cause for concern; however, if the future use of the Property doe not include the use of the septic system, it should be closed in accordance with Idaho Health Department Rules.
Hazardous Substances and Petroleum Products	In their current state, the use and storage of oils, lubes, household maintenance products, and cans of gasoline on the site *are not a cause for concern and are not considered a "REC"*; however, any of these materials that are no longer in use should be disposed of in accordance with Federal, State, and local rules and regulations.
Drums/Unidentified Substance Containers	Of the fifty (50)± drums located on the site, two (2) to three (3) drums located in the field to the northeast of the dwelling (area #2 on Site Plan) contain an unknown liquid. All of these drums/containers have been on the Property for an extended period of time; it is unclear if the staining around the drum/container in area #2 was caused by spills or if the container has leaked; however, it is our opinion that these drums and *the soil staining is not considered a "REC" because the staining on the ground around one (1) drum and one (1) 5-gallon container appears limited to the top 6-inches of soil, a "de minimus" condition.* Although *not considered a "REC"* the contents of the drums should be determined and properly disposed of in accordance with Federal, State, and local rules and regulations.
Pits, Ponds, or Lagoons	The seasonal pond/pool formed by Sand Hollow Creek is not a cause for concern with respect to the environmental integrity of the Property.
Stained Soil or Pavement	One of the drums and/or 5-gallon containers (area #2 on Site Plan) appears to have leaked waste oil onto to the ground. This staining appears to be waste oil and to the extent observable, the leakage appears to be have been present for some time. Currently, this staining appears to be minor (limited to the top six-inches of soil or less). *This type of surface stain is considered "de minimus" and is not a "REC".* ...continued below...

SAGE ENVIRONMENTAL SERVICES LLC
18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208.867.8876
SAGE.BOISE@GMAIL.COM

STAINED SOIL OR PAVEMENT ...CONTINUED FROM PREVIOUS...	It is possible that the removal of drums, containers, or piles of debris could reveal additional staining that was not observable during the site visit. Any staining extending beyond the top 6-inches of soil may require further evaluation.

Based on our review of available information, SAGE ENVIRONMENTAL has identified no "recognized environmental conditions" or "RECs" in connection with the Property. We do recommend that the contents of the drums and containers of liquids stored outside the shop should be determined and disposed of in accordance with Federal, State, and local rules/regulations.

The Client should be aware that the removal of the piles of equipment, miscellaneous materials, and debris, may reveal additional drums, containers, and/or soil staining that require further evaluation.

This report is limited to the information made available to or known to SAGE ENVIRONMENTAL at the time this report was issued. If any additional information becomes available, it will be forwarded to you for your evaluation. We appreciate having the opportunity to assist you with this project. Please feel free to contact me if you have any questions concerning this report.

Sincerely,

Brenda Magnuson

Brenda Magnuson
Principal/Registered Environmental Assessor
Cert. #06973

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18123 N. HIGHFIELD WAY
BOISE, IDAHO 83653
208-867-8876

INDEX OF TABLES

DEFINITION OF ACRONYMS USED

ASTM:	American Standards for Testing and Materials
AST:	Aboveground Storage Tank
AULs:	Activity and Use Limitations
CERCLA:	Comprehensive Environmental Restoration, Compensation, and Liability Act
CERCLIS:	Comprehensive Environmental Response, Compensation, and Liability Information System
CERCLIS-NFRAP:	Comprehensive Environmental Response, Compensation, and Liability Information System-No Further Remedial Action Planned
CFR:	Code of Federal Regulations
CESQG:	Conditionally Exempt Small Quantity Generator
CORRACTS:	Corrective Action Sites
CREC:	Controlled Recognized Environmental Condition
DEQ:	Division of Environmental Quality
EPA:	Environmental Protection Agency
EPCRA:	Emergency Planning and Community Right to Know Act ((also known as SARA Title III)
ERNS:	Emergency Response Notification System
ESA:	Environmental Site Assessment
FOIA:	U.S. Freedom of Information Act
FR:	Federal Register
HREC:	Historic Recognized Environmental Condition
IC:	Institutional Controls
LLP:	Landowner Liability Protections under the Brownfields Amendments
LQG:	Large Quantity Generator
LUST:	Leaking Underground Storage Tank
MSDS:	Material Safety Data Sheet
NCP:	National Contingency Plan
NPL:	National Priority List
NFRAP:	former CERCLIS sites where no further remedial action is planned under CERCLA.
NPDES:	National Pollutant Discharge Elimination System
PCBs:	Polychlorinated Biphenyls
PRP:	Potentially Responsible Party (pursuant to CERCLA
RCRA:	Resource Conservation and Recovery Act
RCRIS:	RCRA Information Systems
RECs:	Recognized Environmental Conditions
SARA:	Superfund Amendments and Reauthorization Act of 1986 (amendment to CERCLA)
SQG:	Small Quantity Generator
TSCA:	Toxic Substances Control Act
TSD:	Treatment Storage and Disposal
TSDF:	Hazardous Waste Treatment, Storage or Disposal Facility
USC:	United States Code
USG:	United States Geological Survey
UST:	Underground Storage Tank
VEC:	Vapor Encroachment Condition
VES:	Vapor Encroachment Screening

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83653
208-867-8876

1.0 PROPERTY SUMMARY

PROPERTY TYPE:	Rural Homesite and Pasture
ADDRESS:	23442 Freezeout Road Caldwell, Idaho
LOCATION:	The Property is located along the north side of a gravel access lane for Freezeout Road, east of Freezeout Road between Willis Road (north) and State Highway 44 (south), northeast of Caldwell and west of Middleton, in Caldwell, Canyon County, Idaho.
LEGAL DESCRIPTION:	"Tax 19480 in the South ½ of the Northeast ¼ , Less Tax #97652, and situated in the Southwest ¼ of the Northeast ¼ and the Southeast ¼ of the Northwest ¼ of Section 3, Township 4 North, Range 3 West of the Boise-Meridian in Canyon County, Idaho."
OWNER OF RECORD:	Thornton Gallup, LLC PO Box 1495 Nampa, Idaho 83653
SITE SIZE/CONFIGURATION:	31.40± acres; irregular, in shape (Figure 2)
DESCRIPTION OF IMPROVEMENTS:	Site improvements are limited to the homesite (southeast quadrant of the Property) and consist of the following: One (1), 1,404 SF, single-level dwelling constructed during 1976; One (1), shop building located northwest of dwelling. This is a steel framed structure with a metal roof and exterior, and three (3) roll-up doors. In this building, the west ⅔ of the floor is dirt; the east ⅓ of the floor is a concrete slab.
DATE OF SITE RECONNAISSANCE:	April 12, 2021 & April 20, 2021 (follow-up) May 16, 2022 (for the update of this report)
DATE OF REPORT:	May 18, 2022
CONCLUSIONS:	SAGE ENVIRONMENTAL SERVICES, LLC has performed a Phase I Environmental Site Assessment (update) in substantial conformance with the ASTM Practice E1527-21 for the Rural Homesite & Undeveloped Pasture Property located at 23442 Freezeout Road in Caldwell, Idaho. Based on our review of reasonably ascertainable information, SAGE ENVIRONMENTAL SERVICES has no "recognized environmental conditions" or "RECs" in connection with the Property. The removal of the piles of equipment, miscellaneous materials, and debris, may reveal additional drums, containers, and/or soil staining that require further evaluation.

[1] "recognized environmental condition": "(1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment."

2.0 INTRODUCTION

2.1 General

Sage Environmental Services, LLC (Sage Environmental) was contracted by Mr. Brian Falck of Pioneer Homes (the Client) to perform an updated Phase One Environmental Site Assessment (ESA) for the Property located at 23442 Freezeout Road (hereinafter referred to as "Property" or "site") in Caldwell, Idaho (Figure 1).

2.2 Location & Legal Description

Location:	The Property is located along the north side of a gravel access lane for Freezeout Road, east of Freezeout Road, between Willis Road (north) and State Highway 44 (south), in Canyon County, Idaho.
Legal Description:	"Tax 19480 in the South ½ of the Northeast ¼ , Less Tax #97652, and situated in the Southwest ¼ of the Northeast ¼ and the Southeast ¼ of the Northwest ¼ of Section 3, Township 4 North, Range 3 West of the Boise-Meridian in Canyon County, Idaho."
Address:	23442 Freezeout Road in Caldwell, Idaho.

2.3 Detailed Scope of Services

This Environmental Site Assessment followed the methodology set forth in ASTM Standard Practice E1527-21and is based on site observations and the use of readily available information. The Scope of Work for this assessment includes the following:

- Reviewing the Federal, State, and local regulatory agency lists and databases of facilities that use, store, and/or generate hazardous substances or petroleum products, and to determine the impacts of such sites on the Property with respect to "recognized environmental conditions";
- Reviewing site information for geologic and hydrogeologic characteristics for vulnerability and other possible areas of concern;
- Reviewing available city directories (i.e. Polk's City Directories), historical maps, geological maps, available historic aerial photographs, and other records to evaluate past property uses and occupancy;
- Reviewing available information regarding the historical use of the property and the adjacent properties;
- Reviewing 50-year chain-of-title information for historical background, as requested by the client;
- Conducting an on-site inspection of the property to observe and evaluate evidence of contamination from hazardous petroleum substances or wastes (stained soil, stressed vegetation, etc.), and other potential sources of contamination, including transformers or other electrical equipment possibly containing polychlorinated biphenyls (PCBs);
- Contacting electric utilities to determine PCB content of utility-owned transformers or other electrical equipment, if necessary;
- Interviewing available people familiar with past use of the property and adjacent properties;
- Visually inspecting adjacent properties and classifying their possible effects on the subject property; and
- Documenting findings and site conditions with photographs.

2.4 Significant Assumptions

In preparing this report, Sage has relied upon certain verbal information and representations provided by State and local government employees, as well as others familiar with the Property history. Sage Environmental did not attempt to independently verify the accuracy or the completeness of that information, but we did not detect any inconsistency or omission of a nature

that would affect the conclusions in this report; the conclusions are based in whole or in part on the validity of such information.

2.5 Limitations & Restrictions

This Phase I Environmental Site Assessment is restricted to the Scope of Services outlined in Section 2.3 of this report and is restricted to observations made by SAGE during the inspection of the Property and research of standard environmental record sources. With the exception of recorded violations discovered upon routine review of environmental regulatory records, the Scope of Services did not address compliance with Federal, State or local laws, regulations, ordinances, or codes. This report also expressly excludes the collection or analysis of any samples for asbestos-containing materials, radon gas, or lead-based paint. In addition, radon screening, lead in drinking water, endangered species, indoor air quality, cultural resources, industrial hygiene, health and safety, and high voltage power lines were not included in this report. No samples of soil, air, water, asbestos or lead-based paint were collected as part of this investigation, and SAGE makes no representations or warranty regarding the presence of asbestos or lead-based paint and the quality of the air, water, or soil on the Property. This Scope of Services did not include sampling of drums, tanks, and other containers for laboratory analysis.

Phase I Environmental Site Assessments are non-comprehensive in nature and are subject to a variety of limitations, including those limitations presented below. This report is not intended to identify all potential concerns or to eliminate all risk associated with the operational responsibilities or transferring property title. SAGE did not consider other factors or site information other than that presented in this report. The agencies and individuals contacted by SAGE had only limited information concerning the Property. When necessary, SAGE made efforts to interview agency personnel and individuals with knowledge of the site, but information collected in this manner can be subject to errors, including personal interpretation and memory. Judgments that lead to conclusions and recommendations are generally made with an incomplete knowledge of the subsurface and historical conditions applicable to the site. More extensive studies, including sampling and/or chemical analysis, may reduce the uncertainties associated with this assessment. SAGE should be notified for additional consultation if the client would like to reduce uncertainties beyond the level associated with this assessment.

2.6 User Reliance

Authorization to perform this assessment update was given in the form of an email request from Mr. Brian Falck, Project Manager for Pioneer Homes (hereinafter, “Client” and also the “User” of this report), on May 4, 2022. As agreed, the scope of this assessment report is limited to the matters expressly covered herein. This report is prepared for the sole benefit of the Client and persons doing business with the Client. Any other person or entity, without the express written authorization of the Client may not rely upon the information contained in this report.

3.0 SITE DESCRIPTION

3.1 PURPOSE

The purpose of this Phase I Environmental Site Assessment is to qualify for the innocent landowner defense and the Bona Fide Prospective Purchaser (BFPP) defense under 2002 Brownfields amendment to the Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA). In addition to CERCLA liability, the purpose of this Phase I Environmental Site Assessment is to identify and understand potential environmental conditions that could materially impact the operation of the business associated with the property. The purpose of the ASTM E1527 standard is to define good commercial and customary practice for conducting a Phase I Environmental Site Assessment, with the goal of identifying “recognized environmental conditions” (RECs) at the subject property.

RECOGNIZED ENVIRONMENTAL CONDITION (REC): The term "Recognized Environmental Condition" defined in E1527-21 means “(1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment." The term includes hazardous substances or petroleum products even under conditions in compliance with existing laws. The term is not intended to include "de minimus" conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be "de minimus" are not “recognized environmental conditions.”

"LIKELY": The ASTM defined "likely" as a condition “which is neither certain nor proved, but can be expected or believed by a reasonable observer based on the logic and/or experience of the environmental professional, and/or available evidence, as stated in the report to support the opinions given.”

3.1.1 ADDITIONAL ENVIRONMENTAL TERMS

HISTORICAL RECOGNIZED ENVIRONMENTAL CONDITIONS (HRECS): A Historical Recognized Environmental Condition (HREC) refers to a past release that has been remediated to below “residential” standards and given regulatory closure with no use restrictions. HREC is defined by ASTM E1527-21as “a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).”

The HREC category is distinct from the Controlled Recognized Environmental Condition (CREC), which applies to sites that have received regulatory closure but are still subject to controls.

CONTROLLED RECOGNIZED ENVIRONMENTAL CONDITIONS (CRECS): The term CREC is intended to clarify the level of risk these sites represent. The environmental professional is required to list any CRECs (as well as RECs) identified in the findings and conclusions section of the Phase I Environmental Site Assessment report.

The ASTM definition of CREC in the E1527-21standard is as follows: “a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).”

BUSINESS ENVIRONMENTAL RISK: Business Environmental Risk is defined by ASTM as "a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. Consideration of business environmental risk issues may involve addressing one or more non-scope considerations.”

The common non-scope environmental business risk items referred to include:

- Asbestos
- Lead Paint
- Lead in Drinking Water
- Radon
- Wetlands
- Ecological Resources
- Endangered Species
- Cultural and Historic Resources
- Regulatory Compliance
- Industrial Hygiene
- Health and Safety
- Indoor Air Quality
- Biological Agents
- Mold

Any non-scope environmental business risk items addressed by SAGE (if required by the Lender and/or Client) is discussed in Section 8.0 “Non-ASTM-Scope Items and Additional Services”.

3.2 SITE VICINITY & GENERAL CHARACTERISTICS

The Property is comprised of a single parcel of land, 31.40± acres in size and is located in Canyon County, outside the city limits of Caldwell, Idaho. The Property is located within an area of Caldwell characterized by rural residential uses and irrigated farmland/pasture, many of which are becoming residential developments (Figure 2).

3.3 PHYSICAL SETTING

According to the USGS Quadrangle map for the site and vicinity, the Property is located on the foothill bench northeast of Caldwell. The site is generally level and lies at an elevation of approximately 2,520 feet above mean sea level. The north end of the site, just north of the C.L.E.

Lateral, lies 7 to 10 feet below the bank of the lateral. The C.L.E. Lateral irrigation canal is the closest surface water to the site; it borders a portion of the eastern Property boundary from the north before traversing westward along the homesite, angling southward along the west side of the homesite, then finally, traversing eastward along the south end of the homesite before exiting the Property along the southern boundary. Sand Hollow Creek borders the Property along the west (Figure 3a).

3.4 Geology & Hydrology

3.4.1 Geology

We compiled information regarding generalized local hydrogeologic and geologic conditions from published technical literature. In the vicinity of the Property, groundwater data for both the shallow water table aquifer and for the deeper water supply aquifer systems were modified from Dion (1972), Squires et al (1992), and from previous investigations conducted by other consultants. Information about the surface and subsurface materials located under the Property was retrieved from Malde and Powers (1962), and Othberg and Stanford (1992), and from previous investigations conducted by other consultants.

The Property is situated within the western portion of the Snake River Plain subdivision of the Columbia Plateau Physiographic Province. Landforms consist of six terrace levels of alluvial gravel deposits. The Property is located on the foothill bench above the flood plain of the current channel of the Boise River. The shallow subsurface contains 100 to 500 feet of Quaternary-age alluvium that consists of interfingered and interlayered sand, silt, clay, and gravel; all primarily deposited by the Boise River. These fluvial and lacustrine (river and lake) sediments unconformably overlay the Quaternary-Tertiary-age Idaho Group deposits, which consist of several thousand feet of poorly consolidated clastic sediments and basaltic volcanic rock. The sediments consist of sand, silt, and clay of variable thickness and lateral extent.

3.4.2 Hydrology

In the area, two aquifers are known to exist. 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. According to a Well Construction Log for the Property, groundwater for this shallow, unconfined aquifer is probably at a depth of 40 to 45 feet below ground surface. Many domestic wells draw water from the shallow aquifers. The general groundwater flow direction in the area is to the west/ southwest towards the Boise River, although seasonal changes and localized impacts from canals and irrigation ditches can create varying flow directions. The delineated source water assessment area for the Property can best be described as an eastward trending corridor approximately four miles long and one-quarter mile wide (IDEQ, 2003).

At a depth of approximately 300 to 500 feet below ground surface, the region's principal water supply aquifer is contained within the Upper Idaho Group strata. In the vicinity of the Property, several hundred feet of silt and clay separate the water supply and water table aquifers, thereby

reducing the potential for flow between the two aquifers; however, recently compiled subsurface data suggests that the boundaries between aquifer units and hydrogeologic settings are gradational and may result in hydraulic communication across the system. This appears to be most evident through pump test data obtained from the east Boise area. To date, due to an incomplete database, an adequate hydrogeologic model describing the nature and extent of the hydraulic continuity between the shallow and deep aquifers has not been fully developed. Until such a study is completed, the potential for migration between the two aquifers will remain poorly understood.

3.5 Current Use of Surrounding Area

The area near the Property is characterized by a mixture of rural residential uses and irrigated farm land and pasture; some of which are being converted to residential developments.

4.0 USER-PROVIDED INFORMATION

4.1 Title Records

A Chain of Title was not requested by the Client.

4.2 Environmental Liens or Activity & Use Limitations

We use the following resources, when available, to determine the presence of activity use limitations (AULs) or engineering controls (ECs) that may be recorded or connected to the Property title:

- Title Commitment (when provided by the Client) or Chain-of-Title report; For this report, a Chain-of-Title report dating back to 1982 was provided by the Client.
- Environmental Database Records
- Environmental Questionnaire and Disclosure Statement

Title Commitment Report: During our review of the Title Commitment Report, recorded AULs or ECs were not found.

Environmental Database Records: We used information obtained from the Environmental Database Records to identify those sites that were assigned a “no further action” status from the Idaho DEQ using activity use limitations (AULs) or engineering controls (ECs). We did not find deed restrictions limiting the use of the Property (AULs), nor did we find any institutional or engineering controls (ECs) listed for the site.

Environmental Questionnaire and Disclosure Statements: We used the Environmental Questionnaire and Disclosure Statement to determine the Owner’s knowledge of activity use limitations (AULs) or engineering controls (ECs) for the Property. According to the Environmental Questionnaire and Disclosure Statement, completed by Brian Falck of Pioneer Homes (the Client/User and also a representative of the Property Owner), the Property Owner has no knowledge of Environmental Liens or Activity and Use Limitations for the Property that may exist on the Property.

4.3 Specialized Knowledge

We have no knowledge of previous Environmental Site Assessments for the Property, nor do we have any knowledge of “recognized environmental conditions” or "RECs" that may have existed on the Property prior to the completion of this report. The Client/User, also the Property Owner, has no knowledge of previous Environmental Site Assessments for the Property, nor do they have any knowledge of RECs that may have existed on the Property.

4.4 Commonly Known or Reasonably Ascertainable Information

Under the standards as outlined in E1527-21 “Standard Practice for Environmental Site Assessments”, the User of this report has certain responsibilities regarding notification to the preparer of this report. Specifically, the User must notify the preparer of the report of any environmental liens encumbering the Property or any specialized knowledge or information about previous ownership or uses of the Property that may be material to identifying “recognized

environmental conditions". Brian Falck of Pioneer Homes is not aware of any environmental issues in connection with the Property.

4.5 Valuation Reduction For Environmental Issues

The client has no reason to believe that the value of the Property has been reduced for any environmental issues and asserts that the purchase price reasonably reflects the fair market value of the Property.

4.6 Owner, Property Manager, and Occupant Information

The owner/manager of the Property is:

Thornton Gallup, LLC
PO Box 1495
Nampa, Idaho 83653

The site is currently unoccupied.

4.7 Reason for Performing the Phase I ESA

It is the understanding of Sage Environmental that the Property is under development by the Client. This development requires relocating and/or retiling a portion of the C.L.E. Lateral. The Bureau of Reclamation, the agency responsible for maintaining and modifying irrigation systems within the State, requires permit for such activities and this Phase I Environmental Site Assessment (ESA) report is a part of the permit requirements. This Phase I ESA also fulfills one of the requirements for the innocent landowner defense and a "Bona Fide Prospective Purchaser" (BFPP) defense subject to CERCLA liability

5.0 HISTORICAL RECORDS & ENVIRONMENTAL DATABASE REVIEW

5.1 STANDARD ENVIRONMENTAL RECORDS

For our Environmental database information, we used a database operated by Nationwide Environmental Title Research Company (NETROnline). A copy of the database is included in the Addenda of this report. The purpose of the records review is to obtain and review records that will help identify recognized environmental conditions in connection with the property. A description of the environmental databases is described in the following paragraphs:

NATIONAL PRIORITIES LIST (NPL), LISTED AND DELISTED SITES: A list of hazardous waste sites in the United States eligible for long-term remedial action (cleanup) financed under the federal Superfund program. Environmental Protection Agency (EPA) regulations outline a formal process for assessing hazardous waste sites and placing them on the NPL. The NPL is intended primarily to guide EPA in determining which sites warrant further investigation.

The inclusion of a facility in the National Priorities List does not reflect a judgment of its owner or operator or make the owner or operator take any action. It also does not assign any liability to any person or company. It serves as a source of information by identifying facilities or other hazardous substance releases that appear to warrant remedial actions.

SUPERFUND (CERCLIS): Superfund is a program administered by the EPA to locate, investigate, and clean up uncontrolled hazardous waste sites throughout the United States. We reviewed the Idaho DEQ's "Waste Remediation Site Locator", DEQ's equivalent of the EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list, a registry which lists those sites which are suspected of having received, generated, transported, or disposed of hazardous wastes prior to December 1980; or areas where hazardous wastes were suspected of having been released into the environment. The inclusion on this list is not in itself a judgment about the activities of a Property's owners or operators, but is used to identify those sites which may require further investigation because they may cause environmental or public health problems. The CERCLIS list is used by the Idaho DEQ to track potentially uncontrolled hazardous materials or hazardous waste sites. The Idaho DEQ also maintains a registry of those sites where clean up or remediation activities have taken place but no further action is planned.

RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION RCRA INFO: Hazardous waste generators, transporters, treaters, storers and disposers of hazardous waste are required to provide information on their activities to state environmental agencies. These agencies then provide the information to regional and national US Environmental Protection Agency (EPA) offices through the Resource Conservation and Recovery Act Information (RCRA Info) System. Information on cleaning up after accidents or other activities that result in a release of hazardous materials to the water, air or land must also be reported through RCRA Info.

INSTITUTIONAL CONTROL/ENGINEERING CONTROL REGISTRIES: Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site. For instance, zoning restrictions prevent site land uses, like residential uses, that are not consistent with the level of cleanup.

ICs are used when contamination is first discovered, when remedies are ongoing and when residual contamination remains onsite at a level that does not allow for unrestricted use and unlimited exposure after cleanup. The National Contingency Plan (NCP) emphasizes that ICs are meant to supplement engineering controls and that ICs will rarely be the sole remedy at a site.

VOLUNTARY CLEANUP SITES: In Idaho, DEQ's Voluntary Cleanup Program (VCP) was created in 1996 by the Idaho Land Remediation Act to encourage innovation and cooperation between the state, local communities and private parties to revitalize properties with hazardous substance or petroleum contamination. The Idaho Land Remediation Rules, adopted in 1997, detail implementation procedures for the program. The Idaho Land Remediation Act was modified in 2002

to incorporate the Community Reinvestment Pilot Initiative, a state-funded program to assist with cleanup costs of up to 10 properties whose development is complicated by contamination issues. Currently, all 10 slots in the pilot program are filled.

EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) LIST: The Emergency Response Notification System (ERNS) is a computer database containing information on reports of oil and hazardous substance releases that have occurred throughout the United States and have been reported to the National Response Center (NRC), the ten EPA Regions, or the U.S. Coast Guard. The initial notification data may be updated with information from various Federal, State, and local response authorities as appropriate. ERNS data can be used to analyze reports of releases, support emergency planning efforts, and assist decision makers in developing spill prevention programs.

STATE AND TRIBAL LANDFILL OR SOLID WASTE DISPOSAL SITES: A listing of solid waste landfills (active and closed sites) is maintained by various agencies, including the Idaho DEQ. The list of closed solid waste landfills and dumps is not necessarily complete because older landfills or dumping areas may not be known.

STATE AND TRIBAL VOLUNTARY CLEANUP SITES: During 1996, the Idaho Legislature created the Idaho Land Remediation Act, DEQ's Voluntary Cleanup Program (VCP), to encourage innovation and cooperation between the state, local communities, and private parties working to revitalize properties with hazardous substance or petroleum contamination. During 1997, DEQ developed the Idaho Land Remediation Rules that detail the implementation of the Voluntary Cleanup Program. Sites that have entered in to the Voluntary Cleanup Program are identified on the Idaho Waste Division Inventory database.

BROWNFIELDS (BMS): The EPA Brownfields Management System (BMS) stores information reported by EPA Brownfields grant recipients on Brownfields properties assessed or cleaned up with grant funding. The Idaho DEQ's Brownfields Assessment Program funds and conducts environmental assessments of Brownfield sites when a lack of environmental information has complicated site redevelopment or reuse. For each site, DEQ will produce a final report that reveals whether a site is clean, lightly contaminated, or heavily contaminated, determines the nature and extent of the contamination, identifies potential cleanup options, and estimates cleanup costs (if any). Brownfields are abandoned or underutilized properties where the reuse is complicated by actual or perceived environmental contamination. With the help of Idaho Counties, Cities, Economic Development Districts, Urban Renewal Entities, developers and brokers, DEQ is developing a comprehensive, statewide inventory of Brownfields. Sites that qualify for and are being remediated under the Brownfields program are identified on the Idaho Waste Division Inventory database and on EPA's EnviroMapper for Brownfields site. DEQ's Brownfields Assessment Program funds and conducts environmental assessments of Brownfields sites when a lack of environmental information has complicated site redevelopment or reuse. For each site, DEQ will produce a final report that:

- Reveals whether a site is clean, lightly contaminated, or heavily contaminated
- Determines the nature and extent of the contamination
- Identifies potential cleanup options estimates cleanup costs (if any).

TOXICS RELEASE INVENTORY (TRI): The Toxics Release Inventory (TRI) contains information about more than 650 toxic chemicals that are being used, manufactured, treated, transported, or released into the environment. Manufacturers of these chemicals are required to report the locations and quantities of chemicals stored on-site to State and local governments. The reports are submitted to the EPA and state governments. EPA compiles this data in an on-line, publicly accessible national computerized database.

ADDITIONAL ENVIRONMENTAL DATABASE SOURCES: For our Federal database information, we used a database operated by Nationwide Environmental Title Research Company (NETROnline) and crosschecked by SAGE, using the "Idaho Waste Remediation Facility Mapper", a database maintained by the Idaho DEQ, for properties or incidents reported within the area defined by the ASTM E1527-21 Minimum Search Distances. According to the DEQ, this data is updated approximately twice per month. We used the "Advanced 'Radius Search'" on the application to identify any additional environmental notification or remediation sites within a ½-mile to 1-mile radius of the Property. The NETROnline database report is presented in the addenda of this report.

The sites identified using the environmental database and other search tools are summarized in Table 1, below:

TABLE 1: SUMMARY OF ENVIRONMENTAL DATABASE SITES

STANDARD ENVIRONMENTAL RECORD SOURCE	ASTM SEARCH DIST. (MILES)	NUMBER OF SITES IDENTIFIED	IDENTIFICATION OF SITES FOUND: DISTANCE AND DIRECTION FROM PROPERTY
Federal NPL site list	1.0	0	
Federal Delisted NPL site list	0.5	0	
Federal CERCLIS list	0.5	0	
Federal CERCLIS NFRAP (no further remedial action planned)	0.5	0	
Federal CORRACTS facilities list	0.5	0	
Federal RCRA non-CORRACTS TSD facilities list	1.0	0	
Federal RCRA generators list/State Hazardous Waste sites	Subject & adj. sites	0	
Federal institutional control/engineering control registries	Subject & adj. sites	0	
Federal ERNS list	Subject property	0	
State and tribal equivalent NPL	1.0	0	
State and tribal equivalent CERCLIS	0.5	0	
State and tribal landfill or Solid Waste Disposal site list	0.5	2	
Federal, State and tribal underground storage tank (UST) lists	Subject & adj. sites	0	
Federal, State and tribal leaking underground storage tank (LUST) lists	0.5	0	
State and tribal institutional/engineering control registries	Subject property	0	
State and tribal voluntary cleanup sites	0.5	0	
Federal, State and tribal Brownfield sites	0.5	0	
State General Remediation	0.5	0	

5.1.1 ADDITIONAL ENVIRONMENTAL RECORD SOURCES

Our cross-check of database information with the Idaho DEQ's "Waste Remediation Facility Mapper" (Terradex) program did not identify additional database sites.

We used the Idaho DEQ's "Nitrate Priority Area Mapping Tool" available on the IDEQ website for information regarding known elevated nitrate levels present within regional groundwater. A major source of the elevated nitrates is from historic agricultural uses in the area. Our review of this map indicates that most of the Property is located just inside the Ada/Canyon County; Purple Sage Nitrate priority area. Well sampling from nearby sites have revealed nitrate levels ranging from 0.01 mg/l (west) and 0.32 mg/L (northwest), to 5.05 mg/L (northeast). These nitrate level are considered elevated, but are well below the EPA and State drinking water standard of 10.0 mg/L.

5.1.2 Vapor Encroachment

In accordance with ASTM Standard E1527-21, Sage conducted a vapor encroachment evaluation for the Property utilizing the environmental database and evaluating the contaminated properties within the ASTM-defined "area of concern" (AOC) of ⅓-mile from the Property. There are no environmental database sites located within the AOC; therefore, there are no vapor encroachment concern for the Property.

5.2 Physical Setting Sources

According to the current (2017) United States Geological Survey (USGS) "Sand Hollow, Idaho" 7.5-Minute Series Quadrangle map, the elevation of the site is approximately 2,520 feet above mean sea level. The site is generally level and lies at an elevation of approximately 2,520 feet above mean sea level. The north end of the site, just north of the C.L.E. Lateral lies 7 to 10 feet below the bank of the lateral. The C.L.E. Lateral irrigation canal is the closest surface water to the site; it borders a portion of the eastern Property boundary from the north before traversing westward along the homesite, angling southward along the west side of the homesite, then finally, traversing eastward along the south end of the homesite before exiting the Property along the southern boundary. Sand Hollow Creek borders the Property along the west (Figure 3a).

5.3 Historical Use Information

We established the site history utilizing several sources of information including:

- Historic USGS Quad Maps
- Aerial Photography
- Sanborn Fire Insurance Maps
- Historical Plat Maps
- Canyon County Assessor's Office
- Recorded Land Title Records
- Polk's City Directories for Caldwell, Idaho
- Interviews and/or questionnaires completed by persons having knowledge of the Property and/or its history

The information obtained from these sources regarding past and current uses of the Property and adjoining properties may be incomplete but typically provides a general synopsis of site history.

5.3.1 Aerial Photograph Review

Aerial photography can reveal historical activities or uses of the Property not otherwise documented or observable during the reconnaissance of the site. Aerial photography can also be used to confirm information obtained from other historical sources. The effectiveness of this review technique depends on the quality of the photographs, the available coverage, and the scale of photographs printed.

We obtained aerial photos, including the earliest available and the most recent historical aerial photos displaying the Property and vicinity taken during 1954, 1969, and 1981 from NETROnline Historic Aerials. We also reviewed current and historical satellite imagery for the

Property taken during 1992, 2002, 2010, and 2020 from Google Earth™. We reviewed these aerial photos for historic information on the use of the site and adjacent properties. Photocopies of these aerial photos are presented in the Addenda of this report.

Aerial photographs only provide information on visual indications of land use. No conclusions can be drawn from the photographs alone; however, our review of the aerial photographs did not reveal any obvious signs of dumping, significant spillage, leaks, storage, disposal of hazardous substances, or land use that would necessitate further investigation. A summary of the aerial photography review is presented in Table 2, below:

TABLE 2: AERIAL PHOTOGRAPH REVIEW SUMMARY

SITE FEATURES	1954	1969	1981	1992	2002	2010	2020	2021	COMMENTS
CROP PATTERNS	Y	Y	Y	Y	Y	Y	Y	Y	Crop patterns and/or pasture is visible on the Property on all photos.
STREETS	N	Y	Y	Y	Y	Y	Y	Y	The unpaved gravel and dirt Freezeout Road access lane is visible along the southern Property boundary from 1969 through 2021.
BUILDINGS	N	N	N	Y	Y	Y	Y	Y	The dwelling is visible on the southeast quadrant of the site on the 1981 and subsequent photos; the shop building is visible on the site on the 1992 and subsequent photos.
PAVED PARKING AREAS	N	N	N	N	N	N	N	N	
DRAINAGE	Y	Y	Y	Y	Y	Y	Y	Y	The C.L.E. Lateral irrigation canal is visible traversing and bordering the Property on all photos. Sand Hollow Creek is visible along the western boundary on all photos.
CIRCULAR OBJECTS (ABOVE GROUND STORAGE TANKS OR WATER TANKS)	N	N	N	N	N	N	N	N	
LAGOON OR IMPOUNDMENT	Y	Y	Y	Y	Y	Y	Y	Y	Visible ponding of Sand Hollow Creek, along the western boundary, is visible on all photos.
GROUND SCARS	N	N	N	N	N	N	N	N	
STANDING LIQUID	N	N	N	N	N	N	N	N	
STACKED MATERIALS/ OBJECTS	N	N	N	N	N	N	N	N	
SCATTERED MATERIALS/ OBJECTS	N	N	N	Y	Y	Y	Y	Y	Scattered materials begin to appear north and east of the homesite starting with the 1992 photo, with more materials appearing in subsequent photos through 2020.
PILES	N	N	N	Y	Y	Y	Y	Y	Piles of material and debris begin to appear north and east of the homesite starting with the 1992 photo, with more materials appearing in subsequent photos through 2020.

(Key: Y=Yes; N=Not Observed; P=Possible, but not clearly resolved; U=Undetermined, not resolvable)

5.3.2 Historical USGS Quadrangle Map(s)

We consulted the 1970 United States Geological Survey (USGS) "Sand Hollow, Idaho" 7.5-Minute Series Quadrangle map for any buildings located on the Property. This map did not indicate the presence of buildings or other developments on the site (Figure 3b).

5.3.3 Sanborn Fire Insurance Maps

Sanborn Maps, constructed by the Sanborn Fire Insurance Company for fire insurance underwriting purposes dating as far back as the late 1800s, can show details of buildings, improvements, and land uses; however, the coverage of these maps is usually limited to older or outdated districts in established towns and cities. During our research of available Sanborn Fire Insurance maps, we found no coverage for the Property and vicinity.

5.3.4 Property Assessor Files

According to the Canyon County Assessor's Office, the current ownership of the Property is as follows:

Thornton Gallup, LLC
PO Box 1495
Nampa, Idaho 83653

5.3.5 Recorded Land Title Records

A Chain of Title was not requested by the Client. The prior use of the subject Property was determined by Sage Environmental, with the aid of historical records and interviews with persons having knowledge of the site and its history. We also use the following resources, when available, to determine the presence of activity use limitations (AULs) or engineering controls (ECs) that may be recorded or connected to the Property title:

- Title Commitment (when provided by the Client) or Chain-of-Title report; For this report, a Chain-of-Title report dating back to 1982 was provided by the Client.
- Environmental Database Records
- Environmental Questionnaire and Disclosure Statement

Chain of Title Report: The Chain of Title report indicated that the Property was sold or conveyed three times since 1982:

1982: Arthur & Bonnie Ashcraft sold/conveyed the Property to Robert & Virginia Figueredo

2018: Virginia Figueredo sold/conveyed the Property to Dorothy & Melvin Bonham, and Melvin Bonham, Jr.

Environmental Database Records: We used information obtained from the Environmental Database Records to identify those sites that were assigned a "no further action" status from the Idaho DEQ using activity use limitations (AULs) or engineering controls (ECs). We did not find deed restrictions limiting the use of the Property (AULs), nor did we find any institution or engineering controls (ECs) listed for the site.

Environmental Questionnaire and Disclosure Statement: We used the Environmental Questionnaire and Disclosure Statement to determine the Owner's knowledge of activity use

limitations (AULs) or engineering controls (ECs) for the Property. According to the Environmental Questionnaire and Disclosure Statements, Brian Falck (a representative of the Property owner and developer) has no knowledge of Environmental Liens or Activity and Use Limitations for the Property that may exist on the Property.

5.3.6 Polk's City Directories

Polk's City Directories, published by the R.L. Polk Company as a telephone/address/ business locating publication, can be useful when researching the historical occupants of the Property (by address). Sage Environmental reviewed the available Polk's City Directories at the Idaho Historical Library in Boise, Idaho; we found Polk directory coverage for Caldwell that included the Property's immediate vicinity, beginning in 2000 (earliest available) through 2020. As expected, the Property does not appear in the Polk Directory listings (the site has never been developed). The Polk Directory listings indicate that the area surrounding the Property has been used for rural residential purposes.

5.3.7 Zoning/Land Use Records

We reviewed the current and land use designations for the Property from the Canyon County Assessor. Our review of this map indicated that currently, the Property is located outside of the city limits of Caldwell, Idaho and within a Canyon County zoning area designated as "Agricultural" zoning district. According to the Canyon County Zoning Ordinance, "The purposes of the A (Agricultural) Zone are to:

A. Promote the public health, safety, and welfare of the people of the County by encouraging the protection of viable farmland and farming operations;

B. Limit urban density development to Areas of City Impact in accordance with the comprehensive plan;

C. Protect fish, wildlife, and recreation resources, consistent with the purposes of the "Local Land Use Planning Act", Idaho Code title 67, chapter 65;

D. Protect agricultural land uses, and rangeland uses, and wildlife management areas from unreasonable adverse impacts from development; and

E. Provide for the development of schools, churches, and other public and quasi-public uses consistent with the comprehensive plan." (Canyon County Code 7 to 10-25)

5.3.8 Historical Plat Maps

We researched historical plat maps and/or Atlases, potential resources for identifying past owners of the Property from Historic MapWorks Residential Geneaology™. The earliest map, The Standard Atlas of Canyon County, published in 1915 by George A. Ogle and Co., indicated that the Property was part of an 80-acre parcel of land owned by George Struthers. A second map, Metsker's Atlas of Canyon County, Idaho, published in 1939, indicated that the Property was part of two larger parcels owned by W.W. Waterman (west end) and Daniel W. Kennedy (east end). Neither plat map indicated the presence of buildings or other developments on the site.

5.4 Prior Use Assessment of the Property

We compiled a history of the past Property uses through our review of available maps, aerial photographs, and interviews with individuals associated with the Property. A summary of the past Property uses is presented in the following table:

TABLE 3: Prior Use Summary of Property

1939-1975	1976 - 2022
Irrigated Farm Land and/or pasture	Rural Homesite and Pasture

5.5 Prior Uses of Adjoining Properties

We also compiled a history of the past uses of the adjoining properties through our review of available maps, aerial photographs, and interviews with individuals associated with the Property. Listed below is a summary of the past uses of the adjoining sites:

TABLE 4: Prior Use Summary of Adjacent Properties

	1939	1954	1969	1981	1992	2002	2010	2022
North:	Undeveloped or Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Vacant Rural Residential & Irrigated Farm Land
South:	Rural Farm Site & Irrigated Farm Land	Rural Farm Site & Irrigated Farm Land	Rural Farm Site & Irrigated Farm Land	Rural Farm Site & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Residential
East:	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land	Rural Residential & Irrigated Farm Land
West:	Undeveloped or Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Irrigated Farm Land	Rural Residential & Pasture	Rural Residential & Pasture	Rural Residential & Pasture

6.0 SITE RECONNAISSANCE

For this Phase I ESA Update, Brenda Magnuson of SAGE ENVIRONMENTAL conducted a site reconnaissance of the Property on May 16, 2022. At the time of the site reconnaissance, the weather conditions were mostly sunny and warm; the ambient air temperature was 71±°F.

6.1 METHODOLOGY & LIMITING CONDITIONS

A visual reconnaissance was conducted on the Property in general accordance with SAGE ENVIRONMENTAL's standard environmental assessment procedures. This reconnaissance consisted of systematically walking the Property to provide an overlapping field of view and noting any "recognized environmental conditions" as encountered. Photographic documentation of pertinent "recognized environmental conditions" and site improvements and also adjacent property uses was made; some of which have been included in the Addenda of this report. In the case of multi-tenant commercial Properties, and the Property has five or fewer current occupants, we make a reasonable attempt to inspect and interview a representative of each tenant space. If there are more than five current occupants, we make a reasonable attempt to inspect and interview the major occupants and those other occupants whose operations are likely to indicate recognized environmental conditions in connection with the Property. For this assessment, the entire site was accessible.

The reconnaissance of the adjacent properties was performed by walking the perimeter of the subject site and observing and photographing the readily accessible and visible areas bordering or adjacent to the subject property and noting potential environmental conditions. During and after the site reconnaissance, we also evaluated adjacent parcels for their potential environmental impact to the Property. Photographs documenting the current condition of the Property are presented in the Addenda. The site reconnaissance focused on the following:

- Evaluating the presence of surface waters on the Property
- An evaluation of the materials used and stored on the Property
- Evidence of contamination by hazardous substances (stains, odors, etc.)
- The presence of aboveground storage tanks (ASTs) or visual indication of underground storage tanks (USTs)
- Evidence of buried solid waste
- Identification of transformers and other electrical equipment potentially containing Polychlorinated Biphenyls (PCBs)
- An evaluation of current land use

6.2 General Site Visit Observations

Table 5: Summary of Site Visit Observations

General Site Observations	Description
Current Use(s) of the Property	Rural Homesite and Pasture
Current Uses of Adjoining Properties	**North:** Rural Residential & Pasture **South:** Developing Residential Subdivision **West:** Rural Residential & Pasture **East:** Rural Residential & Pasture
Description of Structures & Other Improvements (Figure 4)	One, 1,404 SF, single-level dwelling constructed during 1976, located on the southeast portion of site. Three-bay shop building located northwest of dwelling. This is a steel framed structure with a metal roof and exterior. In this building, the west ⅔ of the floor is dirt; the east ⅓ of the floor is a concrete slab.
Description of Roads	Access to the Property is from a access gravel roadway/lane located along the southern boundary. This unimproved, private road extends to Freezeout Road (west), a paved, two-lane rural roadway with no curbs, gutter, or sidewalks.
Geologic, Hydrogeologic & Topographical Conditions	Most of the site is generally level and at-grade with nearby streets; the north end of the site, just north of the E.L.C. Lateral, lies approximately 7 to 10 feet below the lateral; the west end of the site, near Sand Hollow Creek, slopes slightly downward toward the creek. None of the information we obtained during the course of this assessment indicates that hazardous substances or petroleum products are likely to migrate onto the Property from nearby sites.
Potable Water Supply	A private well, located northeast of the dwelling, provides potable water to the home site on the Property. According the Well Construction Log we obtained from the Idaho Department of Water Resources, the domestic well was constructed during 1974 to a depth of 67 feet below ground surface (bgs). Water was first encountered at a depth of 40 feet bgs. A copy of the well log is included in the Addenda.
Sewage Disposal System	An on site septic tank and drainfield system provides sewage disposal for the dwelling on the Property. It is likely that this septic system is located near the dwelling; however, we have no information about the size and exact location of this system.
Hazardous Substances and Petroleum Products	Several containers of oils, lubes, household maintenance products, and a few cans of gasoline are stored inside the shop building; these materials are stored in containers of 5-gallons in size or smaller. None of these containers appeared to be leaking or have leaked. Of the nearly fifty (50) 55-gallon drums we identified on the site, two (2) to three (3) of the drums and three (3) 5-gallon containers contain an unknown liquid; stains around two of the containers indicate that they may contain waste oil. During our inspection of the Property, we saw no visual indications that the site has been, or is being contaminated by hazardous waste or other hazardous substances. We did not observe any visual evidence of the historic use of hazardous materials and we observed no *significant* stains, odors, or unnaturally stressed vegetation (indicators that the improper use of these material has occurred).
USTs or ASTs	None were identified on the Property.
Odors	None were identified on the Property.
Pools of Liquid	None were identified on the Property.

DRUMS	Approximately fifty (50) 55-gallon drums are located on the Property. Most of these drums are empty or contain trash; however, there are three (3) drums located in the field to the northeast of the dwelling that contain unknown liquids. The drums are located northeast of the dwelling (within "Area #2" on the Site Plan). The drums have tight-fitting lids and most did not show evidence of leaks; however, we did see limited staining on the ground next to the one drum (along with a 5-gallon container next to the drum) located in "Area #2" with limited staining on the ground. This staining appears to be caused by waste oil. **Note #1:** During our April 12, 2021 inspection, SAGE noted that three (3) drums were located at the northeast corner of the Property, next to the E.L.C. Lateral. Two (2) of the drums contained unknown liquids. Due to the proximity of the drums to the irrigation lateral and the presence of unknown contents, Sage notified the Client of this concern. The Client subsequently removed the three (3) drums. On April 20, 2021, Sage returned to the site to verify the removal of the drums and inspect the ground for evidence of spills or leaks and verified that none were present. A photo of this location is included in the Addenda. ***Note #2:*** *The number of drums is an approximate number because some of the empty drums are located within piles of debris and are difficult or impossible to see.*
UNIDENTIFIED SUBSTANCE CONTAINERS	See "Hazardous Substance and Petroleum Products" and "Drums" (above).
POLYCHLORINATED BIPHENYLS (PCBS)	None were identified on the Property.
HEATING AND/OR COOLING SOURCES	A natural gas-fired HVAC system provides heat and cooling for the dwelling.
STAINS OR CORROSION	None were identified on the Property.
DRAINS OR SUMPS	None were identified on the Property.
ELEVATORS	None were identified on the Property.
PITS, PONDS, OR LAGOONS	Although not currently present, aerial photos indicate that Sand Hollow Creek, forms a seasonal pond or shallow pool of water near the mid-point of the western Property boundary. During our inspection of the site, we observed the area on the site where the creek temporarily ponds or pools along the western boundary. *This seasonal pond was present on our May 16, 2022 site visit.* A pile of discarded water heaters, pressure tanks, and miscellaneous equipment is located on the southeastern edge of the pond area. Evidence of contamination was not observed in this area.
STORM DRAINS	None were identified on the Property.
STAINED SOIL OR PAVEMENT	Minor surface stains are visible on the gravel drive in front of the shop building (south side). These surface stains appear to have been caused by fluid drips from parked vehicles or equipment. Surface staining was observed on the ground beneath one (1) drum and one (1) 5-gallon container within "Area #2" on the Site Plan. This staining is limited and appears to be caused by a minor spill of waste oil. This stain also appears to be a surface stain; limited to the top 6-inches of soil.
STRESSED VEGETATION	During our inspection of the Property, we did not see any unnaturally stressed vegetation on the Property.
SOLID WASTE	Evidence of buried solid waste disposal was not observed on the Property during our site reconnaissance; however, several piles of wood/lumber waste; concrete waste; miscellaneous equipment; 50+ tires; and other miscellaneous items are located on the home site north and east of the dwelling.

WASTE WATER	Wastewater generated on the Property has been limited to domestic-type sewage from the dwelling.
WELLS	As discussed previously, a private well, located northeast of the dwelling, provides potable water to the home site on the Property. According the Well Construction Log we obtained from the Idaho Department of Water Resources, the domestic well was constructed during 1974 to a depth of 67 feet below ground surface (bgs). Water was first encountered at a depth of 40 feet bgs. A copy of the Well Construction Log is included in the Addenda of this report.
SEPTIC SYSTEMS	As discussed previously, an on site septic tank and drainfield system provides sewage disposal for the dwelling on the Property. It is likely that this septic system is located in the back yard (east) of the dwelling; however, we have no information about the exact location of this system.

7.0 INTERVIEWS

OWNER(S):	In lieu of an interview, we submitted an "Environmental Questionnaire and Disclosure Statements" to Brian Falck, a representative of the Property owner and developer; a copy of the questionnaire is included in the Addenda of this report. For this Phase I ESA Update, Mr. Falck reported that the use of the Property has not changed since the previous Phase I ESA report was prepared and the site has remained vacant.
KEY SITE MANAGER:	See above.
OCCUPANTS:	Currently, no occupants.
PAST OWNERS AND/ OR OPERATORS:	We did not interview any past owners and/or occupants of the site.
LOCAL GOVERNMENT OFFICIALS:	For this report, we did not interview any local government officials with to the Property or nearby sites.

8.0 NON-SCOPE ITEMS AND ADDITIONAL SERVICES

There may be environmental issues or conditions at the Property that parties may wish to assess in connection with commercial real estate that are outside the scope of ASTM E 1527-12. There may be other issues related to the Property or adjacent properties that are not included in CERCLA's definition of hazardous substances (42 USC§ 9601(14)) or do not otherwise present potential CERCLA liability. Such non-scope considerations may pose a Business Environmental Risk include, but are not limited to the following: radon screening, asbestos-containing material survey, lead-based paint survey, lead in drinking water, wetland assessment, interior PCB sampling, regulatory compliance, ecological resources, endangered species, indoor air quality, cultural resources, industrial hygiene, health and safety, and high voltage power lines. Addressing such non-scope issues was not requested by the client.

For this report, the Client has not requested additional Non-ASTM Scope of Work items.

9.0 EVALUATION

9.1 FINDINGS

The findings listed below summarize the information we identified during the course of our inspection of the Property and our research into its history and appropriate database sources. These findings may or may not lead to the identification of any known or suspected recognized environmental conditions, historical recognized environmental conditions, and "de minimus" conditions:

TYPE OF INFORMATION EVALUATED	FINDING
USER-PROVIDED INFORMATION	No environmental concerns
ENVIRONMENTAL DATABASE RECORDS	See below
NITRATE PRIORITY AREA	The Property is located just inside the Ada/Canyon County; Purple Sage Nitrate priority area. Well sampling on nearby sites have revealed nitrate levels ranging from 0.01 mg/l (west) and 0.32 mg/L (northwest), to 5.05 mg/L (northeast) and are considered elevated, but are well below the EPA and State drinking water standard of 10.0 mg/L.
HISTORICAL USE INFORMATION	No environmental concerns
SITE RECONNAISSANCE	See below
POTABLE WATER SUPPLY/WELLS	A private well, located northeast of the dwelling, provides potable water to the home site on the Property. According the Well Construction Log we obtained from the Idaho Department of Water Resources, the domestic well was installed during 1974 and was constructed to a depth of 67 feet below ground surface (bgs). During construction, water was first encountered at a depth of 40 feet bgs.
SEWAGE DISPOSAL SYSTEM/SEPTIC SYSTENS	An on site septic tank and drainfield system provides sewage disposal for the dwelling on the Property. It is likely that this septic system is located near the dwelling; however, we have no information about the exact location of this system.
HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS	Several containers of oils, lubes, household maintenance products, and a few cans of gasoline are stored inside the shop building; these materials are stored in containers of 5-gallons in size or smaller. None of these containers appeared to be leaking or have leaked. Of the nearly fifty (50) 55-gallon drums we identified on the site, two to three (2-3) of the drums and three (3) 5-gallon containers contain an unknown liquid; a small amount of staining around two (2) of the containers indicate that they may contain waste oil. During our inspection of the Property, we saw no visual indications that the site has been, or is being contaminated by hazardous waste or other hazardous substances. We did not observe any visual evidence of the historic use of hazardous materials and we observed no significant stains, odors, or unnaturally stressed vegetation (indicators that the improper use of these material has occurred).
DRUMS/UNIDENTIFIED SUBSTANCE CONTAINERS	Approximately fifty (50) 55-gallon drums are located on the Property. Most of these drums are empty or contain trash; however, two (2) to three (3) drums located in the field to the northeast of the dwelling contain unknown liquids. *...(continued below)...*

DRUMS/UNIDENTIFIED SUBSTANCE CONTAINERS ...(CONTINUED FROM PREVIOUS PAGE)...	The two (2) to three (3) drums containing liquids have tight-fitting lids. One (1) drum has limited staining on the ground that appears to be waste oil. *This drum is located within "Area #2" on the Site Plan.* ***Note:*** *The number of drums is an approximate number because some of the empty drums are located within piles of material and debris that are difficult or impossible to see.*
PITS, PONDS, OR LAGOONS	Although not currently present, aerial photos indicate that Sand Hollow Creek, forms a seasonal pond or shallow pool of water near the mid-point of the western Property boundary. During inspection of the site, we observed the area on the site were the creek temporarily ponds or pools along the western boundary. ***Update:*** *The seasonal pond was present at the time of our May 16, 2022 site visit.*
STAINED SOIL OR PAVEMENT	Minor surface stains are visible on the gravel drive in front of the shop building (south side). These surface stains appear to have been caused by fluid drips from parked vehicles or equipment. We observed staining on the ground beneath one of the drums and a 5-gallon container within "Area #2" (shown on the Site Plan). This staining is limited and appears to be caused by waste oil.
VAPOR ENCROACHMENT CONCERNS	No environmental concerns

9.2 OPINIONS

Listed below are our professional opinions of the impact (if any) on the Property of the conditions identified in the Findings listed in Section 9.1:

TYPE OF INFORMATION EVALUATED	OPINION
ENVIRONMENTAL DATABASE RECORDS	See below
NITRATE PRIORITY AREA	Although it is possible that the groundwater beneath the Property may contain elevated levels of nitrates, our review of area well sampling data indicates that nitrate levels would likely be well below the EPA and Idaho drinking water standard of 10.0 mg/L. *This is not a "recognized environmental condition" or "REC".*
SITE RECONNAISSANCE	See below
POTABLE WATER SUPPLY/ WELLS	The presence of a private well on the Property is not a cause for concern; however, if the future use of the Property does not include the use of the well, it should be properly abandoned in accordance with the Idaho Department of Water Resources (IDWR) rules. *Although not considered a "REC",* due to the relatively shallow depth of the well (less than 100 feet bgs), we recommend sampling of the well prior to it's continued use as a potable water source. The analyses should include at least, bacteria (Total Coliform and E. Coli) and Nitrates.
SEWAGE DISPOSAL SYSTEM/ SEPTIC SYSTENS	The presence of an on site septic tank and drainfield system *is not a cause for concern*; however, if the future use of the Property doe not include the use of the septic system, it should be closed in accordance with Idaho Health Department Rules.

HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS	In their current state, the use and storage of oils, lubes, household maintenance products, and cans of gasoline on the site *are not a cause for concern and are not considered a "REC";* however, any of these materials that are no longer in use should be disposed of in accordance with Federal, State, and local rules and regulations.
DRUMS/UNIDENTIFIED SUBSTANCE CONTAINERS	Of the fifty (50)± drums located on the site, two (2) to three (3) drums located in the field to the northeast of the dwelling (area #2 on Site Plan) contain an unknown liquid. All of these drums/containers have been on the Property for an extended period of time; it is unclear if the staining around the drum/container in area #2 was caused by spills or if the container has leaked; however, *it is our opinion that these drums and the soil staining is not considered a "REC" because the staining on the ground around one (1) drum and one (1) 5-gallon container appears limited to the top 6-inches of soil, a "de minimus" condition.* Although not considered a "REC" the contents of the drums should be determined and properly disposed of in accordance with Federal, State, and local rules and regulations.
PITS, PONDS, OR LAGOONS	The seasonal pond/pool formed by Sand Hollow Creek is not a cause for concern with respect to the environmental integrity of the Property.
STAINED SOIL OR PAVEMENT	One of the drums and/or 5-gallon containers (area #2 on Site Plan) appears to have leaked waste oil onto to the ground. This staining appears to be waste oil and to the extent observable, the leakage appears to be have been present for some time. Currently, this staining appears to be minor (limited to the top six-inches of soil or less). T*his type of surface stain is considered "de minimus" and is not a "REC".* It is possible that the removal of drums, containers, or piles of debris could reveal additional staining that was not observable during the site visit. Any staining extending beyond the top 6-inches of soil may require further evaluation.

10.0 CONCLUSIONS

SAGE ENVIRONMENTAL SERVICES, LLC has performed a Phase I Environmental Site Assessment (update) in conformance with the ASTM Practice E1527-21 for the Property located at 23442 Freezeout Road in Caldwell, Idaho. Any exception to or deletion from this practice is described in Section 2.3 “Scope of Services” and Section 2.5 “Limitations and Restrictions” of this report.

Based on our review of available information, Sage Environmental has identified no “recognized environmental conditions” or “RECs” in connection with t the Property. Although not considered a "REC", the contents of any drums and containers of liquids stored outside the shop should be determined and disposed of in accordance with Federal, State, and local rules/ regulations.

The removal of the piles of equipment, miscellaneous materials, and debris, may reveal additional drums, containers, and/or soil staining that require further evaluation.

10.1 Data Gaps & Failures

We identified four data gaps that were greater than 10 years; 1915-1939 (24 years); 1939-1954 (15 years); 1954-1969 (15 years); and 1981-1992 (11 years). Based upon the known history of the Property, these data gaps are considered insignificant with respect to the historic use(s) of the Property and any resulting environmental impacts.

The lack of Sanborn Map and Polk Directory coverage for the Property is considered a data failures. Based upon the known history of the Property, these data failures are considered insignificant with respect to the historic use(s) of the Property and any resulting environmental impacts.

10.2 Deviations from ASTM E1527-21

We did not deviate from ASTM E1527-21“Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”.

11.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL & SIGNATURES

As required by 40 CFR 312.21(d), Sage is providing the following statements as to the qualifications of the environmental professional(s) responsible for conducting this Phase I Environmental Site Assessment and the preparation of this report:

1. I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental professional as defined in §312.10 of 40 CFR312, and
2. I have the specific qualifications, based on education, training, and experience, to assess a property of the nature, history, and setting to the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By:

Sage Environmental Services, LLC

Brenda L. Magnuson, REA
Registered Environmental Assessor, Cert. #06973

12.0 REFERENCES SITED

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NETROnline: Nationwide Environmental Title Research, LLC. Tempe, Arizona; Environmental Database Report; http://www.NETROnline.com

13.0 PERSONS CONTACTED/INTERVIEWED

Name	Address	Telephone	Relationship to Site Use
Brian Falck	Pioneer Homes 719 1st Street South, Ste. B Boise, Idaho 83709	208.941.2686	Representative of Client (Pioneer Homes) Completed User Questionnaire

ADDENDA

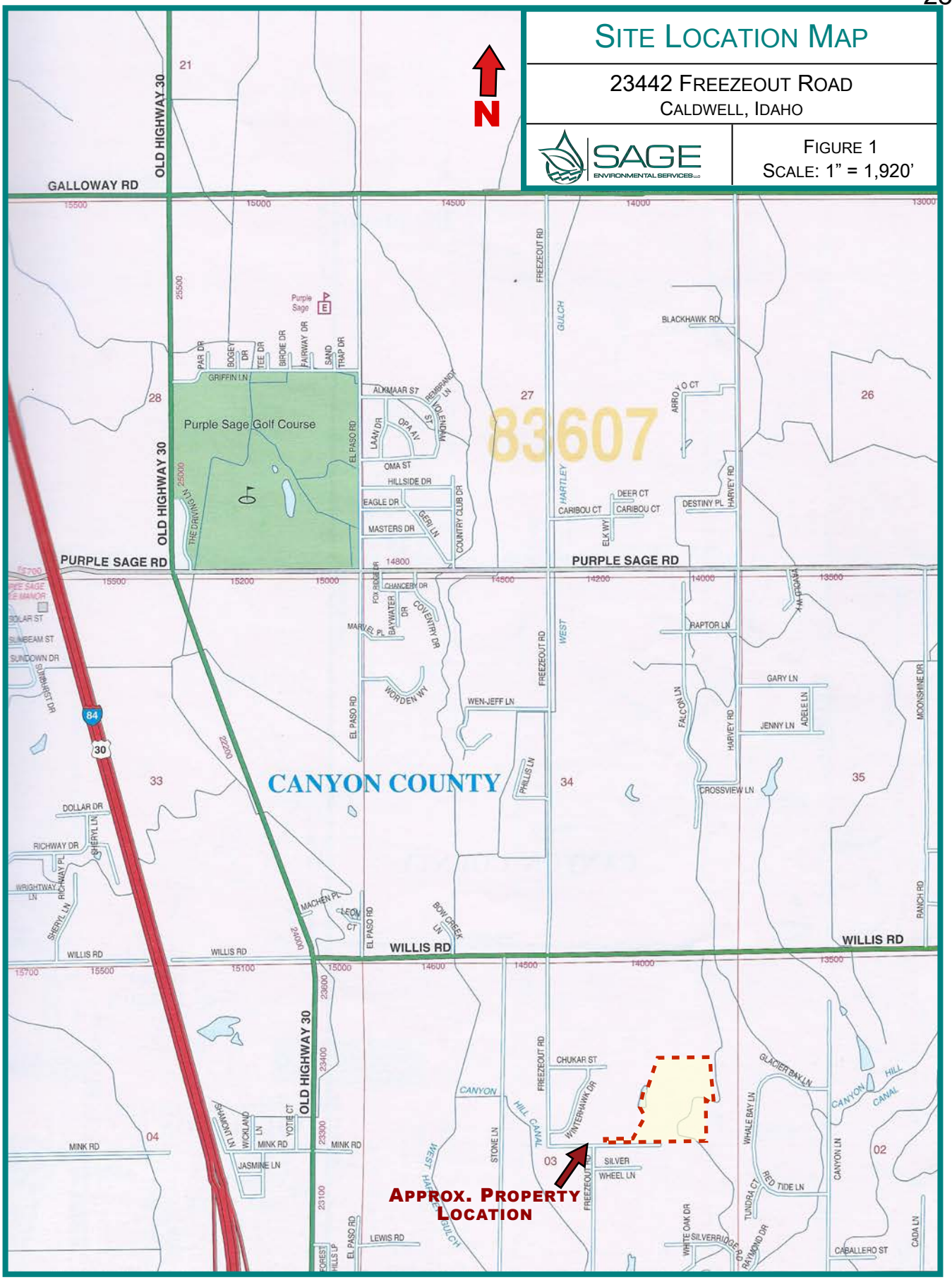
MAPS & FIGURES

SITE LOCATION MAP

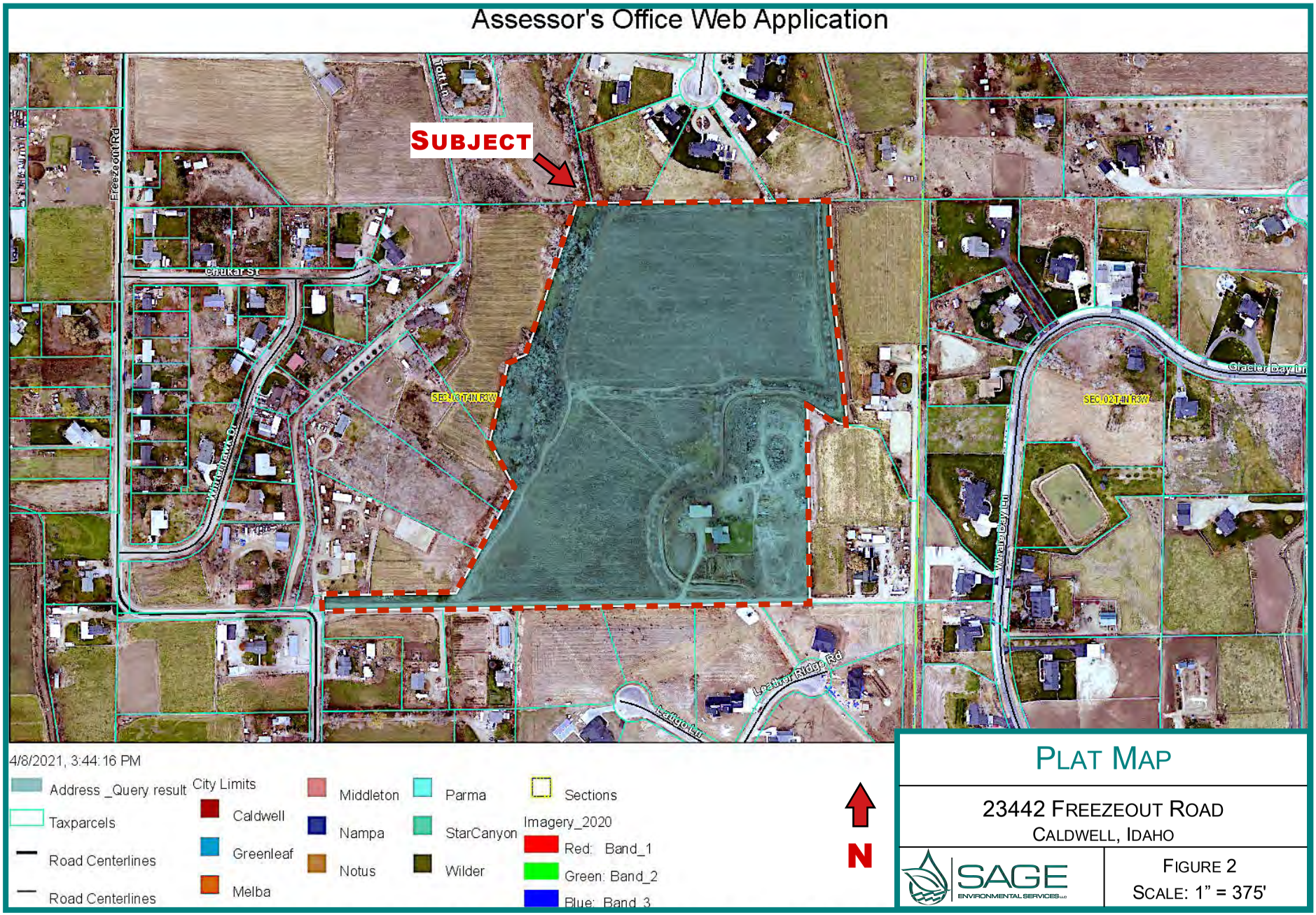
23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES, LLC

FIGURE 1
SCALE: 1" = 1,920'



18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

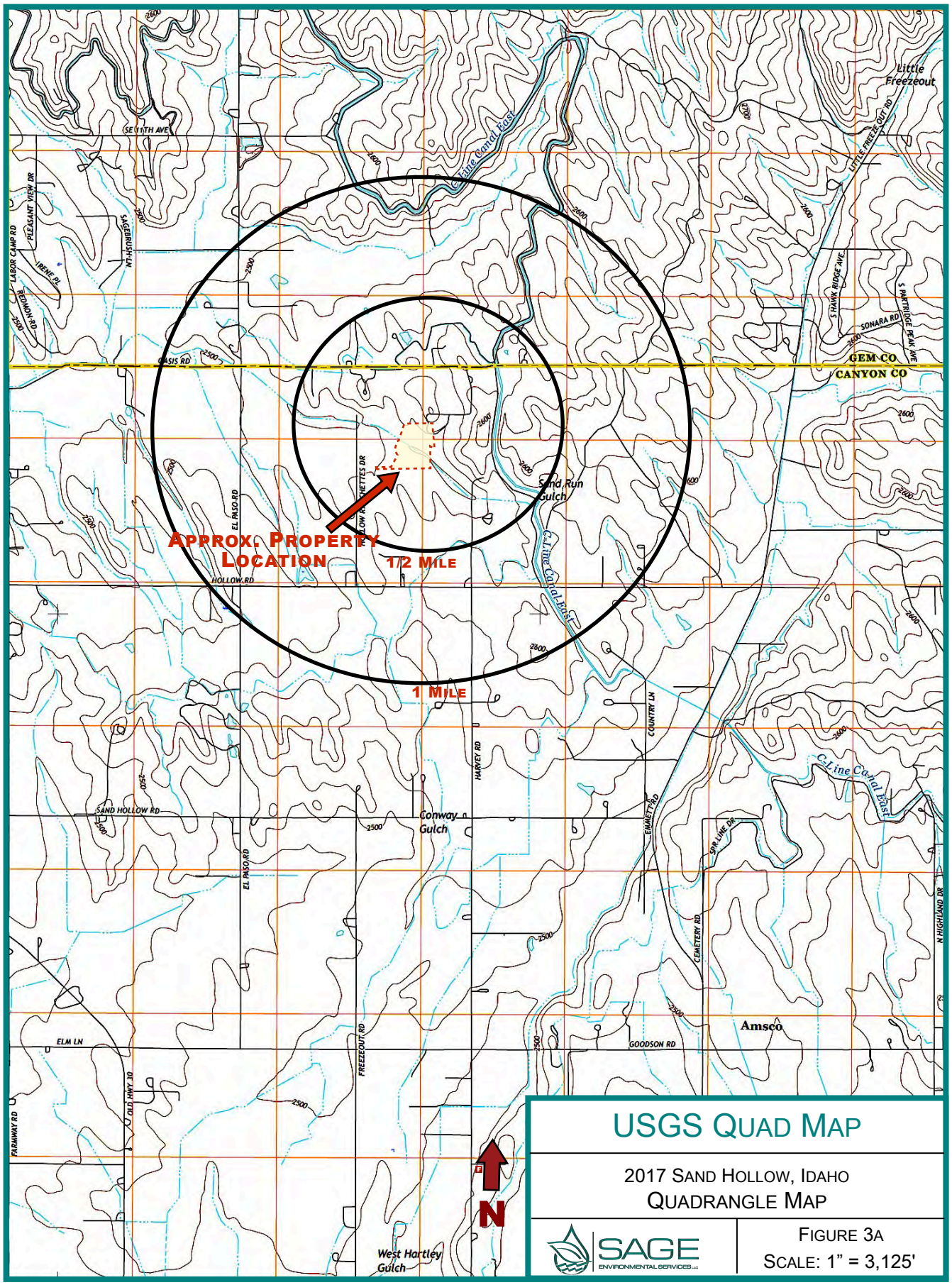


PLAT MAP

23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES, LLC

FIGURE 2
SCALE: 1" = 375'



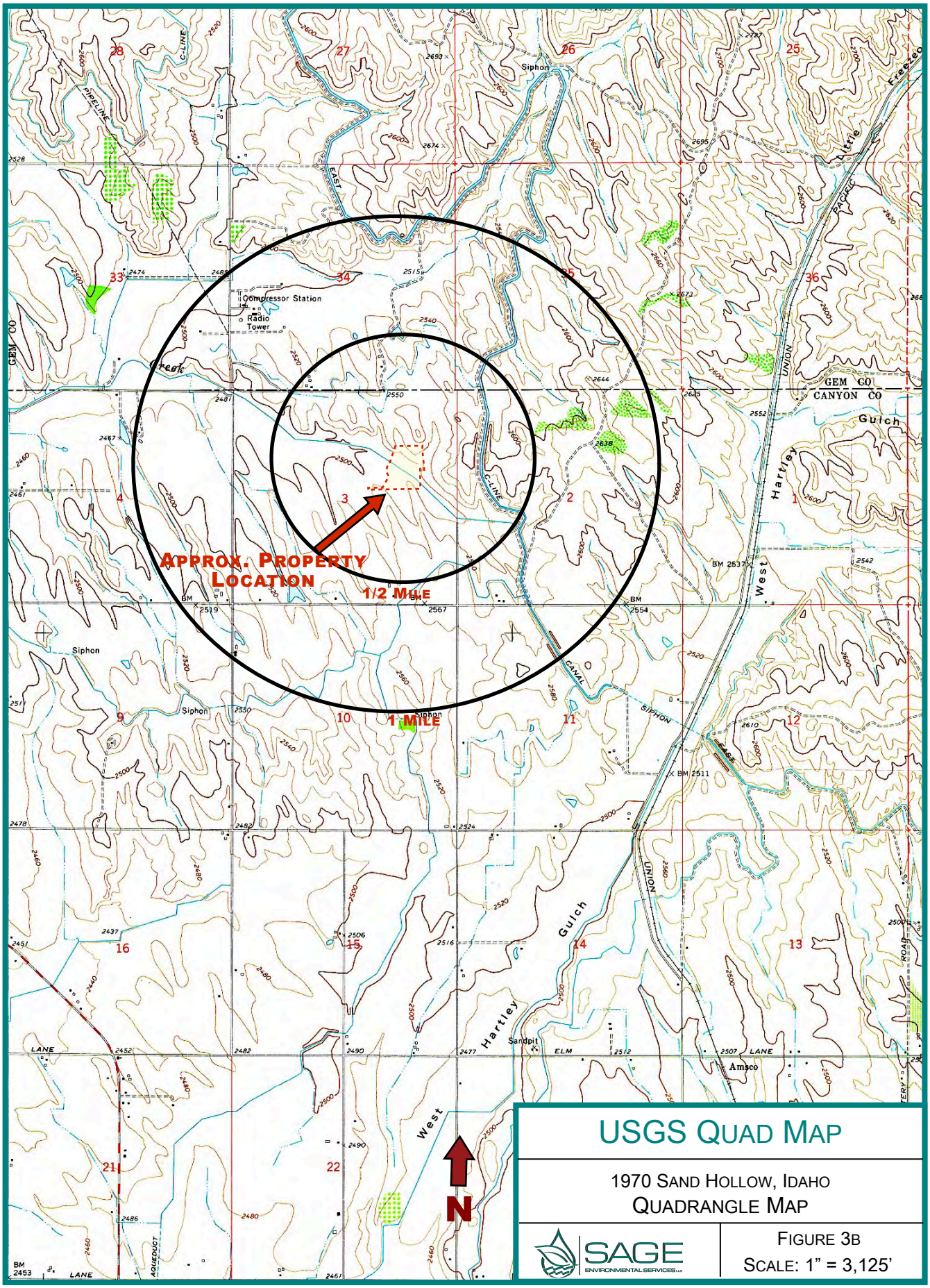
USGS QUAD MAP

2017 SAND HOLLOW, IDAHO
QUADRANGLE MAP

SAGE ENVIRONMENTAL SERVICES LLC

FIGURE 3A
SCALE: 1" = 3,125'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876



USGS QUAD MAP

1970 SAND HOLLOW, IDAHO
QUADRANGLE MAP

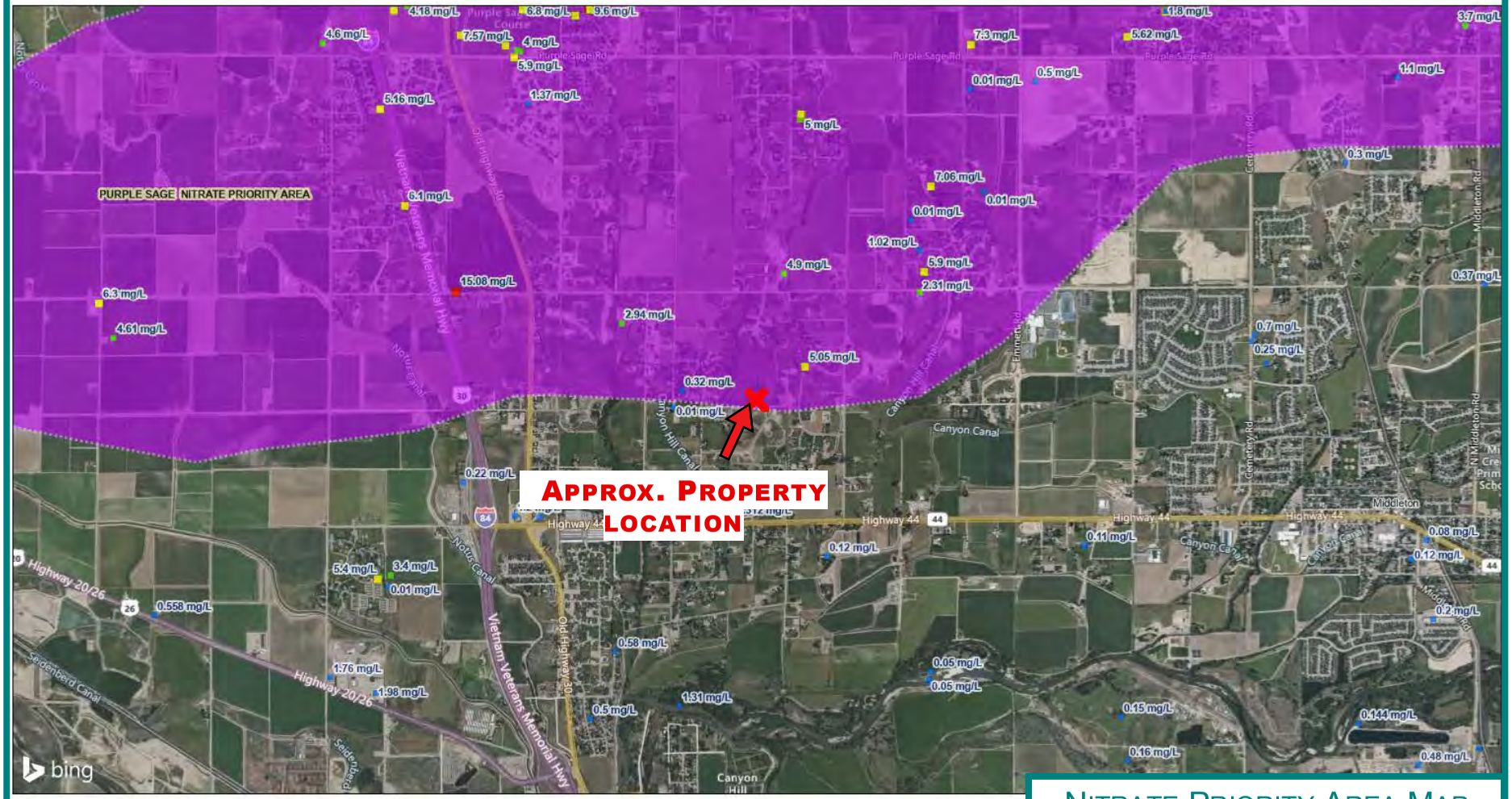
SAGE ENVIRONMENTAL SERVICES, LLC

FIGURE 3B
SCALE: 1" = 3,125'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876


SITE PLAN
23442 FREEZEOUT ROAD
CALDWELL, IDAHO
SAGE ENVIRONMENTAL SERVICES, LLC
FIGURE 4
SCALE: 1" = 250'
WELL =
DRUM =
N
RURAL RESIDENTIAL
SAND HOLLOW CREEK
#1
RURAL RESIDENTIAL
APPROX. PROPERTY BOUNDARY
GRAVEL ACCESS ROAD
FREEZEOUT ROAD
RURAL RESIDENTIAL SUBDIVISION
AREA DESCRIPTIONS
#1
WATER PRESSURE TANKS, HOT WATER HEATER TANKS, DRUMS, MISC. EQUIPMENT
#2
• DOORS, WINDOWS, MISC. LUMBER, ETC.
• 2 DRUMS; 5-GAL OIL/WASTE OIL (LEAKED)
#3
MISC. BLDG. MATERIALS, DIRT, CONCRETE, FEW TIRES
#4
• 50±TIRES
• WASTE LUMBER, DIRT, SCRAP METAL, WASTE CONCRETE
• 2 GAS CANS
• 8-9 DRUMS
#5
• 50±TIRES
• MISC. HOUSEHOLD
• 6 DRUMS (EMPTY AND/OR CONTAIN TRASH
GARAGE
#2
#3
#4
#5
SHED
DWELLING
PROPOSED REALIGNMENT OF C.L.E. LATERAL
C.L.E. LATERAL
RURAL RESIDENTIAL AND IRRIGATED FARM LAND
WHALE BAY LANE

Idaho DEQ 2014 Nitrate Priority Areas



April 10, 2021

- Idaho Cities/Towns
- Nitrate Priority Areas (2014)

Nitrate Monitoring Wells (2014)

- < 1.99 mg/l
- 2.00 - 4.99 mg/l
- 5.00 - 9.99 mg/l
- >= 10.0 mg/l

N

NITRATE PRIORITY AREA MAP

23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES, LLC

FIGURE 5
NO SCALE

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

AERIAL PHOTOS

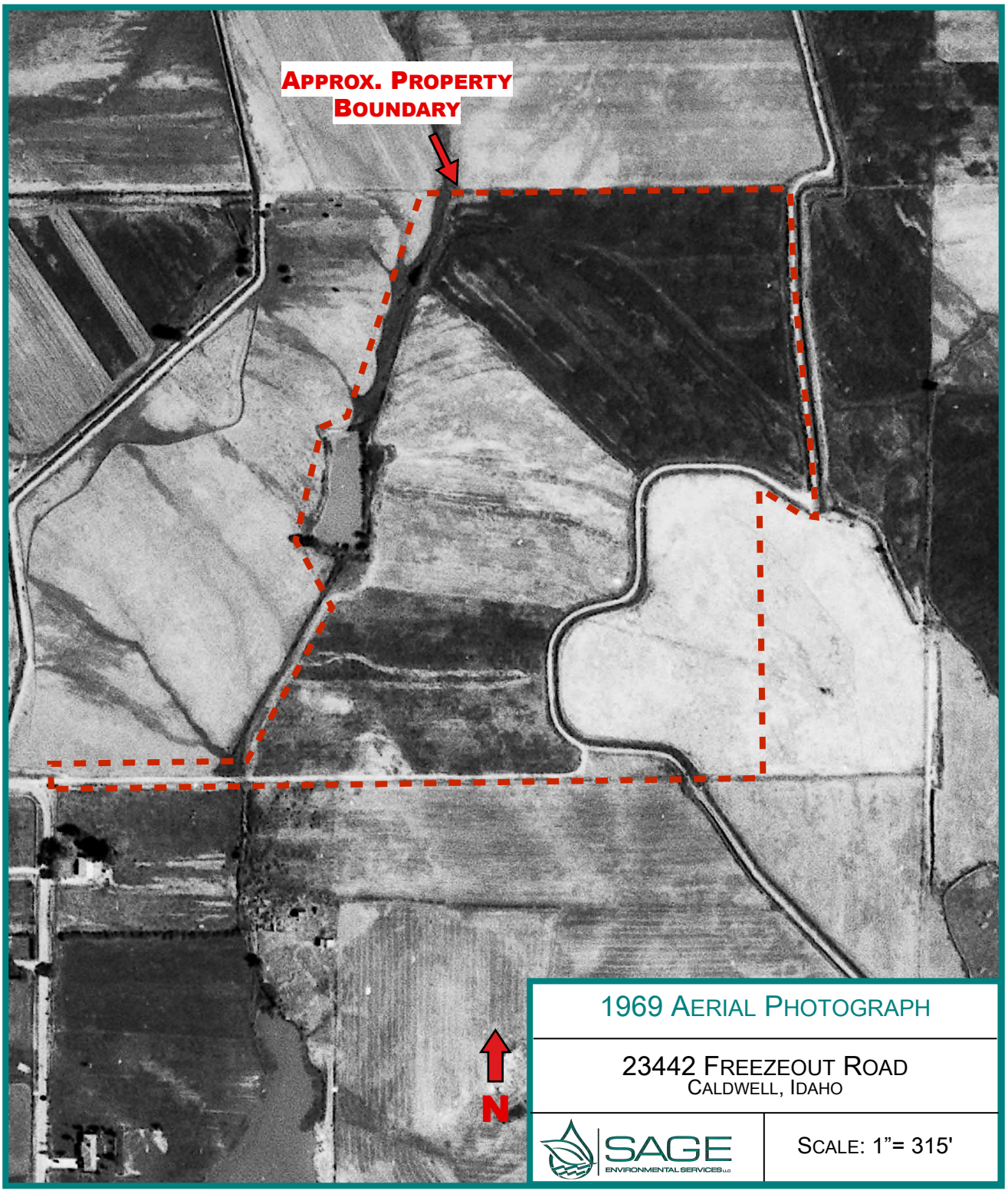
1954 AERIAL PHOTOGRAPH

23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES LLC

SCALE: 1"= 315'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876



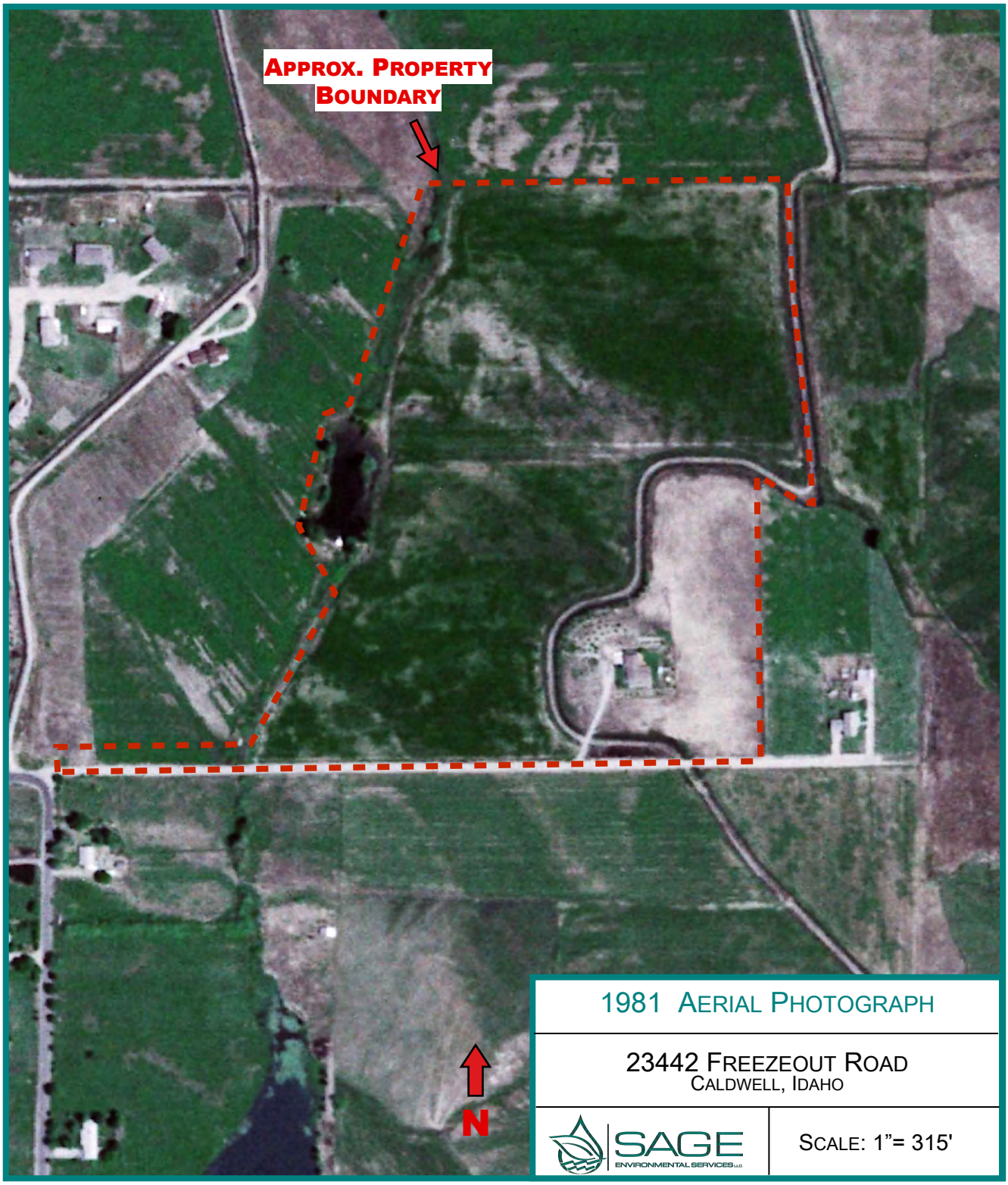
1969 AERIAL PHOTOGRAPH

23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES LLC

SCALE: 1"= 315'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876



1981 AERIAL PHOTOGRAPH

23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES LLC

SCALE: 1"= 315'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
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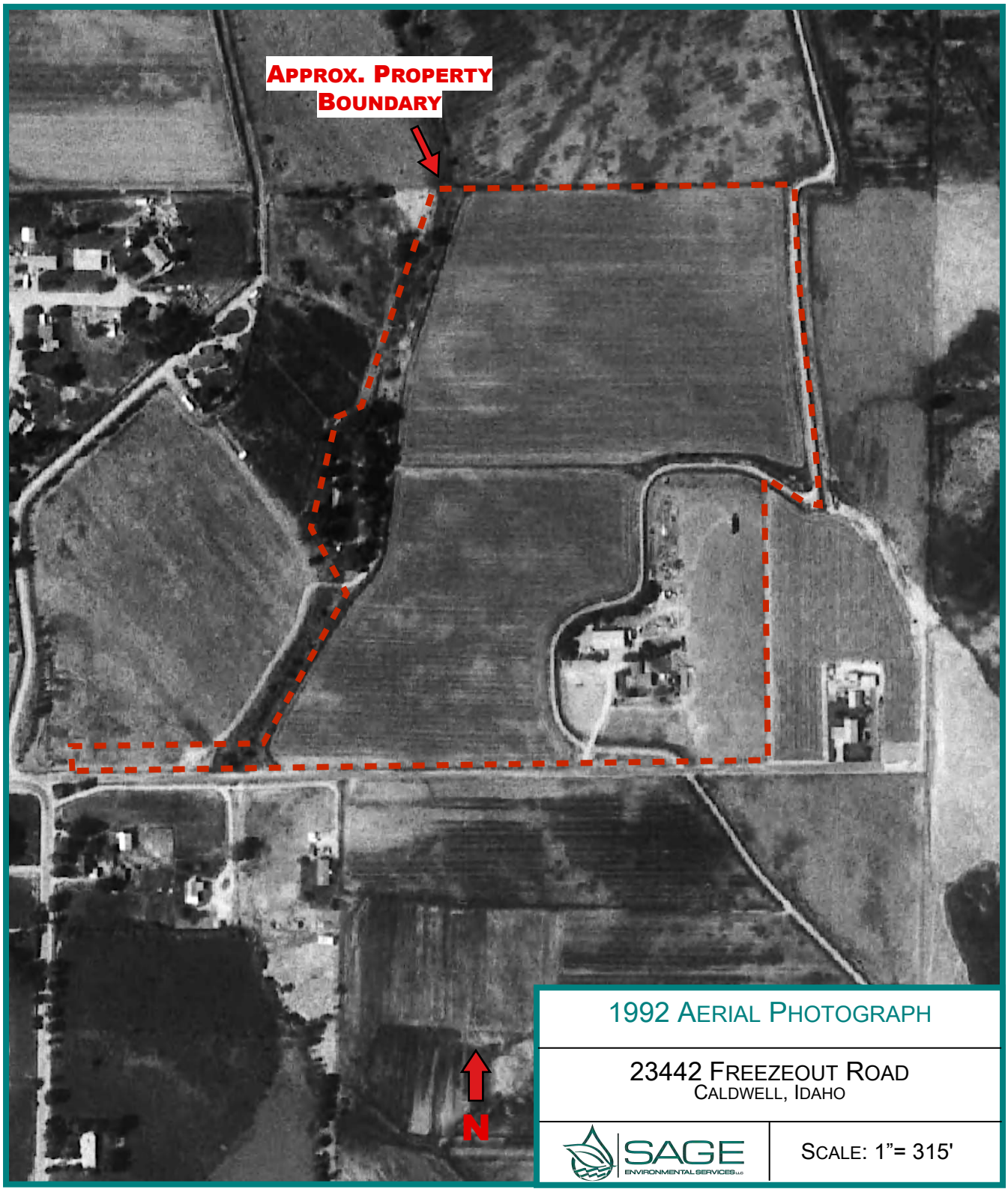


1992 AERIAL PHOTOGRAPH

23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES, LLC

SCALE: 1"= 315'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

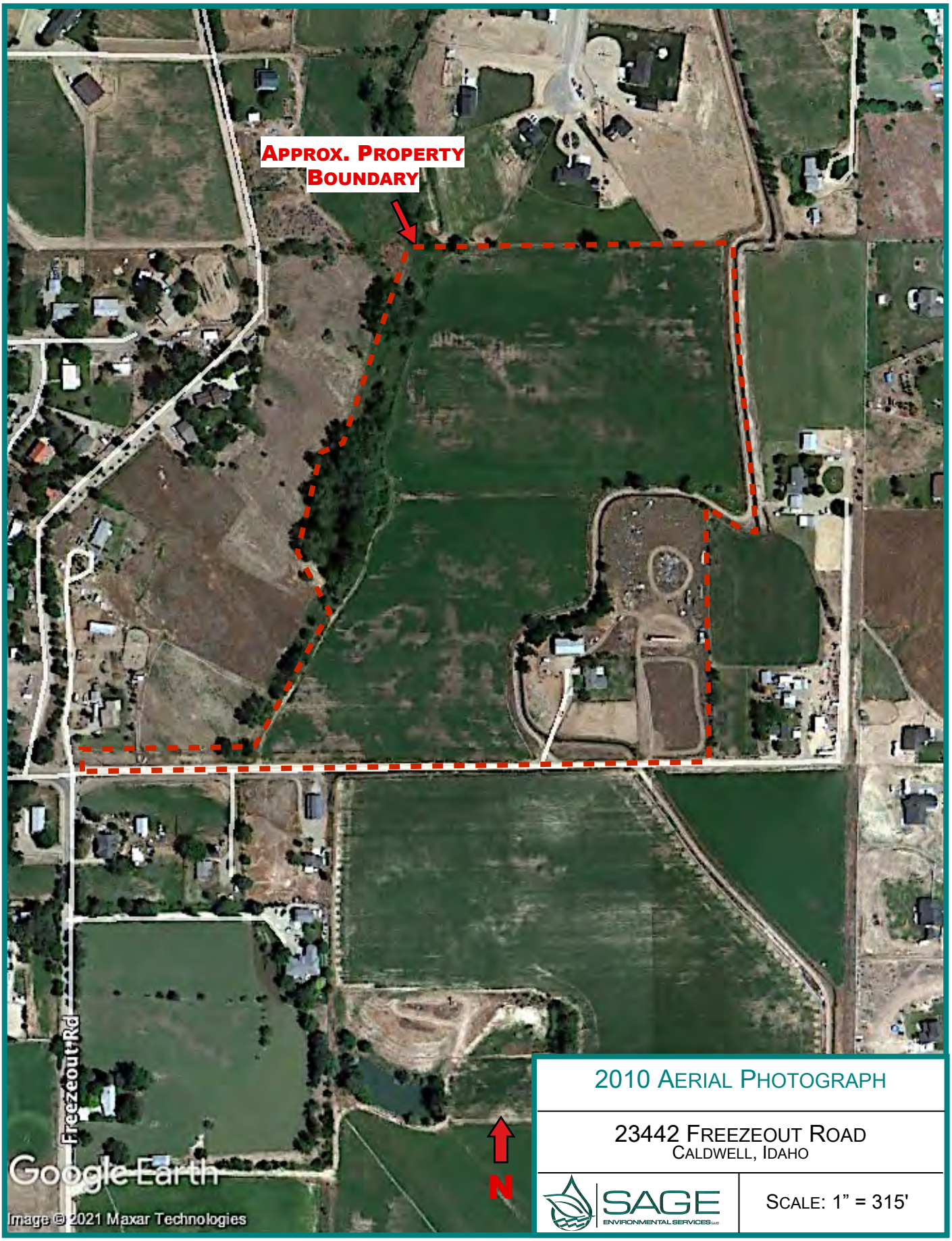
2002 Aerial Photograph

23442 Freezeout Road
Caldwell, Idaho

SAGE Environmental Services, LLC

Scale: 1"=315'

18123 N. Highfield Way
Boise, Idaho 83714
208-867-8876



2010 Aerial Photograph

23442 Freezeout Road
Caldwell, Idaho

SAGE Environmental Services, LLC

Scale: 1" = 315'

18123 N. Highfield Way
Boise, Idaho 83714
208-867-8876

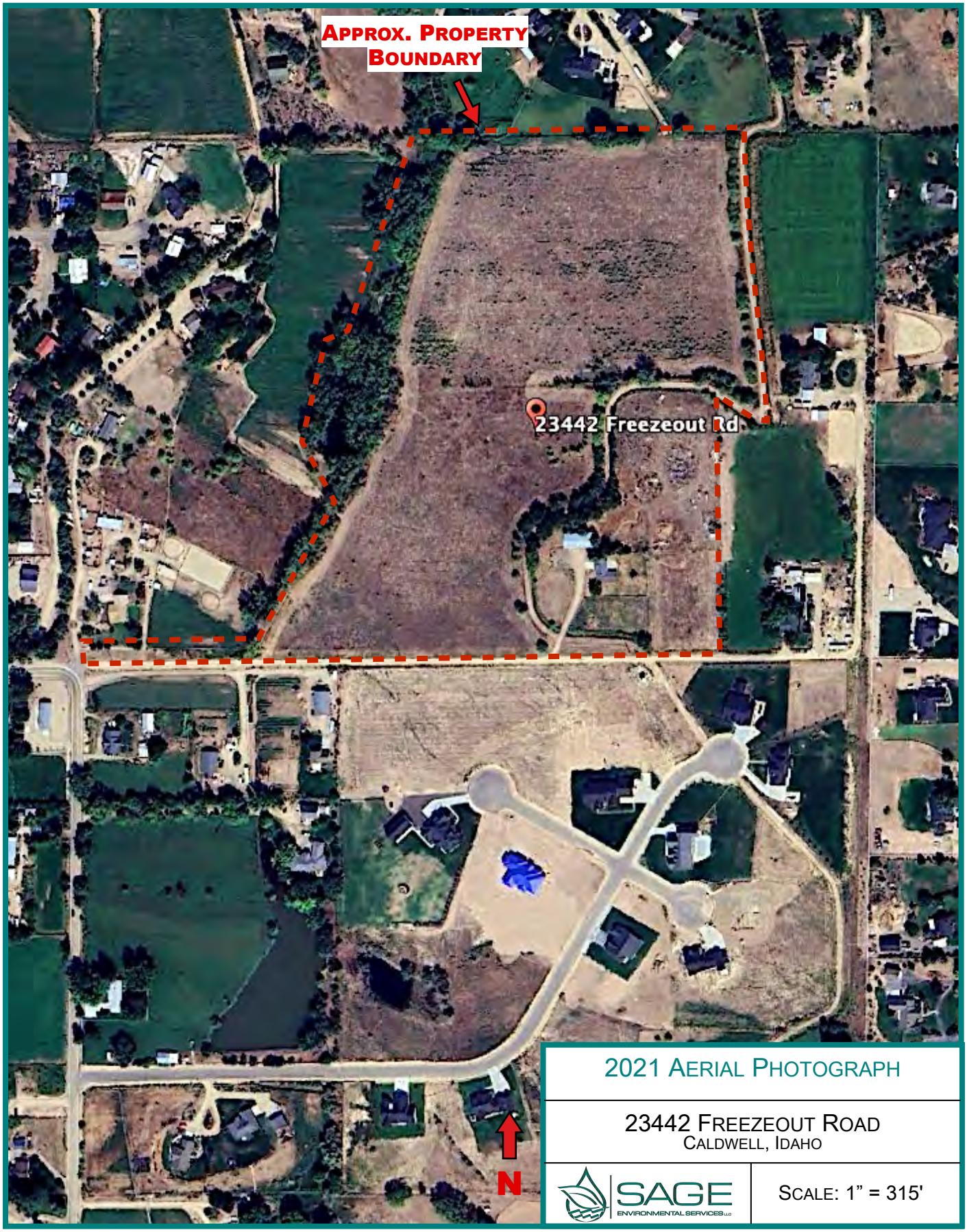
2020 Aerial Photograph

23442 Freezeout Road
Caldwell, Idaho

SAGE Environmental Services, LLC

Scale: 1" = 315'

18123 N. Highfield Way
Boise, Idaho 83714
208-867-8876



2021 AERIAL PHOTOGRAPH

23442 FREEZEOUT ROAD
CALDWELL, IDAHO

SAGE ENVIRONMENTAL SERVICES LLC

SCALE: 1" = 315'

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

SITE PHOTOS

PHOTOGRAPH #1: A VIEW OF THE PROPERTY AS SEEN LOOKING NORTH ALONG THE DRIVEWAY SHOWING THE SHOP BUILDING (LEFT) AND DWELLING (RIGHT).

PHOTOGRAPH #2: A VIEW OF THE PROPERTY AS SEEN LOOKING NORTHWEST FROM NEAR THE SOUTHEASTERN CORNER.

PHOTOGRAPH #3: LOOKING NORTH ALONG THE EASTERN BOUNDARY, AS SEEN FROM NEAR THE SOUTHEASTERN CORNER.

PHOTOGRAPH #4: LOOKING WEST ALONG THE SOUTHERN PROPERTY BOUNDARY.
THE DIRT/GRAVEL ACCESS ROAD FROM FREEZEOUT ROAD IS VISIBLE ON THE LEFT SIDE OF THE PHOTO.

PHOTOGRAPH #5: LOOKING EAST ALONG THE SOUTHERN PROPERTY BOUNDARY.
THE DIRT/GRAVEL ACCESS ROAD FROM FREEZEOUT ROAD IS VISIBLE ON THE RIGHT SIDE OF THE PHOTO.

PHOTOGRAPH #6: A VIEW OF THE PROPERTY AS SEEN LOOKING NORTHEAST FROM NEAR THE SOUTHWESTERN CORNER.

PHOTOGRAPH #7: LOOKING NORTH ALONG THE WESTERN PROPERTY BOUNDARY, AS SEEN FROM NEAR THE SOUTHWESTERN CORNER.

PHOTOGRAPH #8: THIS PHOTO SHOWS THE SOUTH (FRONT) SIDE OF THE SHOP, AS SEEN LOOKING NORTH FROM THE DRIVEWAY.

PHOTOGRAPH #9: THIS PHOTO SHOWS THE WEST (FRONT) SIDE OF THE HOUSE, AS SEEN LOOKING NORTHEAST FROM THE DRIVEWAY.

PHOTOGRAPH #10: A VIEW OF THE SITE AS SEEN LOOKING WEST ACROSS THE BACK YARD, TOWARD THE EAST SIDE OF THE HOUSE.

PHOTOGRAPH #11: THIS PHOTO SHOWS THE DISCARDED HOT WATER HEATERS, PRESSURE TANKS, AND MISCELLANEOUS METAL ITEMS LOCATED AT THE SEASONAL POND AREA (WEST END OF SITE).

PHOTOGRAPH #12: THIS PHOTO SHOWS THE SEASONAL POND AREA LOCATED ON THE WEST END OF THE SITE. THIS VIEW IS LOOKING NORTH.

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PHOTOGRAPH #13: LOOKING SOUTH ALONG THE WESTERN BOUNDARY, AS SEEN FROM NEAR THE NORTHWESTERN CORNER.

PHOTOGRAPH #14: LOOKING EAST ALONG THE NORTHERN BOUNDARY, AS SEEN FROM NEAR THE NORTHWESTERN CORNER.

PHOTOGRAPH #15: A VIEW OF THE PROPERTY AS SEEN LOOKING SOUTHEAST FROM NEAR THE NORTHWESTERN.

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PHOTOGRAPH #16: LOOKING WEST ALONG THE NORTHERN PROPERTY BOUNDARY, AS SEEN FROM NEAR THE NORTHWESTERN CORNER.

PHOTOGRAPH #17: LOOKING SOUTH ALONG THE EASTERN BOUNDARY, AS SEEN FROM NEAR THE NORTHEASTERN CORNER.

PHOTOGRAPH #18: A VIEW OF THE PROPERTY AS SEEN LOOKING SOUTHWEST FROM NEAR THE NORTHEASTERN CORNER.

PHOTOGRAPH #19: LOOKING EAST ALONG THE C.L.E. LATERAL AND ACCESS ROAD.

PHOTOGRAPH #20: THIS PHOTO SHOWS THREE OF THE DRUMS LOCATED ON THE PROPERTY, NORTHEAST OF THE DWELLING IN AREA #2.

PHOTOGRAPH #21: LOOKING SOUTH ACROSS THE EAST END OF THE SITE.

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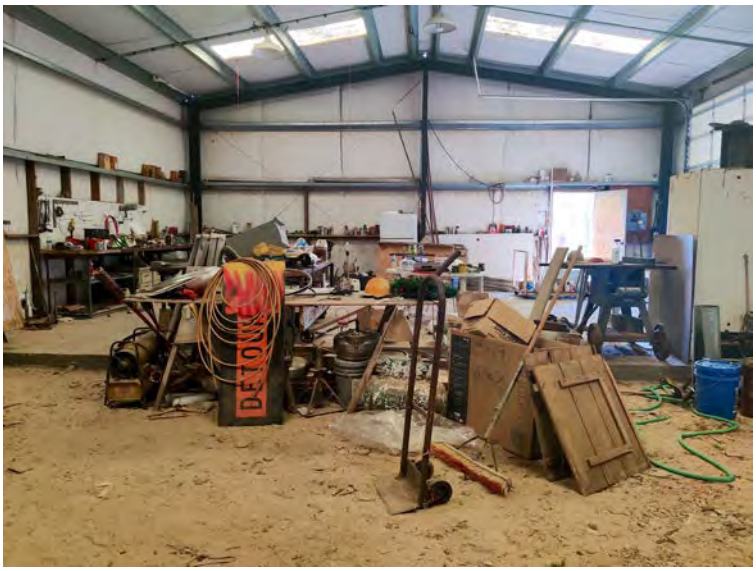
PHOTOGRAPH #22: THIS PHOTO SHOWS A PILE OF APPROXIMATELY 50 TIRES (SOME WITH WHEELS ATTACHED), DRUMS, AND MISCELLANEOUS LOCATED ON THE SOUTHEAST QUADRANT (NORTHEAST OF HOME SITE).

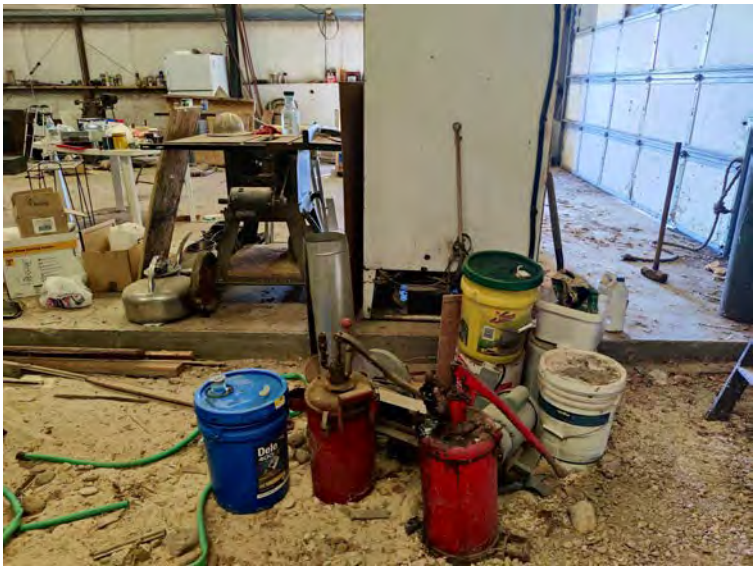
PHOTOGRAPH #23: THIS PHOTO SHOWS ANOTHER AREA OF DISCARDED MATERIALS; HOUSEHOLD GOODS, TIRES, MISCELLANEOUS, AND SEVEN (7) DRUMS IN THE BACKGROUND.

PHOTOGRAPH #24: THIS PHOTO SHOWS TWO (2) TRAILERS FULL OF DISCARDED MATERIALS AND LUMBER.

PHOTOGRAPH #25: THIS PHOTO SHOWS A PILE OF DIRT, SCRAP CONCRETE, AND OTHER BUILDING MATERIALS.

PHOTOGRAPH #26: AN INTERIOR VIEW OF THE SHOP AS SEEN LOOKING EAST.





PHOTOGRAPH #27: ANOTHER INTERIOR VIEW OF THE SHOP; THIS PHOTO SHOWING CONTAINERS OF OILS, LUBES, PAINTS AND OTHER MISCELLANEOUS STORED INSIDE.

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PHOTOGRAPH #28: AN INTERIOR VIEW OF THE DWELLING AS SEEN LOOKING NORTHWEST TOWARD THE KITCHEN/DINING AREA.

PHOTOGRAPH #29: THIS PHOTO SHOWS THE WATER PRESSURE TANK INSIDE THE GARAGE.

PHOTOGRAPH #30: THIS PHOTO SHOWS TWO (2) MORE DRUMS LOCATED ON THE SOUTHEAST QUADRANT OF THE SITE.

PHOTOGRAPH #31: THIS PHOTO SHOWS THE SOIL STATING NEXT TO A DRUM AND CONTAINER, AS DESCRIBED IN THE REPORT (AREA #2).

PHOTOGRAPH #32: LOOKING WEST ACROSS THE NORTH END OF THE SITE (NORTH OF THE E.L.C. LATERAL).

PHOTOGRAPH #33: LOOKING WEST ACROSS THE NORTH END OF THE SITE AS SEEN FROM ALONG THE C.L.E. CANAL ROAD, ADJACENT TO THE WESTERN PROPERTY BOUNDARY.

18123 N. HIGHFIELD WAY
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ENVIRONMENTAL DATABASE

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

Pioneer Homes
23442 Freezeout Rd, Caldwell, ID 83607
prepared for: Sage Environmental Services, LLC
Ref: 22-05740

2022-05-17

Environmental Radius Report

NETRONLINE

2055 E. Rio Salado Pkwy
Tempe, AZ 85381
480-967-6752

Summary

Federal

	< 1/4	1/4 - 1/2	1/2 - 1
Lists of Federal NPL (Superfund) sites	0	0	0
Lists of Federal Delisted NPL sites	0	0	-
Lists of Federal sites subject to CERCLA removals and CERCLA orders	0	0	-
Lists of Federal CERCLA sites with NFRAP	0	0	-
Lists of Federal RCRA facilities undergoing Corrective Action	0	0	-
Lists of Federal RCRA TSD facilities	0	0	-
Lists of Federal RCRA generators	0	-	-
Federal institutional control/engineering control registries	0	-	-
Federal ERNS list	0	-	-

State

	< 1/4	1/4 - 1/2	1/2 - 1
Lists of state and tribal Superfund equivalent sites	0	0	0
Lists of state and tribal hazardous waste facilities	0	0	-
Lists of state and tribal landfills and solid waste disposal facilities	0	0	-
Lists of state and tribal leaking storage tanks	0	0	-
Lists of state and tribal registered storage tanks	0	-	-
State and tribal institutional control/engineering control registries	0	-	-
Lists of state and tribal voluntary cleanup sites	0	0	-
Lists of state and tribal brownfields sites	0	0	-

Other

	< 1/4	1/4 - 1/2	1/2 - 1
Resource Conservation and Recovery Act Information (RCRAInfo)	0	0	-
U.S. EPA Underground Storage Tanks (UST)	0	-	-

Lists of Federal NPL (Superfund) sites

No Federal NPL sites found within a one-mile radius of the target property.

Lists of Federal Delisted NPL sites

No Federal Delisted NPL sites found within a half-mile radius of the target property.

Lists of Federal sites subject to CERCLA removals and CERCLA orders

No Federal sites subject to CERCLA removals and/or orders found within a half-mile radius of the target property.

Lists of Federal CERCLA sites with NFRAP

No Federal CERCLA sites with No Further Remedial Action Planned (NFRAP) decisions found within a half-mile radius of the target property.

Lists of Federal RCRA facilities undergoing Corrective Action

No Federal RCRA facilities undergoing corrective action(s) found within a half-mile radius of the target property.

Lists of Federal RCRA TSD facilities

No Federal RCRA treatment, storage and disposal facilities (TSDFs) found within a half-mile radius of target property.

Lists of Federal RCRA generators

No Federal RCRA generators found at the target property and/or adjoining properties.

Federal institutional control/engineering control registries

No Federal institutional or engineering controls found at the target property.

Federal ERNS list

No Federally recorded releases of oil and/or hazardous substances at the target property.

Lists of state and tribal Superfund equivalent sites

No State and/or tribal Superfund equivalent sites found within a one-mile radius of target property.

Lists of state and tribal hazardous waste facilities

No State and/or tribal hazardous waste facilities found within a half-mile radius of the target property.

Lists of state and tribal landfills and solid waste disposal facilities

No State and/or tribal landfills or solid waste disposal facilities found within a half-mile radius of the target property.

Lists of state and tribal leaking storage tanks

No State and/or tribal leaking storage tanks found within a half-mile radius of the target property.

Lists of state and tribal registered storage tanks

No State and/or tribal registered storage tanks found at subject and adjoining properties.

State and tribal institutional control/engineering control registries

No State and/or tribal institutional and/or engineering controls found filed against the target property.

Lists of state and tribal voluntary cleanup sites

No State and/or tribal voluntary cleanup sites found within a half-mile radius of the target property.

Lists of state and tribal brownfields sites

No State and/or tribal brownfields sites found within a half-mile radius of the target property.

Resource Conservation and Recovery Act Information (RCRAInfo)

No records found

U.S. EPA Underground Storage Tanks (UST)

No records found

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ENVIRONMENTAL QUESTIONNAIRE & DISCLOSURE STATEMENT

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

SAGE ENVIRONMENTAL SERVICES LLC
18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208.867.8876
SAGE.BOISE@GMAIL.COM

ENVIRONMENTAL QUESTIONNAIRE AND DISCLOSURE STATEMENT FOR PROPERTY OWNER

As per ASTM Standard 1527-13, in order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"), the User must provide the following information (if available) to the Environmental Professional. Failure to provide this information could result in a determination the "all appropriate inquiry" is not complete.

PROJECT NUMBER/NAME: 21-03640 **PROPERTY ADDRESS:** 23442 Freezeout Road in Caldwell, Id.

PROPERTY TYPE: Commercial Industrial Multi-Tenant (Residential) Farm Land Vacant Land

QUESTIONNAIRE COMPLETED BY:

Name: BRIAN FALCK Signature: [signature] Title:
Address: 719 1st Street South Ste B
City/State/Zip: Jampa ID 83651
Telephone: 208-991-2686
Email Address: brian@pioneerhomesidaho.com

		YES	NO	UNK
1	Are there any buildings/structures on the property? *If yes, type of construction:* 1404 sq ft house built in 1976, 2628 sqft shop built in 1987	✓		
2	Have there ever been any environmental problems at the property? *If yes, explain:*			✓
3	Has a gas station or dry cleaner operated anywhere on the property? *If yes, explain:* Not likely			✓
4	Do any tenants use hazardous chemicals in relatively large quantities on the property? *If yes, explain:* Not likely			✓
5	Have any tenants ever complained about odors in the building or experienced health-related problems that may have been associated with the building? *If yes, explain:*			✓
6	Are there any underground storage tanks (USTs) or above ground storage tanks (ASTs)? *If yes, describe # of USTs/ASTs; size; contents; date(s) Installed:*			✓
7	Have there been any USTS or ASTs located on the Property in the past? *If yes, describe # of USTs/ASTs; size; contents; date(s) Installed/removed or closed:*			✓
8	Are there or have there been any on site sewage disposal systems (septic, drainfields, drywells, etc.) on the Property? *If yes, explain:* services house	✓		

SAGE ENVIRONMENTAL SERVICES LLC
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BOISE, IDAHO 83714
208.867.8876
SAGE.BOISE@GMAIL.COM

	YES	NO	UNK
9 Are there any wells located on the Property?	✓		

If yes, explain: Domestic Well behind home.

	YES	NO	UNK
10 Did a search of recorded land title records (or judicial records where appropriate) identify any environmental liens filed or recorded against the property under federal, tribal, state or local law?			✓

If yes, explain:

	YES	NO	UNK
11 Do you have any specialized knowledge or experience related to the property or nearby properties? For example, Are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you should have specialized knowledge of the chemical s and processes used by this type of business?		✓	

If yes, explain:

	YES	NO	UNK
12 Does the purchase price being paid for this Property reasonably reflect the fair market value of the property?	✓		
13 If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?		✓	

If yes, explain:

	YES	NO	UNK
14 Do you know the past use(s) of the property?		✓	

If yes, describe:

	YES	NO	UNK
15 Do you know of specific chemicals that are present or once were present at the property?		✓	

If yes, explain:

	YES	NO	UNK
16 Do you know of spills or other chemical release that have taken place at the property?		✓	

If yes, explain:

	YES	NO	UNK
17 Do you know of any environmental cleanups that have taken place at the property?		✓	

If yes, explain:

	YES	NO	UNK
18 Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of contamination at the property?		✓	

If yes, explain:

	YES	NO	UNK
19 What is the reason for conducting the Phase I Environmental Site Assessment?			

If yes, explain: Required part of Bureau of Reclamation request to retro realign a drainage ditch.

SAGE ENVIRONMENTAL SERVICES LLC
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BOISE, IDAHO 83714
208.867.8876
SAGE.BOISE@GMAIL.COM

	YES	NO	UNK
20 Have any previous Environmental Assessment Reports been prepared for the Property? *If yes, provide date when prepared and include copy or report:*			✓

PLEASE ATTACH THE FOLLOWING INFORMATION OR DOCUMENTS, IF AVAILABLE:	
* Names/phone numbers of key individuals with knowledge of the property use/history;	✓
* Map showing the boundaries of the property:	
* Copies of past environmental site assessments or other environmental reports:	✓
* Copies of Environmental permits:	
* Registrations for Underground or Aboveground storage tanks (if any):	
* Material Safety Data Sheets (MSDS) for hazardous substances used or store on site (if any):	
* Community Right-toKnow Plans pertaining to the Property.	
* Notices of other correspondence from any governmental agency relating to any inspections or violations of environmental rules retarding the property or environmental liens encumbering the Property.	
* Recorded Activity Use Limitations (AULs) (if any).	
* Chain of ~~Title~~ Title or other Title Report documents.	✓

CHAIN-OF-TITLE RECORD

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

PioneerTitleCo.
GOING BEYOND

610 S. Kimball Avenue
Caldwell, ID 83605

ELECTRONICALLY RECORDED-DO NOT REMOVE THE COUNTY STAMPED FIRST PAGE AS IT IS NOW INCORPORATED AS PART OF THE ORIGINAL DOCUMENT

2019-033320
RECORDED
07/24/2019 12:38 PM
CHRIS YAMAMOTO
CANYON COUNTY RECORDER
Pgs=3 MBROWN $15.00
TYPE: DEED
PIONEER TITLE CANYON - CALDWELL
ELECTRONICALLY RECORDED

File No. 688622 TK/

WARRANTY DEED

For Value Received **Virginia Figuredo, Trustee of the Virginia Figueredo Trust dated October 25, 2018**

hereinafter referred to as Grantor, does hereby grant, bargain, sell, warrant and convey unto

Dorothy Ann Bonham and Melvin Edward Bonham, Trustees of The Dorothy Ann Honham and Melvin Edward Bonham 2004 Revocable Trust and Melvin Bonham Jr., an unmarried man, each as to an undivided 50% interest

hereinafter referred to as Grantee, whose current address is 3905 Curran Road, Ione, CA 95640

The following described premises, to-wit:

See Exhibit A attached hereto and made a part hereof.

To HAVE AND TO HOLD the said premises, with their appurtenances unto the said Grantee(s), and Grantees(s) heirs and assigns forever. And the said Grantor(s) does (do) hereby covenant to and with the said Grantee(s), the Grantor(s) is/are the owner(s) in fee simple of said premises; that said premises are free from all encumbrances EXCEPT those to which this conveyance is expressly made subject and those made, suffered or done by the Grantee(s); and subject to U.S. Patent reservations, restrictions, dedications, easements, rights of way and agreements, (if any) of record, and current years taxes, levies, and assessments, includes irrigation and utility assessments, (if any) which are not yet due and payable, and that Grantor(s) will warrant and defend the same from all lawful claims whatsoever.

Dated: July 17, 2019

The Virginia Figueredo Trust

By: Virginia Figueredo, Trustee
Virginia Figueredo, Trustee
State of California, County of _____

This record was acknowledged before me on _____ by Virginia Figueredo, as trustee of the Virginia Figueredo Trust .

_____
Signature of notary public
Commission Expires: _____

See Attached
CA Acknowledgment

CALIFORNIA ALL-PURPOSE ACKNOWLEDGEMENT

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Nevada

On July 23, 2019, before me, Christy Marie Summer, Notary Public,
personally appeared Virginia D. Figueredo
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of State of California that the foregoing paragraph is true and correct.

CHRISTY MARIE SUMMER
Notary Public - California
Nevada County
Commission # 2251067
My Comm. Expires Jul 26, 2022

PLACE NOTARY SEAL ABOVE

WITNESS my hand and official seal.

SIGNATURE Christy Marie Summer

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of attached document

Title or type of document: Warranty Deed

Document Date: July 23, 2019 Number of Pages: 5

Signer(s) Other than Named Above:

EXHIBIT A

A part of the SE1/4 of the NE1/4 and the SW1/4 of the NE1/4, Section 3, Township 4 North, Range 3 West, Boise Meridian, more particularly described as follows:

BEGINNING at the southeast corner of said SW1/4 of the NE1/4; thence
south 89°08'36" West along the south boundary of said SW1/4 of the NE1/4 a distance of 681.58 feet to a point on the westerly boundary of the parcel described in the quit claim deed recorded as Instrument No. 945974, Records of Canyon County, Idaho; thence traversing said westerly boundary as follows:
North 14°39'26" East a distnce of 51.96 feet;
North 89°08'36" East a distance of 468.46 feet;
North 28°55'40" East a distance of 397.26 feet;
North 28°44'21" West a distance of 169.92 feet;
North 13°10'27" East a distance of 268.10 feet;
North 66°40'49" East a distance of 65.01 feet;
North 18°34'52" East a distance of 523.27 feet to a point on the north boundary of said SE1/4 of the NE1/4; thence
North 89°24'56" East along said north boundary a distance of 832.99 feet; thence
South 1°27'37" East a distance of 258.22 feet along the centerline of an existing irrigation lateral; thence
South 6°00'26" East continuing along said centerline a distance of 479.39 feet to a point on the northerly boundary of the parcel described in the warranty deed recorded as Instrument No. 729194, records of Canyon County, Idaho; thence traversing the boundary of said parcel as follows:
North 81°39'12" West a distance of 28.29 feet;
North 58°24'52" West a distance of 122.26 feet;
South 0°49'14" East a distance of 654.97 feet to a point on the south boundary of said SE1/4 of the NE1/4; thence
South 89°12'20" West along said south boundary a distance of 965.08 feet to the POINT OF BEGINNING.

EXCEPT THEREFROM the following described property hereinafter referred to as Parcel B, described as follows:

Parcel B:

Commencing at the southwest corner of said SW1/4 of the NE1/4; thence
North 89°08'36" East along the south boundary of said SW1/4 of the NE1/4 a distance of 633.76 feet to the TRUE POINT OF BEGINNING; thence
North 14°30'08" East a distance of 51.91 feet; thence
North 89°08'30" East a distance of 30.00 feet; thence
South 0°51'24" East a distance of 50.05 feet to a point on the said south boundary; thence
South 89°08'36" West along said south boundary a distance of 43.79 feet to the True Point of Beginning.

TOGETHER WITH an easement for ingress and egress over and across said Parcel B

SAGE ENVIRONMENTAL SERVICES, LLC
18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

2019-054664
RECORDED
11/12/2019 02:05 PM

00478570201900546640040046

CHRIS YAMAMOTO
CANYON COUNTY RECORDER
Pgs=4 EHOWELL $15.00
DEED
INTERMOUNTAIN LEGAL GROUP

2019-006101
RECORDED
02/13/2019 04:10 PM

00421040201900061010040040

CHRIS YAMAMOTO
CANYON COUNTY RECORDER
Pgs=4 EHOWELL $15.00
DEED
JOSEPH L MORTON III PC

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:
Intermountain Legal Group
132 SW 5th Avenue, Suite 150
Meridian ID 83642

SEND TAX STATEMENTS TO:
Virginia Figueredo
305 W Main St. Apt 210
Grass Valley, CA 95945

(SPACE ABOVE LINE FOR RECORDER'S USE)

QUITCLAIM DEED BEING RE-RECORDED TO CORRECT INSTRUMENT NUMBER 2018-055754

Rerecorded to correct Trustee name

For value received, VIRGINIA FIGUEREDO, TRUSTEE OF THE FIGUEREDO FAMILY TRUST, WHOSE CURRENT ADDRESS IS 305 W MAIN ST., APT 210, GRASS VALLEY, CA 95945, Grantor, hereby quitclaims to:

VIRGINIA Figueredo TRUSTEE OF THE Virginia FIGUEREDO TRUST DATED OCTOBER 25, 2018, AND ANY AMENDMENTS THERETO, Grantee, whose current address is 305 W Main St. Apt 210, Grass Valley, CA 95945, all of its interest in that real property situated in Canyon County, State of Idaho, described as follows:

See Legal Description on Exhibit "A", attached hereto and incorporated herein by this reference.

The true consideration for this conveyance is to transfer property to the same party.

Witness the hand of said Grantor this 1 day of February 2019

Virginia Figueredo Grantor
VIRGINIA FIGUEREDO, GRANTOR

STATE OF _____)
) ss.
COUNTY OF _____)

See Attached

On this ____ day of _____ 20__, before me _____, personally appeared Virginia Figueredo, personally known to me (or proved to me on the basis of satisfactory evidence) to be the individual whose name is subscribed to the foregoing instrument, and acknowledged that she executed the same as her voluntary act and deed for the purposes therein contained.

WITNESS MY HAND AND OFFICIAL SEAL.

_____
Notary Public
My commission expires on _____

State of Idaho } ss.
County of Canyon }
I hereby certify that the foregoing instrument is a true and correct copy of the original as the same appears in this office.
DATED 10-30-2019
CHRIS YAMAMOTO, Clerk of the District Court and Ex Officio Recorder
By _____ Deputy

STATE OF IDAHO COUNTY RECORDER COUNTY OF CANYON

Exhibit "A"

A part of the Southwest Quarter of the Northeast Quarter and the Southeast Quarter of the Northeast Quarter, Section 3, Township 4 North, Range 3 West, Boise Meridian, more particularly described as follows:

BEGINNING at the Southwest corner of said Southeast Quarter of the Northeast Quarter (CE 1/16 cor.) , monumented with a Government Land Office brass cap monument; thence South 89°12'20" West, 681.58 feet; along the South boundary of said Southwest Quarter of the Northeast Quarter; thence North 14°34'50" East 51.86 feet; thence North 89°12'20" East 468.46 feet parallel with the South boundary of said Southwest Quarter of the Northeast Quarter; thence North 28°55'55" East 397.51 feet; thence North 28°40'15" West 170.55 feet; thence North 13°12'35" East 267.66 feet; thence North 66°50'45" East 65.05 feet; thence North 18°36'25" East 523.48 feet (of record as 523.43 feet); thence North 89°25'22" East 1138.29 feet along the North boundary of said Southeast Quarter of the Northeast Quarter; thence South 0°56'31" West 988.51 feet along the East boundary of said Southeast Quarter of the Northeast Quarter; thence North 89°02"40" West 26.93 feet (of record as 27.00 feet); thence North 23°28'40" West 255.33 feet; thence North 81°34'25" West 133.16 feet; thence North 58°24'15" West 122.26 feet; thence South 0°47'40" East, 655.00 feet; thence South 89°12'20" West 965.09 feet along the South boundary of said Southeast Quarter of the Northeast Quarter to the POINT OF BEGINNING.

This parcel is subject to road easement along the South 30 feet and is subject to an easement for an irrigation lateral.

Subject to the following Exceptions:

Exception 1:

That portion of the Southeast quarter of the Northeast quarter of Section 3, Township 4 North, Range 3 West of the Boise Meridian, Canyon County, Idaho and is more particularly described as follows:

Beginning at the Northeast corner of said Southeast quarter of the Northeast quarter; thence
South 0°56'21" West along the East boundary of said Southeast quarter of the Northeast quarter a distance of 988.14 feet to a point on the Northerly boundary of the parcel described in the Warranty Deed recorded as Instrument No. 729194, records of Canyon County, Idaho; thence
traversing said boundary as follows:
North 89°03'23" West a distance of 27.08 feet;
North 23°29'23" West a distance of 255.33 feet;
North 81°34'03" West a distance of 104.87 feet; thence
leaving said boundary and bearing
North 6°00'26" West along the centerline of an existing irrigation lateral a distance of 479.39 feet; thence
North 1°27'37" West continuing along said centerline a distance of 258.22 feet to a point on the North boundary of said Southeast quarter of the Northeast quarter; thence
North 89°24'56" East along said North boundary a distance of 305.55 feet to the POINT OF BEGINNING.

Exception 2:

This parcel is a portion of the SW1/4 NE1/4 of Section 3, Township 4 North, Range 3 West of the Boise Meridian and is more particularly described as follows:

COMMENCING at the southwest corner of said SW1/4 NE1/4;

thence North 89° 08' 36" East along the south boundary of said SW1/4 NE1/4 a distance of 633.76 feet to the TRUE POINT OF BEGINNING;

thence North 14° 30' 08" East a distance of 51.91 feet;

thence North 89° 08' 30" East a distance of 30.00 feet;

thence South 0° 51' 24" East a distance of 50.05 feet to a point on said south boundary;

thence South 89° 08' 36" West along said south boundary a distance of 43.75 feet to the TRUE POINT OF BEGINNING.

CALIFORNIA CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Nevada)

On 2.1.2019 before me, Susan C. Williams, Notary Public
(here insert name and title of the officer)

personally appeared Virginia Figueredo

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

SUSAN C. WILLIAMS
COMM. #2112491
Notary Public - California
Nevada County
My Comm. Expires May 21, 2019

Signature Susan C. Williams

(Seal)

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a document

titled/for the purpose of _____

containing _____ pages, and dated _____.

The signer(s) capacity or authority is/are as:

- ☐ Individual(s)
- ☐ Attorney-in-Fact
- ☐ Corporate Officer(s) _____ Title(s)
- ☐ Guardian/Conservator
- ☐ Partner - Limited/General
- ☐ Trustee(s)
- ☐ Other: _____

representing: _____ Name(s) of Person(s) or Entity(ies) Signer is Representing

Additional Information

Method of Signer Identification

Proved to me on the basis of satisfactory evidence:
(●) form(s) of identification ( ) credible witness(es)

Notarial event is detailed in notary journal on:
Page # 47 Entry # 7

Notary contact: 530.273.7365

Other

☐ Additional Signer(s) ☑ Signer(s) Thumbprint(s)

☐ _____

RE-RECORDED TO CORRECT LEGAL 47874

945972

INSTRUMENT NO 94714.2

WARRANTY DEED

For Value Received ARTHUR E. ASHCRAFT and BONNIE L. ASHCRAFT, husband and wife,

the grantors, do hereby grant, bargain, sell and convey unto ROBERT V. FIGUEREDO and VIRGINIA D. FIGUEREDO, husband and wife,

of: 1604 W. 218th, Torrance, CA. 90501

the grantees, the following described premises, situated in Canyon County, State of Idaho, to-wit:

A part of the Southwest Quarter of the Northeast Quarter and the Southeast Quarter of the Northeast Quarter, Section 3, Township 4 North, Range 3 West, Boise Meridian, more particularly described as follows:

BEGINNING at the Southwest corner of said Southeast Quarter of the Northeast Quarter (CE 1/16 cor.), monumented with a Government Land Office brass cap monument; thence South 89°12'20" West, 681.58 feet; along the South boundary of said Southwest Quarter of the Northeast Quarter; thence North 14°34'50" East 51.86 feet; thence North 89°12'20" East 468.46 feet parallel with the South boundary of said Southwest Quarter of the Northeast Quarter; thence North 28°55'55" East 397.51 feet; thence North 28°40'15" West 170.55 feet; thence North 13°12'35" East 267.66 feet; thence North 66°50'45" East 65.05 feet; thence North 18°36'25" East 523.48 feet (of record as 523.43 feet); thence North 89°25'22" East 1138.29 feet along the North boundary of said Southeast Quarter of the Northeast Quarter; thence South 0°56'31" West 988.51 feet along the East boundary of said Southeast Quarter of the Northeast Quarter; thence North 89°02'40" West 26.93 feet (of record as 27.00 feet); thence North 23°28'40" West 255.33 feet; thence North 81°34'25" West 133.16 feet; thence North 58°24'15" West 122.26 feet; thence South 89°12'20" West 965.09 feet along the South boundary of said Southeast Quarter of the Northeast Quarter to the POINT OF BEGINNING.

This parcel is subject to a road easement along the South 30 feet and is subject to an easement for an irrigation lateral.

SUBJECT TO That certain mortgage, dated July 14, 1976, in favor of Home Federal Savings & Loan Association of Boise, a corporation, which said mortgage was recorded on July 14, 1976, as Document No. 778725, in the records of Canyon County, Idaho, and which said mortgage, the Grantees herein assume and agree to pay according to the terms and tenor thereof.

Together with all of the Grantors' oil, gas and geothermal rights; mineral and mineral rights appurtenant to the above described property.

*thence South 0°47'40" East, 655.00 feet;

TO HAVE AND TO HOLD the said premises, with their appurtenances unto the said Grantees, their heirs and assigns forever. And the said Grantors do hereby covenant to and with the said Grantees, that they are the owners in fee simple of said premises; that said premises are free from all incumbrances

and that they will warrant and defend the same from all lawful claims whatsoever.

Dated: April 30, 1982

Arthur E. Ashcraft

Bonnie L. Ashcraft

STATE OF IDAHO, COUNTY OF CANYON) ss.

On this 30th day of April, 1982 before me, a notary public, in and for said State, personally appeared ARTHUR E. ASHCRAFT and BONNIE L. ASHCRAFT, husband and wife,

known to me to be the persons who se names are subscribed to the within instrument, and acknowledged to me that they executed the same.

Notary Public.

STATE OF IDAHO, COUNTY OF

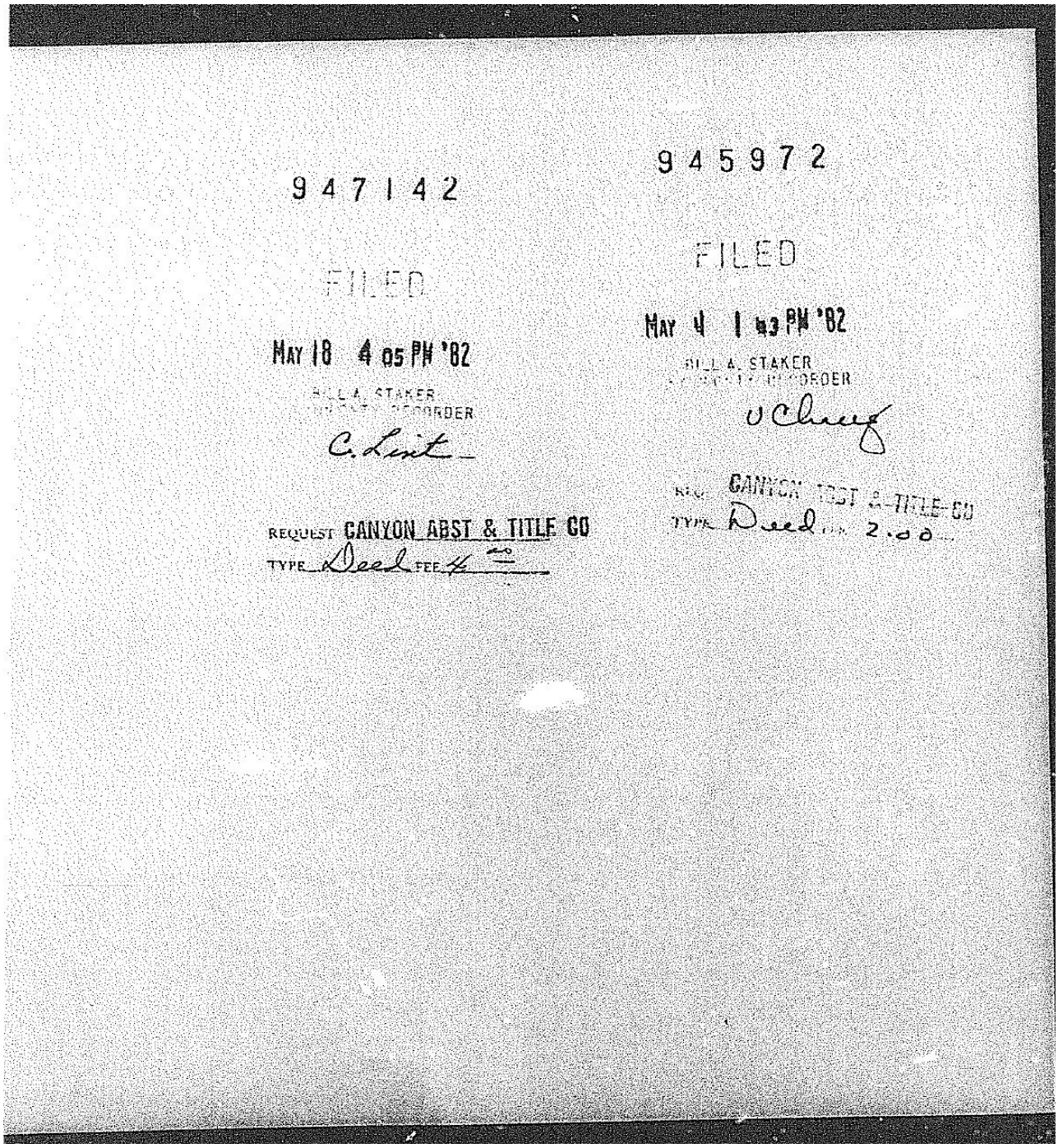
I hereby certify that this instrument was filed for record at the request of

at minutes past o'clock m., this day of 19, in my office, and duly recorded in Book of Deeds at page

Ex Officio Recorder.

By Deputy.

Fees $



947142

FILED

MAY 18 4 05 PM '82

BILL A. STAKER
COUNTY RECORDER

C. Lint

REQUEST CANYON ABST & TITLE CO

TYPE Deed FEE ~~4.00~~

945972

FILED

MAY 4 1 43 PM '82

BILL A. STAKER
COUNTY RECORDER

J Chuey

REQ CANYON ABST & TITLE CO

TYPE Deed 2.00

WELL CONSTRUCTION LOG

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

Received 9-10-74

1. WELL OWNER

Name ASH CRAFT

Address RT 1 CALDWELL

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 67 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	6 inches	+1 feet	66 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation inches by inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☒ No Size of gravel

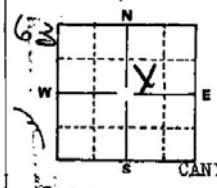
Placed from feet to feet

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

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

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name

Lot No. Block No.

County

SW ¼ NE ¼ Sec. 3, T. 4 (N)S, R. 3 (E)W

7. WATER LEVEL

Static water level 40 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow

Temperature ° F. Quality good

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☒ Other

Discharge G.P.M.	Draw Down	Hours Pumped
20	a	2

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	1	10	topsoil		x
8	10	20	to soil into gracel		x
6	20	30	gravel and sand		x
6	30	40	gravel and sand		x
6	40	50	gravel into clay		x
6	50	60	clay into gravel and sand	x	x
6	60	67	gravel course	xx	

CC1158

10. Work started 8-15-74 finished 8-19-74

11. DRILLERS CERTIFICATION

Firm Name D D WELL DRILLING Firm No. 254

Address 310 s 11 street Date 9/17/74

Signed by (Firm Official) Dave D Kim

and

(Operator)

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

QUALIFICATIONS OF ENVIRONMENTAL ASSESSOR

18123 N. HIGHFIELD WAY
BOISE, IDAHO 83714
208-867-8876

DEFINITION OF ENVIRONMENTAL PROFESSIONAL AND RELEVANT EXPERIENCE THERETO, PURSUANT TO 40 CFR312.10

1) Environmental Professional

a) *Environmental Professional* means:

i) A person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding conditions indicative of releases or threatened releases (se §312.1(c) on, at, in, or to a property, sufficient to meet the objectives and performance factors in §312.20(e) and (f).

ii) Such a person must: (i) hold a current Professional Engineer's or Professional Geologist's license or registration from a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) and have the equivalent of three (3) years of full-time relevant experience; or (ii) be licensed or certified by the federal government, a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) to perform environmental inquiries as defined in §312.21 and have the equivalent of three (3) years of full-time relevant experience; or (iii) have a Baccalaureate or higher degree from an accredited institution of higher education in a discipline of engineering or science and the equivalent of five (5) years of full-time relevant experience; or (iv) have the equivalent of ten (10) years of full-time relevant experience.

iii) An environmental professional should remain current in his or her field through participation in continuing education or other activities.

iv) The definition of environmental professional provided above does not preempt state professional licensing or registration requirements such as those for a professional geologist, engineer, or site remediation professional. Before commencing work, a person should determine the applicability of state professional licensing or registration laws to the activities to be undertaken as part of the inquiry identified in §312.21(b).

v) A person who does not qualify as an environmental professional under the foregoing definition may assist in the conduct of all appropriate inquiries in accordance with this part if such person is under the supervision or responsible charge of a person meeting the definition of an environmental professional provided above when conducting such activities.

2) Relevant Experience

vi) *Relevant Experience*, as used in the definition of environmental professional in this section, means: participation in the performance of all appropriate inquiries investigations, environmental site assessments, or other site investigations that may include environmental analyses, investigations, and remediation which involve the understanding of surface and subsurface environmental conditions and the processes used to evaluate these conditions and for which professional judgment was used to develop opinions regarding conditions indicative of releases or threatened releases (see §312.1(c)) to the subject property.

BRENDA L. MAGNUSON, REA

Sage Environmental Services, LLC

2112 N. 33RD STREET, BOISE, IDAHO 83703
(208) 867-8876

PROFESSIONAL EXPERIENCE

Sage Environmental Services, LLC 2000-Present — Boise, ID
Owner
Complete property transfer site assessments, asbestos management plans, asbestos and lead paint surveys and radon testing. I also conduct subsurface investigations including soil sampling, groundwater sampling, and provide project oversight in the installation of groundwater monitoring wells.

Langston-Williams, Inc. 1997 - 2000 — Boise, ID
Environmental Scientist
Complete property transfer site assessments, asbestos management plans, asbestos and lead paint surveys and radon testing. I also conduct subsurface investigations including soil sampling, groundwater sampling, and provide project oversight in the installation of groundwater monitoring wells.

EnviroSearch International 1995 - 1997 — Boise, ID
Environmental Scientist
Assessed commercial properties for environmental conditions prior to property transfer, prepared asbestos management plans, conducted asbestos and lead paint surveys, and collected samples for radon analyses. I also provided technical field support to the Boise office

Osprey Environmental, Inc. 1991 - 1995 — Boise, ID
Environmental Specialist
Completed property transfer site assessments, asbestos management plans, asbestos and lead paint surveys and radon testing. Conducted subsurface investigations including soil sampling, groundwater sampling, and provided project oversight in the installation of groundwater monitoring wells.

Power Environmental Services, Inc. 1992 - 1993 — Boise, ID
Environmental Specialist
Completed property transfer site assessments and Spill Containment and Countermeasures Plans for a number of Idaho Power's hydroelectric power plants.

Boise City Public Works Department – Environmental Div: 1987 - 1992 — Boise, ID
City of Blackfoot - Water Pollution Control 1984 - 1987 — Blackfoot, ID

EDUCATION

IDAHO STATE UNIVERSITY — Pocatello, ID
Bachelor of Science: Biology- 1983

Certifications

Idaho Wastewater Operator Certificate, Class I	1986
Idaho Water/Wastewater Laboratory Operator Certificate; Class II	1986
Hazardous Materials and Hazardous Waste Seminar, Boise State University	1988
Solvent Management for Idaho Businesses, Boise State University	1989
Treatment of Metal Wastestreams - California State University, Sacramento	1990
Pretreatment Facility Inspection – California State University, Sacramento	1990
Basic Understanding and Complying with the Hazardous Waste Management Regulations	1991
OSHA Hazardous Waste Operation and Emergency Response Training Course August	1992
Idaho Groundwater Resources Course, University of Idaho Extension Office, Boise, Idaho	1993
Practices and Procedures for Asbestos Inspectors and Management Planner	1993
NESHAPS Asbestos Inspector/Management Planner Certification	1993
OSHA Hazardous Waste Operation and Emergency Response Training Course	1993
AHERA Asbestos Inspector/Management Planner Certification (updated annually)	1994

MEMBERSHIPS & APPOINTMENTS
Cal/EPA Registered Environmental Assessor (REA) Certificate #06973

EXPERTISE

- Phase One and Two Site Assessments
- Pollution Prevention
- Waste Minimization
- Water/Groundwater Sampling
- Underground Storage Tank Management
- Asbestos Inspections
- Asbestos Sampling
- Asbestos Management Plans
- Soil Sampling/Characterization

REPRESENTATIVE CLIENTS

First Security Bank of Idaho, N.A.
Bank of America
U.S. BANCORP
Seafirst Bank
Environmental Consulting Group
Washington Trust Bank
DK Commercial Real Estate
Idaho Independent Bank
Construction Lending Corporation of America
Washington Mutual Bank
Western Bank
Wells Fargo Bank
Key Bank National Association
Farmers and Merchants Bank
Washington Federal Savings & Loan
DL Evans Bank
The Clawson Group, Inc.
D.B. Fitzpatrick & Company

As well as a number of local attorneys, insurance companies, out-of-state financial institutions, developers, real estate agencies, developers, and private parties.

REFERENCES

DK Commercial Real Estate
1880 S. Cobalt Point Way
Boise, Idaho 83714
Ms. Brenda Clay (208) 371-5804

RA Schultz & Company
1524 W. Franklin Street
Boise, Idaho 83702
Mr. Richard A. Schultz (208) 343-7070

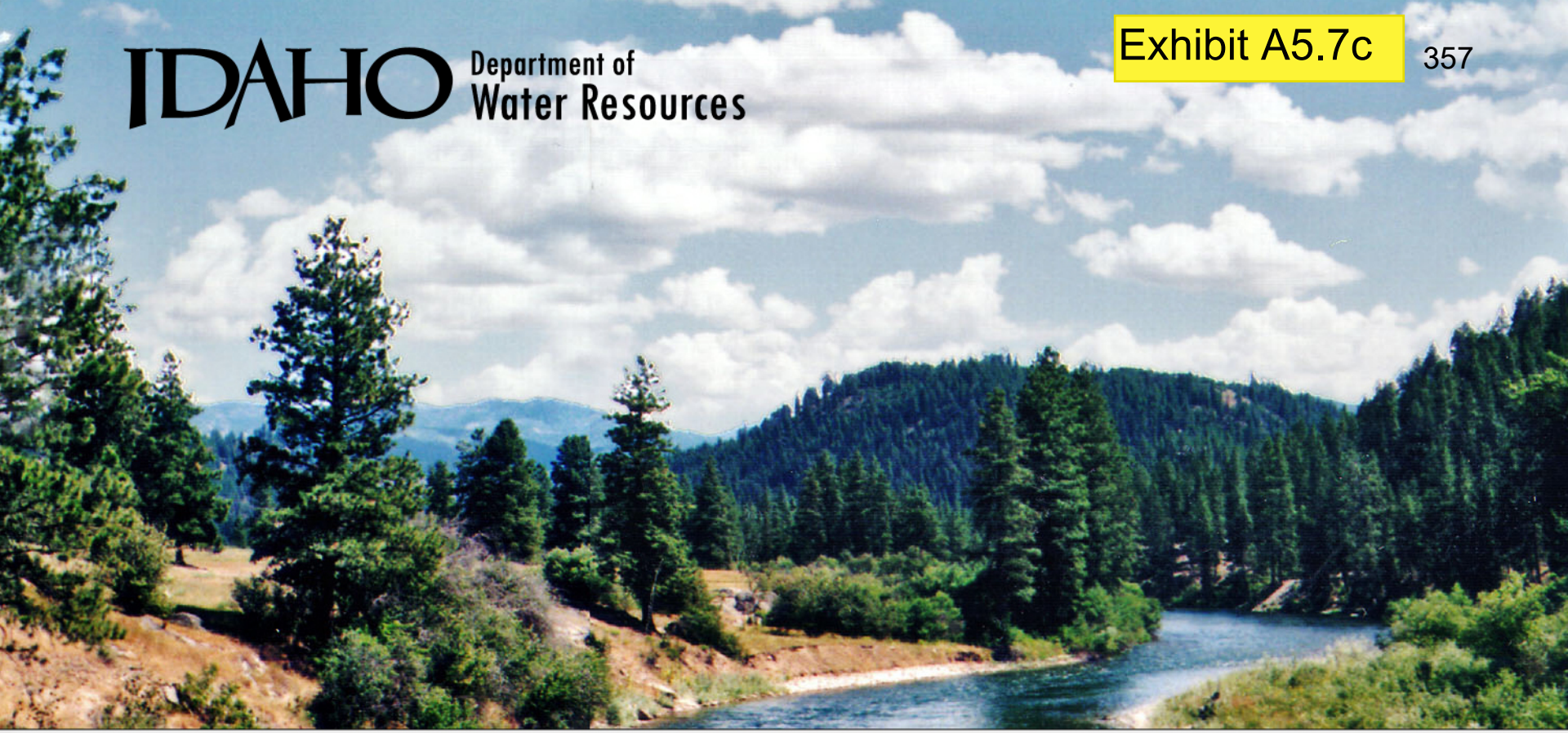
Idaho Independent Bank
8351 W. Overland Road
Boise, Idaho 83709
Contact: Mr. Charlie Kouba (208) 345-2960

Sterling Savings Bank
420 W. Main Street, Suite 205
Boise, Idaho 83702
Mr. Jeffrey Jones (208) 424-2000

Thornton-Oliver-Keller Commercial Real Estate
250 S. 5th Street
Boise, Idaho 83702
Contact: Mr. Jerry VanEngen (208) 378-4600

Capital Matrix, Inc.
1471 Shoreline Dr., Suite 123
Boise, ID 83702
Contact: Ms. Deborah Brown (208) 383-3473
Ms. Ann Munroe

IDAHO Department of Water Resources



Treasure Valley Aquifer System

OSHER Course

Dennis Owsley, P.G., Technical Hydrogeologist
Idaho Department of Water Resources

September 3, 2014

Overview

- Introduction
- Geologic framework
- Aquifer classification/characteristics
- Data collection
  - BREAK --
- Ground water budget
- Current status of aquifers
- Local investigations
- Overview of other Idaho aquifers

Importance of Ground Water

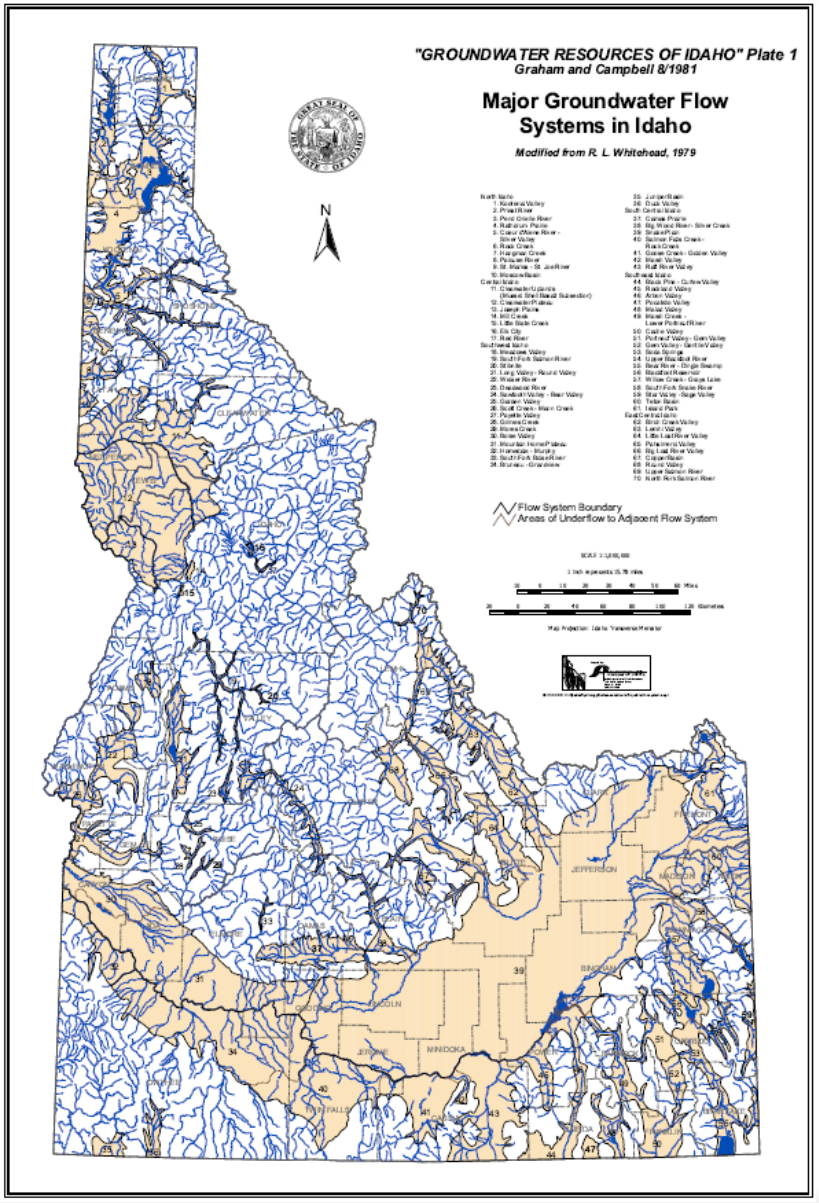
- Over 95% of the drinking water in the valley comes from ground water.
  - (United Water operates two small scale surface water facilities).
- Generally higher water quality
- More reliable supplies

Importance of Ground Water

- Approximately 100,000 AF used for irrigation annually.
- Over 30,000 well records exist throughout the Treasure Valley (primarily domestic wells)
    - Common units to describe water:
        - AF (acre-feet) = amount of water to cover 1 acre of land with 1 foot of water.
        - GPM (gallons per minute)
        - CFS (cubic feet per second)

Occurrence of Ground Water

- Ground water exists throughout the state at various depths below land surface. Areas in which ground water is abundant, aquifers are defined.
- Ground water flow characteristics and trends differ for different aquifers across the state.

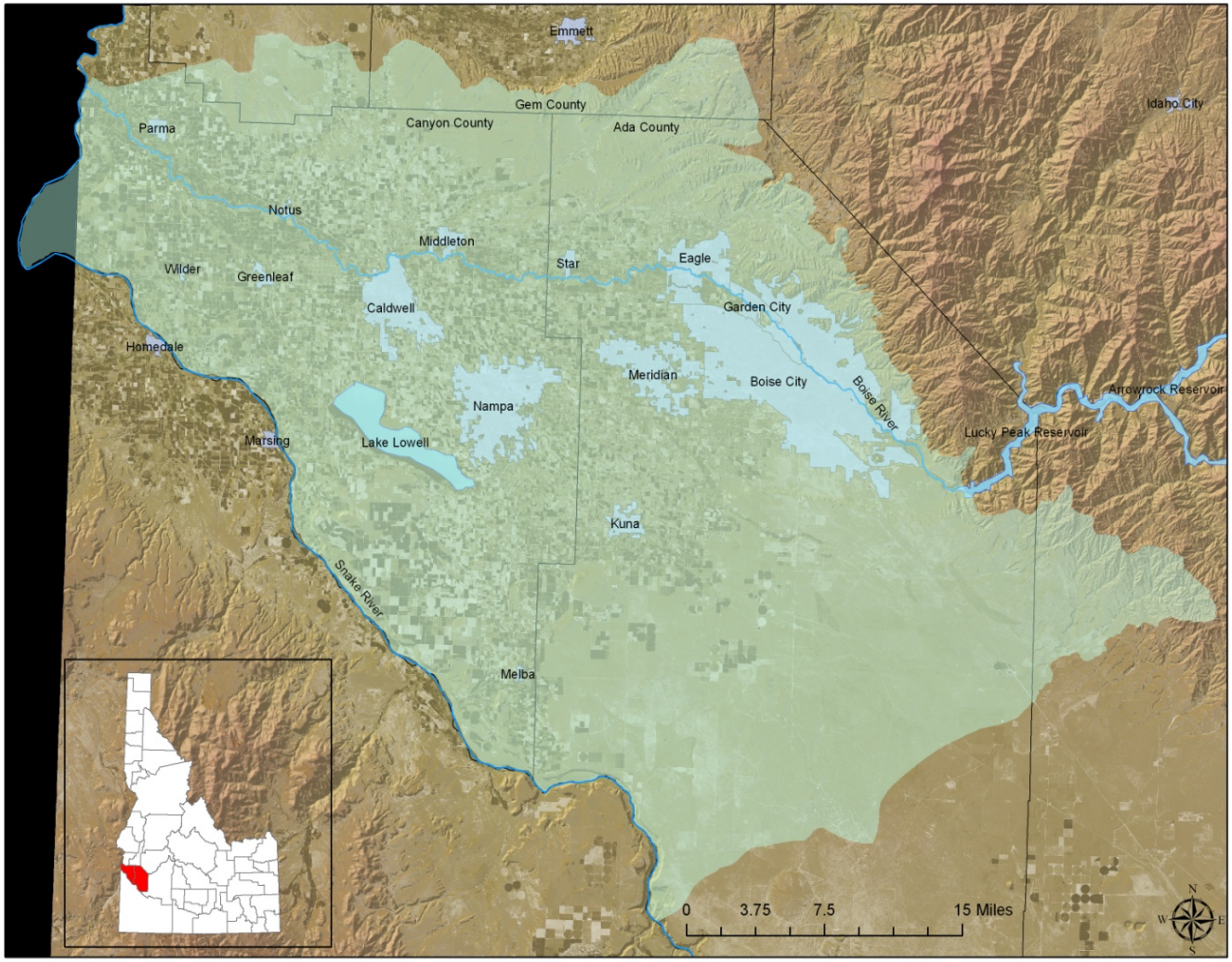


Idaho Aquifers

Definition of an aquifer:

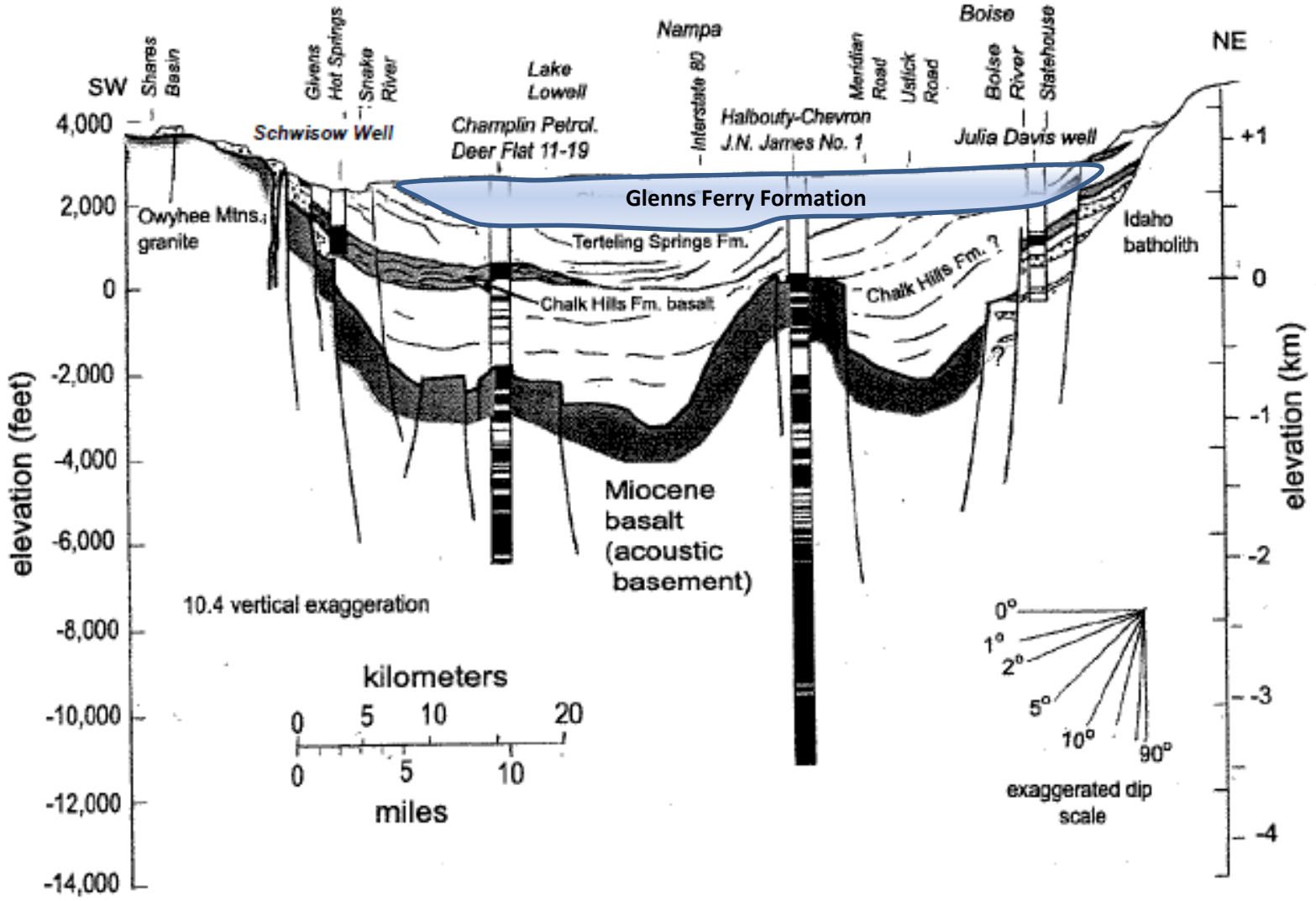
*"Rock or sediment in a formation, group of formations, or part of a formation that is saturated and sufficiently permeable to transmit **economic** quantities of water to wells and springs."*

Treasure Valley Aquifer Boundary

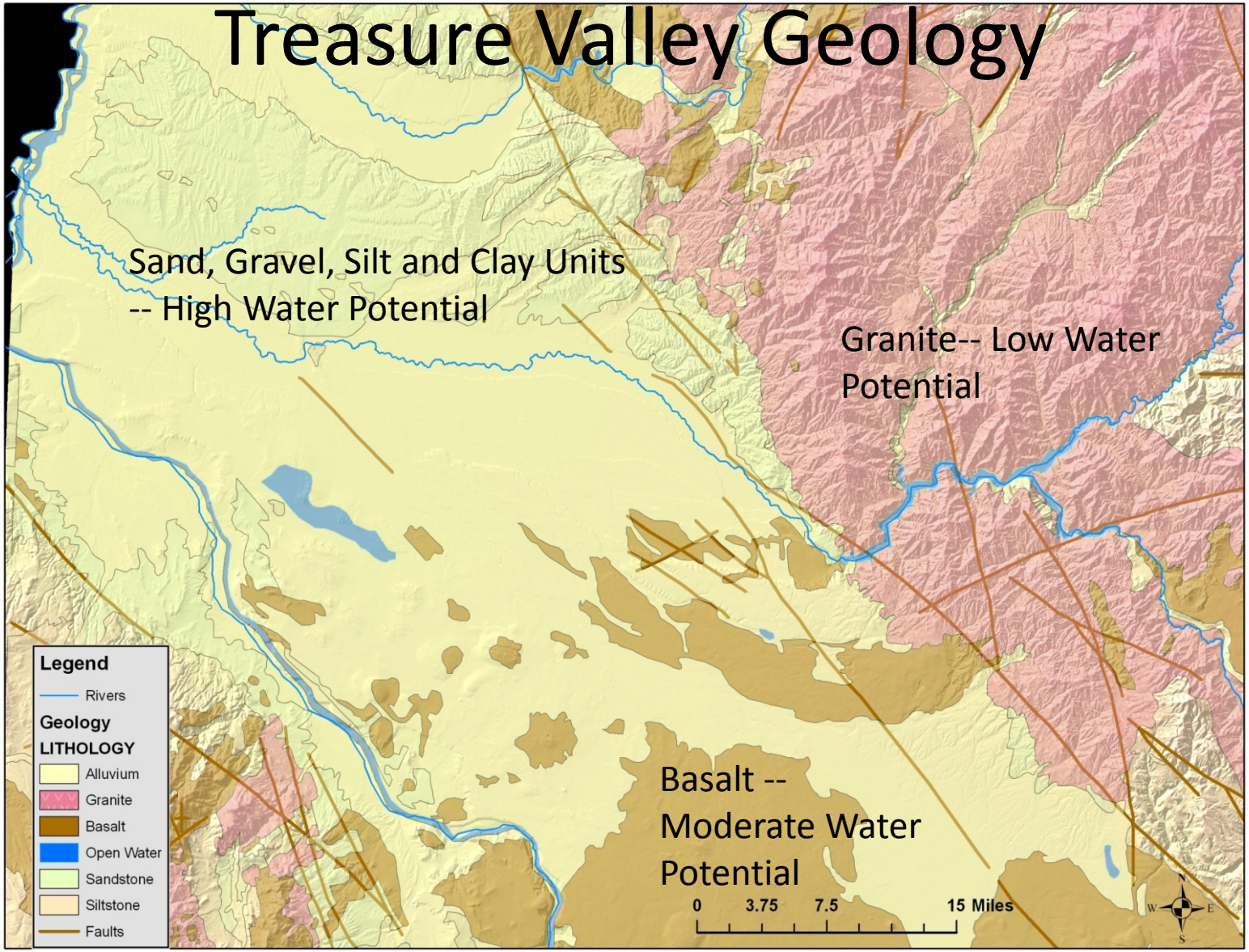


- Boundary extends from Mountain Home Plateau, Oregon Idaho state line, the Snake River, and the Payette River Basin.

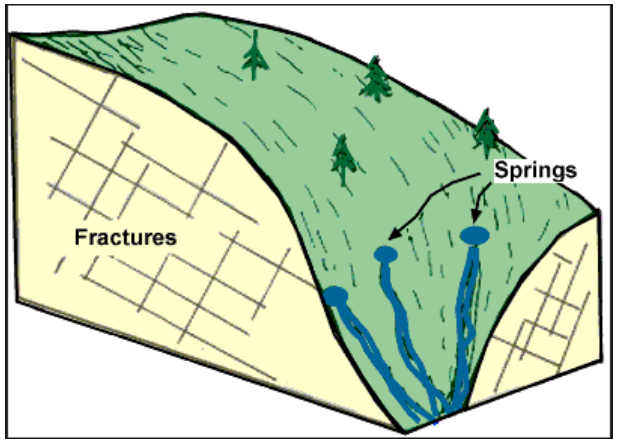
Treasure Valley Geology -- Cross Section



Treasure Valley Geology



Bedrock Units

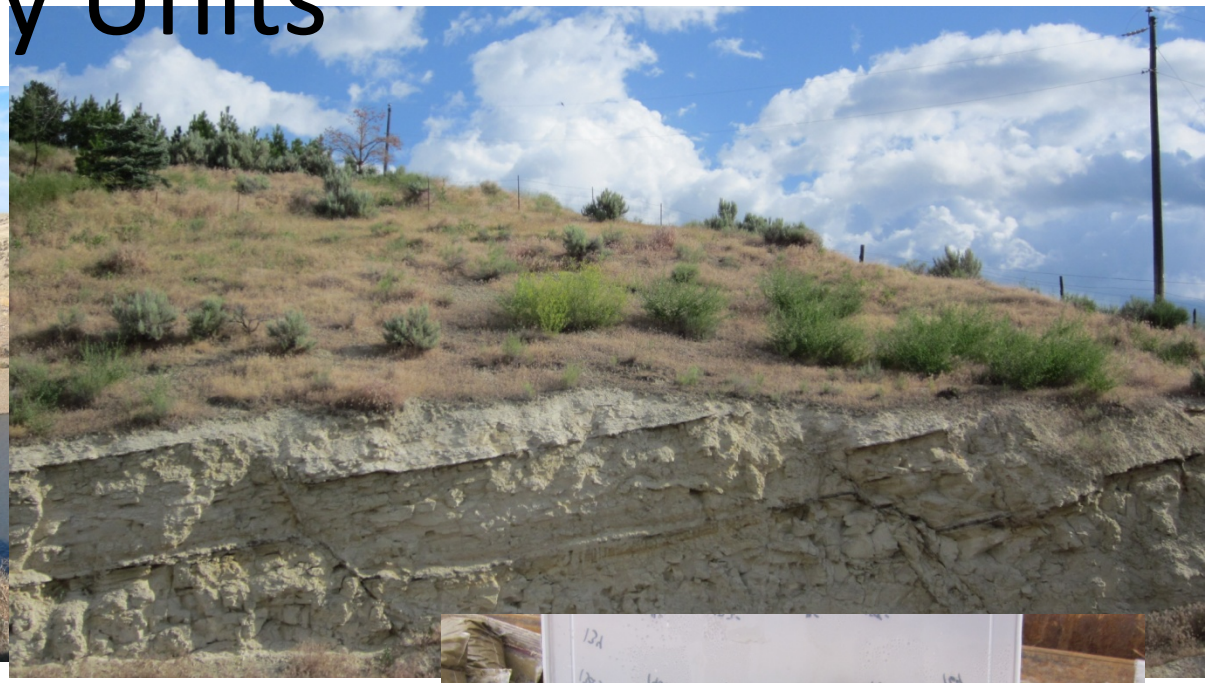


Low water potential. Generally forms a “no-flow” barrier.
Wells constructed in granite have low yields and low sustainability.

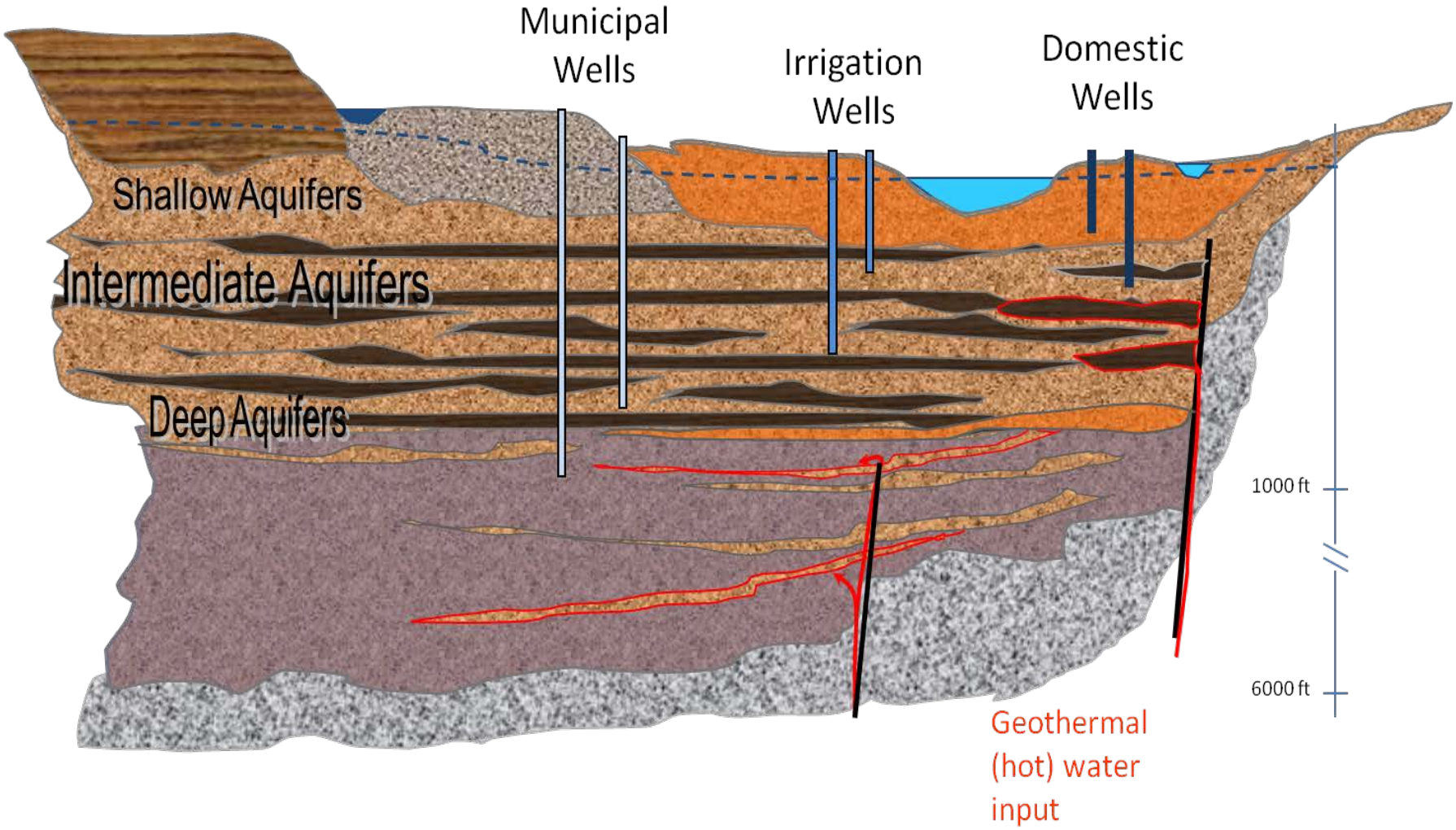
Volcanic Units

Can yield high amounts of water.
Low storage abilities.

Sedimentary Units



Productive aquifer material of the Treasure Valley.
Wells completed into the coarse sands are very productive, and have high storage capabilities.

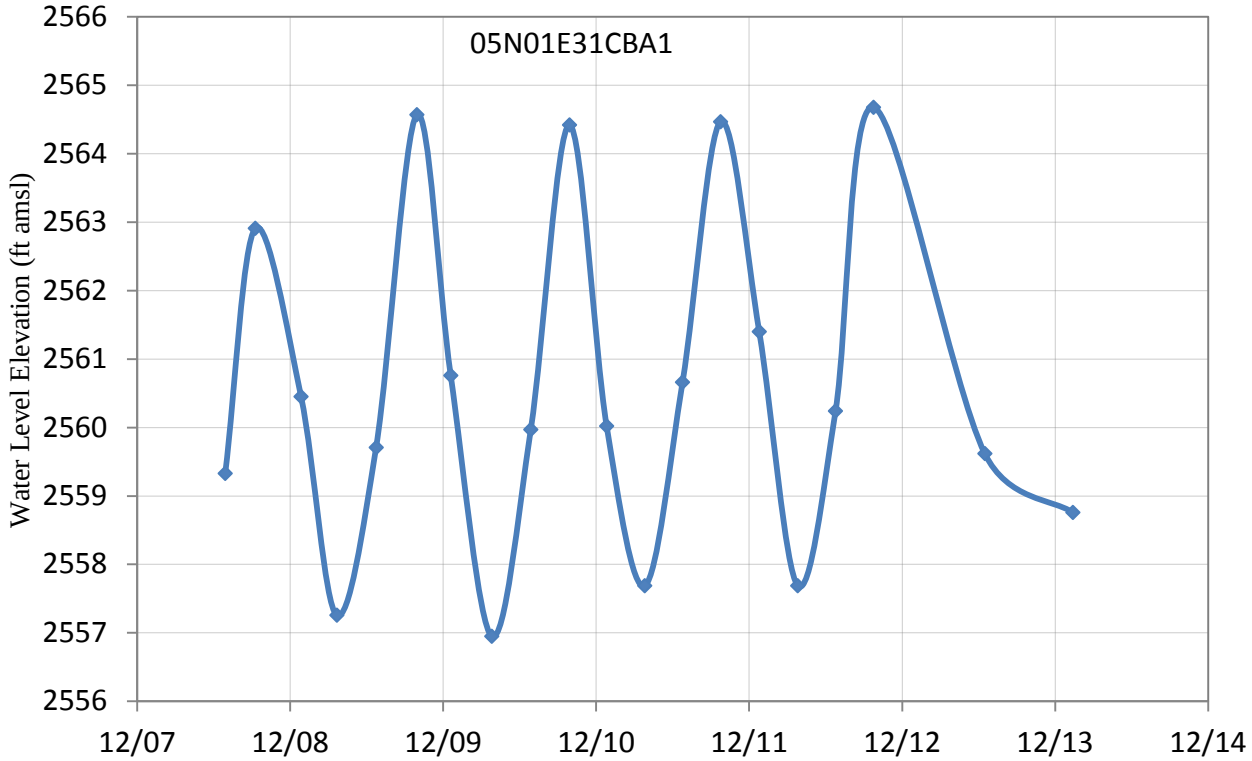

Municipal Wells
Irrigation Wells
Domestic Wells
Shallow Aquifers
Intermediate Aquifers
Deep Aquifers
1000 ft
6000 ft
Geothermal (hot) water input

Aquifer delineation

- Shallow, intermediate, or deep classification is based on well depth and location within the valley.
- Seasonal (and long term) fluctuations are significantly different, based on what portion of the aquifer a well is completed.

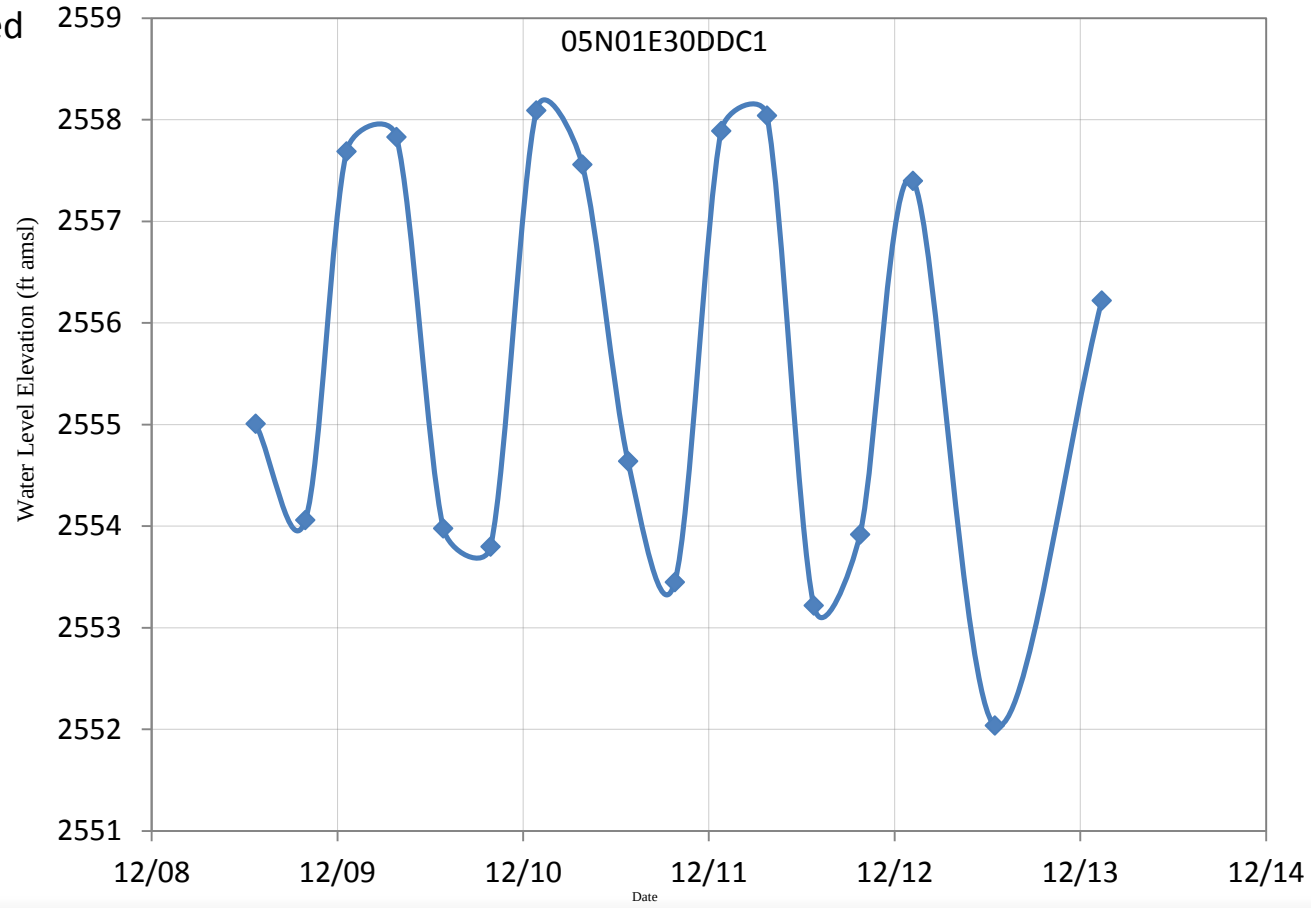
Shallow

- Generally encounter gravel and sand sequences.
- Typically domestic wells
- Good communication with surface water features (recharge).
- Unconfined



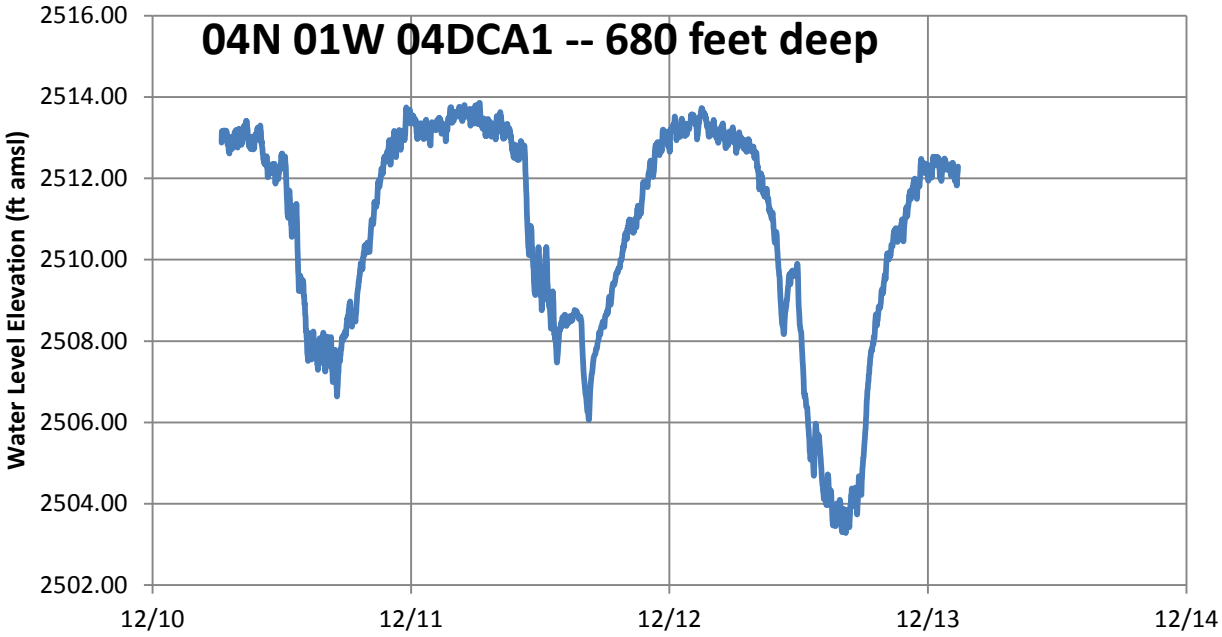
Intermediate Aquifers

- Sands, silts, and clays intermixed. Some gravels present.
- Productive aquifers.
- Domestic, irrigation, municipal wells.
- Minor communication with surface water features (? Recharge)
- Unconfined - semiconfined



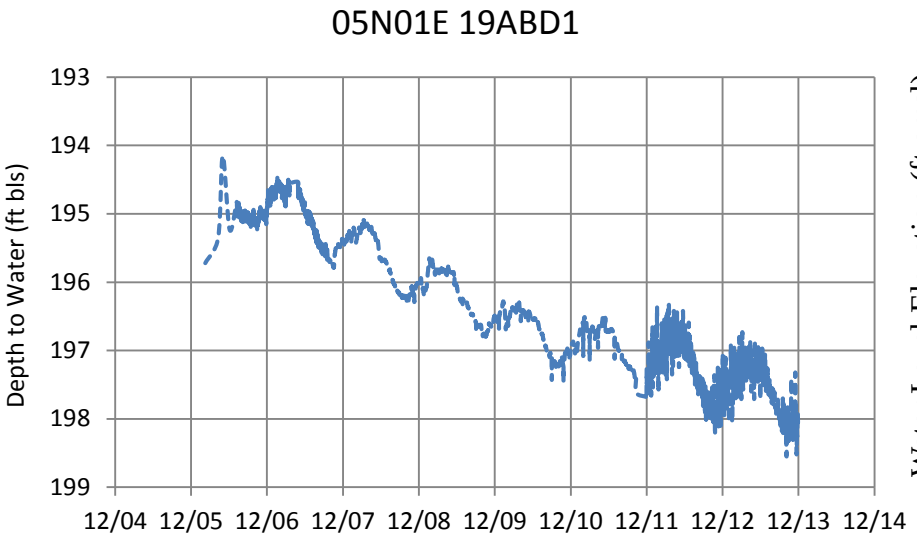
Deep Aquifer

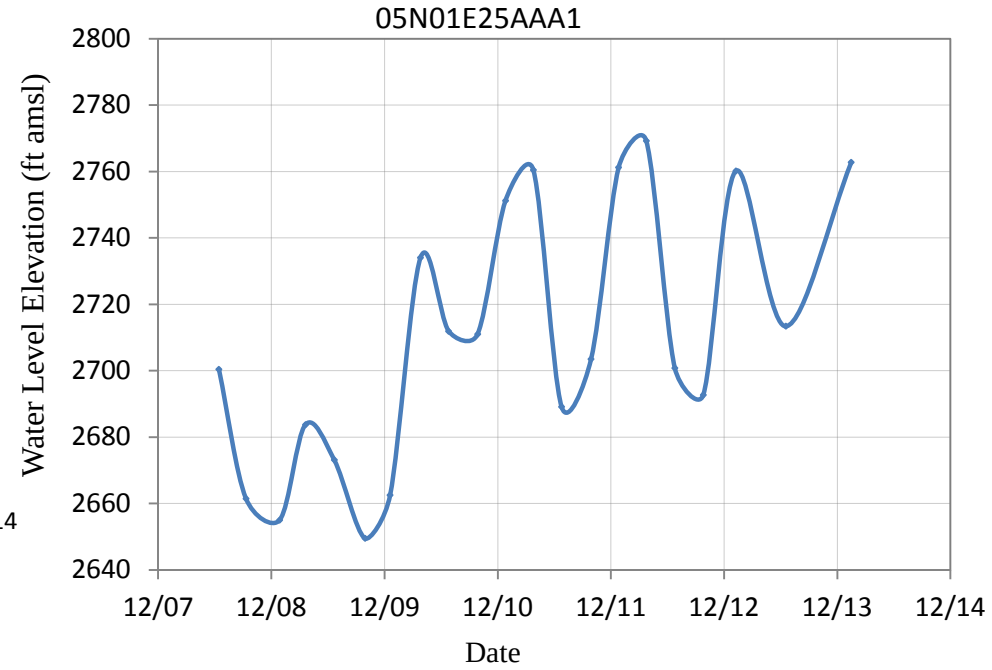
- Sands intermixed within “blue” clay
- Geothermal potential at depth
- Irrigation, municipal, and heat wells
- Little or no communication with surface water features (?? Recharge)
- Confined

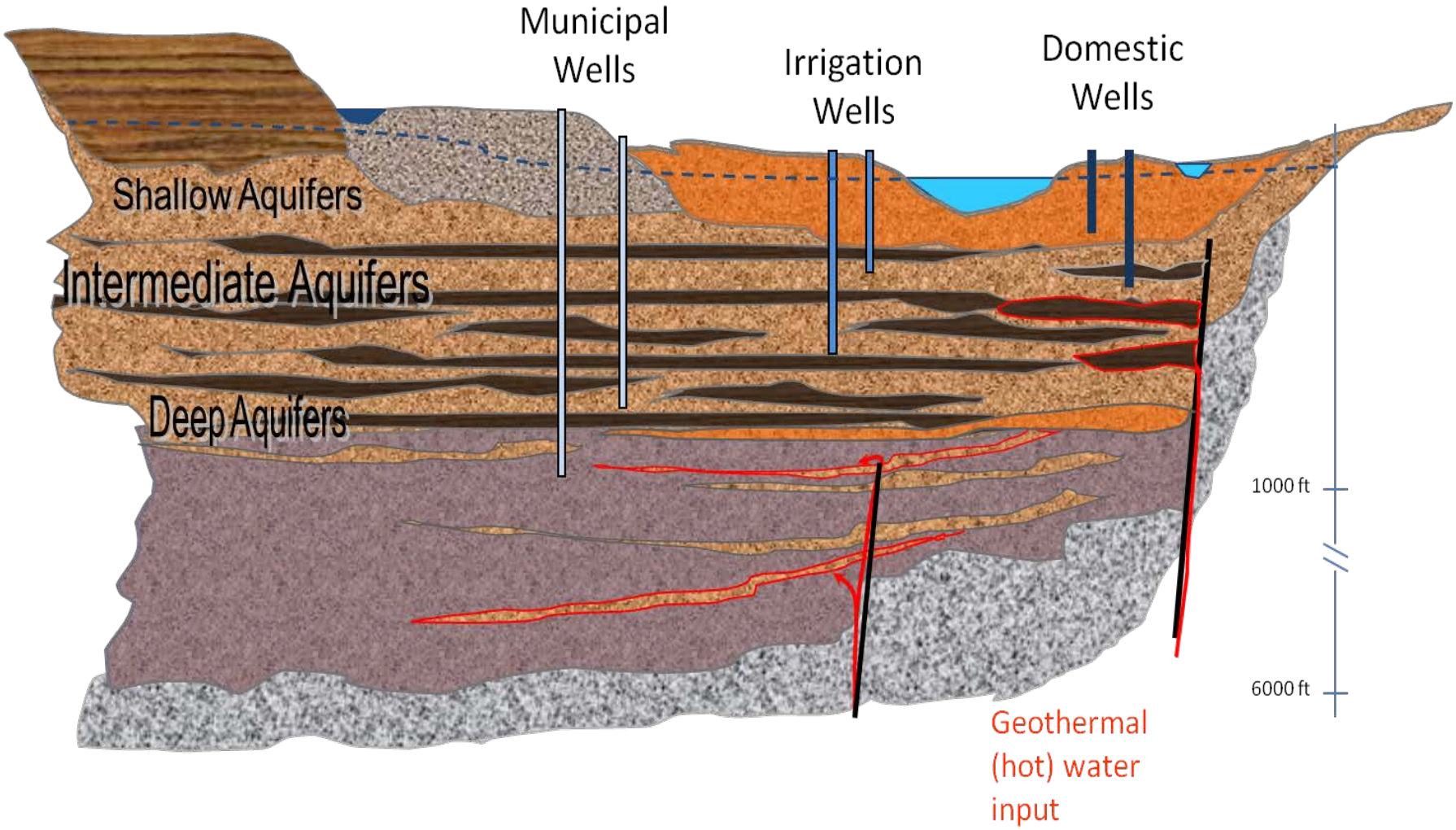


Margin Aquifers

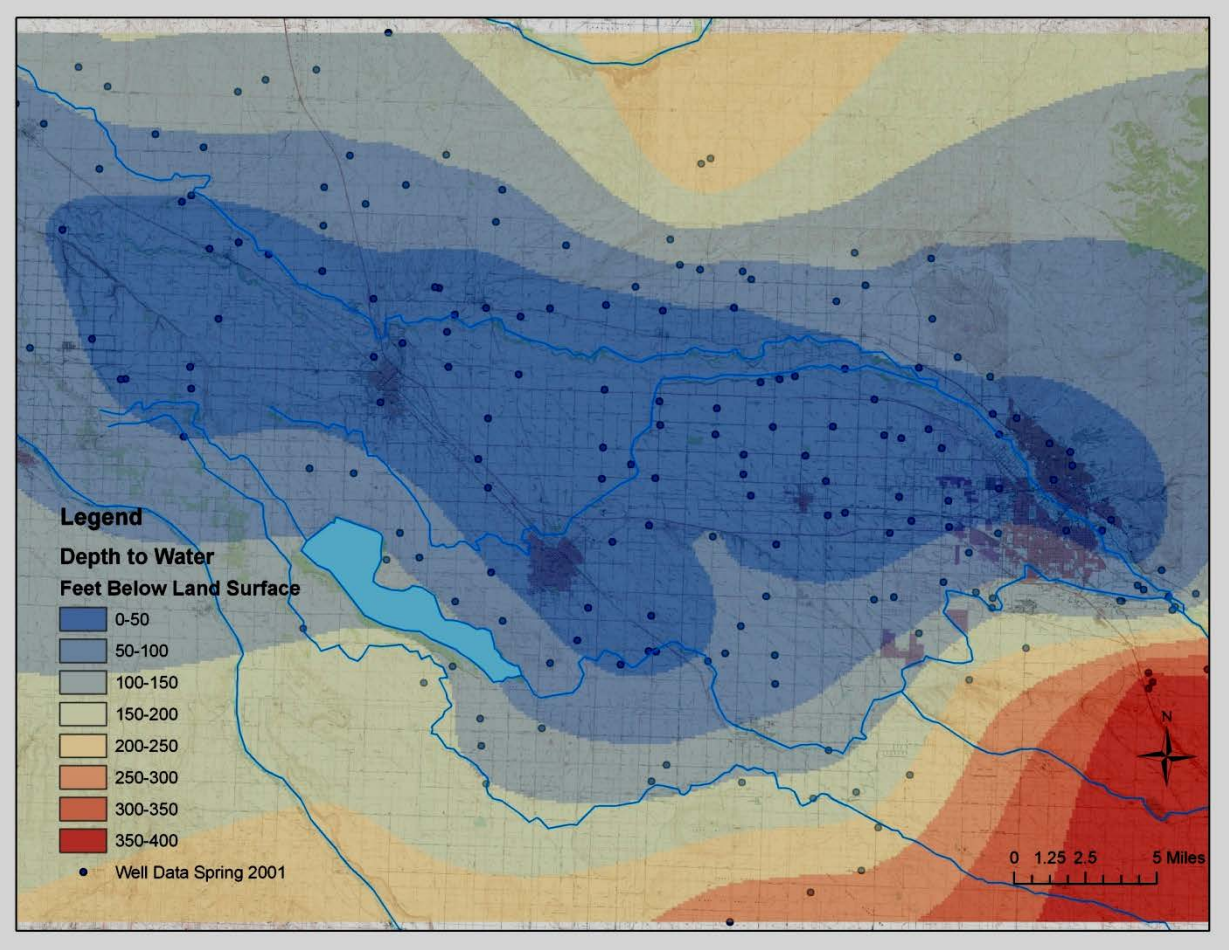
- Foothills areas (sediments)
- Foothills area (bedrock)



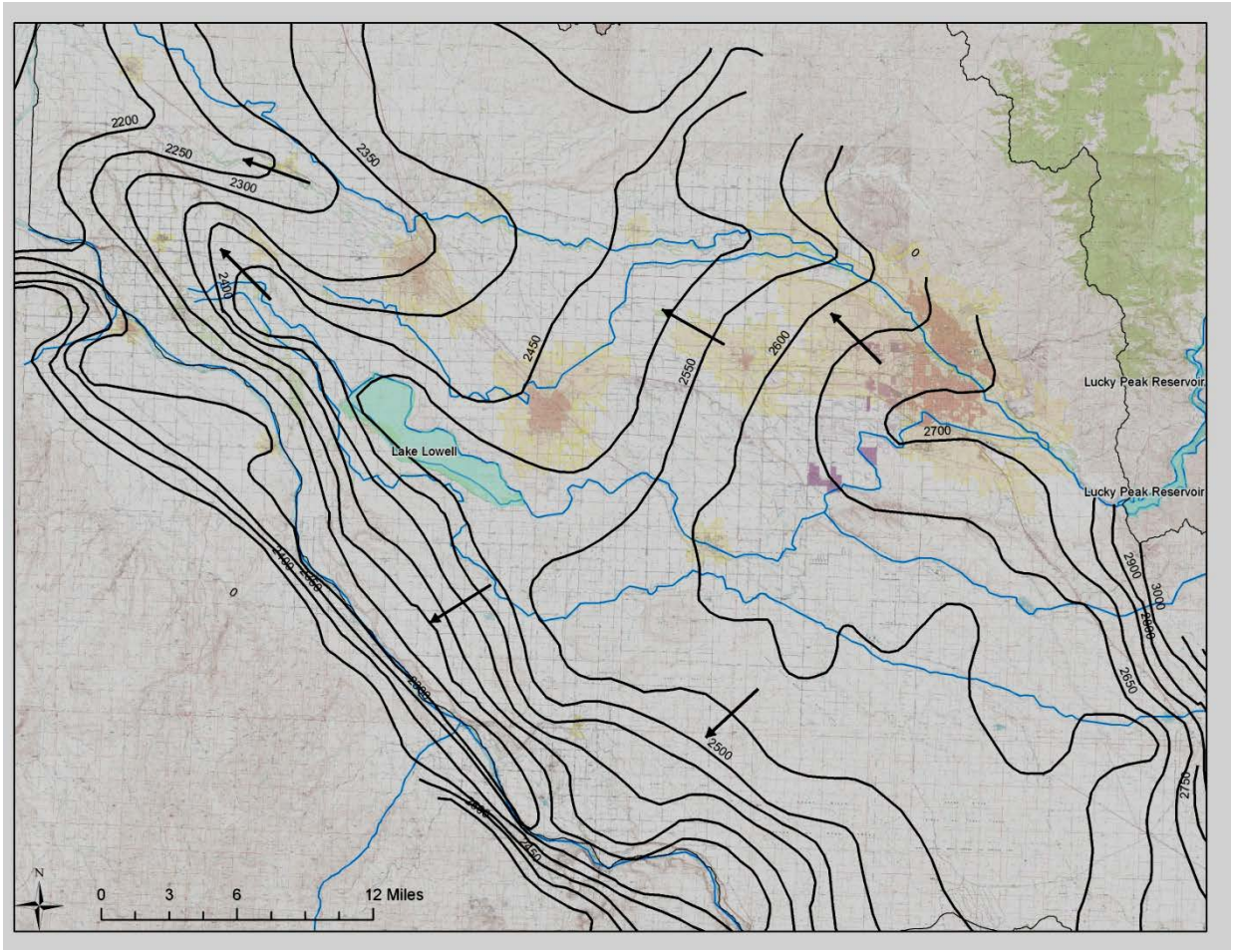



Municipal Wells
Irrigation Wells
Domestic Wells
Shallow Aquifers
Intermediate Aquifers
Deep Aquifers
1000 ft
6000 ft
Geothermal (hot) water input

Depth to Water



Ground Water Flow Direction



Data Collection

- Driller's Reports
- Ground Water Level Monitoring
- Ground Water Modeling
- Drain Discharge Monitoring

Driller's Reports

REVISED

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D D0060212
Drilling Permit No.
Water right or injection well #

2. OWNER
Name IDWR
Address 322 East Front Street
City Boise State ID Zip 83720

3. WELL LOCATION:
Twp. 1 North ☒ or South ☐ Rge. 4 East ☒ or West ☐
Sec. 23 SW 1/4 (10 acres) SE 1/4 (40 acres) NE 1/4 (160 acres)
Gov't Lot County Elmore
Lat. 43 ° 24.498 (Deg. and Decimal minutes)
Long. 115 ° 56.334 (Deg. and Decimal minutes)
Farm field approx. 1/4mi NE of Indian Cr. Rd. &
Address of Well Site Slater Cr. Rd.
City Mayfield
(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 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
3/8bentchps	0'	50'	1850 lbs	poured & tagged
DFGrt/Cmnt	30'	415'	120 cu.ft.	tremie

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
8"	+1.5'	52	.250	steel	☒	☐	☐	☒
4"	+1'	420	sc80	PVC	☒	☐	☒	☐
4"	440'	450'	sc80	PVC	☒	☐	☒	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 52

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☐ N Method
Manufactured screen ☒ Y ☐ N Type PVC factory slotted
Method of installation set in

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
420'	440'	.020		4"	PVC	Sch80

Length of Headpipe Length of Tailpipe 10'
Packer ☐ Y ☒ N Type

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
8-12 sand	415'	454'	1250 lbs.	poured & tagged
medbentchip	454'	500'	850 lbs.	poured-backfill

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) 15 Static water level (ft) 183
Water temp. (°F) Bottom hole temp. (°F)
Describe access port

Well test: Test method:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
5	17	480	☒	☐	☐	☐

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	Water N
12"	0'	2'	brown top soil		X
12"	2'	12'	brown sandy clay		x
12"	12'	43'	light grey sand	X	
12"	43'	50'	light brown sand		X
8"	50'	52'	tan clay		X
8"	52'	58'	grey sand		X
8"	58'	64'	tan sand & clay strips		X
8"	64'	85'	brown sand	X	
8"	85'	138'	light brown sand & clay strips		X
8"	138'	222'	brown sand & clay strips		X
8"	222'	235'	white/grey sand	X	
8"	235'	246'	brown sand & clay strips		X
8"	246'	285'	light brown clay		X
8"	285'	310'	grey sand	X	
8"	310'	340'	brown sand & clay strips		X
8"	340'	352'	brown clay		X
8"	352'	357'	grey clay		X
8"	357'	375'	grey sand & clay strips		X
8"	375'	420'	grey & brown sand & clay strips		X
8"	420'	440'	grey sand	X	
8"	440'	460'	tan sandy clay		X
8"	460'	470'	grey clay		X
8"	470'	475'	tan & grey sandy clay		X
8"	475'	477'	grey clay		X
8"	477'	483'	grey sandy clay		X
8"	483'	500'	grey clay		X
			Med. chips 0'-30' 500 lbs. btwn 8" & 4"		

RECEIVED
SEP 26 2012
WATER RESOURCES
Completed Depth Reached 450
Date: Started 11-10-2011 Completed 11-15-2011

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 Doug Bangs Date 3-9-12
*Driller Date
*Operator II Date
Operator I Date
* Signature of Principal Driller and rig operator are required.

Form provided by Forms On-A-Disk - (214) 340-9429 - www.FormsOnADisk.com

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER
Name Otto Bartel
Address Eagle
Owner's Permit No.

2. NATURE OF WORK
☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning)

3. PROPOSED USE
☒ Domestic ☐ Irrigation ☐ Test ☐ Other (specify type)
☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED
☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION
Diameter of hole 12 inches Total depth 332 feet
Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches +	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

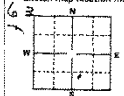
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation inches by inches

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

Well screen installed? ☒ Yes ☐ No
Manufacturer's name Johnson
Type Model No.
Diameter 6 Slot size 10 Set from 325 feet to 331 feet
Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☒ No Size of gravel
Placed from feet to feet
Surface seal depth 100 Material used in seal ☐ Cement grout ☒ Puddling clay ☐ Well cuttings
Sealing procedure used ☐ Slurry pit ☐ Temporary surface casing ☒ Overbore to seal depth

6. LOCATION OF WELL
Sketch map location must agree with written location.



Subdivision Name Shoshone Acres
Lot No. 2 Block No.
County Ada
SW ¼ SE ¼ Sec. 30 T. 5 N/S R. 1 E/W

7. WATER LEVEL
Static water level 150 feet below land surface
Flowing? ☐ Yes ☐ No G.P.M. flow
Temperature ° F. Quality
Artesian closed-in pressure p.s.i.
Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA
☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

042963

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
12"	0	5	Clay		L
	5	100	Sandy clay	L	
	100	332	Sand and Clay	L	

10.
Work started 12-1-73 finished 1-10-74

11. DRILLERS CERTIFICATION
Firm Name H.C. Nicholson Firm No. 344
Address 921 6th Ave So Payette State
Signed by (Firm Official) H.C. Nicholson
and (Operator) Don

MICROFILMED

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

Example of Hydrogeologic Data

February 2011

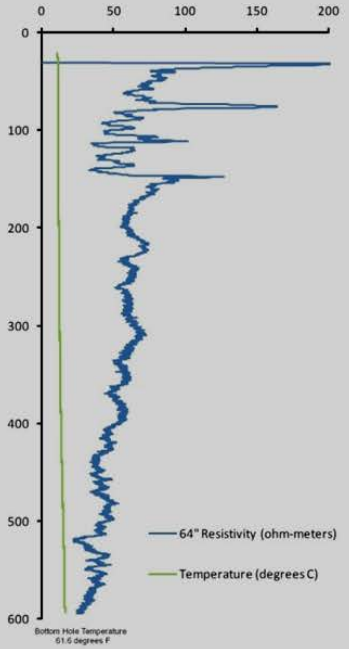
North Ada County Monitoring Well #5
T. 5 N., R. 1 E., Section 29

Water Chemistry

Analyte (mg/L unless otherwise noted)	Shallow	Deep
Alkalinity as CaCO3	202	194
Ammonia	<0.010	<0.010
Arsenic	0.014	0.0061
Calcium as CaCO3	48	57
Chloride	8.45	6.48
Conductivity (uS/cm)	435	454
Fluoride	0.303	0.512
Hardness	160	190
Iron	0.052	0.14
Iron (dissolved/filtered)	<0.010	<0.010
Magnesium	10	12
Manganese (dissolved)	<0.002	0.0062
Nitrate as N	2.85	1.8
Nitrite as N	<0.18	<0.18
Orthophosphate as P	0.188	0.102
pH (SU)	6.88	6.83
Potassium	2.4	2.4
Silica	46	36
Sodium	39	29
Sulfate	26.8	46.1
Sulfide	<0.10	<0.10
Total Dissolved Solids	300	320
Total Kjeldahl Nitrogen	0.14	0.11
Total Organic Carbon	1.35	0.69
Field Temperature (C)	14.1	16.4
Field Conductivity (uS/cm)	461	467
Field pH (SU)	7.62	7.16

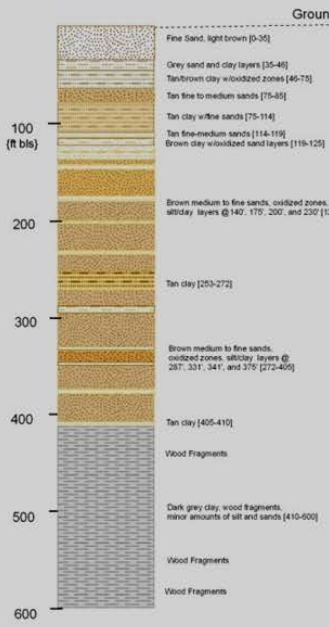
Analysis by Idaho Bureau of Laboratories, Boise, Idaho and Analytical Laboratories, Boise, Idaho.
Samples collected by IDWR on 3/1/2011

Borehole Geophysics



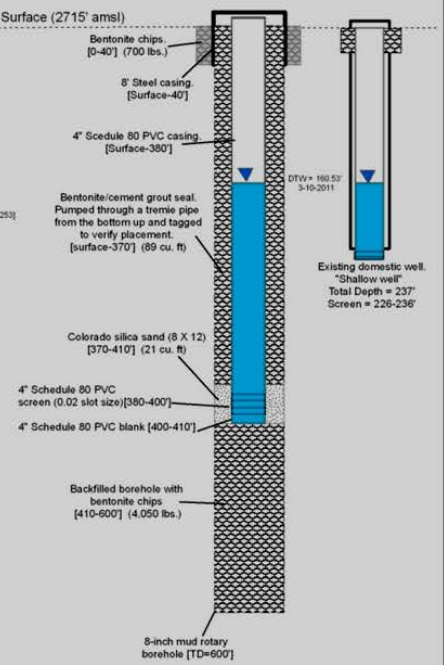
Borehole Geophysics conducted by J.U.B.

Lithologic Description



Lithology based on drill cutting analysis conducted by IDWR

As-Built Well Construction



Well drilling and constuction by Down Right Drilling and Pump Company, Caldwell, Idaho

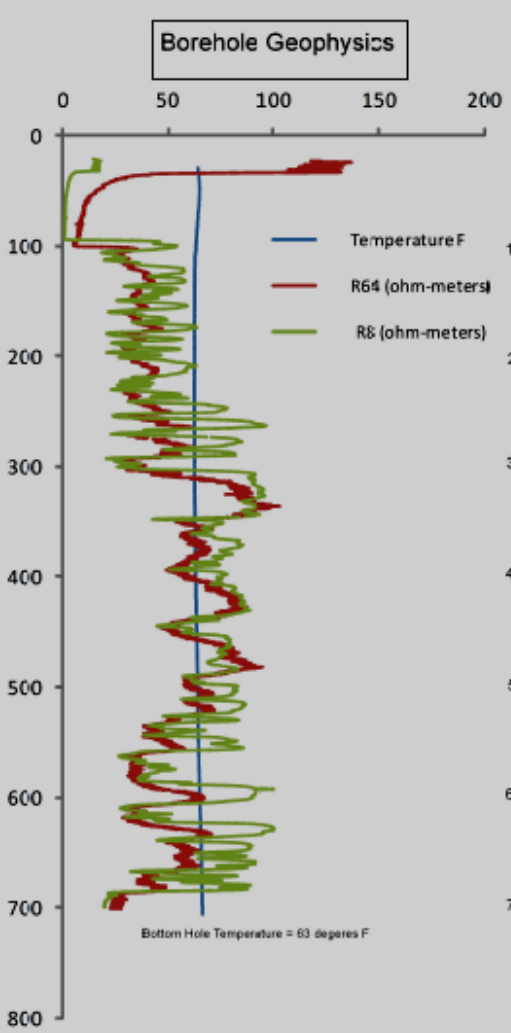
Example of Hydrogeologic Data

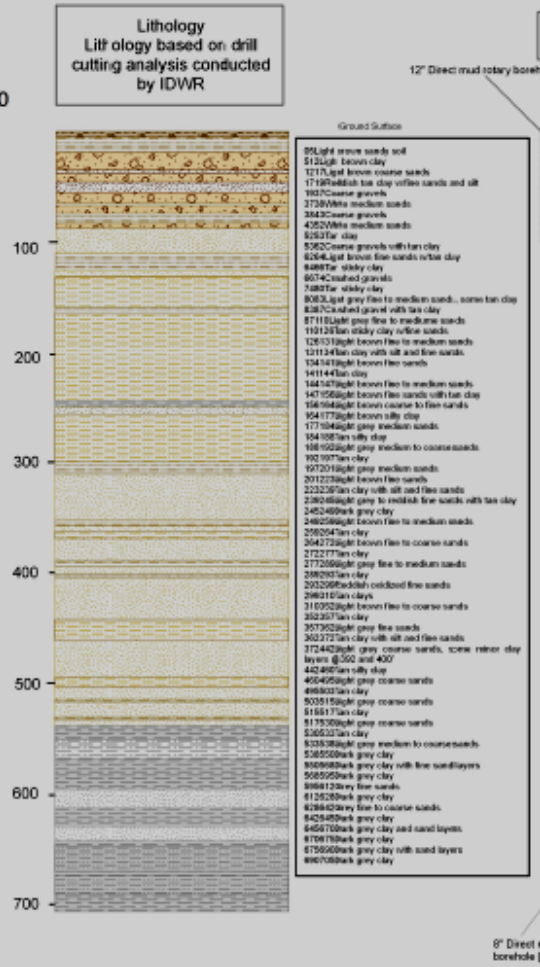
North Ada County Monitoring Well #3
T. 1 N., R. 1W., Section 1

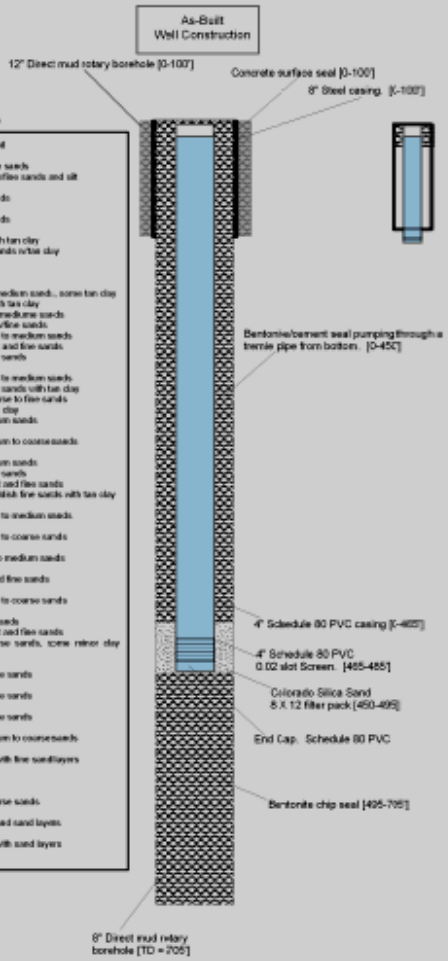
April 2011

Water Chemistry

Analyte (mg/L unless otherwise noted)	Shallow	Deep
Alkalinity as CaCO3	260	137
Ammonia	<0.010	<0.010
Arsenic	0.011	0.006
Calcium as CaCO3	61	38
Chloride	4.07	4.85
Conductivity (uS/cm)	418	282
Fluoride	0.487	0.49
Hardness	200	120
Iron	<0.01	0.018
Iron (dissolved/filtered)	<0.010	<0.010
Magnessium	12	6.9
Manganese (dissolved)	<0.002	0.01
Nitrate as N	2.19	0.702
Nitrite as N	<0.18	<0.18
Orthophosphate as P	0.153	0.22
pH (SU)	7.31	7.18
Potassium	2.9	2
Silica	45	35
Sodium	38	20
Sulfate	9.02	22.1
Sulfide	<0.10	<0.10
Total Dissolved Solids	320	200
Total Kjeldahl Nitrogen	0.18	0.2
Total Organic Carbon	0.69	0.19
Field Temperature (C)	14.6	17.1
Field Conductivity (uS/cm)	482	312
Field pH (SU)	7.45	7.27

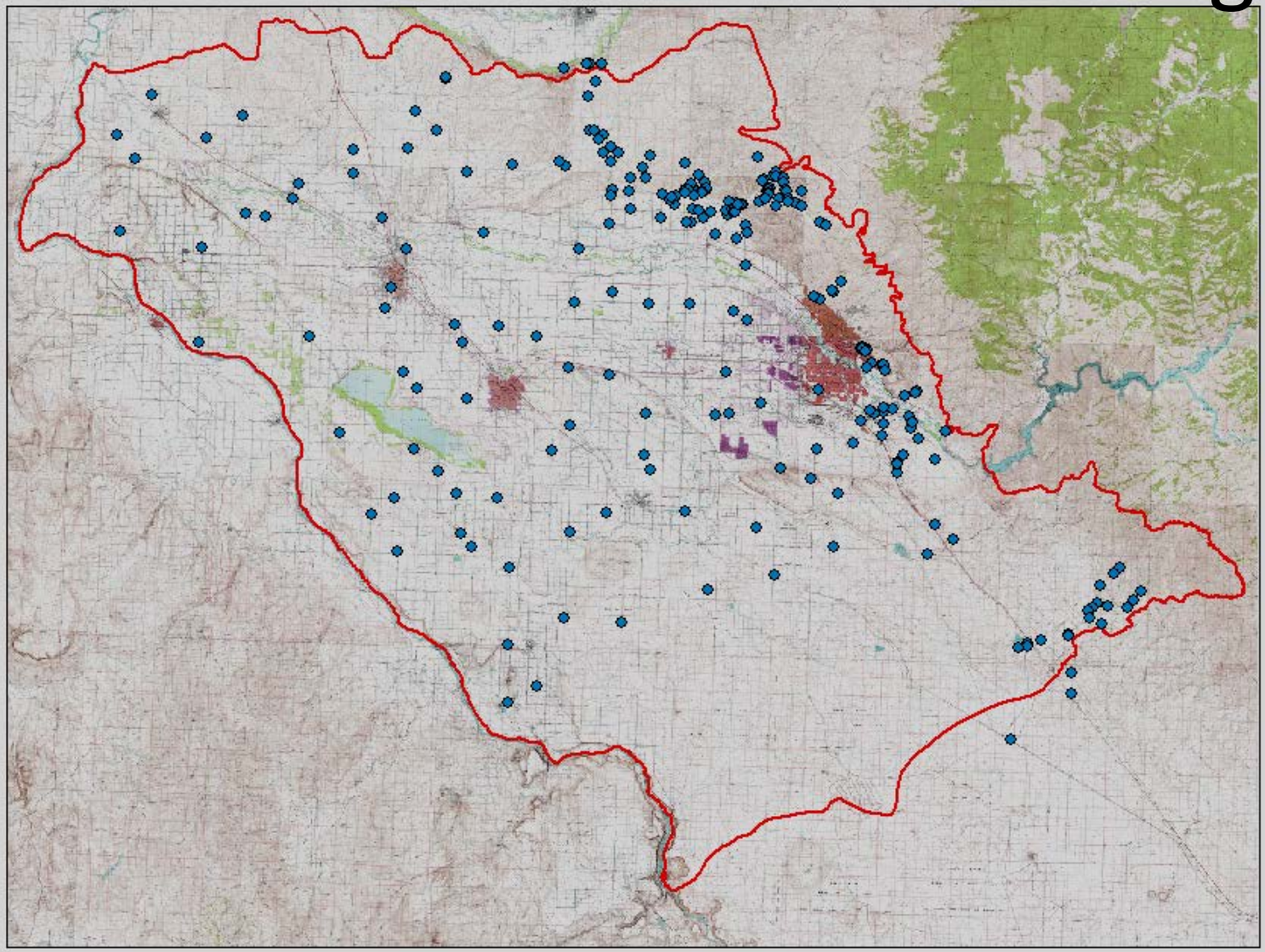




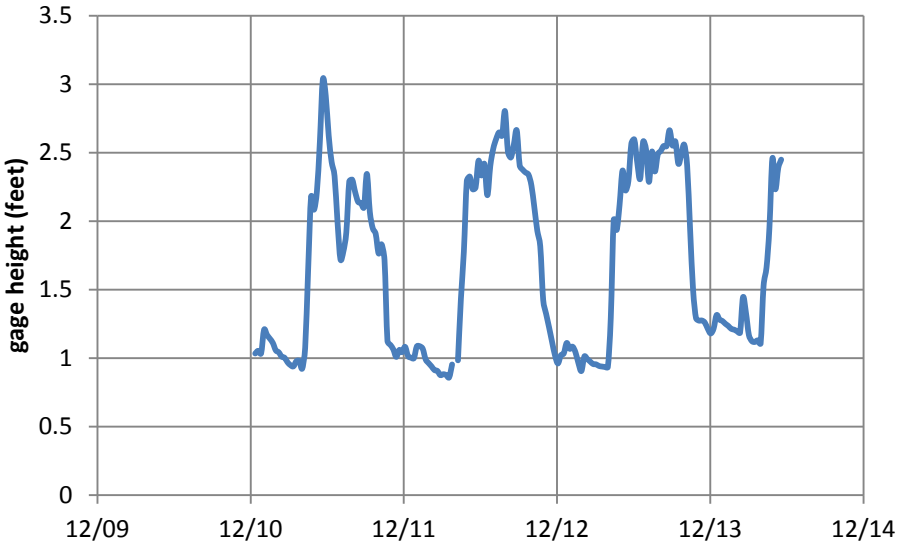


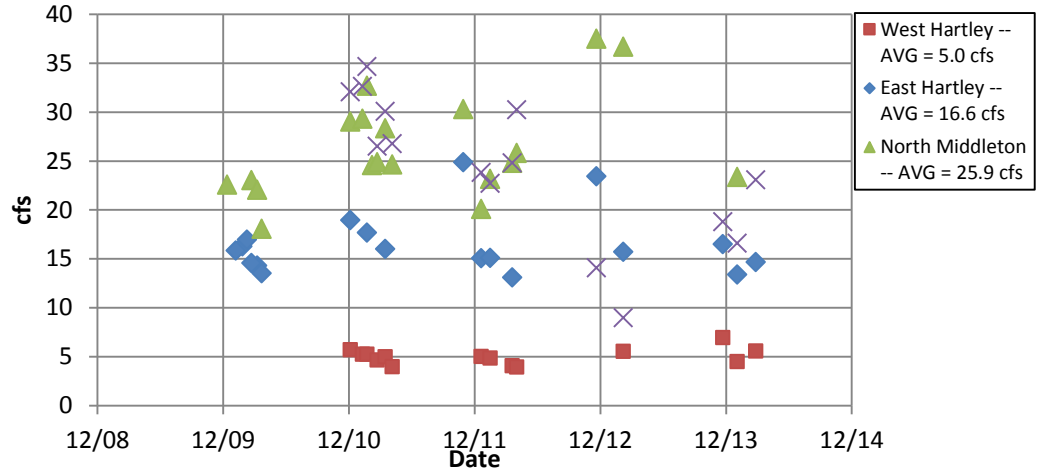
Ground Water Monitoring

Water Level Monitoring



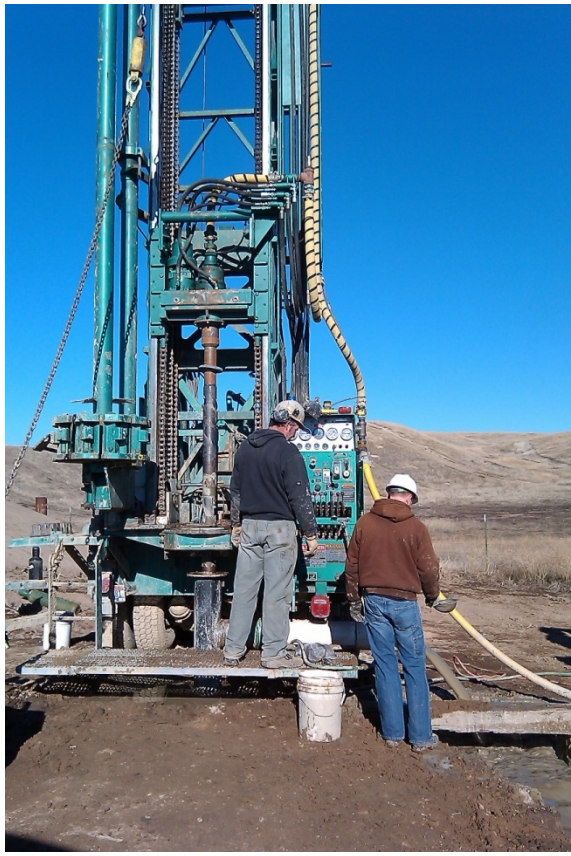
Drain and Stream Gaging





- Questions so far?

- Break for coffee and restrooms……



Ground Water Budget

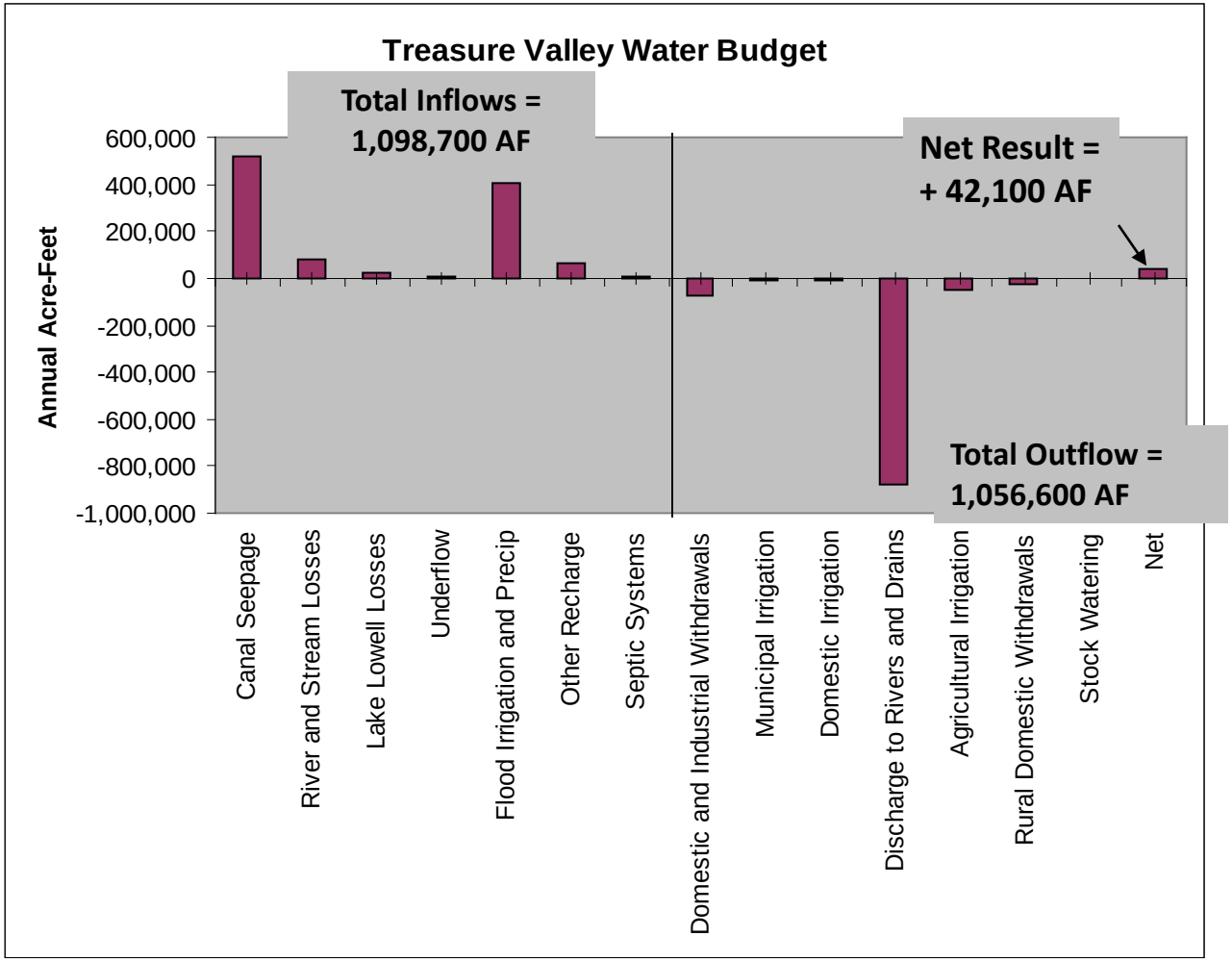
- Simple accounting:

  Inflow – Outflow = Change in storage

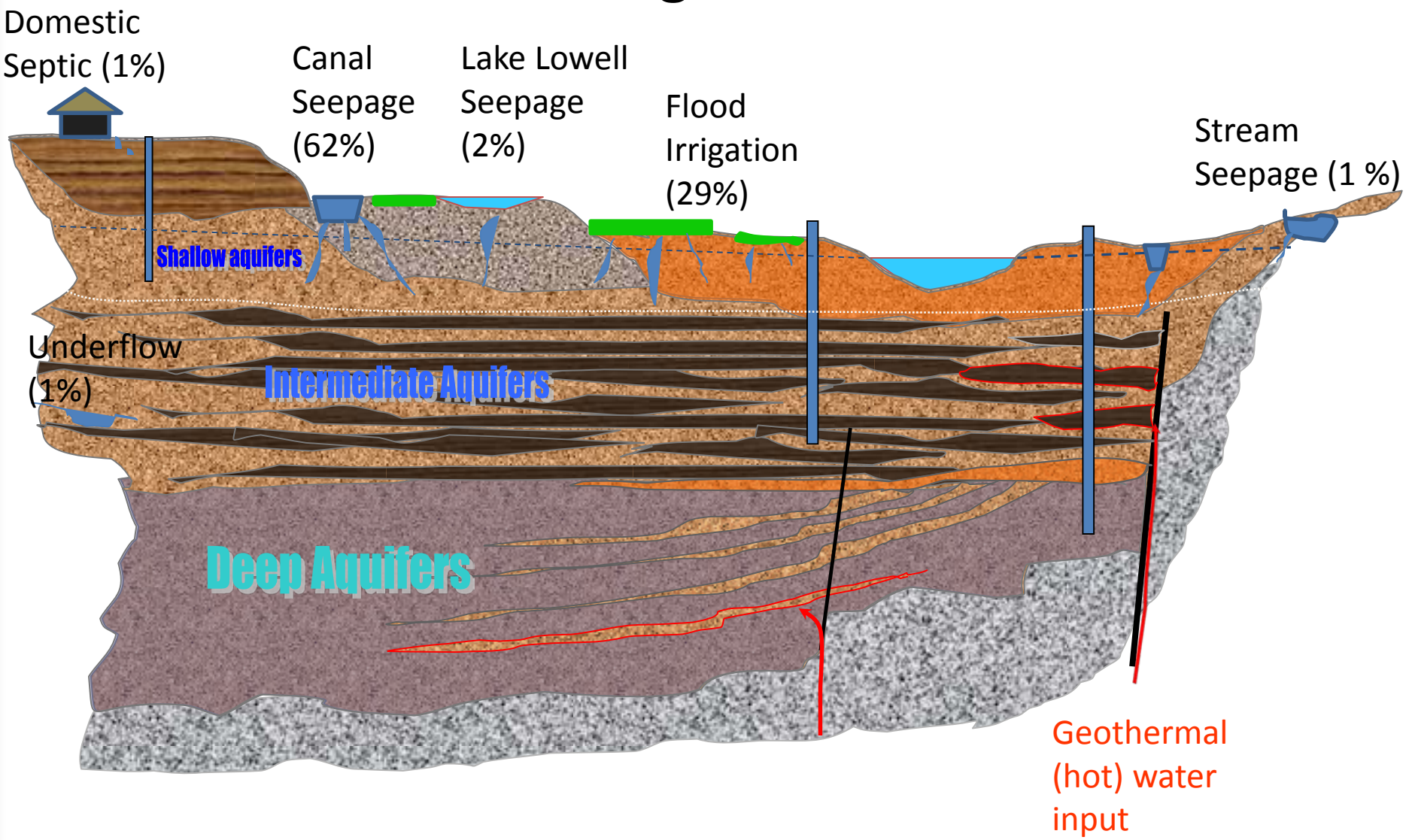
  Inflows: Irrigation seepage, canal seepage, stream loses, precipitation

  Outflows: Discharge to river, wells

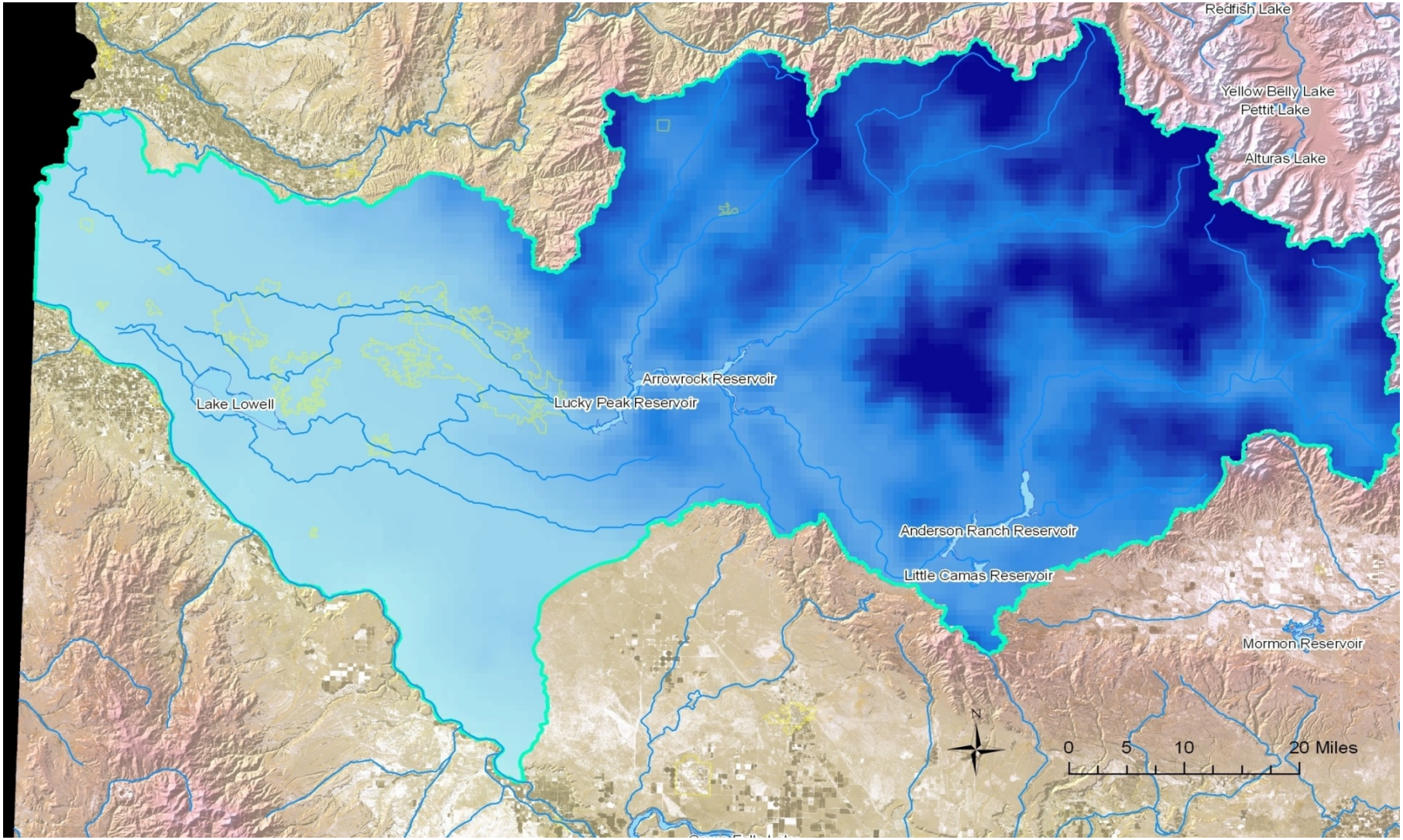
Ground Water Budget



Recharge Sources



Source of Water……



- Approximately 5.7 MAF of precipitation falls in the Boise River watershed.

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Managing Water in the West

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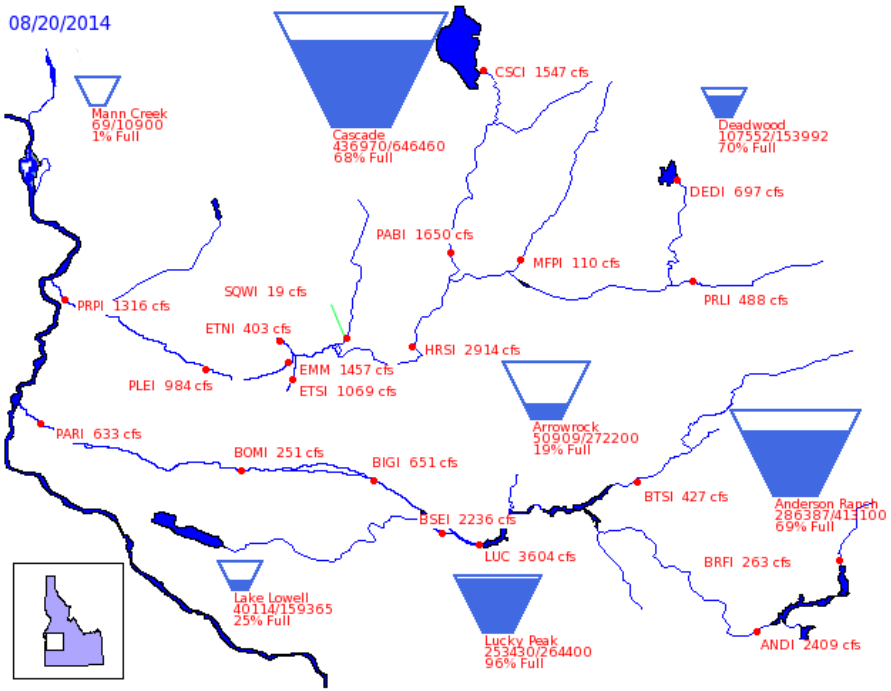
Hydromet Home | Reservoir Storage | Boat Ramps | Current Data | Historical Data

Reservoir System

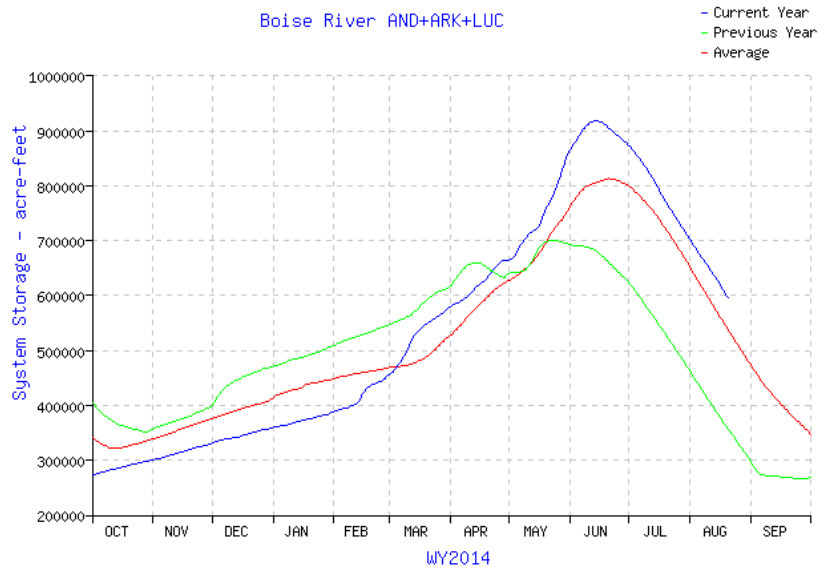
Bureau of Reclamation, Pacific Northwest Region
Major Storage Reservoirs in the Boise & Payette River Basins



PROVISIONAL DATA - SUBJECT TO CHANGE!

Boise River system (Anderson Ranch, Arrowrock, Lucky Peak) is at 62 % of capacity.
Total space available: 358974 AF
Total storage capacity: 949700 AF
Natural Flow: 749 CFS

Payette River system (Cascade, Deadwood) is at 68 % of capacity.
Total space available: 255930 AF
Total storage capacity: 800452 AF
Natural Flow: 1182 CFS



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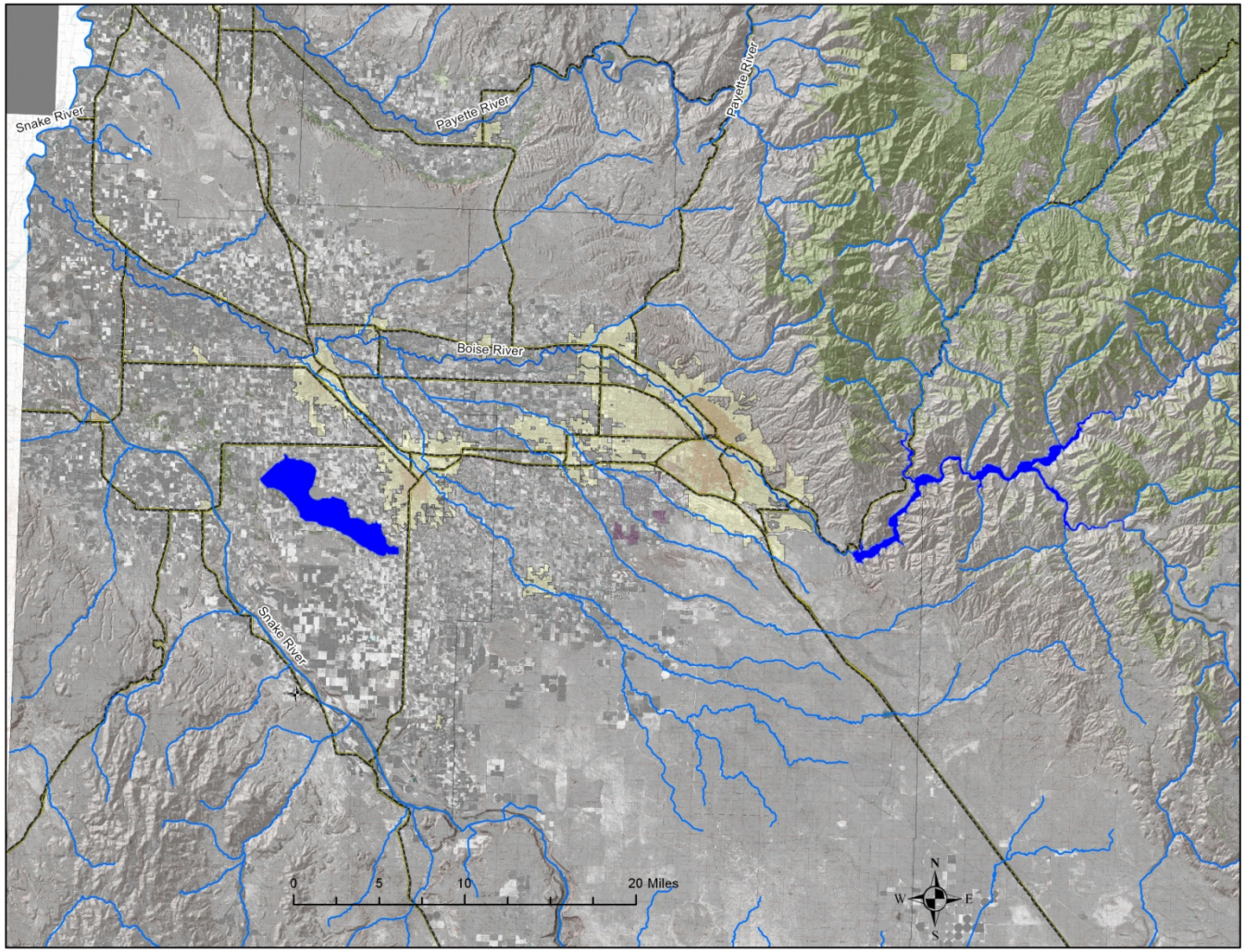
PROVISIONAL DATA - SUBJECT TO CHANGE!
Accessibility

Treasure Valley Surface Water Features

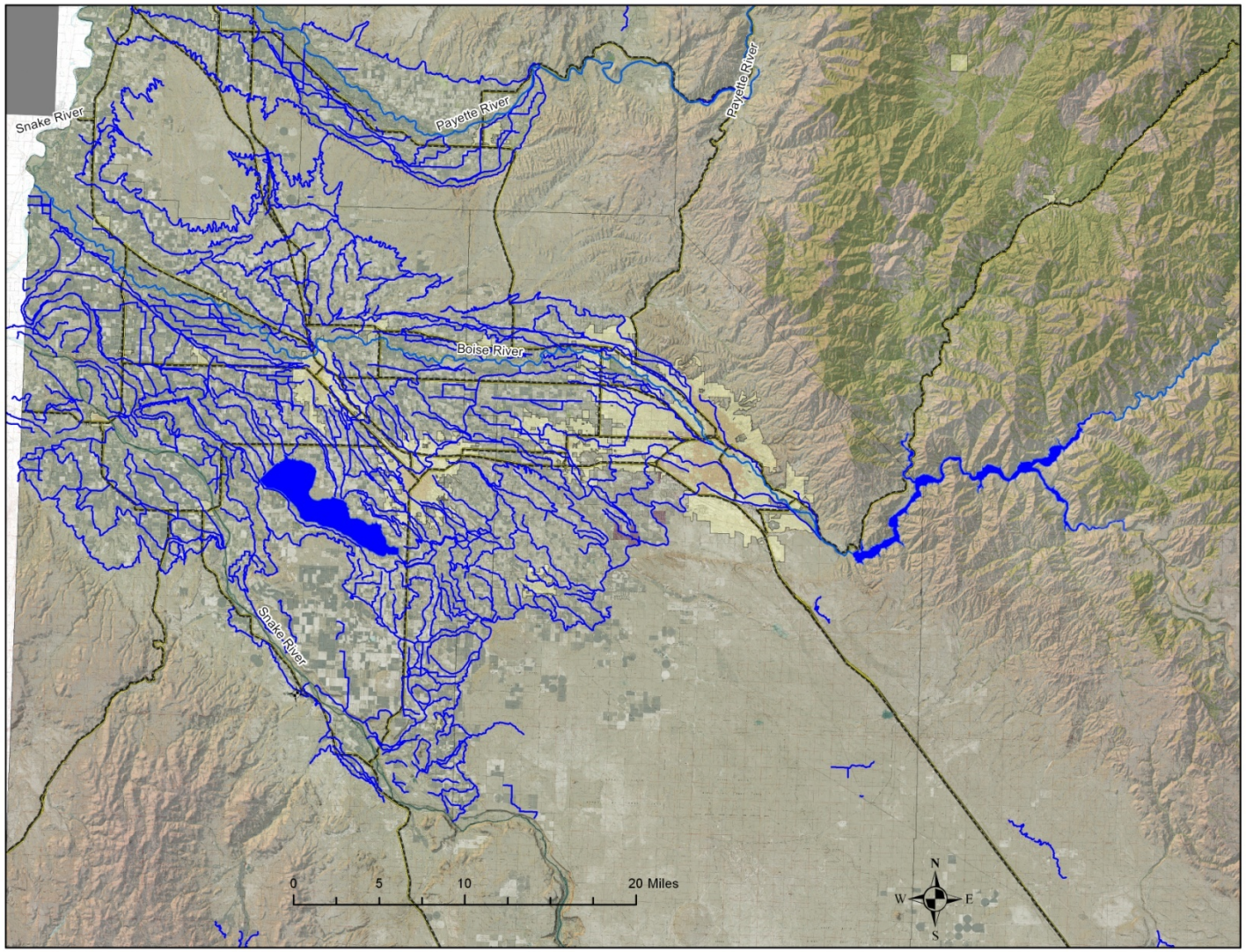


Irrigation Distribution

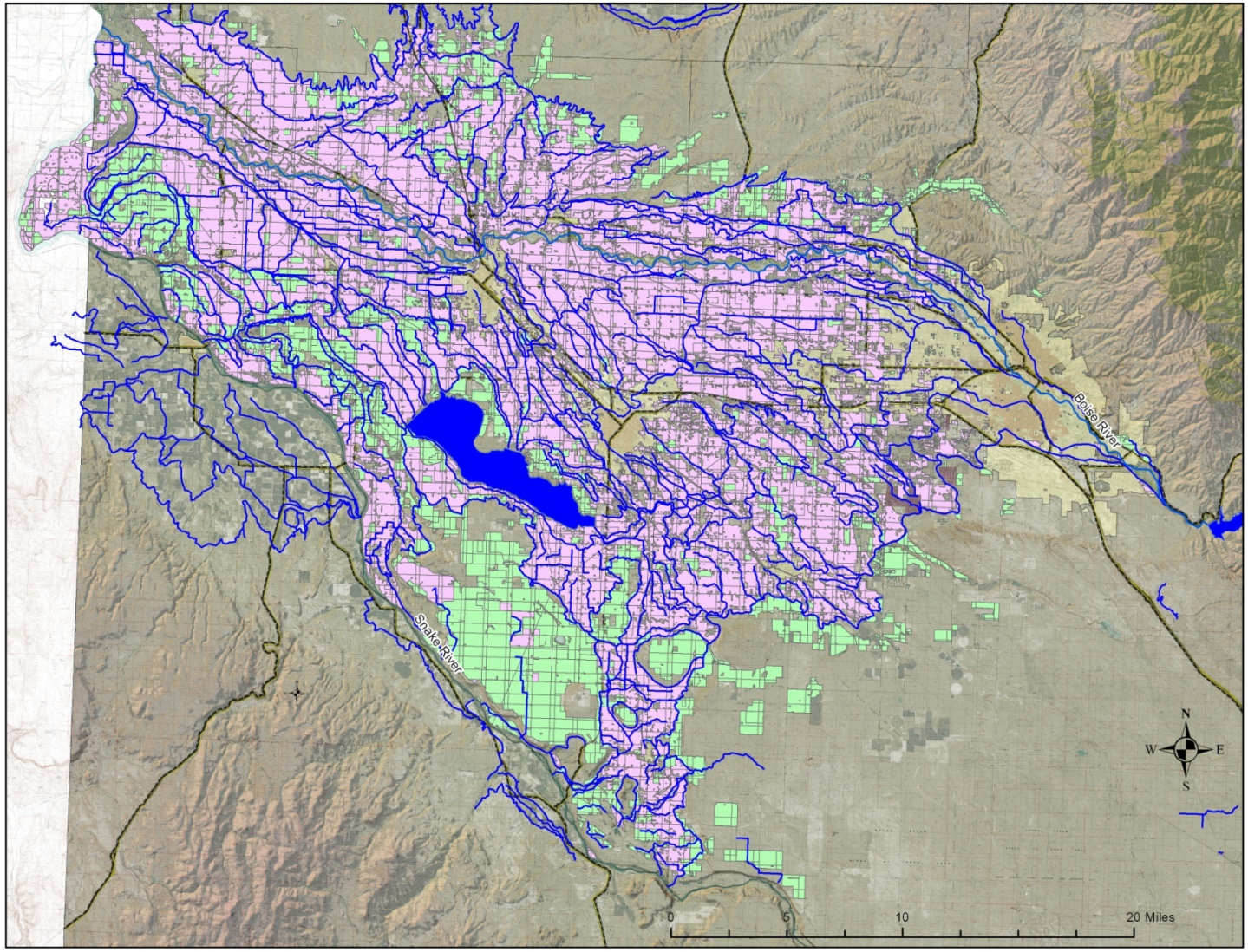
Approximately 1,170 miles of major irrigation canals

Major source of recharge to the aquifer system (loss of 0.75 cfs/mile)

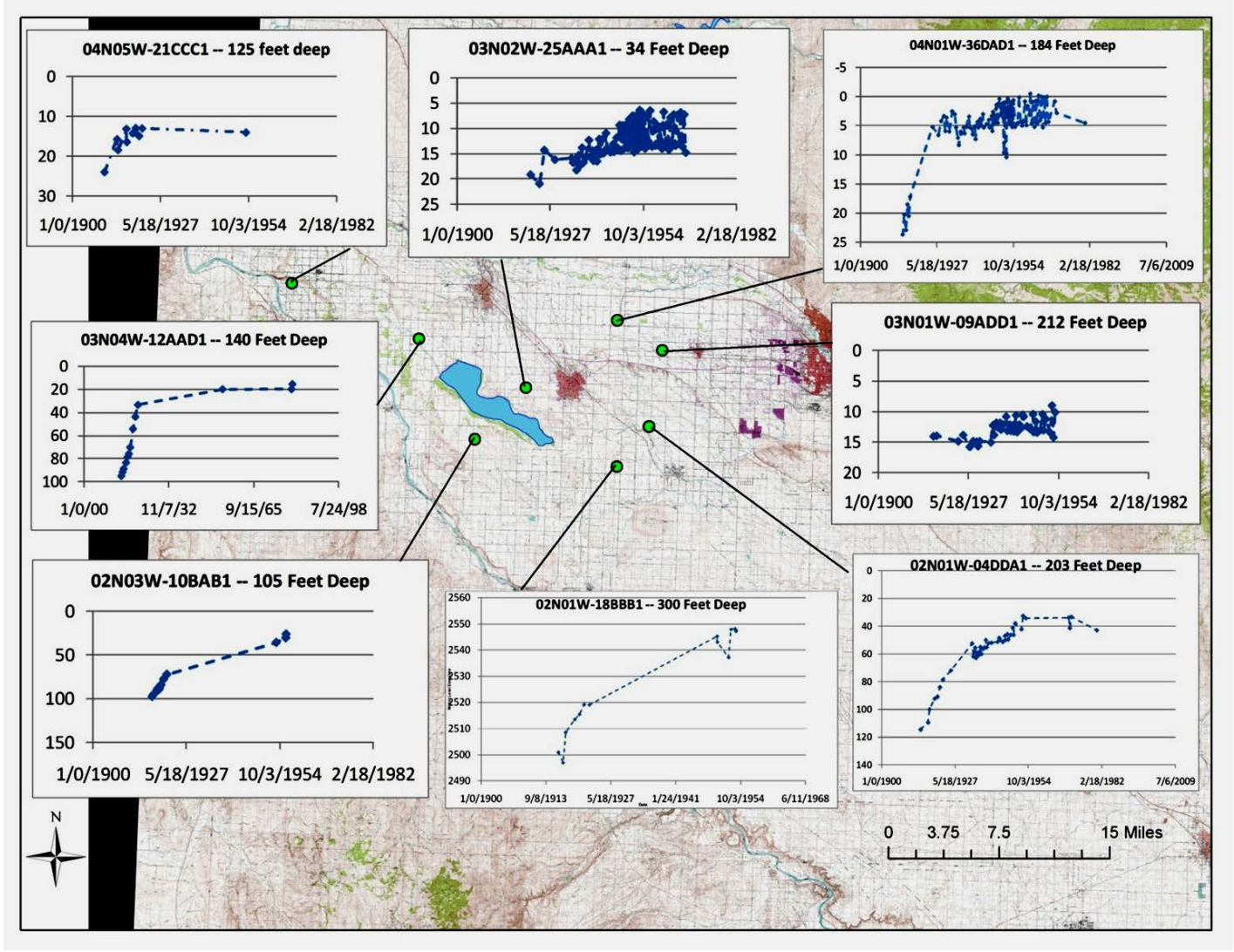
1.7 MAF Diverted Annually



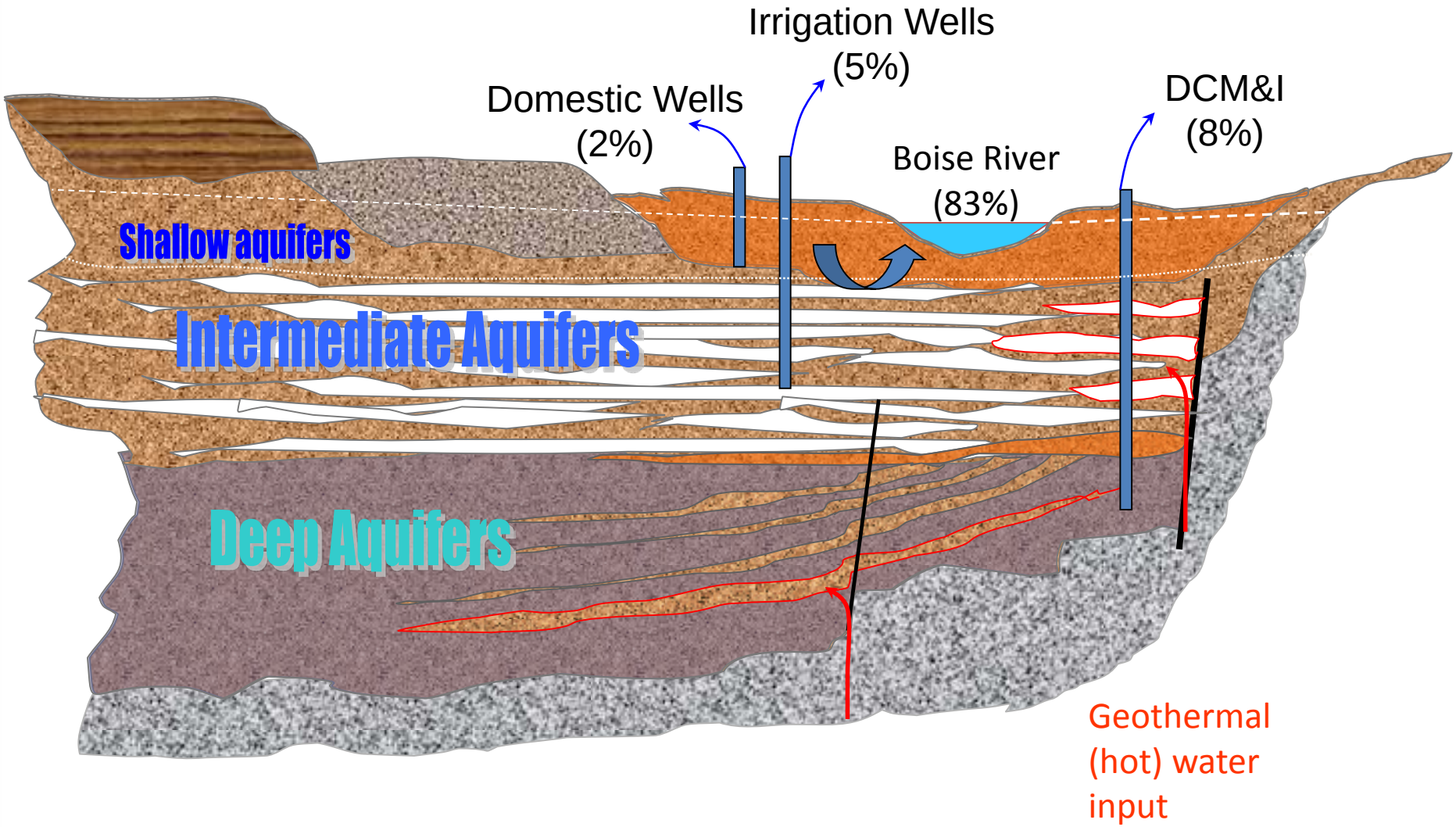
Irrigation Coverage



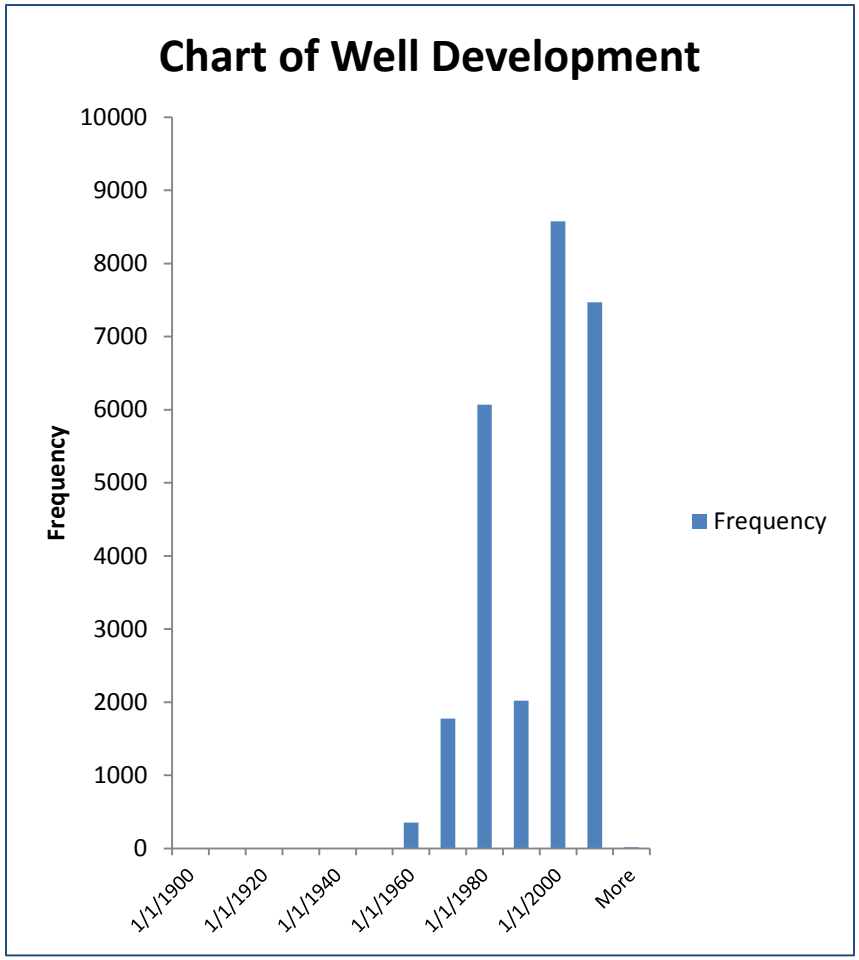
Response to irrigation



Treasure Valley Aquifers



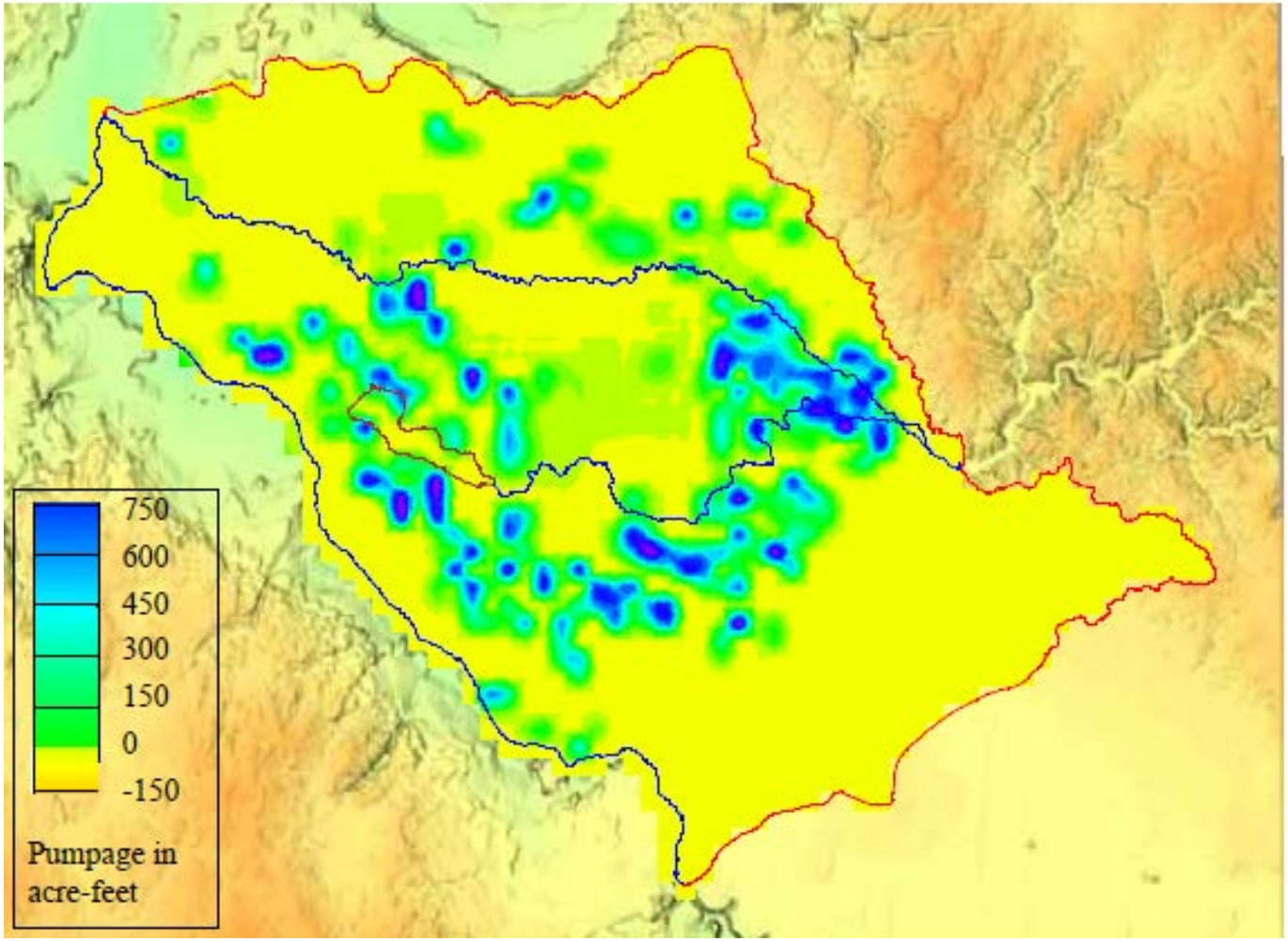
Well Development



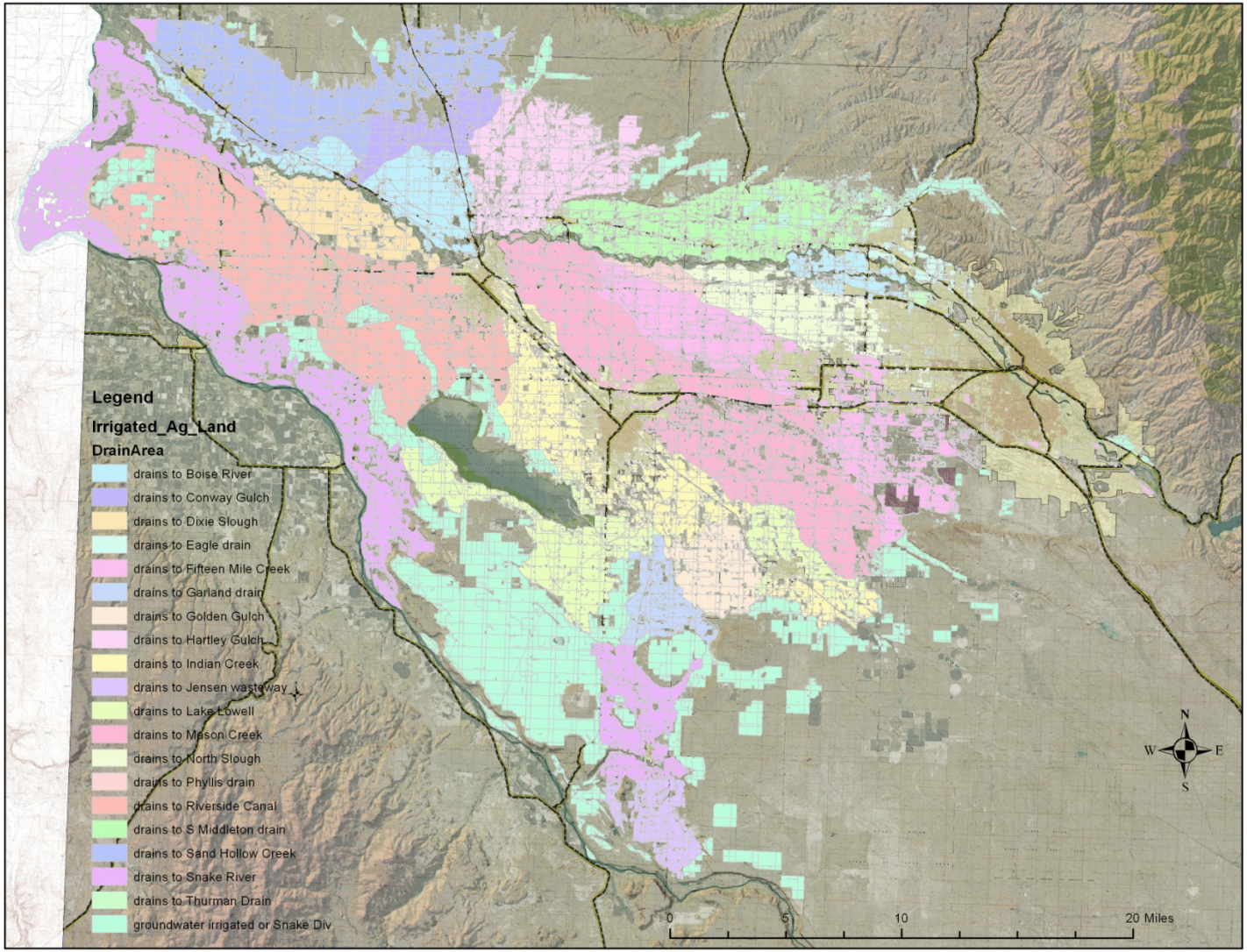
- There are 30,000 wells in the Treasure Valley.
- Unfortunately, well drillers have not always been required to file drilling reports so all of the wells in existence are not on file.
- Well construction standards have changed and improved over the years.

Ground Water Discharge -- Wells

Treasure Valley Pumping Diversions



Ground Water Discharge – Drainage areas

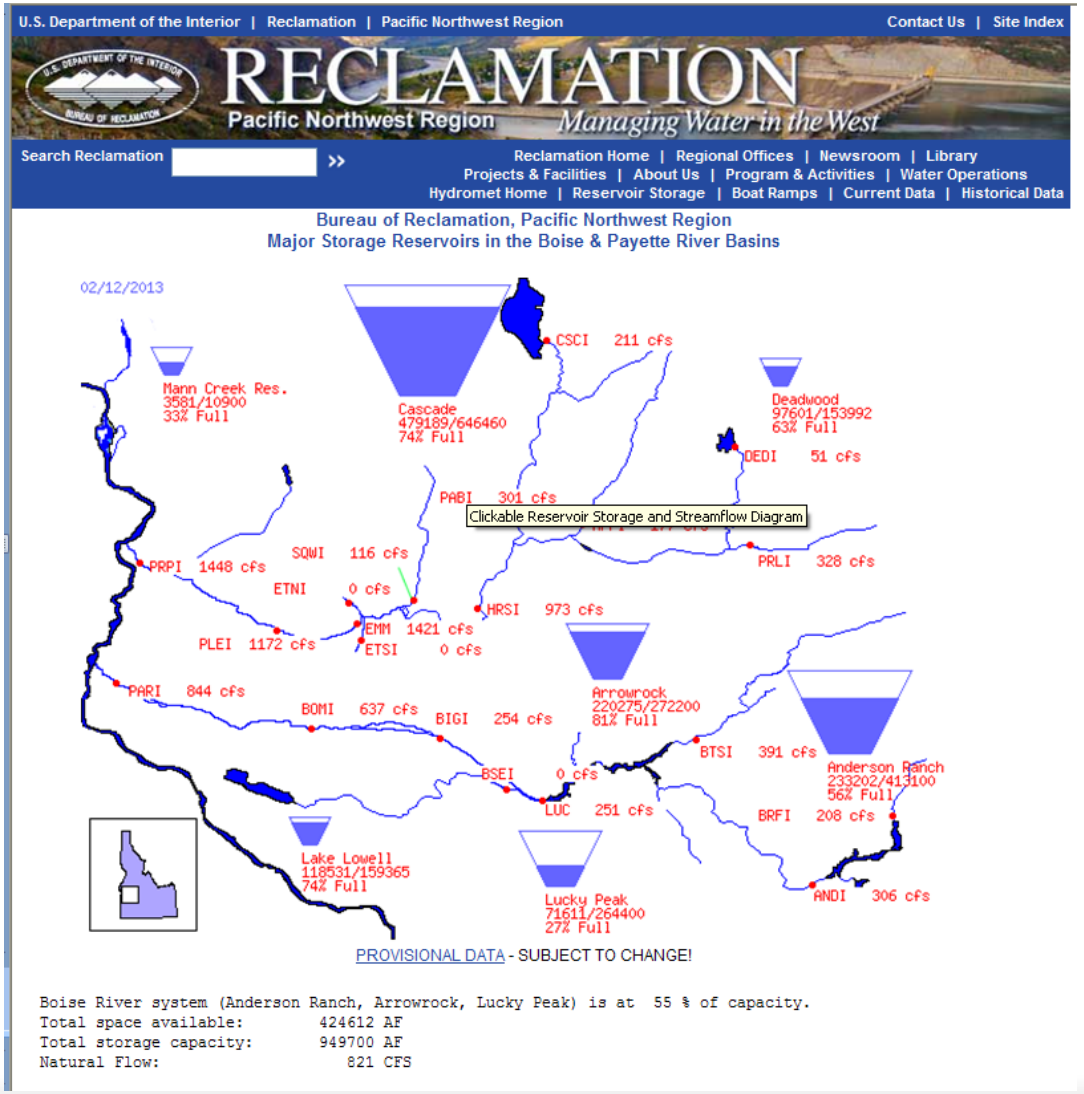


Ground Water Discharge -- Drains

Discharge to the Boise River

- "Teacup" diagram from BOR.
- Notice the river flows increase as you move down-river.
- Winter conditions (no significant precipitation or diversions)
- Data source:

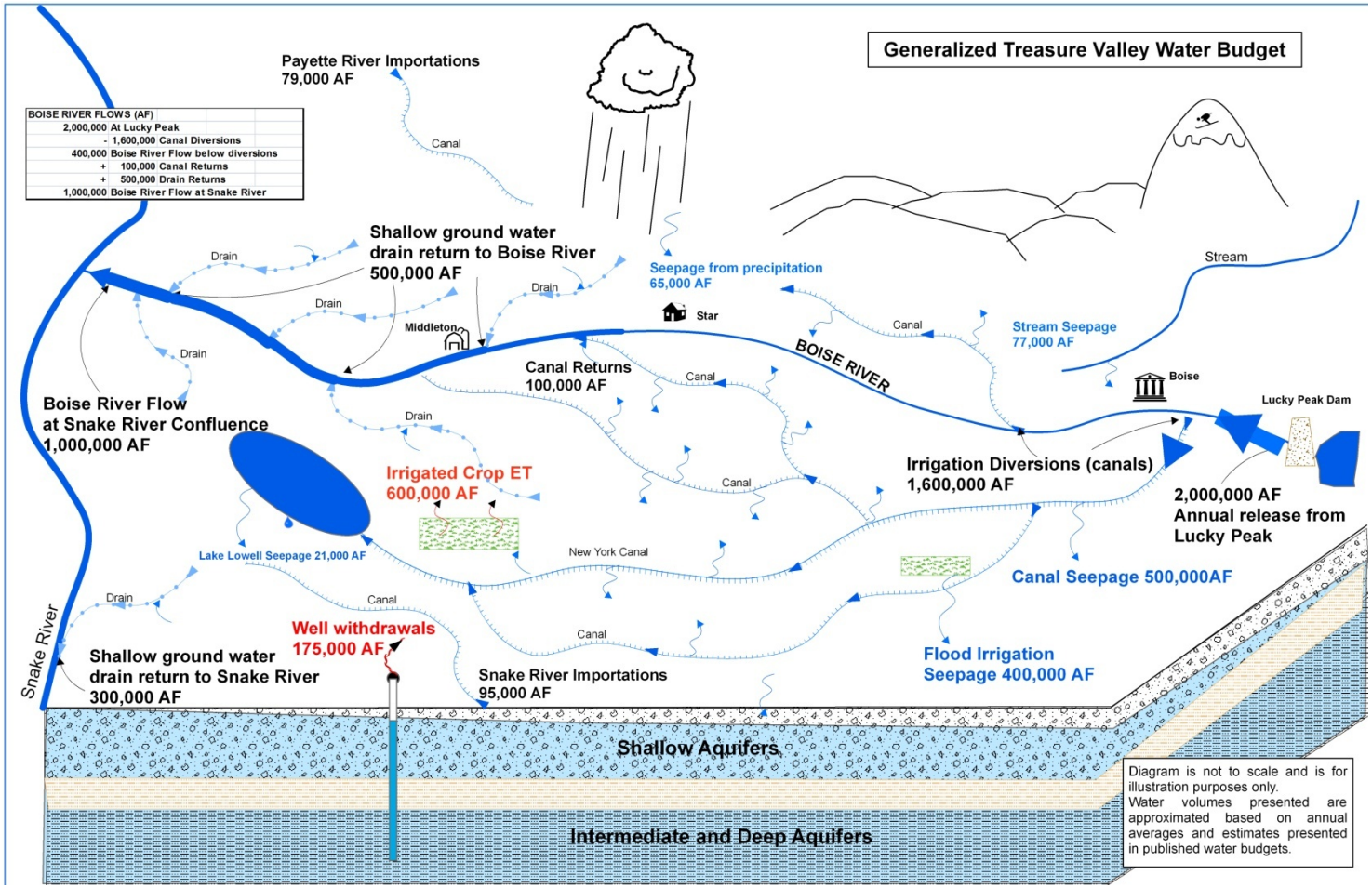
  http://www.usbr.gov/pn/hydromet/boipaytea.html



Ground Water Budget Details

Recharge Sources		**TVHP 1996**	**TVHP 2000**	**BOR 2008**	Averages
Canal Seepage		626,000	521,500	492,284	
Seepage from Rivers and Streams		16,000	77,000	NA	
Seepage from Lake Lowell		19,000	21,200	NA	
Underflow		4,300	4,300	NA	
Flood Irrigation and Precipitation		302,000	404,400	453,868	
Other Uses		48,000	65,700	NA	
Rural Domestic Septic Systems		5,000	4,600	NA	
	Total Inflows	1,020,300	1,098,700	997,657	**1,038,886**
Discharge Sources					
Domestic and Industrial Pumping		66,000	76,800	NA	
Municipal Irrigation		10,000	10,000	NA	
Self-Supplied Industrial		21,000	8,200	NA	
Agricultural Irrigation		72,000	53,000	128,962	
Rural Domestic Pumping		27,000	24,000	NA	
Stock Water Pumping		3,000	3,000	NA	
	Total Pumping	199,000	175,000	128,962	167,654
Discharge to Snake River		276,800	352,600	362,023	
Discharge to Boise River		523,200	529,000	489,105	
	Total Discharge to Rivers	800,000	881,600	851,128	844,243
	Total Outflows	999,000	1,056,600	980,090	**1,011,897**
	Net Difference	21,300	42,100	17,567	26,989

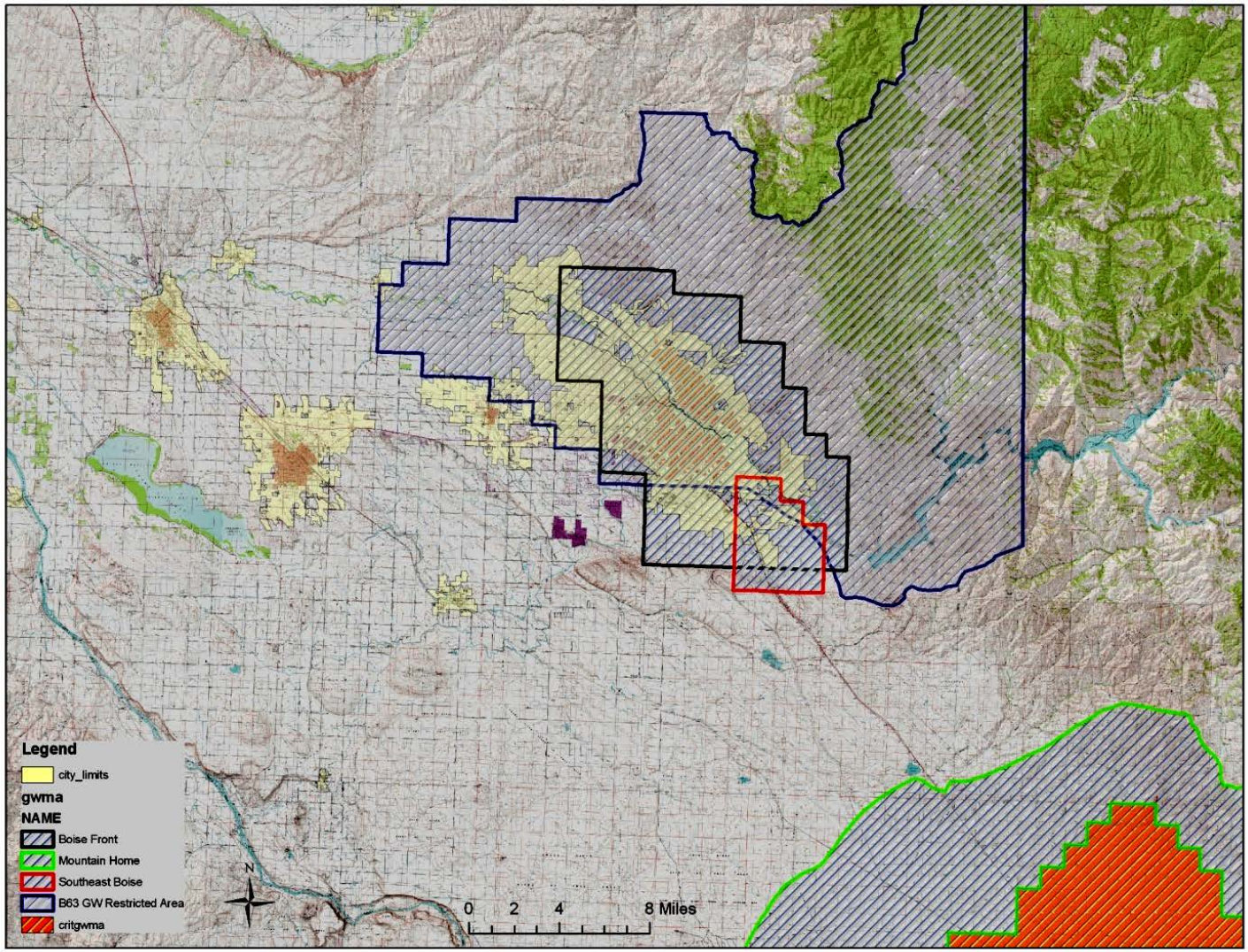
Ground Water Budget Summary



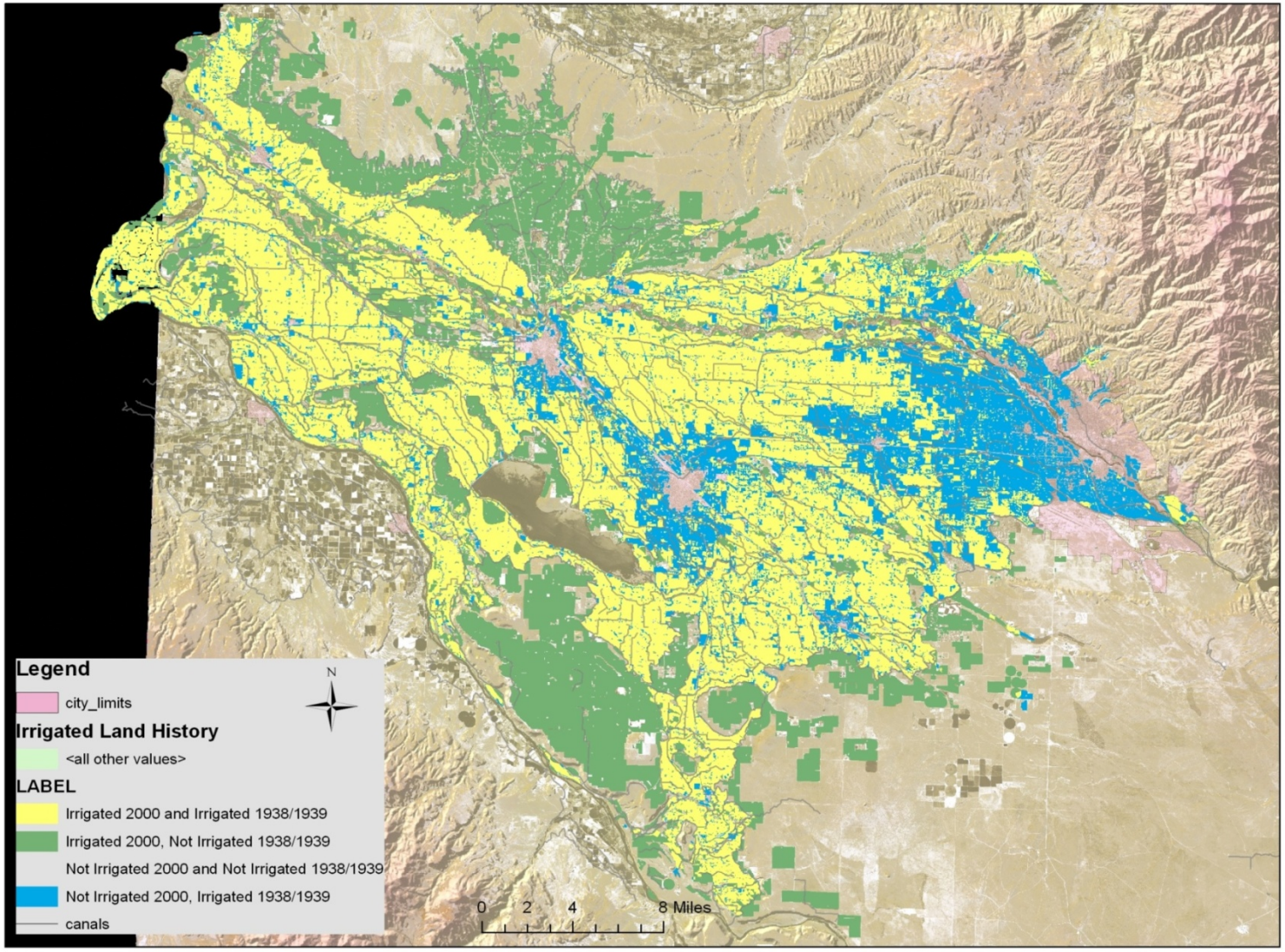
Current Status of Aquifer System

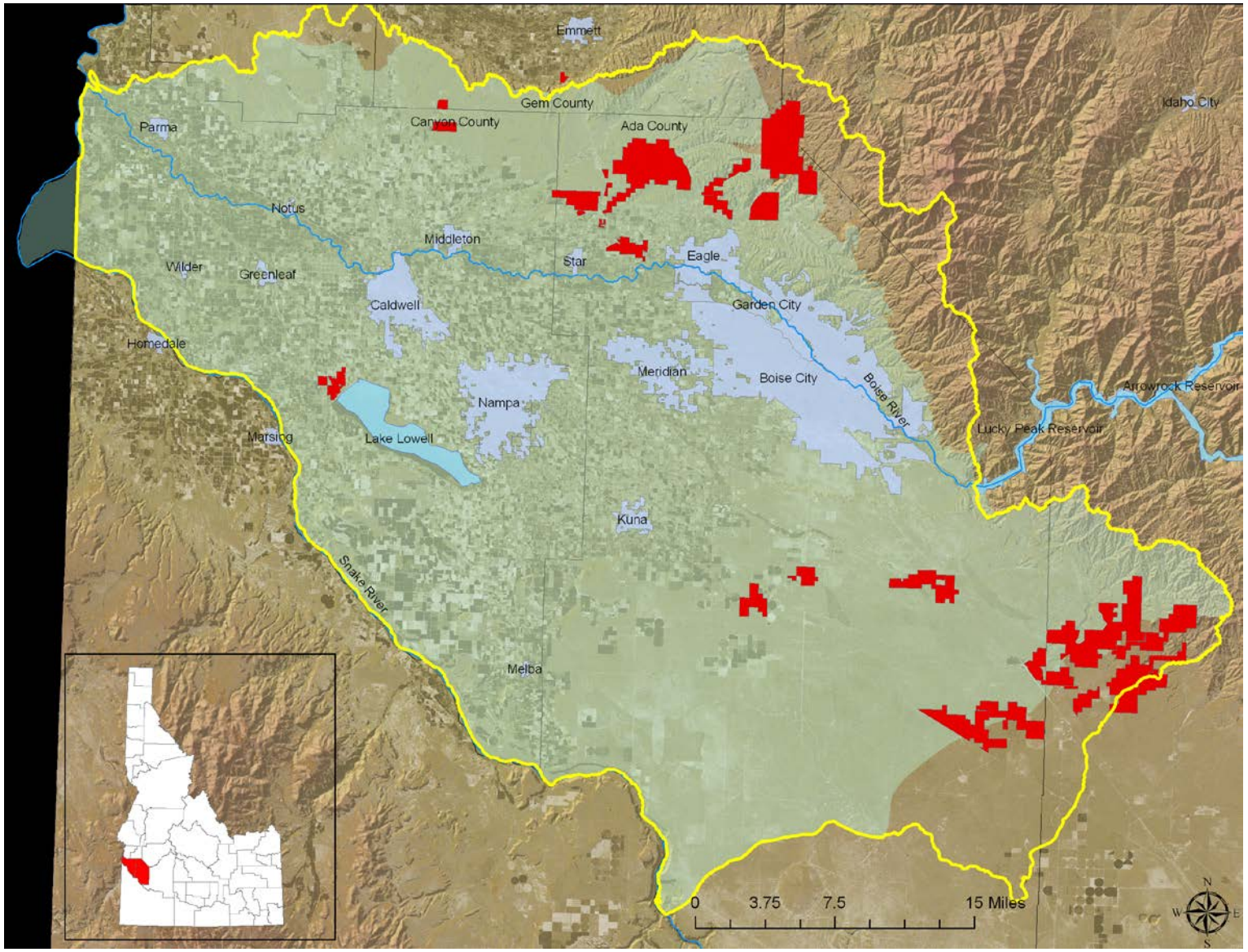
- Management Areas
- Residential Development
  - Changes in land use
  - Planned changes in land use

Management Areas



Changes in Irrigation…..

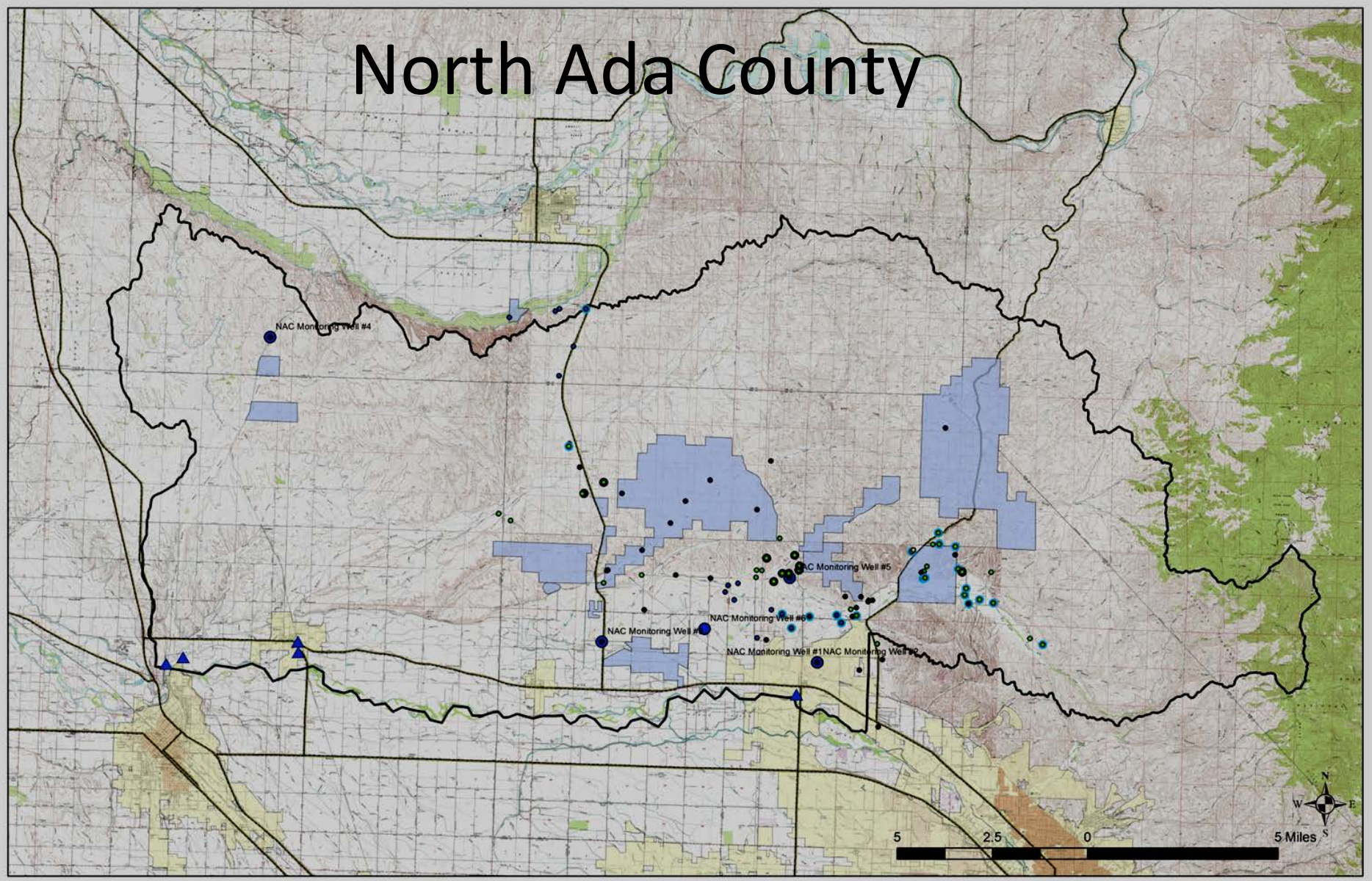


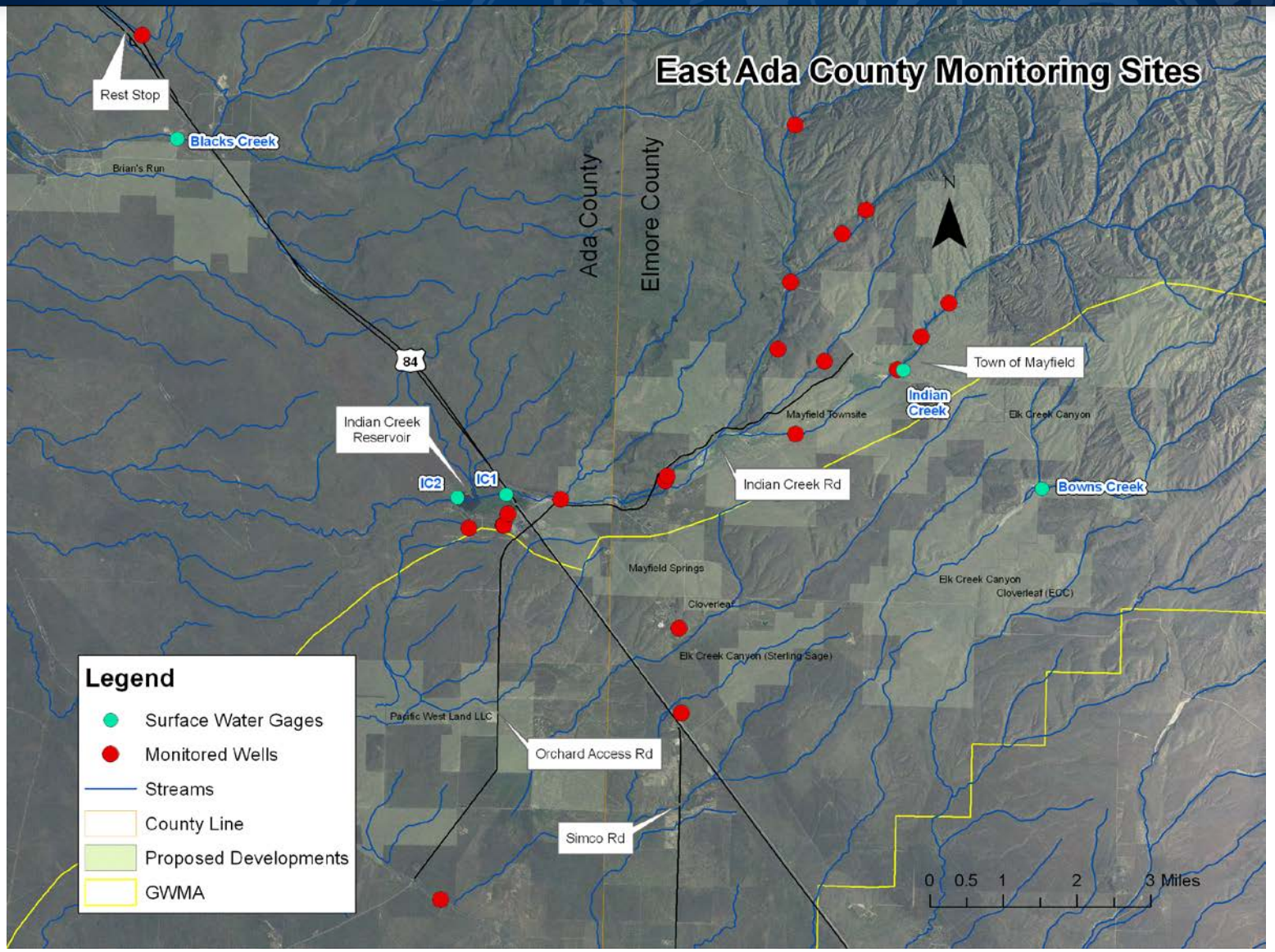

Emmett
Gem County
Canyon County
Ada County
Idaho City
Parma
Notus
Middleton
Star
Eagle
Wilder
Greenleaf
Caldwell
Garden City
Homedale
Meridian
Boise City
Boise River
Arrowrock Reservoir
Nampa
Lucky Peak Reservoir
Marsing
Lake Lowell
Kuna
Snake River
Melba
0
3.75
7.5
15 Miles
N
W
E
S

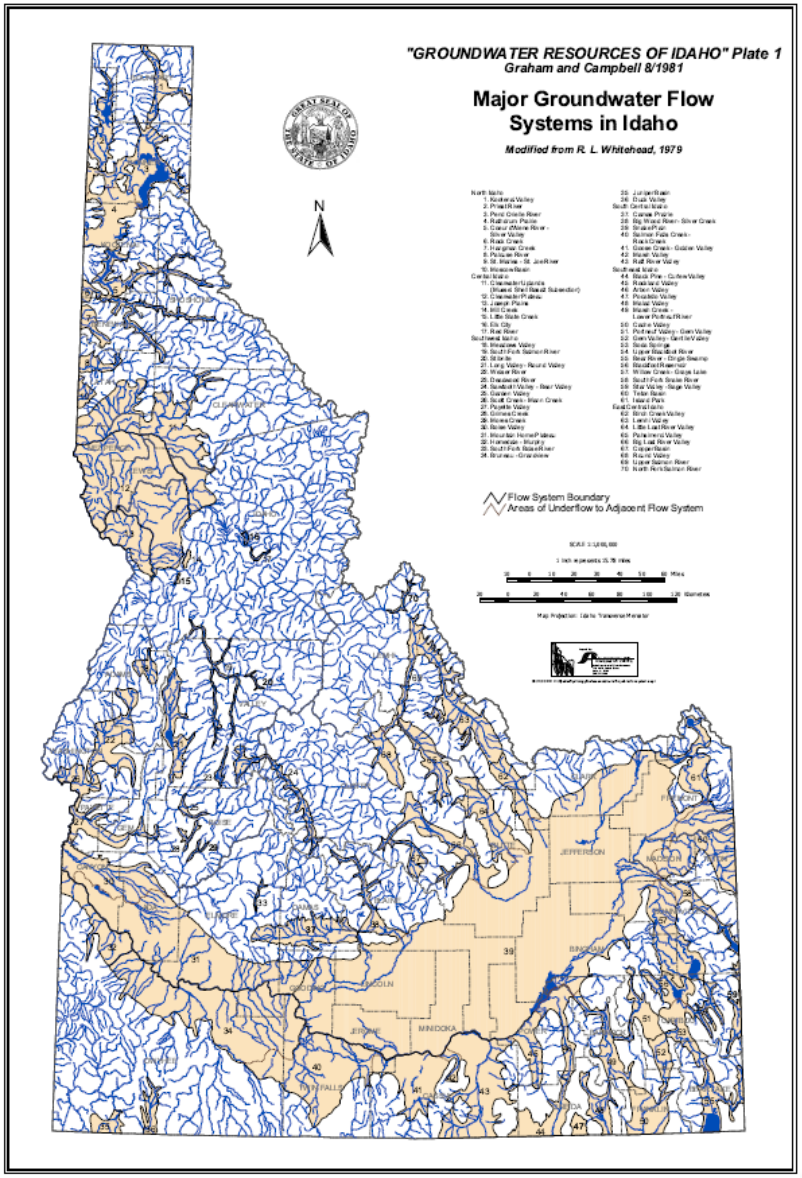
Current Investigations

- North Ada County
- East Ada County
- Revised Treasure Valley Ground Water Model

North Ada County




East Ada County Monitoring Sites
Rest Stop
Blacks Creek
Brian's Run
Ada County
Elmore County
N
84
Town of Mayfield
Indian Creek
Mayfield Townsite
Elk Creek Canyon
Indian Creek Reservoir
IC2
IC1
Indian Creek Rd
Bowns Creek
Mayfield Springs
Elk Creek Canyon
Cloverleaf (ECC)
Cloverleaf
Elk Creek Canyon (Sterling Sage)
Pacific West Land LLC
Orchard Access Rd
Simco Rd
Legend
Surface Water Gages
Monitored Wells
Streams
County Line
Proposed Developments
GWMA
0 0.5 1 2 3 Miles

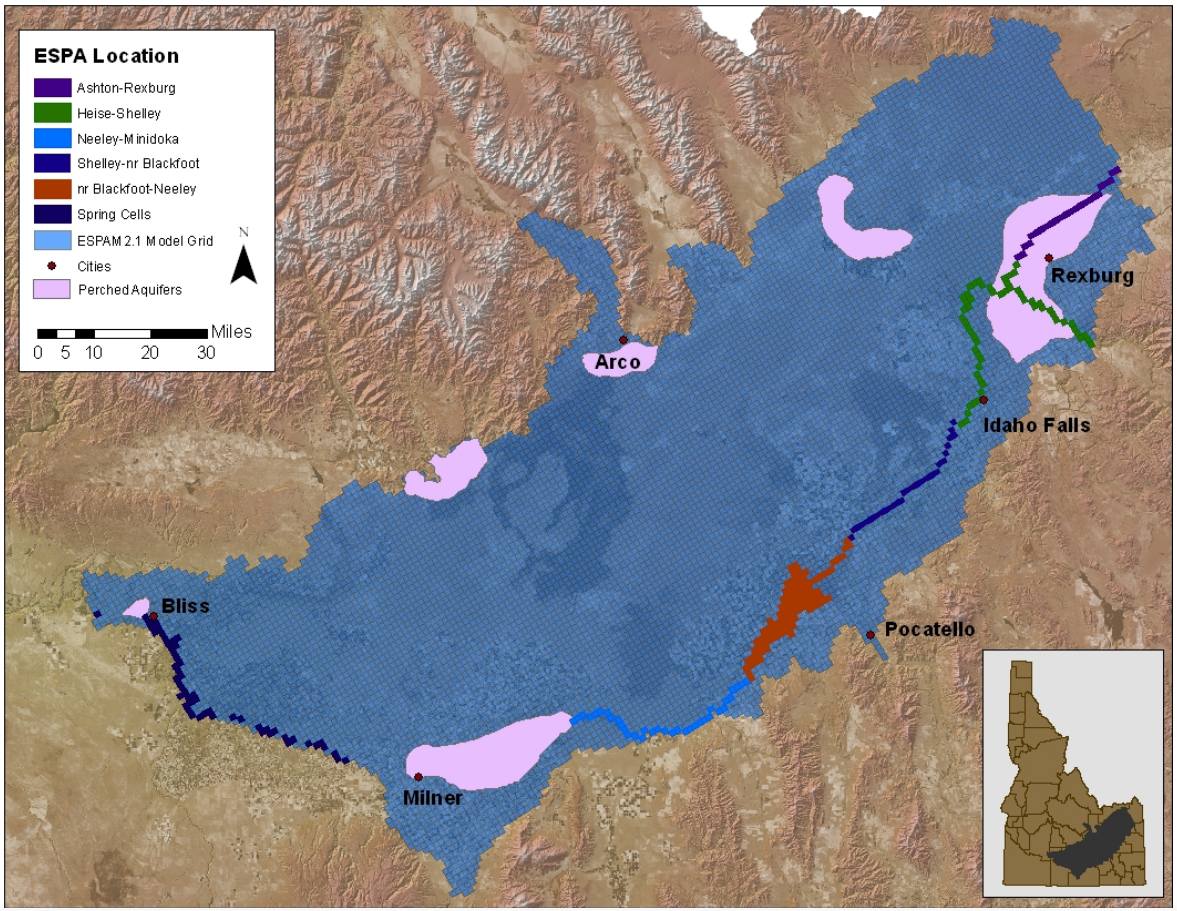


Idaho Aquifers

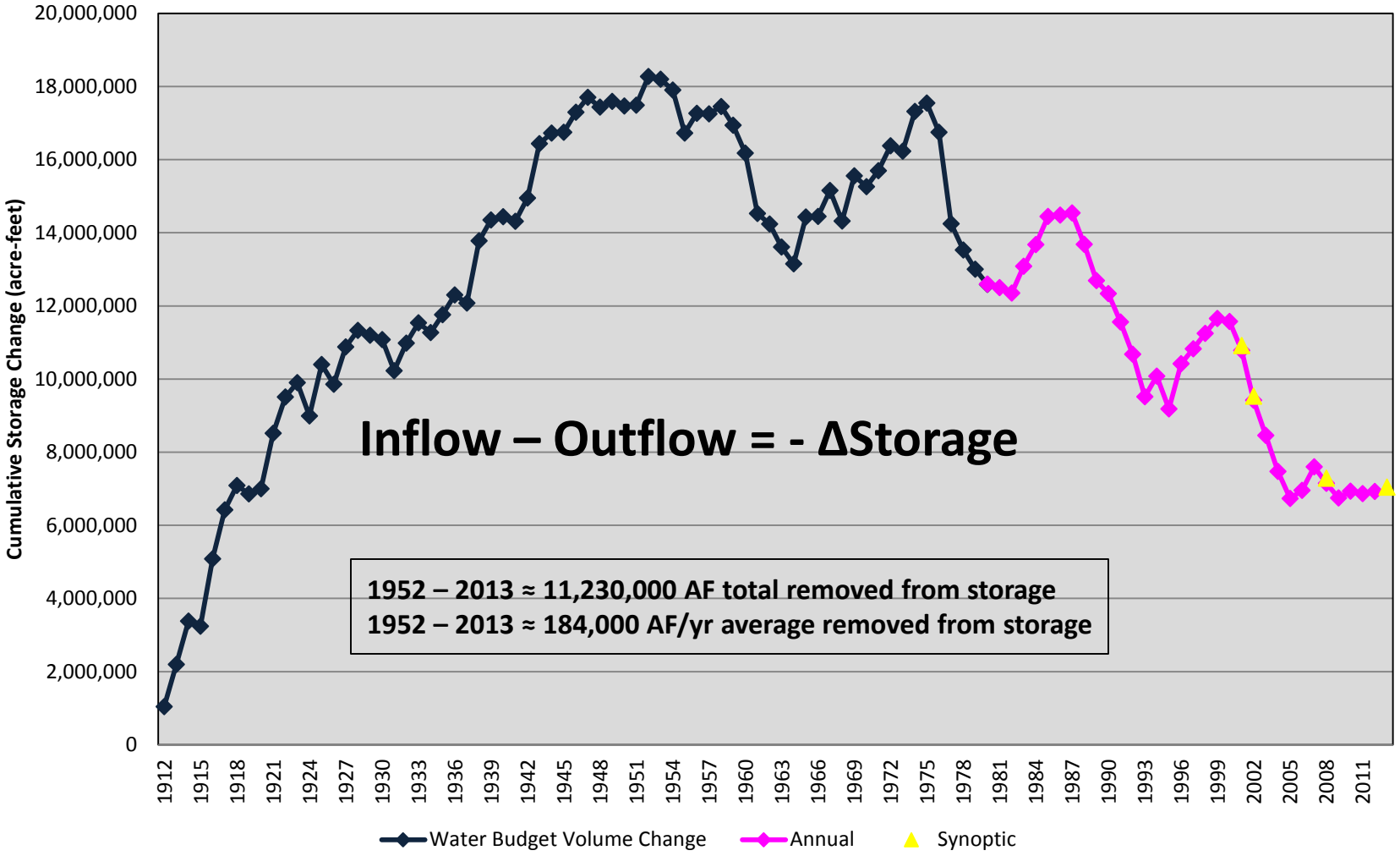
- ESPA
- Rathdrum Prairie
- Moscow
- Tributary Basins
- Management Areas

Eastern Snake Plain Aquifer:

- Aquifer composed primarily of basalt.
- Aquifer is generally unconfined with local confined conditions.
- Some locally perched areas.
- Depth to water ranges from a few feet in places near the river to over 900 feet in the center of the plain.
- Recharge due primarily to irrigation and stream seepage, tributary underflow, and precipitation.
- Water moves very easily (fast) through this aquifer
- Largest aquifer in Idaho.
- Very important to Idaho.

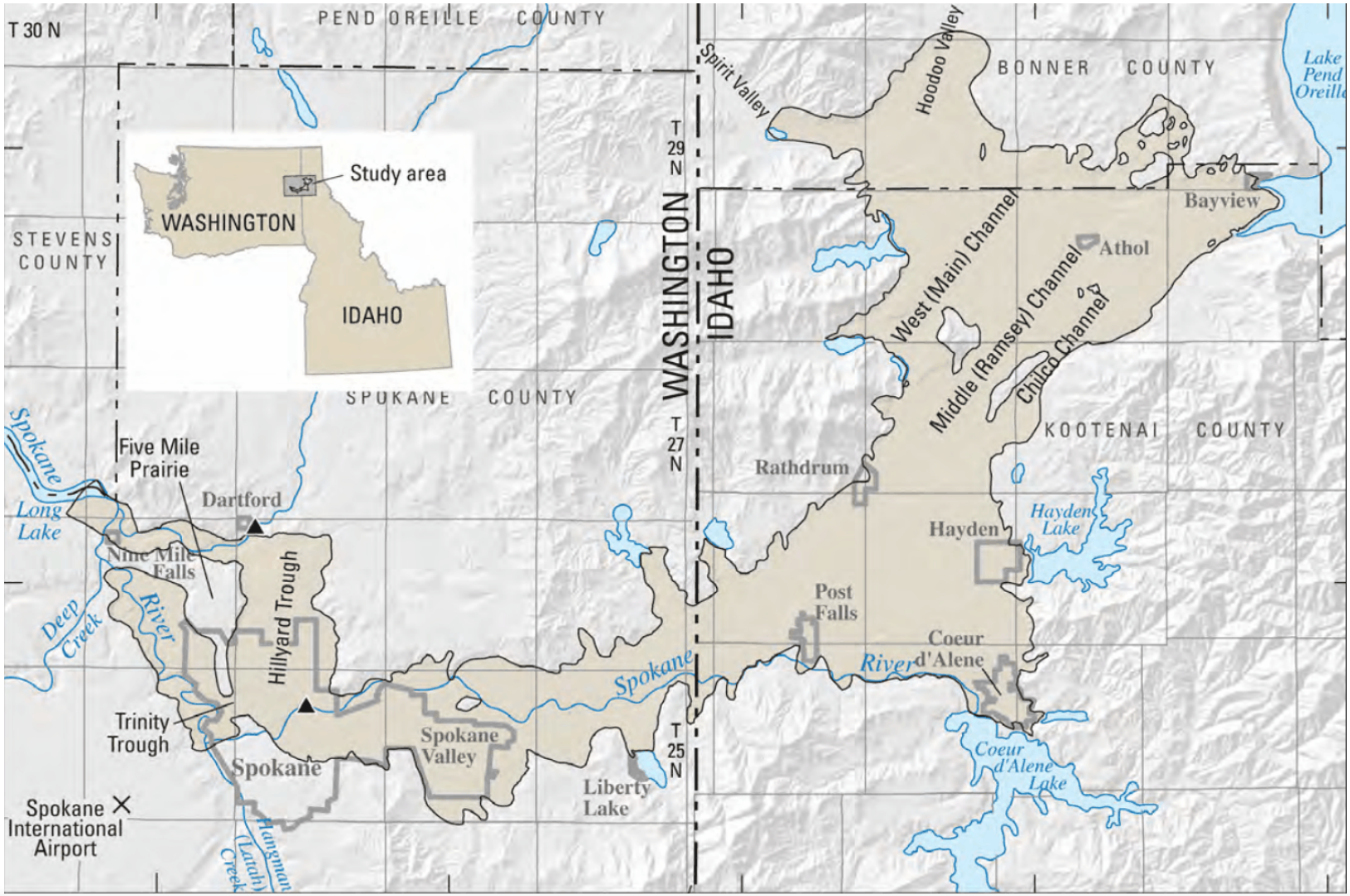


Cumulative Volume Change of Water Stored Within ESPA – ESPAM2.1



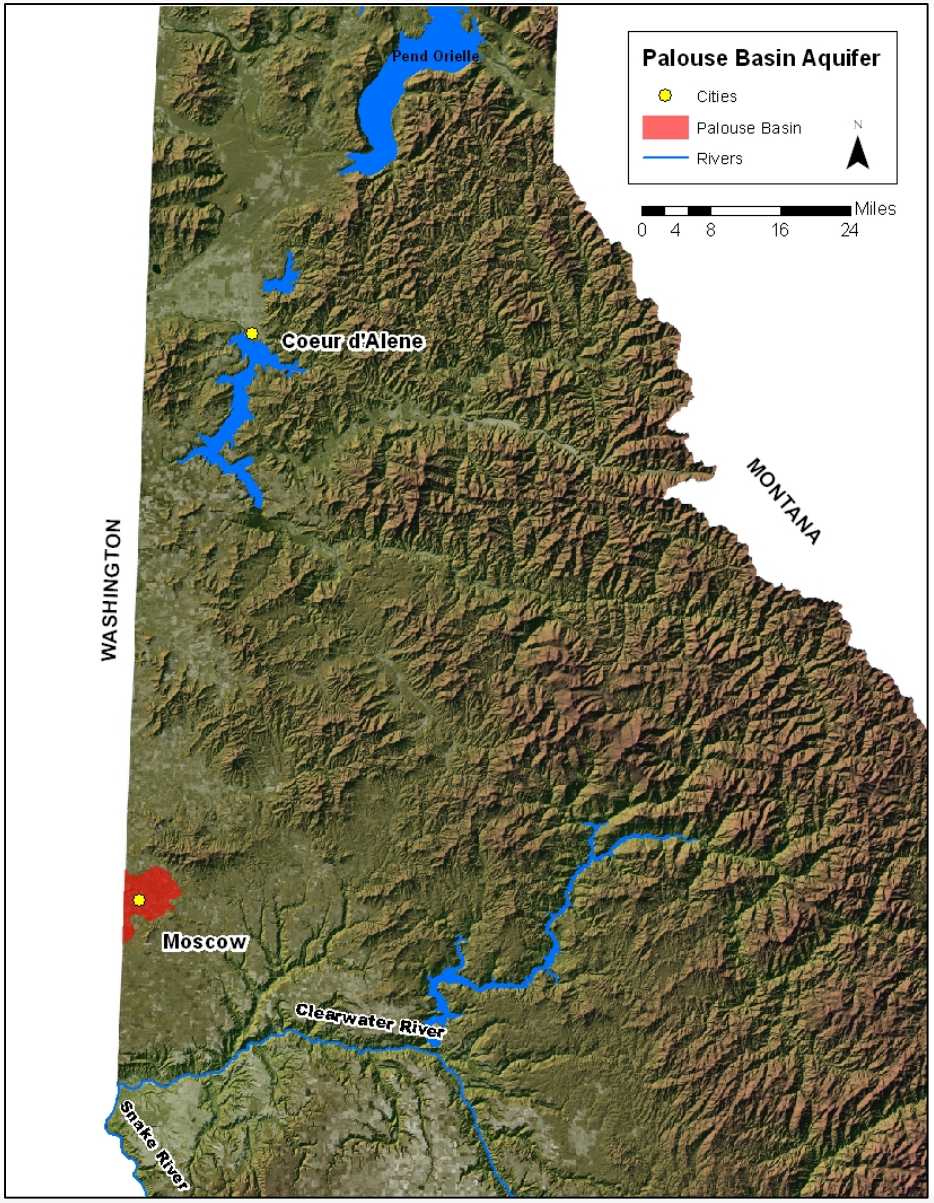
Rathdrum Prairie Aquifer:

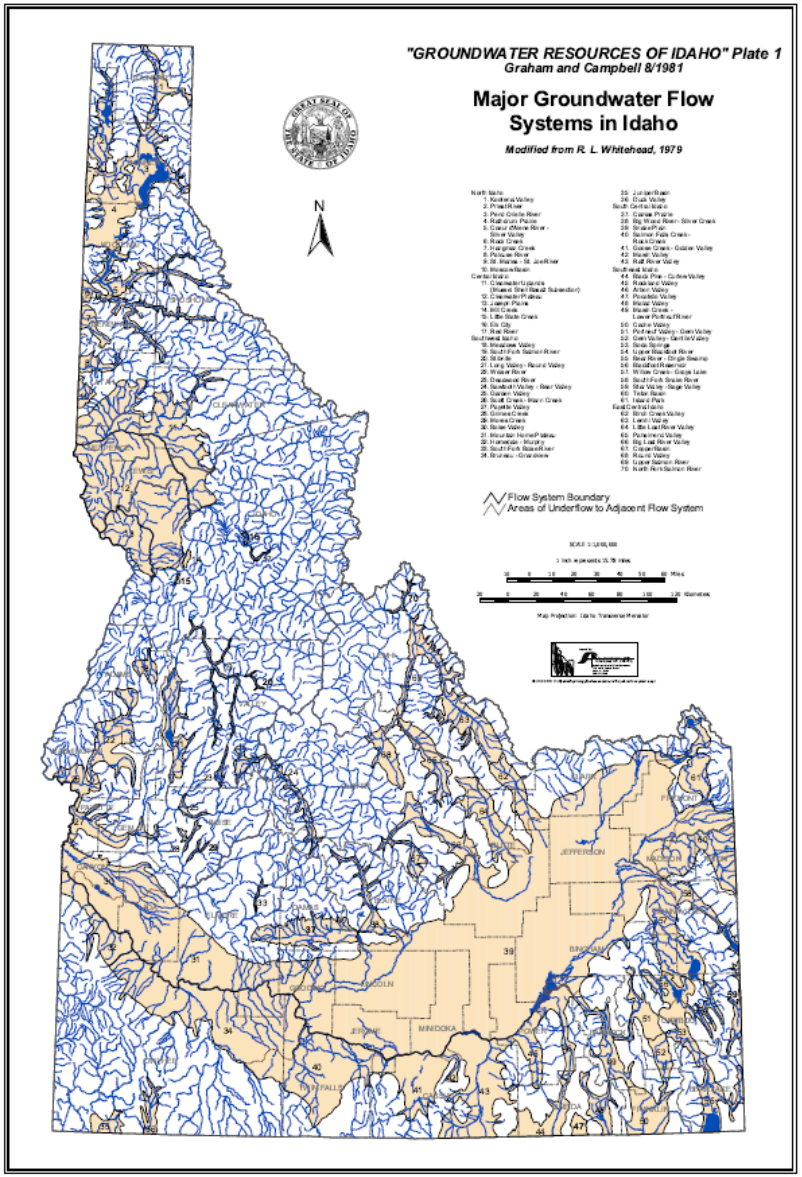
- Aquifer extends across Idaho and Washington.



Palouse Basin Aquifer:

- Generally made up of two aquifers:
  - Upper unconfined: located in surface sediments (limited extent, only minor stock water uses), and in shallow basalts (Wanapum) and interbeds to approx. 500 feet. Some domestic and municipal development.
  - Lower confined: located in deeper basalts (Grande Ronde) to approx 1,000 ft. Accounts for 95% of municipal and university supply.
- Limited recharge from precipitation and stream leakage.





Idaho Aquifers

- Tributary Basins

Thank you. Any Questions?

dennis.owsley@idwr.idaho.gov

http://www.idwr.idaho.gov/

Exhibit A5.7d

LEVEL 1 NUTRIENT PATHOGEN STUDY

FREEZEOUT RIDGE ESTATES SUBDIVISION

23442 Freezeout Road
Caldwell, ID

PREPARED FOR:

Mr. Brian Falck
Pioneer Homes
719 1st Street South, Suite B
Nampa, ID 83651

PREPARED BY:

Atlas Technical Consultants, LLC
2791 South Victory View Way
Boise, ID 83709

January 14, 2021
B201724g

2791 South Victory View Way
Boise, ID 83709
(208) 376-4748 | oneatlas.com

January 14, 2021

Atlas No. B201724g

Mr. Brian Falck
Pioneer Homes
719 1st Street South, Suite B
Nampa, ID 83651

Subject: Level 1 Nutrient Pathogen Study
Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Dear Mr. Falck:

In compliance with your instructions, Atlas has conducted a Level 1 Nutrient Pathogen Study for the above referenced development. Atlas researched and analyzed pertinent geologic conditions in the vicinity of the project site, and the data was used to estimate the downgradient nitrate concentration from the proposed development. Our scope of services is provided in the following report, and the components of this report are listed in the **Table of Contents**. We have provided a PDF copy for your review and distribution.

Atlas would be pleased to continue our role as geotechnical engineers during project implementation. Additionally, Atlas has great interest in providing materials testing and special inspection services during construction of this project. If you will advise us of the appropriate time to discuss these services, we will meet with you at your convenience.

If you have any questions, please call us at (208) 376-4748.

Respectfully submitted,

Ethan Salove, PE
Geotechnical Engineer

Monica Saculles, PE
Senior Geotechnical Engineer

Distribution: Fritz Durham, Idaho Department of Environmental Quality (PDF Copy); Brigitta Gruenberg, Southwest District Health (PDF Copy); William Mason, Mason & Associates, Inc. (PDF Copy).

CONTENTS

TABLES

APPENDICES

1. INTRODUCTION

This report presents results of a Level 1 Nutrient Pathogen (NP) Study conducted for the proposed Freezeout Ridge Estates Subdivision in Caldwell, ID. This study has been conducted to determine whether the proposed number of residential lots for the site will exhibit a negligible impact on groundwater conditions and whether a comprehensive Level 2 NP Study, as outlined by Southwest District Health (SWDH), will be required.

1.1 Authorization

Authorization to perform this analysis was given in the form of written authorization to proceed from Mr. Brian Falck of Pioneer Homes to Monica Saculles of Atlas Technical Consultants (Atlas), on October 14, 2020. Said authorization is subject to terms, conditions, and limitations described in the Professional Services Contract entered into between Pioneer Homes and Atlas. Our scope of services for the proposed development has been provided below.

1.2 Purpose

The purpose of this study is to determine the various site parameters present, which in turn will determine whether the proposed number of residential lots for the site will exhibit a negligible impact on groundwater conditions. Specifically, this study complies with requirements established by Canyon County and the SWDH for area developments in accordance with the Idaho Department of Environmental Quality (IDEQ) guidelines dated 6 May 2002.

1.3 Scope of Investigation

The scope of this study included reviewing geologic literature, assembling an inventory of available reports of wells (domestic, irrigation, or other) in the immediate area, reviewing available water resource reports, and performing a site reconnaissance of the project site. At an additional fee, Atlas will perform on-site evaluation of soils within the proposed septic system drainfield locations following approval of the preliminary plat; however, at that time, a SWDH or IDEQ representative must be present to observe and approve this work.

1.4 Warranty and Limiting Conditions

The field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for the purposes cited above. Atlas warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted professional engineering practice in the fields of site civil engineering, soil mechanics, and engineering geology, only for the site described in this report. No other warranties are implied or expressed.

These engineering methods have been developed to provide the client with information regarding apparent or potential engineering conditions relating to the subject property within the scope cited above and are necessarily limited to the conditions observed at the time of the site visit and research. The report is also limited to the information available at the time it was prepared. In the event additional information is provided to Atlas following the report, it will be forwarded to the client in the form received for evaluation by the client. There is a distinct possibility that conditions may exist which could not be identified within the scope of the investigation or which were not apparent during the site investigation.

This report was prepared for the use of Pioneer Homes, and their retained design consultants ("Client"). Conclusions and recommendations presented in this report are based on the agreed upon scope of work outlined in the report and the Contract for Professional Services between Client and Atlas Technical Consultants ("Consultant"). Use or misuse of this report, or reliance upon the findings hereof by any parties other than the Client, is at their own risk. Neither Client nor Consultant make any representation of warranty to such other parties as to the accuracy or completeness of this report or the suitability of its use by such other parties for any purpose whatever, known or unknown to Client or Consultant. Neither Client non Consultant shall have any liability to, or indemnifies or holds harmless third parties for any losses incurred by the actual or purported use or misuse of this report. No other warranties are implied or expressed.

2. PROJECT DESCRIPTION AND EXISTING SITE CONDITIONS

2.1 Project and Vicinity Description Including Site Topography and Drainage

The proposed development is located north of the City of Caldwell, Canyon County, ID, and occupies a portion of the SE¼NE¼ and SW¼NE¼ of Section 3, Township 4 North, Range 3 West, Boise Meridian. The site address is 23442 Freezeout Road in Caldwell, Idaho.

Currently, the proposed development consists of 31.4 acres of agricultural land with a residence located in the southeastern portion of the parcel. A general westerly slope is present across the site. The project site is bordered on the south by a private driveway, bordered by a small drainage swale to the west, and bordered on the north and east by existing rural residential/agricultural properties. The proposed development will consist of 20 single-family residential lots with individual wells and septic systems.

No stormwater drainage facilities are located in the vicinity of the site, and the project site does not receive off-site drainage. Stormwater drainage for the project site is achieved by percolation through surficial soils. Regional drainage is north and west towards the Boise River. A topographic map and general site map are located in **Appendix I**.

2.2 Regional Geology

The project site is located within the western Snake River Plain of southwestern Idaho and eastern Oregon. The plain is a northwest trending rift basin, about 45 miles wide and 200 miles long, that developed about 14 million years ago (Ma) and has since been occupied sporadically by large inland lakes. Geologic materials found within and along the plain's margins reflect volcanic and fluvial/lacustrine sedimentary processes that have led to an accumulation of approximately 1 to 2 km of interbedded volcanic and sedimentary deposits within the plain. Along the margins of the plain, streams that drained the highlands to the north and south provided coarse to fine-grained sediments eroded from granitic and volcanic rocks, respectively. About 2 million years ago the last of the lakes was drained and since that time fluvial erosion and deposition has dominated the evolution of the landscape.

The project site is underlain by "Gravel of Deer Flat Terrace" as mapped by Othberg and Stanford (1993). Gravel of Deer Flat Terrace extends from Lake Lowell northeast to the area just south of Wilder. 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. Deposited on the fourth terrace above the floodplain in the western Boise Valley. North of Caldwell and Middleton Tertiary sediments are exposed between terrace remnants. Terrace sediments are typically greater than 30 feet thick and mantled with loess 1-4 meters (3-13 feet) thick, contain 45% pedogenic clay and very well developed duripans. A geologic map showing the approximate site boundary is included in **Appendix II**.

2.3 Localized Geology and Hydrogeology

Based on review of Well Driller's Reports (well logs) maintained at the IDWR website for portions of three immediately adjacent sections, Atlas assessed the localized geology and hydrogeology for the site and surrounding areas. Further description of the well log research can be found in the **Well Driller's Report Review** section of this report. In general, well logs in the area show that near surface soils consist primarily of topsoil and hardpan/cemented soils that are underlain by sands and gravels with intermittent clay layers.

The well logs also showed static groundwater levels generally ranging from around 6 to 75 feet below ground surface. First encountered water was not always listed on the well logs, but based on available data and assessing depths of the first water bearing zones that were documented, first encountered water appears to range from roughly 8 to 95 feet below ground surface. In some limited instances, first encountered water wasn't noted until depths of up to 134 feet. The water depths appear to vary with location and topography.

2.4 Soil Survey Review

Atlas reviewed the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Service website for soil survey information on Canyon County. Research indicated that the project site is characterized by Elijah-Chilcott silt loams and Elijah-Vickery silt loams. Specific soils characteristics, as defined by the USDA NRCS, have been listed below for each of these soils and soil survey data from the NRCS website has been included in **Appendix III** of this report:

- **Elijah-Chilcott silt loam** – Elijah-Chilcott soils occur on terraces. These soils are classified as well drained and the most limiting soil layer has a very low to moderately low capacity to transmit water. Typical soil profiles of the Elijah-Chilcott silt loams include silt loam and silty clay loam at the surface, followed by cemented material underlain by very gravelly sand. Slopes of Elijah-Chilcott soils are typically 1 to 3 percent.
- **Elijah-Vickery silt loam** – Elijah-Vickery soils occur on terraces. These soils are classified as well drained and the most limiting soil layer has a very low to moderately low capacity to transmit water. Typical soil profiles of the Elijah-Vickery silt loams include silt loam, loam, and silty clay loam at the surface, followed by cemented material underlain by very gravelly sand or coarse sand. Slopes of Elijah-Vickery soils are typically 3 to 7 percent.

2.5 Review of Nutrient Pathogen Studies in the Vicinity of the Project Site

Atlas has filed a request for information with IDEQ and the SWDH to view nutrient pathogen studies completed near the referenced site. Atlas was provided copies of 6 such studies (outlined below). Information gathered from review of these documents is referenced within the **Hydraulic Conductivity** section of this report.

- Addendum to Level I Nutrient - Pathogen Study, Proposed Sagebrush Estates Subdivision, Canyon County, Idaho, prepared by Terracon and dated September 18, 2007
- Addendum for Level 1 Nutrient-Pathogen Evaluation, Purple Sage Estates Subdivision No. 2, SW of Purple Sage Road and El Paso Road, Portion of Canyon County parcel No. R38128010 Canyon County, Idaho, prepared by Allwest Testing and Engineering and dated December 22, 2017
- Level 1 Nutrient-Pathogen Evaluation, Sunset Ridge Subdivision, SEC of Willis Road and El Paso Road, Canyon County, Idaho, prepared by Allwest Testing and Engineering and dated July 13, 2017
- Level 1 Nutrient-Pathogen Evaluation, Willis Road Subdivision, NEC of Willis Road and El Paso Road, Canyon County, Idaho, prepared by Allwest Testing and Engineering and dated March 1, 2017
- Revised Level 1 Nutrient-Pathogen Evaluation, Purple Sage Subdivision No. 3, South of Purple Sage and West of El Paso Road, Canyon County, Idaho, prepared by Allwest Testing and Engineering and dated September 11, 2019
- Level One Nutrient Pathogen Study, Saddleback Ridge Estates, Middleton, Idaho, prepared by Applied Intellect and dated April 30, 2019

3. SITE PARAMETERS FOR LEVEL 1 NITRATE MASS-BALANCE ANALYSIS

3.1 Water Budge Parameters

3.1.1 Well Driller's Report Review

Prior to 1967 in the State of Idaho, driller's logs for wells were submitted to Idaho Department of Water Resources (IDWR) on a voluntary basis. After 1967, it became and Idaho requirement to submit logs for all wells drilled. However, the state was unable to track or enforce completion of this requirement until 1987 when well permits were also required by the state. Therefore, available records maintained by the IDWR may be incomplete for the area researched.

Atlas conducted a review of Well Driller's Reports (well logs) maintained at the IDWR website for portions of three immediately adjacent sections. A total of 31 Well Driller's Reports on file for this area were copied and are included in **Appendix IV** of this report, along with a map showing approximate well locations. Although numerous well logs are available for the site vicinity, only 17 wells provided complete pump test data. A spreadsheet showing tabulated data from these 17 well logs can be found in **Appendix IV**.

Of these wells, several did not have aquifer bottom recorded and were excluded from analysis. Well number 4 was drilled greater than 100 feet past first encountered water and was likewise eliminated from analysis. Atlas was left with 12 well logs that were used for hydraulic conductivity analysis.

From the 17 wells with complete pump test data, discharge rates ranging from 12 to 60 gallons per minute were reported. Drawdown data generally ranged from 5 to 80 feet, though some well logs reported drawdown as high as 150 feet. Soils commonly encountered included sand and gravel sediments with intermittent clay layers.

3.1.2 Hydraulic Conductivity

Atlas calculated the transmissivity of each of the wells using the following relationship provided by Razack and Huntley (C.W. Fetter, 2001):

$$T = 33.6\left(\frac{Q}{h_0 - h}\right)^{0.67}$$

Where: T = Transmissivity (feet^2/day)
Q = Pumping Rate (feet^3/day)
h_0-h = Drawdown (feet)

The hydraulic conductivity values for each of the wells were then obtained by the following relationship (C.W.Fetter, 2001):

$$K = \frac{T}{b}$$

Where: K = Hydraulic Conductivity (feet/day)
T = Transmissivity (feet^2/day)
b = Aquifer Thickness (feet)

Using the previously stated equations with the stated input data, Atlas obtained calculated hydraulic conductivity values that ranged from 7 to 181 feet/day. Atlas calculated the average hydraulic conductivity value as 65 feet/day. Additionally, based on six previous NP Studies that have been conducted within the vicinity of the project site, hydraulic conductivity values of 70 feet per day were used and approved during the IDEQ/SWDH review process. Based on this evidence, hydraulic conductivity values reflective of fine sand to coarse sand with some gravel are considered to be most reflective of the shallow groundwater flow regime across the site, and typical hydraulic conductivity rates for these sediments vary approximately from 3 to 300 feet/day (C.W. Fetter, 2001). For the mass-balance spreadsheets, Atlas used a hydraulic conductivity of 65 feet/day, which is the calculated average of the well logs and more conservative than the values used in previous NP studies.

3.1.3 Groundwater Gradient and Direction

For groundwater gradient information within the vicinity of the site, a review of the available literature developed for the region was conducted. Specifically, Atlas reviewed the map provided to Atlas by the IDEQ during the public records request. This map showed the groundwater contour elevations in the vicinity of the site. Based on these groundwater contour elevations, Atlas found that a 50 foot drop in elevation occurs in the area over a distance of roughly 10,475 linear feet. This drop in groundwater elevation yields a hydraulic gradient of 0.00477 feet/feet. A southwestern groundwater flow direction (roughly 220° Azimuth) was also determined based on this map. For this report, Atlas used a hydraulic gradient of 0.00477 feet/feet for the mass-balance spreadsheet. Atlas has presented a map of the IDEQ groundwater flow contours in **Appendix V** of this report.

3.1.4 Mixing Zone Thickness

In the mass-balance spreadsheets, the mixing zone thickness refers to the induction zone anticipated for the septic tank effluent or contaminate source. IDEQ guidance states that the value of the mixing zone thickness varies with distance from the proposed location of the septic system to the property boundary as follows:

- If distance is less than 500 feet to the property boundary, use a mixing zone thickness of 15 feet.
- If distance is between 500 and 1,000 feet to the property boundary, use a mixing zone thickness of 30 feet.
- If distance is greater than 1,000 feet to the property boundary, use a mixing zone thickness of 60 feet.

Since the distance between the closest individual septic system location to the property boundary will be less than 500 feet, Atlas used a value of 15 feet as the mixing zone thickness for the mass-balance spreadsheets.

3.1.5 Aquifer Widths Perpendicular to Flow

Atlas used a southwest groundwater flow direction (approximately 220° Azimuth) and the property site plan to determine the aquifer widths for the mass-balance spreadsheets. For the individual lots on the project site, Atlas determined that 179.20 to 362.88 feet are the aquifer widths that are perpendicular to the southwesterly flow direction. A site map with the perpendicular widths identified is located in **Appendix VI** of the report.

3.1.6 Area of Parcel, Percent of Lot Impervious, and Number of Proposed Lots

The Client described the project as 31.4 acres with 20 proposed lots that are approximately 1.00 to 1.89 acres in size. For the mass-balance spreadsheets, Atlas analyzed each of the 20 lots on 1.00 to 1.89 acres and estimated that less than five percent of the parcel would be impervious to percolation as a result of the proposed development.

3.1.7 Gallons of Septic Tank Effluent

The Client described the project as having individual septic tank systems for each proposed single-family residential lot. For the mass-balance spreadsheets, Atlas used the default value of 300 gallons per day for the septic system as the amount of effluent discharge.

3.1.8 Regional Climatology and Natural Recharge Rate

For the region, the annual average temperature ranges from 20°F to 91°F with extremes from roughly -4°F to 102°F. The region has average wind speeds of up to 11 miles per hour in spring with a prevailing direction from the southeast. The pH of surface water, groundwater, and soil in the region typically range from 7 to 9. Average precipitation for the region is on the order of 10 to 12 inches per year.

The natural recharge rate (NRR) has been estimated using the following relationship provided by IDEQ:

$$NRR = 0.0046(\text{Annual Precipitation in inches})^2$$

Using the above relationship, an annual precipitation rate of 11.45 inches yields an estimated natural recharge rate of 0.6 inches per year, and this value was used in the mass-balance spreadsheets. A copy of the research data showing the annual precipitation for the project area is included in **Appendix VII**.

3.2 Nitrogen Budget Parameters

3.2.1 Vicinity Water Quality and Background Groundwater Nitrate Concentration

Atlas reviewed well monitoring data from the IDEQ and IDWR websites for 12 wells in the project site vicinity. Of these 12 wells, only 5 of them had been monitored within the past 10 years. The most recent monitoring event for these 5 wells occurred in 2013 and nitrate concentration ranged from 2.3 to 6.3 mg/L. Atlas averaged the highest nitrate value obtained from each of the 5 assessed wells, which resulted in a nitrate concentration of 4.1 mg/L. Therefore, Atlas used a value of 4.1 mg/L as the background nitrate level for the mass-balance spreadsheets in this report. A spreadsheet showing tabulated data from these 12 well logs, as well as a map showing the well locations, can be found in **Appendix VIII**.

3.2.2 Septic Tank Effluent Concentrations

In the mass-balance spreadsheets, the value for septic tank effluent concentrations refers to the amount of nitrate (nitrate concentration) that is anticipated to be released into the groundwater system from effluent or a contaminate source. Currently, there are three types of septic tank systems: a regular septic tank system and two nitrate reducing systems:

- A regular septic tank releases a nitrate concentration of 45 mg/L in the effluent discharge.
- A 40 percent nitrate reducing system releases a nitrate concentration of 27 mg/L in the effluent discharge.
- A 65 percent nitrate reducing system releases a nitrate concentration of 16 mg/L in the effluent discharge.

3.2.3 Denitrification Rate and Nitrate in Natural Recharge Rate

In the mass-balance spreadsheets, the values for the denitrification rate and nitrate in natural recharge are preset default values set by IDEQ. Atlas used the default value of 0 for the Denitrification Rate and 0.3 mg/L for the Nitrate in Natural Recharge for the mass-balance spreadsheets.

4. LEVEL 1 NITRATE MASS-BALANCE ANALYSIS

Nitrate is the most mobile constituent of concern in domestic wastewater and has an impact on public health when the maximum contaminant level (MCL) is exceeded (nitrate-N >10.0 mg/L). For this reason, nitrate is usually the limiting factor in determining appropriate lot sizes and on-site wastewater treatment system design and placement. According to the Nutrient-Pathogen Evaluation Program for On-Site Wastewater Treatment Systems May 2002, IDEQ considers an increase of 1.0 mg/L nitrate, or less, predicted to occur at the down-gradient boundary of each individual lot as demonstrating a negligible impact. To evaluate the impact of nitrate on the groundwater system in the vicinity of the proposed project, a mass-balance approach, recommended by SWDH and IDEQ, has been performed. Note that calculations for this approach do not take into consideration actual alignment of individual wastewater treatment systems.

The mass-balance spreadsheets for down-gradient nitrate concentration of the individual lots with the smallest aquifer width perpendicular to groundwater flow for each size of lot are present in **Appendix IX**. A summary of values used in the analysis are presented in **Table 1** and results of the analyses are presented in **Table 2**.

Table 1 – Parameters Used in the Level 1 Nitrate Mass-Balance Analysis

Water Budget	Value Used
Hydraulic Conductivity (ft/day)	65
Hydraulic Gradient	0.00477
Mixing Zone Thickness (ft)	15
Percent of Parcel that is Impervious (%)	5
Septic Tank Effluent (gpd/home)	300*
Natural Recharge Rate (in/yr)	0.6
Nitrogen Budget	**Value Used**
Upgradient Groundwater Concentration (mg/L)	4.1
Denitrification Rate (decimal fraction)	0*
Nitrate in Natural Recharge (mg/L)	0.3*
Point of Compliance Nitrate Concentration Goal (mg/L)**	5.1

***Numbers represent the default values recommended by IDEQ and SWDH.**
****Upgradient groundwater concentration (mg/L) plus 1 mg/L equates to point of compliance nitrate concentration goal.**

Results of the mass-balance analysis for the individual lots with the smallest aquifer widths perpendicular to groundwater flow for each size of lot are outlined below. Mass-balance spreadsheets for 40% nitrate reducing septic systems were only prepared for the lots that were incapable of supporting a standard septic system.

Table 2 – Individual Lot Mass-Balance Analysis for Various Septic Tank Systems

Lot Area (acres)	Smallest Aquifer Width Perpendicular to Groundwater Flow Direction (feet)	Downgradient Nitrate Concentration (mg/L)	
		Standard Septic Systems	40% Nitrate Reducing Systems
1.00	228.41	5.6*	4.9
1.01	226.05	5.6*	4.9
1.04	179.20	5.9*	5.1
1.14	290.89	5.3*	4.7
1.20	326.11	5.1	N/A
1.24	262.50	5.4*	4.8
1.30	302.70	5.2*	4.7
1.34	300.99	5.2*	4.7

***Value exceeds the point of compliance nitrate concentration goal of 5.1 mg/L.**

Table 2 (cont'd) – Individual Lot Mass-Balance Analysis for Various Septic Tank Systems

Lot Area (acres)	Smallest Aquifer Width Perpendicular to Groundwater Flow Direction (feet)	Downgradient Nitrate Concentration (mg/L)	
		Standard Septic Systems	40% Nitrate Reducing Systems
1.40	313.27	5.2*	4.7
1.42	302.05	5.2*	4.7
1.46	326.11	5.1	N/A
1.50	211.51	5.7*	5.0
1.69	345.17	5.1	N/A
1.87	344.61	5.1	N/A
1.89	236.19	5.5*	4.9

***Value exceeds the point of compliance nitrate concentration goal of 5.1 mg/L.**

5. CONCLUSIONS AND RECOMMENDATIONS

Mass-balance spreadsheets for down-gradient nitrate concentration have been prepared for the individual lots with the smallest aquifer widths perpendicular to groundwater flow for each lot size. All spreadsheets are presented in the **Appendices** of this report. The results indicated that all lots were below the Point of Compliance Nitrate Concentration of 5.1 mg/L when using the 40 percent nitrate reduction septic system; however, lots 4, 7, 8, and 10 were below using a standard septic system. Therefore, the proposed development does not exceed the down-gradient Point of Compliance Nitrate Concentration of 5.1 mg/L when using a 40 percent nitrate reduction septic system or standard septic system for above mentioned lots. As a result, the development meets the criteria of a negligible impact as defined by the IDEQ.

Note that IDEQ and SWDH must review and approve the parameter values developed for this Level 1 NP Study and the mass-balance spreadsheets prior to subdivision approval. Also, note the following:

- If changes in the number of lots are desired, a revised lot layout must be provided to Atlas, and this study must be resubmitted or amended.
- This report must be submitted to the SWDH with a preliminary plat as well as the Subdivision Engineering Report (SER). Also, SWDH requires a preliminary development meeting to begin the SER process.
- To verify soil profile components at actual drainfield locations, soil exploration by test pits or borings, with approval by SWDH personnel, will be required following development of the preliminary plat.

Again, these results, as of the completion of this report, have not been reviewed by IDEQ or SWDH. Therefore, a revision in assumed hydraulic conductivity value, or other parameters used in the mass-balance spreadsheet, may be required subsequent to the SWDH and IDEQ review, and consequently, the allowable number of lots may change significantly. If so, the SWDH and IDEQ will request that this report be resubmitted or amended with revised values.

6. REFERENCES

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7. LIST OF APPENDICES

Appendix I	Topographic Map and General Site Map
Appendix II	Geologic Map with Approximate Project Site Location
Appendix III	Soil Survey Information
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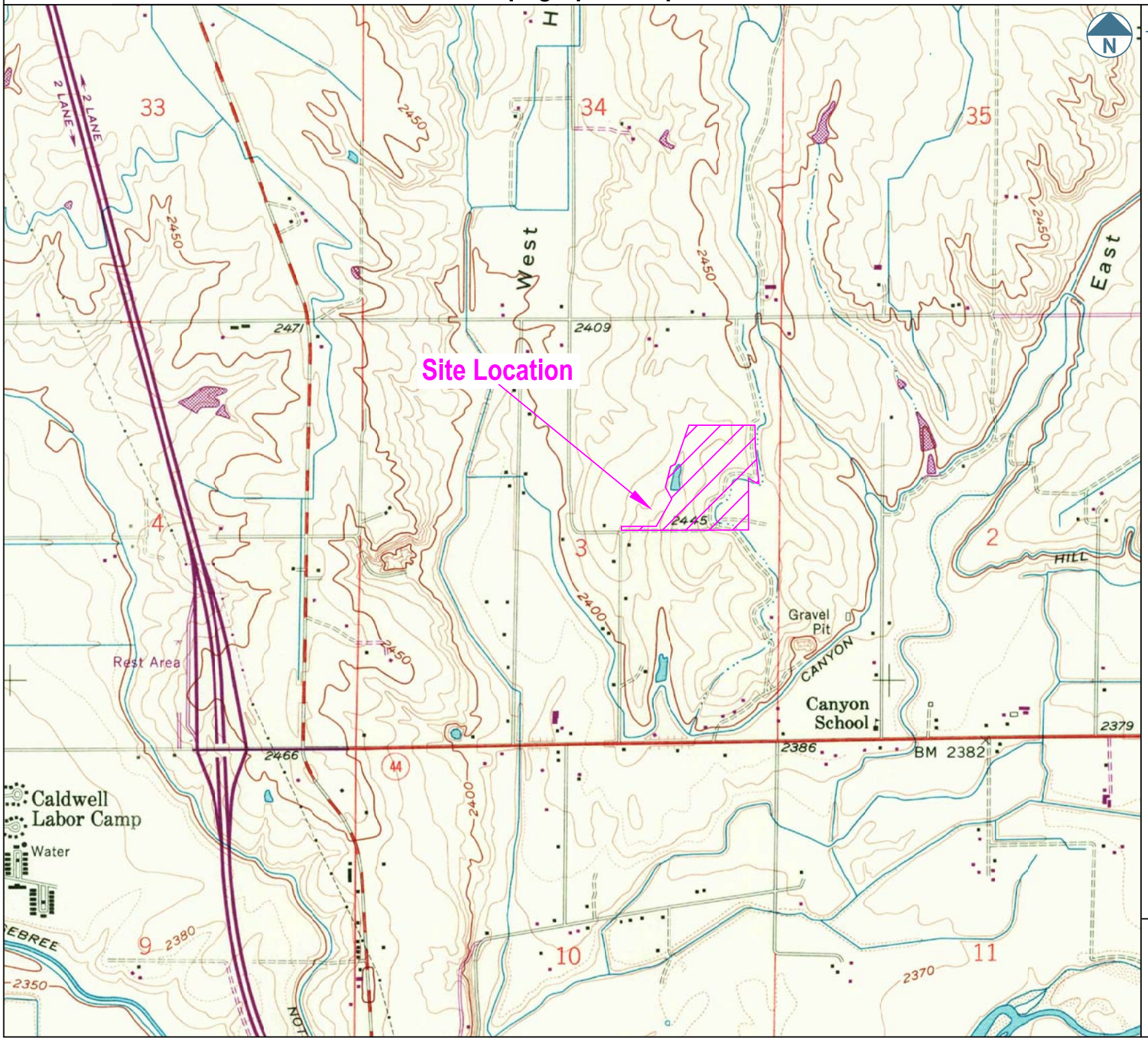
Appendix VI	Site Plan with Aquifer Width Map for Individual Lots
Appendix VII	Historic Precipitation/Climate Data for Project Location
Appendix VIII	Site Location with Vicinity Monitoring Wells Map and Monitored Well Data
Appendix IX	Nitrate Mass-Balance Spreadsheets for Individual Lots

Appendix I TOPOGRAPHIC MAP AND GENERAL SITE MAP

Topographic Map



MAP NOTES:

- Caldwell, Idaho
  N4337.5-W11637.5/7.5
  1958, Photorevised 1971
  10 Foot Contour Intervals
  T4N, R3W, & Section 03

LEGEND

Approximate Site Location

SCALE
0 0.25 0.5
(Mile)

Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS
2791 S. Victory View Way
Boise, ID 83709
Phone: (208) 376-4748
Fax: (208) 322-6515
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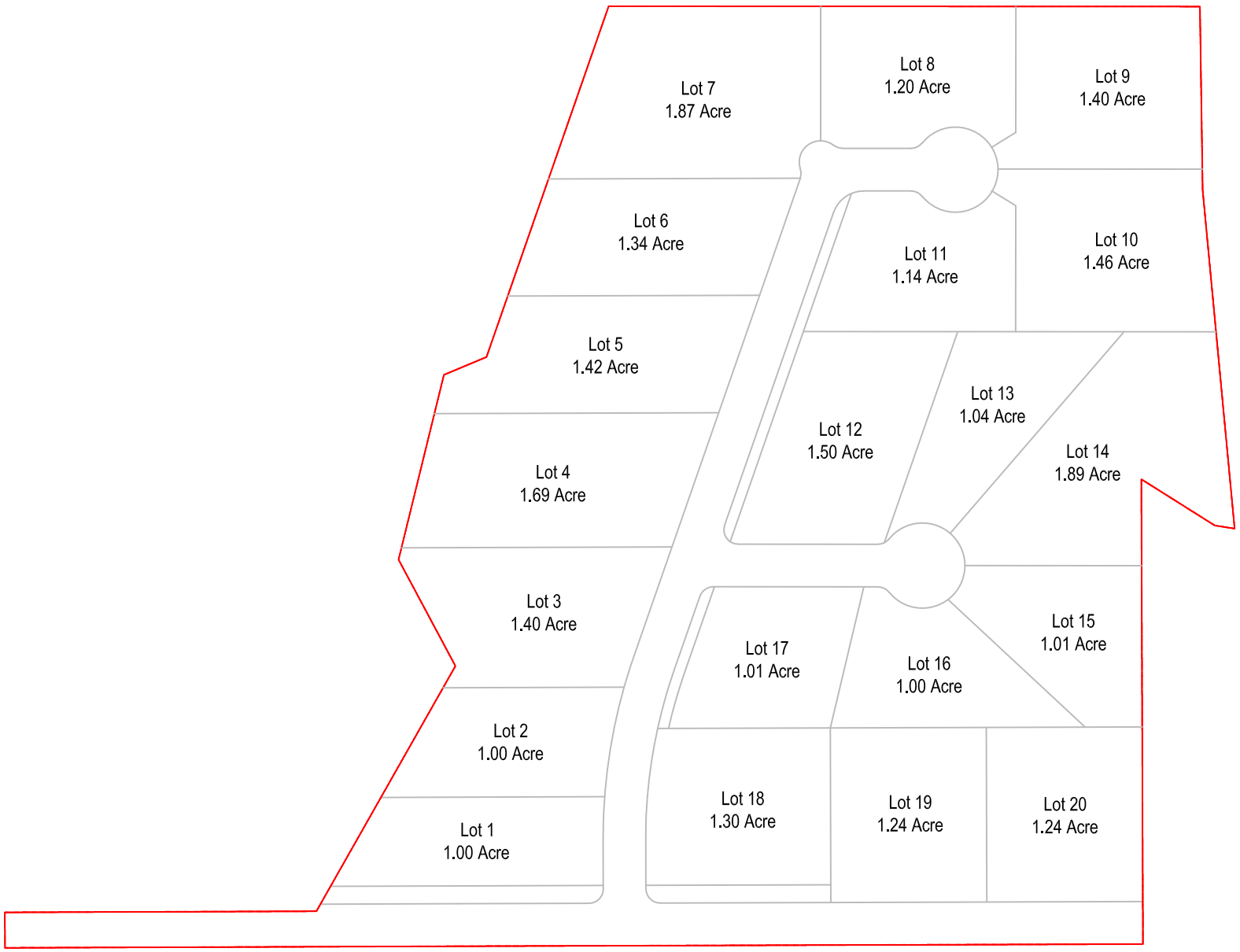
Site Map



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

SCALE

0 150 300

(Feet)

Freezeout Ridge Estates Subdivision

23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS

2791 S. Victory View Way
Boise, ID 83709

Phone: (208) 376-4748
Fax: (208) 322-6515
Web: oneatlas.com

Appendix II GEOLOGIC MAP WITH APPROXIMATE PROJECT SITE LOCATION

IDAHO GEOLOGICAL SURVEY
MOSCOW • BOISE • POCATELLO

GEOLOGIC MAP SERIES, SCALE 1:100,000
OTHBERG AND STANFORD

GEOLOGIC MAP OF THE BOISE VALLEY AND ADJOINING AREA, WESTERN SNAKE RIVER PLAIN, IDAHO

BY KURT L. OTHBERG AND LOUDON R. STANFORD

1992

MAP UNITS

SEDIMENTARY

QUATERNARY SEDIMENTS

Alluvium and Colluvium

Deposits of floodplains, alluvial fans, side-stream terraces, and landslides.

Qa ALLUVIUM OF BOISE AND SNAKE RIVER — Sandy cobble gravel upstream grading to sandy pebble gravel downstream. Mostly channel alluvium of the Boise and Snake rivers. Thickness 6-14 meters (20-46 feet). No pedogenic clay.

Ql LANDSLIDE DEPOSITS — Highly variable rock and soil masses varying from transported coherent blocks to unsorted, unstratified colluvium. Includes scar area at the head of the landslide. Derived from slumps, slides, and debris flows. Most slides represent slope failures within basaltic tuff (Tbt) and surface soils of granitic rocks.

Qfg ALLUVIAL FAN GRAVEL — Sandy pebble and cobble gravel where formed from reworked Tennile Gravel (QTtg) and sand and granule gravel where formed from weathered granite (g). Primarily formed by Pleistocene debris flows and local high-energy streams during times of greater runoff (Pierce and Scott, 1982). Loess 1-2 meters thick discontinuously covers surface of gravel. Patterned ground present. Amount of pedogenic clay and presence of duripans varies.

Qas SANDY ALLUVIUM OF SIDE-STREAM VALLEYS AND GULCHES — Medium to coarse sand interbedded with silty fine sand and silt. Sediment mostly derived from weathered granite and reworked Tertiary sediments. Thickness variable. Minor pedogenic clay and calcium carbonate.

Qfs SAND OF INCISED ALLUVIAL FANS — Medium to coarse sand interbedded with silty fine sand and silt. Mostly reworked Tertiary sediments deposited in local alluvial fans. Thickness 1-15 meters (3-50 feet). Pedogenic clay 10-20%; duripans locally present.

Qds SAND OF DRY CREEK TERRACE — Medium to coarse sand interbedded with silty fine sand and silt. Remnant of ancestral Dry Creek valley. Pedogenic clay 10-20%; duripans locally present.

Qtfg GRAVEL OF ALLUVIAL-FAN REMNANTS — Dark gray, poorly sorted, sandy pebble and cobble gravel. Gravel clasts subangular and subrounded. Thickness 3-6 meters (10-20 feet). Mapped only where channel deposits of ancestral Squaw Creek cap remnants of a large alluvial fan in southwest corner of map.

Bonneville Flood Deposits

Consists primarily of fine-grained sediments of the Bonneville Flood slack waters that inundated the Snake River Valley and the lower Boise Valley. Includes gravels deposited in high-energy flood channels. The surface of sediments deposited by the Bonneville Flood show minor accumulations of pedogenic clay and calcium carbonate. Slack-water sediments bury loess and soils of older surfaces.

Qbgc CLAY OF BONNEVILLE FLOOD SLACK WATER — Light tan silty clay 1-2 meters (3-7 feet) thick. Deposited by slack water of Bonneville Flood upstream from Parma. Buries gravel of Boise terrace.

Qs SANDY SILT OF BONNEVILLE FLOOD SLACK WATER OVERLYING TERTIARY SEDIMENTS — Thin-bedded tan silt, silty sand, and fine sand 3-6 meters (10-20 feet) thick. Deposited by Bonneville Flood slack water that flooded the valleys to 747 meters (2,450 feet) elevation (O'Connor, 1990). Buries erosion surface of fine-grained Tertiary sediments.

Qbfg GRAVEL OF THE BONNEVILLE FLOOD-SCOURED BOISE TERRACE AND BOISE FLOODPLAIN COMPLEX — Sandy pebble gravel remnants of Boise terrace mostly scoured by late stages of Bonneville Flood. Includes areas of floodplain gravel indistinguishable from scoured Boise terrace.

Qwgs SANDY SILT OF BONNEVILLE FLOOD SLACK WATER — Thin-bedded tan silt, silty sand, and fine sand 3-6 meters (10-20 feet) thick. Deposited by Bonneville Flood slack water that flooded valleys to 747 meters (2,450 feet) elevation (O'Connor, 1990). Buries gravel of Whitney terrace (Qwg).

Qwfg GRAVEL OF THE BONNEVILLE FLOOD-SCOURED WHITNEY TERRACE — Sandy pebble gravel remnants of Whitney terrace scoured by late stages of Bonneville Flood. Includes abandoned flood channels. Loess mostly removed. Local remnants of duripans similar to those on Qwg.

Qwig SANDY SILT OF BONNEVILLE FLOOD SLACK WATER — Thin-bedded tan silt, silty sand, and fine sand 3-6 meters (10-20 feet) thick. Deposited by Bonneville Flood slack water that flooded valleys to 747 meters (2,450 feet) elevation (O'Connor, 1990). Extent of slack-water sediment not everwhere concordant with interpreted extent of flood waters. Buries thin loess, duripan, and sandy pebble gravel of Wilder terrace, the third terrace above the floodplain in the western Boise Valley. Gravel thickness 3-8 meters (10-25 feet).

TERRACE GRAVELS

These gravels compose a sequence of terraces of the ancestral Boise River. The characteristic coarse channel gravels were primarily deposited on fine-grained Tertiary sediments cut during valley deepening. The light gray gravel is composed mostly of granitic and felsitic clasts derived from the upper Boise River basin in the central Idaho mountains. Qgg and younger gravels have about a 10% component of Pleistocene basalt clasts mostly derived from the Boise River canyon. Boise Valley units are also used for terrace gravels of the Snake River, but Snake River gravels have a darker color due to a component of gravel clasts derived from the Owyhee Mountains and sources to the southeast. All gravel deposits have imbricated well-rounded clasts, poor sorting, and crude stratification of beds of gravel and lenses of cross-bedded sand. These features suggest deposition in braided channels.

Qbg GRAVEL OF THE BOISE TERRACE — Sandy pebble and cobble gravel. First terrace above the floodplain. Thickness 3-14 meters (10-45 feet). Mostly mantled with thin loess.

Qg GRAVEL OF BOISE FRONT TERRACES, UNDIVIDED — Sandy pebble and cobble gravel with subangular boulders. Thickness 1-6 meters (3-20 feet) thick. Forms terraces along canyons and gulches and on flat divides near the margin of the foothills.

Qwg GRAVEL OF WHITNEY TERRACE — Sandy pebble and cobble gravel. Second terrace above floodplain. Thickness 5-24 meters (16-80 feet); thickest to the east. Mantled with 1-2 meters of loess.

Qsg GRAVEL OF SUNRISE TERRACE — Sandy pebble and cobble gravel. Third terrace above the floodplain. Thickness about 13 meters (44 feet). Mostly mantled with 1-2 meters of loess.

Qgg GRAVEL OF GOWEN TERRACE — Sandy pebble and cobble gravel. Fourth terrace above the floodplain. Buried by basalt (Qgb) east of Interstate 84. Terrace gravel overlies the gravel and sand of Bonneville Point (Tbg) to the east and fine-grained Tertiary sediments to the west. Mostly mantled by 1-2 meters (3-7 feet) of loess.

Qag GRAVEL OF AMITY TERRACE — Sandy pebble and cobble gravel grading at depth to coarse pebbly sand. Seventh terrace above the floodplain. Gravel and sand is about 10 meters (33 feet) thick. Northwest-trending, gently sloping escarpments suggest faulting of the gravel. Mantled with loess 0.5-2 meters (2-7 feet) thick.

Qdg GRAVEL OF DEER FLAT TERRACE — Sandy pebble gravel grading at depth to coarse pebbly sand. Deposited on the fourth terrace above the floodplain in the western Boise Valley. North of Caldwell and Middleton Tertiary sediments are exposed between terrace remnants. Boise River gravels also interfinger with and are replaced northeastward by Willow Creek alluvial fan sand and gravel. Gravel and sand deposit is about 10 meters (33 feet) thick. Mantled with loess 1-4 meters (3-13 feet) thick.

Qpdg GRAVEL OF DEER FLAT AND PRE-DEER FLAT TERRACES, UNDIVIDED — Sandy pebble and cobble gravel. Alluvial fan deposits of the ancestral Willow Creek interfinger, cap and mixing downstream with channel alluvium of the ancestral Boise River. Deposited on stream-cut surface of fourth and fifth terrace above the floodplain. Tertiary sediments are exposed between terrace remnants. Mostly mantled with loess 0.5-1 meter (2-3 feet) thick.

QTtg TENMILE GRAVEL — Sandy pebble and cobble gravel grading westward to sandy pebble gravel and pebbly sand at depth. Eighth terrace above the floodplain in the eastern Boise Valley. Remnants in the western Boise Valley form the fifth terrace above the floodplain. Side slopes of remnants expose underlying Glenns Ferry Formation. Thickness is about 15 meters (50 feet). Several normal faults exposed in gravel pits and road cuts. Surface of terrace shows prominent northwest-trending gulches and gently sloping fault-line escarpments. Mostly mantled with loess 1-2 meters (3-7 feet) thick. Patterned ground prominent. Named by Savage (1958); restricted by Wood and Anderson (1981); further restricted herein to exclude the gravel and sand of Bonneville Point formation (Tbg).

TERTIARY SEDIMENTS

Tps SAND OF THE PIERCE GULCH FORMATION — Pale yellow-gray arkosic sand overlain by pebble to cobble gravel. Sand includes cross-bedded and foreset-bedded sequences. Named by W.L. Burnham and S.H. Wood (written communication-unpublished manuscript, 1989).

Tgf GLENNS FERRY FORMATION — Greenish gray poorly consolidated siltstone and fine sandstone. Distinct thick beds; indistinct thin bedding. Includes tan sandstone in Dead Horse Canyon.

Tbg GRAVEL OF BONNEVILLE POINT — Interbedded pebble and cobble gravel, pebbly sand, sand and buried soils. Mostly oxidized to yellow-orange grading to red-brown near surface. Half of the clasts weathered. Mostly channel alluvium of ancestral Boise River deposited in former valley at mountain front. Thickness about 152 meters (500 feet). Soils have B horizons with 50% clay. The upper part of the gravel contains a highly oxidized, partly cemented zone. Several normal faults exposed in gravel pits and road cuts. Patterned ground present with mound relief of 1-2 meters.

Tal ALLUVIAL FAN DEPOSIT — Composed of poorly sorted, silty and sandy gravels with subangular cobbles and boulders in crudely stratified layers and lenses; mostly oxidized to a red-brown near the surface. Alluvial fan remnants deposited by debris flows and ephemeral streams from foothills. Up to 61 meters (200 feet) thick.

Ts SAND AND MUDSTONE OF STREAM AND LAKE SEDIMENTS — Medium- to coarse-grained arkosic sand, sandstone, and claystone. Includes interbeds of fine gravel, locally cemented, and sandy siltstone. Structures vary from large foreset beds of sand to thin-bedded claystone. Undifferentiated unit reflects a variety of stream and lake depositional environments along the northeastern and southwestern margin of the ancestral western Snake River Plain. Includes parts of the Payette, Poison Creek, and Succor Creek Formations, the tuffaceous sediments of Ferns (1989), and the Terreling Springs Formation of W.L. Burnham and S.H. Wood (written communication-unpublished manuscript).

IGNEOUS ROCKS

QUATERNARY BASALTS

Basalt lava flows primarily erupted from three sources during the Pleistocene: the northwest-southeast axis of the western Snake River Plain; Smith Prairie (Howard and others, 1982); and along the edge of the plain southeast of Boise. The basalts inundated ancestral valleys and plains. Their resistance to erosion helped preserve the terrace remnants they cap. The early Pleistocene basalt flows diverted the Boise River northward and the Snake River westward.

Qbs BASALT OF MORES CREEK — Single flow of dark gray olivine basalt about 6 meters (20 feet) thick. Fine-grained with abundant microphenocrysts of plagioclase and common microphenocrysts of olivine. Canyon-filling lava erupted from unknown vent in Mores Creek valley (Howard and others, 1982). Identified in ledges, normally submerged in reservoirs near Lucky Peak Dam.

Qgb BASALT OF GOWEN TERRACE — Four flows of medium gray olivine basalt. Hand samples and thin sections show sparse phenocrysts of olivine up 1-3 millimeters in diameter. Canyon-filling lava probably erupted in Smith Prairie (Howard and others, 1982). Buries gravel of Gowen terrace; basalt surface capped with about 3 meters (10 feet) of terrace gravel at distal end. Thickness of basalt ranges from about 3 meters (10 feet) near Boise to about 61 meters (200 feet) near Lucky Peak Dam. Mostly mantled with loess 1-2 meters (3-7 feet) thick. Pedogenic clay 35%; duripan (caliche) 0.5-1 meter thick.

Qlb BASALT OF LUCKY PEAK — Single flow of dark gray to black aphyric very fine-grained basalt. Canyon-filling lava probably erupted in Smith Prairie (Howard and others, 1982). Basalt buries gravel composing fifth terrace above the floodplain. Thickness of basalt about 37 meters (121 feet). Upper surface mostly buried by alluvial fan deposits (Qfg).

Qkb BASALT OF KUNA BUTTE — Dark gray olivine basalt flow forming irregular topography southeast of Nampa. Common phenocrysts of olivine 1-5 millimeters in diameter. Thickness unknown. Erupted from northwest end of Kuna Butte. Pedogenic clay 10-20%; duripans locally present.

Qfm BASALT OF FIVEMILE CREEK — One to three flows of medium gray olivine basalt. Thin sections show a cumulophyric texture of a few percent small interlocking olivine grains. Erupted from small vent near headwaters of Fivemile Creek. Basalt buries gravel composing sixth terrace above the floodplain. Thickness ranges from about 3 meters at the west edge of the flow to about 55 meters (180 feet) at the east. Mostly mantled with loess 1-2 meters thick. Pedogenic clay 35%; duripan (caliche) 0.5-1 meter thick. Patterned ground present.

Qbs BASALT FLOWS OF INDIAN CREEK, UNDIVIDED — Multiple flows of medium to dark gray olivine basalt. Undivided basalts generally aphyric but include flows with small olivine and plagioclase phenocrysts. Erupted from vents south and southeast of the map. Both normal and reversed magnetic polarities. Lavas flowed into and down ancestral Indian Creek and Boise River valleys. Northwest-trending, gently sloping escarpments suggest faulting of the basalt. Mantled with loess 0.5-4 meters thick. Pedogenic clay 35%; duripan (caliche) 1 meter thick.

Qibs BASALT FLOWS OF INDIAN CREEK BURIED BY LOESS AND STREAM SEDIMENTS — Tan massive silt, light brown stratified clay, silt, and sand, and basalt 6-15 meters (20-50 feet) deep. Location of basalt based on water well logs and subcrop mapping by Wood and Anderson (1981). Pedogenic clay 10-20%; duripans locally present.

Qubs BASALT FLOWS OF UPPER DEER FLAT, UNDIVIDED — Multiple flows of dark gray aphyric olivine basalt. Reversed magnetic polarities. Probably erupted from one or more vents south of the map. Mantled with loess 1-4 meters (3-13 feet) thick. Pedogenic clay in loess 10-20%; calcium carbonate in B horizon. Loess buries duripan (caliche) 1 meter thick formed in the top of the basalt.

Qb BASALTIC VENTS, UNDIVIDED — Olivine basalt and basaltic tephra forming dissected cones and volcanic necks near the Snake River.

TERTIARY BASALTS

Tbs BASALT OF PICKET PIN CANYON — Dark gray basalt flow with a cumulophyric texture of distinctive rosettes of white plagioclase. Position suggests inverted topography of a canyon-filling lava. Maximum thickness is 9 meters (30 feet).

Tbsk TUFF AND VOLCANICLASTIC SEDIMENTS — Brown basaltic tuff and volcaniclastic sediments. Minor beds of arkosic sand, pumice, and rhyolitic ash. Up to 107 meters (350 feet) thick.

Tbsv BASALT VOLCANIC ASSEMBLAGE — Contains several undivided lithologies: (1) thin subaerial lava flows, (2) thin subaqueous and other water-affected subaerial lava flows, and (3) tuff and volcaniclastic sediments. Lava up to 73 meters (240 feet) thick; overlying tuff and volcaniclastic sediments up to 61 meters (200 feet) thick.

Tbsl BASALT AND ANDESITE OF GRAVEYARD POINT AREA — Olivine basalt near Graveyard Point and pyroxene andesite breccia south of Graveyard Point (Ferns, 1989).

TERTIARY RHYOLITES

Tr RHYOLITE OF THE BOISE FRONT — Pinkish gray porphyritic rhyolite, dark gray vitrophyre, and gray perlite.

Tjp JUMP CREEK RHYOLITE — Mostly gray porphyritic rhyolite and quartz latite. Plagioclase phenocrysts up to 15 millimeters. Lava flow or remobilized welded tuff.

Tbh HORNBLENDE-BIOTITE RHYOLITE — Black glassy rhyolite; light gray where devitrified.

CRETACEOUS GRANITIC ROCKS

g GRANITIC ROCKS OF THE IDAHO BATHOLITH — Light gray biotite granite and granodiorite. Medium to coarse grained and equigranular to porphyritic. Includes pegmatite zones and dikes of rhyolite and basalt.

MAP SYMBOLS

- Contact: approximately located; dashed where inferred
- Fault: approximately located; dashed where inferred; dotted where concealed; ball and bar on downthrown side
- Strike and dip of bedding
- Approximate upper limit of Bonneville Flood slack water
- Sand dune fields
- Basalt sampling site

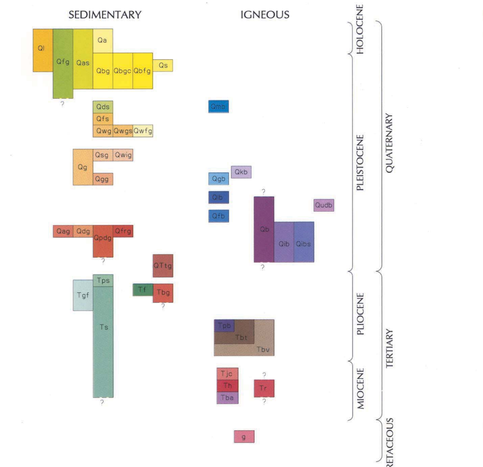
Magnetic Polarities, K/Ar Ages, and $^{40}Ar/^{39}Ar$ Ages of Basalts

Rock Unit	Field Number	Polarity	Latitude	Longitude	Age (Ma) [1] potassium-argon [2] argon-argon
Basalt of Mores Creek	MC-1	N	43°31.52'	116°3.76'	0.107 ± 0.012 [1]
Basalt of Gowen terrace	GT-4	N	43°31.33'	116°4.24'	0.572 ± 0.210 [1]
Basalt of Kuna Butte (South Side)	SS	N	43°31.51'	116°32.03'	0.387 ± 0.031 [2]
Basalt of Lucky Peak	LP-4	N	43°31.85'	116°3.66'	1.364 ± 0.210 [1]*
Caldwell lava flow	CBR	R	43°41.31'	116°41.06'	0.799 ± 0.095 [2]
Upper Deer Flat lava flow	UDF	R	43°30.29'	116°34.38'	0.922 ± 0.184 [2]
Basalt of Fivemile Creek	30-3	N	43°32.67'	116°9.38'	0.974 ± 0.098 [2]
Basalt of Fivemile Creek	FM1	N	43°30.27'	116°6.91'	
Basalt of Fivemile Creek	FM2	N	43°31.52'	116°4.45'	
Basalt of Hubbard surface	TCC-1	N	43°31.92'	116°20.20'	1.001 ± 0.098 [1]
Mason Creek lava flow	MA	NF	43°33.72'	116°28.23'	1.231 ± 0.123 [2]
Black Cat Road lava flow	BC	R	43°31.43'	116°27.15'	
East Nampa lava flow	NS5	R	43°36.23'	116°31.12'	1.165 ± 0.125 [2]
Rawson Canal lava flow	RC	R	43°34.09'	116°27.12'	

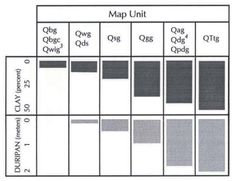
Potassium-argon and argon-argon analyses provided by the Berkeley Geochronology Center, Institute of Human Origins, University of California, Berkeley, California. Magnetic polarity results from field fluxgate magnetometer using five samples per site.

* Stratigraphic relationships indicate the K-Ar age of the basalt of Lucky Peak is too old (Othberg and Burnham, 1990).

CORRELATION OF MAP UNITS



Pedogenic[1] clay and duripans[2] on terraces.



Soil data adapted from Collett (1980), Priest and others (1972), and the University of Idaho Soil Characterization Laboratory.

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[1] Pedogenic refers to the physical and chemical soil-forming processes that act upon earth materials at the land surface.

[2] Duripans are white silica- and calcium carbonate-cemented hardpans commonly called caliche.

[3] The Bonneville Flood slack-water sediments that form the surface of Qwig (gravel of Wilder terrace) bury a duripan about 0.5 meter thick that formed in the top of the gravel.

[4] The surface of Qdg (gravel of Deer Flat terrace) is buried by loess from near Lake Lowell to near Wilder. The thick duripan lies at depths of 1-4 meters (3-13 feet).

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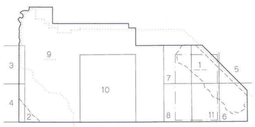
ADDITIONAL SOURCES OF GEOLOGIC MAPPING



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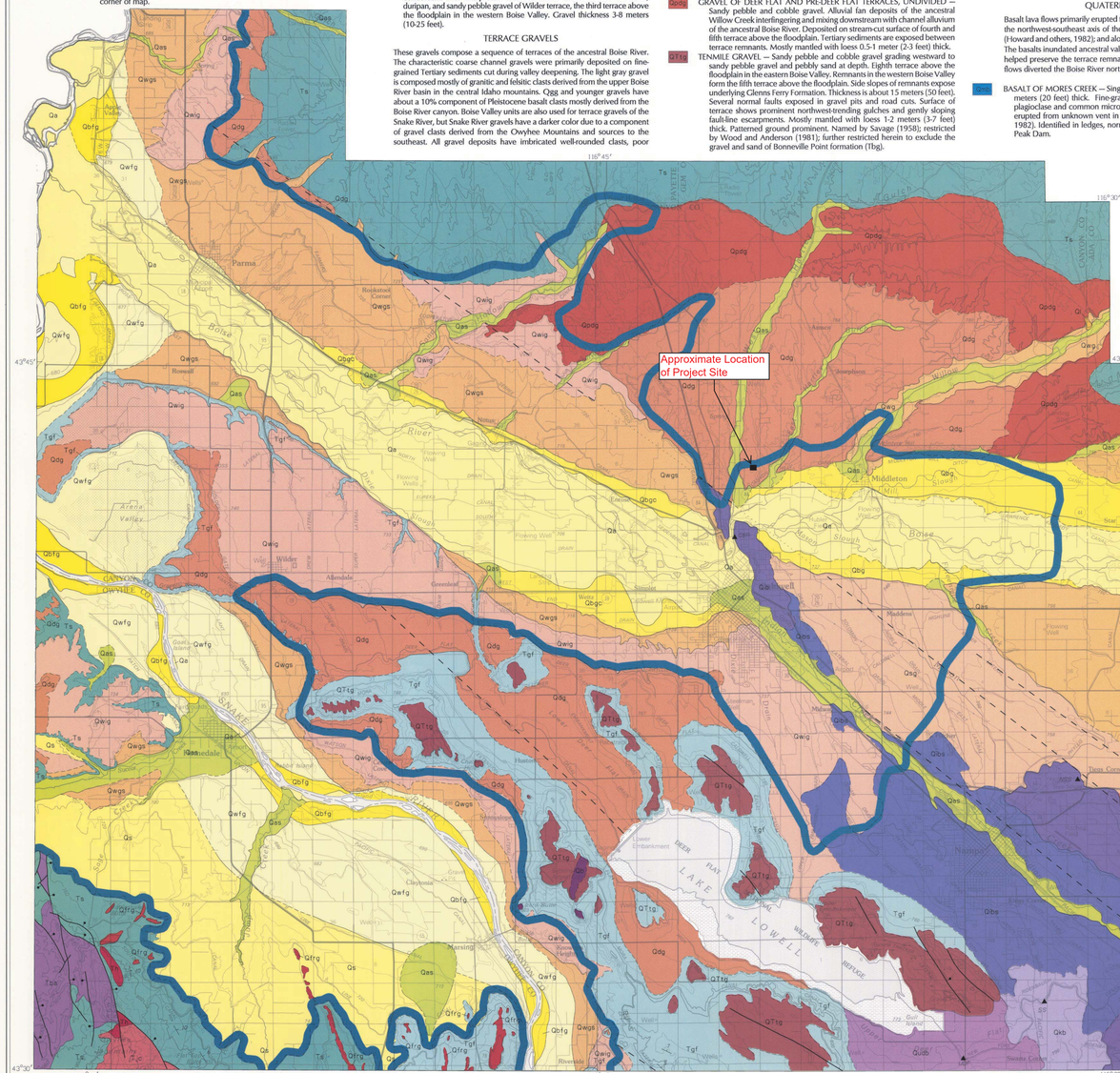
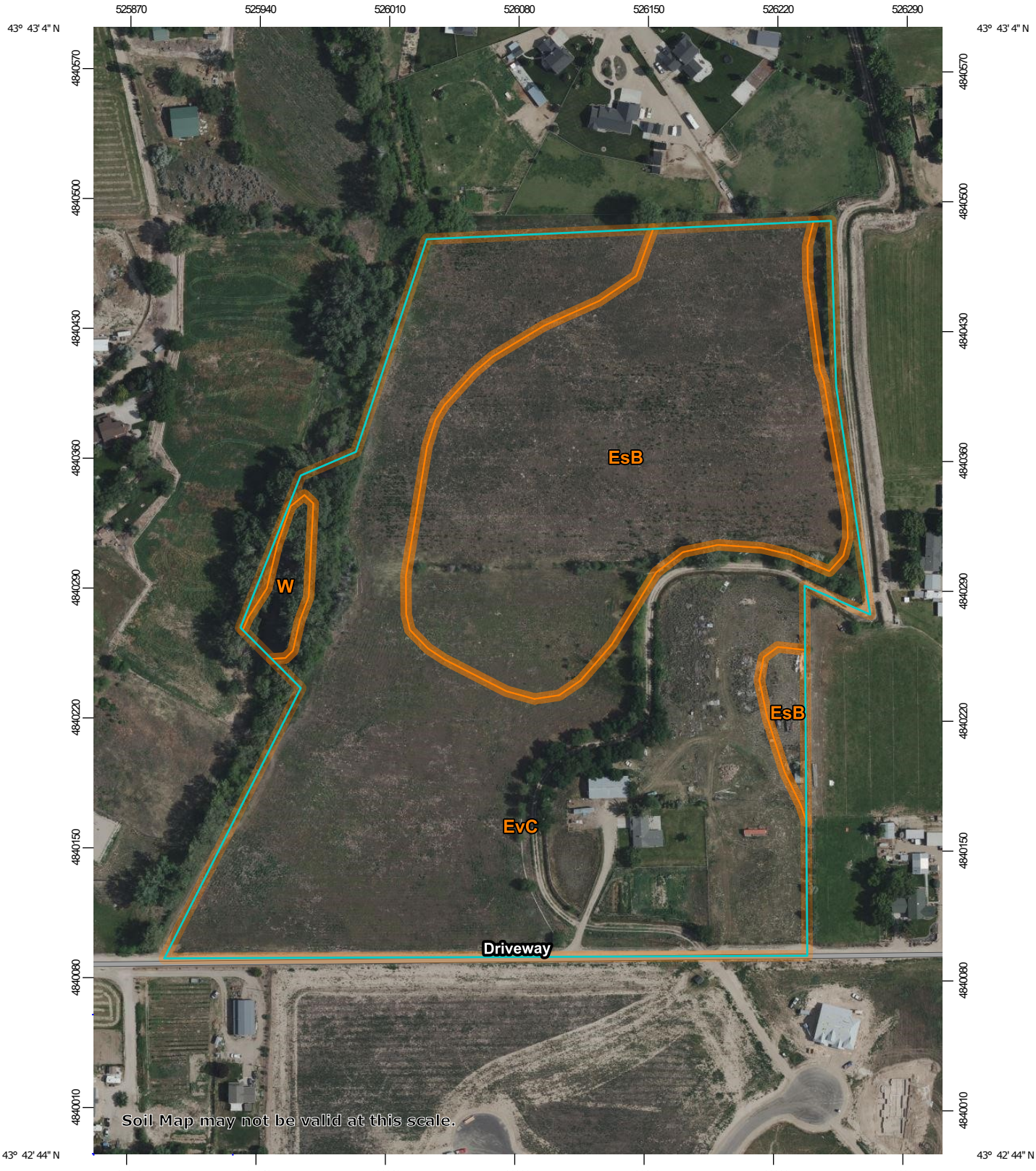


Cartography by Loudon R. Stanford on a computer-aided cartographic system at the Idaho Geological Survey
Typography by Ann G. Killen
Map reviewed by Roy M. Breckenridge, Willis L. Burnham, and Monte D. Wilson
Digital four-color separations by Optronics Specialty, Inc., Chatsworth, California
Printed by Joslyn & Morris, Inc., Boise

Published and sold by the Idaho Geological Survey
University of Idaho, Moscow, Idaho 83843

Appendix III SOIL SURVEY INFORMATION

Soil Map—Canyon Area, Idaho
(Freezeout Ridge Estates Subdivision)



Map Scale: 1:2,960 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

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
EsB	Elijah-Chilcott silt loams, 1 to 3 percent slopes	10.1	36.3%
EvC	Elijah-Vickery silt loams, 3 to 7 percent slopes	17.3	62.1%
W	Water	0.4	1.6%
Totals for Area of Interest		**27.9**	**100.0%**

Canyon Area, Idaho

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
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)

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

Data Source Information

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

Canyon Area, Idaho

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)

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

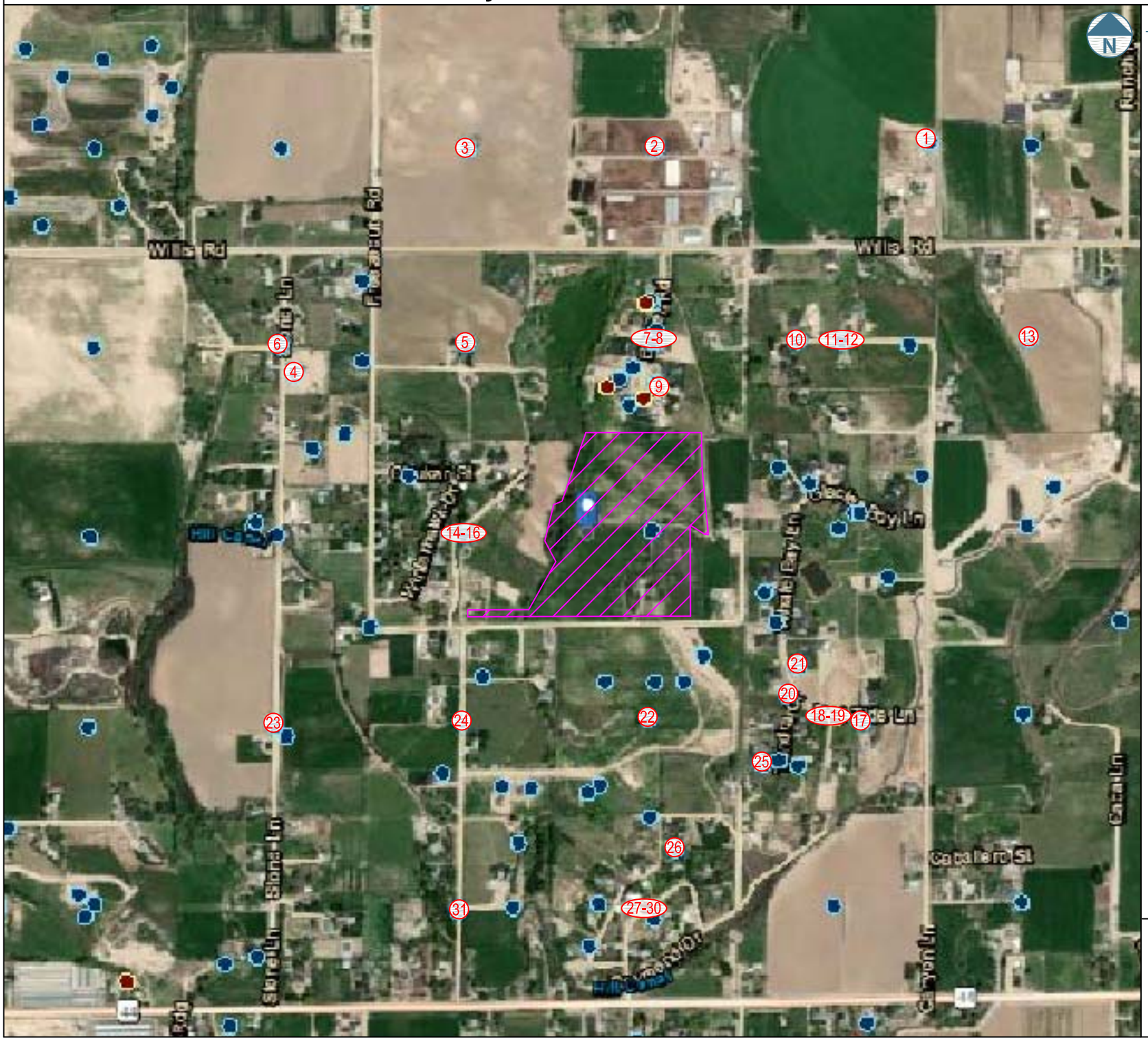
Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Hydric soil rating: No

Data Source Information

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

Appendix IV SITE LOCATION WITH VICINITY WELLS MAP AND IDWR DRILLER'S WELL LOGS

Vicinity IDWR Well Locations



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Well Location (#)

SCALE

0 0.125 0.25

(Mile)

Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS
2791 S. Victory View Way
Boise, ID 83709
Phone: (208) 376-4748
Fax: (208) 322-6515
Web: oneatlas.com

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0066280
Drilling Permit No. 965483-871542
Water right or injection well # 63-33545

2. OWNER:
Name Daniel McLeran / Josh Sylvester
Address 13758 Willis Rd
City Caldwell State ID Zip 83607

3.WELL LOCATION:
Twp. 5 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 35 S/E (10 acres) 1/4 S/W (40 acres) 1/4 S/W (160 acres) 1/4
Gov't Lot ____ County Canyon
Lat. 43 ° 43.3614 (Deg. and Decimal minutes)
Long. 116 °40.0740 (Deg. and Decimal minutes)
Address of Well Site 13758 Willis
(Give at least name of road + Distance to ...) City Caldwell
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 ft³)	Placement method/procedure
5&3/4bentonite	0	47	1,750LBS	overbore drypour

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6	+1.5	137	.250	steel	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 137

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method ____
Manufactured screen ☒ Y ☐ N Type 18 slot Johnson
Method of installation wash into sand

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
140	150	18		5	stainless	.250

Length of Headpipe 7' Length of Tailpipe valve 6"
Packer ☒ Y ☐ N Type 3 lip rubber K

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) 75 Static water level (ft) 75
Water temp. (°F) cold Bottom hole temp. (°F) ____
Describe access port removable well cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
150	45 gpm	1/2 HR

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	Water N
12	0	4	fill dirt		X
12	4	12	clay and cleachy		X
12	12	30	sand		X
10	30	47	sandy clay		X
6	47	57	sandy clay		X
6	57	75	sand with small gravels		X
6	75	112	gravel	X	
6	112	141	sand with clay layers	X	
6	141	150	sand	X	

RECEIVED
APR 21 2014
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 150
Date Started: Apr 8, 2014 Date Completed: Apr 10, 2014

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 Nu Acre Drilling LLC Co. No. 701
*Principal Driller ____ Date Apr 17, 2014
*Driller ____ Date ____
*Operator II ____ Date ____
Operator I ____ Date ____

* **Signature of Principal Driller and rig operator are required.**

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

450

1. WELL OWNER

Name Wm. A. Jackson

Address 1223 N Michigan

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 95 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	8 inches	+1.5 feet	88.5 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

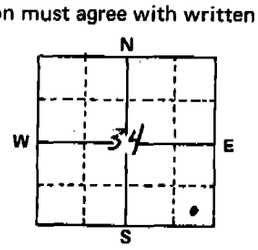
Placed from _____ feet to _____ feet

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

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



County Canyon

SE ¼ SE ¼ Sec. 34, T. 5 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 51 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature _____ ° F. Quality _____

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
20	10	1

041560

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
10	0	6	Top soil & Hard pan		X
10	6	18	Dry hard bound		X
8	18	58	Sand & Gravel		X
8	58	68	Sandy clay		X
8	68	70	Sand "clay pinch"		X
8	70	95	Sandy clay		X
8	95	120	Sand & clay Stratas	X	

10.

Work started 11-27-72 finished 12-4-72

11. DRILLER'S CERTIFICATION

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

Bill Doty Well Drilling & Development 42
Driller's or Firm's Name Number

Rt. 7 Caldwell Idaho
Address

Bill Doty 12-19-72
Signed By Date

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

Form 238-7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

451

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name James Radford

Address R5 Caldwell Ida

Owner's Permit No. _____

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
0250 inches	6 5/8 inches	+ 1 feet	79 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

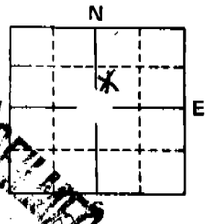
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 20 Material used in seal: ☐ Cement grout ☒ Puddling clay ☐ Well cuttings
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County Canyon

SW ¼ NE ¼ Sec. 34, T 5N N/S, R 3W E/W.

7. WATER LEVEL

Static water level 5 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature ____ °F. Quality good

8. WELL TEST DATA

☒ Pump ☐ Bailer [redacted] ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
ND	65	24

9. LITHOLOGIC LOG

106447

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	16	Top Soil & Hardpan		X
6	16	39	Sand & Clay		X
6	39	53	Fine Sand & Gravel		X
6	53	67	Good Clay		
6"	67	79	Coarse Sand & Gravel	X	
Completed Well Description					
in Coarse Gravel					

RECEIVED
AUG 5 1980
Department of Water Resources
Western Regional Office

RECEIVED
AUG 6 1980
Department of Water Resources

10.

Work started Jan 25/80 finished Feb 1/80

11. DRILLERS CERTIFICATION

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

Firm Name David Kraus Drilling Firm No. 208
Address 323 Main Caldwell Ida Date Jan 5/80
Signed by (Firm Official) David Kraus
and
(Operator) David

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

603

452

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0064373
Drilling Permit No. 96257Ho-8681635
Water right or injection well #

2. OWNER:
Name Steven Levine
Address P.O. Box 400
City Middleton State ID Zip 83644

3.WELL LOCATION:
Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 3 ____ 10 acres 1/4 NE 40 acres 1/4 NW 160 acres 1/4
Gov't Lot ____ County Canyon
Lat. 43 ° 43.094 (Deg. and Decimal minutes)
Long. 116 ° 41.092 (Deg. and Decimal minutes)
Address of Well Site 23854 Stone Lane 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 ft³)	Placement method/procedure
3/4 Bent.	0'	44'	27 bags	Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	+2	116	.250	Steel	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 116'

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method ____
Manufactured screen ☒ Y ☐ N Type Johnson
Method of installation Wash Down

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
124'	119'	18		5	SS	N/A

Length of Headpipe 10' Length of Tailpipe ____
Packer ☒ Y ☐ N Type ____

10.FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
None				

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) 15' Static water level (ft) 10'
Water temp. (°F) 56 Bottom hole temp. (°F) ____
Describe access port Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Test method: Pump	Bailer	Air	Flowing artesian
75'	50 GPM	30 min.	☐	☐	☒	☐
			☐	☐	☐	☐

Water quality test or comments: Iron 1 PH 7.5 Hardness 4

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	Water N
10"	0'	3'	Topsoil		X
10"	3'	5'	Tan Clay		X
10"	5'	32'	Gravel	X	
10"	32'	35'	Brown Clay		X
10"	35'	40'	Tan Clay		X
10"	40'	44'	Tan Clay		X
6"	44'	57'	Sand	X	
6"	57'	64'	Tan Clay		X
6"	64'	73'	Sand	X	
6"	73'	77'	Tan Clay		X
6"	77'	80'	Sandy Clay	X	
6"	80'	90'	Sand	X	
6"	90'	112'	Sandy Clay	X	
6"	112'	116'	Tan Clay		X
6"	116'	124'	Sand	X	

RECEIVED
JUN 12 2013
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 124'
Date Started: Jun 3, 2013 Date Completed: Jun 5, 2013

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 Adamson Pump & Drilling Co. No. 457
*Principal Driller Dave Adamson Date Jun 10, 2013
*Driller John Sutton Date Jun 10, 2013
*Operator II ____ Date Jun 10, 2013
Operator I Sam Navarro Date ____

* **Signature of Principal Driller and rig operator are required.**

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

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

Received 8-23-71

453

1. WELL OWNER

Name RON BALE

Address ROUTE #7 CALDWELL, IDAHO

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

_____

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6" inches Total depth 105 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
~~6"~~ inches	~~inches~~	~~feet~~	~~feet~~
.250 inches	6" inches	+2½ feet	92 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

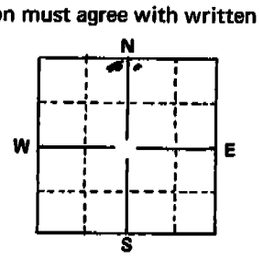
Placed from _____ feet to _____ feet

Surface seal? ☒ Yes ☐ No To what depth 19 feet

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



63

County CANYON

NW ¼ NE ¼ Sec. 3, T. 4 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 16 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature _____° F. Quality _____

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

~~☒ Pump~~ ☐ Bailer ☒ Other

Discharge G.P.M.	Draw Down	Hours Pumped
100		2 hrs.

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8"	0	5	TOP SOIL		X
8"	5	10	HARD PAN + SAND		X
8"	10	15	SAND		X
8"	15	19	GRAVEL		X
6"	19	20	GRAVEL		X
6"	20	40	SANDY CLAY		X
6"	40	50	SAND	X	
6"	50	55	SANDY CLAY LAYERS		X
6"	55	60	SAND	X	
6"	60	64	SANDY CLAY		X
6"	64	70	SAND	X	
6"	70	85	SANDY CLAY LAYERS		X
6"	85	97	CLAY	~~X~~	X
6"	97	105	SAND	X	
6"	105	?	SAND	X	

001163

10.

Work started JULY 29, 1971 finished AUG 6, 1971

11. DRILLER'S CERTIFICATION

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

BILL DOTY WELL DRILLING 42
Driller's or Firm's Name Number

ROUTE #7 CALDWELL, IDAHO
Address

Bill Doty Sr. 8-23-71
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

Form 238-7
4/92

C

RECEIVED
SEP 0 3 1993
Department of Water Resources

454

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name GOLDY EUNICE OR CLARENCE FRIEND

Address 23853 STONE LANE Caldwell 83605

Drilling Permit No. 63-93-W-0480

Water Right Permit No. _____

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: XX Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2 feet	62 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

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

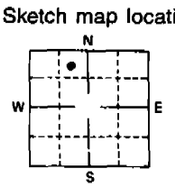
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes XX No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 20 Material used in seal: ☐ Cement grout
XX Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing XX Overbore to seal depth
Method of joining casing: ☐ Threaded XX Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

Address of Well Site 23853 STONE LANE
(give at least name of road)

NE ¼ NW ¼ Sec. 3, T. 4N N XX or S ☐, R. 3W E ☐ or W XX

7. WATER LEVEL

Static water level 6 feet below land surface.
Flowing? ☐ Yes XX No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer XX Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
25	40	1½HRS.

70651

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	14	TOP SOIL		X
6	14	26	GRAVEL		X
6	26	34	CLAY		X
6	34	45	SAND & CLAY	X	
6	45	53	SAND & CLAY LAYERS	X	
6	53	59	SAND	X	
6	59	62	CLAY		X
6	62		SAND	X	

RECEIVED
SEP 08 1993
Department of Water Resources
Western Regional Office

MICROFILMED
FEB 09 1994

10.

Work started 7-17-93 finished 8-7-93

11. DRILLER'S CERTIFICATION

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

Firm Name BILL DOTY DRILLING CO., INC. Firm No. 42

Address 106 CALLOWAY CALDWELL, ID 83605 Date 8-24-93

Signed by Drilling Supervisor _____

and

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

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

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

45513

1. WELL OWNER

Name Logan Kerr

Address Caldwell Idaho

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

_____

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 70 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	8 inches	+2 feet	68 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

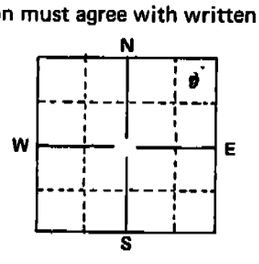
Placed from _____ feet to _____ feet

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

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



63

County Canyon

NE ¼ NE ¼ Sec. 3, T. 4 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 43 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature _____ ° F. Quality _____

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
20	10	1

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
10	0	6	Top soil		X
10	6	15	Hard pan & sand		X
10	15	18	Clay		X
8	18	38	Sand & clay layers		X
8	38	68	Sand & Gravel		X
8	68	70	Clay		X
8	70	80	Sand & clay layers	X	

001156

10.

Work started 7-24-72 finished 7-28-72

11. DRILLER'S CERTIFICATION

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

Bill Doty Well Drilling & Development 42
Driller's or Firm's Name Number

Rt 7 Caldwell
Address

Bill Doty 12-14-72
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

789156 456

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

1. WELL TAG NO. D -0025835
DRILLING PERMIT NO. ____-____-____-_____-_____
Other IDWR No. _____

2. OWNER:
Name JEFF BELL
Address 1357 E. PITKIN
City MERIDIAN State ID Zip 83642

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

N / W / E / S — X

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 3, NE 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County CAYNON
Lat: : : Long: : :
Address of Well Site 14133 Willis RD
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 Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0'	30'	15 BAG	OVER BORE

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2'	95'	1/4	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

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

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

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
30	25	90'	6 HRS

Water Temp. 58° Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encounter 90'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	2	TOP SOIL		✓
10	2	8	HARD PAN		✓
10	8	45	CLAY - BROWN		✓
6	45	68	SANDY CLAY BROWN		✓
6	68	90	GRAVEL - (PIT RUN)	X	
6	90	95	SANDY GRAVEL	X	

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DEC 27 2002
WATER RESOURCES
WESTERN REGION

Completed Depth 95' (Measurable)
Date: Started 11-19-02 Completed 11-25-02

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

Company Name Gary's Well Drilling Firm No. 317
Firm Official Gayle W. Wilson Date 12-20-02
and
Driller or Operator JR Wilson Date 12-20-02
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
6/07

457

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 2055974
Drilling Permit No. 909744-858315
Water right or injection well # 63-W-0273-001

2. OWNER: Chaney Stoffs Construction
Name Chaney Stoffs
Address P.O. Box 244
City Notus State ID Zip 83656

3. WELL LOCATION:
Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 3 ____ 10 acres ____ 1/4 NE 40 acres 1/4 NE 160 acres 1/4
Gov't Lot ____ County Canyon
Lat. 43 ° 43.077 (Deg. and Decimal minutes)
Long. 116 ° 40.507 (Deg. and Decimal minutes)
Address of Well Site 23824 Bryer Rd
(Give at least name of road + Distance to Road or Landmark) City Caldwell
Lot. 9 Blk. 1 Sub. Name Willis Est

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 ft³)	Placement method/procedure
3/8 Bentonite Chip	0	38	1200 lbs	borehole hydrated

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
[redacted]					☐	☐	☐	☐
6	+2	85	250	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 85

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method ____
Manufactured screen ☒ Y ☐ N Type Certalock
Method of installation Set with Sandline pullback

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
97	77.20	N/A	4½	PVC	N/A	

Length of Headpipe — Length of Tailpipe —
Packer ☐ Y ☒ N Type none

10. FILTER PACK: none

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) 43 Static water level (ft) 47
Water temp. (°F) N/A Bottom hole temp. (°F) N/A
Describe access port well cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
50	90 gpm	60 min

Test method: Pump ☐ Bailer ☐ Air ☒ Flowing artesian ☐

Water quality test or comments: none

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	Water N
10	0	2	Top Soil		
"	2	14	Brown Clay		
"	14	19	Sandy Clay		
"	19	38	Brown Clay		
6	38	43	Clay Brown		
"	43	97	gravel	X	

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JAN 04 2010
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 97'
Date Started: 12-17-09 Date Completed: 12-18-09

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 Adamson Pump & Drilling Co. No. 457
*Principal Driller Dave Adamson Date 12-23-09
*Driller John Seton Date 12-21-09
*Operator II John Sutton Date 12-21-09
Operator I ____ Date ____

*** Signature of Principal Driller and rig operator are required.**

Form 238-7
6/07

63

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0070229
Drilling Permit No. 97L230-87787
Water right or injection well #

2. OWNER:
Name Allen & Rachelle Boshaw
Address 5 S. Honey Dr.
City Nampa State ID Zip 83687

3.WELL LOCATION:
Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 2 10 acres 1/4 NW 40 acres 1/4 NW 160 acres 1/4
Gov't Lot County Canyon
Lat. 43 ° 43.132 (Deg. and Decimal minutes)
Long. 116 ° 40.289 (Deg. and Decimal minutes)
Address of Well Site End of Canyon Lane - 1-1/4 mile north of Hwy 44 City Caldwell
(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 ft³)	Placement method/procedure
3/4 Bent.	0'	42'	23 bags	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	+2	139'	.250	Steel	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

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

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method
Manufactured screen ☒ Y ☐ N Type Alloy
Method of installation Wash Down

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
144'	149'	.018	5'	5"	SS	

Length of Headpipe 11' Length of Tailpipe
Packer ☒ Y ☐ N Type K-packer

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) 52' Static water level (ft) 51'
Water temp. (°F) 56° Bottom hole temp. (°F)
Describe access port Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Test method: Pump	Bailer	Air	Flowing artesian
70'	40 GPM	45 minutes	☐	☐	☒	☐
			☐	☐	☐	☐

Water quality test or comments: Hardness 9 PH 7.6 Iron .8

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	Water N
10"	0'	5'	Hardpan		X
10"	5'	14'	Brown Clay		X
10"	14'	33'	Sand		X
10"	33'	42'	Brown Sandy Clay		X
6"	42'	52'	Brown Sandy Clay		X
6"	52'	93'	Sand and Gravel	X	
6"	93'	97'	Clay		X
6"	97'	106'	Sand	X	
6"	106'	119'	Sandy Clay		X
6"	119'	128'	Clay w/Sand Strips	X	
6"	128'	142'	Clay		X
6"	142'	149'	Sand	X	

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NOV 12 2015
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 149'
Date Started: Nov 2, 2015 Date Completed: Nov 4, 2015

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 Adamson Pump & Drilling Co. No. 457
*Principal Driller Dave Adamson Date Nov 5, 2015
*Driller Sam Navarro Date Nov 5, 2015
*Operator II Date
Operator I Josh Young Date Nov 5, 2015

* **Signature of Principal Driller and rig operator are required.**

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

459

RECEIVED

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

Department of Water Administration

1. WELL OWNER

Name JOHN BISHOP
Address RT. 7 CALDWELL IDAHO

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☒ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 71 feet
Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.280 inches	6 inches	+ 1 feet	70 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

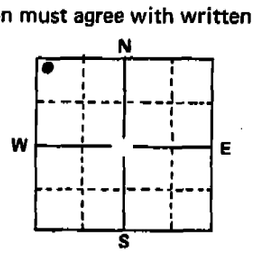
Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal? ☒ Yes ☐ No To what depth 18 feet
Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



6 2

County CANYON

NW ¼ NW ¼ Sec. 2, T. 4 N, R. 3 W

7. WATER LEVEL

Static water level 28 feet below land surface
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Temperature _____ ° F. Quality GOOD
Artesian closed-in pressure _____ p.s.i.
Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
12	7	1

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	20	SANDY BROWN CLAY		✓
	20	52	BROWN SAND		✓
	52	60	BROWN SAND	✓	
	60	71	GRAVEL	✓	

001151

10.

Work started OCT-25-72 finished OCT-26-72

11. DRILLER'S CERTIFICATION

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

METZER WELL DRILLING 93
Driller's or Firm's Name Number

BOX 511 HOMEDALE IDA.
Address

Kenneth Metzer Nov-3-72
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

63

837570 460

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. DRILLING PERMIT NO. __-__-__-____-____
Other IDWR No. D0042258

2. OWNER:
Name BRIAN MC MILLAN/CHRIS BELL
Address 729 BANKSIDE
City EAGLE State ID Zip 83616

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

N / W / E / S

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 2 1/4 (10 acres) NW 1/4 (40 acres) NW 1/4 (160 acres)
Gov't lot _____ County CANYON
Lat: : : Long: : :
Address of Well Site 13832 RED TIDE LN
City CALDWELL
(Give at least name of road + Distance to Road or Landmark)
Lt. 26 Blk. 1 Sub. Name NORTH SLOPE #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 Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	18	450	POUR

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 138
Was drive shoe seal tested? ☒ Y ☐ N How? air

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	138	250	STEEL	☒	☐	☒	☐
5"	131	142	250	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe 11' Length of Tailpipe _____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
142	147	20		5"	SS	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
50ft. below ground Artesian Pressure ____ lb
Depth flow encountered 140 ft. Describe access port or control devices: WELL CAP

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

Yield gal/min.	Drawdown	Pumping Level	Time
50	30	80	4 HR

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered 68

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	2	TOP SOIL		☒
10"	2	18	BROWN CLAY		☒
6"	18	22	BROWN CLAY		☒
6"	22	53	GRAVEL		☒
6"	53	68	BROWN CLAY		☒
6"	68	127	SAND CLAY STRIPS	☒	
6"	127	140	BROWN CLAY		☒
6"	140	147	FINE SAND	☒	

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NOV 25 2005
WATER RESOURCES
WESTERN REGION
ORIGINAL

Completed Depth: 147 (Measurable)
Date: Started 11/17/2005 Completed 11/21/2005

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 GEORGE POST WELL DRILLING Firm No. 563
Firm Official _____ Date 11/22/2005
Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

Date: 11/22/2005 Time:9:04:35 AM

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

461

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name DON CAWARD
Address RT-7 CALDWELL IDAHO

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☒ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 82 feet
Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1 feet	78 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 18 Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings
Sealing procedure used ☐ Slurry pit ☐ Temporary surface casing ☒ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.

63

N / W / E / S

Subdivision Name _____
Lot No. _____ Block No. _____

County CANYON

NE ¼ NW ¼ Sec. 2, T. 4 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 45 feet below land surface
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Temperature _____ ° F. Quality GOOD
Artesian closed-in pressure _____ p.s.i.
Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
15	10	2

041702

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	21	SANDY BROWN CLAY		✓
	21	73	BROWN SAND & GRAVEL		✓
	73	82	BROWN CLAY		✓
	82		WHITE SAND	✓	

10.

Work started MARCH-13-74 finished MARCH-20-74

11. DRILLERS CERTIFICATION

Firm Name HEITER WELL DRILLING Firm No. 93
Address BOX 511 HOMEDALE Date 3-21-74
Signed by (Firm Official) Kenneth Heiter
and
(Operator) " "

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

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

462

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, **Department of Water Resources within 30** days after the completion or abandonment of the well.

1. WELL OWNER

Name James Fulmer

Address Caldwell

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

_____

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6" inches Total depth 91' feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	6" inches	+ 1 feet	79' feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

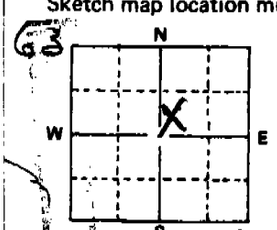
Placed from _____ feet to _____ feet

Surface seal depth 30' Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

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

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

SW ¼NE ¼ Sec. 3, T. 4N N/S, R. 3W E/W

7. WATER LEVEL

Static water level 20' feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature _____ ° F. Quality Good

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other

Discharge G.P.M.	Draw Down	Hours Pumped
40	5	3

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	1	10	TOPSOIL		X
6	10	20	HARD PAN		X
6	20	30	GRAVEL		X
6	30	40	GRAVEL INTO SAND		X
6	40	50	SANDY CLAY		X
6	50	60	SANDY CLAY	X	
6	60	70	CLAY		
6	70	80	CLAY	X	
6	80	91'	CLAY WITH SAND VEINS OF WATER IN DRY HOLE		

001160

10. Work started 11-15- finished 11-29-75

11. DRILLERS CERTIFICATION

Firm Name D D Well Drilling Firm No. 254

Address 310 S 11 Date 1-26-76

Signed by (Firm Official) _____

and

(Operator) _____

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

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

463

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name LARRY LEMASTER

Address CALDWELL IDAHO

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☒ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 105 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1 feet	99 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

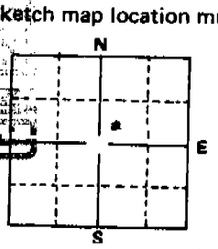
Placed from _____ feet to _____ feet

Surface seal depth 6 Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

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

6. LOCATION OF WELL

Sketch map location must agree with written location. 63



Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

SW ¼ NE ¼ Sec. 3, T. 4 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 35 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow _____

Temperature _____ ° F. Quality GOOD

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other AIR

Discharge G.P.M.	Draw Down	Hours Pumped
20	15	3

033069

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	2	TOPSOIL		✓
	2	11	HARD PAN		✓
	11	28	BROWN SAND		✓
	28	42	GRAVEL		✓
	42	96	BROWN SAND		✓
	92	105	BROWN CLAY		✓
	105		WHITE SAND	✓	

10.

Work started 7-30-74 finished 8-2-74

11. DRILLERS CERTIFICATION

Firm Name HETZER WELL DRL. Firm No. 93

Address BOX 511 HOMEDALE Date 8-6-74

Signed by (Firm Official) Ronald M Jr

and

(Operator) _____

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

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

RECEIVED
MAY 23 1974
Department of Water Administration

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name GARY LASHER

Address CALDWELL, IDAHO

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

_____

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☒ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 105 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	8 inches	+ 1 feet	85 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

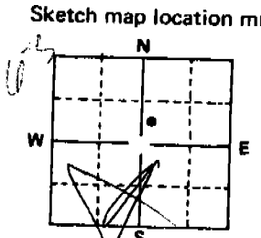
Placed from _____ feet to _____ feet

Surface seal depth 18 Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

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

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

SW ¼ NE ¼ Sec. 3, T. 4 N R. 3 W

7. WATER LEVEL

Static water level 25 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow _____

Temperature _____ ° F. Quality GOOD

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other AIR

Discharge G.P.M.	Draw Down	Hours Pumped
30	20	2

041703

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	12	BROWN CLAY		✓
	12	21	GRAVEL & SAND		✓
	21	26	BROWN SAND		✓
	26	38	SANDY BROWN CLAY		✓
	38	83	QUICK SAND BROWN		✓
	83	105	BROWN CLAY		✓
	105		BROWN SAND	✓	

10.

Work started MARCH-27-74 finished APR.-1-74

11. DRILLERS CERTIFICATION

Firm Name METZER WELL DRILLING Firm No. 93

Address BOX 511 HOMEDALE Date 4-9-74

Signed by (Firm Official) Kenneth Metzer

and

(Operator) _____

MICROFILMED

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE COPY TO THE DEPARTMENT

63

833286 465

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. DRILLING PERMIT NO. 0 -0 -3 -9156 - ____
Other IDWR No. _____

2. OWNER:
Name Larry Meridith
Address 26190 Moonglow Dr.
City Middleton State ID Zip 83644

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

N
W E S

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 3 1/4 (10 acres) NE 1/4 (40 acres) SE 1/4 (160 acres)
Gov't lot _____ County Canyon
Lat: : : Long: : :
Address of Well Site South Side of Red Tide .25mile
West of Canyon City Middleton
(Give at least name of road + Distance to Road or Landmark)
Lt. 27 Blk. 1 Sub. Name _____

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	0	20	750Lbs	Dry Pour

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 133ft
Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	133	.250	Steel	☒	☐	☒	☐
5"	130	135	.258	Steel	☒	☐	☒	☐
					☐	☐	☐	☐

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
135	140	.010	—	5"	SS	☐	☒
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
44ft. 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
60GPM	____	135ft	2hours

Water Temp. 57DegF Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered 42ft

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	2	Sandy Top Soil		☒
"	2	8	Brown Clay		☒
"	8	18	Tan Sandy Clay		☒
"	18	20	Gravel and Sand		☒
6"	20	50	Gravel and Sand	☒	
"	50	57	Tan Clay		☒
"	57	97	Sand	☒	
"	97	108	Tan Clay		☒
"	108	123	Sand	☒	
"	123	133	Tan Clay		☒
"	133	140	Fine Sand	☒	

RECEIVED
MAY 25 2005
WATER RESOURCES
WESTERN REGION

Completed Depth: 140 (Measurable)
Date: Started 5-18-05 Completed 5-18-05

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 _____ Date 5-23-05
Supervisor or Operator _____ Date 5-23-05
(Sign once if Firm Official & Operator)

Date: 5/23/2005 Time:5:51:11 PM

63

837844

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only 466
Well ID No. 408277
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0042283
DRILLING PERMIT NO
Water Right or Injection Well No

2. OWNER: CODY BEHREND
Name C+S Interiors
Address 5520 N WILDGOOSE
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 4 North ☒ or South ☐
Rge 3 East ☐ or West ☒
Sec 2 NW 1/4 (10 acres) ____ 1/4 (40 acres) SW 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: :
Address of Well Site 23281 Canyon Ln
(Give at least name of road + Distance to Road or Landmark) City Caldwell
Lt 28 Blk 1 Sub Name N Slope Estates

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

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

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

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
☒ Dry granular bentonite + well cuttings	0	18	600lb	Overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 92'
Was drive shoe seal tested? ☐ Y ☒ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	92	1/4	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 7 Length of Tailpipe -0-
Packer ☒ Y ☐ N Type Figure K

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method
Screen Type & Method of installation SS Wire / Pull back

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
95	100	14		5	SS	Screen	
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
8 ft. below ground Artesian pressure ____ lb
Depth flow encountered ____ ft Describe access port or control devices:
Sanitary Well Cap

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

Yield gal./min.	Drawdown	Pumping Level	Time
40	NA	40	15 Min

Water Temp 59° Bottom hole temp. N/A
Water Quality test or comments: Clear
Depth first Water Encounter 20

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology Water Quality & Temperature	Water Y	Water N
10	0	15	Brn Clay		X
10	15	18	Gravel / Clay layers		X
6	18	33	Gravel / Thin Clay layers	X	
6	33	45	Gravel	X	
6	45	60	Clay		X
6	60	86	Fine Sand	X	
6	86	90	Clay		X
6	90	100	Corse Sand	X	

RECEIVED
JAN 12 2006
WATER RESOURCES
WESTERN REGION

Completed Depth 100 (Measurable)
Date: Started 12/8/2005 Completed 12/8/2005

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed SYLVAN ADAMSON
Company Name Domestic Pump & Drilling Firm No 483
Principal Driller Sylvan Adamson Date 1/5/2006
and
Driller or Operator II Date
Operator I Date
Principal Driller and Rig Operator *Required*
Operator I must have signature of Driller/Operator II

FORWARD WHITE COPY TO WATER RESOURCES

63 INJECTION WELL

840115

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 410424 467
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0046577
DRILLING PERMIT NO. 894729 - 840115
Water Right or Injection Well No. 63-W-217-001

2. OWNER:
Name C+S Interiors / Abram Antonucci
Address 5520 N Wildgoose
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. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 2, ____ 1/4 NW 1/4 SW 1/4 (10 acres / 40 acres / 160 acres)
Gov't Lot ____ County CANYON
Lat: : : Long: : :
Address of Well Site 23281 Canyon Lane
City Caldwell
(Give at least name of road + Distance to Road or Landmark)
Lt. 28 Blk. 1 Sub. Name North Slope Estates

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

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

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

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Grout Bent	0	18	4 0026	Overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 22
Was drive shoe seal tested? ☐ Y ☒ N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	22	1/4	Steel	☒	☐	☒	☐
4½	22	12		PVC	☐	☒	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____
Packer ☐ Y ☒ N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ____
Screen Type & Method of Installation Factory PVC

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
42	22	20		4½	PVC	Screen	
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
Injected	30 GPM	15 Min	

Water Temp. 59° Bottom hole temp. N/A
Water Quality test or comments: None
Depth first Water Encounter 18

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	3	Soil		☒
10	3	15	Brn Clay		☒
10	15	18	Brn Clay + Gravel		☒
6	18	42	Gravel	☒	

RECEIVED
JUN 26 2006
WATER RESOURCES
WESTERN REGION

42
Completed Depth (Measurable)
Date: Started 6/9/06 Completed 6/9/06

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed. SHAWN ADAMSON
Company Name DOMESTIC PUMP Firm No. 483
Principal Driller ____ Date 6/19/06
and
Driller or Operator II ____ Date 6/19/06
Operator I ____ Date ____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

63

836321

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 406794 68
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0041972
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Jeff Shelman
Address 16380 Franklin Rd. Apt. E-4
City Nampa State Id Zip 83687

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 3, NE 1/4 (10 acres) SE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: : :
Address of Well Site 23363 Tundra Ct.
City Caldwell
(Give at least name of road + Distance to Road or Landmark)
Lt. 18 Blk. 1 Sub. Name North Slope Est.

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
Perma plug	0	18	550 lbs	10" overbore dry pour

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 133-8"
Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	133-8"	250	Steel	☐	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 5' Length of Tailpipe 0
Packer ☒ Y ☐ N Type 3-Rib

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method _____
Screen Type & Method of Installation Johnson Wash Dr. Vake

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
133	138	20	6" Tele		S.S.	☐	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
35		136'	3 hrs.

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: good clear color
Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	4	Top Soil		X
10 & 6	4	20	Sand & clay		X
6	20	49	Sand & gravel		X
	49	67	Brn clay		X
	67	73	med Sand	X	
	73	94	Brn clay		X
	94	105	Sandy Clay		X
	105	118	Brn Clay		X
	118	121	Fine Sand	X	
	121	133	Brn clay		X
	133	138	med Sand	X	

RECEIVED
OCT 25 2005
WATER RESOURCES
WESTERN REGION

Completed Depth 138 ft (Measurable)
Date: Started 9/26/05 Completed 9/27/05

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 Inc Firm No. 522
Principal Driller Jeff Clawson Date 10/21/05
and
Driller or Operator II _____ Date _____
Operator I _____ Date _____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
11/97 JGE

835629 469

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by
Twp 4N Rge 3W Sec 2
1/4 SW 1/4 NW 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0041755
DRILLING PERMIT NO.
Other IDWR No.

2. OWNER:
Name MCCLURE - BLUE CANYON HOMES
Address 23444 WHALE BAY
City MIDDLETON State ID Zip 83644

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

N / W / E / S

Twp. 4 North [X] or South [ ]
Rge. 3 East [ ] or West [X]
Sec. 2 1/4 (10 acres) SW 1/4 (40 acres) NW 1/4 (160 acres)
Gov't Lot County CANYON
Lat: Long:
Address of Well Site SAME City
(Give at least name of road + Distance to Road or Landmark)
Lt. Blk. Sub. Name

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

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

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	400#	POUR

Was drive shoe used? [X] Y [ ] N Shoe Depth(s) 118
Was drive shoe seal tested? [X] Y [ ] N How? AIR

8. CASING/LINER:

Diameter	From	To	Guage	Material	Casing	Liner	Welded	Threaded
6	+2	118	250	STEEL	[X]	[ ]	[X]	[ ]
4.5	114	134		PVC	[ ]	[X]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]

Length of Headpipe Length of Tailpipe

9. PERFORATIONS/SCREENS:
[ ] Perforations Method
[X] Screens Screen Type

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
114	134	20		4.5	PVC	[ ]	[X]
						[ ]	[ ]
						[ ]	[ ]

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

11. WELL TESTS:
[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
40		110	2 HR

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

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	5	TOP SOIL/ HARD PAN		
	5	20	SANDY CLAY		
6	20	30	SAND/ SOME CLAY		
	30	70	SAND/ GRAVEL	X	
	70	85	SAND	X	
	85	109	SANDY CLAY		
	109	116	LAYERS SAND/ CLAY		
	116	124	HARD CLAY		
	124	134	SAND / JOINT CLAY	X	

RECEIVED
SEP 06 2005
WATER RESOURCES
WESTERN REGION

Completed Depth 134 (Measurable)
Date: Started 8/29/2005 Completed 8/30/2005

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 DAVIS WELL & PUMP Firm No. 101
Firm Official Date 9/2/2005
and
Driller or Operator Chris Davis Date 9/2/2005
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

63

835570

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 406067 A70
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0041771
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Blackhorse Construction
Address 3910 Hill Rd.
City Boise State Id Zip 83703

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 3, NE 1/4 (10 acres) SE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : **Long:** : :
Address of Well Site 23336 Tundra Ct.
City Caldwell
(Give at least name of road + Distance to Road or Landmark)
Lt. 23 Blk. 1 Sub. Name North Slope Est.

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
perma plug	0	19	550 lbs	10" overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 115'
Was drive shoe seal tested? ☐ Y ☒ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2'4"	115	250	steel	☐	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 5 Length of Tailpipe 0
Packer ☒ Y ☐ N Type 3-R16

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method
Screen Type & Method of Installation Johnson Set pull back

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
115	125	20	6" Tele		S.S.	☐	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
100		123'	2 hrs

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: Good clear color no smell
Depth first Water Encounter 78'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	4	Top Soil		X
|	4	7	Clay & Sand		X
|	7	8	Hrdpan		X
|	8	13	Sand		X
10-6	13	21	Clay & Sand		X
6	21	41	Clay		X
|	41	53	Sandy Clay		X
|	53	71	Brn Clay		X
|	71	78	Sandy clay		X
|	78	81	Sand		X
|	81	96	Brn clay		X
|	96	104	Sandy clay		X
|	104	107	med Sand	X	
|	107	115	Brn clay		X
|	115	125	med Sand	X	

RECEIVED
OCT 25 2005
WATER RESOURCES
WESTERN REGION

Completed Depth 125 ft. (Measurable)
Date: Started 8/25/05 Completed 8/26/05

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 Inc. No. 522
Principal Driller Jeff Lawson Date 9/6/05
and
Driller or Operator II ____ Date ____
Operator I ____ Date ____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

060915

471

Office Use Only
Inspected by _____
Twp____ Rge____ Sec____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63-97-W-0406-000
Other IDWR No. _____

2. OWNER:
Name Hector Villarreal
Address 3404 S. Colorado
City Caldwell State Id Zip 83605

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

N / W / E / S

Twp. 4 North ☑ or South ☐
Rge. 3 East ☐ or West ☑
Sec. 3, ____ (10 acres) 1/4 NE (40 acres) 1/4 SW (160 acres) 1/4
Gov't Lot ____ County _____
Lat: : : Long: : :
Address of Well Site 23547 Stone Ln
City Caldwell
(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	3	25	150	pour in

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6 3/8	+2	98	.250	steel	☑	☐	☑	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 6' Length of Tailpipe 1.5

MICROFILMED JUN 2 1998

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☑ Screens Screen Type 304 stainless

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
99	104	.016				☐	☑
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
5 ft. below ground Artesian pressure _____ lb.
Depth flow encountered 96 ft. Describe access port or control devices: removable well seal/cap

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

Yield gal./min.	Drawdown	Pumping Level	Time
30	5'	10'	1 hr

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered 8'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8"	0	4	dirt		✓
"	4	8	sandy dirt		✓
"	8	9	gravel	✓	
6	9	22	sandy clay		✓
	22	30	silt		✓
	30	38	fine sand	✓	
	38	41	white clay		✓
	41	58	silty clay		✓
	58	66	clay		✓
	66	75	silt		✓
	75	76	good sand	✓	
	76	96	silt w thin layers clay		✓
	96	104	good sand	✓	
	104	105	clay		✓

RECEIVED
MAR 04 1998
Department of Water Resources

RECEIVED
FEB 13 1998
WATER RESOURCES
WESTERN REGION

RECEIVED
DEC 12 1997
Department of Water Resources

RECEIVED
DEC 05 1997
WATER RESOURCES
WESTERN REGION

Completed Depth 105 (Measurable)
Date: Started 7/7/97 Completed 7/10/97

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 Robinson Well Drilling Firm No. 490
Firm Official Ralph Robinson Date 7/10/97
and
Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

2nd Wa Sog Kerr

State law requires that this report be filed with the Director, **Department of Water Resources within 30** days after the completion or abandonment of the well.

1. WELL OWNER

Name LARRY LE[illegible]MASTER

Address CALDWELL IDAHO

Owner's Permit No. ____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☒ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 134 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+1 feet	133 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? ☒ Yes ☐ No

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation ____ inches by ____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name ____

Type ____ Model No. ____

Diameter ____ Slot size ____ Set from ____ feet to ____ feet

Diameter ____ Slot size ____ Set from ____ feet to ____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel ____

Placed from ____ feet to ____ feet

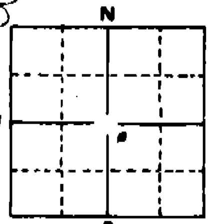
Surface seal depth 18 Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

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

6. LOCATION OF WELL

Sketch map location must agree with written location.

65



Subdivision Name ____

Lot No. ____ Block No. ____

County CANYON

NW ¼ SE ¼ Sec. 3, T. 4 N/S, R. 3 E/W

7. WATER LEVEL

Static water level 60 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow ____

Temperature ____ °F. Quality GOOD YERDS.

Artesian closed-in pressure ____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other AIR

Discharge G.P.M.	Draw Down	Hours Pumped
15	20	3

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	4	TOPSOIL		✓
	4	5	HARDPAN		✓
	5	32	BROWNSAND		✓
	32	74	GRAVEL		✓
	74	80	BROWN SAND		✓
	80	110	SANDY BROWN CLAY		✓
	110	130	BROWN SAND		✓
	130	134	BROWN CLAY		✓
	134		WHITE SAND	✓	

001157

10.

Work started 3-16-75 finished 3-24-75

11. DRILLERS CERTIFICATION

Firm Name METZER WELL DRL Firm No. 93

Address RT. 1 HOMEDALE IDA Date 3-4-75

Signed by (Firm Official) Kenneth Metzer

and

(Operator) ____

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

8362254/3

163 Form 238-7 3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. DRILLING PERMIT NO. __ - __ - -419 -53
Other IDWR No. _____

2. OWNER:
Name CORY HAMRICK
Address 9935 GANTERBURY
City BOISE State ID Zip 83704

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

N / W / E / S

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 2 1/4 (10 acres) SW 1/4 (40 acres) SW 1/4 (160 acres)
Gov't lot _____ County CANYON
Lat: : : Long: : :
Address of Well Site TUNDRA CT.
City MIDDLETON
(Give at least name of road + Distance to Road or Landmark)

Lt. 20 Blk. 1 Sub. Name NORTHSLOPE ESTATES

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	18	450	POUR

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	118	250	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 8' Length of Tailpipe _____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
123	128	250		5"	SS	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
63ft. below ground Artesian Pressure ____ lb
Depth flow encountered 120 ft. Describe access port or control devices: WELL CAP

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

Yield gal/min.	Drawdown	Pumping Level	Time
50		115	1 HR

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered 75

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	4	TOP SOIL		☒
10"	4	18	BROWN CLAY		☒
6"	18	35	BROWN CLAY		☒
6"	35	75	GRAVEL		☒
6"	75	114	SAND CLAY STRIPS	☒	
6"	114	120	TAN CLAY		☒
6"	120	128	SAND	☒	

RECEIVED
SEP 27 2005
WATER RESOURCES
WESTERN REGION

ORIGINAL

Completed Depth: 128 (Measurable)
Date: Started 09/22/2005 Completed 09/22/2005

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 GEORGE POST WELL DRILLING Firm No. 563
Firm Official _____ Date 09/23/2005
Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

Date: 9/23/2005 Time:2:19:52 PM

63 Attn: Rob Amended well Log O.K. RW 5/1/06

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by 836415
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. __ - __ - -419 -55
Other IDWR No. REVISED 04/28/2006

2. OWNER:
Name BOB WRIGHT
Address 318
City PETRA WAY State ID Zip 83607

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

N / W / E / S

Twp 4 North ☒ or South ☐
Rge 3 East ☐ or West ☒
Sec 3 1/4 (10 acres) SE 1/4 (40 acres) NW 1/4 (160 acres)
Gov't lot ____ County CANYON
Lat: : : Long: : :
Address of Well Site 14085 SILVER RIDGE RD.
City CALDWELL
(Give at least name of road + Distance to Road or Landmark)

Lt 2 Blk 1 Sub. Name SLEEPY HOLBIN

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	18	450	POUR

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	113	250	STEEL	☒	☐	☒	☐
5"	107	115	250	STEEL	☒	☐	☒	☐
4"	15	115		PVC	☐	☒	☐	☐

Length of Headpipe 8' Length of Tailpipe ____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
115	120	020		5"	S.S.	☐	☐
115	119			4"	SS	☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
58ft. below ground Artesian Pressure ____ lb
Depth flow encountered 114 ft Describe access port or control devices: WELL CAP

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

Yield gal/min.	Drawdown	Pumping Level	Time
90		100	1 HR

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered 75

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	4	TOP SOIL		☒
10"	4	18	BROWN CLAY		☒
6"	18	37	BROWN CLAY		☒
6"	37	56	GRAVEL		☒
6"	56	75	BROWN CLAY		☒
6"	75	109	SAND AND CLAY STRIPS	☒	
6"	109	114	TAN CLAY		☒
6"	114	120	SAND	☒	
			WELL MADE FINE SAND/PUT		
			4" SCREEN AND LINER IN TO STOP		
			FINE SAND		

RECEIVED MAY 05 2006 WATER RESOURCES WESTERN REGION
RECEIVED MAY 01 2006 WATER RESOURCES WESTERN REGION

ORIGINAL
REVISED

Completed Depth: 120 (Measurable)
Date: Started ~~09/29/2005~~ 4-27-06 Completed ~~09/30/2005~~

13. DRILLER'S CERTIFICATION 4-27-06
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name GEORGE POST WELL DRILLING Firm No. 563
Firm Official ____ Date ~~09/30/2005~~
Supervisor or Operator ____ Date 4-27-06
(Sign once if Firm Official & Operator)

Date: 4/28/2006 Time: 8:14:21 AM

836415

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. DRILLING PERMIT NO. __-__-__-419-55
Other IDWR No. _____

2. OWNER:
Name BOB WRIGHT
Address 318
City PETRA WAY State ID Zip 83607

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

N / W / E / S

Twp 4 North ☒ or South ☐
Rge 3 East ☐ or West ☒
Sec 3 1/4 (10 acres) SE 1/4 (40 acres) NW 1/4 (160 acres)
Gov't lot _____ County CANYON
Lat: : : Long: : :
Address of Well Site 14085 SILVER RIDGE RD.
City CALDWELL
(Give at least name of road + Distance to Road or Landmark)
Lt. 2 Blk. 1 Sub. Name SLEEPY HOLBIN

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONTITE	0	18	450	POUR

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	113	250	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 8' Length of Tailpipe _____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
~~105~~	~~200~~	020		5"	S.S.	☐	☐
115	120					☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
58ft. below ground Artesian Pressure _____ lb
Depth flow encountered 114 ft. Describe access port or control devices: WELL CAP

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

Yield gal/min.	Drawdown	Pumping Level	Time
90		100	1 HR

Water Temp. _____ Bottom hole temp _____
Water Quality test or comments: _____
Depth first Water Encountered 75

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	4	TOP SOIL		☒
10"	4	18	BROWN CLAY		☒
6"	18	37	BROWN CLAY		☒
6"	37	56	GRAVEL		☒
6"	56	75	BROWN CLAY		☒
6"	75	109	SAND AND CLAY STRIPS	☒	
6"	109	114	TAN CLAY		☒
6"	114	120	SAND	☒	

ORIGINAL
RECEIVED
OCT 04 2005
WATER RESOURCES
WESTERN REGION

Completed Depth: 120 (Measurable)
Date: Started 09/29/2005 Completed 09/30/2005

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 GEORGE POST WELL DRILLING Firm No. 563
Firm Official _____ Date 09/30/2005
Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

Date: 10/3/2005 Time: 7:51:25 AM

SCANNED
FEB 19 2006

63

Form 238-7
11/97 JGE

844113 476

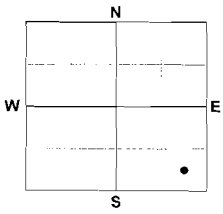
Office Use Only
Inspected by
Twp Rge Sec
1/4 1/4 1/4
Lat: : : Long: : :

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0047730
DRILLING PERMIT NO.
Other IDWR No. 63-W-228-001

2. OWNER:
Name Sidney Roberts
Address 23117 White Oak Dr.
City Caldwell State ID Zip 83605

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



Twp. 4 North X or South
Rge. 3 East or West X
Sec. 3 1/4 (10 acres) SE 1/4 (40 acres) SE 1/4 (160 acres)
Gov't Lot County Canyon
Lat: 43 42.481' Long: 116 40.606'
Address of Well Site 23117 White Oak Dr.
City Caldwell
(Give at least name of road + Distance to Road or Landmark)
Lt. 5 Blk. 1 Sub. Name Sleepy Hollow

4. USE:
Domestic Municipal Monitor Irrigation
Thermal X 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'	10 Sacks	Overbore

Was drive shoe used? X Y N Shoe Depth(s) 86'
Was drive shoe seal tested? X Y N How? Air

8. CASING/LINER:

Diameter	From	To	Guage	Material	Casing	Liner	Welded	Threaded
6"	+2'	86'	.250	Steel	X		X	
5"	80'	88'	.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
88'	98'	.020		5"	SS		X

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
55 ft. below ground Artesian pressure lb.
Depth flow encountered 65 ft. Describe access port or control devices: Cap

11. WELL TESTS:
Pump Bailer X Air Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
40 gpm	80'	80'	1 Hr.

Water Temp. 56 Bottom hole temp. 56
Water Quality test or comments:
Depth first Water Encounter 65'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10"	0	4'	Top Soil		
10"	4'	18'	Brown Clay		
6"	18'	30'	Brown Clay		
6"	30'	48'	Gravel		
6"	48'	63'	Sand		
6"	63'	76'	Heaving Sand	X	
6"	76'	83'	Sand		
6"	83'	88'	Brown Clay		
6"	88'	98'	Sand	X	

SCANNED RECEIVED
AUG 15 2007 JAN 17 2007
WATER RESOURCES WESTERN REGION

Completed Depth 98' (Measurable)
Date: Started 1/5/2007 Completed 1/8/2007

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 Date 1/9/2007
and
Driller or Operator Date 1/9/2007
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
9/82

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Darrel + Sherri Anglen

Address 8212 Blue Ridge Ln. Boise, Id. 83705

Owner's Permit No. 63-90-Z-036

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☑ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1'6" feet	[illegible] feet
_____ inches	_____ inches	_____ feet	54 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

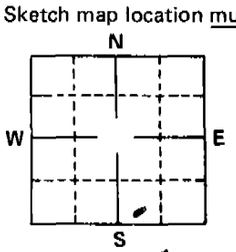
Was casing drive shoe used? ☑ Yes ☐ No
Was a packer or seal used? ☐ Yes ☑ No
Perforated? ☐ Yes ☑ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☑ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☑ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 30 Material used in seal: ☐ Cement grout ☑ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☑ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☑ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location



Subdivision Name _____

Lot No. _____ Block No. _____

County Canyon

SE ¼ SE ¼ Sec. 3, T. 4 ☑ N ☐ S, R. 3 ☑ E ☐ W

MICROFILMED
AUG 11 1992

7. WATER LEVEL

Static water level 18'6" feet below land surface.
Flowing? ☐ Yes ☑ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature ___ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☑ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
10	30'	1

080109

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	8	topsoil		✓
	8	21	silt + sand		✓
	21	22	clay		✓
	22	25	clay + sand		✓
	25	30	clay		✓
	30	32	gravel	✓	
	32	40	clay + sand	✓	
	40	45	sand	✓	
	45	54	clay		✓
	54	55	sand	✓	

RECEIVED
APR 2 1990
Department of Water Resources

10.

Work started 3/4/90 finished 3/6/90

11. DRILLERS CERTIFICATION

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

Firm Name Gem State Drilling Firm No. 277
Address 290 N. Eagle Rd. Eagle Date 3/6/90
Signed by (Firm Official) Lyle E Gulle
and
(Operator) David L. Gulle

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

Form 238-7
9/82

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

478

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

W

gm

1. WELL OWNER

Name Phillip Villarreal c/o Rick Sweaney

Address Caldwell, Idaho 83605

Owner's Permit No. _____

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2'6" feet	58 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

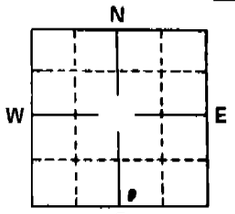
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 20' Material used in seal: ☐ Cement grout ☐ Bentonite ☒ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County Canyon

SW ¼ SE ¼ Sec. 3, T. 4 N/S, R. 3 E/W.

7. WATER LEVEL

Static water level 6 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
30		2

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	20	sand & clay layers	x	
6	20	55	sand & clay layers	x	
6	55	62	clay		x
6	62	70	sand	x	

RECEIVED
MAY 14 1985
Department of Water Resources
Western Regional Office

0025933
MICROFILMED

10.

Work started 10-05-84 finished 10-05-84

11. DRILLERS CERTIFICATION

DR

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

Firm Name BILL DOTY WELL DRILLING Firm No. 42
Address RT. 7 BX. 311 Caldwell, Idaho 83605 Date 1-15-85
Signed by (Firm Official) Bill Doty
and
(Operator) Bob Doty

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

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

4776

1. WELL OWNER

Name viking con.

Address MIDELTON ID.

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

_____

3. PROPOSED USE

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

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 48 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	6 inches	+ 1 feet	47 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

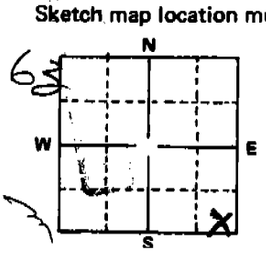
Placed from _____ feet to _____ feet

Surface seal depth 18 Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

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

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

SE ¼ SE ¼ Sec. 3, T. 4 ☐N/S, R. 3 ☐E/W

7. WATER LEVEL

Static water level 7 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature _____ ° F. Quality good

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other

Discharge G.P.M.	Draw Down	Hours Pumped
60	10	2

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	-1	10	top soil & haed pan		X
8	10	18	clay		X
6	18	30	clay into gravel	X	
6	30	40	gravel into clay		X
6	40	48	clay into light gray sand	XX	

001159

10.

Work started 5/10/74 finished 5/11/74

11. DRILLERS CERTIFICATION

Firm Name D& D WELL DRILLING Firm No. 254

Address 310 s, 11street Date 9/17/74

Signed by (Firm Official) _____

and

(Operator) _____

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

Form 238-7
1/78

DSI

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

480

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Ray Johnson

Address Box 123 Middleton, IDAHO

Owner's Permit No. _____

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ Top feet	1 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

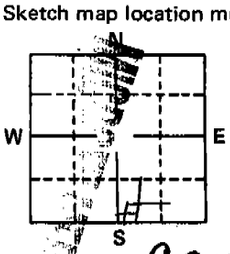
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 18 Material used in seal: ☐ Cement grout ☒ Puddling clay ☐ Well cuttings
Sealing procedure used: ☒ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port SANitary well seal

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____

County CANYON
Fruitdale Farms Sec 3-4-3 Blk 45 less Tax 1
SW ¼ SE ¼ Sec. 3, T. 4 (N) S, R. 3 E (W)

7. WATER LEVEL

Static water level 45 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
30	70	2

85296

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	Top	1	Top Soil		✓
6	1	5	Clay & SAND		✓
6	5	10	HARD PAN		✓
6	10	18	Clay & SAND		✓
6	18	28	GRAVEL		✓
6	28	40	Clay & streaks of SAND		✓
6	40	55	SAND	✓	
6	55	80	Hearing SAND	✓	
6	80	81	Clay & streaks of SAND	✓	

RECEIVED
JAN 29
DEC 15 1982
Department of Water Resources
Western Regional Office
Department of Water Resources

10.

Work started 12-1-81 finished 12-23-81

11. DRILLERS CERTIFICATION

20

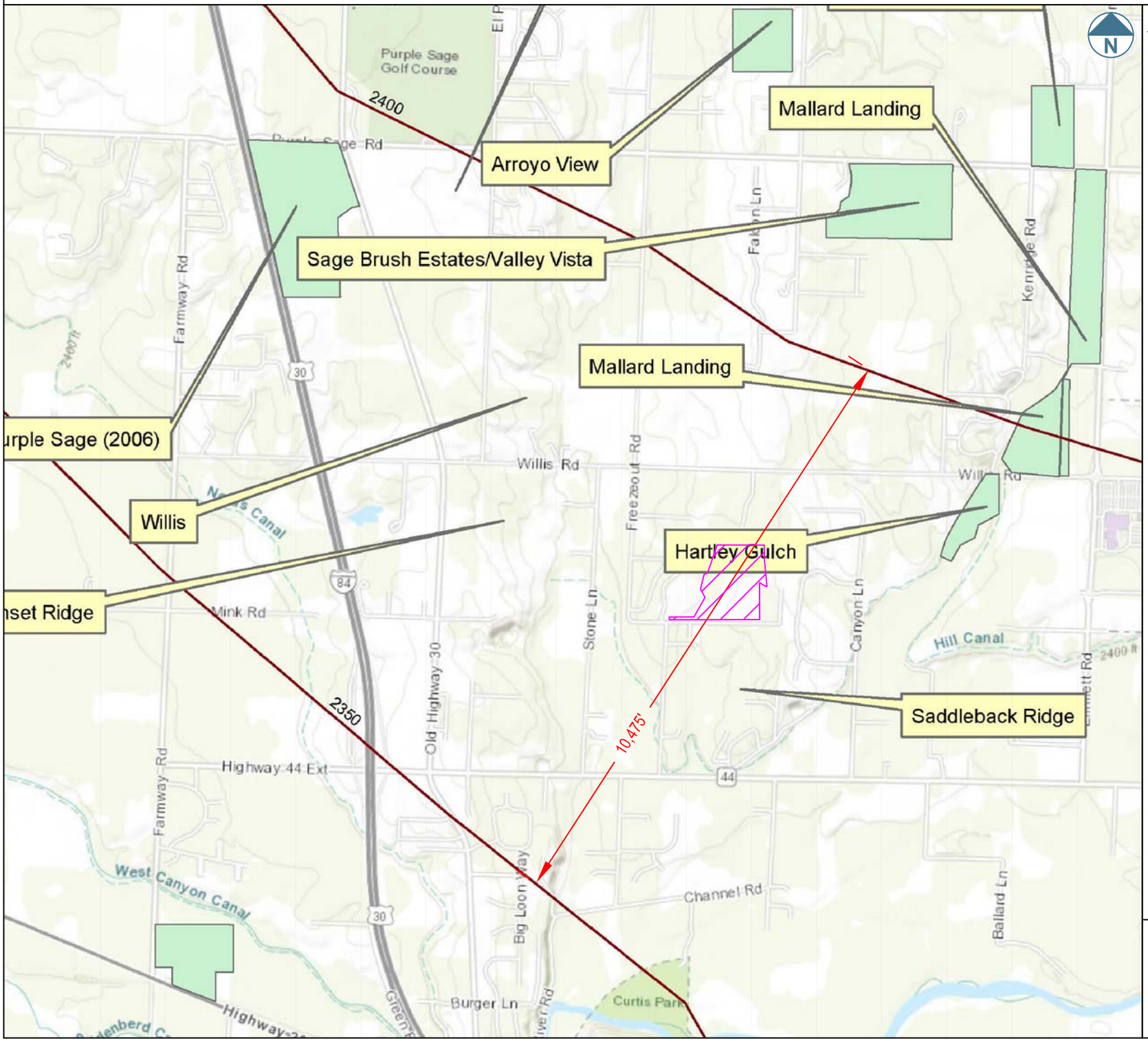
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Daugherty Well Drilling Firm No. 333
Address Rt 2 Wilder, Idaho Date 12-9-81
Signed by (Firm Official) Duane Daugherty
and
(Operator) Duane Daugherty

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

Appendix V IDEQ GROUNDWATER CONTOUR MAP

IDEQ Groundwater Contours



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

SCALE

0 0.25 0.5

(Mile)

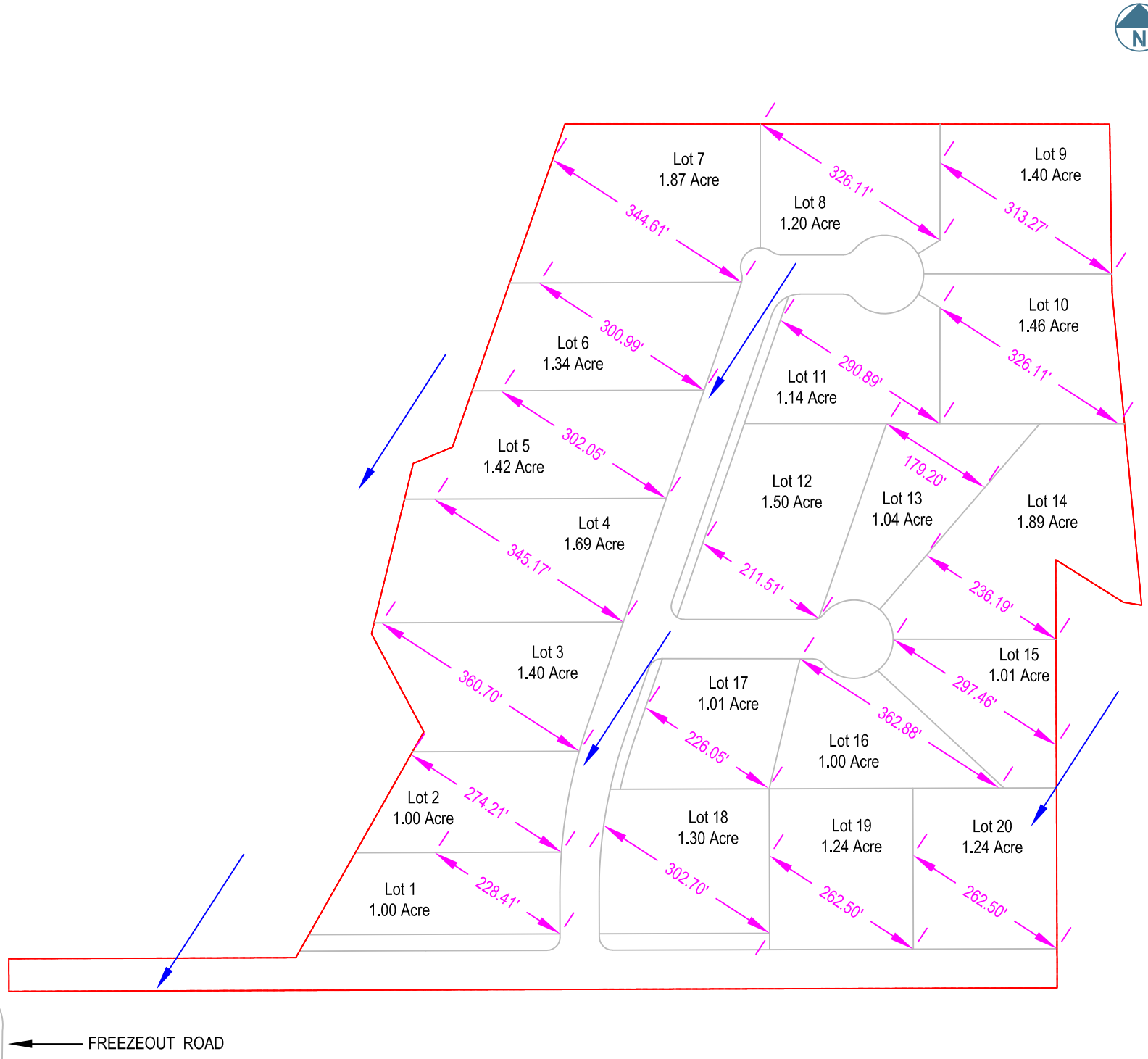
Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS
2791 S. Victory View Way
Boise, ID 83709
Phone: (208) 376-4748
Fax: (208) 322-6515
Web: oneatlas.com

Appendix VI SITE PLAN WITH AQUIFER WIDTH MAP FOR INDIVIDUAL LOTS

Site Map with Individual Lot Aquifer Widths Perpendicular to Groundwater Flow Direction



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Groundwater Flow Direction

SCALE

0 150 300

(Feet)

Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS
2791 S. Victory View Way
Boise, ID 83709
Phone: (208) 376-4748
Fax: (208) 322-6515
Web: oneatlas.com

Appendix VII HISTORIC PRECIPITATION/CLIMATE DATA FOR PROJECT LOCATION

U.S. Climate Data

Monthly Geo

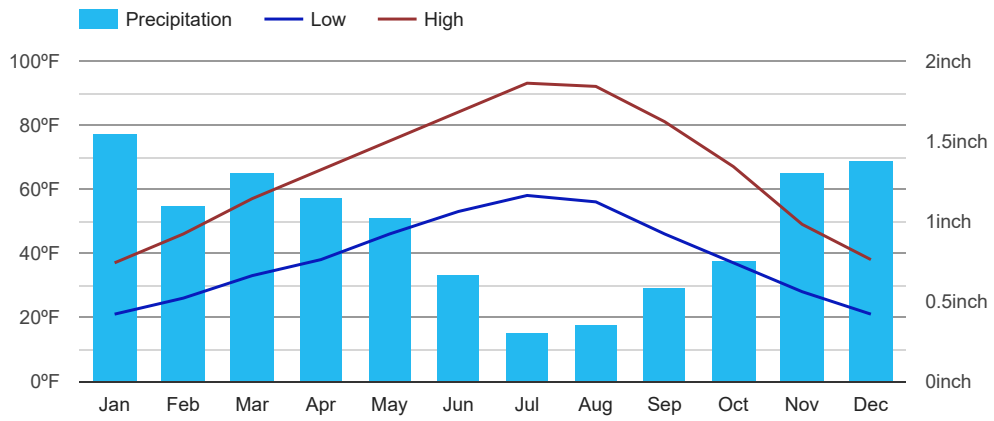
Climate Caldwell - Idaho

	Ja (January)	Fe (February)	Ma (March)	Ap (April)	Ma (May)	Ju (June)
Hi	37	46	57	66	75	84
Lo	21	26	33	38	46	53
Pre.	1.54	1.10	1.30	1.14	1.02	0.67

	Ju (July)	Au (August)	Se (September)	Oc (October)	No (November)	De (December)
Hi	93	92	81	67	49	38
Lo	58	56	46	37	28	21
Pre.	0.31	0.35	0.59	0.75	1.30	1.38

Hi : Average high in °F - Lo : Average low in °F - Pre. : Average precipitation in inch - DP : Days with precipitation - Sun : Hours of sunshine

Caldwell Climate Graph - Idaho Climate Chart



Annual high temperature	65°F
Annual low temperature	39°F
Average annual precip.	11.45 inch

Share

Station Data

Monthly averages Caldwell
Longitude: -116.636, Latitude: 43.6419
Average weather Caldwell, ID - 83605

Monthly: 1981-2010 normals

Abbreviations

Ja (January): January, Fe (February): February, ...

Appendix VIII SITE LOCATION WITH VICINITY MONITORING WELLS MAP AND MONITORED WELL DATA

Vicinity Monitoring Well Locations

NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Well Location (#)

SCALE

0 0.125 0.25

(Mile)

Freezeout Ridge Estates Subdivision
23442 Freezeout Road
Caldwell, ID

Modified by: MHS
January 7, 2021
Drawing: B201724g

ATLAS
2791 S. Victory View Way
Boise, ID 83709
Phone: (208) 376-4748
Fax: (208) 322-6515
Web: oneatlas.com

Well #	Agency	WellNumber	AgencyWellName	SampleDate	Type	Name	Value	Units
A	IDEQ	25	04N03W03BACA1	19970821	Nutr	Nitrate	2.94	mg/l
B	IDEQ	26	04N03W03CABA1	19970820	Nutr	Nitrate	0.184	mg/l
C	IDEQ	27	04N03W03DDCC	19970821	Nutr	Nitrate	0.312	mg/l
D	IDEQ	2122	04N03W03AAD	20130521	Nutr	Nitrate	2.68	mg/l
	IDEQ	2122	04N03W03AAD	20130521	Nutr	Nitrate	2.3	mg/l
E	IDEQ	2126	04N03W03AAA	20130521	Nutr	Nitrate	4.2	mg/l
	IDEQ	2126	04N03W03AAA	20130521	Nutr	Nitrate	3.99	mg/l
F	IDEQ	2134	04N03W03AAA	20130521	Nutr	Nitrate	3.28	mg/l
	IDEQ	2134	04N03W03AAA	20130521	Nutr	Nitrate	2.8	mg/l
	IDEQ	2134	04N03W03AAA	20130521	Nutr	Nitrate	3.41	mg/l
	IDEQ	2134	04N03W03AAA	20130521	Nutr	Nitrate	3.4	mg/l
G	IDEQ	2151	04N03W02BCA	20130521	Nutr	Nitrate	3.4	mg/l
	IDEQ	2151	04N03W02BCA	20130521	Nutr	Nitrate	4.07	mg/l
H	IDEQ	2180	04N03W02BCA	20130528	Nutr	Nitrate	6.3	mg/l
	IDEQ	2180	04N03W02BCA	20130528	Nutr	Nitrate	6.12	mg/l
I	DEQ	587		20071025		Nitrate	0.32	mg/l
J	ISDA	6601001		19960306		Nitrate	0.01	mg/l
K	DEQ	4371591166714		20060706		Nitrate	5.05	mg/l
L	ISDA	DY16270851		20060222		Nitrate	4.9	mg/l

Appendix IX NITRATE MASS-BALANCE SPREADSHEETS FOR INDIVIDUAL LOTS

IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	228.41	Site-specific	
Parcel Area (acres)	1	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.10E+04	95.9
Effluent	4.14E+02	3.6
Recharge	5.86E+01	0.5
Total Water Volume	**1.15E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	**5.1**
Avg. Downgradient Nitrate Concentration in GW (mg/l)	**5.6**
Current/Acceptable Lot Size (Acres)	**1.0**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.54E+07	70.9
Septic Tank Effluent Nitrate Mass	1.87E+07	29.1
Recharge Nitrate Mass	1.76E+04	0.0
Total Nitrate Mass	**6.41E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.00 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	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 SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	228.41	Site-specific	
Parcel Area (acres)	1	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.10E+04	95.9
Effluent	4.14E+02	3.6
Recharge	5.86E+01	0.5
Total Water Volume	**1.15E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.9
Current/Acceptable Lot Size (Acres)	1.0

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.54E+07	80.2
Septic Tank Effluent Nitrate Mass	1.12E+07	19.8
Recharge Nitrate Mass	1.76E+04	0.0
Total Nitrate Mass	**5.66E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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:

$NRR\ (inches/yr) = (TAP)^2 * 0.0046$

TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.00 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	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 SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	226.05	Site-specific	
Parcel Area (acres)	1.01	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.09E+04	95.8
Effluent	4.14E+02	3.7
Recharge	5.92E+01	0.5
Total Water Volume	**1.13E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.6
Current/Acceptable Lot Size (Acres)	1.0

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.46E+07	70.5
Septic Tank Effluent Nitrate Mass	1.87E+07	29.5
Recharge Nitrate Mass	1.78E+04	0.0
Total Nitrate Mass	**6.33E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.01 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	70	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	226.05	Site-specific	
Parcel Area (acres)	1.01	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.17E+04	96.1
Effluent	4.14E+02	3.4
Recharge	5.92E+01	0.5
Total Water Volume	**1.22E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	**5.1**
Avg. Downgradient Nitrate Concentration in GW (mg/l)	**4.9**
Current/Acceptable Lot Size (Acres)	**1.0**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.80E+07	81.1
Septic Tank Effluent Nitrate Mass	1.12E+07	18.9
Recharge Nitrate Mass	1.78E+04	0.0
Total Nitrate Mass	**5.92E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.01 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	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 SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	179.2	Site-specific	
Parcel Area (acres)	1.04	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	8.62E+03	94.8
Effluent	4.14E+02	4.6
Recharge	6.09E+01	0.7
Total Water Volume	**9.10E+03**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.9
Current/Acceptable Lot Size (Acres)	1.0

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	3.53E+07	65.4
Septic Tank Effluent Nitrate Mass	1.87E+07	34.5
Recharge Nitrate Mass	1.83E+04	0.0
Total Nitrate Mass	**5.40E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.04 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	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 SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	179.2	Site-specific	
Parcel Area (acres)	1.04	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	8.62E+03	94.8
Effluent	4.14E+02	4.6
Recharge	6.09E+01	0.7
Total Water Volume	**9.10E+03**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.1
Current/Acceptable Lot Size (Acres)	1.0

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	3.53E+07	75.9
Septic Tank Effluent Nitrate Mass	1.12E+07	24.0
Recharge Nitrate Mass	1.83E+04	0.0
Total Nitrate Mass	**4.66E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.04 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	290.89	Site-specific	
Parcel Area (acres)	1.14	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.40E+04	96.7
Effluent	4.14E+02	2.9
Recharge	6.68E+01	0.5
Total Water Volume	**1.45E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.3
Current/Acceptable Lot Size (Acres)	1.1

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.74E+07	75.4
Septic Tank Effluent Nitrate Mass	1.87E+07	24.5
Recharge Nitrate Mass	2.00E+04	0.0
Total Nitrate Mass	**7.60E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.14 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	290.89	Site-specific	
Parcel Area (acres)	1.14	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.40E+04	96.7
Effluent	4.14E+02	2.9
Recharge	6.68E+01	0.5
Total Water Volume	**1.45E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.7
Current/Acceptable Lot Size (Acres)	1.1

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.74E+07	83.7
Septic Tank Effluent Nitrate Mass	1.12E+07	16.3
Recharge Nitrate Mass	2.00E+04	0.0
Total Nitrate Mass	**6.86E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.14 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	326.11	Site-specific	
Parcel Area (acres)	1.2	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.57E+04	97.0
Effluent	4.14E+02	2.6
Recharge	7.03E+01	0.4
Total Water Volume	**1.62E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.1
Current/Acceptable Lot Size (Acres)	1.2

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.43E+07	77.5
Septic Tank Effluent Nitrate Mass	1.87E+07	22.5
Recharge Nitrate Mass	2.11E+04	0.0
Total Nitrate Mass	**8.30E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.20 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	262.5	Site-specific	
Parcel Area (acres)	1.24	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.26E+04	96.3
Effluent	4.14E+02	3.2
Recharge	7.27E+01	0.6
Total Water Volume	**1.31E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	**5.1**
Avg. Downgradient Nitrate Concentration in GW (mg/l)	**5.4**
Current/Acceptable Lot Size (Acres)	**1.2**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.18E+07	73.5
Septic Tank Effluent Nitrate Mass	1.87E+07	26.5
Recharge Nitrate Mass	2.18E+04	0.0
Total Nitrate Mass	**7.04E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.24 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	262.5	Site-specific	
Parcel Area (acres)	1.24	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.26E+04	96.3
Effluent	4.14E+02	3.2
Recharge	7.27E+01	0.6
Total Water Volume	**1.31E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	**5.1**
Avg. Downgradient Nitrate Concentration in GW (mg/l)	**4.8**
Current/Acceptable Lot Size (Acres)	**1.2**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.18E+07	82.2
Septic Tank Effluent Nitrate Mass	1.12E+07	17.8
Recharge Nitrate Mass	2.18E+04	0.0
Total Nitrate Mass	**6.30E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.24 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	302.7	Site-specific	
Parcel Area (acres)	1.3	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.46E+04	96.7
Effluent	4.14E+02	2.8
Recharge	7.62E+01	0.5
Total Water Volume	**1.51E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	**5.1**
Avg. Downgradient Nitrate Concentration in GW (mg/l)	**5.2**
Current/Acceptable Lot Size (Acres)	**1.3**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.97E+07	76.2
Septic Tank Effluent Nitrate Mass	1.87E+07	23.8
Recharge Nitrate Mass	2.29E+04	0.0
Total Nitrate Mass	**7.84E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.30 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	302.7	Site-specific	
Parcel Area (acres)	1.3	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.46E+04	96.7
Effluent	4.14E+02	2.8
Recharge	7.62E+01	0.5
Total Water Volume	**1.51E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	**5.1**
Avg. Downgradient Nitrate Concentration in GW (mg/l)	**4.7**
Current/Acceptable Lot Size (Acres)	**1.3**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.97E+07	84.2
Septic Tank Effluent Nitrate Mass	1.12E+07	15.8
Recharge Nitrate Mass	2.29E+04	0.0
Total Nitrate Mass	**7.09E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.30 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	300.99	Site-specific	
Parcel Area (acres)	1.34	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.45E+04	96.7
Effluent	4.14E+02	2.8
Recharge	7.85E+01	0.5
Total Water Volume	**1.50E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.2
Current/Acceptable Lot Size (Acres)	1.3

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.94E+07	76.1
Septic Tank Effluent Nitrate Mass	1.87E+07	23.9
Recharge Nitrate Mass	2.36E+04	0.0
Total Nitrate Mass	**7.80E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.34 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	300.99	Site-specific	
Parcel Area (acres)	1.34	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.45E+04	96.7
Effluent	4.14E+02	2.8
Recharge	7.85E+01	0.5
Total Water Volume	**1.50E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.7
Current/Acceptable Lot Size (Acres)	1.3

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.94E+07	84.1
Septic Tank Effluent Nitrate Mass	1.12E+07	15.9
Recharge Nitrate Mass	2.36E+04	0.0
Total Nitrate Mass	**7.06E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.34 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	313.27	Site-specific	
Parcel Area (acres)	1.4	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.51E+04	96.8
Effluent	4.14E+02	2.7
Recharge	8.20E+01	0.5
Total Water Volume	**1.56E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.2
Current/Acceptable Lot Size (Acres)	1.4

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.18E+07	76.8
Septic Tank Effluent Nitrate Mass	1.87E+07	23.2
Recharge Nitrate Mass	2.46E+04	0.0
Total Nitrate Mass	**8.05E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.40 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	313.27	Site-specific	
Parcel Area (acres)	1.4	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.51E+04	96.8
Effluent	4.14E+02	2.7
Recharge	8.20E+01	0.5
Total Water Volume	**1.56E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	**5.1**
Avg. Downgradient Nitrate Concentration in GW (mg/l)	**4.7**
Current/Acceptable Lot Size (Acres)	**1.4**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.18E+07	84.6
Septic Tank Effluent Nitrate Mass	1.12E+07	15.3
Recharge Nitrate Mass	2.46E+04	0.0
Total Nitrate Mass	**7.30E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.40 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	302.05	Site-specific	
Parcel Area (acres)	1.42	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.45E+04	96.7
Effluent	4.14E+02	2.8
Recharge	8.32E+01	0.6
Total Water Volume	**1.50E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.2
Current/Acceptable Lot Size (Acres)	1.4

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.96E+07	76.1
Septic Tank Effluent Nitrate Mass	1.87E+07	23.8
Recharge Nitrate Mass	2.50E+04	0.0
Total Nitrate Mass	**7.82E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.42 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	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 SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	302.05	Site-specific	
Parcel Area (acres)	1.42	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.45E+04	96.7
Effluent	4.14E+02	2.8
Recharge	8.32E+01	0.6
Total Water Volume	**1.50E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	**5.1**
Avg. Downgradient Nitrate Concentration in GW (mg/l)	**4.7**
Current/Acceptable Lot Size (Acres)	**1.4**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	5.96E+07	84.2
Septic Tank Effluent Nitrate Mass	1.12E+07	15.8
Recharge Nitrate Mass	2.50E+04	0.0
Total Nitrate Mass	**7.08E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$

TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.42 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	326.11	Site-specific	
Parcel Area (acres)	1.46	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.57E+04	96.9
Effluent	4.14E+02	2.6
Recharge	8.55E+01	0.5
Total Water Volume	**1.62E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.1
Current/Acceptable Lot Size (Acres)	1.5

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.43E+07	77.5
Septic Tank Effluent Nitrate Mass	1.87E+07	22.5
Recharge Nitrate Mass	2.57E+04	0.0
Total Nitrate Mass	**8.30E+07**	

Instructions for Use

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.46 Acre Lots - Standard Septic System	Parcel Identification
1/8/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	211.51	Site-specific	
Parcel Area (acres)	1.5	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.02E+04	95.3
Effluent	4.14E+02	3.9
Recharge	8.79E+01	0.8
Total Water Volume	**1.07E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.7
Current/Acceptable Lot Size (Acres)	1.5

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.17E+07	69.1
Septic Tank Effluent Nitrate Mass	1.87E+07	30.9
Recharge Nitrate Mass	2.64E+04	0.0
Total Nitrate Mass	**6.04E+07**	

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.50 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	211.51	Site-specific	
Parcel Area (acres)	1.5	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.02E+04	95.3
Effluent	4.14E+02	3.9
Recharge	8.79E+01	0.8
Total Water Volume	**1.07E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.0
Current/Acceptable Lot Size (Acres)	1.5

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.17E+07	78.8
Septic Tank Effluent Nitrate Mass	1.12E+07	21.1
Recharge Nitrate Mass	2.64E+04	0.0
Total Nitrate Mass	**5.29E+07**	

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.50 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	345.17	Site-specific	
Parcel Area (acres)	1.69	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.66E+04	97.0
Effluent	4.14E+02	2.4
Recharge	9.90E+01	0.6
Total Water Volume	**1.71E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.1
Current/Acceptable Lot Size (Acres)	1.7

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.81E+07	78.5
Septic Tank Effluent Nitrate Mass	1.87E+07	21.5
Recharge Nitrate Mass	2.97E+04	0.0
Total Nitrate Mass	**8.68E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.69 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

V. 1.3 5/2/2002

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INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	344.61	Site-specific	
Parcel Area (acres)	1.87	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.66E+04	96.9
Effluent	4.14E+02	2.4
Recharge	1.10E+02	0.6
Total Water Volume	**1.71E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.1
Current/Acceptable Lot Size (Acres)	1.9

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	6.80E+07	78.4
Septic Tank Effluent Nitrate Mass	1.87E+07	21.5
Recharge Nitrate Mass	3.29E+04	0.0
Total Nitrate Mass	**8.67E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.87 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	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 SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	236.19	Site-specific	
Parcel Area (acres)	1.89	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.14E+04	95.6
Effluent	4.14E+02	3.5
Recharge	1.11E+02	0.9
Total Water Volume	**1.19E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	5.5
Current/Acceptable Lot Size (Acres)	1.9

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.66E+07	71.4
Septic Tank Effluent Nitrate Mass	1.87E+07	28.6
Recharge Nitrate Mass	3.32E+04	0.1
Total Nitrate Mass	**6.53E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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 parameters to examine the resultant impact on nitrate concentrations.

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)	
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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.89 Acre Lots - Standard Septic System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	Prepared By

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IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADSHEET

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 On-Site Sewage Treatment Systems. In Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See **Instructions for Use** below.

INPUT

Water Budget	Input Value	Default Value	
Hydraulic Conductivity (ft/day)	65	Site-specific	
Hydraulic Gradient	0.00477	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	236.19	Site-specific	
Parcel Area (acres)	1.89	Site-specific	
Percent of Parcel That Is Impervious (Percent)	5	Site-specific	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	
Septic Tank Effluent (gallons/d/home)	300	300	Default
Natural Recharge rate (inches/yr)	0.6	Site-specific	
Nitrogen Budget (all concentrations represent nitrate nitrogen)			
Upgradient Ground Water Concentration (mg/l)	4.1	Site-specific	
Septic Tank Effluent Concentration (mg/l)	27.0	45.0	Provide Justification
Denitrification Rate (decimal fraction)	0	0	Default
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default

OUTPUT

Yearly Water Budget	Volume (m^3)	% of Total
Ground Water	1.14E+04	95.6
Effluent	4.14E+02	3.5
Recharge	1.11E+02	0.9
Total Water Volume	**1.19E+04**	

Point of Compliance Nitrate Concentration Goal (mg/l)	5.1
Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.9
Current/Acceptable Lot Size (Acres)	1.9

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.66E+07	80.6
Septic Tank Effluent Nitrate Mass	1.12E+07	19.4
Recharge Nitrate Mass	3.32E+04	0.1
Total Nitrate Mass	**5.78E+07**	

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 an estimated **Average Downgradient Nitrate Concentration in GW** (shown in the *OUTPUT* side of the spreadsheet).

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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 (inches/yr) = $(TAP)^2 * 0.0046$
TAP is input in inches/yr.

SITE INFORMATION

Freezeout Ridge Estates Subdivision	Site Name
1.89 Acre Lots - 40% Nitrate Reducing System	Parcel Identification
1/11/2021	Date
Ethan Salove, PE	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.

Exhibit B1

R34479 PARCEL INFORMATION REPORT

12/11/2024 10:26:50 AM

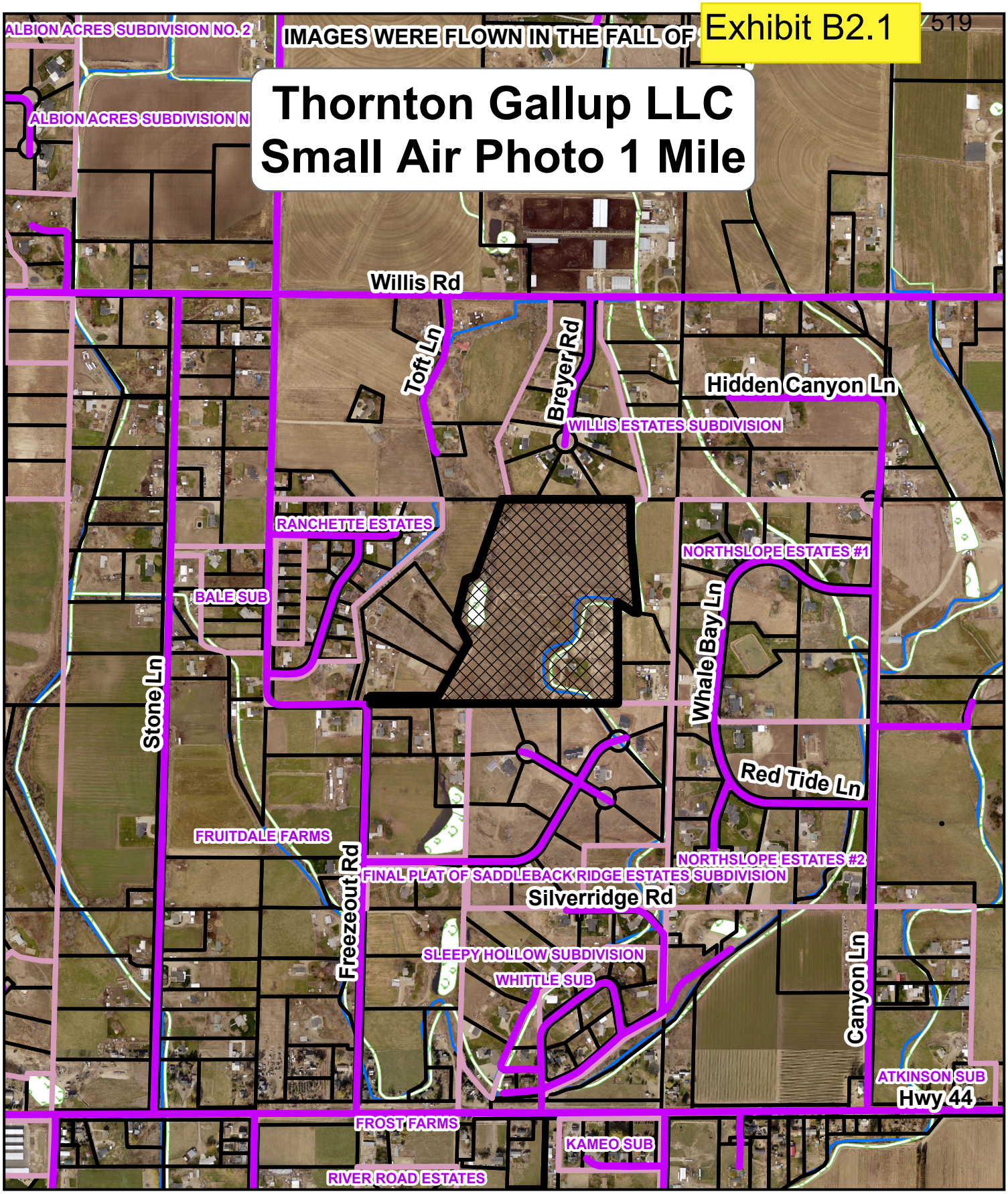
PARCEL NUMBER:	R34479
OWNER NAME:	THORNTON GALLUP LLC
CO-OWNER:	
MAILING ADDRESS:	PO BOX 1495 NAMPA ID 83653
SITE ADDRESS:	14180 GADSDEN LN
TAX CODE:	0320000
TWP:	4N **RNG:** 3W **SEC:** 03 **QUARTER:** NE
ACRES:	31.40
HOME OWNERS EXEMPTION:	No
AG-EXEMPT:	Yes
DRAIN DISTRICT:	NOT In Drain Dist
ZONING DESCRIPTION:	AG / AGRICULTURAL
HIGHWAY DISTRICT:	HIGHWAY DISTRICT #4
FIRE DISTRICT:	MIDDLETON FIRE
SCHOOL DISTRICT:	MIDDLETON SCHOOL DIST #134
IMPACT AREA:	MIDDLETON
FUTURE LAND USE 2011-2022 :	Res
FLU Overlay Zone Desc 2030:	
FLU RR Zone Desc 2030:	
FUTURE LAND USE 2030:	Res
IRRIGATION DISTRICT:	BLACK CANYON IRRIGATION DIST
FEMA FLOOD ZONE:	X **FLOODWAY:** NOT In FLOODWAY **FIRM PANEL:** 16027C0233F
WETLAND:	Freshwater Emergent Wetland \ Riverine
NITRATE PRIORITY:	NE CANYON CO.
FUNCTIONAL Classification:	NOT In COLLECTOR
INSTRUMENT NO. :	2020036886
SCENIC BYWAY:	NOT In Scenic Byway
LEGAL DESCRIPTION:	03-4N-3W NE TX 19480 IN S 1/2 OF NE LS TX 97652
PLATTED SUBDIVISION:	
SMALL CITY ZONING:	
SMALL CITY ZONING TYPE:	

DISCLAIMER:

1. FEMA FLOOD ZONE REFERS TO THE DESIGNATED FEMA FLOOD AREAS. POSSIBLY ONE (1) OF SEVERAL ZONES - SEE FIRM PANEL NUMBER.
2. THIS FORM DOES NOT CALCULATE DATA FOR PARCELS INSIDE CITY LIMITS SO WATCH YOURSELVES.
3. WETLANDS CLASSIFICATION WILL POPULATE IF "ANY" PORTION OF SAID PARCEL CONTAINS A DELINEATED WETLAND.
4. COLLECTORS AND ARTERIALS ARE BASED ON THE SHERRIFS CENTERLINE WITH AN ADDITIONAL 100 FOOT BUFFER.

Exhibit B2.1

Thornton Gallup LLC
Small Air Photo 1 Mile

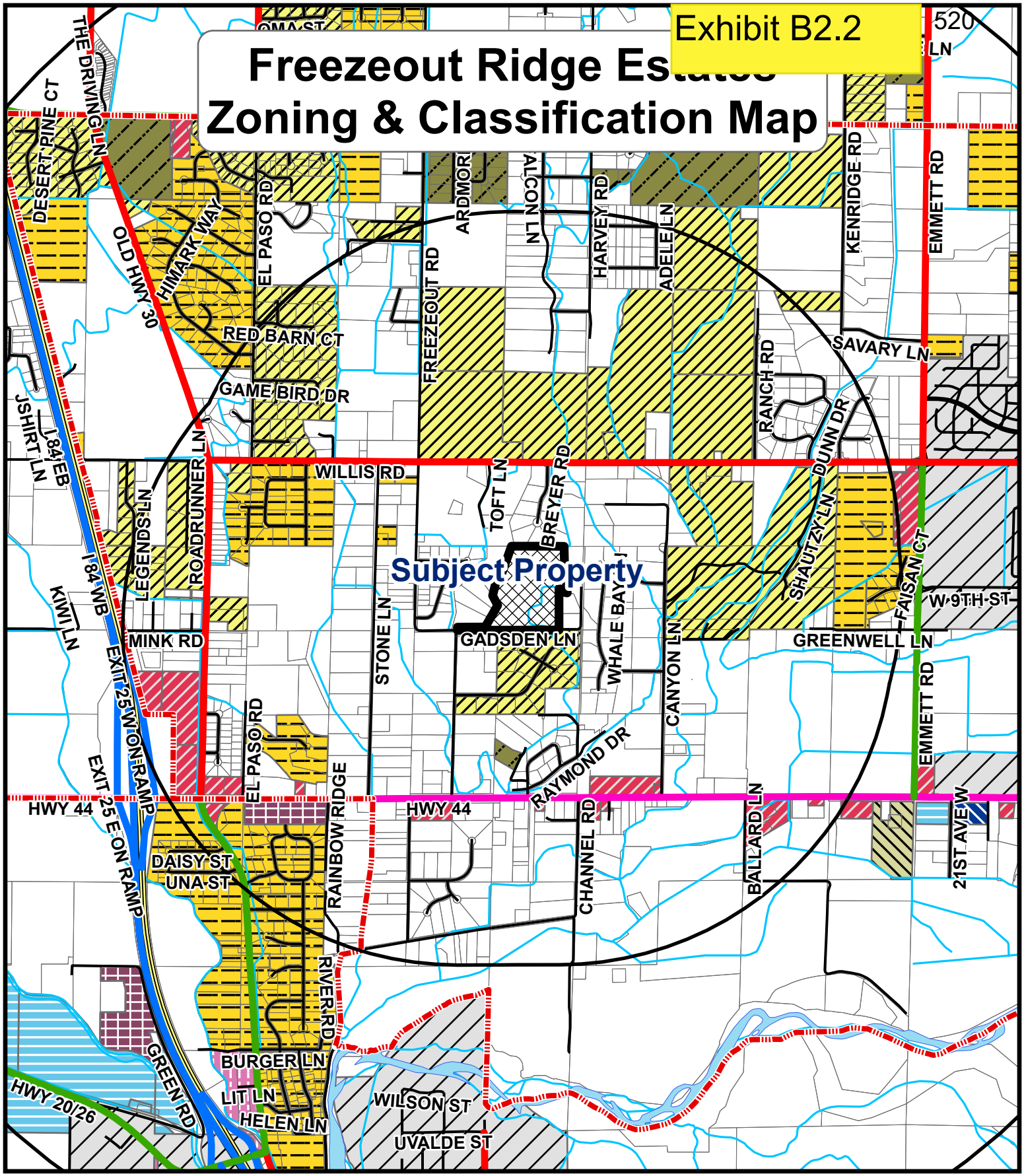


City_Limits
Wetlands

0 0.25 0.5 Miles

Exhibit B2.2

Freezeout Ridge Estates
Zoning & Classification Map



CurrentZoning

- RR
- CR-RR
- R1
- CR-R1
- R2
- C
- C1
- CR-C1
- C2
- CR-C2
- M1
- CR-M1
- M2
- AG

ITD Functional Classification

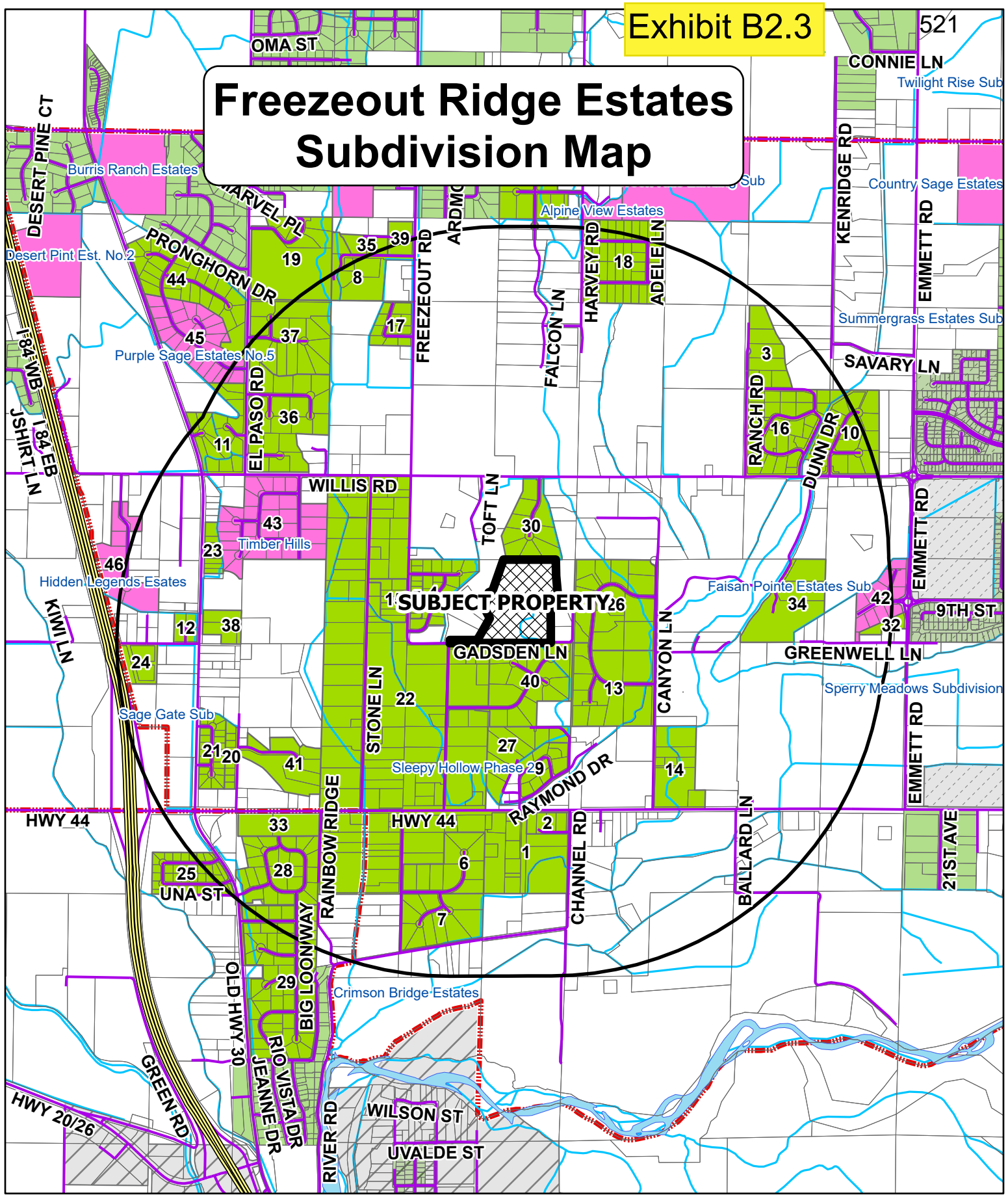
- Interstate
- Major Collector
- Minor Arterial
- Minor Collector
- Other Principal Arterials

0 0.5 1 Miles

Exhibit B2.3

521

Freezeout Ridge Estates Subdivision Map



SUBDIVISIONS
Plat Type,Plat Status
Preliminary,Approved
Preliminary,Pending

0 0.3 0.6 Miles

SUBDIVISION & LOT REPORT

NUMBER OF SUBS	ACRES IN SUB	NUMBER OF LOTS	AVERAGE LOT SIZE	
46	1262.78	711	1.78	
NUMBER OF SUBS IN PLATTING	**ACRES IN SUB**	**NUMBER OF LOTS**	**AVERAGE LOT SIZE**	
4	107.14	70	1.53	
NUMBER OF LOTS NOTIFIED	**AVERAGE**	**MEDIAN**	**MINIMUM**	**MAXIMUM**
65	3.42	1.93	0.01	31.40
NUMBER OF MOBILE HOME PARKS	**ACRES IN MHP**	**NUMBER OF SITES**	**AVG HOMES PER ACRE**	**MAXIMUM**
0	0	0	0	0

PLATTED SUBDIVISIONS

SUBDIVISION NAME	Label	LOCATION	ACRES	NO. OF LOTS	AVERAGE LOT SIZE	CITY OF…	Year
FROST FARMS	1	4N3W10	53.58	20	2.68	COUNTY (Canyon)	1907
KAMEO SUB	2	4N3W10	5.09	4	1.27	COUNTY (Canyon)	2005
RANCH ROAD ESTATES	3	5N3W35	15.21	7	2.17	COUNTY (Canyon)	2003
RANCHETTE ESTATES	4	4N3W03	17.05	20	0.85	COUNTY (Canyon)	1972
RANCHETTE ESTATES #2	5	4N3W03	2.89	9	0.32	COUNTY (Canyon)	1974
RIVER ROAD ESTATES	6	4N3W10	21.39	10	2.14	COUNTY (Canyon)	2001
RIVER ROAD ESTATES #2	7	4N3W10	23.92	12	1.99	COUNTY (Canyon)	2003
WEN-JEFF ESTATES	8	5N3W34	16.78	7	2.40	COUNTY (Canyon)	1997
WHITTLE SUB	9	4N3W03	11.42	10	1.14	COUNTY (Canyon)	1971
WILLIS CREEK SUBDIVISION	10	5N3W35	28.54	19	1.50	COUNTY (Canyon)	2005
WILLIS RANCH	11	5N3W33	21.11	16	1.32	COUNTY (Canyon)	1998
YOTIE SUB	12	4N3W04	4.14	4	1.03	COUNTY (Canyon)	2001
NORTHSLOPE ESTATES #2	13	4N3W02	37.37	12	3.11	COUNTY (Canyon)	2005
ATKINSON SUB	14	4N3W02	21.36	10	2.14	COUNTY (Canyon)	1971
BALE SUB	15	4N3W03	7.08	7	1.01	COUNTY (Canyon)	1990
D&S PURPLE SAGE RANCHETTES	16	5N3W35	36.47	31	1.18	COUNTY (Canyon)	1972
DEE ANN MEADOWS SUB	17	5N3W34	9.71	12	0.81	COUNTY (Canyon)	1974
DRAKE SUB	18	5N3W35	40.05	41	0.98	COUNTY (Canyon)	1973
EL PASO HEIGHTS	19	5N3W34	37.90	7	5.41	COUNTY (Canyon)	1998
FOREST HILLS ESTATES	20	4N3W04	4.82	9	0.54	COUNTY (Canyon)	1987
FOREST HILLS ESTATES #2	21	4N3W04	11.35	21	0.54	COUNTY (Canyon)	1996
FRUITDALE FARMS	22	4N3W03	273.92	83	3.30	COUNTY (Canyon)	1911
HECK SUB #1	23	4N3W04	4.69	9	0.52	COUNTY (Canyon)	1985
KABLE SUB	24	4N3W04	8.04	4	2.01	COUNTY (Canyon)	1966
MOUNTAIN GEM ESTATES	25	4N3W09	17.72	37	0.48	COUNTY (Canyon)	1996
NORTHSLOPE ESTATES #1	26	4N3W02	42.71	15	2.85	COUNTY (Canyon)	2004
SLEEPY HOLLOW SUBDIVISION	27	4N3W03	17.60	6	2.93	COUNTY (Canyon)	2005
SOUTHWICK ESTATES	28	4N3W09	29.57	24	1.23	COUNTY (Canyon)	2007
TAYLOR RIDGE SUBDIVISION	29	4N3W10	62.78	53	1.18	COUNTY (Canyon)	2007
WILLIS ESTATES SUBDIVISION	30	4N3W03	19.35	10	1.93	COUNTY (Canyon)	2008
EAGLES NEST ESTATES	31	5N3W34	35.62	11	3.24	COUNTY (Canyon)	1998
GREEN ESTATES	32	4N3W02	2.87	2	1.44	COUNTY (Canyon)	2009
NORTH SOUTHWICK COMMERCIAL SUBDIVISION	33	4N3W10	10.55	2	5.27	COUNTY (Canyon)	2017
KINDER PLATZ SUBDIVISION	34	4N3W02	25.33	4	6.33	COUNTY (Canyon)	2017
RADFORD RIDGES SUBDIVISION	35	5N3W34	4.59	2	2.29	COUNTY (Canyon)	2017
ALBION ACRES SUBDIVISION NO. 1	36	5N3W34	41.10	19	2.16	COUNTY (Canyon)	2018
ALBION ACRES SUBDIVISION NO. 2	37	5N3W34	33.13	14	2.37	COUNTY (Canyon)	2018
PALOMINOS SUBDIVISION	38	4N3W04	6.49	2	3.24	COUNTY (Canyon)	2019
RADFORD RIDGES NO 2 SUBDIVISION	39	5N3W34	4.75	3	1.58	COUNTY (Canyon)	2019
FINAL PLAT OF SADDLEBACK RIDGE ESTATES SUBDIVISION	40	4N3W03	35.81	16	2.24	COUNTY (Canyon)	2020
BOULDER CREEK SUBDIVISION	41	4N3W03	18.01	7	2.57	COUNTY (Canyon)	2020
FAISAN POINTE ESTATES SUBDIVISION	42	4N3W02	13.82	13	1.06	COUNTY (Canyon)	2021
TIMBER HILLS SUBDIVISION	43	4N3W03&04	45.62	28	1.63	COUNTY (Canyon)	2021
PURPLE SAGE ESTATES SUBDIVISION NO. 4	44	5N3W33	33.44	25	1.34	COUNTY (Canyon)	2021
PURPLE SAGE ESTATES SUBDIVISION NO. 5	45	5N3W33	28.45	25	1.14	COUNTY (Canyon)	2022
HIDDEN LEGENDS ESTATES SUBDIVISION	46	4N3W04	19.59	9	2.18	COUNTY (Canyon)	2023

SUBDIVISIONS IN PLATTING

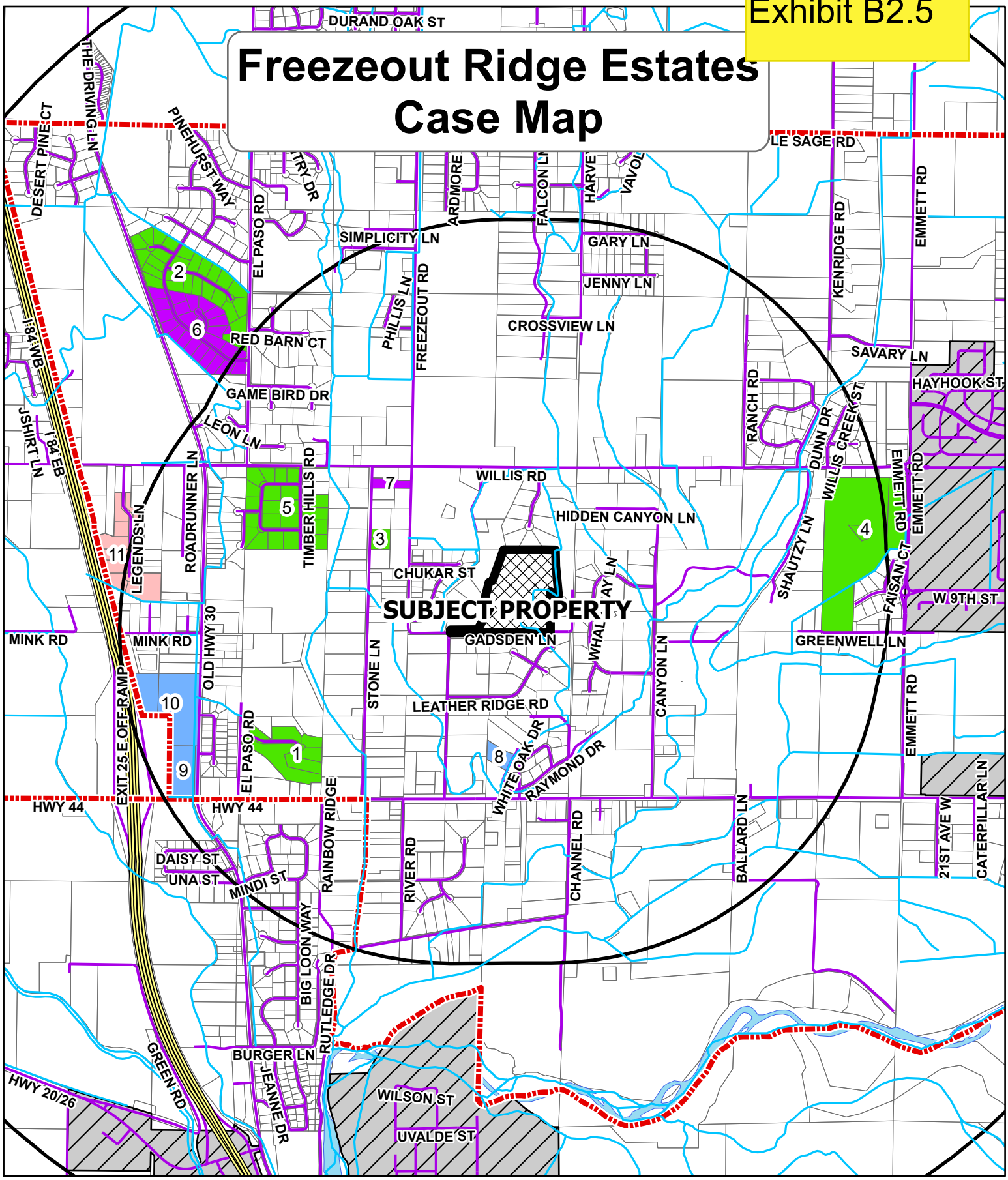
SUBDIVISION NAME	ACRES	NO. OF LOTS	AVERAGE LOT SIZE			
Purple Sage Estates No.5	28.32	23	1.23			
Timber Hills	45.49	28	1.62			
Faisan Pointe Estates Sub	13.82	11	1.26			
Hidden Legends Esates	19.51	8	2.44			

MOBILE HOME & RV PARKS

SUBDIVISION NAME	SITE ADDRESS	ACRES	NO. OF SPACES	UNITS PER ACRE	CITY OF...

Exhibit B2.5

Freezeout Ridge Estates Case Map



YEAR

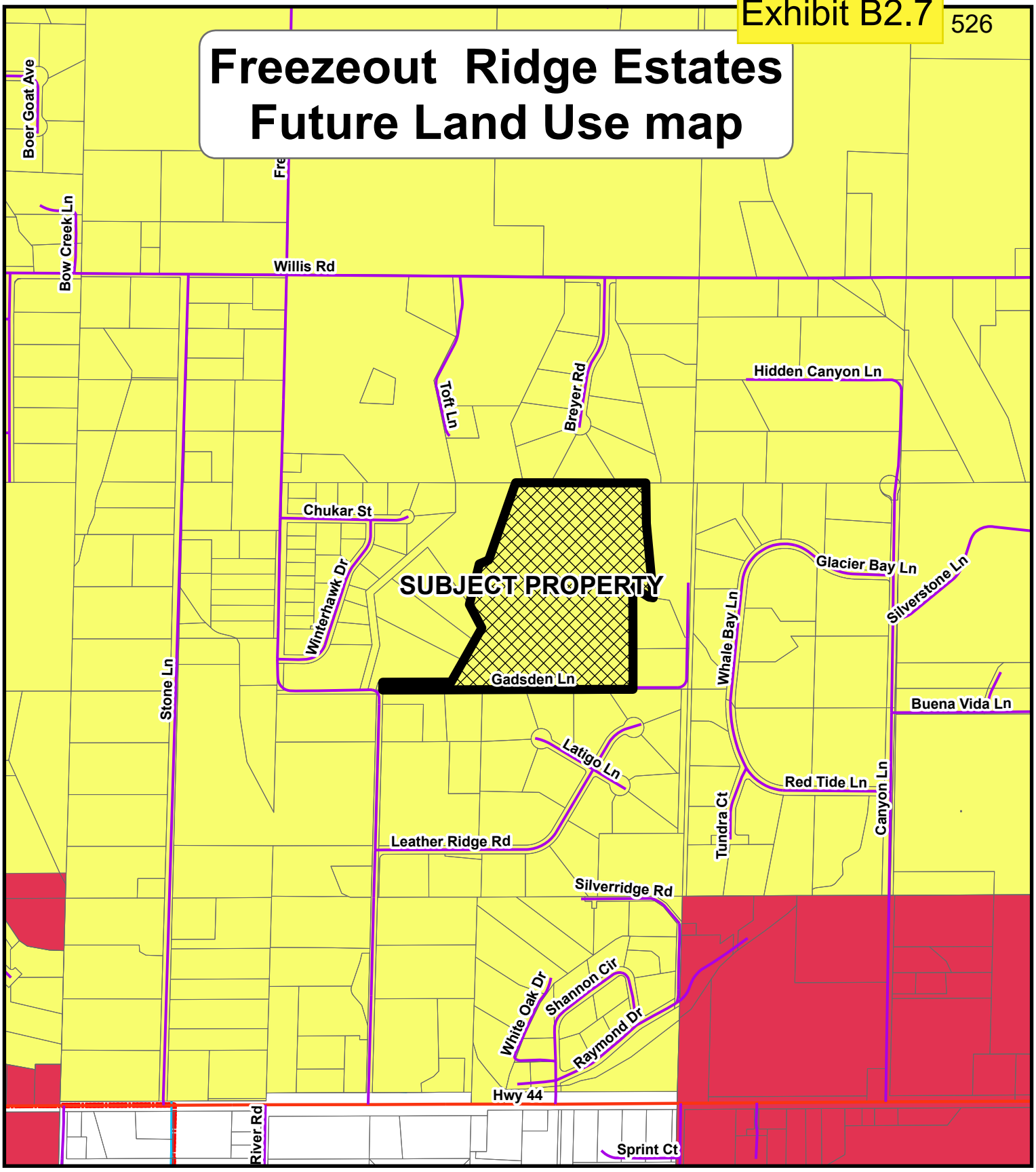
2023	2020
2022	2019
2021	2018

0 0.5 1 Miles

CASE SUMMARY

ID	CASENUM	REQUEST	CASENAME	FINALDECIS
1	SD2019-0004	Boulder Creek Sub	Boulder Creek Sub	APPROVED
2	SD2019-0043	Purple Sage Estaates No.4	Purples Sage Estates No.4	APPROVED
3	RZ2019-0040	Rezone AG to R1	Wangsgard, Kathi	APPROVED
4	RZ2019-0034	Rezone AG to R1	Mortensen	APPROVED
5	Trison Estates Sub	0	Trison Estates Sub	Approved
6	SD2020-0026	Plat - Purple Sage Esates No.5	Plat - Purple Sage Esates No.5	APPROVED
7	RZ2021-0016	Rezpme AG to R 1	Guijaro	APPROVED
8	RZ2022-0006	Rezone AG to CR-R1	Phoenix	APPROVED
9	RZ2022-0009	Rezone AG to C1	Oregon Trail Chruch of God	APPROVED
10	CU2021-0009	Planned Unit Development	Sage Gate Storage & Business Park	DENIED
11	SD2022-0003	Hidden Legends Estates Sub	Hidden Legends Estates Sub	APPROVE

Freezeout Ridge Estates Future Land Use map



Legend

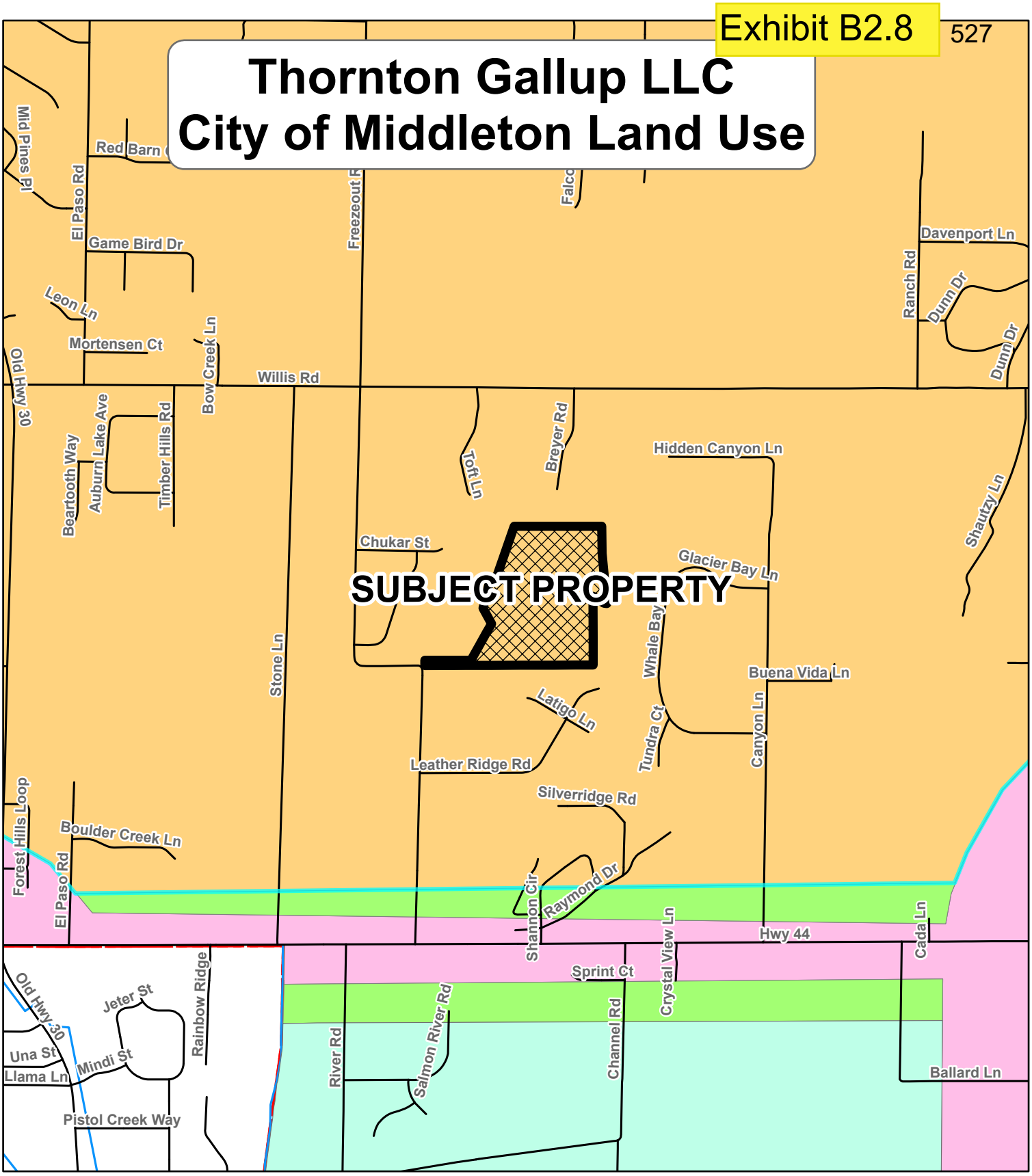
Future Land Use 2011_2022

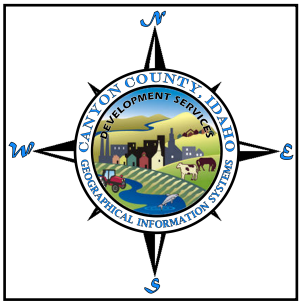
- COMMERCIAL
- INDUSTRIAL
- RESIDENTIAL

0 0.15 0.3 Miles

Exhibit B2.8

Thornton Gallup LLC
City of Middleton Land Use





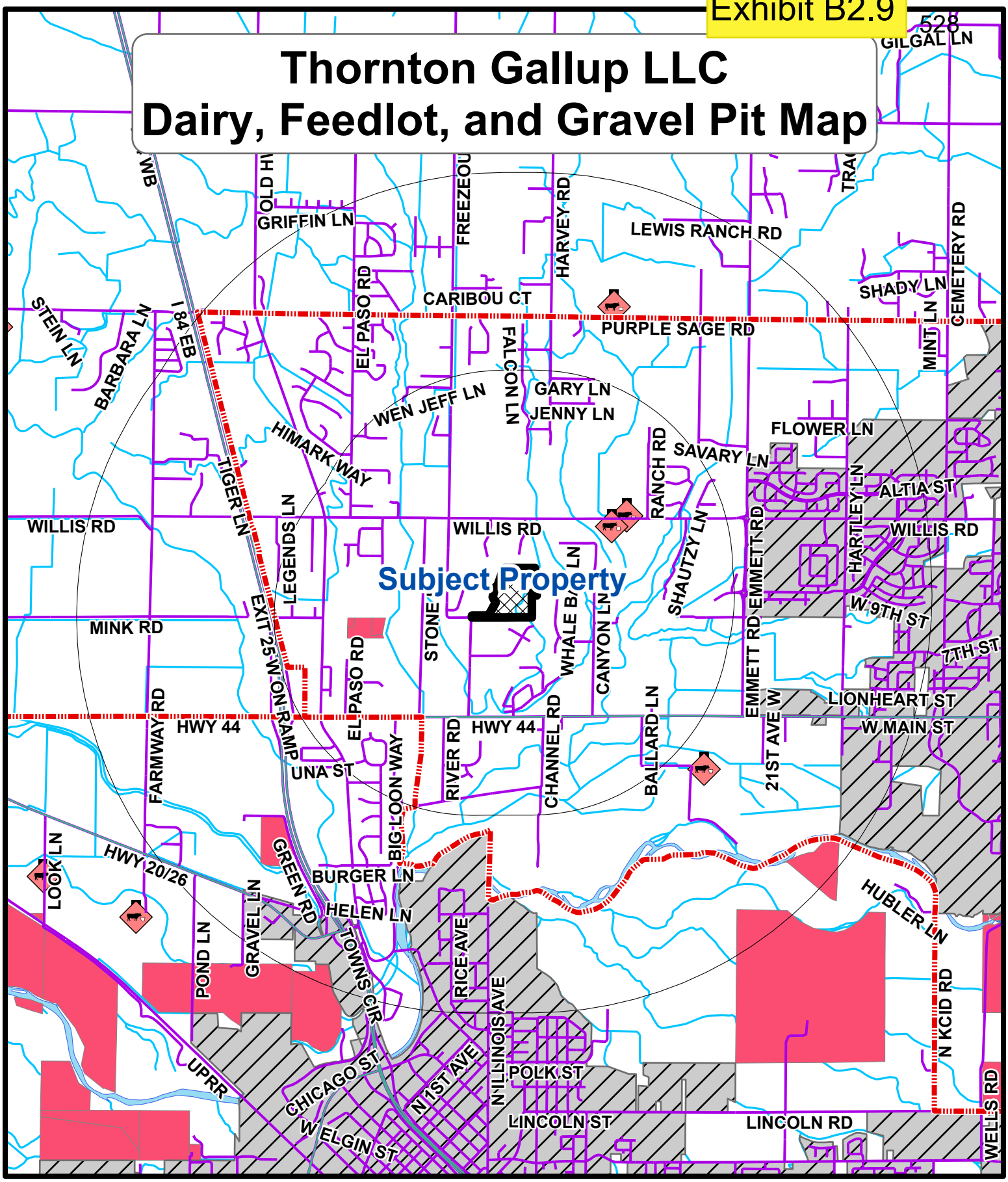
MiddletonCompPlan

- Commercial
- Industrial
- Mixed Use
- Public
- Residential
- Residential Special Areas
- Transit Oriented

0 0.25 0.5 Miles

Exhibit B2.9

Thornton Gallup LLC
Dairy, Feedlot, and Gravel Pit Map



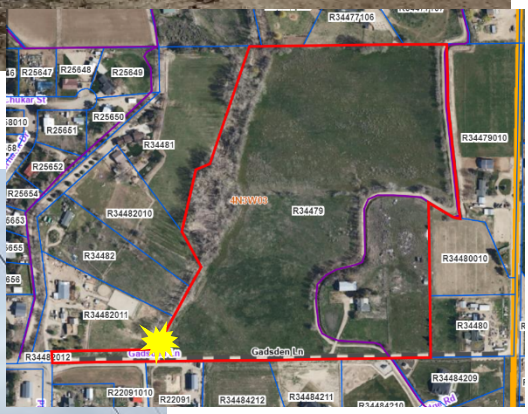
FEEDLOTS

DAIRIES

GRAVELPITS

0 0.75 1.5 Miles

Exhibit C



All three photos were taken from the same location. The top left and bottom photo are looking Northeast onto the property. The top right is looking West up the private road.

All three photos were taken from the same location. The top image was taken looking North at the residential buildings. The bottom left is looking West at the lateral. The bottom right is looking Northeast at the lateral.

The top photo is taken looking South near the boundary of the property on the East. (blue star) The bottom photo is taken looking South (yellow star).

All three photos were taken at the same location. The first is taken looking West at Freezeout Rd, the second is taken looking South at Freezeout Rd and the last is looking back down the private road to the West.

Exhibit D1

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
BOISE REGULATORY OFFICE
720 EAST PARK BOULEVARD, SUITE 245
BOISE, IDAHO 83704-9754

August 23, 2021

Walla Walla District
Regulatory Division

SUBJECT: NWW-2021-00298

Mr. Robert T. Gallup
Thornton Gallup LLC
P.O. Box 1495
Nampa, Idaho 83653

Dear Mr. Gallup:

We have reviewed your September 16, 2020 application for permit in accordance with Section 404 of the Clean Water Act and have determined that the subject project area contains water features which are (b)(5) excluded waters, and not considered waters of the United States. Therefore, a Department of Army authorization is not required.

Enclosed is our Department of Army (DA) Approved Jurisdictional Determination (AJD) that there are no waters of the United States, including wetlands, within your proposed project area. Therefore, no DA authorization is required. This decision is based upon our review of the information your agent provided and additional information available to our office. Your project site is located at the C.L.E. 10.2 Lateral at the Freezeout Ridge Estates, within Section 3 of Township 4 North, Range 3 West, near latitude 43.715278º N and longitude -116.675556º W, in Canyon County, in Caldwell, Idaho. Your request has been assigned file number NWW-2021-00298, which should be referred to in future correspondence with our office regarding this site.

The DA exerts regulatory jurisdiction over waters of the United States (U.S.), including wetlands, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). Section 404 of the Clean Water Act requires a DA permit be obtained prior to discharging dredged or fill material into waters of the U.S., which are defined at 33 CFR 328.3.

This approved JD is valid for a period of 5-years from the date of this letter, unless new information supporting a revision is provided to this office before the expiration date. Also enclosed, you will find the Approved Jurisdictional Determination Form addressing wetlands and waters of the U.S. located within the JD review area, and a

Notification of Administrative Appeals Options and Process and Request for Appeal Form (RFA) regarding this DA Approved Jurisdictional Determination. Should you disagree with certain terms and/or conditions this Approved JD, the Notification of Administrative Appeal Options form outlines the steps to take to file your objection. Please note, the RFA form must be received by the Northwest Division Office no later than October 22, 2021.

Nothing in this letter shall be construed as excusing you from compliance with other Federal, state, or local statutes, ordinances or regulations which may affect this work.

If you have any questions about this determination, please contact Sarah Windham by telephone at 208-433-4464, by mail at the address in the above letterhead, or via email at sarah.v.windham@usace.army.mil. We appreciate your cooperation with the Corps of Engineers' Regulatory Program.

Sincerely,

Shane Skaar
Environmental Resources Specialist
Regulatory Division

Enclosures:
Wetland/Waters Delineation Map
Approved JD Form
Notification of Administrative Appeal Options and Request for Appeal Form

Michelle Barron

From: Don Popoff <dpopoff@rh2.com>
Sent: Wednesday, August 30, 2023 2:19 PM
To: Michelle Barron
Cc: Olga Powers; Nick Sparacino; carl@blackcanyonirrigation.com; tyler@blackcanyonirrigation.com; Cameron Shippy; William Mason
Subject: [External] BCID Comments_RZ2021-0053_SD2021-0055_Freezeout Ridge
Attachments: BCID_LTR_Response_RZ2021-0053_SD2021-0055_Freezeout_20230830.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Michelle,

Please see the attached BCID Comments_RZ2021-0053_SD2021-0055_Freezeout Ridge.
Please let me know if you have any questions.

Thanks
Don
District Engineer
Black Canyon Irrigation District

Donald Popoff PE
Nampa Office Manager | RH2 Engineering, Inc.

16150 N. High Desert Street
Suite 201
Nampa, Idaho 83687
C: 208.807.0015
O: 208.563.2280
dpopoff@rh2.com
www.rh2.com

BLACK CANYON IRRIGATION DISTRICT

NOTUS, IDAHO

August 30th, 2023

Canyon County Development Services Department
111 North 11th Ave. Suite 140
Caldwell, ID 83605
(208) 454-7458

RE: Freezeout Ridge Subdivison, Parcel R3447900000
Case No. RZ2021-0053/SD2023-0008
Applicant: Mason & Associates, Inc.
Planner: Michelle Barron

The parcel is located at 23442 Freezeout Rd, Nampa ID 83653.

The Black Canyon Irrigation District (District) is providing PRE-PLAT CONCURRENCE APPROVAL with the following conditions and comments regarding this proposed rezone/preliminary plat.

General Comments

- The District requests that all District requirements be met (as indicated below) prior to rezone approval, preliminary plat approval, construction drawing approval and final plat approval respectively.
- This project was previously approved by the District on November 4, 2021. Unknown delays have required this project to be re-approved with the District, with some very minor revisions that the District has identified with the Developer.
- The District has begun the review process with the developer for the Freezeout Ridge subdivision. The developer has filled out an intake sheet and is on track with the District's development review process. We appreciate this coordination from the Developer.

Prior to District Pre-plat Concurrence / Rezone Approval

- The provided pre-plat shows a 35-foot District easement along the north edge of the parcel. A portion of this easement is shown to be on the Developer's property. Please provide the additional easement width as discussed and as requested of the Developer for future access to this pipeline. Please show the required easement on pre-plat documents.

Prior to District Construction Plan Concurrence Approval

- The pre-plat map shows an assumed "private" gravity irrigation line extending west and south to the parcel located at 23440 Freezeout Rd. The developer will need to ensure that water is delivered to this parcel as has historically been delivered. A separate weir box for District's flow measurements may be required. This detail will need to be resolved during construction plan review approval.
- Initial approval documents with the District shows the adjacent property owner providing an easement along the eastern edge of this plat. Pipe location will be determined based on the successful acquisition of this easement. This detail will need to be resolved during construction plan review approval.
- A turnout off Freezeout road to access the last irrigation and weir boxes along the south side of property has been shown and approved. This access will be reviewed and any changes resolved based on pipeline location during construction plan review approval.
- An agreement with the Bureau of Reclamation will be required prior to working in the District's easement. This agreement was almost completed, but is waiting on concurrence of construction drawings with the

District. Once construction plans are approved a letter will be provided to the Bureau for concurrence.

Prior to District Final Plat Concurrence Approval

- A legal, standalone, recorded easement for the District will be required prior to final plat concurrence from the District for the east-west running easement across the northern property line. A 20-foot easement is shown on the final plat for the southern edge of the neighboring subdivision (Willis Estates). Please ensure that a minimum of 15' of easement is provided (completing the 35-foot easement) within the Freezeout Ridge subdivision. No other utilities will be allowed within the District's easement including pressure irrigation or fencing.
- All items required in the Bureau's license agreement will be required to be completed.
- All District construction standard items relevant to this project, including hydrostatic pipe testing, will need to be completed.
- District policy requires that all easements are fenced along the District facility easement/right-of-way boundary line located within the subdivision. Specifically for this subdivision, the easement along the east edge and southeast corner of the plat will be required to be fenced prior to concurrence of final plat.
- District policy requires that a 12' wide all-weather road be constructed along the District's easement as shown. A 12' wide all-weather road will be required to be constructed prior to concurrence of final plat.
- A lot division fee will be assessed to the developer of this project prior to final plat.
- All fees will need to be paid in full to the District.
- As-constructed surveyed plans will be required to be provided to the District / along with digital pipe network design drawings.

General Comments

- Runoff and drainage from the proposed land subdivision should be addressed as well to ensure downstream users are not adversely affected by the proposed land use changes.
- All Maintenance road right-of ways, lateral right-of ways and drainage right-of ways will need to be protected (including the restriction of all encroachments). Also, any crossing agreement(s) and/or piping agreement(s) will need to be acquired from the Bureau of Reclamation (Reclamation), once approved by the District, to cross over or under any existing lateral, pipe any lateral or encroach in any way the right-of ways of the District or the Reclamation.
- As long as this property has irrigation water attached to it, an irrigation system with an adequate overflow needs to be installed to ensure the delivery of irrigation water to each lot and/or parcel of land entitled to receive irrigation water.

All the above requirements are requested to be met, including any others that arise during future reviews.

Thank You,

Donald Popoff P.E.
District Engineer
Black Canyon Irrigation District

Exhibit D3

Michelle Barron

From: Richard Sims <middletown.rich@gmail.com>
Sent: Wednesday, November 20, 2024 9:19 PM
To: Michelle Barron
Subject: Re: [External] Rz2021-0053

Thank you for sending the picture. I looked in my records and the parcel was reviewed and no comment was offered. Thanks for clearing it up for me.
Rich Sims

On Wed, Nov 20, 2024 at 5:20 PM Michelle Barron <Michelle.Barron@canyoncounty.id.gov> wrote:

> Good afternoon Rich,
>
> Sorry for the confusion. It is the same application. Your agency was previously noticed in January of 2022. I do not see where the Soil Conservation commented. If you would like to provide comment, that would be great. The deadline for the comments is 12/9/2024. I will attach the aerial for your use.
>
> Thanks,
>
> Michelle Barron
> Principal Planner
> Canyon County Development Services Department
> 111 N. 11th Ave., #310, Caldwell, ID 83605
> Direct Line: 208-455-6033
> DSD Office Phone: 208-454-7458
> Email: Michelle.Barron@canyoncounty.id.gov
> Website: www.canyoncounty.id.gov
>
> -----Original Message-----
> From: Richard.Sims <middletown.rich@gmail.com>
> Sent: Tuesday, November 19, 2024 11:50 AM
> To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
> Subject: [External] Rz2021-0053
>
> I am a little confused. In the same day I received two messages about this tract. One asking for comments and one saying we do not need to respond with two different due dates. I did not get a copy of the p and z aerial phot which is essential for me to do my work. Was this submitted previously for comments. If not please send an aerial photo.
> Rich Sims
> Canyon county soil conservation district.
>
> Sent from my iPhone

Exhibit D4

2021-066321
RECORDED
09/23/2021 12:05 PM
00649164202100663210120126
CHRIS YAMAMOTO
CANYON COUNTY RECORDER
Pgs=12 HCRETAL NO FEE
MISC
CITY OF MIDDLETON

Space above this line for Recorder's use

CONSENT TO ANNEXATION

THIS CONSENT TO ANNEXATION ("**Consent**"), is made this 1st day of September, 2021, between the City of Middleton, Idaho, an Idaho municipal corporation ("**City**") and Thornton Gallup, LLC. ("**Developer**").

WHEREAS, Developer is the owner of the Subject Property located in Canyon County, Idaho and more particularly described below; and

WHEREAS, the Subject Property is located outside the City corporate limits but within the City's area of impact as established by Idaho Code Section 67-6526; and

WHEREAS, Developer is in the process of developing the Subject Property under the land use jurisdiction of Canyon County, Idaho, but the parties acknowledge that the orderly development of the City will encompass the Subject Property within the foreseeable future; and

WHEREAS, Both City and Developer have an interest in the thoughtful, well-planned, and coordinated growth of Canyon County and City; and

WHEREAS, Developer desires to agree and consent to the annexation of the Subject Property into the corporate limits of City (the **"Annexation"**) as soon as the Subject Property becomes contiguous to City limits; and

WHEREAS, there are costs associated with processing applications and noticing hearings for annexations when a property proposes itself as a candidate for annexation into the City (**"Costs"**); and,

WHEREAS, said costs are the responsibility of the property owner of the land proposing annexation.

NOW, THEREFORE, based upon the foregoing recitals, and the mutual consideration for the

execution of this Consent described herein, the parties agree as follows:

I. General

A. The Subject Property is legally described on **Exhibit A** attached and incorporated by this reference ("**Subject Property**").

B. In recognition of this binding commitment and consent to annexation, City shall be responsible for all Costs associated with the Annexation of the Subject Property into the City.

C. City staff shall support the Annexation application at the time of said application so long as the same is in the best interests of City, at the time thereof.

D. Developer's subsequent and/or associated applications for the development of the Subject Property shall be granted no special privilege, license, priority, approval, or entitlement hereby, and shall progresses in accordance with the then-current and applicable law.

E. This Consent shall be recorded in the Canyon County Recorder's Office following complete execution by the Developer and the City. This Consent shall run with the land. By the execution of this Consent, Developer is bound and likewise binds its heirs, assigns, and any and all successors in interests to the terms of this Consent.

II. Annexation:

A. The Subject Property is not currently contiguous to the Middleton City limits and cannot, therefore, be immediately annexed into City. The annexation process shall proceed immediately at such time as an annexation path, as required by Idaho law, becomes available.

B. The Annexation shall be initiated and consummated pursuant to Idaho Code 50-222, and the same shall be a "Category A" annexation, as the term is used therein.

C. At such time as the Subject Property shall become contiguous to the City limits, the Developer, his heirs, successors, and assigns shall support the Annexation of the Subject Property in whole into the City limits to become part of the same with a R-1 zone designation. The Annexation application, and associated application for the designation of a zone to the Subject Property, may be initiated by the City. The failure of any application to result in the annexation of the Subject Property shall not prevent or prohibit future annexation applications under this Consent.

D. In consideration of City's assumption of the Costs of the Annexation of the Subject Property in the impact area, Developer and its successors, forever, hereby irrevocably consent to the annexation of the Subject Property into the City limits as a voluntary "Category A Annexation" under Idaho law.

E. Developer, for itself and its heirs, assigns, and any and all successors in interest,

forever, waive the right to object to annexation of the Subject Property or revoke consent to the Annexation of the Subject Property.

F. Notice of such consent and waiver shall appear on any plat recorded in the office of the Canyon County Recorder and upon the covenants of any subsequent development occurring on the Subject Property.

IV. Effective Date/Binding Effect:

This Consent shall become effective at the time that both parties execute the same. This Consent constitutes the legal, valid, and binding obligation of each party. The individuals executing this Consent warrants that he or she has full power and has been duly authorized to execute and deliver this Consent on behalf of the entity for which he or she signs.

V. Termination: Termination of this Consent shall occur upon complete satisfaction of its terms.

[end of text.]

IN WITNESS WHEREOF the parties hereto have set their hands the day and year written below.

Date: 9-3-21

Thornton Gallup, LLC.
[name of entity]
By: Don Thornton
Its: Member

CITY OF MIDDLETON, IDAHO

Date: 9/17/2021

By: STEVEN RULE
Its Mayor

ATTEST:

Date: 9-17-2021

BECKY CROFTS, City Clerk

STATE OF IDAHO)
) **ss.**
COUNTY OF CANYON)

On this 17th day of September, 2021, before me the undersigned, a Notary Public in and for said State personally appeared Steven Rule and Becky Crofts known or identified to me to be the Mayor and City Clerk of the City of Middleton, Idaho that executed the said instrument, and acknowledged to me that such City executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

JENNIFFER A ODOM
COMMISSION #62130
NOTARY PUBLIC
STATE OF IDAHO

*SEAL

NOTARY PUBLIC FOR IDAHO
Residence: Middleton, ID
My Commission Expires: 8/28/25

STATE OF IDAHO)
) **ss.**
COUNTY OF CANYON)

On this 3 day of September, in the year 2021, before me the undersigned, a Notary Public in and for said State personally appeared Don Thornton known or identified to me to be the manager or a member of the limited liability company that executed the instrument or the person who executed the instrument on behalf of said limited liability company and acknowledged to me that such limited liability company executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

*SEAL JULIE R VAUDREY
Notary Public - State of Idaho
Commission Number 20201512
My Commission Expires Apr 22, 2026

NOTARY PUBLIC FOR IDAHO
Residence: Canyon County
My Commission Expires: April 22, 2026

Exhibit A

Legal Description of the Subject Property

Mason & Associates Inc.
Professional Engineers, Land Surveyors and Planners
924 3rd St. So. Nampa, ID 83651
Ph (208) 454-0256 Fax (208) 467-4130
e-mail: dholzhey@masonandassociates.us

FOR: Pioneer Homes
JOB NO.: JY1420
DATE: September 9, 2021

SUBDIVISION BOUNDARY
PARCEL

A parcel of land being a portion of the SW1/4 NE1/4 and a portion of the SE1/4 NE1/4 of Section 3, Township 4 North, Range 3 West, Boise Meridian, Canyon County Idaho, more particularly described as follows:

Commencing at the southwest corner of the SW1/4 NE1/4, marked with a found G.L.O. brass monument;

Thence N 89° 47' 50" E a distance of 677.27 feet along the south boundary of the SW1/4 NE1/4 to the **POINT OF BEGINNING** marked with a found 1/2 rebar BBCE 940, replaced with a 5/8 rebar pls 9366;

Thence N 00° 01' 01" W a distance of 50.05 feet to a found 5/8 rebar PLS 8960;

Thence N 89° 49' 42" E a distance of 438.55 feet to a found 1/2 rebar, replaced with a 5/8 rebar PLS 9366;

Thence N 29° 32' 40" E a distance of 397.27 feet to a found 5/8 rebar PLS 8960;

Thence N 28° 07' 21" W a distance of 169.92 feet to a found 5/8 rebar PLS 8960;

Thence N 13° 47' 27" E a distance of 268.10 feet to a found 1/2 rebar, replaced with a 5/8 rebar PLS 9366;

Thence N 67° 17' 49" E a distance of 65.01 feet to a found 1/2 rebar, replaced with a 5/8 rebar PLS 9366;

Thence N 19° 11' 52" E a distance of 523.26 feet to a found 1/2 rebar on the north boundary of the SE1/4 NW1/4, replaced with a 5/8 rebar PLS 9366;

Thence S 89° 58' 08" E a distance of 832.99 feet along the north boundary of the SE1/4 NE1/4 to a found 1/2 rebar, replaced with a 5/8 rebar PLS 9366;

Thence S 00° 50' 23" E a distance of 258.22 feet to a point marked with a 5/8 rebar PLS 9366;

Thence S 05° 23' 12" E a distance of 479.39 feet to a found 1/2 rebar, replaced with a 5/8 rebar PLS 9366;

Thence N 81° 01' 58" W a distance of 28.29 feet to a point marked with a 5/8 rebar PLS 9366;

Thence N 57° 47' 44" W a distance of 122.26 feet to a point, witness with a found 1/2 rebar replaced with a 5/8 rebar PLS 9366, bearing S 00° 11' 44" E a distance of 6.97 feet to said point;

Thence S 00° 11' 44" E a distance of 654.93 feet to a found 1/2 rebar on the south boundary of the SE1/4 NW1/4, replaced with a 5/8 rebar PLS 9366;

Thence S 89° 49' 13" W a distance of 965.15 feet along the south boundary of the SE1/4 NE1/4 to a found G.L.O. brass monument at the southwest corner of the SE1/4 NE1/4;

Thence S 89° 47' 50" W a distance of 637.76 feet along the south boundary of the SW1/4 NE1/4 to the **POINT OF BEGINNING.**

This parcel contains 31.408 acres more or less.

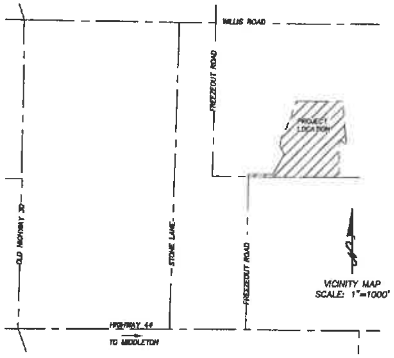
SUBJECT TO: All existing rights of way and easements of record or implied appearing on the above-described parcel of land.

Exhibit B

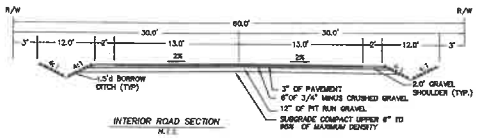
Preliminary Plat or Site Plan

PRELIMINARY PLAT
FOR
FREEZEOUT RIDGE ESTATES SUBDIVISION

A PART OF THE SE 1/4 NW 1/4 AND A PART OF THE SW 1/4 NE 1/4, SECTION 3, T. 4 N., R. 3 W., B.M., CANYON COUNTY, IDAHO 2021



VICINITY MAP
SCALE: 1"=1000'



INTERIOR ROAD SECTION
N.T.S.

OWNER/DEVELOPER
PIONEER HOMES
719 1ST ST. SOUTH STE. B
NAMPA, ID 83651
(208) 468-9200

ENGINEER/SURVEYOR
MASON & ASSOCIATES, INC.
924 3rd ST. SOUTH
NAMPA, ID 83651
(208) 454-0256

PROJECT NARRATIVE

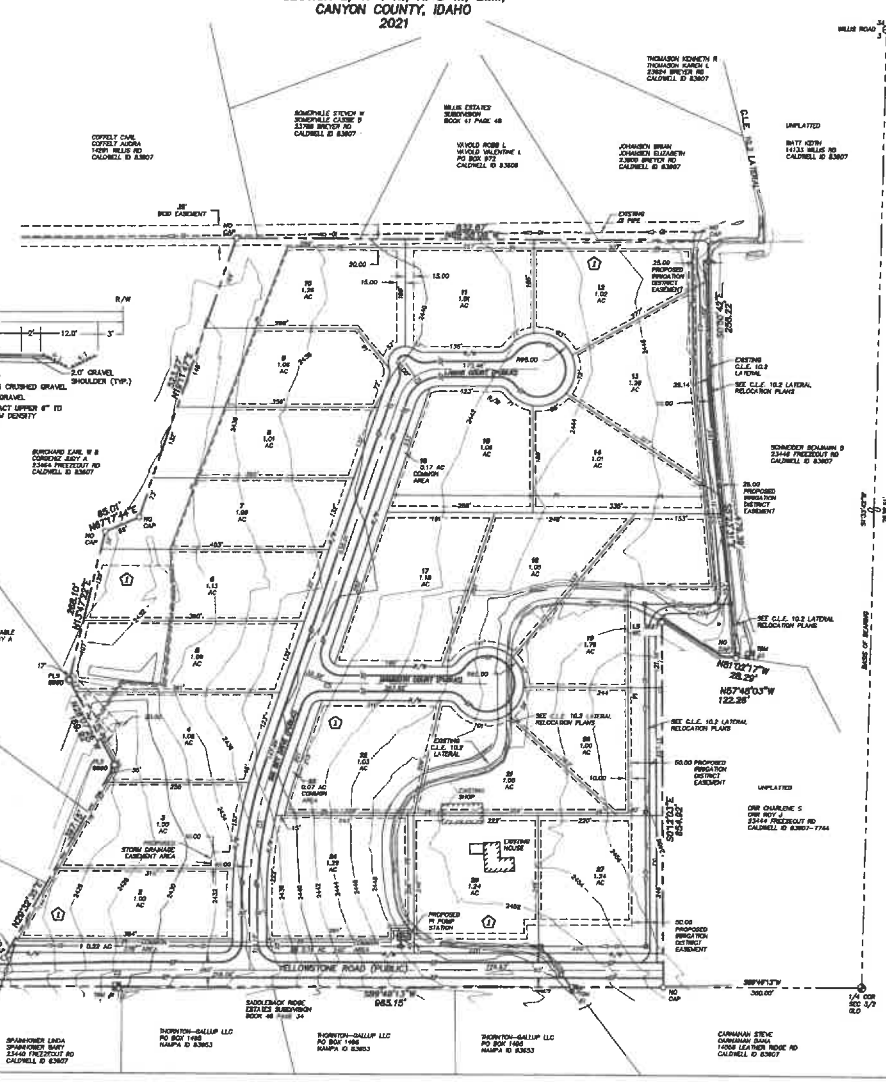
1. CURRENT CANYON COUNTY ZONE AG REQUEST FOR R-1.
2. NO. OF RESIDENTIAL LOTS IS 23. NO. OF COMMON LOTS IS 4. TOTAL NUMBER OF LOTS IS 27.
3. AREA: ±31.41 ACRES.
4. MINIMUM LOT SIZE: 1.00 ACRE
5. A PRESSURE IRRIGATION SYSTEM SHALL BE PROVIDED PER IDAHO CODE, SECTION 31-3805. PIPING TO BE PLACED ALONG REAR LOT LINES, TYPICAL. IRRIGATION WATER SHALL BE PROVIDED BY BLACK CANYON IRRIGATION DISTRICT. IRRIGATION SYSTEM SHALL BE MAINTAINED BY FREEZEOUT RIDGE ESTATES SUBDIVISION WATER USER'S AGREEMENT INSTRUMENT #00000000.
6. BUILDING SETBACKS AND DIMENSIONAL STANDARDS IN THIS SUBDIVISION SHALL BE IN COMPLIANCE WITH CANYON COUNTY STANDARDS FOR THE APPLICABLE ZONE.
7. ANY RE-SUBDIVISION OF THIS PLAT SHALL COMPLY WITH THE APPLICABLE ZONING REGULATIONS IN EFFECT TO THE TIME OF THE RE-SUBDIVISION.
8. THIS DEVELOPMENT RECOGNIZES SECTION 22-4503 OF THE IDAHO CODE, RIGHT TO FARM ACT, WHICH STATES: AGRICULTURAL OPERATION, AGRICULTURAL FACILITY OR EXPANSION THEREOF NOT A NUISANCE -- EXCEPTION. NO AGRICULTURAL OPERATION, AGRICULTURAL FACILITY OR EXPANSION THEREOF SHALL BE OR BECOME A NUISANCE, PRIVATE OR PUBLIC, BY ANY CHANGED CONDITIONS IN OR ABOUT THE SURROUNDING NONAGRICULTURAL ACTIVITIES AFTER IT HAS BEEN IN OPERATION FOR MORE THAN ONE (1) YEAR, WHEN THE OPERATION, FACILITY OR EXPANSION WAS NOT A NUISANCE AT THE TIME IT BEGAN OR WAS CONSTRUCTED. THE PROVISIONS OF THIS SECTION SHALL NOT APPLY WHEN A NUISANCE RESULTS FROM THE IMPROPER OR NEGLIGENT OPERATION OF AN AGRICULTURAL OPERATION, AGRICULTURAL FACILITY OR EXPANSION THEREOF.
9. IRRIGATION, DRAINAGE AND PUBLIC UTILITY EASEMENTS TO BE PROVIDED UNLESS OTHERWISE SHOWN
   - SUBDIVISION BOUNDARY : 10 FEET
   - STREET FRONTAGE : 10 FEET
   - REAR LOTS : 10 FEET
   - SIDE LOTS : 5 FEET
10. INDIVIDUAL PRIVATE WELLS WILL BE INSTALLED BY HOMEOWNER.
11. INDIVIDUAL SEPTIC SYSTEMS WILL BE INSTALLED BY HOMEOWNER.
12. IMPROVEMENTS SHOULD NOT SIGNIFICANTLY INCREASE STORM WATER RUNOFF. INCREASED RUNOFF WILL BE RETAINED VIA SWALES. INDIVIDUAL LOTS ARE RESPONSIBLE FOR RETENTION AND TREATMENT OF STORM WATER RUNOFF INCLUDING THE APPLICATION OF PERIMETER LOT BERMING TO PREVENT DIRECT LOT DISCHARGE INTO IRRIGATION FACILITIES.

TBM'S

TBM #1
FOUND BRASS CAP
CE 1/16 CORNER SECTION 3
GLO 1938
6.5' SOUTH OF SOUTH EDGE GRAVEL DRIVEWAY AND SOUTH OF THE 4TH POWER POLE
EAST END OF FREEZEOUT RD.
NAVD 88 EL=2430.90'

TBM #2
NE BOLT IRR BOX FOR THE 10.2 LATERAL 9' SOUTH OF SOUTH EDGE GRAVEL ROAD & 47' NE OF PI PUMP STATION
NAVD 88 EL=2450.83'

TBM #3
CHISELED X IN SW CORNER IRR BOX 24.6' EAST OF PROPERTY CORNER & EAST OF ANGLE POINT ON THE LATERAL ALONG THE EAST PROPERTY LINE.
NAVD 88 EL=2402.39'



0 50 100 200
Scale: 1"=100'

LEGEND

- BENCHMARK
- FOUND BRASS CAP MONUMENT
- FOUND ALUMINUM CAP MONUMENT
- FOUND 5/8" IRON PIN
- FOUND 1/2" IRON PIN
- BLOCK NUMBER
- TOPOGRAPHIC CONTOUR LINE
- PROPERTY BOUNDARY LINE
- SECTION LINE
- EASEMENT LINE
- RIGHT OF WAY LINE
- LOT LINE
- FUTURE EDGE OF PAVEMENT
- FUTURE SHOULDER OF ROAD
- PROPOSED GRAVITY IRRIGATION PIPE
- PROPOSED EDGE OF GRAVEL ROAD
- PROPOSED PRESSURE IRRIGATION LINE
- EXISTING PIPE

Curve Table

Curve #	Length	Radius	Delta	Chord Direction	Chord Length	Tangent
C1	37.89	1500.00	1°26'23"	N89°04'38"E	37.89	18.95
C2	38.30	1500.00	1°27'46"	S89°05'20"W	38.28	19.15
C3	253.63	750.00	19°22'34"	S8°30'30"W	252.43	128.04
C4	92.72	75.00	70°50'05"	S64°38'30"W	86.93	53.33
C5	25.09	75.00	19°09'56"	S80°23'10"E	24.97	12.66

SHEET INDEX
SHEET 1– PRELIMINARY PLAT
SHEET 2– EXISTING FEATURES
SHEET 3– IRRIGATION AND DRAINAGE PLAN

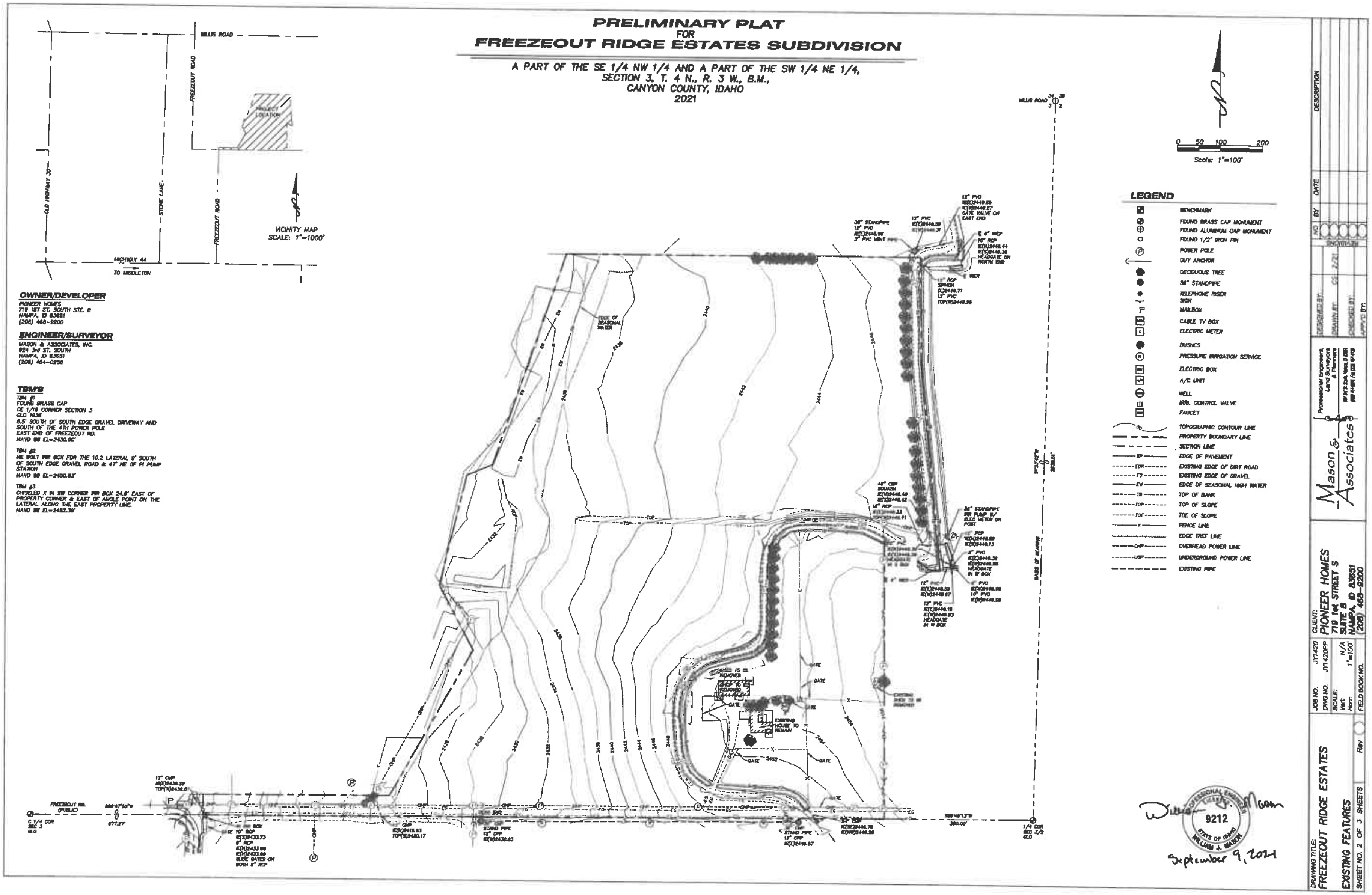
PROFESSIONAL ENGINEER 9212 STATE OF IDAHO WILLIAM J. MASON
September 9, 2021

DRAWING TITLE: FREEZEOUT RIDGE ESTATES PRELIMINARY PLAT	JOB NO. JY1420; DWG NO. JY1420PP; SCALE: Vert: N/A, Horz: 1"=100'; FIELD BOOK NO.	CLIENT: PIONEER HOMES 719 1st STREET S SUITE B NAMPA, ID 83651 (208) 468-9200
SHEET NO. 1 OF 3 SHEETS	Rev	

Mason & Associates — Professional Engineers, Land Surveyors & Planners

DESIGNED BY: DRAWN BY: CS 3/21 CHECKED BY: APPV'D BY:

REVISIONS: NO | BY | DATE | DESCRIPTION


PRELIMINARY PLAT
FOR
FREEZEOUT RIDGE ESTATES SUBDIVISION
A PART OF THE SE 1/4 NW 1/4 AND A PART OF THE SW 1/4 NE 1/4,
SECTION 3, T. 4 N., R. 3 W., B.M.,
CANYON COUNTY, IDAHO
2021
VICINITY MAP
SCALE: 1"=1000'
HIGHWAY 44
TO MIDDLETON
OWNER/DEVELOPER
PIONEER HOMES
719 1ST ST. SOUTH STE. B
NAMPA, ID 83651
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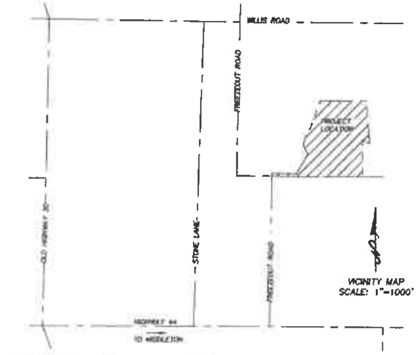
TBM #3
CHISELED X IN SW CORNER IRR BOX 24.6' EAST OF
PROPERTY CORNER & EAST OF ANGLE POINT ON THE
LATERAL ALONG THE EAST PROPERTY LINE.
NAVD 88 EL=2483.39'
Scale: 1"=100'
LEGEND
BENCHMARK
FOUND BRASS CAP MONUMENT
FOUND ALUMINUM CAP MONUMENT
FOUND 1/2" IRON PIN
POWER POLE
GUY ANCHOR
DECIDUOUS TREE
36" STANDPIPE
TELEPHONE RISER
SIGN
MAILBOX
CABLE TV BOX
ELECTRIC METER
BUSHES
PRESSURE IRRIGATION SERVICE
ELECTRIC BOX
A/C UNIT
WELL
IRR. CONTROL VALVE
FAUCET
TOPOGRAPHIC CONTOUR LINE
PROPERTY BOUNDARY LINE
SECTION LINE
EDGE OF PAVEMENT
EXISTING EDGE OF DIRT ROAD
EXISTING EDGE OF GRAVEL
EDGE OF SEASONAL HIGH WATER
TOP OF BANK
TOP OF SLOPE
TOE OF SLOPE
FENCE LINE
EDGE TREE LINE
OVERHEAD POWER LINE
UNDERGROUND POWER LINE
EXISTING PIPE
EXISTING HOUSE TO REMAIN
BASIS OF BEARING
FREEZEOUT RD. (PUBLIC)
9212
STATE OF IDAHO
WILLIAM J. MASON
September 9, 2021
DRAWING TITLE:
FREEZEOUT RIDGE ESTATES
EXISTING FEATURES
SHEET NO. 2 OF 3 SHEETS
JOB NO. JY1420
DWG NO. JY1420PP
SCALE: Vert: N/A Horz: 1"=100'
FIELD BOOK NO.
CLIENT:
PIONEER HOMES
719 1st STREET S
SUITE B
NAMPA, ID 83651
(208) 468-9200
Mason & Associates
Professional Engineers, Land Surveyors & Planners
DESIGNED BY:
DRAWN BY: CS 2/21
CHECKED BY:
APP'D BY:
NO BY DATE DESCRIPTION

IRRIGATION AND DRAINAGE PLAN
FOR
FREEZEOUT RIDGE ESTATES SUBDIVISION

A PART OF THE SE 1/4 NW 1/4 AND A PART OF THE SW 1/4 NE 1/4,
SECTION 3, T. 4 N., R. 3 W., B.M.,
CANYON COUNTY, IDAHO
2021



OWNER/DEVELOPER
PIONEER HOMES
719 1ST ST. SOUTH STE. B
NAMPA, ID 83651
(208) 468-9200

ENGINEER/SURVEYOR
MASON & ASSOCIATES, INC.
924 3rd ST. SOUTH
NAMPA, ID 83651
(208) 454-0256

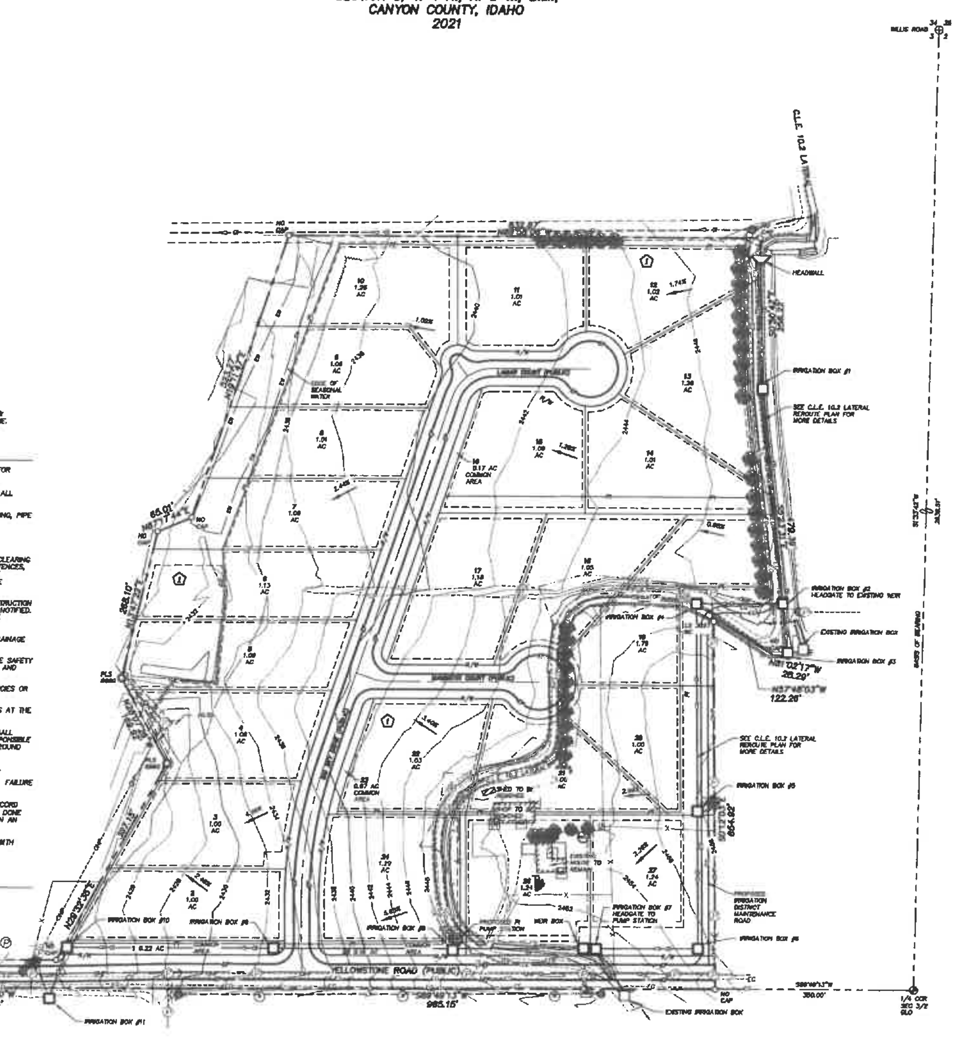
TBM'S
TBM #1
FOUND BRASS CAP
CE 1/16 CORNER SECTION 3
GLO 1938
5.5' SOUTH OF SOUTH EDGE GRAVEL DRIVEWAY AND SOUTH OF THE 4TH POWER POLE EAST END OF FREEZEOUT RD.
NAVD 88 EL=2430.90'

TBM #2
NE BOLT IRR BOX FOR THE 10.2 LATERAL 9' SOUTH OF SOUTH EDGE GRAVEL ROAD & 47' NE OF PI PUMP STATION
NAVD 88 EL=2480.63'

TBM #3
CHISELED X IN SW CORNER IRR BOX 24.8' EAST OF PROPERTY CORNER & EAST OF ANGLE POINT ON THE LATERAL ALONG THE EAST PROPERTY LINE.
NAVD 88 EL=2452.38'

GENERAL
1. UNLESS OTHERWISE SHOWN, ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2017 EDITION OF IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (I.S.P.W.C.), AND THE 2020 BLACK CANYON IRRIGATION DISTRICT STANDARDS.
2. A PRECONSTRUCTION CONFERENCE WILL BE HELD A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO START OF WORK. ALL CONTRACTORS, SUBCONTRACTORS AND UTILITY CONTRACTORS SHALL BE PRESENT.
3. MASON, & ASSOCIATES, INC. WILL PROVIDE (1) SET OF CONSTRUCTION STAKES FOR THE FOLLOWING ITEMS: ROUGH GRADING, PIPE IMPROVEMENTS, AND TOP OF CONCRETE.
4. ALL CONSTRUCTION STAKES MUST BE REQUESTED A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO PLANNED USE.
5. THE CONTRACTOR(S) SHALL REMOVE ALL OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND, AS REQUIRED FOR THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. THIS SHALL INCLUDE CLEARING AND GRUBBING WHICH CONSISTS OF CLEARING THE GROUND SURFACE OF ALL TREES, STUMPS, BRUSH, UNDERGROWTH, HEDGES, HEAVY GROWTH OF GRASS OR WEEDS, FENCES, STRUCTURES, DEBRIS, RUBBISH, AND SUCH MATERIAL WHICH, IN THE OPINION OF THE ENGINEER, IS UNSUITABLE FOR THE FOUNDATION OF PAVEMENT AND/OR STRUCTURES. ALL MATERIAL NOT SUITABLE FOR THE FUTURE USE ON SITE SHALL BE DISPOSED OF OFF SITE AT THE CONTRACTORS EXPENSE.
6. CERTAIN CONTROL POINTS WILL BE SET BY THE ENGINEER, OR ITS REPRESENTATIVE, WHICH ARE CRITICAL TO THE CONSTRUCTION STAKING OF THE PROJECT. THESE POINTS WILL BE DESIGNATED AT THE TIME THEY ARE SET AND THE CONTRACTOR SO NOTIFIED. DESTRUCTION OF THESE POINTS BY THE CONTRACTOR OR HIS SUBCONTRACTORS SHALL BE GROUNDS FOR CHARGING THE CONTRACTOR FOR COST OF RE-ESTABLISHING SAID POINTS.
7. THE CONTRACTOR(S) SHALL MAINTAIN ALL EXISTING DRAINAGE FACILITIES WITHIN THE CONSTRUCTION AREA UNTIL THE DRAINAGE IMPROVEMENTS ARE IN PLACE AND FUNCTIONING.
8. ALL CONTRACTORS WORKING WITHIN THE PROJECT BOUNDARIES ARE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE SAFETY LAWS OF ANY JURISDICTIONAL BODY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BARRICADES, SAFETY DEVICES AND CONTROL OF TRAFFIC WITHIN AND AROUND THE CONSTRUCTION AREA.
9. ALL MATERIALS FURNISHED ON OR FOR THE PROJECT MUST MEET THE MINIMUM REQUIREMENTS OF THE APPROVING AGENCIES OR AS SET FORTH HEREIN, WHICHEVER IS MORE RESTRICTIVE.
10. CONTRACTORS MUST FURNISH PROOF THAT ALL MATERIALS INSTALLED ON THIS PROJECT MEET THE ABOVE REQUIREMENTS AT THE REQUEST OF THE AGENCY AND/OR ENGINEER.
11. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CALL DIGLINE.
12. ALL COSTS OF RETESTING FOR PREVIOUSLY FAILED TESTS SHALL BE BACKCHARGED TO THE CONTRACTOR BY THE OWNER.
13. ALL COSTS TO THE CONTRACTOR INCURRED IN CORRECTING DEFICIENT WORK SHALL BE TO THE CONTRACTORS ACCOUNT. FAILURE TO CORRECT SUCH WORK WILL BE CAUSE FOR A STOP WORK ORDER AND POSSIBLE TERMINATION.
14. WORK SUBJECT TO APPROVAL BY ANY POLITICAL SUBDIVISION AND/OR AGENCY MUST BE APPROVED BY ENGINEER OF RECORD PRIOR TO: (A) PLACING OF CONCRETE, (B) PLACING OF AGGREGATE BASE, (C) BACKFILLING TRENCHES FOR PIPE. WORK DONE WITHOUT SUCH APPROVAL SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF PERFORMING THE WORK IN AN ACCEPTABLE MANNER.
15. THE CONTRACTOR IS RESPONSIBLE FOR FILING THE NOTICE OF INTENT (NOI) FOR STORM WATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY UNDER THE NPDES GENERAL PERMIT WITH THE EPA, AS REQUIRED.
16. UPON THE COMPLETION OF WORK, THE CONTRACTOR SHALL SUBMIT A SET OF RECORD DRAWINGS TO THE ENGINEER.

IRRIGATION
1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2017 EDITION OF IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (I.S.P.W.C.), AND THE 2020 BLACK CANYON IRRIGATION DISTRICT STANDARDS.



LEGEND
- BENCHMARK
- FOUND ALUMINUM CAP MONUMENT
- FOUND BRASS CAP MONUMENT
- FOUND 1/2" IRON PIN
- FOUND 5/8" IRON PIN
- PROPOSED HEADWALL
- PROPOSED IRRIGATION BOX
- POWER POLE
- GUY ANCHOR
- DECIDUOUS TREE
- 36" STANDPIPE
- TELEPHONE RISER
- SIGN
- MAILBOX
- CABLE TV BOX
- ELECTRIC METER
- BUSHES
- PRESSURE IRRIGATION SERVICE
- ELECTRIC BOX
- A/C UNIT
- WELL
- IRR. CONTROL VALVE
- FAUCET
- FLOW ARROW
- BLOCK NUMBER
- TOPOGRAPHIC CONTOUR LINE
- PROPERTY BOUNDARY LINE
- SECTION LINE
- EASEMENT LINE
- RIGHT OF WAY LINE
- LOT LINE
- FUTURE EDGE OF PAVEMENT
- EXISTING EDGE OF DIRT ROAD
- EXISTING EDGE OF GRAVEL
- EDGE OF SEASONAL HIGH WATER
- TOP OF BANK
- TOP OF SLOPE
- TOE OF SLOPE
- FENCE LINE
- EDGE TREE LINE
- OVERHEAD POWER LINE
- UNDERGROUND POWER LINE
- EXISTING PIPE
- PROPOSED GRAVITY IRRIGATION PIPE
- PROPOSED EDGE OF GRAVEL ROAD

9212
STATE OF IDAHO
WILLIAM J. MASON
September 9, 2021

DRAWING TITLE:	JOB NO. JY1420	CLIENT:			
FREEZEOUT RIDGE ESTATES	DWG NO. JY1420PP	PIONEER HOMES	Mason & Associates — Professional Engineers, Land Surveyors & Planners	DESIGNED BY:	NO / BY / DATE / DESCRIPTION
IRRIGATION AND DRAINAGE PLAN	SCALE: Vert. N/A Horz. 1"=100'	719 1st STREET S SUITE B NAMPA, ID 83651 (208) 468-9200		DRAWN BY: CS 3/21	REVISIONS
SHEET NO. 3 OF 3 SHEETS Rev	FIELD BOOK NO.			CHECKED BY: APP'D BY:	

Exhibit D5

Michelle Barron

From: Doug Critchfield <critchfieldd@cityofnampa.us>
Sent: Tuesday, November 19, 2024 10:16 AM
To: Michelle Barron
Subject: [External] RE: Full Political RZ2021-0053 Thornton Gallup LLC

Michelle – Nampa Planning and Zoning has no comments on this proposal. Thanks - Doug

Doug Critchfield, Principal Planner, ASLA
O: 208.468.5406, F: 208.468.5439
500 12th Ave. S., Nampa, ID 83651
Planning and Zoning - Like us on Facebook
Citizen's Guide to Planning – Learn More About Planning!

NAMPAReady

From: Amber Lewter <Amber.Lewter@canyoncounty.id.gov>
Sent: Tuesday, November 19, 2024 8:50 AM
To: 'rcollins@cityofcaldwell.org' <rcollins@cityofcaldwell.org>; 'p&Z@cityofcaldwell.org' <p&Z@cityofcaldwell.org>; 'dgeyer@cityofcaldwell.org' <dgeyer@cityofcaldwell.org>; 'jdodson@cityofcaldwell.org' <jdodson@cityofcaldwell.org>; 'mbessaw@cityofcaldwell.org' <mbessaw@cityofcaldwell.org>; 'amy@civildynamics.net' <amy@civildynamics.net>; 'alicep@cityofhomedale.org' <alicep@cityofhomedale.org>; 'jgreen@marsingcity.com' <jgreen@marsingcity.com>; 'mayor@cityofmelba.org' <mayor@cityofmelba.org>; 'cityclerk@cityofmelba.org' <cityclerk@cityofmelba.org>; 'jhutchison@middletoncity.com' <jhutchison@middletoncity.com>; 'jreynolds@middletoncity.com' <jreynolds@middletoncity.com>; 'mhobbs@middletoncity.org' <mhobbs@middletoncity.org>; 'rstewart@middletoncity.com' <rstewart@middletoncity.com>; Robyn Sellers <sellersr@cityofnampa.us>; Kristi Watkins <watkinsk@cityofnampa.us>; Daniel Badger <BadgerD@cityofnampa.us>; Addressing <Addressing@cityofnampa.us>; Doug Critchfield <critchfieldd@cityofnampa.us>; Clerks <clerks@cityofnampa.us>; Char Tim <timc@cityofnampa.us>; 'notuscityclerk@gmail.com' <notuscityclerk@gmail.com>; 'info@parmacityid.org' <info@parmacityid.org>; 'mayor@parmacityid.org' <mayor@parmacityid.org>; 'planning@parmacityid.org' <planning@parmacityid.org>; 'snickel@staridaho.org' <snickel@staridaho.org>; 'wsevery@cityofwilder.org' <wsevery@cityofwilder.org>; 'casanderson@caldwellschools.org' <casanderson@caldwellschools.org>; 'jshoemaker@blm.gov' <jshoemaker@blm.gov>; 'nicmiller@cwi.edu' <nicmiller@cwi.edu>; 'ddenney@homedaleschools.org' <ddenney@homedaleschools.org>; 'Brian Graves' <bgraves@kunaschools.org>; 'tejensen@kunaschools.org' <tejensen@kunaschools.org>; 'nstewart@marsingschools.org' <nstewart@marsingschools.org>; 'sadams@melbaschools.org' <sadams@melbaschools.org>; 'horner.marci@westada.org' <horner.marci@westada.org>; 'lgrooms@msd134.org' <lgrooms@msd134.org>; 'mgee@msd134.org' <mgee@msd134.org>; 'cstauffer@nsd131.org' <cstauffer@nsd131.org>; 'dleon@nsd131.org' <dleon@nsd131.org>; 'krantza@notusschools.org' <krantza@notusschools.org>; 'tkelly@parmaschools.org' <tkelly@parmaschools.org>; 'jenny.titus@vallivue.org' <jenny.titus@vallivue.org>; lisa.boyd <lisa.boyd@vallivue.org>; 'joseph.palmer@vallivue.org' <joseph.palmer@vallivue.org>; 'jdillon@wilderschools.org' <jdillon@wilderschools.org>; 'lrichard@cityofcaldwell.org' <lrichard@cityofcaldwell.org>; 'Alan Perry' <aperry@cityofcaldwell.org>; 'homedalefd@gmail.com' <homedalefd@gmail.com>; 'tlawrence@kunafire.com' <tlawrence@kunafire.com>; 'khinkle@kunafire.com' <khinkle@kunafire.com>; 'marsingfiredistrict@yahoo.com' <marsingfiredistrict@yahoo.com>; 'marsingruralfire@gmail.com' <marsingruralfire@gmail.com>; 'brian.mccormack@melbafire.id.gov' <brian.mccormack@melbafire.id.gov>; 'kenny.hoagland@melbafire.id.gov' <kenny.hoagland@melbafire.id.gov>; 'permits@starfirerescue.org' <permits@starfirerescue.org>; 'johnsonre@nampafire.org' <johnsonre@nampafire.org>;

Ron Johnson <johnsonrl@nampafire.org>; 'linanj@nampafire.org' <linanj@nampafire.org>; 'jeff@parmafire.us' <jeff@parmafire.us>; 'parmaruralfire@gmail.com' <parmaruralfire@gmail.com>; 'permits@starfirerescue.org' <permits@starfirerescue.org>; 'eddy@heritagewifi.com' <eddy@heritagewifi.com>; 'jmaloney@wilderfire.org' <jmaloney@wilderfire.org>; 'knute.sandahl@doi.idaho.gov' <knute.sandahl@doi.idaho.gov>; 'Chris Hopper' <chopper@hwydistrict4.org>; 'Lenny Riccio' <lriccio@hwydistrict4.org>; 'bobw@gghd3.org' <bobw@gghd3.org>; 'office@gghd3.org' <office@gghd3.org>; 'Eddy Thiel' <eddy@nampahighway1.com>; 'gwatkins@nphd.net' <gwatkins@nphd.net>; 'admin1@kunalibrary.org' <admin1@kunalibrary.org>; 'admin2@kunalibrary.org' <admin2@kunalibrary.org>; 'lizardbuttelibrary@yahoo.com' <lizardbuttelibrary@yahoo.com>; 'brandy.walker@centurylink.com' <brandy.walker@centurylink.com>; 'eingram@idahopower.com' <eingram@idahopower.com>; 'easements@idahopower.com' <easements@idahopower.com>; 'mkelly@idahopower.com' <mkelly@idahopower.com>; 'monica.taylor@intgas.com' <monica.taylor@intgas.com>; 'jessica.mansell@intgas.com' <jessica.mansell@intgas.com>; 'contract.administration.bid.box@ziply.com' <contract.administration.bid.box@ziply.com>; 'developmentreview@blackcanyonirrigation.com' <developmentreview@blackcanyonirrigation.com>; 'aflavel.bkirrdist@gmail.com' <aflavel.bkirrdist@gmail.com>; 'tritthaler@boiseproject.org' <tritthaler@boiseproject.org>; 'gashley@boiseproject.org' <gashley@boiseproject.org>; 'irr.water.3@gmail.com' <irr.water.3@gmail.com>; 'kchamberlain.fcdc@gmail.com' <kchamberlain.fcdc@gmail.com>; 'office@idcpas.com' <office@idcpas.com>; 'fcdc1875@gmail.com' <fcdc1875@gmail.com>; 'farmers.union.ditch@gmail.com' <farmers.union.ditch@gmail.com>; 'wilders04@msn.com' <wilders04@msn.com>; 'irrigation.mm.mi@gmail.com' <irrigation.mm.mi@gmail.com>; 'nmid@nmid.org' <nmid@nmid.org>; 'eolvera@nmid.org' <eolvera@nmid.org>; 'terri@nyid.org' <terri@nyid.org>; 'kirk@pioneerirrigation.com' <kirk@pioneerirrigation.com>; 'sheepmama25@gmail.com' <sheepmama25@gmail.com>; 'fcdc1875@gmail.com' <fcdc1875@gmail.com>; 'mack@settlersirrigation.org' <mack@settlersirrigation.org>; 'kchamberlain.fcdc@gmail.com' <kchamberlain.fcdc@gmail.com>; 'mitch.kiester@phd3.idaho.gov' <mitch.kiester@phd3.idaho.gov>; 'anthony.lee@phd3.idaho.gov' <anthony.lee@phd3.idaho.gov>; 'drain.dist.2@gmail.com' <drain.dist.2@gmail.com>; 'bryce@sawtoothlaw.com' <bryce@sawtoothlaw.com>; 'scott_sbi@outlook.com' <scott_sbi@outlook.com>; 'projectmgr@boiseriver.org' <projectmgr@boiseriver.org>; 'testrada@starswd.com' <testrada@starswd.com>; 'jlucas@achdidaho.org' <jlucas@achdidaho.org>; 'clittle@achdidaho.org' <clittle@achdidaho.org>; 'brentc@brownbuscompany.com' <brentc@brownbuscompany.com>; 'gis@compassidaho.org' <gis@compassidaho.org>; 'D3Development.services@itd.idaho.gov' <D3Development.services@itd.idaho.gov>; 'niki.benyakhlef@itd.idaho.gov' <niki.benyakhlef@itd.idaho.gov>; 'itdd3permits@itd.idaho.gov' <itdd3permits@itd.idaho.gov>; 'airport.planning@itd.idaho.gov' <airport.planning@itd.idaho.gov>; 'webmaster@valleyregionaltransit.org' <webmaster@valleyregionaltransit.org>; 'smm5156@gmail.com' <smm5156@gmail.com>; 'deb0815@yahoo.com' <deb0815@yahoo.com>; 'kunacemetery@gmail.com' <kunacemetery@gmail.com>; '3tjj@frontiernet.net' <3tjj@frontiernet.net>; 'melbacemetery@gmail.com' <melbacemetery@gmail.com>; 'middletoncemdist13@gmail.com' <middletoncemdist13@gmail.com>; 'ann_jacops@hotmail.com' <ann_jacops@hotmail.com>; 'facjhill@gmail.com' <facjhill@gmail.com>; Brian Crawforth <Brian.Crawforth@canyoncounty.id.gov>; Christine Wendelsdorf <Christine.Wendelsdorf@canyoncounty.id.gov>; Michael Stowell <mstowell@ccparamedics.com>; 'tryska7307@gmail.com' <tryska7307@gmail.com>; Curt Shankel <shankelc@cityofnampa.us>; Diana Little <Diana.Little@canyoncounty.id.gov>; Loretta Tweedy <Loretta.Tweedy@canyoncounty.id.gov>; Assessor Website <2cAsr@canyoncounty.id.gov>; Elections Clerk <electionsclerk@canyoncounty.id.gov>; 'roger@amgidaho.com' <roger@amgidaho.com>; Nichole Schwend <Nichole.Schwend@canyoncounty.id.gov>; Rick Britton <Rick.Britton@canyoncounty.id.gov>; 'Richard Sims' <middletown.rich@gmail.com>; Jim Lunders <jlunders@2cmad.org>; 'mgrodriguez@usbr.gov' <mgrodriguez@usbr.gov>; 'edward_owens@fws.gov' <edward_owens@fws.gov>; 'BRO.Admin@deq.idaho.gov' <BRO.Admin@deq.idaho.gov>; 'kenny.huston@oer.idaho.gov' <kenny.huston@oer.idaho.gov>; 'brenna.garro@oer.idaho.gov' <brenna.garro@oer.idaho.gov>; 'peter.Jackson@idwr.idaho.gov' <peter.Jackson@idwr.idaho.gov>; 'maureen.oshea@idwr.idaho.gov' <maureen.oshea@idwr.idaho.gov>; 'westerninfo@idwr.idaho.gov' <westerninfo@idwr.idaho.gov>; 'john.graves@fema.dhs.gov' <john.graves@fema.dhs.gov>; 'idahoaaa@gmail.com' <idahoaaa@gmail.com>; 'zlathim@idl.idaho.gov' <zlathim@idl.idaho.gov>; 'brandon.flack@idfg.idaho.gov' <brandon.flack@idfg.idaho.gov>; 'aubrie.hunt@dhw.idaho.gov' <aubrie.hunt@dhw.idaho.gov>; 'marilyn.peoples@dhw.idaho.gov' <marilyn.peoples@dhw.idaho.gov>; 'tricia.canaday@ishs.idaho.gov' <tricia.canaday@ishs.idaho.gov>;

'dan.everhart@ishs.idaho.gov' <dan.everhart@ishs.idaho.gov>; 'patricia.hoffman@ishs.idaho.gov' <patricia.hoffman@ishs.idaho.gov>; 'stevie.harris@isda.idaho.gov' <stevie.harris@isda.idaho.gov>; 'brock.cornell@isda.idaho.gov' <brock.cornell@isda.idaho.gov>; 'tate.walters@id.usda.gov' <tate.walters@id.usda.gov>; 'carol.chadwick@usda.gov' <carol.chadwick@usda.gov>; 'noe.ramirez@usda.gov' <noe.ramirez@usda.gov>; 'CENWW-RD-BOI-TV@usace.army.mil' <CENWW-RD-BOI-TV@usace.army.mil>; 'laura.j.freedman@usps.gov' <laura.j.freedman@usps.gov>; 'rakesh.n.dewan@usps.gov' <rakesh.n.dewan@usps.gov>; 'chad.m.franklin@usps.gov' <chad.m.franklin@usps.gov>; 'melvin.b.norton@usps.gov' <melvin.b.norton@usps.gov>; 'tammi.l.barth@usps.gov' <tammi.l.barth@usps.gov>; 'henry.medel@usps.gov' <henry.medel@usps.gov>; 'khrista.m.holman@usps.gov' <khrista.m.holman@usps.gov>; 'rochelle.fuquay@usps.gov' <rochelle.fuquay@usps.gov>; 'leroy.eyler@usps.gov' <leroy.eyler@usps.gov>; 'marc.c.boyer@usps.gov' <marc.c.boyer@usps.gov>; 'mhuff@co.owyhee.id.us' <mhuff@co.owyhee.id.us>; 'gmprdjennifer@gmail.com' <gmprdjennifer@gmail.com>; 'lisaitano@me.com' <lisaitano@me.com>; 'scott@fccnw.com' <scott@fccnw.com>; 'srcsbinfo@gmail.com' <srcsbinfo@gmail.com>; 'tottens@amsidaho.com' <tottens@amsidaho.com>; 'melvin.b.norton@usps.gov' <melvin.b.norton@usps.gov>; 'scott.hauser@usrtf.org' <scott.hauser@usrtf.org>; 'info@destinationcaldwell.com' <info@destinationcaldwell.com>; Media - IPT Newsroom <newsroom@idahopress.com>; Media - KBOI TV News <news@kboi2.com>; Media - KIVI News <news@kivitv.com>; Media - KBOI Radio News <670@kboi.com>; Media - KTVB News <ktvbnews@ktvb.com>; 'middletonexpress1@gmail.com' <middletonexpress1@gmail.com>; 'rmorgan@kellerassociates.com' <rmorgan@kellerassociates.com>
Subject: Full Political RZ2021-0053 Thornton Gallup LLC

Dear Agencies,

Your agency is being notified pursuant to the Local Land Use Planning Act, Idaho Code 67-6509, to all political subdivisions providing services within the planning jurisdiction of Canyon County, including school districts and media.

No response is required from your agency unless you have input on the proposed project.

Contact the planner of record, **Michelle Barron** at michelle.barron@canyoncounty.id.gov with any questions or additional agency comments or concerns if applicable.

Thank you,

Amber Lewter
Hearing Specialist
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605

Direct Line: 208-454-6631
Fax: 208-454-6633
Email: amber.lewter@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

Development Services Department (DSD)

NEW public office hours
Effective Jan. 3, 2023
Monday, Tuesday, Thursday and Friday
8am – 5pm
Wednesday
1pm – 5pm
**We will not be closed during lunch hour **

PUBLIC RECORD NOTICE: All communications transmitted within the Canyon County email system may be a public record and may be subject to disclosure under the Idaho Public Records Act and as such may be copied and reproduced by members of the public.

Exhibit D6

Michelle Barron

From: Amber Lewter
Sent: Wednesday, November 20, 2024 8:24 AM
To: Michelle Barron
Subject: FW: Full Political RZ2021-0053 Thornton Gallup LLC

From: Christine Wendelsdorf
Sent: Wednesday, November 20, 2024 7:41 AM
To: Amber Lewter <Amber.Lewter@canyoncounty.id.gov>
Subject: Re: Full Political RZ2021-0053 Thornton Gallup LLC

Thank you Amber. I believe this property may be in a floodplain. I want to make sure these codes and regulations will be met.
Sent from my iPad

> On Nov 19, 2024, at 8:49 AM, Amber Lewter <Amber.Lewter@canyoncounty.id.gov> wrote:
>
> Dear Agencies,
>
> Your agency is being notified pursuant to the Local Land Use Planning Act, Idaho Code 67-6509, to all political subdivisions providing services within the planning jurisdiction of Canyon County, including school districts and media.
>
> No response is required from your agency unless you have input on the proposed project.
>
> Contact the planner of record, **Michelle Barron** at michelle.barron@canyoncounty.id.gov with any questions or additional agency comments or concerns if applicable.
>
> Thank you,
>
> <image001.png>
> **Amber Lewter**
> Hearing Specialist
> Canyon County Development Services Department
> 111 N. 11th Ave., #310, Caldwell, ID 83605
>
> Direct Line: 208-454-6631
> Fax: 208-454-6633
> Email: amber.lewter@canyoncounty.id.gov
> Website: www.canyoncounty.id.gov
>
> Development Services Department (DSD)
> NEW public office hours

Effective Jan. 3, 2023
Monday, Tuesday, Thursday and Friday
8am – 5pm
Wednesday
1pm – 5pm
**We will not be closed during lunch hour **

PUBLIC RECORD NOTICE: All communications transmitted within the Canyon County email system may be a public record and may be subject to disclosure under the Idaho Public Records Act and as such may be copied and reproduced by members of the public.

<NEW - P&Z Rezone full political agency notice.pdf>

Michelle Barron

From: Steve Pemberton <SPemberton@canyonhd4.org>
Sent: Tuesday, June 27, 2023 2:00 PM
To: Dan Lister; wmason@masonandassociates.us
Cc: Chris Hopper; Michelle Barron
Subject: [External] Freezeout Ridge Estates
Attachments: Frezeot Rd-Freezeout Ridge Estates Pre Plat Comments 6-27-2023.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Sorry for the delay response, here is the comments for Freezeout Ridge Estates.

Steve Pemberton
Engineer Technician
Canyon Highway District No. 4
208-454-8135
spemberton@canyonhd4.org
Canyonhd4.org

CANYON HIGHWAY DISTRICT No. 4
15435 HIGHWAY 44
CALDWELL, IDAHO 83607

TELEPHONE 208/454-8135
FAX 208/454-2008

June 27, 2023

Canyon County Board of Commissioners
and Planning & Zoning Commission
111 N. 11th Street
Caldwell, Idaho 83605
Attention: Dan Lister, Planner Director

Mason & Associates
924 3rd St. South
Nampa, Id
Attention: William J. Mason, PE
.

RE: **Freezeout Ridge Estates Preliminary Plat**
Canyon County Parcel R34479000 0

Dear Commissioners:

Canyon Highway District No. 4 (CHD4) has reviewed the application for preliminary plat of Freezeout Ridge Estates, parcel R34479000 0, approximately 31 acres, located in the SE ¼ and a part of the SW ¼ NE ¼ of Section 3 T4N R3W. CHD4 provides the following comments on the proposed development:

General
The subject property is located on the east side of Freezeout Road approximately 2620-feet north of Hwy 44. Freezeout Road is under the jurisdiction of CHD4. Freezeout Road is classified as a Collector on the long range functional classification map. Property is considered rural by CHD4 for purposes of development.

CHD4 provides the following comments on the preliminary plat dated 10/25/22:

Right-of-Way

1. Relocate all encroachments out utilities out of right-of-way north and south side of Yellowstone Road.
2. Relocate mailboxes out of right-of -way on the east side of Freezeout Road.
3. Need dedicated right-of-way for parcel R34482012.
4. Verify legal access and crossing for parcel R34482012.

Preliminary Plat

1. CL radius C4 needs to be 200 feet. (AASHTO standards)
2. Label ROW radius at Yellowstone road and Big Sky Drive (40 feet).

Internal Street Improvements

1. CHD4 will require a 56 foot stub street 310 feet north of Yellowstone Road west of Big sky drive for parcels R34482 and R34482010 preventing any landlock.

2. CHD4 would allow a reduction in Yellowstone Road from the section that is 60 feet to 56 feet and Big Sky Way from 60 feet to 56 feet.

All other platting and improvement requirements to be in accordance with the current edition of the Highway Standards and Development Procedures Manual in effect at the time of preliminary plat consideration by the CHD4 Board.

Respectfully,

Steve Pemberton
Engineer Tech

Exhibit D7.1

CANYON HIGHWAY DISTRICT No. 4
15435 HIGHWAY 44
CALDWELL, IDAHO 83607

TELEPHONE 208/454-8135
FAX 208/454-2008

August 24, 2023

Canyon County Commissioners, P&Z Commission, & Development Services
111 N. 11th Ave Suite 140
Caldwell, Idaho 83605
Attention: Michelle Barron, Planner

Mason & Associates
924 3rd St South Suite B
Nampa, Idaho 83657

RE: SD2022-0055 Freezeout Ridge Estates Subdivision
Canyon County Parcel R34479 aka 23442 Freezeout Rd

Dear Commissioners:

Canyon Highway District No. 4 (CHD4) has reviewed the application and agency notice for Freezeout Ridge Subdivision, a proposed 24 lot rural subdivision on 31 acres located in the NE ¼ Section 3 T4N R3W. CHD4 offers the following comments on the proposed use:

General
The subject property has frontage available to one public highway, Freezeout Rd, at the west end of the 50-foot wide flag lot portion of the parcel. Freezeout Rd is identified as a major collector on the functional classification maps adopted by Canyon Co and CHD4. The development is proposed to be served by extension of a public road (Faithful Road) east from Freezeout Rd, and public local roads within the development.

Access
Access to the public highway system is available only at the west end of the 50-foot wide flag extension of the parcel. This access location is suitable for the proposed R-1 development density.

Transportation Impacts
The 23 proposed residential lots will generate approximately 218 new vehicle trips per day, about half of the 500 trips/day threshold which would require a traffic impact study. The approximate 20 peak hour trips from the development are not anticipated to have significant direct effect on the public roadway intersections at Freezeout/SH 44 or Freezeout/Willis Rd. The cumulative effects of the new vehicle trips will be mitigated through collection of transportation impact fees at the time of access permit issuance. These impact fees will be used to provide for improvements at nearby arterial intersections to mitigate the indirect impacts from the development.

Preliminary Plat
In a letter dated March 8, 2023, CHD4 provided the following comments on the preliminary plat dated October 24, 2022:

Right-of-Way

1. Relocate all encroachments out of right-of-way south side of Yellowstone Road.
2. Relocate all encroachments and power poles out of the right-of-way on the north side of Yellowstone Road.
3. Relocate mailboxes out of right-of -way on the east side of Freezeout Road.
4. Need dedicated right-of-way for parcel R34482012.
5. Verify legal access and crossing for parcel R34482012.

Preliminary Plat

1. Wide CL radius C4 needs to be 200 feet.
2. Label CL radius at Yellowstone road and Big Sky Drive (40 feet).

Internal Street Improvements

1. CHD4 would require a 56 foot stub street 310 feet north of Yellowstone Road west of Big sky drive for parcels R34482 and R34482010 preventing any landlock unless other legal means of access for this parcel can be demonstrated.
2. CHD4 would allow a reduction in Yellowstone Road from 60 feet to 56 feet and Big Sky Way from 60 feet to 56 feet.

Yellowstone Rd appears to have been renamed to Faithful Road on the January 23, 2023 plat. The curve C4 at the end of White Wolf Ct does not meet the minimum 200-ft centerline radius for a 25 mph design speed.

All other platting and improvement requirements to be in accordance with the current edition of the Highway Standards and Development Procedures Manual in effect at the time of preliminary plat consideration by the CHD4 Board.

CHD4 recommends the applicant confirm the comments above have been addressed, and submit a revised preliminary plat to the highway district for approval. CHD4 does not have record of preliminary plat review fees being paid; these fees in the amount of $338 are due prior to scheduling a hearing for preliminary plat approval by the CHD4 Board.

CHD4 does not opposed the requested land use changes, but requests that the Planning & Zoning Commission and Canyon County Commissioners consider these comments, and make any conditional approval of the applicant's request subject to the requirements listed above.

Please feel free to contact me with any questions on this matter.

Respectfully,

Chris Hopper, P.E.
District Engineer

File: Subdivision_Freezeout Rd- Freezeout Ridge Estates Subdivision

Michelle Barron

From: Chris Hopper <chopper@hwydistrict4.org>
Sent: Monday, December 2, 2024 5:32 PM
To: Michelle Barron
Cc: Mason & Associates (Darrin, Will & Jordan) Mason
Subject: [External] RZ2021-005 Freezeout Ridge Estates
Attachments: Freezeout Rd- RZ2021-005 Freezeout Ridge Estates.pdf

Michelle & William-
For your use please see the attached comments from HD4 on the rezone for Freezeout Ridge Estates Sub.

Respectfully,

Chris Hopper, P.E.
District Engineer

Highway District No. 4
15435 Hwy 44
Caldwell, Idaho 83607
208-454-8135 Ext. 104

HIGHWAY DISTRICT No.4
15435 HIGHWAY 44
CALDWELL, IDAHO 83607

TELEPHONE 208.454.8135
FAX 208.454.2008

December 3, 2024

Canyon County Board of Commissioners
and Planning & Zoning Commission
111 N. 11th Street
Caldwell, Idaho 83605
Attention: Michelle Barron

Mason & Associates
924 3rd Street South
Nampa, ID 83651
Attention: William Mason, P.E.

RE: RZ2021-005 Freezeout Ridge Estates Preliminary Plat
Canyon County Parcel R34479000 0

Dear Commissioners:

Highway District No. 4 (HD4) has received the notice of application for rezone of approximately 31.4 acres from agricultural to R-1 residential for purposes of developing a 23-lot subdivision. HD4 has previously provided comments on a preliminary plat dated March 28, 2024. (Freezeout Ridge Estates) for this parcel. The comments dated April 15, 2024 are repeated below for reference.

General

The subject property has frontage available to one public highway, Freezeout Rd, at the west end of the 50-foot wide flag lot portion of the parcel. Freezeout Rd is identified as a major collector on the functional classification maps adopted by Canyon Co and HD4. The development is proposed to be served by extension of a public road (Faithful Road) east from Freezeout Rd, and public local roads within the development.

HD4 provides the following comments on the preliminary plat dated March 28, 2024:

Right-of-Way

1. *The preliminary plat is the final work product and is intended to be relied upon to make policy decisions, Add notation on any 1 of the 3 Preliminary Plat sheets for items previously specified to be removed/relocated, below;*
    a. *Relocate all encroachments (utility, irrigation or otherwise) to be out of right-of-way of Faithful Road.*
    b. *Relocate mailboxes out of right-of -way on the east side of Freezeout Road.*

Preliminary Plat

1. *CL radius C4 needs to be 200 feet. Re-submitted changing radius to 100', adding a knuckle, without a variance, staff will present as re-submitted to HD4 Board of commissioners for approval.*
2. *Revise to move irrigation box #4 east to provide 90° crossing of Faithful Road to the irrigation lateral on the south side of the road.*

3. *Revise to provide a cul-de-sac/turnaround at the east end of Faithful Rd meeting ACCHD HS & DP (3120.020) that transitions to existing lane at east boundary, or if the portion of Faithful, east of Prismatic Drive is private, the cul-de-sac is not required. An ingress/egress easement for lots inside the subdivision or adjoining parcels that use the private lot, will be required.*

Internal Street Improvements

1. *HD4 would require a 56-foot stub street 310 feet north of ~~Yellowstone~~ Faithful Road west of ~~Big sky~~ Prismatic Drive for parcels R34482 and R34482010 preventing any land lock* ***unless*** *Canyon County can confirm there is a recorded document or recorded easement providing the access, as it is today.*

Please provide HD4 with a single hard copy and electronic copy of the plans, including supplementary materials requested above, for additional review. Also, submit a review comment sheet, which explains the changes made versus the review comments.

All other platting and improvement requirements to be in accordance with the current edition of the Highway Standards and Development Procedures Manual in effect at the time of preliminary plat consideration by the HD4 Board.

HD4 is charging additional review fees for any submittal after the 3rd review.
We recommend you perform complete in-house quality control reviews of plans and plats and supporting reports or documents, prior to submittal to avoid additional delays or additional fees for review of this and any other project submitted.

Please feel free to contact me with any questions on these comments.

-End April 15, 2024 Comments-

HD4 has no objection to the proposed rezone. Transportation impacts will be mitigated by dedication of public right-of-way, construction of public improvements, transportation impact fees, or a combination of these means.

Respectfully,

Chris Hopper, P.E.
District Engineer

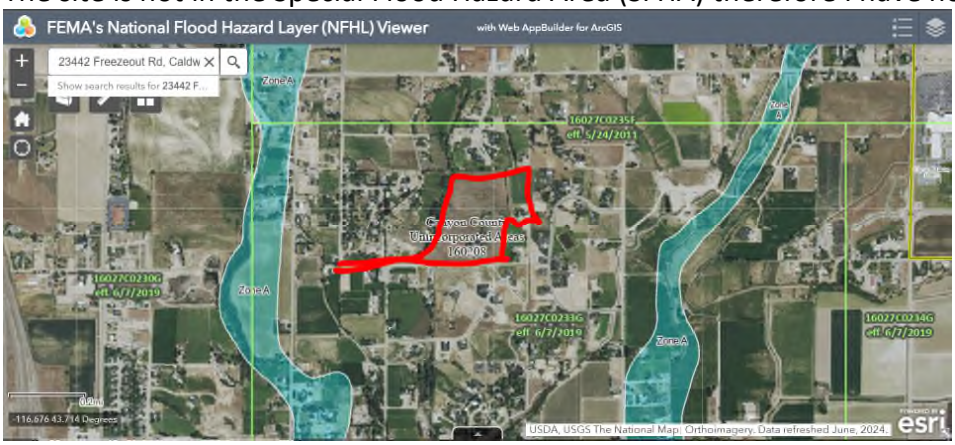
File: Subdivision_Freezeout Rd- Freezeout Ridge Estates Subdivision

Michelle Barron

From: O'Shea, Maureen <Maureen.OShea@idwr.idaho.gov>
Sent: Tuesday, November 19, 2024 4:09 PM
To: Michelle Barron
Cc: Dalia Alnajjar
Subject: [External] re: Full Political RZ2021-0053 Thornton Gallup LLC - 14180 Gadsden Lane (formerly 23442 Freezeout Road), Caldwell
Attachments: NEW - P&Z Rezone full political agency notice.pdf

Michelle,

The site is not in the Special Flood Hazard Area (SFHA) therefore I have no comments.



I am working part-time & generally available from 9:00 a.m. to noon Monday through Thursday.

Thank you,
Maureen O'Shea, CFM
Floodplain Specialist
Idaho Dept. of Water Resources
322 E. Front Street, PO Box 83720,
Boise, ID 83720-0098
Office # 208-287-4928
Cell # 208-830-4174
Maureen.OShea@idwr.idaho.gov
https://www.idwr.idaho.gov/floods/

From: Amber Lewter <Amber.Lewter@canyoncounty.id.gov>
Sent: Tuesday, November 19, 2024 8:50 AM
To: 'rcollins@cityofcaldwell.org' <rcollins@cityofcaldwell.org>; 'p&Z@cityofcaldwell.org' <p&Z@cityofcaldwell.org>; 'dgeyer@cityofcaldwell.org' <dgeyer@cityofcaldwell.org>; 'jdodson@cityofcaldwell.org' <jdodson@cityofcaldwell.org>; mbessaw@cityofcaldwell.org; 'amy@civildynamics.net' <amy@civildynamics.net>; 'alicep@cityofhomedale.org' <alicep@cityofhomedale.org>; 'jgreen@marsingcity.com' <jgreen@marsingcity.com>; 'mayor@cityofmelba.org' <mayor@cityofmelba.org>; 'cityclerk@cityofmelba.org' <cityclerk@cityofmelba.org>; 'jhutchison@middletoncity.com' <jhutchison@middletoncity.com>; 'jreynolds@middletoncity.com' <jreynolds@middletoncity.com>; 'mhobbs@middletoncity.org' <mhobbs@middletoncity.org>; 'rstewart@middletoncity.com' <rstewart@middletoncity.com>; 'sellersr@cityofnampa.us' <sellersr@cityofnampa.us>; 'watkinsk@cityofnampa.us'

<watkinsk@cityofnampa.us>; 'badgerd@cityofnampa.us' <badgerd@cityofnampa.us>; 'addressing@cityofnampa.us' <addressing@cityofnampa.us>; 'critchfieldd@cityofnampa.us' <critchfieldd@cityofnampa.us>; 'clerks@cityofnampa.us' <clerks@cityofnampa.us>; 'timc@cityofnampa.us' <timc@cityofnampa.us>; 'notuscityclerk@gmail.com' <notuscityclerk@gmail.com>; 'info@parmacityid.org' <info@parmacityid.org>; 'mayor@parmacityid.org' <mayor@parmacityid.org>; 'planning@parmacityid.org' <planning@parmacityid.org>; 'snickel@staridaho.org' <snickel@staridaho.org>; 'wsevery@cityofwilder.org' <wsevery@cityofwilder.org>; 'casanderson@caldwellschools.org' <casanderson@caldwellschools.org>; 'jshoemaker@blm.gov' <jshoemaker@blm.gov>; 'nicmiller@cwi.edu' <nicmiller@cwi.edu>; ddenney@homedaleschools.org; 'Brian Graves' <bgraves@kunaschools.org>; tejensen@kunaschools.org; 'nstewart@marsingschools.org' <nstewart@marsingschools.org>; 'sadams@melbaschools.org' <sadams@melbaschools.org>; 'horner.marci@westada.org' <horner.marci@westada.org>; 'lgrooms@msd134.org' <lgrooms@msd134.org>; 'mgee@msd134.org' <mgee@msd134.org>; 'cstauffer@nsd131.org' <cstauffer@nsd131.org>; 'dleon@nsd131.org' <dleon@nsd131.org>; 'krantza@notusschools.org' <krantza@notusschools.org>; 'tkelly@parmaschools.org' <tkelly@parmaschools.org>; 'jenny.titus@vallivue.org' <jenny.titus@vallivue.org>; 'lisa.boyd@vallivue.org' <lisa.boyd@vallivue.org>; 'joseph.palmer@vallivue.org' <joseph.palmer@vallivue.org>; 'jdillon@wilderschools.org' <jdillon@wilderschools.org>; 'lrichard@cityofcaldwell.org' <lrichard@cityofcaldwell.org>; Alan Perry <aperry@cityofcaldwell.org>; 'homedalefd@gmail.com' <homedalefd@gmail.com>; 'tlawrence@kunafire.com' <tlawrence@kunafire.com>; 'khinkle@kunafire.com' <khinkle@kunafire.com>; 'marsingfiredistrict@yahoo.com' <marsingfiredistrict@yahoo.com>; 'marsingruralfire@gmail.com' <marsingruralfire@gmail.com>; 'brian.mccormack@melbafire.id.gov' <brian.mccormack@melbafire.id.gov>; 'kenny.hoagland@melbafire.id.gov' <kenny.hoagland@melbafire.id.gov>; 'permits@starfirerescue.org' <permits@starfirerescue.org>; 'johnsonre@nampafire.org' <johnsonre@nampafire.org>; 'johnsonrl@nampafire.org' <johnsonrl@nampafire.org>; 'linanj@nampafire.org' <linanj@nampafire.org>; 'jeff@parmafire.us' <jeff@parmafire.us>; 'parmaruralfire@gmail.com' <parmaruralfire@gmail.com>; 'permits@starfirerescue.org' <permits@starfirerescue.org>; 'eddy@heritagewifi.com' <eddy@heritagewifi.com>; 'jmaloney@wilderfire.org' <jmaloney@wilderfire.org>; Knute Sandahl <Knute.Sandahl@doi.idaho.gov>; 'Chris Hopper' <chopper@hwydistrict4.org>; 'Lenny Riccio' <lriccio@hwydistrict4.org>; 'bobw@gghd3.org' <bobw@gghd3.org>; 'office@gghd3.org' <office@gghd3.org>; 'Eddy Thiel' <eddy@nampahighway1.com>; 'gwatkins@nphd.net' <gwatkins@nphd.net>; 'admin1@kunalibrary.org' <admin1@kunalibrary.org>; 'admin2@kunalibrary.org' <admin2@kunalibrary.org>; lizardbuttelibrary@yahoo.com; 'brandy.walker@centurylink.com' <brandy.walker@centurylink.com>; 'eingram@idahopower.com' <eingram@idahopower.com>; 'easements@idahopower.com' <easements@idahopower.com>; 'mkelly@idahopower.com' <mkelly@idahopower.com>; 'monica.taylor@intgas.com' <monica.taylor@intgas.com>; 'jessica.mansell@intgas.com' <jessica.mansell@intgas.com>; 'contract.administration.bid.box@ziply.com' <contract.administration.bid.box@ziply.com>; 'developmentreview@blackcanyonirrigation.com' <developmentreview@blackcanyonirrigation.com>; 'aflavel.bkirrdist@gmail.com' <aflavel.bkirrdist@gmail.com>; 'tritthaler@boiseproject.org' <tritthaler@boiseproject.org>; 'gashley@boiseproject.org' <gashley@boiseproject.org>; 'irr.water.3@gmail.com' <irr.water.3@gmail.com>; 'kchamberlain.fcdc@gmail.com' <kchamberlain.fcdc@gmail.com>; 'office@idcpas.com' <office@idcpas.com>; 'fcdc1875@gmail.com' <fcdc1875@gmail.com>; 'farmers.union.ditch@gmail.com' <farmers.union.ditch@gmail.com>; 'wilders04@msn.com' <wilders04@msn.com>; 'irrigation.mm.mi@gmail.com' <irrigation.mm.mi@gmail.com>; 'nmid@nmid.org' <nmid@nmid.org>; 'eolvera@nmid.org' <eolvera@nmid.org>; 'terri@nyid.org' <terri@nyid.org>; 'kirk@pioneerirrigation.com' <kirk@pioneerirrigation.com>; 'sheepmama25@gmail.com' <sheepmama25@gmail.com>; 'fcdc1875@gmail.com' <fcdc1875@gmail.com>; 'mack@settlersirrigation.org' <mack@settlersirrigation.org>; 'kchamberlain.fcdc@gmail.com' <kchamberlain.fcdc@gmail.com>; Mitch Kiester <mitch.kiester@phd3.idaho.gov>; 'anthony.lee@phd3.idaho.gov' <anthony.lee@phd3.idaho.gov>; 'drain.dist.2@gmail.com' <drain.dist.2@gmail.com>; 'bryce@sawtoothlaw.com' <bryce@sawtoothlaw.com>; 'scott_sbi@outlook.com' <scott_sbi@outlook.com>; projectmgr <projectmgr@boiseriver.org>; testrada@starswd.com; 'jlucas@achdidaho.org' <jlucas@achdidaho.org>; 'clittle@achdidaho.org' <clittle@achdidaho.org>; 'brentc@brownbuscompany.com' <brentc@brownbuscompany.com>; 'gis@compassidaho.org' <gis@compassidaho.org>; 'D3Development.services@itd.idaho.gov' <D3Development.services@itd.idaho.gov>; 'niki.benyakhlef@itd.idaho.gov' <niki.benyakhlef@itd.idaho.gov>; 'itdd3permits@itd.idaho.gov' <itdd3permits@itd.idaho.gov>; 'airport.planning@itd.idaho.gov' <airport.planning@itd.idaho.gov>; 'webmaster@valleyregionaltransit.org' <webmaster@valleyregionaltransit.org>;

'smm5156@gmail.com' <smm5156@gmail.com>; 'deb0815@yahoo.com' <deb0815@yahoo.com>; 'kunacemetery@gmail.com' <kunacemetery@gmail.com>; '3tjj@frontiernet.net' <3tjj@frontiernet.net>; 'melbacemetery@gmail.com' <melbacemetery@gmail.com>; 'middletoncemdist13@gmail.com' <middletoncemdist13@gmail.com>; 'ann_jacops@hotmail.com' <ann_jacops@hotmail.com>; 'facjhill@gmail.com' <facjhill@gmail.com>; Brian Crawforth <Brian.Crawforth@canyoncounty.id.gov>; Christine Wendelsdorf <Christine.Wendelsdorf@canyoncounty.id.gov>; Michael Stowell <mstowell@ccparamedics.com>; 'tryska7307@gmail.com' <tryska7307@gmail.com>; 'shankelc@cityofnampa.us' <shankelc@cityofnampa.us>; Diana Little <Diana.Little@canyoncounty.id.gov>; Loretta Tweedy <Loretta.Tweedy@canyoncounty.id.gov>; Assessor Website <2cAsr@canyoncounty.id.gov>; Elections Clerk <electionsclerk@canyoncounty.id.gov>; 'roger@amgidaho.com' <roger@amgidaho.com>; Nichole Schwend <Nichole.Schwend@canyoncounty.id.gov>; Rick Britton <Rick.Britton@canyoncounty.id.gov>; 'Richard Sims' <middletown.rich@gmail.com>; Jim Lunders <jlunders@2cmad.org>; 'mgrodriguez@usbr.gov' <mgrodriguez@usbr.gov>; 'edward_owens@fws.gov' <edward_owens@fws.gov>; BRO Admin <BRO.Admin@deq.idaho.gov>; Kenny Huston <kenny.huston@oer.idaho.gov>; Brenna Garro <Brenna.Garro@oer.idaho.gov>; Jackson, Peter <Peter.Jackson@idwr.idaho.gov>; O'Shea, Maureen <Maureen.OShea@idwr.idaho.gov>; Western Info <westerninfo@idwr.idaho.gov>; 'john.graves@fema.dhs.gov' <john.graves@fema.dhs.gov>; 'idahoaaa@gmail.com' <idahoaaa@gmail.com>; 'zlathim@idl.idaho.gov' <zlathim@idl.idaho.gov>; Flack,Brandon <brandon.flack@idfg.idaho.gov>; 'aubrie.hunt@dhw.idaho.gov' <aubrie.hunt@dhw.idaho.gov>; 'marilyn.peoples@dhw.idaho.gov' <marilyn.peoples@dhw.idaho.gov>; Tricia Canaday <Tricia.Canaday@ishs.idaho.gov>; Dan Everhart <Dan.Everhart@ishs.idaho.gov>; Patricia Hoffman <Patricia.Hoffman@ishs.idaho.gov>; Stevie Harris <Stevie.Harris@ISDA.IDAHO.GOV>; Brock Cornell <Brock.Cornell@ISDA.IDAHO.GOV>; 'tate.walters@id.usda.gov' <tate.walters@id.usda.gov>; 'carol.chadwick@usda.gov' <carol.chadwick@usda.gov>; 'noe.ramirez@usda.gov' <noe.ramirez@usda.gov>; 'CENWW-RD-BOI-TV@usace.army.mil' <CENWW-RD-BOI-TV@usace.army.mil>; 'laura.j.freedman@usps.gov' <laura.j.freedman@usps.gov>; 'rakesh.n.dewan@usps.gov' <rakesh.n.dewan@usps.gov>; 'chad.m.franklin@usps.gov' <chad.m.franklin@usps.gov>; 'melvin.b.norton@usps.gov' <melvin.b.norton@usps.gov>; 'tammi.l.barth@usps.gov' <tammi.l.barth@usps.gov>; 'henry.medel@usps.gov' <henry.medel@usps.gov>; 'khrista.m.holman@usps.gov' <khrista.m.holman@usps.gov>; 'rochelle.fuquay@usps.gov' <rochelle.fuquay@usps.gov>; 'leroy.eyler@usps.gov' <leroy.eyler@usps.gov>; 'marc.c.boyer@usps.gov' <marc.c.boyer@usps.gov>; 'mhuff@co.owyhee.id.us' <mhuff@co.owyhee.id.us>; 'gmprdjennifer@gmail.com' <gmprdjennifer@gmail.com>; 'lisaitano@me.com' <lisaitano@me.com>; 'scott@fccnw.com' <scott@fccnw.com>; 'srcsbinfo@gmail.com' <srcsbinfo@gmail.com>; 'tottens@amsidaho.com' <tottens@amsidaho.com>; 'melvin.b.norton@usps.gov' <melvin.b.norton@usps.gov>; 'scott.hauser@usrtf.org' <scott.hauser@usrtf.org>; 'info@destinationcaldwell.com' <info@destinationcaldwell.com>; Newsroom <newsroom@idahopress.com>; 'news@kboi2.com' <news@kboi2.com>; 'news@kivitv.com' <news@kivitv.com>; '670@kboi.com' <670@kboi.com>; 'ktvbnews@ktvb.com' <ktvbnews@ktvb.com>; 'middletonexpress1@gmail.com' <middletonexpress1@gmail.com>; 'rmorgan@kellerassociates.com' <rmorgan@kellerassociates.com>
Subject: Full Political RZ2021-0053 Thornton Gallup LLC

Dear Agencies,

Your agency is being notified pursuant to the Local Land Use Planning Act, Idaho Code 67-6509, to all political subdivisions providing services within the planning jurisdiction of Canyon County, including school districts and media.

No response is required from your agency unless you have input on the proposed project.

Contact the planner of record, **Michelle Barron** at michelle.barron@canyoncounty.id.gov with any questions or additional agency comments or concerns if applicable.

Thank you,

Amber Lewter
Hearing Specialist
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605

Direct Line: 208-454-6631
Fax: 208-454-6633
Email: amber.lewter@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

Development Services Department (DSD)
NEW public office hours
Effective Jan. 3, 2023
Monday, Tuesday, Thursday and Friday
8am – 5pm
Wednesday
1pm – 5pm
**We will not be closed during lunch hour **

Exhibit D9 69

Michelle Barron

From: Niki Benyakhlef <Niki.Benyakhlef@itd.idaho.gov>
Sent: Tuesday, August 1, 2023 1:43 PM
To: Michelle Barron
Cc: Bonnie Puleo
Subject: [External] RE: Agency Notification RZ2021-0053 & SD2021-0055 / Mason & Assoc

Hello Michelle –

After careful review of the transmittal submitted to ITD on July 31, 2023 regarding RZ2021-0053 & SD2021- / Mason & Assoc, the Department has no comments or concerns to make at this time. This development is only proposing 23 buildable lots which will not warrant enough impact to our state highway system.

Thank you,

Niki Benyakhlef
Development Services Coordinator

District 3 Development Services
O: 208.334.8337 | C: 208.296.9750
Email: niki.benyakhlef@itd.idaho.gov
Website: itd.idaho.gov

From: Bonnie Puleo <Bonnie.Puleo@canyoncounty.id.gov>
Sent: Monday, July 31, 2023 1:08 PM
To: 'lgrooms@msd134.org' <lgrooms@msd134.org>; Marc Gee <mgee@msd134.org>; 'mitch.kiester@phd3.idaho.gov' <mitch.kiester@phd3.idaho.gov>; Anthony Lee <anthony.lee@phd3.idaho.gov>; 'Kent, Lori - NRCS-CD, Caldwell, ID' <Lori.Kent@id.nacdnet.net>;'permits@starfirerescue.org' <permits@starfirerescue.org>; 'CHOPPER@CANYONHD4.ORG' <CHOPPER@CANYONHD4.ORG>; 'JESSICA.MANSELL@INTGAS.COM' <JESSICA.MANSELL@INTGAS.COM>; 'MONICA.TAYLOR@INTGAS.COM' <MONICA.TAYLOR@INTGAS.COM>; Idaho Power <easements@idahopower.com>; Megan Kelly <mkelly@idahopower.com>; 'BRO.Admin@deq.idaho.gov' <BRO.Admin@deq.idaho.gov>; 'CARL@BLACKCANYONIRRIGATION.COM' <CARL@BLACKCANYONIRRIGATION.COM>; dpopoff@rh2.com; COMPASS <gis@compassidaho.org>; Niki Benyakhlef <Niki.Benyakhlef@itd.idaho.gov>; D3 Development Services <D3Development.Services@itd.idaho.gov>; 'GMPRDJENNIFER@GMAIL.COM' <GMPRDJENNIFER@GMAIL.COM>; 'westerninfo@idwr.idaho.gov' <westerninfo@idwr.idaho.gov>
Subject: Agency Notification RZ2021-0053 & SD2021-0055 / Mason & Assoc

---

Good afternoon;

Please see the attached agency notice. You are invited to provide written testimony or comments by August 31, 2023, although as of this point, no hearing date has been set. You will receive a separate notification when the hearing date has been set for this case. The deadline for written testimony or additional exhibits is to ensure planners can consider

the information as they develop their staff report and recommended findings. All items received by the deadline will also be placed in the hearing packet, allowing the hearing body adequate time to review the submitted information.

Please direct your comments or questions to Planner Michelle Barron at michelle.barron@canyoncounty.id.gov

Thank you,

Bonnie Puleo
Hearing Specialist
Canyon County Development Services
111 No 11th Ave. Suite 310
Caldwell, ID 83605
bonnie.puleo@canyoncounty.id.gov
(208) 454-6631 *direct*
NEW public office hours **effective January 3, 2023**
Monday, Tuesday, Thursday and Friday
8 am – 5 pm
Wednesday
1 pm – 5 pm
We will not be closed during lunch hour

Michelle Barron

From: Niki Benyakhlef <Niki.Benyakhlef@itd.idaho.gov>
Sent: Monday, November 25, 2024 8:06 AM
To: Michelle Barron
Cc: Amber Lewter
Subject: [External] RE: Agency Notification RZ2021-0053 Thornton Gallup LLC

Follow Up Flag: Follow up
Flag Status: Flagged

Good Morning, Michelle –

After careful review of the transmittal submitted to ITD on November 19, 2024, regarding RZ2021-0053 Thornton Gallup LLC, the Department has no comments or concerns to make at this time. This development does not meet the threshold for a Traffic Impact Study and does not abut the state highway system. Additionally, there is currently a SH-44 corridor study that addresses form I-84 east to Star Rd that would potentially address congestion in that area.

Thank you,

Niki Benyakhlef
Development Services Coordinator

District 3 Development Services
O: 208.334.8337 | C: 208.296.9750
Email: niki.benyakhlef@itd.idaho.gov
Website: itd.idaho.gov

From: Amber Lewter <Amber.Lewter@canyoncounty.id.gov>
Sent: Tuesday, November 19, 2024 8:42 AM
To: 'jhutchison@middletoncity.com' <jhutchison@middletoncity.com>; 'jreynolds@middletoncity.com' <jreynolds@middletoncity.com>; 'mhobbs@middletoncity.org' <mhobbs@middletoncity.org>; 'rstewart@middletoncity.com' <rstewart@middletoncity.com>; 'lgrooms@msd134.org' <lgrooms@msd134.org>; 'mgee@msd134.org' <mgee@msd134.org>; 'permits@starfirerescue.org' <permits@starfirerescue.org>; 'Chris Hopper' <chopper@hwydistrict4.org>; 'Lenny Riccio' <lriccio@hwydistrict4.org>; 'monica.taylor@intgas.com' <monica.taylor@intgas.com>; 'jessica.mansell@intgas.com' <jessica.mansell@intgas.com>; 'easements@idahopower.com' <easements@idahopower.com>; 'mkelly@idahopower.com' <mkelly@idahopower.com>; 'developmentreview@blackcanyonirrigation.com' <developmentreview@blackcanyonirrigation.com>; 'mitch.kiester@phd3.idaho.gov' <mitch.kiester@phd3.idaho.gov>; 'anthony.lee@phd3.idaho.gov' <anthony.lee@phd3.idaho.gov>; 'gis@compassidaho.org' <gis@compassidaho.org>; D3 Development Services <D3Development.Services@itd.idaho.gov>; Niki Benyakhlef <Niki.Benyakhlef@itd.idaho.gov>; 'knute.sandahl@doi.idaho.gov' <knute.sandahl@doi.idaho.gov>; Brian Crawforth <Brian.Crawforth@canyoncounty.id.gov>; Christine Wendelsdorf <Christine.Wendelsdorf@canyoncounty.id.gov>; Michael Stowell <mstowell@ccparamedics.com>; Assessor Website <2cAsr@canyoncounty.id.gov>; Dalia Alnajjar <Dalia.Alnajjar@canyoncounty.id.gov>; Tom Crosby <Tom.Crosby@canyoncounty.id.gov>; Cassie Lamb <Cassie.Lamb@canyoncounty.id.gov>; Eric Arthur <Eric.Arthur@canyoncounty.id.gov>; Kathy Husted <Kathleen.Husted@canyoncounty.id.gov>; Tony Almeida <tony.almeida@canyoncounty.id.gov>; Sage Huggins

<Sage.Huggins@canyoncounty.id.gov>; 'Richard Sims' <middletown.rich@gmail.com>; 'BRO.Admin@deq.idaho.gov' <BRO.Admin@deq.idaho.gov>; 'brandon.flack@idfg.idaho.gov' <brandon.flack@idfg.idaho.gov>; 'westerninfo@idwr.idaho.gov' <westerninfo@idwr.idaho.gov>; 'idahoaaa@gmail.com' <idahoaaa@gmail.com>; 'gmprdjennifer@gmail.com' <gmprdjennifer@gmail.com>
Subject: Agency Notification RZ2021-0053 Thornton Gallup LLC

Dear Agencies,

Please see the attached agency notice regarding the scheduled Planning and Zoning Commission hearing on this project. We had previously requested your agency provide comments for the noticed land use application and if any agency comments were received, they were included in the Staff report. No response is required unless there is an update to your original comments.

This is the notification that a hearing date of **December 19, 2024** at 6:30 pm has been set for this case along with a final deadline of **December 9, 2024** for agency comments. If the comment deadline is on a weekend or holiday, it will move to close of business 5pm the next business day.

Please direct your comments or questions to Planner **Michelle Barron** at michelle.barron@canyoncounty.id.gov

Thank you,

Amber Lewter
Hearing Specialist
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605

Direct Line: 208-454-6631
Fax: 208-454-6633
Email: amber.lewter@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

Development Services Department (DSD)
NEW public office hours
Effective Jan. 3, 2023
Monday, Tuesday, Thursday and Friday
8am – 5pm
Wednesday
1pm – 5pm
**We will not be closed during lunch hour **

Exhibit D10

Michelle Barron

From: Timothy Jensen <tejensen@kunaschools.org>
Sent: Wednesday, November 20, 2024 5:41 PM
To: Michelle Barron
Subject: [External] RZ2021-0053 Thornton Gallup LLC

Michelle,

Kuna School District has no official comment on this application as it does not lie within our boundaries. Thank you.

Tim Jensen Ed.S
KSD Planning & Development Team
Principal-Fremont MS
IMLA President

Exhibit D11

MIDDLETON RURAL FIRE DISTRICT

STAR FIRE PROTECTION DISTRICT

FIRE DEPARTMENT PRELIMINARY PLAT APPLICATION

PLEASE PRINT **Date:** 6/15/2023

Applicant Name: Pioneer Homes	Primary Contact: ☐Applicant ☐Owner ■Representative		
Address: 719 1st St. S. Suite B	City: Nampa	Zip: 83651	
Phone/Mobile: (208) 468-9200	Email Address: brian@pioneerhomesidaho.com		
Owner(s): Thornton Gallup LLC			
Address: P.O. Box 1495	City: Nampa	Zip: 83653	
Phone/Mobile:	Email Address:		
Representative: Mason and Associates	Contact Name: Will Mason		
Phone/Mobile: (208) 454-0256	Email Address: wmason@masonandassociates.us		
Billing: Name and Email:			

PROJECT INFORMATION

Subdivision Name: Freezeout Ridge Estates		
Site Location: 23442 Freezeout Rd. Caldwell, ID		
Approved Zoning Designation of Site: AG Requesting R1	Legal Description: Section 3 T4N R3W	
Total Acreage of Site: 31.41 AC	Dwelling Units Per Gross Acre: 1.16	
Minimum Lot Size: 1.00 AC	Minimum Lot Width: 125` min	

Total Number of Lots: 27	Residential: 23	Commercial: N/A
Industrial: N/A	Common: 4	Other: N/A
Total Number of Units: N/A	Single-family: N/A	Duplex: N/A
Multi-family N/A	Other: N/A	Water Services: Individual Wells
Streets: ■Public ☐Private	# Entrances: 1	Gated: ☐Yes ■No

FIRE CODE OFFICAL USE ONLY

REVIEW NOTES:

See attached staff report.

Application & Plans Received: (Date/By) 6/21/23 Dropoff-NSinclair

Permit Fee: $200.00 (Paid) Cash Credit Card Check # 14190

Fire Authority Having Jurisdiction: Middleton Rural FD

Fire District Permit # 23 MS-135

City/County Jurisdiction: Middleton / Canyon

County/City Permit #

FIRE DISTRICT APPLICATION STATUS

☐Approved ☒Approved with Conditions ☐Denied

Fire Code Official: Victor Bolds **Date:** 8/28/2023

(208) 286-7772
11665 W. STATE ST., SUITE B
STAR, IDAHO 83669

DATE: August 28, 2023

TO: Pioneer Homes
Mason and Associates

FROM: Victor Islas, Deputy Chief

SUBJECT: Fire District Review (23MS-135)

PROJECT NAME: Freezeout Ridge Estates
23442 Freezeout Rd., Caldwell, Idaho

Fire District Summary Report:

1. **Overview**
   a. This development can be serviced by the Middleton Rural Fire District. This development shall comply with the 2018 International Fire Code (IFC), Authority Having Jurisdiction (AHJ) and any codes set forth by the Canyon County, Idaho
   b. Scope: New Development
   c. Construction Type – VB
   d. Purposed Lots = 27 (Residential =23, Common =4)
   e. Zoning – R1 Rural Residential
   f. Any overlooked hazardous condition and/or violation of the International Building and/or Fire Code does not imply approval of such condition or violation.

2. **Fire Response Time:**
   a. This development will be served by the Middleton Rural Fire District Station 53, located at 302 E. Main St., ., Middleton, Idaho 83644. Station 53 is 3.7 mile with a travel time of 7 minutes under ideal driving conditions to the purposed entrance off Freezeout Rd.

3. **Accessibility:** Roadway Access, Traffic, Radio Coverage
   a. Access roads shall be provided and maintained following Appendix D and Section 503 of the IFC. Access shall include adequate roadway widths, signage, turnarounds, and turning radius for fire apparatus.
   b. Access road design shall be designed and constructed to allow for evacuation simultaneously with emergency response operations.
   c. All access roads in this development shall remain clear and unobstructed during construction of the development. Additional parking restrictions may be required as to maintain access for emergency vehicles at all times.
   d. Purposed access roads meet the intent of the fire code for subdivision under 30 lots.
   e. If the home sites more than 150 ft off the road way additional turnaround will be required.
   f. No parking signs will be required in all cul de sac.

Fire District Headquarters • 11665 W. State St., Suite B • Star, Idaho 83669 • (208) 286-7772 • www.midstarfire.org

4. **Addressing/Street Signs:**
    a. Addressing/building identification sign shall be placed in a position that is plainly legible and visible from the street or road fronting the property.
        i. Approved residential address numbers a minimum of six inches (6") in height and in a contrasting color shall be placed on all new buildings in such a position as to be clearly visible and legible from the street or road fronting the property.
    b. Upon commencement of initial construction of a new structure, a clear visible freestanding sign or post shall be erected and maintained in place until the permanent address numerals are attached or otherwise displaced upon the premises at completion.

5. **Water Supply:** Water supply requirements will be followed as described in Appendix B of the 2018 International Fire Code unless agreed upon by the Fire District.
    a. Fire Flow: The fire-flow calculation area shall be the total floor area of all floor levels within the exterior walls, and under the horizontal projections of the roof of a building.
    b. Fire Flow: One and two family dwellings not exceeding 3,600 square feet require a fire-flow of 1,000 gallons per minute for a duration of 1 hour to service the entire project. One and two family dwellings in excess of 3,600 square feet require a minimum fire flow as specified in Appendix B of the International Fire Code.
    c. Water Supply: Water Supply Options
        i. Municipal Water System
        ii. Private or Community well capable of supplying required fire flow.
        iii. Elevated and pressure tanks
        iv. NFPA 13D Residential Fire Sprinkler System

6. **Additional Comments:**
    a. Final inspection by the Fire District of the above listed must be completed before building permits are issued by Canyon County.

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Exhibit D12

SOUTHWEST DISTRICT HEALTH

June 15, 2021

Brian Falck
Pioneer Homes
719 1st Street South, Suite B
Nampa, Idaho 836

RE: Freezeout Ridge Estates, Level 1 Nutrient Pathogen (NP) Study Approval

Dear Mr. Falck:

Southwest District Health (SWDH) and the Idaho Department of Environmental Quality (DEQ) received your Level 1 Nutrient-Pathogen study for review on April 19, 2021 for the proposed Freezeout Ridge Estates, located north of Caldwell, Canyon County, Idaho in SE1/4NE1/4 and SW1/4NE1/4, Section 3, Township 4N, Range 3W, Boise Meridian. The NP study was prepared by Atlas Technical Consultants, LLC, for Pioneer Homes of Nampa, Idaho.

The Property is reported to be an approximate 31-acre area of land. The proposed development includes 20 residential lots, with lot sizes ranging from approximately one (1) acre to 1.9 acres. Individual wastewater disposal systems and individual water wells for single family residences are planned.

Based on the data presented in the NP Study, Freezeout Ridge Estates 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, apart from **lots 4,7,8 and 10**, will need extended treatment systems to reduce nitrate concentrations in wastewater to 27 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, Freezeout Ridge Estates 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 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. Once an SER is submitted to our office, SWDH can review it. A pre-development meeting is required to being the SER process. During this meeting an on-site evaluation, including test holes can be scheduled.

If you have questions, please call our office at 208-899-3907 or brigita.gruenberg@phd3.idaho.gov.

Sincerely,

Brigitta Gruenberg, REHS

Brigitta Gruenberg, REHS/RS
Land Development Senior

c Monica Saculles, Atlas Technical Consultants, LLC
Angie Cuellar, Mason & Associates Inc.
File copy

Exhibit E1

Michelle Barron

From: DEBBIE WHITE <luckiestnumber1@msn.com>
Sent: Monday, December 9, 2024 1:14 PM
To: Michelle Barron
Subject: Re: [External] Impact Statement Case No. RZ2021-005
Attachments: Gadsen Development 2.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Hello,
Thank you for the replay, it is nice to see someone is listening. Please add my additional comments to the list.

To whom it may concern, December 9, 2024
Thank you for the reply, it is nice to know that someone is listening.

Please add my additional comments to Case No. RZ2021-005.
In the first meeting with developers, all current neighbors were very concerned about the following:

- Impact to water table in the area, 23 additional wells will cause a substantial drop in the water table to the entire area, necessitating deeper wells, possible fail of existing wells. The developer needs to be held accountable, to ensure that this is addressed and guarantee existing homeowners he will cover any impact they may have on their water level or well functionality.
- Impact to water quality and purity, due to 23 individual septic systems and sewer drain fields. The developer needs to be held accountable, to ensure all testing and evaluation has been completed to verify NO effect to the purity of the area's ground water.
- Impact to Freezeout Road traffic, the easement to the Gadsen development sits at the base of a natural incline to the West on Freezeout Road, this impact visibility of all drivers, the additional traffic caused by 23 new residents will highly impact this area, and no doubted increase the safety of this small country road. Countless accidents happen on this stretch of Freezeout Road every year, resulting in property damage, pets killed, and injuries.
- The West side of the Gadsen development is currently a wetland for an abondance of wildlife. The developer needs to be help accountable to maintain this wetland, the existing trees and natural habitat.

Please DO NOT maintain the RR zoning for Freezeout Road Caldwell Idaho – do the right thing for the existing IMPACTED community - Maintain our community with RR-Rural Resident zoning.

Sincerely,
Debbie White
23448 Freezeout Road
Caldwell Id 83607
208-880-1618

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Friday, December 6, 2024 4:50 PM
To: 'DEBBIE WHITE' <luckiestnumber1@msn.com>
Subject: RE: [External] Impact Statement Case No. RZ2021-005

Thank you for your response. I will add this to the file.

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: DEBBIE WHITE <luckiestnumber1@msn.com>
Sent: Wednesday, December 4, 2024 4:27 PM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Subject: [External] Impact Statement Case No. RZ2021-005

To whom it may concern, December 4, 2024
I am writing to you today to express my concerns on the zoning changes proposed by Mason & Associates development (Case No. Rz2021-005).

I have lived on Freezeout Road for 28 years and consider this to be a rural community.
All the homes in the impact area are zoned RR – Rural Resident.
If R1 zoning is granted this target development of 31 acre would be the only neighborhood zoned RI, they would not have enough room to own large animals, opportunities of a rural community, etc., yet be surrounded by RR homes, which do own large animals and are rural residents.
As a responsible member of society, and an active member in our community, living in Idaho this sounds like an Impact that should be reconsidered. Why would Canyon County approve this type of request, which would create an uncoordinated neighborhood and additional congestion and conflict with the existing community?

The title - Impact Statement – should recognize the IMPACT to existing homeowners, HEAR their concerns and do what is BEST for the current residents! These are the people Impacted!

I understand development is inevitable and change is something we live with every day.
But why make is the worst development decision possible, versus a development that will blend in with the CURRENT community and maintain the Rural Residents.

Most developers are millionaires, yet they are after the most money they can make on a project, I understand this. But consider this land, locked by rural resident piece of property, and the new neighborhood becomes a

suburbia in the country, WHY? No developer should have the right to ruin an RR community, just to make an extra million on top of the millions they already make.

Picture it in your head……..

If R1 zoning is granted this target development of 31 acre would become a neighborhood who would not get what everyone else has, not have enough room to own large animals, build shops, etc., they will get the country life this area brings, but they will be surrounded by RR homes, which do own large animals, do build shops, etc., and do enjoy the country lifestyle.

I am not a millionaire, I have no way to fight development, nor should I, all I have is my voice. The first meeting I went to on this development project was disappointing as the panel behind the desk did not listen, empathize, or consider anyone's impact statements.

I do not know if that is part of their responsibilities, but I would think so. Most people feel there is no support for the homeowner, the existing communities, the families, and lifestyles that are impacted when developers always win. Does Canyon County care?

Items to consider, from the Idaho Planning and Zoning website.

Rezone Development Considerations:

- Maintain a balance between residential growth and agriculture that protects the rural character.
- None of the current homeowners in the impacted areas approve the re-zone request, and no one believes the rezone is compatible or will have co-exist success in the community.
- There is no additional growth opportunity in this area, the site should follow current zoning, to provide less impact to the current community.

R1 is non-agriculture development which is encouraged to the city locations to lessen the impact on small rural communities like Freezeout Road. The 31.39 acres located at 14180 Gadsen Lane is the last open piece of property in this area, therefore it should align with the zoning of the surrounding properties.

I am not a millionaire, I am not a developer, and I am not a planning and zoning officer, I am a concerned homeowner trying to maintain the rural lifestyle I have built for many years.

I want to protect the neighborhood with development that fits in, with as minor impact as possible.

Please DO NOT grant Mason & Associates development (Case No. Rz2021-005) their rezoning request to R1-single family for 31.39 acres located at 14180 Gadsen Lane – the last 31 acres on Freezeout Road, Caldwell Idaho – Maintain our community with RR-Rural Resident zoning.

Sincerely,

Debbie White
23448 Freezeout Road
Caldwell Id 83607
208-880-1618

Exhibit E2

Michelle Barron

From: Jason Roach <jason@galtsmiles.com>
Sent: Sunday, December 8, 2024 2:34 PM
To: Michelle Barron
Subject: [External] Case No. RZ2021-005

Hi,

My name is Jason Roach at 14177 Leather Ridge Rd and I am writing regarding case no. RZ2021-005 Located at 14180 Gadsden Ln. Caldwell, ID. The project is going to add 23 residential homes on 1 acre lots that will affect traffic flow on our small street, freeze out road and leather ridge rd.

I realize development is inevitable for this piece of land. That being said, I would ask the developer to consider making the lots 2 acres in size, reducing the number of homes to 13 instead of 23. I would also ask the developer to make it so traffic entering and exiting the proposed community would not be allowed to use leather ridge road as an access road to the new community. Reducing increased traffic on our small roads and reducing possible well water issues would be much appreciated from the surrounding residents. We all realize that plot of land will be developed, we would just like you to consider doing it in a way that would keep our country homes feeling like the country. Idaho is a special place and this is a special area to the residents who have made this their home. Let's try to preserve this area as much as possible, but still allow reasonable development to occur. This would be a win win for all. Please consider my request. Thank you-Jason Roach

Sent from Jason's iPhone

Michelle Barron

From: Judy Cordeniz <jcordeniz53@gmail.com>
Sent: Wednesday, November 20, 2024 12:38 PM
To: Michelle Barron
Subject: Re: [External] Case no. RZ2021-005. Rezone of parcel R34479

Follow Up Flag: Follow up
Flag Status: Flagged

Thank you your prompt response. If my math serves me right we are looking at 1 acre lot per residence.

Secondly- we are desperately hoping that the woodland buffer stays intact. This is an irrigation drainage area and refuge for many fowl and other wild life , fox, coyotes etc. Do you have any insight into the plans for that area ?

Thanks so much.

Judy A. Cordeniz, NASM/CPT
Judy's Fitness on the Fly
208-371-0058 (txt, message, voice)
jcordeniz53@gmail.com

On Wed, Nov 20, 2024 at 12:10 PM Michelle Barron <Michelle.Barron@canyoncounty.id.gov> wrote:

> Common lots are lots that are reserved for some type of common area (maintained by an HOA), such as for a road lot, irrigation structure, landscaping buffer, etc. Sometimes subdivisions will have a park, but I don't see that on this concept plan.
>
> Thanks,
>
> Michelle Barron
> Principal Planner
> Canyon County Development Services Department
> 111 N. 11th Ave., #310, Caldwell, ID 83605
> Direct Line: 208-455-6033
> DSD Office Phone: 208-454-7458
> Email: Michelle.Barron@canyoncounty.id.gov
> Website: www.canyoncounty.id.gov
>
> -----Original Message-----
> From: Judy Cordeniz <jcordeniz53@gmail.com>
> Sent: Wednesday, November 20, 2024 9:06 AM
> To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
> Subject: [External] Case no. RZ2021-005. Rezone of parcel R34479
>
> Hello Michelle - please clarify for me the definition of “4 common lots” in the description of the proposed rezoning at 14180 Gadsden Lane.

Thank you.
Judy Cordeniz-Burchard
Homeowner at 23464 Freezeout Rd

Sent from my iPhone

Exhibit E4

Michelle Barron

From: leann1075@gmail.com
Sent: Monday, December 9, 2024 5:00 PM
To: Michelle Barron
Subject: [External] OPPOSED: Case #RZ2021-005

To Whom it May Concern:

I am writing to express my grave concern with the proposed development at 14180 Gadsden Ln, parcel R34479.

This development has a long history of strong disagreement from all neighbors that this would affect. We previously met on May 5, 2021 with the developer, Brian Faulk of Pioneer Homes to oppose this development. We especially oppose the rezoning request from A to R-1. There is no precedent for this rezone as all other nearby developments are R2. An R1 request comes across as greedy and irresponsible development.

Developing this land will have long lasting, dire consequences on the land and surrounding areas.

First and foremost, the strain on our natural resources will be immeasurable, irreversible, and reckless. To add 23 wells and individual septics will deplete all wells/water tables in the surrounding areas. This would devastate all current homeowners, especially those that rely on the water for income producing agriculture crops. Not to mention the septic drain fields will contaminate the surrounding soil, with no proposed solution to rectify this for current homeowners.

Second, this development would wipe out all current wildlife in the area. This land is home to golden eagles, redtail hawks, owls, canadian geese, deer, mallard ducks, red and black fox, pheasants, quail and numerous other birds and field wildlife. Previously, the developer mentioned having a common area--this is not only NOT a viable solution, but it's offensive to strip the area wildlife of their natural habitat only to turn around and offer a small plot of land that will not sustain all the wildlife.

Third, there is no current or proposed infrastructure to support 50+ cars that would occupy the development.

I am proposing the following studies:

Road use assessment
Environmental impact study
Assessment of ground water impact to include purity

Again, we strongly oppose this development for the above mentioned reasons.

Regards,
Le Ann Stephens and Ben Schneider
14000 Gadsden Ln

--
Le Ann Stephens

Exhibit E5 7

Michelle Barron

From: Jill Chris <jchris@micron.com>
Sent: Monday, December 9, 2024 1:49 PM
To: Michelle Barron
Subject: [External] RZ2021-005
Attachments: Rezoning Letter RA2021-005 Chris.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Micron Confidential

Hi Michelle,

Please find the attached letter in connection with rezoning case RZ2021-005.

Thanks!

Jill Chris

Micron Confidential

To Whom It May Concern,

This letter is provided to convey concerns connected to development plans for case number RZ2021-005. The following is being requested before any development is allowed to continue:

- Full details provided regarding any new roads or impacts to easements for all surrounding neighborhoods
- Traffic assessment to understand any risks associated with the new development
- Environmental impact assessment to confirm no undue impact
- Ground water assessment to understand impact of new wells and septic systems to surrounding areas
- Confirmation that there will be no impact to the well depth of all surrounding communities as a result of this development
- Rezoned to no less than R-R like neighboring developments

We hope that these factors are seriously considered.

Sincerely,

Ryan and Jill Chris

Exhibit E6 39

Michelle Barron

From: Steve Carnahan <scarnahanc@gmail.com>
Sent: Monday, December 9, 2024 3:01 PM
To: Michelle Barron
Subject: [External] Regarding case # Rz2021-005

The proposal for rezoning of this parcel is detrimental to our property at 14056 Leather Ridge Road and the surrounding areas for the following reasons 1. The drain on the water table from the proposed 23 new wells would cause a decrease in the water table to the entire area and existing wells.
2.The impact of the proposed 23 septic drainage fields will affect the purity of the ground water in the area and to the neighboring properties.
3. The proposed egress on the small county road Freezeout and this additional traffic is a safety concern. The is a sharp turn at the corner were this neighborhood would access Freezeout rd. There is also a slope that makes it difficult to clearly see oncoming traffic. There have already been numerous accidents taking out fencing and mail boxes and with the additional amount of cars that would be coming in and out of the proposed development there surely will be more. This is a rural community where people ride horses, farm equipment, heard sheep, walk and bike, there are also several bus stops in the area. The increased traffic is a huge safety concern and could lead to more accidents and possible fatalities. The majority of the area is R-R and I think that the proposed development should also be no less than R-R

Sincerely,
Steve and Dana Carnahan
14056 Leather Ridge Rd
Caldwell I'd
Sent from my iPad

Exhibit E7

Michelle Barron

From: Tasha Roach <roachteam7@gmail.com>
Sent: Sunday, December 8, 2024 9:46 PM
To: Michelle Barron
Subject: [External] Re: Case No. RZ2021-005

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Michelle,
Thank you so much for your response. I am attaching the same letter with the correct verbiage regarding the builder. There was conflicting information that it was Pioneer Homes instead of Mason and Associates. This new letter will reflect it being Mason and Associates as shown upon further investigation.

To: Michelle Barron Dec. 8, 2024

Re: Case No. RZ20211-005

From: Tasha Roach

I'm writing with concerns in regards to the rezoning and building of the property located at 14180 Gadsden Lane Caldwell, Idaho.

It is my understanding that this property is wanting to rezone to a residential property from what was an agricultural one. As someone who purchased land here several years ago, the draw was to be in a rural area surrounded by like-minded neighbors who wanted to raise animals and grow their own food. We appreciate being able to have the quiet streets and safety of riding horses and walking along the roads. As growth has continued further out around us, Freezeout Road has become a path for commuters. Because of this, several accidents (not all reported) have occurred as a result. In the few years we have been here, it has gotten increasingly less safe due to the already increased traffic. Adding 30 homes on the most dangers curve would increase traffic by a possible 60 cars, assuming each household has just two cars. This would increase traffic and potential accidents tenfold. With more cars on the road, it would also impact us being able to walk on our streets (remember there are no sidewalks) or ride our horses or walk livestock. Additionally, our local schools in the Middleton District are already overcrowded. The addition of this many homes would further impact this problem. Given the already approved homes within MSD and the already overcrowded schools, what is being done to help compensate for that? Is the builder going to financially contribute to the district to help make the changes to accommodate for the additional students and load that will impact the schools? Or will they just want residents to be taxed? I think I know the answer. The fact is, that the addition of this many homes will not only impact surrounding neighbors, but also, the schools and surrounding communities that are already feeling the constriction of overgrowth. Furthermore, the proposal shows that "the individual lots are responsible for retention and treatment of storm water runoff including the application of perimeter lot berming to prevent direct lot discharge into irrigation facilities". This leads itself to the inevitable contamination of our water systems, especially given that many people moving here are unfamiliar with our well and irrigation systems. This needs to be a more uniformed approach to avoid contamination. Of course the addition of these homes also impacts our water table and could create problems with current

wells. Also, there will be the need to add septic systems which also would impact the purity of the well water for neighbors. For obvious reasons, water access and purity are of utmost concern. Furthermore, growth in this area will disturb the wildlife that have grown accustomed to this open land, increased people equals an increase in crime, decrease in safety, increase in light pollution, and a general decrease in the rural life we were all seeking when we purchased here.

I realize that growth is inevitable and I'm not one to complain without a solution. Although I would prefer to have NO more houses added, I would guess that the change is already underway and I don't even know if my letter will have any impact, but I will try. As I understand it, Mason and Associates are the ones wanting to expand this area. As a show of solidarity with neighbors, who want to keep the quietness that they moved here for, it would be nice if they would take into consideration our concerns and in the least, keep it zoned Ag or no less than the R-R zone of bordering developments. By making each lot 2 acres at the minimum, this would limit the amount of traffic to half the size due to half the homes being built. If they care at all about the neighbors, they would be willing to do this. If not, it is quite apparent that this is strictly a financial decision, which is not the Idaho way and would be very disappointing. I hope I am wrong and Idaho values of respecting our neighbors is upheld.

I am asking that the county and builder takes into consideration our concerns and will at least compromise to keep the rural vibe of the community that drew us and many others here in the first place.

Sincerely,

Tasha Roach (Concerned Resident)

On Dec 8, 2024, at 4:30 PM, Tasha Roach <roachteam7@gmail.com> wrote:

To: Michelle Barron Dec. 8, 2024

Re: Case No. RZ20211-005

From: Tasha Roach

I'm writing with concerns in regards to the rezoning and building of the property located at 14180 Gadsden Lane Caldwell, Idaho.

It is my understanding that this property is wanting to rezone to a residential property from what was an agricultural one. As someone who purchased land here several years ago, the draw was to be in a rural area surrounded by like-minded neighbors who wanted to raise animals and grow their own food. We appreciate being able to have the quiet streets and safety of riding horses and walking along the roads. As growth has continued further out around us, Freezeout Road has become a path for commuters. Because of this, several accidents (not all reported) have occurred as a result. In the few years we have been here, it has gotten increasingly less safe due to the already increased traffic. Adding 30 homes on the most dangers curve would increase traffic by a possible 60 cars, assuming each household has just two cars. This would increase traffic and potential accidents

tenfold. With more cars on the road, it would also impact us being able to walk on our streets (remember there are no sidewalks) or ride our horses or walk livestock. Additionally, our local schools in the Middleton District are already overcrowded. The addition of this many homes would further impact this problem. Given the already approved homes within MSD and the already overcrowded schools, what is being done to help compensate for that? Is the builder going to financially contribute to the district to help make the changes to accommodate for the additional students and load that will impact the schools? Or will they just want residents to be taxed? I think I know the answer. The fact is, that the addition of this many homes will not only impact surrounding neighbors, but also, the schools and surrounding communities that are already feeling the constriction of overgrowth. Furthermore, the proposal shows that "the individual lots are responsible for retention and treatment of storm water runoff including the application of perimeter lot berming to prevent direct lot discharge into irrigation facilities". This leads itself to the inevitable contamination of our water systems, especially given that many people moving here are unfamiliar with our well and irrigation systems. This needs to be a more uniformed approach to avoid contamination. Of course the addition of these homes also impacts our water table and could create problems with current wells. Also, there will be the need to add septic systems which also would impact the purity of the well water for neighbors. For obvious reasons, water access and purity are of utmost concern. Furthermore, growth in this area will disturb the wildlife that have grown accustomed to this open land, increased people equals an increase in crime, decrease in safety, increase in light pollution, and a general decrease in the rural life we were all seeking when we purchased here.

I realize that growth is inevitable and I'm not one to complain without a solution. Although I would prefer to have NO more houses added, I would guess that the change is already underway and I don't even know if my letter will have any impact, but I will try. As I understand it, Pioneer Homes, are the ones wanting to expand this area and also own a lot still located in the Saddleback Ridge Estates. As a show of solidarity with neighbors, who want to keep the quietness that they moved here for, it would be nice if they would take into consideration our concerns and in the least, keep it zoned Ag or no less than the R-R zone of bordering developments. By making each lot 2 acres at the minimum, this would limit the amount of traffic to half the size due to half the homes being built. If they care at all about the neighbors, they would be willing to do this. If not, it is quite apparent that this is strictly a financial decision, which is not the Idaho way and would be very disappointing. I hope I am wrong and Idaho values of respecting our neighbors is upheld.

I am asking that the county and builder takes into consideration our concerns and will at least compromise to keep the rural vibe of the community that drew us here in the first place.

Sincerely,

Tasha Roach (Concerned Resident)

RESOLUTION NO. 24-203

A RESOLUTION OF THE CANYON COUNTY BOARD OF COUNTY COMMISSIONERS AUTHORIZING THE QUITCLAIM OF PARCEL NO. R34482012 TO CANYON HIGHWAY DISTRICT NO. 4

The following resolution and order was considered and adopted by the Canyon County, Idaho Board of Commissioners on this 31st day of October, 2024.

Upon motion of Commissioner Brooks and the second by Commissioner Van Beek, the Board resolves as follows:

WHEREAS, Idaho Code § 31-801 grants general powers and duties, subject to the restrictions of law, to the boards of county commissioners in their respective counties; and

WHEREAS, Idaho Code § 31-828 grants the Board authority "to do and perform all other acts . . . which may be necessary to the full discharge of the duties of the chief executive authority of the county government"; and

WHEREAS, Idaho Code § 31-807 authorizes the Board to manage county property subject to restrictions including, but not limited to, those described in Idaho Code § 31-808; and

WHEREAS, Idaho Code § 31-808(9) states that the Board may grant any real or personal property to any political subdivision after a decision that it is in the public interest; and

WHEREAS, Canyon County Parcel No. R34482012 is a .04 acre parcel with a portion of a public road built through it, and was taken by tax deed by Canyon County on or about July 24, 2019 for delinquent taxes; and

WHEREAS, the Board has considered the value of Parcel No. R34482012 to the County in light of its condition, location, and other factors; and

WHEREAS, the Board has determined it is in the best interest of Canyon County to transfer interest in this property to Canyon Highway District No. 4, which is a political subdivision of the state of Idaho, rather than offer the property at tax deed auction; and

WHEREAS, Canyon Highway District No 4, has an interest in Parcel No. R34482012 and is willing to accept the transfer of the parcel by quitclaim deed from Canyon County.

NOW THEREFORE, THE BOARD HEREBY RESOLVES, that upon issuance and recording of Quitclaim Deed for Parcel No. R34482012, located at 0 Freezeout Road, Caldwell, Idaho, the County's interests in Parcel No. R34482012 shall be conveyed by quitclaim deed executed by the Board to Canyon Highway District No. 4.

IT IS FURTHER RESOLVED BY THE BOARD, that this resolution shall be effective this 31st day of October, 2024.

CANYON COUNTY BOARD OF COMMISSIONERS

✓ Motion Carried Unanimously
_____ Motion Carried/Split Vote Below
_____ Motion Defeated/Split Vote Below

	Yes	No	Did Not Vote
Commissioner Leslie Van Beek			
Commissioner Brad Holton	X		
Commissioner Zach Brooks			

ATTEST: RICK HOGABOAM, CLERK

By: JRoss
Deputy Clerk

COUNTY QUITCLAIM DEED

THIS INDENTURE, made this 31st day of October, 2024, between **Canyon County**, a political subdivision of the state of Idaho, whose mailing address is 1115 Albany Street, Caldwell, Idaho 83605, by and through its Board of County Commissioners, and **Highway District No. 4**, whose address is, 15435 Hwy 44, Caldwell, Idaho, 83607.

Canyon County does hereby remise, release, and quitclaim unto **Highway District No. 4,** and to its assigns forever, all of **Canyon County's** rights, title, and interests in the odd-lot property situated in Canyon County, state of Idaho, sometimes referred to as 0 Freezeout Rd Caldwell, Idaho PIN 34482012 0 and more particularly described in Exhibit "A" attached herein by reference. Said parcel comprising approximately 0.042 acres is intended for public right-of-way for Freezeout Rd, a public highway under jurisdiction of **Highway District No. 4**.

2024-035452
RECORDED
11/01/2024 09:17 AM

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RICK HOGABOAM
CANYON COUNTY RECORDER
Pgs=3 TYOUREN NO FEE
DEED
BOCC

IN WITNESS WHEREOF, Canyon County has caused the due execution and attestation hereof of this County Quitclaim Deed under and by virtue of a resolution duly passed by the Board of County Commissioners of Canyon County, Idaho, on October 31st, 2024.

BOARD OF COUNTY COMMISSIONERS

Commissioner Leslie Van Beek

Commissioner Brad Holton

Commissioner Zach Brooks

STATE OF IDAHO)

ss.

County of Canyon)

On this 31st day of October, 2024, before me, **RICK HOGABOAM** (the Clerk of the County of Canyon, ex officio auditor and recorder, and ex officio clerk of the Board of County Commissioners), or the deputy clerk whose signature appears below, personally appeared **LESLIE VAN BEEK, BRAD HOLTON, and ZACH BROOKS,** known or identified to me to be the duly elected commissioners of the Board of County Commissioners of the County of Canyon, a political subdivision of the State of Idaho, and executed said instrument, and acknowledged to me that such County of Canyon, State of Idaho, executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year first above written.

JROSS

Deputy Clerk

EXHIBIT A

A PORTION OF THE SOUTHWEST ¼ OF THE NORTHEAST ¼ OF SECTION 3, TOWNSHIP 4 NORTH RANGE 3 WEST OF THE BOISE MERIDIAN, CANYON COUNTY, IDAHO, AND MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 3; THENCE NORTH 89° 08' 36" EAST A DISTANCE OF 633.76 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 14° 30' 08" EAST A DISTANCE OF 51.91 FEET; THENCE NORTH 89° 08' 30" EAST A DISTANCE OF 30.00 FEET; THENCE SOUTH 0° 51' 24" EAST A DISTANCE OF 50.05 FEET TO A POINT ON THE SOUTH BOUNDARY OF SW ¼ NE ¼ SECTION 3; THENCE SOUTH 89° 08' 36" WEST ALONG THE SOUTH BOUNDARY OF THE SW ¼ NE ¼ SECTION 3 TO THE TRUE POINT OF BEGINNING.