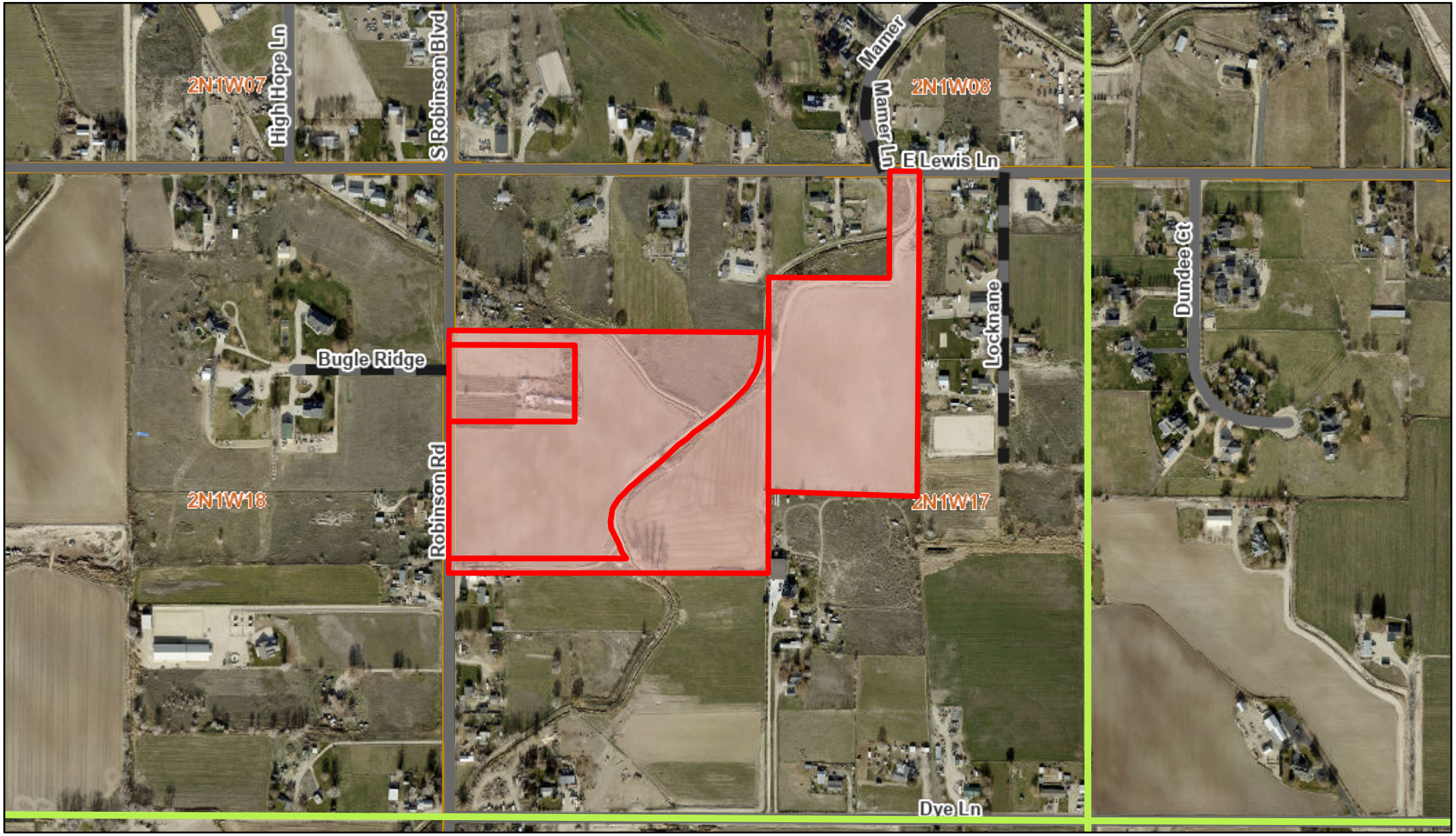
Canyon County, ID Web Map



5/7/2026, 3:14:47 PM

Multiple Parcel Search _Query result

Quarter Line

CanyonCountyRoads

Roads

CC_PrivateRoads

County Boundary

Current Impact Area

City Limits

Sections

Imagery_2025_2026

Red: Band_1

Green: Band_2

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

County of Ada, Bureau of Land Management, State of Oregon, State of Oregon DOT, State of Oregon GEO, Esri Canada, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA

Canyon County, ID

County of Ada, Bureau of Land Management, State of Oregon, State of Oregon DOT, State of Oregon GEO, Esri Canada, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA | City of Nampa |

ZONING AMENDMENT
PUBLIC HEARING - MASTER APPLICATION

PROPERTY OWNER	OWNER NAME: HTV CREEK LLC	
	MAILING ADDRESS: 521 N 10TH AVE #4 CALDWELL, ID 83605	
	PHONE:	EMAIL:

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

Signature: _____ ***Date:*** 03/02/26

APPLICANT: IF DIFFERING FROM THE PROPERTY OWNER	APPLICANT NAME:	
	COMPANY NAME:	
	MAILING ADDRESS:	
	PHONE:	EMAIL:

SITE INFO	STREET ADDRESS: 9814 ROBINSON RD NAMPA, ID 83686	
	PARCEL NUMBER: R28963, R2891010, R2891011, and R28961	
	PARCEL SIZE: approximately 43.95 acres	
	CHECK THE APPLICABLE APPLICATION TYPE:	
	☐ REZONE	☒ CONDITIONAL REZONE WITH DEVELOPMENT AGREEMENT
	CURRENT ZONING: A	PROPOSED ZONING: RR
	FLOOD ZONE (YES/NO) NO	ZONING DISTRICT:

FOR DSD STAFF COMPLETION ONLY:

CASE NUMBER	DATE RECEIVED:	
RECEIVED BY:	APPLICATION FEE:	CK MO CC CASH

CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT
111 North 11th Avenue, #310, Caldwell, ID 83605
zoninginfo@canyoncounty.id.gov - Phone: 208-402-4164
Revised 3/21/23

ZONING AMENDMENT
PUBLIC HEARING - CHECKLIST

Zoning Amendment/Conditional Rezone CCZO Section 07-06-05/07-06-07

Check the applicable application type:

☐Rezone

☐Conditional Rezone with Development Agreement

THE FOLLOWING ITEMS MUST BE SUBMITTED WITH THIS APPLICATION TO BE DEEMED COMPLETE (PLEASE CHECK OFF THE ITEMS REQUIRED):

Description	Applicant	Staff
Master Application completed and signed.	X	
Letter of Intent (see standards on next page)	X	
Land Use Worksheet	X	
Neighborhood Meeting form was completed and signed	X	
Completed Agency Acknowledgement form including:		
Southwest District Health	X	
Irrigation District	X	
Fire District	X	
Highway District/Idaho Transportation Dept	X	
Area of City Impact (If applicable)	N/A -BUT INCLD	
Conditional Rezone:		
Proposed conditions of approval and/or Concept Plan (can be a draft survey/draft preliminary plat/drawing)	DA AND CP	
Deed or evidence of property interest to the subject property	X	
Fee: **Rezone: Per Adopted Fee Schedule** **Conditional Rezone: Per Adopted Fee Schedule** **Text Amendment: Per Adopted Fee Schedule**	X	
Fees are non-refundable		

*DISCLAIMER: The subject property shall be in compliance with the public nuisance ordinance, the building code and the zoning code before the Director can accept the application.

REZONE OPTION:

When considering a zoning map amendment (rezone) of a property, a conditional rezone is recommended when considering conceptual site plan and/or addressing potential impacts through mitigation strategies and measures such as restricting uses, limiting the area to be rezoned to retain agricultural uses, and agricultural preservation methods such as buffers and disclosures. Without a conditional rezone, no conditions can be considered as part of the rezone application.

The applicant/owner and DSD Planner must sign (below) if the conditional rezone option was discussed and the applicant/owner declined the option.

Applicant/Owner: _____ Date 04/27/2026

DSD Planner: _____ Date _____

CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT
111 North 11th Avenue, #310, Caldwell, ID 83605
zoninginfo@canyoncounty.id.gov - Phone: 208-402-4164
Revised 3/29/23

HAVEN
CREEK

Date: April 27, 2026

To: Canyon County Development Services Department

From: Tanner Verhoeks, PE (HTV Creek LLC)

Legal Counsel: T. Hethe Clark (Clark Wardle, LLP)

Re: Conditional Rezone (Ag to CR-RR)

Dear Canyon County Development Services Department, Planning and Zoning Commission, and Board of County Commissioners,

Please find attached our Haven Creek project application, including all project reports, documents, exhibits, and diligence items. This Application has been updated and is being resubmitted based on feedback from prior application Case CR2022-0005.

The subsequent FCCO Responses, Proposed Development Agreement, and Appendices provide detailed discussion.

We are excited to move this project forward and to do what's best for the project and community.

Sincerely,

Tanner Verhoeks, PE
Principal, Haven Idaho LLC

Justin Ruthenbeck
Principal, Haven Idaho LLC

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EXECUTIVE SUMMARY

Haven Creek is a proposed County subdivision located near Nampa, Idaho. The proposed Conditional Rezone of 44 acres to RR is intended to facilitate the construction of 21 single-family residential lots, yielding a gross average lot size of 2.1 acres each (43.92 acres into 21 buildable lots). This subdivision fits in well with the existing uses around it.

> *You'll probably recognize this particular property from our previous CR-R1 application considered from 2022-2024. Some felt that the proposed R1 density, while consistent with the County's Comprehensive Plan, did not reflect the existing neighboring residences. When asked what we could do to receive approval, The Board of County Commissioners* ***directed us to come back with an RR application*** *with lower density.*

This updated proposal follows the County's direction.

This revised proposal is a direct result of our "Better Than We Found It" philosophy and a rigorous response to the Board's feedback on Case CR2022-0005. Since that hearing, we have begun meeting with a voluntary Neighbor Working Group to find some common ground on local concerns. We also completed the mandated Neighborhood Meeting (3/2/26). We plan to continue the voluntary Neighbor Working Group as a means to collaborate with neighboring owners in areas where we can find agreement.

Crucially, this application also reconciles the project with the recent jurisdictional change moving the Nampa Area of City Impact (AOCI) boundary to Lewis Lane, effectively placing the subject property immediately adjacent to, but outside of, the city's impact area. The property currently has a future land use designation of Agriculture. Because it is in the area near the AOCI boundary and is surrounded by residential development along a road corridor that is to be expanded to accommodate area growth, we are proposing the R-R zone, **which is a permitted zone within the Agricultural future land use designation** (see below):

Agriculture	
Description	The agricultural designation is the base designation throughout the County. It contains areas of productive irrigated croplands, grazing lands, feedlots, dairies, seed production, and ground of lesser agricultural value.
Applicable Zone Districts	R-R, AC-5, AC-20, AC-40

Rural Residential is described in the 2030 Comprehensive Plan, as follows:

District	Description	Density Maximum
Rural Residential (R-R)	The R-R district provides rural transitional areas to create a boundary between agricultural and urban areas. These areas are generally conducive to small-scale farming operations and compatible with non-agricultural uses.	One unit per two acres

Given the location of this property, its proximity to the Nampa AOCI, as well as the amount of residential development in the immediate area, we believe this property should be considered a “transitional area”. As described in greater detail below, the reduction in density in this updated application is consistent with the R-R limitation of one unit per two acres.

Our updated proposal includes the following solutions:

1. **Density & Character Alignment:** We are proposing an RR project, including a 30% decrease in lot count. The overall density for the project is now **2.1 acres/lot**. This reduced density matches the existing residential fabric of the Robinson Road corridor, where over 140 residences already exist on 1–5 acre parcels.
2. **Water Users Association (WUA) Governance:** In lieu of a standard HOA, our WUA will provide professional oversight for (a) the management of pressurized irrigation rotations to ensure downstream neighbors are not impacted, and historic uses for upstream neighbors are maintained (b) mandatory septic O&M inspections, and (c) a proposed well mitigation program.
3. **Well Mitigation Fund:** All engineering analysis concludes newly proposed wells will not substantively impact neighboring properties. This fund provides assistance for neighboring wells if, despite this analysis, our project negatively impacts neighboring wells.
4. **Surface Irrigation Water Compatibility:** Our proposed pressurized irrigation system will improve overall reliability for members of the WUA and will have no impact to surface water delivery for others on the delivery laterals. The property has a significant existing groundwater permit.

COMPARISON BETWEEN PRIOR AND CURRENT APPLICATION

	PRIOR Application	CURRENT Application
Existing Future Land Use	Residential	Agriculture
Requested Future Land Use	No change	Agriculture
Existing Zone	Agriculture	Agriculture
Requested Zone	CR-R1	CR-RR
Proposed # Lots	29	21
Proposed Density	1.5 acres/lot	2.1 acres/lot
Domestic Water	Community Water	Individual Wells
Domestic Sewer	Nitrate Reducing Septics	Nitrate Reducing Septics
Irrigation	Pressurized Irrigation with Holding Pond	Pressurized Irrigation with Holding Pond
Fire Protection	Groundwater	Irrigation Holding Pond
Street Section	Rural Roadside Ditch	Rural Roadside Ditch
KSD Partnership	Lot Donation with Curriculum Partnership	Curriculum Partnership with Capital Improvement Project

Application (RR) Technical Design Summary

Below you will find the highlights of the current application:

- Zoning
    - Existing Zoning - Agriculture
    - Proposed Zoning - **CR-RR**
    - Canyon County FLUM - Agriculture (No Change Proposed)
- City of Nampa
    - City of Nampa Agency Acknowledgement Complete
    - Nampa FLUM - Low Density Residential
    - City of Nampa Area of Impact: No, Adjacent
- ROW/Roads
    - 50’ dedicated ROW along S Robinson Rd and E Lewis Lane
    - 56’ ROW dedicated for internal public streets
- Landscaping
    - Landscape medians at entryway and throughout
    - Landscape buffer adjacent to Robinson - 15’-20’
    - Two common lots: (1) Storm drain and Irrigation facilities (2) Landscape Median(s)
- Density
    - 2.1 acres per lot gross density
- Geotech
    - Report completed - supports CR-RR layout as proposed
- Groundwater
    - Report previously completed - supports CR-RR layout as proposed
    - Further analysis performed demonstrating worst case scenarios
    - Updated Memos with 2+ years of IDWR groundwater monitoring data
    - Fewer Lots = Less Domestic Use
- Septic
    - *No Issues Identified in Review with SWDH*
    - Fewer lots = Fewer Septics
    - L1NP study previously completed - supports CR-RR layout as proposed
- Highway District
    - *No Issues Identified in Review with NHD1*
    - Variance re-approvable for access from S Robinson Road.
    - Access off of E Lewis Lane is not feasible due to irrigation easement along Ridenbaugh Canal.
- Irrigation Districts
    - *No Issues Identified in Review with NMID*
    - Includes both Nampa & Meridian Irrigation District and Boise-Kuna Irrigation District.
    - Preliminary design and diligence completed with both irrigation districts. Existing and proposed irrigation supports CR-RR layout as proposed.

- Kuna Rural Fire District
    - *No Issues Identified in Review with Kuna Rural Fire District*
    - Preliminary Design and Diligence completed. Proposed access and fire water supply supported by CR-RR as proposed
- Kuna School District
    - Capacity to serve the students. 10-11 students based on a student generation rate of 0.5 students per dwelling.
    - Crimson Pointe Elementary - has capacity
    - Kuna Middle School - has capacity
    - Swan Falls High / Kuna High School - nearing capacity

SOLUTIONS

Density and Groundwater, as vocalized during public hearings and small group conversations, remain the primary and consistent concerns of neighboring owners. Below is our approach to addressing these concerns directly:

Density & Character Alignment

Density and Character alignment was one of the primary topics of debate in the previous Case CR2022-0005. Staff reports show that the surrounding area has 13 platted subdivisions within one mile with an average density of 3.32 acres. The commissioners made it clear at the end of our last hearing that we should decrease our density and come back with an RR project. We have done so. We reduced our lots and density by 30% bringing our average much closer to the surrounding area to match the 140+ residential lots around us.

While increasing lot sizes beyond a 2.1ac density was considered, there is a higher market demand for smaller acreage properties in the 1.5-2.5ac range. Larger properties require significantly more effort to maintain while also requiring the conversion of more farmland to serve the same number of residential owners. The proposed 2ac density is the sweet spot that promotes rural lifestyle choices (small livestock and hobby farming) while balancing land maintenance and efficient use of resources. We believe it is the ideal transitional agriculture use. This density is consistent with the Rural Residential zone, which is a permitted zone within the Agricultural land use designation and permits a maximum density of one unit per two acres. It is also consistent with direction received in connection with our prior application.

Water Users Association Governance

In lieu of a standard homeowner's association, our plan is to institute a formal Water Users Association (WUA). The WUA will be privately funded and operated based on assessments required in the project CCRs. Specifically, it will be in charge of the following items:

- Well Mitigation Fund management, as further described below
- Private Domestic Well Oversight
    - Drilled to a Minimum Well Depth and Installed per latest well drilling standards
    - Physically and Legally restricted from being used to water more than statutory limit of ½ acre through CC&Rs
- Pressurized Irrigation
    - Pressurized irrigation system will be properly designed and engineered to serve all 21 building lots and common area landscaping
    - A Storage Holding Pond and pump facility will be located in the Northwest corner of the property
    - The storage pond will be filled with surface water rights from Boise-Kuna and Nampa-Meridian already delivering surface water to property.

    - The property has a significant existing supplemental groundwater irrigation permit. This right will be used to charge the pond and keep it filled off season for fire water supply purposes.
    - The holding pond will ensure that water is available at a consistent schedule while allowing our neighbors on our same lines to continue to use their irrigation water as they have historically.
    - The WUA will also maintain the holding pond, pump equipment, and landscaping at the pond site and other common landscaping areas.
- Advanced Treatment Septics
    - Advanced Treatment Septic systems require regular inspections and maintenance.
    - Most homeowners are not aware of or desire to do these inspections and maintenance.
    - Traditionally this O&M is to be enforced by SWDH, but SWDH does not have the resources to consistently do so
    - The WUA will retain a certified Operator that will inspect, certify, and perform O&M on the community's private, individual septic systems.

Well Mitigation Fund

Modeled partially after Kuna's Fund 6, we propose establishing a private well mitigation program. This fund, managed by the Water Users Association (WUA), provides a financial guarantee for any neighbor whose well is impacted by the proposed project.

If the newly installed wells are shown to cause problems for neighboring wells, the WMF will solve the situation for any affected neighbor based on the conditions identified below.

- Criteria for "cause" will be based on similar programs in place in other Counties, with details to be determined.
- In-field pump testing and 2 years of monitoring data from multiple surrounding private wells, along with hydrology studies give us confidence that new proposed wells will not negatively affect neighboring wells.
- We will offer multiple onsite wells to supplement existing IDWR monitoring data; coupled with existing offsite monitoring data, this will provide sufficient data to independently determine impact of proposed new wells.
- Some neighbors with concerns for their shallow wells have already joined the IDWR monitoring program. The Mitigation Fund will be open to anyone who joins this program prior to the proposed Development.
- Detailed documentation will be provided prior to Final Plat recording.

Component	Kuna Precedent Reference	Haven Creek Private Fund Implementation
Funding Source	Assessment of water hookup fees	Initial developer seed and a percentage assessment of each lot sale price
Eligibility	Impacted domestic and small community systems	Landowners with existing shallow wells within ½ mile of the center of the Haven Creek project who (i) request to be included in the program, and (ii) participate in the pre-development IDWR monitoring program
Governance	Managed by City Treasurer/Books	Administered by the Water Users Association (WUA) with professional oversight.
Adjudication	Professional water services evaluation	Third-party review by a licensed hydrogeologist to verify measurable impact by Haven Creek or whether the cause is attributable to other factors
Timeframe	Variable	Three years from first building permit
Prioritization	Distributed based on household income (low-to-moderate), severity of decline, and status as primary residence.	Distributed based on household income (low-to-moderate), severity of decline, and status as primary residence.

SUBSTANTIAL AND COMPETENT EVIDENCE

To ensure this application is supported by "substantial and competent evidence," we provide the following technical data:

Rural Residential (i.e., Transitional) Zoning

Jurisdictional Alignment: Just Beyond the AOCI

The shift of the Nampa AOCI boundary to Lewis Lane confirms that this property serves as a vital permanent buffer between the future urban footprint to the north and the commercial agricultural core to the south.

- **The RR Mandate:** The Canyon County 2030 Comprehensive Plan defines the RR district as providing "rural transitional areas to create a boundary between agricultural and urban areas." Because the property is now outside the AOCI, RR zoning within a Rural Residential zone is the *most* appropriate designation, as it prevents urban sprawl while allowing for a "Community in the Country" density that honors the existing neighborhood fabric.
- **Reconciling Zoning Dissonance:** Factual use-on-the-ground proves this corridor transitioned to residential use decades ago. Most surrounding properties were entitled via historical Conditional Use Permits (CUPs), leaving an outdated "Agricultural" zoning map that is inconsistent with actual use on the ground. Haven Creek aligns the map with the reality of over 140+ existing residences in the vicinity.

Marginal Soil Quality

Physical evidence proves the "Prime Farmland" the previous map classification for this site is technically inaccurate:

- **Geotechnical Reality:** Geotechnical fieldwork (18 test pits) confirms a rocky subsurface as shallow as 4.5 ft and as deep as 13.8 ft with an average of 8.67 ft below grade. Commercial-scale cropping is non-viable due to shallow rock shelves and an irregular shape that prevents efficient machine movement.
- **Seed Crop Isolation:** While the land is used for seed crops, it is valued for its isolation—a direct result of being "enclaved" by residential development—rather than its soil productivity.
- **Highest and Best Use:** In a rapidly growing County, limiting sprawl into truly prime farmland is best achieved by bringing infill, "remnant" parcels like this to their highest and best use: a transitional residential community that acts as a buffer for the intense dairy operations to our south

Transportation Corridor

Robinson Road is no longer a rural lane; it is a critical node in the regional transportation network. This supports the previously stated point that this is an area in "transition."

- **SH-16 and Highway 44:** The extension of SH-16 will transform Robinson Road into a primary north-south arterial.
- **Corridor Improvements:** Nampa Highway District No. 1 and the City of Nampa are currently forecasting road widening and roundabouts at Robinson/Locust and Robinson/Kuna Road to support this growth in addition to the other roundabouts and road projects that have already been completed
- **Traffic Threshold Analysis:** Our previously completed traffic threshold analysis analyzed the impact of 29 building lots and found the impact to the local intersections' LOS to be negligible. Reducing our density down to 21 lots further minimizes any sort of traffic impact that our project would have.

Undisputed Hydrology

HDR (previously SPF Water Engineering) data confirm the site sits on one continuous, productive aquifer. Groundwater pumping for domestic purposes at the Haven Creek Subdivision is anticipated to have a negligible impact on local wells, with estimated drawdowns of approximately 1 inch at ¼ to ½ mile from the center of the subdivision. All of the previous assessments and new memo are located in Appendix D.

Bottom line, our development and 21 new homes are not anticipated to affect neighboring wells. We are, in addition, providing the above-described Well Mitigation Fund.

Viable Septics

Atlas data confirms the site, while within a nitrate priority area, is able to support septics as the project is currently envisioned. They have provided a new memo with the following statement:

"Atlas has been informed that the number of lots has been reduced from 29 to 21, with an average lot size of 2 acres. The original NP study and subsequent letter indicated that the point of compliance for nitrates could be achieved for 29 septic systems with lots as small as 1 acre and effluent volumes of up to 500 gallons per day. The reduction in the lot density will reduce the total impact of nitrates from septic systems on the site."

Geotechnical investigations (18 test pits) confirm 61% of the site has >8 feet of soil. All lots will use **Advanced Treatment Septic systems** with nitrate-reducing media to meet the 6.4 mg/L point-of-compliance goal.

1. 18 test pits have been dug, with basalt rock encountered an average of 8.7 feet below grade (4.5-13.8 feet).
2. 61% of the property has at least 8 feet of soil cover overlying bedrock, allowing for typical septic system design, but all lots will utilize **Advanced Treatment Septic systems** with 65% nitrate reduction to meet the 6.4 mg/L point-of-compliance goal

3. The remainder of the site has bedrock between 4.5-8'. Alternative septic systems are available for use in areas where separation to bedrock cannot be achieved.
4. Infiltration tests for Stormwater Retention were performed on 5 test pits, with a measured average infiltration rate of 2.74 inches per hour.
5. Proposed lot boundaries, informed by engineering studies, have been designed to meet down-gradient nitrate concentration limits.
6. An abundance of options to meet site constraints and nitrate requirements (as conditioned by SWDH and DEQ) are available[1].
7. Test pits for each lot at time of home build will be advanced with a SWDH representative present for septic system design and approval.
8. Septic system maintenance, if any, will be performed by the proposed private Water Users Association (WUA). The WUA will function much like a homeowners' association, with a focus specifically on septic and water system maintenance. Funding will be provided by the homeowners through assessments. In addition, operations and maintenance manuals and required specifications for septic systems will be included in CCRs and enforceable by the WUA.

Surface Irrigation

The property has existing surface water rights and 359 gpm in permitted supplemental groundwater. Residential use will result in an overall decrease in water demand relative to existing water allocated to the property; if this rezone is approved, we won't have to ask for any more water than we already have allocated to our property, and we will return excess groundwater rights to the IDWR public pool.

In addition, our WUA will act as a single stakeholder in the existing water rotation; the new homes will not cause complexity to managing the existing rotation.

Our proposed approach to surface and groundwater use, coupled with the Well Mitigation Fund, forms a comprehensive solution for water management.

[1] https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14470

FCCO RESPONSES

ANALYSIS OF CONDITIONAL REZONE CRITERIA (CCZO §07-06-05 & §07-06-07(6))

1. Is the proposed conditional rezone generally consistent with the comprehensive plan?

- **Finding:** Yes. The request is in direct conformance with the 2030 Comprehensive Plan's vision for "rural transitional areas". It aligns with **Property Rights Policy P1.01.03**, avoiding unnecessary conditions on a property that is functionally residential.
- **Evidence:** The project provides a diversity of housing choices (**Goal G11.01.00**) and maintains a balance between growth and agriculture (**Policy P4.04.04**). The 2030 Plan identifies the Rural Residential (RR) district as the primary tool for creating a boundary between agricultural and urban areas. By proposing a 2.1-acre average density, the project fulfills **Land Use Policy P4.03.02**, which seeks to avoid fragmenting existing land use patterns. We are proposing the R-R zone, **which is a permitted zone within the Agricultural future land use designation** in the FLUM and explicitly supports this transition area as a boundary between agricultural and urban zones.

2. When considering the surrounding land uses, is the proposed conditional rezone more appropriate than the current zoning designation?

- **Finding:** Yes. RR zoning matches the average density of the 13 subdivisions within one mile (3.32 acres) much more closely than the current 40-acre Ag minimum. The property is property is a "remnant" parcel surrounded by over 140+ residences
- **Evidence:** Surrounding parcels were entitled via CUPs, leaving an outdated map that Haven Creek now reconciles. Marginal soil productivity makes residential transition the most sustainable option. Parcel shape and prior testimony around efforts to farm this land confirms commercial-scale cropping to be economically non-viable. Testimony from **Stewart Dairy** confirms that 2-acre residential development is a superior buffer for heavy agricultural operations compared to urban density.

3. Is the proposed conditional rezone compatible with surrounding land uses?

- **Finding:** The request is compatible with the established residential fabric and the dairy to the south. Compatibility is "substantial" through technical engineering and professional oversight.
- **Evidence:**
    - Nearby Production agriculture has testified there are no compatibility concerns.
    - Proposed water and septic approaches have been measured, studied, and shown compatible with surrounding water uses.
    - The use of an approved supplemental groundwater right allows the subdivision to fill its storage pond during low-flow periods, ensuring historic surface water rotations for neighbors are never disrupted.
    - New vehicle trips avoid all neighboring residential streets through direct access to Robinson Rd, an arterial street.
    - Applicant's initial traffic study demonstrates negligible impact to Robinson Rd and

no impact to level of service at relevant intersections.
    - The property is surrounded by residential homes. These homes are overwhelmingly small acreage homesites size clustered between 1-3 acres. A zoning designation of Rural Residential is compatible with these land uses and **is a permitted zone within the Agricultural future land use designation** The amendment satisfies **Land Use Goal 5** to achieve a recognition that agriculture and development can successfully co-exist.

4. Will the proposed conditional rezone negatively affect the character of the area? What measures will be implemented to mitigate impacts?

- **Finding:** No. The project preserves the "Community in the Country" lifestyle. The proposed conditional rezone does not cause a negative impact on the character of the area. The area is planned to be residential. It will continue to transition to residential. Concerns with lot size do not change the fact that the area is planned for increased residential density.
- **Evidence:**
    - Surrounding parcels have a primary use as residential homes, with secondary use for personal agriculture.
    - Proposed parcels have a primary use as residential homes, with secondary use for personal agriculture.
    - Proposed project density is 2.1 acres per parcel.
    - Within a 1 mile radius, 37 existing parcels are less than the average parcel size of this project. **The character of the neighborhood already includes many home sites smaller than those proposed here.**
    - The surrounding neighborhood has supported parcels both larger and smaller than the proposed project for 30+ years without conflict or incompatibility.
    - Additional mitigations have been proposed to improve the character of the area, including:
        - **Drainage/Irrigation:** Piping the Fieselman Lateral; pressurized irrigation pond eliminates potential conflict in understanding surface irrigation processes
        - **Wells:** Drilled to a minimum depth, and WMF is available if neighboring wells are impacted
        - **Traffic:** All traffic directed to existing arterial road
        - **Groundwater Supply:** Funded and maintained septic systems to avoid impact to neighboring wells' groundwater supply
        - **Upkeep:** Funded and responsible party to maintain landscape improvements. Lots sized for ease of upkeep for typical homeowner without farm equipment.
        - **Rural Design:** Road design, drainage, and landscape designed to blend with landscaping on neighboring residential properties
    - The project omits urban curb and gutter in favor of rural roadside borrow ditches.

5. Will adequate facilities and services including sewer, water, drainage, irrigation and utilities be provided to accommodate the proposed conditional rezone?

- **Finding:** Yes. All facilities will meet or exceed IDEQ and SWDH standards. As conditioned and planned, adequate facilities and services will be provided to accommodate the proposed conditional rezone.
- **Evidence:**
    - HDR and IDWR data confirms Groundwater pumping for domestic purposes at the Haven Creek Subdivision is anticipated to have a negligible impact on local wells, with estimated drawdowns of approximately 1 inch at 1⁄4 to 1⁄2 mile from the center of the subdivision
    - Adequate sewer facilities have been demonstrated through use of standard and/or advanced nitrate-reducing septic systems (to meet the 6.4 mg/L point-of-compliance goal in the Nitrate Priority Area), including sufficient ongoing maintenance through a proposed WUA.
    - Adequate water facilities have been proposed through individual private domestic wells that will be conditioned to have a minimum well depth into a productive aquifer
    - Adequate drainage has been proposed through use of rural-scale road drainage and basins with existing offsite patterns maintained.
    - Adequate irrigation has been proposed through inclusion of pressurized irrigation with a storage holding pond to prevent impact on neighboring usage patterns.
    - Adequate other utilities (electric) have been proposed.

The Applicant will continue to engineer, refine, and submit for review and approval for all required agencies including, but not limited to DEQ, SWDH, DWR, and Canyon County Development Services in accordance with standard development practices

6. Does the proposed conditional rezone 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?

- **Finding:** No. The project is below the threshold for a Traffic Impact Study and generates only 24 AM peak trips. As conditioned and planned, the proposed conditions rezone will not cause undue interference with existing or future traffic patterns.
- **Evidence:**
    - The SH-16 extension and planned roundabouts at Robinson/Locust and Robinson/Kuna Road will systematically absorb future corridor growth.
    - The rezone is conditioned to provide dedicated Right-of-Way along Robinson Road at subdivision time.
    - Per Applicant's Traffic Threshold Analysis and Trip Comparison, Adjacent Intersections are LOS A/B and expected ADT from the project will not affect the LOS.
    - A traffic study is not required and street improvements are not required for a project of the proposed size.
    - To mitigate any impact of increased school bus traffic, the project includes a new proposed school bus stop just inside the development, which is sited to provide safe pickup/dropoff without impacting traffic flow

7. Does legal access to the subject property for the conditional rezone exist or will it exist at the time of development?

- **Finding:** Yes. The property has frontage on Robinson Road
- **Evidence:** Nampa Highway District #1 has previously approved a single point of access off Robinson Road, which is compliant for developments under 30 lots. This request will be renewed during the Preliminary Plat phase of the project.

8. Will the proposed conditional rezone amendment impact essential public services and facilities, such as schools, police, fire and emergency medical services? What measures will be implemented to mitigate impacts?

- **Finding:** Adequate essential public services are available or planned
- **Evidence:**
    - Fire:
        - Kuna Rural Fire have provided a letter (4/2024) indicating current response times from Station #1 are adequate. Station #2 is undergoing entitlement/construction and will improve response times further once complete.
    - Police:
        - No response received during previous application efforts after multiple requests. County Code Section 7-17-09(3)B states: “If no written reply is received from any of the various departments or interested agencies within thirty (30) calendar days from the date of notification, approval of the preliminary plat by such department or agency will be considered to be granted.”
    - EMS:
        - Indicated they can serve the project from five different stations with responses times ranging between 12-18 mins
    - Schools:
        - KSD expects 10-12 new students generated by this project. While KSD is confronting challenges in terms of capacity, KSD has confirmed that it has the capacity to serve the students generated by this project.

PROPOSED DEVELOPMENT AGREEMENT CONDITIONS

1. The development shall comply with all applicable federal, state, and county laws, ordinances, rules and regulations that pertain to the property.

2. Development shall be consistent with the site plan on file with the Canyon County Development Services and as reviewed and approved by the Canyon County Board of County Commissioners on _____.

3. The subject parcel shall be in subjection to the Canyon County Zoning Ordinance Chapter 7, Article 17 for platting with a maximum of 21 buildable lots with the gross density of 2.1 acres per lot. The following restrictions apply:

    a. Future subdivision and development shall conform to the generalized concept plans on file with Canyon County.

    b. Future development shall comply with Idaho Department of Environmental Quality requirements and BMPs (best management practices) for dust control during construction, and stormwater pollution prevention plan.

    c. Future development shall meet all applicable requirements and standards of the Nampa Highway District #1.

4. All septic systems to be installed on the property (the "Septic Systems") shall be Advanced Treatment Septic systems and the location and technical specifications for each shall be reviewed and approved by SWDH in accordance with its standard processes. The Septic Systems shall conform to the Level I Nutrient Pathogen Study prepared by Atlas Technical Consultants, LLC and dated January 14, 2022, subject to any modifications to the foregoing required from time to time by IDEQ and SWDH. Advanced Treatment Septic systems shall include nitrate reducing systems with holding tanks, with a treatment medium poured in and maintained. An O&M Manual for operation of the Septic Systems shall be prepared and included in the CCRs to ensure ongoing, standard installation, operations, maintenance, and repair of the Septic Systems. Homeowners shall be responsible to ensure ongoing maintenance, replacement, and repair of the Septic Systems on their individual lots. The Water Users Board, as defined in Condition 9, below, shall have authority to ensure maintenance in accordance with O&M Manual and shall retain a certified operator to conduct annual inspections to ensure ongoing operation consistent with the O&M Manual.

5. Historic irrigation lateral, drain and ditch flow patterns shall be maintained and protected. Modification or improvements shall be approved in writing by the applicable irrigation district.

6. The developer shall comply with CCZO §07-06-07 (4) Time Requirements: "All conditional rezones for a land use shall commence within two (2) years of the approval of the board."

7. Prior to County signature of the first final plat, the owner shall provide CCRs to the County for review and approval, which review shall include appropriate provisions

related to a Well Mitigation Fund consistent with the description provided in the Applicant's submittals to the County. In lieu of a typical homeowners' association, the CCRs shall provide for a "Water Users Board" that is responsible for administration of the Well Mitigation Fund as well as the Septic Systems on each of the individual lots. The Water Users Board shall, on an ongoing basis, ensure that the Septic Systems are in compliance with the requirements of IDEQ and Southwest District Health. The CCRs shall provide operations and maintenance manuals for any facilities associated with the Pressurized Irrigation system, including elements of said systems located on common area and within individually owned residential lots.

8. A note shall be placed on the face of each final plat and recorded CCRs that recognizes Idaho State Code 22-4503, Right to Farm Act: "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. All residential lots shall be served by pressurized irrigation, managed and maintained by the Water Users Board.

10. Development shall conform to the requirements of Kuna Rural Fire District including requirements for fire apparatus access, fire water supply, and premises identification.

11. Structures, including foundations, shall be installed in accordance with the recommendations identified in that certain Geotechnical Investigation prepared by Atlas Technical Consultants, LLC and dated January 3, 2022.

12. Development shall conform to the requirements of Nampa & Meridian Irrigation District and the Boise Project Board of Control.

Appendix A - Project Concept Plat

A-1	Current 21 Lot Concept	Haven Idaho, LLC. Tanner Verhoeks, P.E. (Principal)	FOR REFERENCE

Summary: A DRAFT Concept Plan showing what a 21 lot, 2 acre average subdivision could look like. The Applicant will continue to engineer, refine, and submit for review and approval for all required agencies including, but not limited to DEQ, SWDH, DWR, and Canyon County Development Services in accordance with standard development practices during the preliminary plat approval process

A-2	Project Renderings	Haven Idaho, LLC. Tanner Verhoeks, P.E. (Principal)	FOR REFERENCE

Summary: Digital Renderings to show what the project is planned to look like

Appendix B - Neighbor Coordination

B-1	Voluntary Working Group	Voluntary Meeting Held	COMPLETE

Summary: Our first voluntary Working Group meeting was hosted in early February to give the Developer and Neighbors a chance to discuss the new RR application and find some common ground and proposed solutions/mitigations to concerns. The Working Group will continue meeting with an open invitation to any neighbors who wish to collaborate on pragmatic design solutions to observed or potential problems.

B-2	Neighborhood Meeting	Mandatory Neighborhood Meeting	COMPLETE

Summary: The mandated Neighborhood Meeting with held of 3/2/2026. Neighbors attended and continued to ask about groundwater, surface water, and compatibility discussions. We invited more neighbors to our next Working Group meeting if they wanted to help be a part of science backed solutions

Appendix C - Septic and Geotech

C-1	Geotechnical Report	Atlas Technical Consultants, LLC Monica Saculles (Senior Geotechnical Engineer)	REPORT COMPLETE FAVORABLE

Summary: A Geotechnical Report was completed by Atlas Technical Consultants. The scope of this investigation included review of geologic literature and existing available geotechnical studies of the area, visual site reconnaissance of the immediate site, subsurface exploration of the site, field and laboratory testing of materials collected, and engineering analysis and evaluation of foundation materials.Based on the subsurface conditions encountered during this investigation and available information regarding the proposed development, the site is adequate for the planned construction.

C-2	Septic (L1NP)	Atlas Technical Consultants, LLC Monica Saculles (Senior Geotechnical Engineer)	REPORT COMPLETE FAVORABLE

Summary: A Level-1 Nutrient Pathogen Study was completed by Atlas Technical Consultants. The report concluded that “Considering the estimated input parameters, the results of the nitrogen mass-balance approach indicated that the down-gradient nitrate concentration using a 40 percent nitrate reducing system is 6.4 mg/L. Thus for the entire site, the Point of Compliance Nitrate Concentration value of 6.4 mg/L was not exceeded when analyzing for the 40 percent nitrate reducing septic systems. The report has been reviewed by DEQ and SWDH. The report will be updated as applicable and resubmitted following conditional rezone approval as facilitated by the preliminary plat approval process.

C-3	L1NP 29 Lot Memo w/ Secondary Dwellings	Atlas Technical Consultants, LLC Clinton Wyllie(Senior Geotechnical Engineer)	REPORT COMPLETE FAVORABLE

Summary: Atlas looked at effluent flow for primary and secondary homes, using 29 lots and a worst case scenario of a 1 acre lot. As long as the lot width is adequate and 65% nitrate reducing systems are used, then the site will meet the point-of-compliance down-gradient nitrate concentrations as required by SWDH and IDEQ.

C-4	2026 21 Lot Updated Memo	Atlas Technical Consultants, LLC Clinton Wyllie(Senior Geotechnical Engineer)	REPORT COMPLETE FAVORABLE

Summary: Atlas has been informed that the number of lots has been reduced from 29 to **21**, with an average lot size of 2 acres. The original NP study and subsequent letter indicated that the point of compliance for nitrates could be achieved for 29 septic systems with lots as small as 1 acre and effluent volumes of up to 500 gallons per day. **The reduction in the lot density will reduce the total impact of nitrates from septic systems on the site.**

Appendix D - Domestic Water

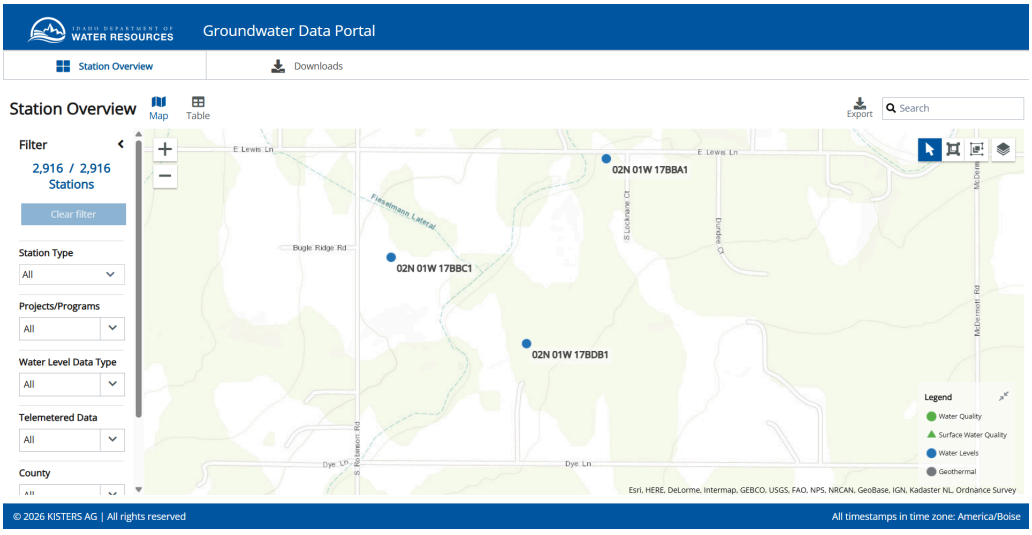
D-1	Water Use Assessment & Follow-up Assessment	SPF Water Engineering, LLC Terry M. Scanlan, P.E., P.G. (Principal Engineer/Hydrogeologist) Andrew Francis, P.G. (Project Hydrogeologist)	MEMOS AND ANALYSIS SHOW NEGLIGIBLE IMPACT

Summary: SPF did a water-use assessment in Fall of 2021 for the Haven Creek project that concluded “The water-level impact on existing nearby wells that may result from the pumping of new wells at the Subdivision will be a few tenths of a foot or less. This impact is insignificant relative to the productivity of existing wells and will not negatively affect existing water users.”

SPF updated the assessment in early 2022 based on feedback after the first neighborhood meeting during the original application process. This report added analysis if domestic irrigation from the new wells was put into practice. The report concluded that “The additional groundwater pumping that will result from the Subdivision will have a minimal effect on the existing groundwater conditions in the area. Groundwater pumping for domestic use with the occasional irrigation demand is insignificant when compared to groundwater pumping from large municipal and irrigation wells in the Kuna area. These wells often pump as much as 2000 gpm for extended periods of time without adverse local impacts”

D-2	Monitoring Program Authorizations & IDWR Monitoring Data	IDWR Dennis Owsley	(3) MONITORING WELLS ADDED TO THE PROGRAM

Summary: Partnering with IDWR to collect data about our specific aquifer - working with neighbors to gain signed authorizations to enter them into the monitoring program with IDWR - helps us to understand what is going on before we can discuss any well guarantee programs. Data is current through April 2026



D-3	Pumping Test Memo	HDR Terry M. Scanlan, P.E., P.G.	REPORT COMPLETE FAVORABLE

Summary: An aquifer pumping test was conducted in April 2023 using the existing domestic well and well pump at 9814 Robinson Road. The purpose of the test was to evaluate aquifer water-level response to well pumping for the purpose of projecting impacts from future groundwater development at the proposed Haven Creek subdivision. The test indicates that the shallow aquifer at the Haven Creek site is highly productive. Pumping for residential domestic purposes at the proposed subdivision will have a negligible impact on local groundwater levels. Pumping for supplemental irrigation purposes will likely have a measurable impact on nearby wells, although the magnitude of impact is not anticipated to be injurious.

D-4	Supplemental Groundwater Irrigation Right	Haven, HDR	Approved and in good standing

Summary: This land has an approved groundwater Permit; 0.80 cfs (359 gpm) for irrigation of up to 40 acres within the project site; not to exceed 0.02 cfs/acre and 4.5 af annually when combined with surface water.

D-5	2026 Groundwater Impact Analysis	HDR Terry M. Scanlan, P.E., P.G.	REPORT COMPLETE FAVORABLE

Summary:

1. Groundwater pumping for domestic purposes at the Haven Creek Subdivision is anticipated to have a negligible impact on local wells, with estimated drawdowns of approximately 1 inch at 1⁄4 to 1⁄2 mile from the center of the subdivision.
2. Groundwater pumping for supplemental irrigation, whether for agricultural purposes prior to subdivision development or residential irrigation after subdivision development, could have a measurable impact on local groundwater levels, with drawdowns of approximately 2 feet at 1⁄4 to 1⁄2 mile from the center of the subdivision.
3. A drawdown of 2 feet caused by irrigation pumping at Haven Creek will only affect local wells that are already on the verge of failure due shallow construction, low productivity, or inadequate pump setting. Such wells would only be impacted by irrigation pumping in March or April, when groundwater levels are at seasonal lows. From early May through the remainder of the irrigation season, groundwater levels are expected to be more than 2 feet higher than seasonal lows. Thus, a well that will function during the annual seasonal low water in March or April, will likewise function with 2 feet of interference drawdown from irrigation pumping in May through October.

4. Surface water irrigation activities are the primary influence on local groundwater levels. Drought cycles, when canals operate for shorter seasons, provide less recharge resulting in lower groundwater levels. Other activities that may reduce incidental groundwater recharge, such as piping of lateral ditches, conversions from furrow irrigation to sprinkler irrigation, or reductions in irrigated area through residential development will eventually lower groundwater levels in agricultural areas.
5. Domestic wells drilled to between 250 and 300 feet are anticipated to find acceptable drinking water quality. All wells should be tested following construction, and treatment should be provided if any parameters exceed drinking water standards.

Appendix E - Irrigation, Storm, and Ag Wastewater

E-1	Irrigation District Coordination & Review (including crossing)	Nampa-Meridian Irrigation Dave Duvall (Water Superintendent))	DUE DILIGENCE COMPLETE FAVORABLE

Summary: NMID has approved of conceptual plans, including a single canal crossing as proposed and piping of the Fieselman lateral as shown on the conceptual plat. Additional requirements for canal maintenance access and easements are understood and incorporated into the conceptual plat.

E-2	Community Pressurized Irrigation	Boise Projects Board of Control Ray Moore (Watermaster for Division 3)	DUE DILIGENCE COMPLETE FAVORABLE

Summary: The proposed pressure irrigation (PI) system consists of a pressurized pipe network around and through the development with service stubs to each lot. The pipe network is pressurized by a pump station that draws water from an irrigation pond in the common lot in the northeast corner of the development. The pond will be filled routinely by an existing private irrigation lateral that is located at the southeast corner of the development. Piping of the irrigation lateral through the site will be maintained for downstream users. Please reference the Conceptual Plat for more information.

E-3	Storm Water Retention	Focus Engineering	Concept Design Complete

Summary: All stormwater runoff onsite will be collected and managed onsite. Runoff will be conveyed by roadside borrow ditches and culverts to retention ponds at the entrance to the development and in the common lot at the northeast corner of the development where the water will infiltrate back into the ground within 24 hours. Reference the Conceptual Plat for locations of retention ponds.

E-4	Historical Irrigation Runoff	Focus Engineering	Concept Design Complete

Summary: The existing irrigation wastewater ditch on the east side of the property will be piped, keeping its same alignment and function. Downstream users expressed a preference for continued access to this wastewater. The drain crosses the Burke Canal by siphon then Crosses E Lewis Lane in a box culvert. Please reference the Conceptual Plat for more information.

Appendix F - Services (Fire, School, Traffic)

F-1	Fire Comments	Kuna Rural Fire District	COORDINATION IN-PROGRESS FIRE SUPPORTIVE

Summary: The Kuna Fire District has provided multiple options for meeting fire suppression requirements, including fire hydrants, sprinklered homes, or nearby year-round water sources. Proposed fire hydrant locations have been reviewed and approved. Fire hydrants will be fed via pond storage and pump station. Correspondence with the CFM and Fire Chief show response times are reasonable. Their detailed requirements will be reflected in the Preliminary Plat process.

F-2	Kuna School District	Timothy E. Jensen (KSD)	PARTNERSHIP IN-PROGRESS KSD SUPPORTIVE

Summary: The school district provided feedback on facility and program needs they have when considering how to serve new students. We mutually proposed a partnership known as:*The Swan Falls House*[2] to the Board of Trustees partnership to deeply involve high school students in the design, permitting, and construction of one Haven Creek home. The Board and Developer will coordinate to determine if this partnership is still the desired use of time resources by both parties. Support is enthusiastic.

F-3	Access Variance Approveable	Nampa Highway District #1 Eddy Theil (ROW Agent)	VARIANCE GRANTED

Summary: Access of Robinson variance was approved on Aug 31, 2021. This approval will need to be re-issued as part of the preliminary plat processing.

F-4	Traffic Technical Memo	Ardurra	No measurable Impact to I/S LOS

Summary: A traffic threshold analysis study for Robinson Road and the project adjacent intersection concluded that, even with the trip gains noted at Robinson Road/Lewis Lane, as the nearest impacted intersection to the Haven Creek Subdivision, that LOS should be more than sufficient to accommodate development trips. This transportation threshold determination would confirm the County's TIS requirement position that no additional LOS analysis should be needed, given project trip impacts do not substantially impact Canyon County and Nampa Highway District Roadways. A two day weekday traffic count completed shows that 89% of traffic is only two-axle vehicles which is a typical range of vehicle class for a minor arterial.

[2] https://www.youtube.com/live/s7SOlNLpYnE?feature=share&t=10612

Appendix G - Density & Compatibility

G-1	CUP VS Rezone Historical	Haven	ZONING MAPS ARE INCONSISTENT W/ TODAY'S USES

Summary: The subject property is surrounded by County subdivisions that were approved by use of a Conditional Use Permit in an area that is zoned Agricultural. Predominant use should be weighted alongside zoning – historically, in the early 2000s, people used CUPs instead of rezones.

Commissioners brought up this topic at the BoCC meeting on 3/2/23 4:30-6:00 pm meeting. Reference audio from at approximately 1:00:50 timestamp https://agenda.canyoncounty.id.gov/SupportDoc/GetSupportingDoc?supportDocID=136

In summary, it was stated that the zoning maps are not aligned with current uses today. Lots of previous CUPs were approved and allowed new uses within Ag zones and the zoning maps are now disconnected with the actual uses today. "We should be looking at what is reality, not just what is on a map"

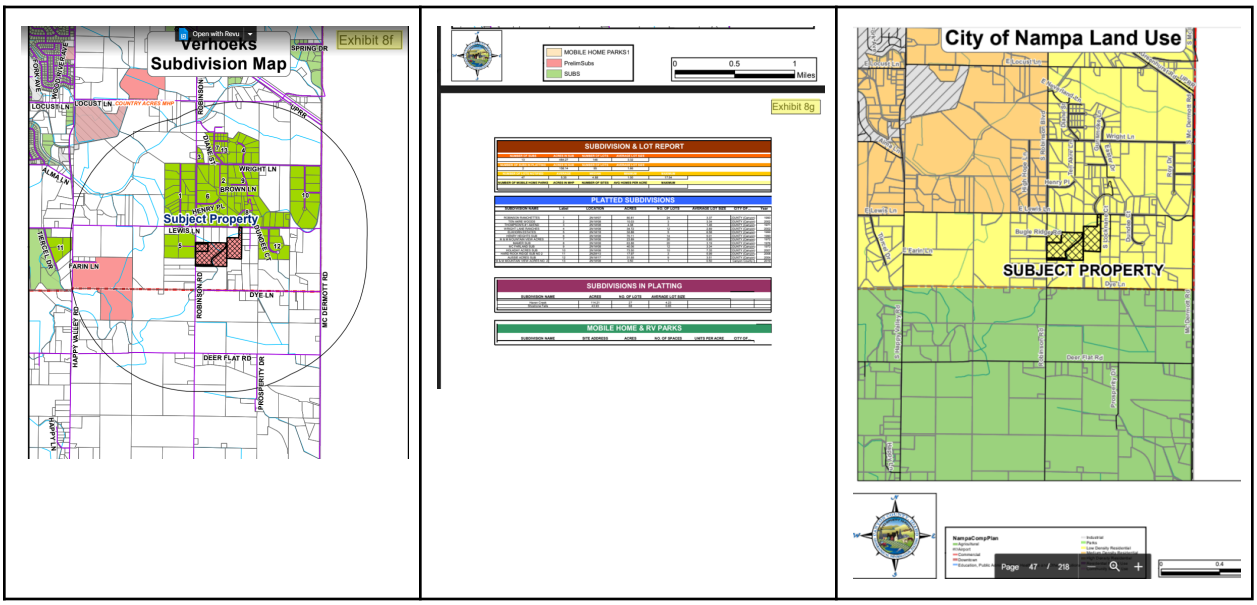
The Robinson Rd/Lewis Area in Canyon County SE of Nampa is a prime example of this disconnect and should be considered when bringing zoning maps into alignment with current uses.

G-2	Surrounding Subdivisions	Haven	ADJACENT TO EXISTING SUBDIVISIONS

Summary: The conditional rezone request complies with Canyon County's current comprehensive plan Rural Residential (i.e., Transitional) Zoning. These subject parcels are also located outside the border of the City of Nampa's Area of Impact with a Future land use zoning designation of Low Density Residential. This development complies with both comprehensive plans and we believe this is an excellent compromise of what the County wants this area to be today and what Nampa has envisioned for the future.

This area clearly started the transition from AG to Residential long before us. However, these subdivisions were created in the past through conditional use permits and avoided the process of rezoning. Rezoning is the current preferred process.

Existing subdivisions around the property are provided in the Staff Report.



G-3	Large AG Coordination	Stewart Dairy	DETERMINE COMPATIBLE AFTER FEEDBACK INCORPORATED

Summary: After testimony during our last application that large agricultural users within the vicinity of the project were not compatible with the project, we sought to discuss directly with these users and gather their feedback about the project to see if a new subdivision was compatible with the area. Stewart Dairy heard we were seeking feedback and reached out.

Stewart Dairy was supportive for a few reasons:

(1) the property has rock shelves and results in lower agriculture productivity,
(2) large AG supports creating growth within the area of impact to protect the commercial farmland outside the impact area,
(3) small acreage lots create a transitional buffer and the 1.5-2.5 range are manageable and valuable,
(4) developer wants to work with Stewart Dairy to make sure RTF acknowledgements are customized to this area

LAND USE WORKSHEET

PLEASE CHECK ALL THAT APPLY TO YOUR REQUEST:

GENERAL INFORMATION

1. DOMESTIC WATER: X Individual Domestic Well o Centralized Public Water System o City

o N/A – Explain why this is not applicable: _____

o How many Individual Domestic Wells are proposed? 21

2. SEWER (Wastewater) X Individual Septic o Centralized Sewer system

o N/A – Explain why this is not applicable: _____

3. IRRIGATION WATER PROVIDED VIA:

X Surface X Irrigation Well o None

4. IF IRRIGATED, PROPOSED IRRIGATION:

X Pressurized o Gravity

5. ACCESS:

X Frontage o Easement Easement width_____Inst. # _____

6. INTERNAL ROADS:

X Public o Private Road User's Maintenance Agreement Inst #_____

7. FENCING o Fencing will be provided (Please show location on site plan)

Type: _____ Height: _____

8. STORMWATER: X Retained on site o Swales X Ponds o Borrow Ditches

o Other: _____

9. SOURCES OF SURFACE WATER ON OR NEARBY PROPERTY: (i.e. creeks, ditches, canals, lake)

BOISE PROJECTS SUPPLIES PIPED WATER TO SITE

RESIDENTIAL USES

1. NUMBER OF LOTS REQUESTED:

X Residential 21 o Commercial _____ o Industrial _____

X Common 2 o Non-Buildable _____

2. FIRE SUPPRESSION:

X Water supply source: POND

3. INCLUDED IN YOUR PROPOSED PLAN?

o Sidewalks o Curbs o Gutters o Street Lights X None

NON-RESIDENTIAL USES

1. SPECIFIC USE: _____

2. DAYS AND HOURS OF OPERATION:

o Monday _____ to _____

o Tuesday _____ to _____

o Wednesday _____ to _____

o Thursday _____ to _____

o Friday _____ to _____

o Saturday _____ to _____

o Sunday _____ to _____

3. WILL YOU HAVE EMPLOYEES? o Yes If so, how many? _____ o No

4. WILL YOU HAVE A SIGN? o Yes o No o Lighted o Non-Lighted

Height: _____ ft Width: _____ ft. Height above ground: _____ ft

What type of sign: _____Wall _____ Freestanding _____ Other

5. PARKING AND LOADING:

How many parking spaces? _____

Is there is a loading or unloading area? _____

ANIMAL CARE-RELATED USES

1. MAXIMUM NUMBER OF ANIMALS: _____

2. HOW WILL ANIMALS BE HOUSED AT THE LOCATION?

o Building o Kennel o Individual Housing o Other _____

3. HOW DO YOU PROPOSE TO MITIGATE NOISE?

o Building o Enclosure o Barrier/Berm o Bark Collars

4. ANIMAL WASTE DISPOSAL

o Individual Domestic Septic System o Animal Waste Only Septic System

o Other: _____

Notice of Neighborhood Meeting
Pre-application requirement for a Public Hearing

02/18/2026

Dear Neighbor,

We are in the process of presenting an application to Canyon County Development Services for a conditional rezone and comp plan amendment. One of the requirements necessary, prior to submission, is to hold a "Neighborhood Meeting" and provide information to our surrounding neighbors about our application; *Canyon County Zoning Ordinance § 07-01-15.* This meeting for our surrounding neighbors is only for informational purposes. We would like to receive feedback from you, our neighbors, as we move through the land use application process with the county.

This neighborhood meeting is **not** a public hearing before a governing body of Canyon County. Once our application has been submitted to the county's Development Services Department, only then, will a public hearing date be scheduled. Also, only after our application is accepted and a public hearing is scheduled with a confirmed date by the county, will the surrounding neighbors receive an official notification from the county via postal mail. The notice will also appear in a newspaper publication and a sign will be displayed on the parcel notifying the public of a county Planning and Zoning land use hearing for our application.

The Neighborhood Meeting details are as follows:

Date: 03/02/2026
Time: 5pm
Location: 9814 Robinson Road
Property description: Southwest Corner of Robinson Rd and Lewis Ln - Meet by the vineyard

The project is summarized below:

Site Location: 9814 Robinson Road
Proposed access: Robinson Road
Total acreage: +/- 43.92 acres
Proposed lots: 21 lots

We look forward to our neighborhood meeting and encourage you, as our neighbor, to attend. During our meeting, we will answer any questions you may have. Please note, the county does not currently have any information on our project. Also, please do not call the county regarding this meeting or our application as this meeting is a PRE-APPLICATION requirement; we have not submitted the application to the county for consideration at this time.

There's a working group comprised of us, some of our neighbors, and some individuals who were vocal during our previous application. If you are interested in understanding details and helping to shape the direction this new application takes, we welcome new members to the working group.

Feel free to contact Haven Idaho at 208-504-1140, creek@havenidaho.com, or by mail at 521 N 10th Ave. #4 Caldwell, ID 83605.

The Haven Idaho Team



NEIGHBORHOOD MEETING SIGN-UP

CANYON COUNTY DEVELOPMENT SERVICES DEPARTMENT

111 North 11th Avenue, #310, Caldwell, ID 83605

zoninginfo@canyoncounty.id.gov Phone: 208-402-4164

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: 9814 ROBINSON RD	Parcel Number:	
City: NAMPA	State: ID	ZIP Code: 83686
Notices Mailed Date: 2/18/2026	Number of Acres: ± 44	Current Zoning: AG
Description of the Request: CONDITIONAL REZONE TO RR & COMP PLAN AMENDMENT		

APPLICANT / REPRESENTATIVE INFORMATION

Contact Name: HAVEN IDAHO		
Company Name: HTV CREEK LLC		
Current address: 521 10th AVE #4		
City: CALDWELL	State: ID	ZIP Code: 83605
Phone: [redacted]	Cell:	Fax:
[redacted]		

MEETING INFORMATION

DATE OF MEETING: 3/2/26	MEETING LOCATION: ONSITE
MEETING START TIME: 5:00 pm	MEETING END TIME:
ATTENDEES: 9	

NAME (PLEASE PRINT)	SIGNATURE:	ADDRESS:
1. Curtis Kessel	Curtis Kessel	4930 Dyer Ln. Kuna
2. Sam Nelson		6900 E Cem'y Ct
3. Cynthia L. Attig	Cynthia L Attig	9886 Robinson Rd
4. Doug Stittsworth	Doug Stittsworth	9884 Robinson RD
5. Kimberley A Smith	Kimberley A Smith	6715 E Lewis Lane
6. Lee Nichols		9663 Robinson
7.		
8.		
9.		

10.
11.

12.
13.
14.
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): TANNER VERHOEKS

APPLICANT/REPRESENTATIVE (Signature): _____

DATE: 3 / 2 / 2026

AGENCY ACKNOWLEDGMENT

Date: 02/25/26

Applicant: HTV CREEK LLC

Parcel Number: R28963, R2891010, R2891011, and R28961

Site Address: 9814 ROBINSON RD NAMPA, ID 83686

SIGNATURES DO NOT INDICATE APPROVAL OR COMPLETION OF OFFICIAL REVIEW.

The purpose of this form is to facilitate communication between applicants and agencies so that relevant requirements, application processes, and other feedback can be provided to applicants early in the planning process. Record of communication with an agency regarding the project can be submitted instead of a signature. After the application is submitted, impacted agencies will be sent a hearing notification by DSD staff and will have the opportunity to submit comments.

Southwest District Health:

☑ Applicant submitted/met for informal review.

Date: 02/27/2026 Signed: Anthony Lee

Authorized Southwest District Health Representative
(This signature does not guarantee project or permit approval)

Fire District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Fire District Representative
(This signature does not guarantee project or permit approval)

Highway District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Highway District Representative
(This signature does not guarantee project or permit approval)

Irrigation District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Irrigation Representative
(This signature does not guarantee project or permit approval)

Area of City Impact City: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized AOCI Representative
(This signature does not guarantee project or permit approval)

DISCLAIMER: THIS ACKNOWLEDGMENT IS ONLY VALID SIX MONTHS FROM THE DATE ISSUED

AGENCY ACKNOWLEDGMENT

Date: 02/25/26

Applicant: HTV CREEK LLC

Parcel Number: R28963, R2891010, R2891011, and R28961

Site Address: 9814 ROBINSON RD NAMPA, ID 83686

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Southwest District Health:

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Southwest District Health Representative
(This signature does not guarantee project or permit approval)

Fire District: District: KUNA RURAL FIRE

☒ Applicant submitted/met for informal review.

Date: 3/6/2026 Signed: Scott Arellano, CFM

Authorized Fire District Representative
(This signature does not guarantee project or permit approval)

Highway District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Highway District Representative
(This signature does not guarantee project or permit approval)

Irrigation District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Irrigation Representative
(This signature does not guarantee project or permit approval)

Area of City Impact City: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized AOCI Representative
(This signature does not guarantee project or permit approval)

DISCLAIMER: THIS ACKNOWLEDGMENT IS ONLY VALID SIX MONTHS FROM THE DATE ISSUED

AGENCY ACKNOWLEDGMENT

Date: 02/25/26

Applicant: HTV CREEK LLC

Parcel Number: R28963, R2891010, R2891011, and R28961

Site Address: 9814 ROBINSON RD NAMPA, ID 83686

SIGNATURES DO NOT INDICATE APPROVAL OR COMPLETION OF OFFICIAL REVIEW.

The purpose of this form is to facilitate communication between applicants and agencies so that relevant requirements, application processes, and other feedback can be provided to applicants early in the planning process. Record of communication with an agency regarding the project can be submitted instead of a signature. After the application is submitted, impacted agencies will be sent a hearing notification by DSD staff and will have the opportunity to submit comments.

Southwest District Health:

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Southwest District Health Representative
(This signature does not guarantee project or permit approval)

Fire District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Fire District Representative
(This signature does not guarantee project or permit approval)

Highway District: District: Nampa Highway Dist. #1

☒ Applicant submitted/met for informal review.

Date: 2-25-26 Signed: Edward Neil

Authorized Highway District Representative
(This signature does not guarantee project or permit approval)

Irrigation District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Irrigation Representative
(This signature does not guarantee project or permit approval)

Area of City Impact City: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized AOCI Representative
(This signature does not guarantee project or permit approval)

DISCLAIMER: THIS ACKNOWLEDGMENT IS ONLY VALID SIX MONTHS FROM THE DATE ISSUED

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Date: 02/25/26

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☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Southwest District Health Representative
(This signature does not guarantee project or permit approval)

Fire District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Fire District Representative
(This signature does not guarantee project or permit approval)

Highway District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Highway District Representative
(This signature does not guarantee project or permit approval)

Irrigation District: District: Nampa & Meridian Irrigation Dist.

☒ Applicant submitted/met for informal review.

Date: 3-5-2026 Signed: _____

Authorized Irrigation Representative
(This signature does not guarantee project or permit approval)

Area of City Impact City: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized AOCI Representative
(This signature does not guarantee project or permit approval)

DISCLAIMER: THIS ACKNOWLEDGMENT IS ONLY VALID SIX MONTHS FROM THE DATE ISSUED

AGENCY ACKNOWLEDGMENT

Date: 02/25/26

Applicant: HTV CREEK LLC

Parcel Number: R28963, R2891010, R2891011, and R28961

Site Address: 9814 ROBINSON RD NAMPA, ID 83686

SIGNATURES DO NOT INDICATE APPROVAL OR COMPLETION OF OFFICIAL REVIEW.

The purpose of this form is to facilitate communication between applicants and agencies so that relevant requirements, application processes, and other feedback can be provided to applicants early in the planning process. Record of communication with an agency regarding the project can be submitted instead of a signature. After the application is submitted, impacted agencies will be sent a hearing notification by DSD staff and will have the opportunity to submit comments.

Southwest District Health:

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Southwest District Health Representative
(This signature does not guarantee project or permit approval)

Fire District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Fire District Representative
(This signature does not guarantee project or permit approval)

Highway District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Highway District Representative
(This signature does not guarantee project or permit approval)

Irrigation District: District: _____

☐ Applicant submitted/met for informal review.

Date: _____ Signed: _____

Authorized Irrigation Representative
(This signature does not guarantee project or permit approval)

Area of City Impact City: Nampa

☐ Applicant submitted/met for informal review.

Date: 02/25/2026 Signed: _____

Authorized AOCI Representative
(This signature does not guarantee project or permit approval)

DISCLAIMER: THIS ACKNOWLEDGMENT IS ONLY VALID SIX MONTHS FROM THE DATE ISSUED

PioneerTitleCo.
GOING BEYOND

1872 South Eagle Road
Meridian, ID 83642

ELECTRONICALLY RECORDED-DO NOT REMOVE THE COUNTY STAMPED FIRST PAGE AS IT IS NOW INCORPORATED AS PART OF THE ORIGINAL DOCUMENT

ACCOMMODATION

2023-001114
RECORDED
01/12/2023 04:11 PM
CHRIS YAMAMOTO
CANYON COUNTY RECORDER
Pgs=3 LBERG $15.00
TYPE: DEED
PIONEER TITLE CANYON - CALDWELL
ELECTRONICALLY RECORDED

QUITCLAIM DEED

For Value Received

Haven Idaho LLC, an Idaho limited liability company, Grantor

do hereby convey, release, remise and forever quit claim unto

HTV Creek LLC, an Idaho limited liability company, Grantee

whose address is 521 N 10th Ave, Ste 4, Caldwell ID 83605

the following described premises, to-wit:

See Exhibit A attached hereto and made a part hereof.

together with their appurtenances.

Dated: January 5, 2023

MANAGER
Justin Ruthenbeck, as Manager of Vista Nine LLC, the Manager of Haven Idaho LLC

State of California, County of San Diego

This record was acknowledged before me on January 10, 2023 by Justin Ruthenbeck, as Manager of Vista Nine LLC, the Managing Member of Haven Idaho LLC.

Signature of notary public
Commission Expires: Jan. 16, 2025

J. J. ORTEGA-MALDONADO
COMM. #2341734
Notary Public - California
San Diego County
My Comm. Expires Jan. 16, 2025

EXHIBIT A

Parcel 1:

That portion of the North One-Half of the North One-Half of the Southwest Quarter of the Northwest Quarter, and the South One-Half of the Northwest Quarter of the Northwest Quarter, all in Section 17, Township 2 North, Range 1 West of the Boise Meridian, Canyon County, Idaho, lying South and East of the centerline of the Ridenbaugh High-Line Canal; and that portion of the South 60 feet of the North One-Half of the North One-Half of the Southwest Quarter of the Northwest Quarter lying West of the centerline of the Ridenbaugh High-Line Canal.

Parcel 2:

That portion of the South One-Half of the Northwest Quarter of the Northwest Quarter of Section 17, Township 2 North, Range 1 West of the Boise Meridian, Canyon County, Idaho, described as follows:

Commencing at the Northwest corner of said South One-Half of the Northwest Quarter of the Northwest Quarter, thence South along the West line of Section 17 a distance of 60 feet to the real point of beginning, thence running East, parallel with the North line of said South One-Half of the Northwest Quarter of the Northwest Quarter, a distance of 518 feet to a point, thence running South, parallel with the West boundary of said Section 17, a distance of 314 feet to a point, thence running West, parallel with the North line of said South One-Half of the Northwest Quarter of the Northwest Quarter, a distance of 518 feet to a point on the West boundary of said Section 17, thence running North along said West boundary a distance of 314 feet to the POINT OF BEGINNING.

Parcel 3:

The North One-Half of the North One-Half of the Southwest Quarter of the Northwest Quarter, and the South One-Half of the Northwest Quarter of the Northwest Quarter, all in Section 17, Township 2 North, Range 1 West of the Boise Meridian, Canyon County, Idaho.

EXCEPTING THEREFROM:

That portion thereof lying South and East of the centerline of the Ridenbaugh High-Line Canal; and that portion of the South 60 feet of the North One-Half of the North One-Half of the Southwest Quarter of the Northwest Quarter lying West of the centerline of the Ridenbaugh High-Line Canal.

ALSO EXCEPTING THEREFROM:

That portion of the North One-Half of the North One-Half of the Southwest Quarter of the Northwest Quarter and of the South One-Half of the Northwest Quarter of the Northwest Quarter of Section 17, Township 2 North, Range 1 West of the Boise Meridian, Canyon County, Idaho, described as follows:

Commencing at the Northwest corner of said South One-Half of the Northwest Quarter of the Northwest Quarter, thence South along the West line of Section 17 a distance of 60 feet to the real point of beginning, thence running East, parallel with the North line of said South One-Half of the Northwest Quarter of the Northwest Quarter, a distance of 518 feet to a point, thence running South, parallel with the West boundary of said Section 17, a distance of 314 feet to a point, thence running West, parallel with the North line of said South One-Half of the Northwest Quarter of the Northwest Quarter, a distance of 518 feet to a point on the West boundary of said Section 17, thence running North along said West boundary a distance of 314 feet to the POINT OF BEGINNING.

Parcel 4:

A part of the East Half of the Northwest Quarter of Section 17, Township 2 North, Range 1 West of the Boise Meridian, Canyon County, Idaho, more particularly described, to-wit:

COMMENCING at the Northwest corner of the East Half of the Northwest Quarter of Section 17, Township 2 North, Range 1 West of the Boise Meridian, Canyon County, Idaho, the INITIAL POINT; thence

South 89° 44' 20" East 622.69 feet along the North boundary of the East Half of the Northwest Quarter; thence leaving the said North boundary

South 0° 15' 40" West 1337.56 feet; thence

North 88° 12' 00" West 614.96 feet to a point in the West boundary of the said East Half of the Northwest Quarter; thence

North 0° 05' 03" West 1321.06 feet along the said West boundary to the INITIAL POINT.

EXCEPTING THEREFROM the following:

A parcel of land lying in the East Half of the Northwest Quarter, Section 17, Township 2 North, Range 1 West, Boise Meridian, Canyon County, Idaho, more particularly described as follows:

BEGINNING at an iron pin marking the Northwest corner of the said East Half of the Northwest Quarter, Section 17, said iron pin being the REAL POINT OF BEGINNING; thence

South 89° 06' 15" East along the Northerly boundary of the said East Half of the Northwest Quarter, Section 17, 500.00 feet to a PK nail, said Northerly boundary also being the centerline of Lewis Lane; thence leaving said Northerly boundary and centerline of Lewis Lane

South 0° 53' 45" West 440.00 feet to an iron pin; thence

North 89° 06' 09" West 497.35 feet to an iron pin on the Westerly boundary of the said East Half of the Northwest Quarter, Section 17; thence

North 0° 33' 02" East along the said Westerly boundary 440.00 feet to the POINT OF BEGINNING, as conveyed in Warranty Deed recorded September 1, 1999, as Instrument No. 9935502, records of Canyon County, Idaho.

Parcel Table	
Parcel #	Area
Site 1 : 1	2.03
Site 1 : 2	1.83
Site 1 : 3	2.02
Site 1 : 4	1.89
Site 1 : 5	1.53
Site 1 : 6	1.93
Site 1 : 7	2.18
Site 1 : 8	1.23
Site 1 : 9	1.43
Site 1 : 10	1.68
Site 1 : 11	2.00
Site 1 : 12	2.08
Site 1 : 13	2.13
Site 1 : 14	2.16
Site 1 : 15	1.88
Site 1 : 16	2.07
Site 1 : 17	1.70
Site 1 : 18	1.25
Site 1 : 19	1.97
Site 1 : 20	2.01
Site 1 : 21	1.91

AVERAGE LOT SIZE = 1.9 ACRES

GROSS LOT DENSITY
43.92 ACRES/ 21 LOTS = 2.1

HAVEN CREEK - RR ZONING (21 LOTS)

NORTH

0 80' 160'


the
HAVEN
CREEK







GEOTECHNICAL INVESTIGATION

HAVEN ROBINSON

9814 Robinson Road
Kuna, ID

PREPARED FOR:

Mr. Tanner Verhoeks
Haven Idaho
521 North 10th Avenue #4
Caldwell, ID 83605

PREPARED BY:

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

January 3, 2022
B213035g

January 3, 2022

Atlas No. B213035g

Mr. Tanner Verhoeks
Haven Idaho
521 North 10th Avenue #4
Caldwell, ID 83605

Subject: Geotechnical Investigation
Haven Robinson
9814 Robinson Road
Kuna, ID

Dear Mr. Verhoeks:

In compliance with your instructions, Atlas has conducted a soils exploration and foundation evaluation for the above referenced development. Fieldwork for this investigation was conducted on November 8 and 9, 2021. Data have been analyzed to evaluate pertinent geotechnical conditions. Results of this investigation, together with our recommendations, are to be found in the following report. We have provided a PDF copy for your review and distribution.

Often, questions arise concerning soil conditions because of design and construction details that occur on a project. Atlas would be pleased to continue our role as geotechnical engineers during project implementation.

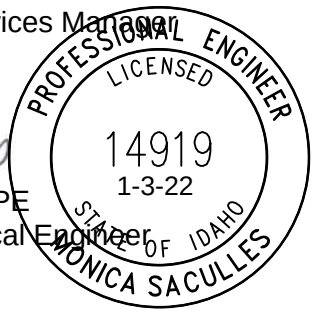
If you have any questions, please call us at [redacted]

Respectfully submitted,

Bryar Jensen, EI
Staff Engineer

Elizabeth Brown, PE
Geotechnical Services Manager

Monica Saculles, PE
Senior Geotechnical Engineer



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1. INTRODUCTION

This report presents results of a geotechnical investigation and analysis in support of data utilized in design of structures as defined in the 2018 International Building Code (IBC). Information in support of groundwater and stormwater issues pertinent to the practice of Civil Engineering is included. Observations and recommendations relevant to the earthwork phase of the project are also presented. Revisions in plans or drawings for the proposed development from those enumerated in this report should be brought to the attention of the soils engineer to determine whether changes in the provided recommendations are required. Deviations from noted subsurface conditions, if encountered during construction, should also be brought to the attention of the soils engineer.

1.1 Project Description

The proposed development is northwest of the City of Kuna, Canyon County, ID, and occupies a portion of the NW¼ of Section 17, Township 2 North, Range 1 West, Boise Meridian. This project will consist of construction of a 19 to 29 lot residential subdivision to be developed on 43.86 acres. Total settlements are limited to 1 inch. Loads of up to 4,000 pounds per lineal foot for wall footings, and column loads of up to 50,000 pounds were assumed for settlement calculations. Additionally, assumptions have been made for traffic loading of pavements. Retaining walls are not anticipated as part of the project. Atlas has not been informed of the proposed grading plan.

1.2 Authorization

Authorization to perform this exploration and analysis was given in the form of a written authorization to proceed from Mr. Tanner Verhoeks of Haven Idaho to Monica Saculles of Atlas Technical Consultants (Atlas), on December 20, 2021. Said authorization is subject to terms, conditions, and limitations described in the Professional Services Contract entered into between Haven Idaho and Atlas. Our scope of services for the proposed development has been provided in our proposal dated October 19, 2021 and repeated below.

1.3 Scope of Investigation

The scope of this investigation included review of geologic literature and existing available geotechnical studies of the area, visual site reconnaissance of the immediate site, subsurface exploration of the site, field and laboratory testing of materials collected, and engineering analysis and evaluation of foundation materials.

2. SITE DESCRIPTION

2.1 Site Access

Access to the site may be gained via Interstate 84 to the Ten Mile Road exit. Proceed south on Ten Mile Road approximately 2.2 miles to its intersection with Amity Road. From this intersection, proceed west on Amity Road 3.0 miles to Robinson Road. Continue south on Robinson Road for

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approximately 3.2 miles. The project site is located east of this location. The location is depicted on site maps included in the **Appendix**.

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 "Basalt Flows of Indian Creek, Undivided" as mapped by Othberg and Stanford (1993). This volcanic deposit is composed of multiple flows of medium to dark gray olivine basalt. These flows erupted from numerous vents found south of the Boise River and north of the Snake River, southeast of the City of Boise, Idaho. At the time of eruption lavas flowed into and down ancestral Indian Creek and Boise River valleys. Northwest-trending, gently sloping escarpments suggest faulting of the basalt. These basalts are mantled with loess 2-12 feet thick that contains about 35% pedogenic clay and a duripan that can be 3 feet thick.

2.3 General Site Characteristics

The site to be developed is approximately 43.86 acres in size. Currently, a residence is present in the western portion of the site. This residence fronts Robinson Road, which runs along the western property boundary. Ridenbaugh Highline Canal runs roughly northeast to southwest through the central portion of the property. The Fieselmann Lateral Canal branches from the Ridenbaugh Highline Canal in the center of the site. The Fieselmann Lateral Canal runs northwest from the center of the site. The remainder of the site consists of agricultural cropland. Surrounding the project site from all directions is agricultural cropland and residential properties. Vegetation around the residence consists primarily of landscape trees, shrubs, and grasses adjacent to the residence. The remainder of the site consists of agricultural crops. The site is relatively flat and level.

Regional drainage is north and west toward the Boise River. Stormwater drainage for the site is achieved by percolation through surficial soils. The site is situated so that it is unlikely that it will receive any drainage from off-site sources. Stormwater drainage collection and retention systems are not in place on the project site and do not currently exist within the vicinity of the project site.

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2.4 Regional Site Climatology and Geochemistry

According to the Western Regional Climate Center, the average precipitation for the Treasure Valley is on the order of 10 to 12 inches per year, with an annual snowfall of approximately 20 inches and a range from 3 to 49 inches. The monthly mean daily temperatures range from 21°F to 95°F, with daily extremes ranging from roughly -25°F to 111°F. Winds are generally from the northwest or southeast with an annual average wind speed of approximately 9 miles per hour (mph) and a maximum of 62 mph. Soils and sediments in the area are primarily derived from siliceous materials and exhibit low electro-chemical potential for corrosion of metals or concretes. Local aggregates are generally appropriate for Portland cement and lime cement mixtures. Surface water, groundwater, and soils in the region typically have pH levels ranging from 7.2 to 8.2.

3. SEISMIC SITE EVALUATION

3.1 Geoseismic Setting

Soils on site are classed as Site Class D in accordance with Chapter 20 of the American Society of Civil Engineers (ASCE) publication ASCE/SEI 7-16. Structures constructed on this site should be designed per IBC requirements for such a seismic classification. Our investigation did not reveal hazards resulting from potential earthquake motions including: slope instability, liquefaction, and surface rupture caused by faulting or lateral spreading. Incidence and anticipated acceleration of seismic activity in the area is low.

3.2 Seismic Design Parameter Values

The United States Geological Survey National Seismic Hazard Maps (2008), includes a peak ground acceleration map. The map for 2% probability of exceedance in 50 years in the Western United States in standard gravity (g) indicates that a peak ground acceleration of 0.189 is appropriate for the project site based on a Site Class D.

The following section provides an assessment of the earthquake-induced earthquake loads for the site based on the Risk-Targeted Maximum Considered Earthquake (MCE_R). The MCE_R spectral response acceleration for short periods, S_{MS}, and at 1-second period, S_{M1}, are adjusted for site class effects as required by the 2018 IBC. Design spectral response acceleration parameters as presented in the 2018 IBC are defined as a 5% damped design spectral response acceleration at short periods, S_{DS}, and at 1-second period, S_{D1}.

The USGS National Seismic Hazards Mapping Project includes a program that provides values for ground motion at a selected site based on the same data that were used to prepare the USGS ground motion maps. The maps were developed using attenuation relationships for soft rock sites; the source model, assumptions, and empirical relationships used in preparation of the maps are described in Petersen and others (1996).

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Table 1 – Seismic Design Values

Seismic Design Parameter	Design Value
Site Class	D "Stiff Soil"
S_S	0.275 (g)
S_1	0.101 (g)
F_a	1.580
F_v	2.397
S_{MS}	0.435
S_{M1}	0.243
S_{DS}	0.290
S_{D1}	0.162

4. SOILS EXPLORATION

4.1 Exploration and Sampling Procedures

Field exploration conducted to determine engineering characteristics of subsurface materials included a reconnaissance of the project site and investigation by test pit. Test pit sites were located in the field by means of a Global Positioning System (GPS) device and are reportedly accurate to within ten feet. Upon completion of investigation, each test pit was backfilled with loose excavated materials. Re-excavation and compaction of these test pit areas are required prior to construction of overlying structures.

In addition, samples were obtained from representative soil strata encountered. Samples obtained have been visually classified in the field by professional staff, identified according to test pit number and depth, placed in sealed containers, and transported to our laboratory for additional testing. Subsurface materials have been described in detail on logs provided in the **Appendix**. Results of field and laboratory tests are also presented in the **Appendix**. Atlas recommends that these logs **not** be used to estimate fill material quantities.

4.2 Laboratory Testing Program

Along with our field investigation, a supplemental laboratory testing program was conducted to determine additional pertinent engineering characteristics of subsurface materials necessary in an analysis of anticipated behavior of the proposed structures. Laboratory tests were conducted in accordance with current applicable American Society for Testing and Materials (ASTM), and results of these tests are to be found in the **Appendix**. The laboratory testing program for this report included: Atterberg Limits Testing – ASTM D4318, Grain Size Analysis – ASTM C117/C136, Hydrometer – ASTM D422, and Resistance Value (R-value) and Expansion Pressure of Compacted Soils – Idaho T-8. As to date, the R-value test results have not been received and, therefore, have not been included within this report. Atlas will forward the results in the form of an addendum once the R-value test results have been received.

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4.3 Soil and Sediment Profile

The profile below represents a generalized interpretation for the project site. Note that on site soils strata, encountered between test pit locations, may vary from the individual soil profiles presented in the logs, which can be found in the **Appendix**.

Sandy lean clays were encountered at ground surface. These soils were brown, slightly moist, and medium stiff to very stiff, with fine to medium-grained sand. Organic materials and disturbed materials as a result of plowing activities were measured to depths of roughly 1 foot.

Sandy silts were encountered beneath surficial clays. These fine-grained soils were brown to light brown and slightly moist. Consistencies commonly ranged from stiff to hard, with many of these firmer soil horizons containing some degree of calcium carbonate cementation (hardpan). Fine to coarse-grained sand was present throughout this horizon. Refusal on basalt was encountered at depth in all test pits except test pits 9 and 13, where refusal was met on indurated clay soils.

During excavation, test pit sidewalls were generally stable. However, moisture contents will affect wall competency with saturated soils having a tendency to readily slough when under load and unsupported.

4.4 Volatile Organic Scan

No environmental concerns were identified prior to commencement of the investigation. Therefore, soils obtained during on-site activities were not assessed for volatile organic compounds by portable photoionization detector. Samples obtained during our exploration activities exhibited no odors or discoloration typically associated with this type of contamination. No groundwater was encountered.

5. SITE HYDROLOGY

Existing surface drainage conditions are defined in the **General Site Characteristics** section. Information provided in this section is limited to observations made at the time of the investigation. Either regional or local ordinances may require information beyond the scope of this report.

5.1 Groundwater

During this field investigation, groundwater was not encountered in test pits advanced to a maximum depth of 13.8 feet bgs. Soil moistures in the test pits were dry to slightly moist throughout.

Atlas has previously performed 2 geotechnical investigations within 0.75 mile of the project site. Information from these investigations has been provided in the table below.

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Table 2 – Groundwater Data

Date	Approximate Distance from Site (mile)	Direction from Site	Groundwater Depth (feet bgs)
January 2006	0.55	East	Not Encountered to 17.4
September 2020	0.75	West	Not encountered to 9.8

Furthermore, according to Idaho Department of Water Resources (IDWR) monitoring well data within approximately ¼-mile of the project site, groundwater was measured at depths ranging between 38 and 62 feet bgs.

Based on evidence of this investigation and background knowledge of the area, Atlas estimates groundwater depths to remain greater than approximately 20 feet bgs throughout the year. This depth can be confirmed through long-term groundwater monitoring.

5.2 Soil Infiltration Rates

Soil permeability, which is a measure of the ability of a soil to transmit a fluid, was tested in the field. For this report, an estimation of infiltration is also presented using generally recognized values for each soil type and gradation. Of soils comprising the generalized soil profile for this study, lean clay with sand and sandy lean clay soils generally offer little permeability, with typical hydraulic infiltration rates of less than 2 inches per hour. Sandy silt soils will commonly exhibit infiltration rates from 2 to 4 inches per hour. However, calcium carbonate cementation and induration encountered within the clay and silt soils may reduce these values to near zero. Infiltration rates through basalt rock can be highly variable, ranging from nearly zero to greater than 6 inches per hour in some cases. Movement of water through the basalt may be more characteristic of fracture flow. Infiltration testing is required to determine site-specific infiltration rates for drainage design once proposed locations of infiltration facilities are determined.

5.3 Infiltration Testing

Infiltration testing was conducted using an open test pit method. Test pit areas will need to be re-excavated and compacted prior to construction of structures that will be sensitive to settlement. Test locations were presoaked prior to testing. Pre-soaking increases soil moistures, which allows the tested soils to reach a saturated condition more readily during testing. Saturation of the tested soils is desirable in order to isolate the vertical component of infiltration by inhibiting horizontal seepage during testing.

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Testing was conducted on November 9, 2021. Details and results of testing are as follows:

Table 3 – Infiltration Test Results

Test Location	Test Depth (feet bgs)	Soil Type	Stabilized Infiltration Rate (inches/hour)	Design Infiltration Rate (inches per hour)
TP-1	6.1	Basalt	12.2*	6.1*
TP-5	5.1	Basalt	2.0	1.0
TP-6	9.2	Basalt	11.5*	5.75*
TP-14	9.6	Basalt	0.8	0.4
TP-18	8.9	Basalt	0.9	0.45

***It is anticipated that water was draining through fractures in the basalt. These rates are appropriate for the tested location only and may not be suitable for design in other areas of the site. Additional infiltration testing is recommended once actual infiltration facility locations have been determined.**

Appropriate factors of safety have been applied to the stabilized infiltration rates achieved during testing to obtain the design infiltration rates listed above. The reason for the decreased infiltration rate is to account for long term saturation of the soils and the potential for less permeable soils to settle into the bottom of the infiltration facilities. Atlas recommends that all infiltration facilities be constructed in accordance with the local municipality requirements.

6. FOUNDATION AND SLAB DISCUSSION AND RECOMMENDATIONS

Various foundation types have been considered for support of the proposed structures. Two requirements must be met in the design of foundations. First, the applied bearing stress must be less than the ultimate bearing capacity of foundation soils to maintain stability. Second, total and differential settlement must not exceed an amount that will produce an adverse behavior of the superstructure. Allowable settlement is usually exceeded before bearing capacity considerations become important; thus, allowable bearing pressure is normally controlled by settlement considerations.

Considering subsurface conditions and the proposed construction, it is recommended that the structures be founded upon conventional spread footings and continuous wall footings. Total settlements should not exceed 1 inch if the following design and construction recommendations are observed. Presently, there are approximately 19 to 29 lots proposed for the project site. The following recommendations are not specific to the individual structures, but rather should be viewed as guidelines for the subdivision-wide development.

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6.1 Foundation Design Recommendations

Based on data obtained from the site and test results from various laboratory tests performed, Atlas recommends the following guidelines for the net allowable soil bearing capacity:

Table 4 – Soil Bearing Capacity

Footing Depth	ASTM D1557 Subgrade Compaction	Net Allowable Soil Bearing Capacity
Footings must bear on competent, undisturbed, native sandy lean clay soils, sandy silt soils, or compacted structural fill. Existing organics materials and fill materials (if encountered) must be completely removed from below foundation elements.[1] An excavation depth of approximately 1 foot bgs should be anticipated to expose proper bearing soils.[2]	Not Required for Native Soil 95% for Structural Fill	1,500 lbs/ft^2 A ⅓ increase is allowable for short-term loading, which is defined by seismic events or designed wind speeds.

[1]It will be required for Atlas personnel to verify the bearing soil suitability for each structure at the time of construction.
[2]Depending on the time of year construction takes place, the subgrade soils may be unstable because of high moisture contents. If unstable conditions are encountered, over-excavation and replacement with granular structural fill and/or use of geotextiles may be required.

The following sliding frictional coefficient values should be used: 1) 0.35 for footings bearing on native sandy silt, sandy lean clay, or silty sand soils and 2) 0.45 for footings bearing on granular structural fill. A passive lateral earth pressure of 320 pounds per square foot per foot (psf/ft) should be used for sandy lean clay soils and 349 psf/ft should be used for sandy silt soils. For compacted sandy gravel fill, a passive lateral earth pressure of 496 psf/ft should be used.

Footings should be proportioned to meet either the stated soil bearing capacity or the 2018 IBC minimum requirements. Total settlement should be limited to approximately 1 inch, and differential settlement should be limited to approximately ½ inch. Objectionable soil types encountered at the bottom of footing excavations should be removed and replaced with structural fill. Excessively loose or soft areas that are encountered in the footings subgrade will require over-excavation and backfilling with structural fill. To minimize the effects of slight differential movement that may occur because of variations in the character of supporting soils and seasonal moisture content, Atlas recommends continuous footings be suitably reinforced to make them as rigid as possible. For frost protection, the bottom of external footings should be 24 inches below finished grade.

6.2 Foundation Drain Recommendations

Considering the presence of shallow cemented soils across the site, Atlas recommends that foundation drains be installed. The drains should be placed at the footing elevation, sloped at least 2 percent, and be directed to suitable discharge points at least 10 feet away from the structures. Discharge points should be protected to prevent erosion.

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6.3 Crawl Space Recommendations

Considering the presence of shallow cemented soils across the site, all residences constructed with crawl spaces should be designed in a manner that will inhibit water in the crawl spaces. Atlas recommends that roof drains carry stormwater at least 10 feet away from each residence. Grades should be at least 5 percent for a distance of 10 feet away from all residences. In addition, rain gutters should be placed around all sides of residences, and backfill around stem walls should be placed and compacted in a controlled manner.

6.4 Floor, Patio, and Garage Slab-on-Grade

Organic, loose, or obviously compressive materials must be removed prior to placement of concrete floors or floor-supporting fill. In addition, the remaining subgrade should be treated in accordance with guidelines presented in the **Earthwork** section. Areas of excessive yielding should be excavated and backfilled with structural fill. Fill used to increase the elevation of the floor slab should meet requirements detailed in the **Structural Fill** section. Fill materials must be compacted to a minimum 95 percent of the maximum dry density as determined by ASTM D1557.

A free-draining granular mat should be provided below slabs-on-grade to provide drainage and a uniform and stable bearing surface. This should be a minimum of 4 inches in thickness and properly compacted. The mat should consist of a sand and gravel mixture, complying with Idaho Standards for Public Works Construction (ISPWC) specifications for ¾-inch (Type 1) crushed aggregate. The granular mat should be compacted to no less than 95 percent of the maximum dry density as determined by ASTM D1557. A moisture-retarder should be placed beneath floor slabs to minimize potential ground moisture effects on moisture-sensitive floor coverings. The moisture-retarder should be at least 15-mil in thickness and have a permeance of less than 0.01 US perms as determined by ASTM E96. Placement of the moisture-retarder will require special consideration with regard to effects on the slab-on-grade and should adhere to recommendations outlined in the ACI 302.1R and ASTM E1745 publications. Upon request, Atlas can provide further consultation regarding installation.

7. CONSTRUCTION CONSIDERATIONS

Recommendations in this report are based upon structural elements of the project being founded on competent, native sandy lean clay soils, sandy silt soils, or compacted structural fill. Structural areas should be stripped to an elevation that exposes these soil types.

7.1 Earthwork

Excessively organic soils, deleterious materials, or disturbed soils generally undergo high volume changes when subjected to loads, which is detrimental to subgrade behavior in the area of pavements, floor slabs, structural fills, and foundations. Mature trees, brush, thick grasses, and agricultural crops with associated root systems were noted at the time of our investigation. It is recommended that organic or disturbed soils, if encountered, be removed to depths of 1 foot (minimum), and wasted or stockpiled for later use. However, in areas where trees are/were

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present, deeper excavation depths should be anticipated. Stripping depths should be adjusted in the field to assure that the entire root zone or disturbed zone (plow depths) or topsoil are removed prior to placement and compaction of structural fill materials. Exact removal depths should be determined during grading operations by Atlas personnel, and should be based upon subgrade soil type, composition, and firmness or soil stability. If underground storage tanks, underground utilities, wells, or septic systems are discovered during construction activities, they must be decommissioned then removed or abandoned in accordance with governing Federal, State, and local agencies. Excavations developed as the result of such removal must be backfilled with structural fill materials as defined in the **Structural Fill** section.

Atlas should oversee subgrade conditions (i.e., moisture content) as well as placement and compaction of new fill (if required) after native soils are excavated to design grade. Recommendations for structural fill presented in this report can be used to minimize volume changes and differential settlements that are detrimental to the behavior of footings, pavements, and floor slabs. Sufficient density tests should be performed to properly monitor compaction. For structural fill beneath building structures, one in-place density test per lift for every 5,000 square feet is recommended. In parking and driveway areas, this can be decreased to one test per lift for every 10,000 square feet.

7.2 Dry Weather

If construction is to be conducted during dry seasonal conditions, many problems associated with soft soils may be avoided. However, some rutting of subgrade soils may be induced by shallow groundwater conditions related to springtime runoff or irrigation activities during late summer through early fall. Solutions to problems associated with soft subgrade soils are outlined in the **Soft Subgrade Soils** section. Problems may also arise because of lack of moisture in native and fill soils at time of placement. This will require the addition of water to achieve near-optimum moisture levels. Low-cohesion soils exposed in excavations may become friable, increasing chances of sloughing or caving. Measures to control excessive dust should be considered as part of the overall health and safety management plan.

7.3 Wet Weather

If construction is to be conducted during wet seasonal conditions (commonly from mid-November through May), problems associated with soft soils must be considered as part of the construction plan. During this time of year, fine-grained soils such as silts and clays will become unstable with increased moisture content, and eventually deform or rut. Additionally, constant low temperatures reduce the possibility of drying soils to near optimum conditions.

7.4 Soft Subgrade Soils

Shallow fine-grained subgrade soils that are high in moisture content should be expected to pump and rut under construction traffic. During periods of wet weather, construction may become very difficult if not impossible. The following recommendations and options have been included for dealing with soft subgrade conditions:

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- Track-mounted vehicles should be used to strip the subgrade of root matter and other deleterious debris. Heavy rubber-tired equipment should be prohibited from operating directly on the native subgrade and areas in which structural fill materials have been placed. Construction traffic should be restricted to designated roadways that do not cross, or cross on a limited basis, proposed roadway or parking areas.
- Soft areas can be over-excavated and replaced with granular structural fill.
- Construction roadways on soft subgrade soils should consist of a minimum 2-foot thickness of large cobbles of 4 to 6 inches in diameter with sufficient sand and fines to fill voids. Construction entrances should consist of a 6-inch thickness of clean, 2-inch minimum, angular drain-rock and must be a minimum of 10 feet wide and 30 to 50 feet long. During the construction process, top dressing of the entrance may be required for maintenance.
- Scarification and aeration of subgrade soils can be employed to reduce the moisture content of wet subgrade soils. After stripping is complete, the exposed subgrade should be ripped or disked to a depth of 1½ feet and allowed to air dry for 2 to 4 weeks. Further disking should be performed on a weekly basis to aid the aeration process.
- Alternative soil stabilization methods include use of geotextiles, lime, and cement stabilization. Atlas is available to provide recommendations and guidelines at your request.

7.5 Frozen Subgrade Soils

Prior to placement of structural fill materials or foundation elements, frozen subgrade soils must either be allowed to thaw or be stripped to depths that expose non-frozen soils and wasted or stockpiled for later use. Stockpiled materials must be allowed to thaw and return to near-optimal conditions prior to use as structural fill.

The onsite, shallow clayey and silty soils are susceptible to frost heave during freezing temperatures. For exterior flatwork and other structural elements, adequate drainage away from subgrades is critical. Compaction and use of structural fill will also help to mitigate the potential for frost heave. Complete removal of frost susceptible soils for the full frost depth, followed by replacement with a non-frost susceptible structural fill, can also be used to mitigate the potential for frost heave. Atlas is available to provide further guidance/assistance upon request.

7.6 Structural Fill

Soils recommended for use as structural fill are those classified as GW, GP, SW, and SP in accordance with the Unified Soil Classification System (USCS) (ASTM D2487). Use of silty soils (USCS designation of GM, SM, and ML) as structural fill may be acceptable. However, use of silty soils (GM, SM, and ML) as structural fill below footings is prohibited. These materials require very high moisture contents for compaction and require a long time to dry out if natural moisture contents are too high and may also be susceptible to frost heave under certain conditions. Therefore, these materials can be quite difficult to work with as moisture content, lift thickness, and compactive effort becomes difficult to control. If silty soil is used for structural fill, lift thicknesses should not exceed 6 inches (loose), and fill material moisture must be closely monitored at both the working elevation and the elevations of materials already placed. Following

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placement, silty soils must be protected from degradation resulting from construction traffic or subsequent construction.

Recommended granular structural fill materials, those classified as GW, GP, SW, and SP, should consist of a 6-inch minus select, clean, granular soil with no more than 50 percent oversize (greater than ¾-inch) material and no more than 12 percent fines (passing No. 200 sieve). These fill materials should be placed in layers not to exceed 12 inches in loose thickness. Prior to placement of structural fill materials, surfaces must be prepared as outlined in the **Construction Considerations** section. Structural fill material should be moisture-conditioned to achieve optimum moisture content prior to compaction. For structural fill below footings, areas of compacted backfill must extend outside the perimeter of the footings for a distance equal to the thickness of fill between the bottom of foundation and underlying soils, or 5 feet, whichever is less. All fill materials must be monitored during placement and tested to confirm compaction requirements, outlined below, have been achieved.

Each layer of structural fill must be compacted, as outlined below:

- Below Structures and Rigid Pavements: A minimum of 95 percent of the maximum dry density as determined by ASTM D1557.
- Below Flexible Pavements: A minimum of 92 percent of the maximum dry density as determined by ASTM D1557 or 95 percent of the maximum dry density as determined by ASTM D698.

The ASTM D1557 test method must be used for samples containing up to 40 percent oversize (greater than ¾-inch) particles. If material contains more than 40 percent but less than 50 percent oversize particles, compaction of fill must be confirmed by proof rolling each lift with a 10-ton vibratory roller (or equivalent) until the maximum density has been achieved. Density testing must be performed after each proof rolling pass until the in-place density test results indicate a drop (or no increase) in the dry density, defined as maximum density or “break over” point. The number of required passes should be used as the requirements on the remainder of fill placement. Material should contain sufficient fines to fill void spaces, and must not contain more than 50 percent oversize particles.

7.7 Backfill of Walls

Backfill materials must conform to the requirements of structural fill, as defined in this report. For wall heights greater than 2.5 feet, the maximum material size should not exceed 4 inches in diameter. Placing oversized material against rigid surfaces interferes with proper compaction, and can induce excessive point loads on walls. Backfill shall not commence until the wall has gained sufficient strength to resist placement and compaction forces. Further, retaining walls above 2.5 feet in height shall be backfilled in a manner that will limit the potential for damage from compaction methods and/or equipment. It is recommended that only small hand-operated compaction equipment be used for compaction of backfill within a horizontal distance equal to the height of the wall, measured from the back face of the wall.

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Backfill should be compacted in accordance with the specifications for structural fill, except in those areas where it is determined that future settlement is not a concern, such as planter areas. In nonstructural areas, backfill must be compacted to a firm and unyielding condition.

7.8 Excavations

Shallow excavations that do not exceed 4 feet in depth may be constructed with side slopes approaching vertical. Below this depth, it is recommended that slopes be constructed in accordance with Occupational Safety and Health Administration (OSHA) regulations, Section 1926, Subpart P. Based on these regulations, on-site soils are classified as type "C" soil, and as such, excavations within these soils should be constructed at a maximum slope of 1½ feet horizontal to 1 foot vertical (1½:1) for excavations up to 20 feet in height. Excavations in excess of 20 feet will require additional analysis. Note that these slope angles are considered stable for short-term conditions only, and will not be stable for long-term conditions.

During the subsurface exploration, test pit sidewalls generally exhibited little indication of collapse. For deep excavations, native granular sediments cannot be expected to remain in position. These materials are prone to failure and may collapse, thereby undermining upper soil layers. This is especially true when excavations approach depths near the water table. Care must be taken to ensure that excavations are properly backfilled in accordance with procedures outlined in this report.

7.9 Groundwater Control

Groundwater was not encountered during the investigation and is anticipated to be below the depth of most construction. Special precautions may be required for control of surface runoff and subsurface seepage. It is recommended that runoff be directed away from open excavations. Silty and clayey soils may become soft and pump if subjected to excessive traffic during time of surface runoff. Ponded water in construction areas should be drained through methods such as trenching, sloping, crowning grades, nightly smooth drum rolling, or installing a French drain system. Additionally, temporary or permanent driveway sections should be constructed if extended wet weather is forecasted.

8. GENERAL COMMENTS

Based on the subsurface conditions encountered during this investigation and available information regarding the proposed development, the site is adequate for the planned construction. When plans and specifications are complete, and if significant changes are made in the character or location of the proposed development, consultation with Atlas must be arranged as supplementary recommendations may be required. Suitability of subgrade soils and compaction of structural fill materials must be verified by Atlas personnel prior to placement of structural elements. Additionally, monitoring and testing should be performed to verify that suitable materials are used for structural fill and that proper placement and compaction techniques are utilized.

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Appendix I WARRANTY AND LIMITING CONDITIONS

Atlas warrants that findings and conclusions contained herein have been formulated in accordance with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics, and engineering geology only for the site and project described in this report. These engineering methods have been developed to provide the client with information regarding apparent or potential engineering conditions relating to the site within the scope cited above and are necessarily limited to conditions observed at the time of the site visit and research. Field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for the purposes cited above.

Exclusive Use

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

Report Recommendations are Limited and Subject to Misinterpretation

There is a distinct possibility that conditions may exist that could not be identified within the scope of the investigation or that were not apparent during our site investigation. Findings of this report are limited to data collected from noted explorations advanced and do not account for unidentified fill zones, unsuitable soil types or conditions, and variability in soil moisture and groundwater conditions. To avoid possible misinterpretations of findings, conclusions, and implications of this report, Atlas should be retained to explain the report contents to other design professionals as well as construction professionals.

Since actual subsurface conditions on the site can only be verified by earthwork, note that construction recommendations are based on general assumptions from selective observations and selective field exploratory sampling. Upon commencement of construction, such conditions may be identified that require corrective actions, and these required corrective actions may impact the project budget. Therefore, construction recommendations in this report should be considered preliminary, and Atlas should be retained to observe actual subsurface conditions during earthwork construction activities to provide additional construction recommendations as needed.

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Since geotechnical reports are subject to misinterpretation, **do not** separate the soil logs from the report. Rather, provide a copy of, or authorize for their use, the complete report to other design professionals or contractors. Locations of exploratory sites referenced within this report should be considered approximate locations only. For more accurate locations, services of a professional land surveyor are recommended.

This report is also limited to information available at the time it was prepared. In the event additional information is provided to Atlas following publication of our report, it will be forwarded to the client for evaluation in the form received.

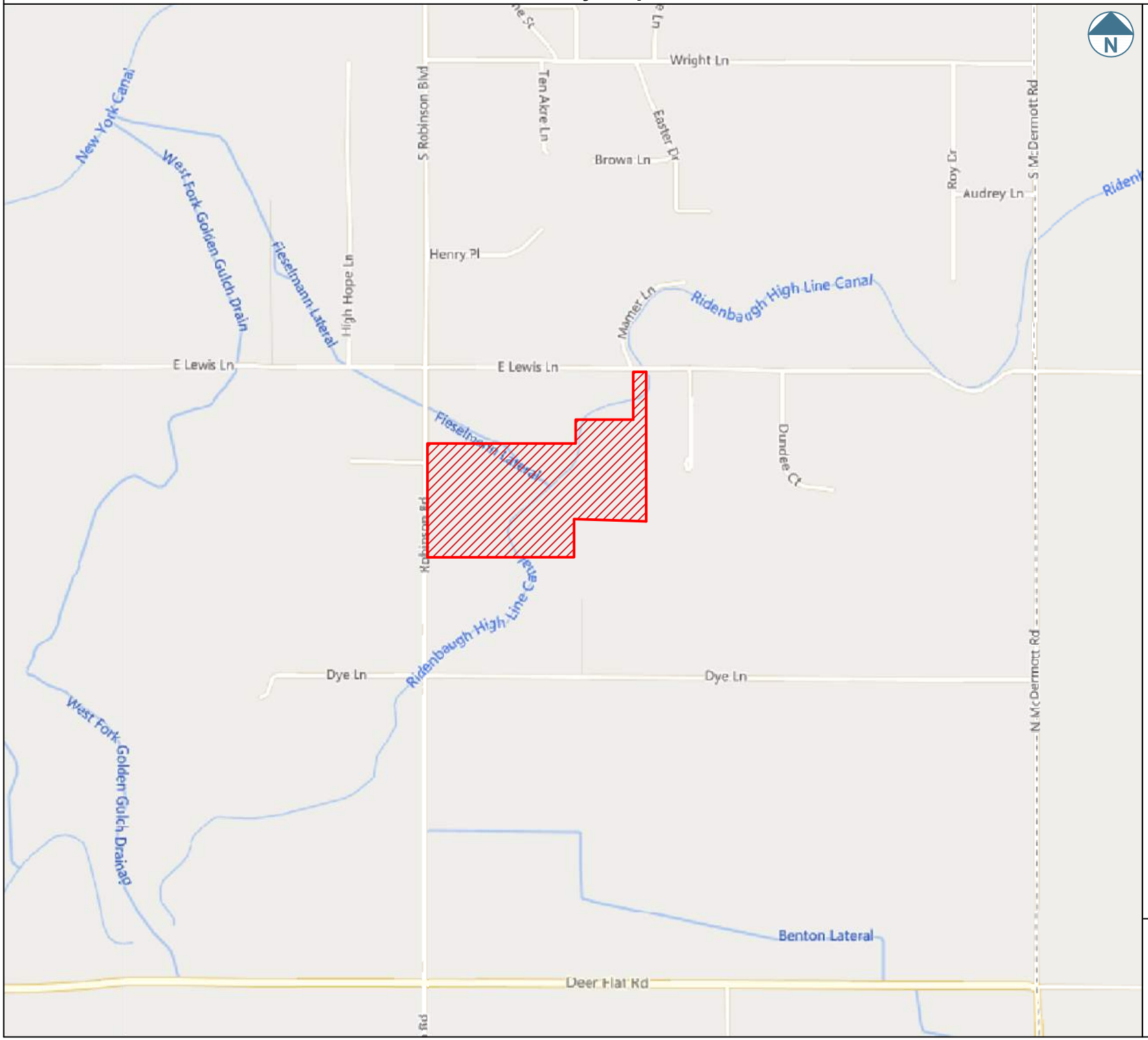
Environmental Concerns

Comments in this report concerning either onsite conditions or observations, including soil appearances and odors, are provided as general information. These comments are not intended to describe, quantify, or evaluate environmental concerns or situations. Since personnel, skills, procedures, standards, and equipment differ, a geotechnical investigation report is not intended to substitute for a geoenvironmental investigation or a Phase II/III Environmental Site Assessment. If environmental services are needed, Atlas can provide, via a separate contract, those personnel who are trained to investigate and delineate soil and water contamination.

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Vicinity Map

Figure 1



MAP NOTES:

- Not to Scale

LEGEND

Approximate Site Location

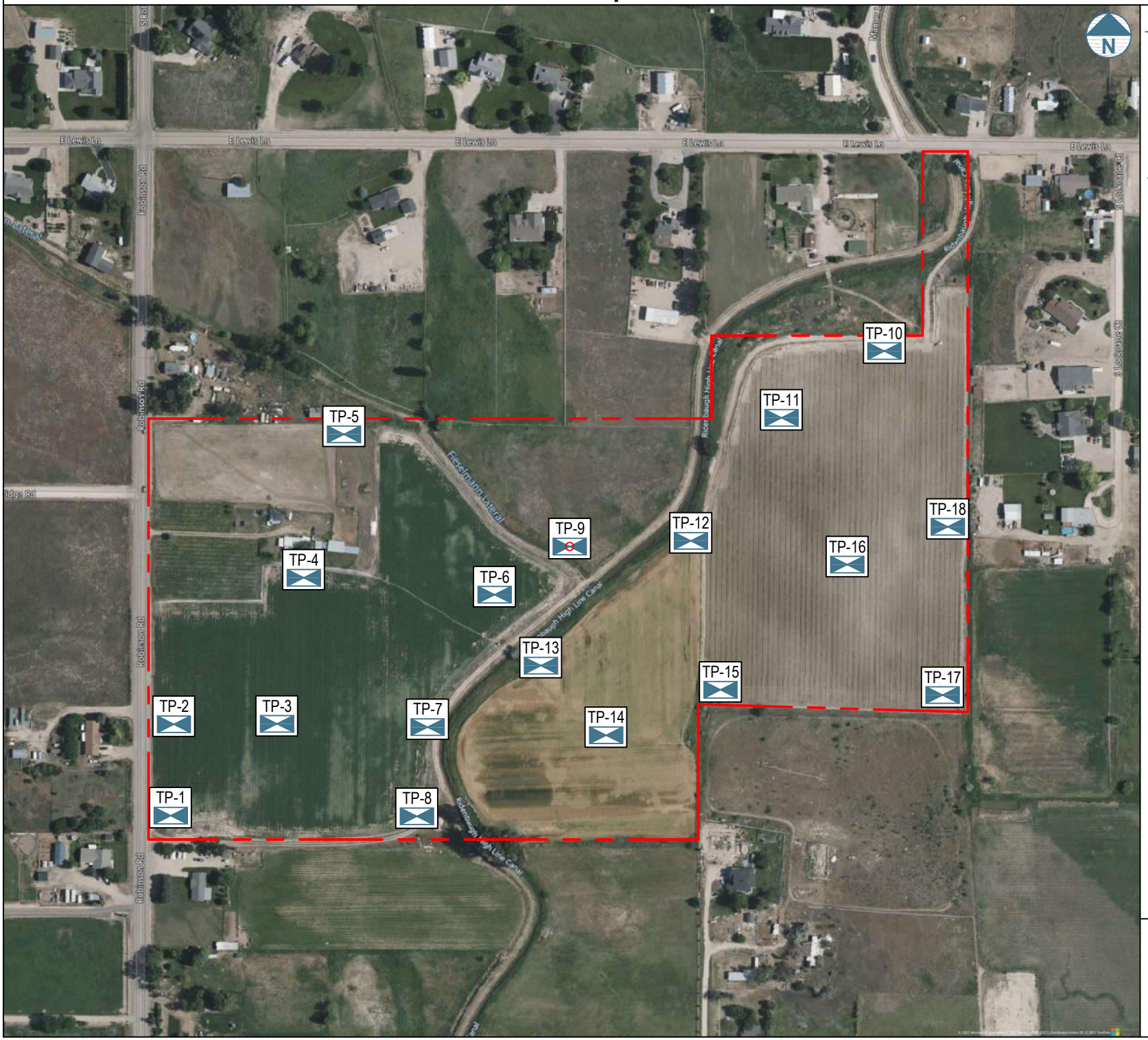
Haven Robinson
9814 Robinson Road
Kuna, ID

Modified by: CBJ
December 28, 2021
Drawing: B213035g

ATLAS
2791 S. Victory View Way
Boise, ID 83709

Site Map

Figure 2



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Approximate Atlas Test Pit Location

Approximate Atlas Test Pit Location with Piezometer

Haven Robinson
9814 Robinson Road
Kuna, ID

Modified by: CBJ
December 28, 2021
Drawing: B213035g

ATLAS
2791 S. Victory View Way
Boise, ID 83709
Web: oneatlas.com

Appendix IV GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-1
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.513370
Longitude: -116.493220
Depth to Water Table: Not Encountered
Total Depth: 6.1 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.4	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.4-6.1	Sandy Silt (ML): Brown, slightly moist, stiff to very stiff, with fine to medium-grained sand. --Refusal on basalt rock at a depth of 6.1 feet bgs.				

Notes: See Site Map for test pit location.
Infiltration testing conducted at a depth of 6.1 feet bgs.

Test Pit Log #: TP-2
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.513919
Longitude: -116.493232
Depth to Water Table: Not Encountered
Total Depth: 9.2 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.6	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.6-9.2	Sandy Silt (ML): Brown, slightly moist, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 3.5 to 9.2 feet bgs. --Refusal on basalt rock at a depth of 9.2 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-3
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514004
Longitude: -116.492150
Depth to Water Table: Not Encountered
Total Depth: 8.4 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.3	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.3-8.4	Sandy Silt (ML): Brown, slightly moist, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 2.8 to 8.4 feet bgs. --Refusal on basalt rock at a depth of 8.4 feet bgs.				

Notes: See Site Map for test pit location.

Test Pit Log #: TP-4
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514769
Longitude: -116.492048
Depth to Water Table: Not Encountered
Total Depth: 4.5 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.2	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.2-4.5	Sandy Silt (ML): Brown, slightly moist, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 4.5 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-5
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.515734
Longitude: -116.491675
Depth to Water Table: Not Encountered
Total Depth: 5.1 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.4	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.4-5.1	Sandy Silt (ML): Brown, dry, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 2.9 to 5.1 feet bgs. --Refusal on basalt rock at a depth of 5.1 feet bgs.				

Notes: See Site Map for test pit location.
Infiltration testing conducted at a depth of 5.1 feet bgs.

Test Pit Log #: TP-6
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514699
Longitude: -116.490435
Depth to Water Table: Not Encountered
Total Depth: 9.2 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.2	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.2-9.2	Sandy Silt (ML): Brown, dry, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 3.3 to 9.2 feet bgs. --Refusal on basalt rock at a depth of 9.2 feet bgs.				

Notes: See Site Map for test pit location.
Infiltration testing conducted at a depth of 9.2 feet bgs.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-7
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514023
Longitude: -116.490859
Depth to Water Table: Not Encountered
Total Depth: 6.6 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.5	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.	GS	1.0-1.5	0.75	A
1.5-6.6	Sandy Silt (ML): Brown, dry, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 3.1 to 6.6 feet bgs. --Refusal on basalt rock at a depth of 6.6 feet bgs.				

Notes: See Site Map for test pit location.

Lab Test ID	Moisture (%)	LL	PI	Sieve Analysis (% Passing)				
				#4	#10	#40	#100	#200
A	16.3	31	9	99	98	95	90	77.9

Test Pit Log #: TP-8
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.513284
Longitude: -116.491078
Depth to Water Table: Not Encountered
Total Depth: 8.9 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.4	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.4-8.9	Sandy Silt (ML): Brown, dry, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 2.8 to 8.9 feet bgs. --Refusal on basalt rock at a depth of 8.6 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-9
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.515059
Longitude: -116.489707
Depth to Water Table: Not Encountered
Total Depth: 11.6 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.6	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material to a depth of 1 foot bgs.			0.75	
1.6-10.0	Sandy Silt (ML): Brown, dry, very stiff, with fine to coarse-grained sand. --Moderate calcium carbonate cementation from 6.9 to 10.0 feet bgs.				
10.0-11.6	Sandy Lean Clay (CL): Brown, dry, hard, with fine to medium-grained sand. --Refusal on indurated clay at a depth of 11.6 feet bgs.				

Notes: See Site Map for test pit location.
Piezometer installed to a depth of 11.6 feet bgs.

Test Pit Log #: TP-10
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.516354
Longitude: -116.487011
Depth to Water Table: Not Encountered
Total Depth: 8.1 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.4	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.4-8.1	Sandy Silt (ML): Light brown, dry, very stiff to hard, with fine to coarse-grained sand. --Moderate calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 8.1 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-11
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.515509
Longitude: -116.487674
Depth to Water Table: Not Encountered
Total Depth: 10.4 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.8	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.	Bulk	1.0-1.5	0.75	R-value
1.8-10.4	Sandy Silt (ML): Brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 10.4 feet bgs.				

Notes: See Site Map for test pit location.

Test Pit Log #: TP-12
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.515085
Longitude: -116.488617
Depth to Water Table: Not Encountered
Total Depth: 10.4 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.3	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.3-10.4	Sandy Silt (ML): Light brown, dry to slightly moist, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 2.5 to 10.4 feet bgs. --Refusal on basalt rock at a depth of 10.4 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-13
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514232
Longitude: -116.489891
Depth to Water Table: Not Encountered
Total Depth: 13.8 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.3	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.3-11.5	Sandy Silt (ML): Light brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 5.7 to 11.5 feet bgs.				
11.5-13.8	Lean Clay with Sand (CL): Brown, slightly moist, hard, with fine to medium-grained sand. --Refusal on indurated clay at a depth of 13.8 feet bgs.				

Notes: See Site Map for test pit location.

Test Pit Log #: TP-14
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.513946
Longitude: -116.489470
Depth to Water Table: Not Encountered
Total Depth: 9.6 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.9	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.9-9.6	Sandy Silt (ML): Light brown, dry, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 4.4 to 9.6 feet bgs. --Refusal on basalt rock at a depth of 9.6 feet bgs.				

Notes: See Site Map for test pit location.
Infiltration testing conducted at a depth of 9.6 feet bgs.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-15
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514030
Longitude: -116.488480
Depth to Water Table: Not Encountered
Total Depth: 10.3 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-2.4	Lean Clay with Sand (CL): Brown, slightly moist, very stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			2.25	
2.4-10.3	Sandy Silt (ML): Light brown to brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 4.6 to 10.3 feet bgs. --Refusal on basalt rock at a depth of 10.3 feet bgs.				

Notes: See Site Map for test pit location.

Test Pit Log #: TP-16
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514700
Longitude: -116.487201
Depth to Water Table: Not Encountered
Total Depth: 4.9 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.1	Lean Clay with Sand (CL): Brown, slightly moist, very stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			3.5	
1.1-4.9	Sandy Silt (ML): Brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 4.9 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-17
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514012
Longitude: -116.486229
Depth to Water Table: Not Encountered
Total Depth: 10.3 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.9	Lean Clay with Sand (CL): Brown, slightly moist, very stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			3.5	
1.9-10.3	Sandy Silt (ML): Light brown to brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 10.3 feet bgs.				

Notes: See Site Map for test pit location.

Test Pit Log #: TP-18
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.515035
Longitude: -116.486296
Depth to Water Table: Not Encountered
Total Depth: 8.9 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.7	Lean Clay with Sand (CL): Brown, slightly moist, very stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			2.5	
1.7-8.9	Sandy Silt (ML): Light brown to brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 8.9 feet bgs.	GS	8.0-8.5		B

Notes: See Site Map for test pit location.
Infiltration testing conducted at a depth of 8.9 feet bgs.

Lab Test ID	Moisture (%)	LL	PI	Sieve Analysis (% Passing)				
				#4	#10	#40	#100	#200
B	24.1	NP	NP	86	83	81	80	69.6

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Appendix V GEOTECHNICAL GENERAL NOTES

Unified Soil Classification System			
Major Divisions		**Symbol**	**Soil Descriptions**
Coarse-Grained Soils < 50% passes No.200 sieve	Gravel & Gravelly Soils < 50% coarse	GW	Well-graded gravels; gravel/sand mixtures with little or no fines
		GP	Poorly-graded gravels; gravel/sand mixtures with little or no fines
		GM	Silty gravels; poorly-graded gravel/sand/silt mixtures
		GC	Clayey gravels; poorly-graded gravel/sand/clay mixtures
	Sand & Sandy Soils > 50% coarse fraction	SW	Well-graded sands; gravelly sands with little or no fines
		SP	Poorly-graded sands; gravelly sands with little or no fines
		SM	Silty sands; poorly-graded sand/gravel/silt mixtures
		SC	Clayey sands; poorly-graded sand/gravel/clay mixtures
Fine-Grained Soils > 50% passes No.200 sieve	Silts & Clays LL < 50	ML	Inorganic silts; sandy, gravelly or clayey silts
		CL	Lean clays; inorganic, gravelly, sandy, or silty, low to medium-plasticity clays
		OL	Organic, low-plasticity clays and silts
	Silts & Clays LL > 50	MH	Inorganic, elastic silts; sandy, gravelly or clayey elastic silts
		CH	Fat clays; high-plasticity, inorganic clays
		OH	Organic, medium to high-plasticity clays and silts
Highly Organic Soils		PT	Peat, humus, hydric soils with high organic content

Relative Density and Consistency Classification	
Coarse-Grained Soils	**SPT Blow Counts (N)**
Very Loose:	< 4
Loose:	4-10
Medium Dense:	10-30
Dense:	30-50
Very Dense:	> 50
Fine-Grained Soils	**SPT Blow Counts (N)**
Very Soft:	< 2
Soft:	2-4
Medium Stiff:	4-8
Stiff:	8-15
Very Stiff:	15-30
Hard:	> 30

Moisture Content and Cementation Classification	
Description	**Field Test**
Dry	Absence of moisture, dry to touch
Slightly Moist	Damp, but no visible moisture
Moist	Visible moisture
Wet	Visible free water
Saturated	Soil is usually below water table
Description	**Field Test**
Weak	Crumbles or breaks with handling or slight finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

Particle Size	
Boulders:	> 12 in.
Cobbles:	12 to 3 in.
Gravel:	3 in. to 5 mm
Coarse-Grained Sand:	5 to 0.6 mm
Medium-Grained Sand:	0.6 to 0.2 mm
Fine-Grained Sand:	0.2 to 0.075 mm
Silts:	0.075 to 0.005 mm
Clays:	< 0.005 mm

Acronym List	
GS	grab sample
LL	Liquid Limit
M	moisture content
NP	non-plastic
PI	Plasticity Index
Q_p	penetrometer value, unconfined compressive strength, tsf
V	vane value, ultimate shearing strength, tsf

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Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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LEVEL 1 NUTRIENT PATHOGEN STUDY

HAVEN CREEK SUBDIVISION

9814 Robinson Road
Kuna, ID

PREPARED FOR:

Mr. Tanner Verhoeks
Haven Idaho
521 North 10th Avenue #4
Caldwell, ID 83605

PREPARED BY:

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

January 14, 2022
B212203g

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

January 14, 2022

Atlas No. B212203g

Mr. Tanner Verhoeks
Haven Idaho
521 North 10th Avenue #4
Caldwell, ID 83605

Subject: Level 1 Nutrient Pathogen Study
Haven Creek Subdivision
9814 Robinson Road
Kuna, ID

Dear Mr. Verhoeks:

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,



Bryar Jensen, EI
Staff Engineer

Monica Saculles, PE
Senior Geotechnical Engineer

Distribution: Fritz Durham, Idaho Department of Environmental Quality (PDF Copy); Stephen Fitzner, Southwest District Health (PDF Copy).

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1. INTRODUCTION

This report presents results of a Level 1 Nutrient Pathogen (NP) Study conducted for the proposed Haven Creek Subdivision in Kuna, 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. Tanner Verhoeks of Haven Idaho to Monica Saculles of Atlas Technical Consultants (Atlas), on 20 December 2021. Said authorization is subject to terms, conditions, and limitations described in the Professional Services Contract entered into between Haven Idaho 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.

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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 Haven Idaho, 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 southwest of the City of Nampa, Canyon County, ID, and occupies a portion of the NW¼ of Section 17, Township 2 North, Range 1 West, Boise Meridian. The site address is 9814 North Robinson Road in Kuna, Idaho.

Currently, the proposed development consists of 43.86 acres of agricultural land with a residence located in the western portion of the parcel. A general westerly slope is present across the site. The project site is bordered on the west by Robinson Road, and surrounded on all sides by existing rural residential/agricultural properties. The proposed development will consist of 26 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**.

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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 "Basalt Flows of Indian Creek, Undivided" as mapped by Othberg and Stanford (1993). This volcanic deposit is composed of multiple flows of medium to dark gray olivine basalt. These flows erupted from numerous vents found south of the Boise River and north of the Snake River, southeast of the City of Boise, Idaho. At the time of eruption lavas flowed into and down ancestral Indian Creek and Boise River valleys. Northwest-trending, gently sloping escarpments suggest faulting of the basalt. These basalts are mantled with loess 2-12 feet thick that contains about 35% pedogenic clay and a duripan that can be 3 feet thick. 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 clays that are underlain by basalt.

The well logs also showed static groundwater levels generally ranging from around 14 to 68 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 30 to 83 feet below ground surface. In some limited instances, first encountered water wasn't noted until depths of up to 106 feet. The water depths appear to vary with location and topography.

Prior to preparing this Nutrient Pathogen Study, Atlas conducted a subsurface geotechnical investigation for the property. Based on review of the Geotechnical Engineering Report (B213035g), onsite soils primarily consisted of sandy lean clay soils that were underlain in most areas by sandy silt soils. Hardpan cementation was present through portions of the sandy silt soils. Basalt rock was noted at depth in most of the test pits. This soils/rock profile is similar to profiles found on nearby driller's well logs that are included later in this report. In general, these driller's well logs showed topsoil near the surface, hardpan, and sand-clay mixtures. At greater depths, varying layers of sand, clay, basalt and gravels were noted. Copies of the test pit logs and a map showing the test pit locations can be found in **Appendix III**.

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Groundwater was not encountered within test pits advanced to a maximum depth of 13.8 feet below ground surface (bgs). Review of the Idaho Department of Water Resources (IDWR) monitoring well data within approximately ¼-mile of the project site, groundwater was measured at depths ranging between 38 and 62 feet bgs. Furthermore, the driller's well logs generally show static groundwater depths ranging from 14 to 68 feet bgs. These static water depths appear to vary with location and topography. Since elevations on the site vary roughly 20 feet from the low points to the high points, seasonal high groundwater levels are anticipated to vary significantly.

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 the Potratz-Power silt loams, Power-Potratz complex silt loams, and Power-Purdam 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 IV** of this report:

- **Potratz-Power silt loam** – Potratz-Power silt loam soils occur on lava plains. These soils are classified as well drained and the most limiting soil layer has a moderately high to high capacity to transmit water. Typical soil profiles for the Potratz-Power silt loam include silt loam at the surface, followed by loam underlain by bedrock.
- **Power-Potratz silt loam** – Power-Potratz soils occur on terraces. These soils are classified as well drained and the most limiting soil layer has a moderately high to high capacity to transmit water. Typical soil profiles of Power-Potratz silt loam include silt loam at the surface, followed by loam underlain by bedrock.
- **Power-Purdam silt loam** – Power-Purdam soils occur on stream terraces. These soils are classified as well drained and the most limiting soil layer has a very low to moderately high capacity to transmit water. Typical soil profiles of Power-Purdam silt loam include silt loam or silty clay loam at the surface, followed by cemented material underlain by stratified very gravelly sand to loam.

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

Atlas has filed a request for information with IDEQ to view nutrient pathogen studies completed near the referenced site. Atlas has reviewed the following documents:

- Level 1 Nutrient Pathogen Study, Hardrock Ridge Subdivision, southwest of Lewis Lane and Happy Valley Road, Canyon County, Idaho, prepared by Skinner Land Surveying and dated September 11, 2006
- Level 1 Nutrient Pathogen Study Addendum 1, Butterfield Subdivision, NWC of Columbia Road and Ridgewood Road, Canyon County, Idaho, prepared by Skinner Land Surveying and dated July 25, 2006

Information gathered from review of these documents is referenced within the **Hydraulic Conductivity** section of this report.

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

3.1 Water Budget 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 an 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 53 Well Driller's Reports on file for this area were copied and are included in **Appendix V** of this report, along with a map showing approximate well locations. Although numerous well logs are available for the site vicinity, only 14 wells provided complete pump test data. A spreadsheet showing tabulated data from the well logs can be found in **Appendix V**.

Of the wells with complete pump test data, several listed a drawdown that was higher than possible, and were excluded from analysis. Other wells had drawdown values that were either listed as "zero" or "none" and were not used in the analysis. Lastly, a bailer was used for the test of well 46, so the well was likewise eliminated from analysis. Atlas was left with 3 usable well logs that were used for hydraulic conductivity analysis.

Discharge rates listed on the well logs ranged from 15 to 150 gallons per minute. Drawdown data generally ranged from 1 to 80 feet, though some well logs reported drawdown as high as 135 feet. Aquifer sediments commonly included fractured basalt, with some sand and gravel sediments.

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)

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Using the previously stated equations with the stated input data, Atlas obtained calculated hydraulic conductivity values that ranged from 21 to 369 feet/day. Atlas calculated the average hydraulic conductivity value as 141 feet/day. Additionally, based on two previous NP Studies that have been conducted within the vicinity of the project site, hydraulic conductivity values ranging from 75 to 87 feet per day were used and approved during the IDEQ/SWDH review process. For the mass-balance spreadsheets, Atlas used a hydraulic conductivity of 81 feet/day, which is the average of values used and approved in previous NP studies, and lower than the calculated well log average.

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 15,000 linear feet. This drop in groundwater elevation yields a hydraulic gradient of 0.0033 feet/feet. A northwestern groundwater flow direction (roughly 315° Azimuth) was also determined based on this map. For this report, Atlas used a hydraulic gradient of 0.0033 feet/feet for the mass-balance spreadsheet. Atlas has presented a map of the IDEQ groundwater flow contours in **Appendix VI** 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 is 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 northwest groundwater flow direction (approximately 315° 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 191.73 to 348.20 feet are the aquifer widths that are perpendicular to the northwesterly flow direction. A site map with the perpendicular widths identified is located in **Appendix VII** of the report.

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

The Client described the project as 43.86 acres with 26 proposed lots that are approximately 1.03 to 2.16 acres in size. For the mass-balance spreadsheets, Atlas analyzed two of the smallest lots and estimated that less than ten 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 -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 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 VIII**.

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 3 wells in the project site vicinity. Additional monitoring wells were present within the site vicinity, though they were either set in deep aquifers or had not been sampled within the past several years. Atlas averaged the nitrate value obtained from two of the wells with the most recent monitoring date. These wells had nitrate concentrations of 5.27 and 5.5 mg/L, which resulted in an average concentration of 5.4 mg/L. Therefore, Atlas used a value of 5.4 mg/L as the background nitrate level for the mass-balance spreadsheets in this report. A spreadsheet showing tabulated data from these 3 well logs, as well as a map showing the well locations, can be found in **Appendix IX**.

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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 for the lots with the smallest aquifer width perpendicular to groundwater flow direction and smallest acreage are present in **Appendix X**. A summary of values used in the analysis are presented in **Table 1** and results of the analyses are presented in **Table 2**.

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

Water Budget	Value Used
Hydraulic Conductivity (ft/day)	81
Hydraulic Gradient	0.0033
Mixing Zone Thickness (ft)	15
Percent of Parcel that is Impervious (%)	10
Septic Tank Effluent (gpd/home)	300*
Natural Recharge Rate (in/yr)	0.6
Nitrogen Budget	**Value Used**
Upgradient Groundwater Concentration (mg/L)	5.4
Denitrification Rate (decimal fraction)	0*
Nitrate in Natural Recharge (mg/L)	0.3*
Point of Compliance Nitrate Concentration Goal (mg/L)**	6.4

***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 lots with the smallest aquifer width perpendicular to groundwater flow direction and smallest acreage are outlined below. Mass-balance spreadsheets for standard and 40% nitrate reducing septic systems were prepared for these two lots.

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

Lot Number	Lot Area (acres)	Aquifer Width Perpendicular to Groundwater Flow Direction (feet)	Downgradient Nitrate Concentration (mg/L)		
			Standard Septic Systems	40% Nitrate Reducing Systems	65% Nitrate Reducing Systems
Lot 9	1.03	200.22	7.2*	6.4	N/A
Lot 23	1.60	191.73	7.3*	6.4	N/A

***Value exceeds the point of compliance nitrate concentration goal of 6.4 mg/L.**

5. CONCLUSIONS AND RECOMMENDATIONS

Mass-balance spreadsheets for down-gradient nitrate concentration have been prepared for the lots with the smallest aquifer width perpendicular to groundwater flow direction and smallest acreage. All spreadsheets are presented in the **Appendices** of this report. Considering the estimated input parameters, the results of the nitrogen mass-balance approach indicated that the down-gradient nitrate concentration using a 40 percent nitrate reducing system is 6.4 mg/L. **Thus for the entire site, the Point of Compliance Nitrate Concentration value of 6.4 mg/L was not exceeded when analyzing for the 40 percent nitrate reducing septic systems.**

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Note that SWDH and IDEQ 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.

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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	Site Map with Test Pit Locations and Subsurface Investigation Test Pit Logs
Appendix IV	Soil Survey Information
Appendix V	Site Location with Vicinity Wells Map and IDWR Driller's Well Logs
Appendix VI	IDEQ Groundwater Contour Map
Appendix VII	Site Plan with Aquifer Width Map for Individual Lots
Appendix VIII	Historic Precipitation/Climate Data for Project Location
Appendix IX	Site Location with Vicinity Monitoring Wells Map and Monitored Well Data
Appendix X	Nitrate Mass-Balance Spreadsheets for Individual Lots

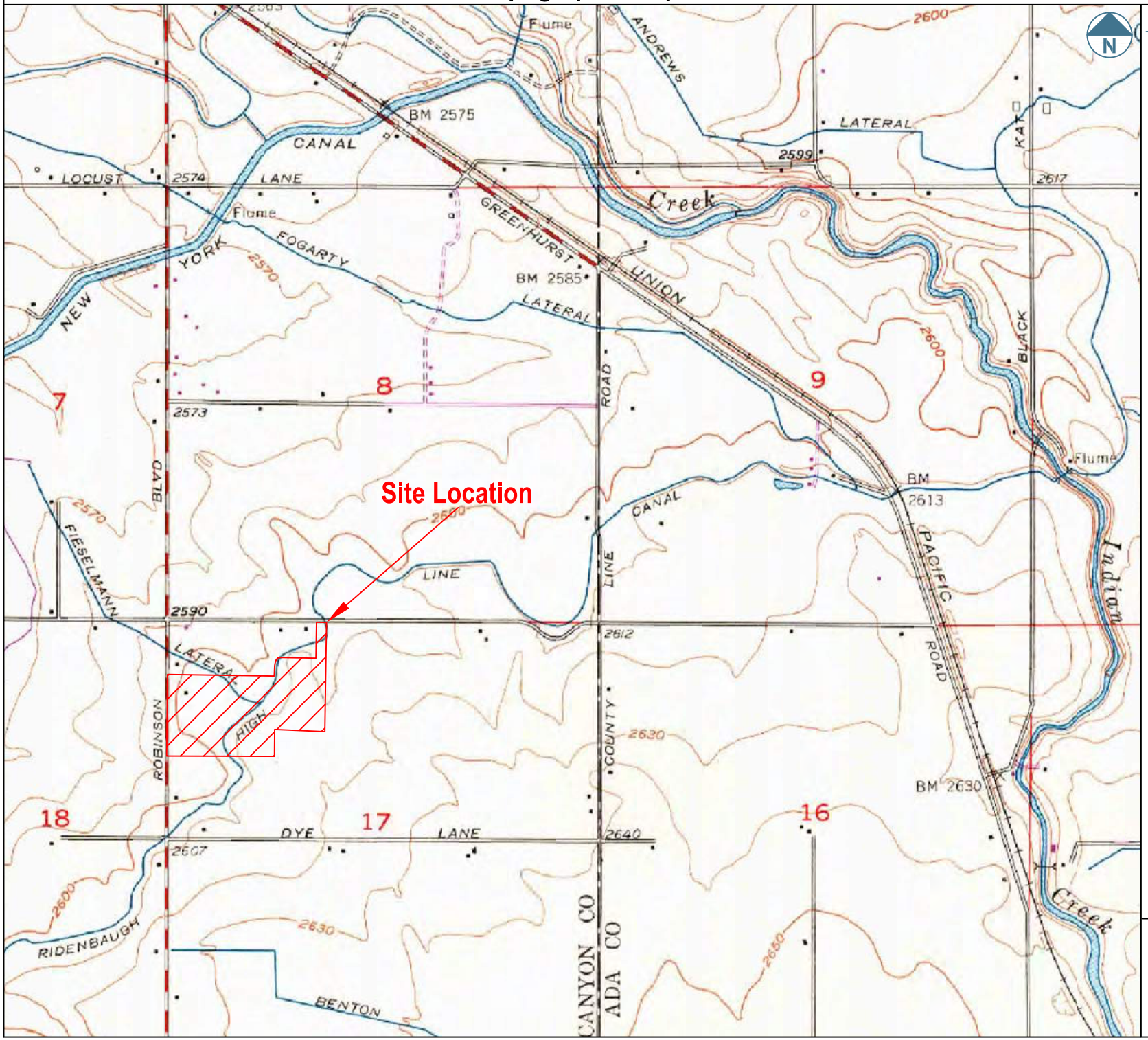
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Appendix I TOPOGRAPHIC MAP AND GENERAL SITE MAP

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Topographic Map

Figure 1



MAP NOTES:

- Meridian, Idaho
  43116-E2-TF-024
  1953, Photorevised 1971
  10 Foot Contour Intervals
  T3N, R1W, & Section 32

LEGEND

Approximate Site Location

SCALE
0 0.25 0.5
(Mile)

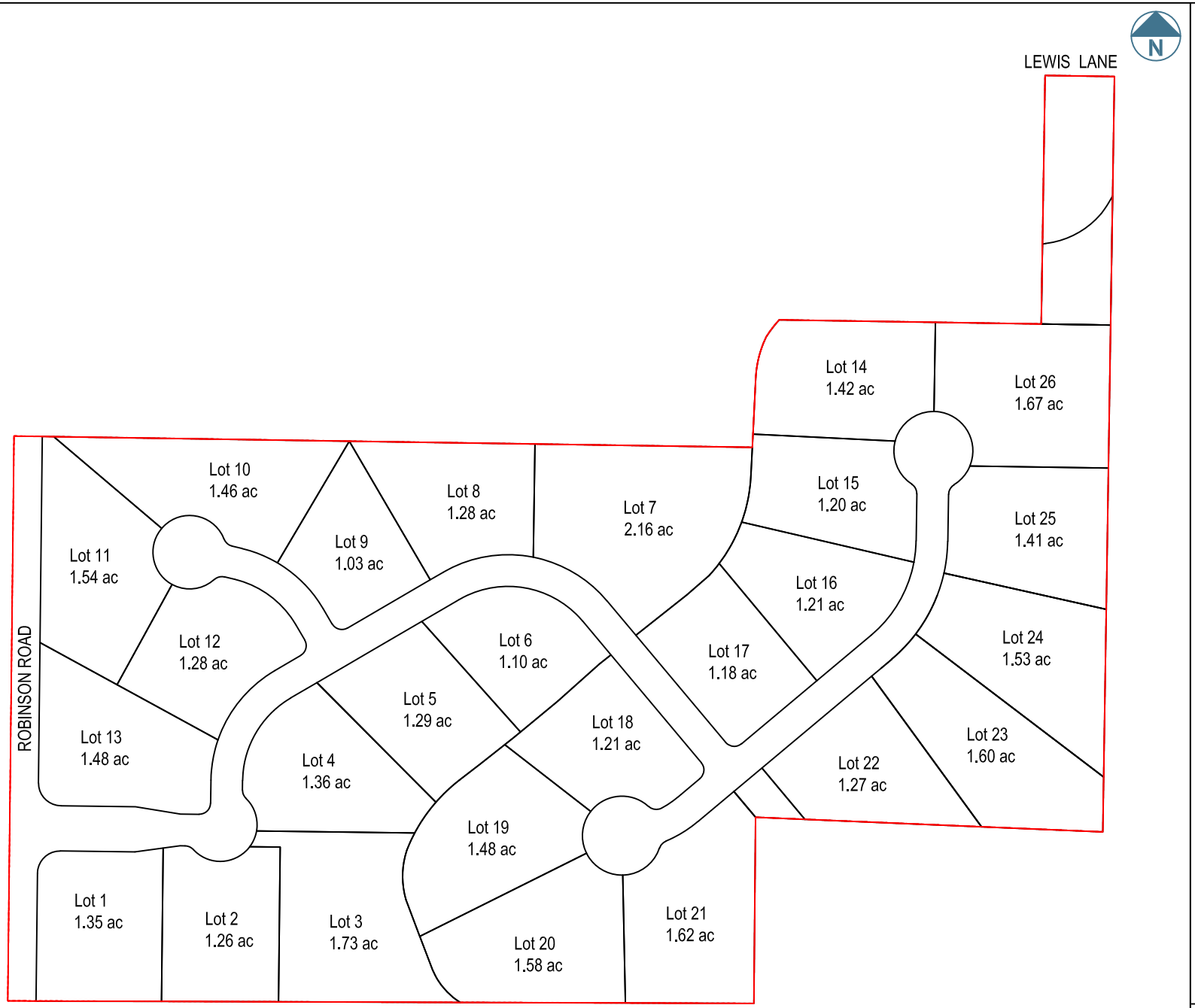
Haven Creek
9814 Robinson Road
Kuna, ID

Modified by: CBJ
January 14, 2022
Drawing: B212203g

ATLAS
2791 S. Victory View Way
Boise, ID 83709

Site Map

Figure 2



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

SCALE

0 175 350

(Feet)

Haven Creek

9814 Robinson Road
Kuna, ID

Modified by: CBJ
January 14, 2022
Drawing: B212203g

ATLAS

2791 S. Victory View Way
Boise, ID 83709

Appendix II GEOLOGIC MAP WITH APPROXIMATE PROJECT SITE LOCATION

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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 Tenmile 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.

Qfrg 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 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.

Tf 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.

Qmb 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.

Qfb 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.

Qib 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.

Qudb 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

Tpb 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).

Tbt 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.

Tba 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.

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

Th 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

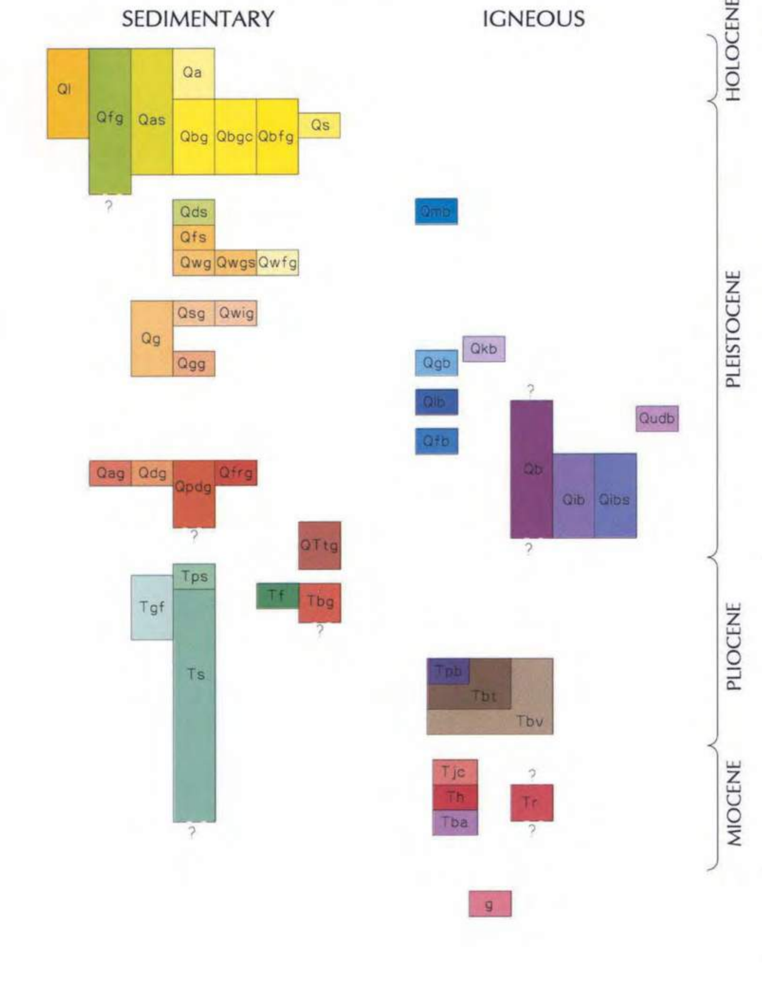
Magnetic Polarities, K/Ar Ages, and $^{40}Ar/^{39}Ar$ Ages of Basalts

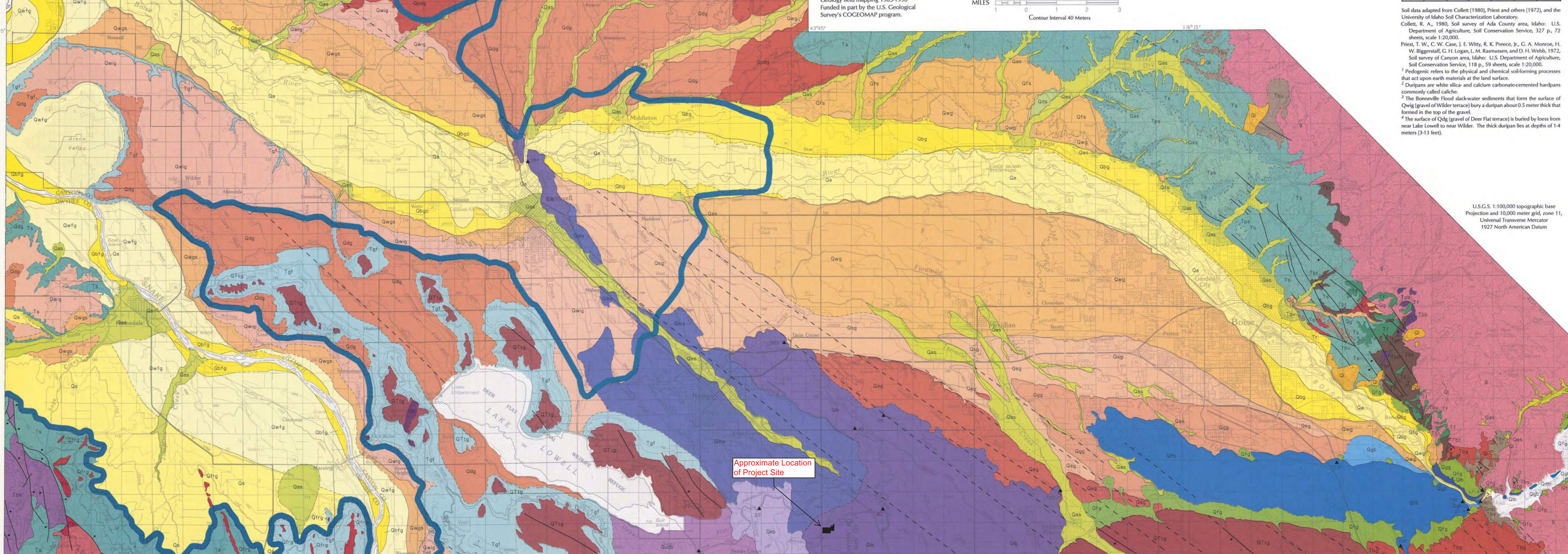
Rock Unit	Field Number	Polarity	Latitude	Longitude	Age (Ma) [1] potassium-argon [2] argon-argon
Basalt of Mores Creek	MC-1	N	43°31.52′	116°3.76′	0.107 0.012 [1]
Basalt of Gowen terrace	GT-4	N	43°31.33′	116°4.24′	0.572 0.210 [1]
Basalt of Kuna Butte (South Side)	SS	N	43°31.51′	116°32.03′	0.387 0.031 [2]
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 [1]
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	N?	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°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





SCALE 1:100,000

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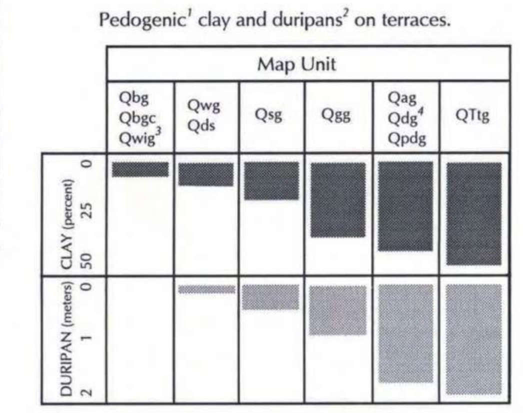
MILES 1 0 1 2 3

Contour Interval 40 Meters

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

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

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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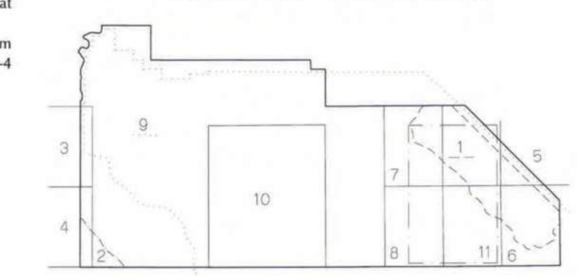
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Cartography by Loudon R. Stanford on a computer-aided cartographic system at the Idaho Geological Survey
Typography by Ann G. Killen
Map reviewed by Roy M. Breckenridge, Willis L. Burnham, and Monte D. Wilson
Digital four-color separations by Optronics Specialty, Inc., Chatsworth, California
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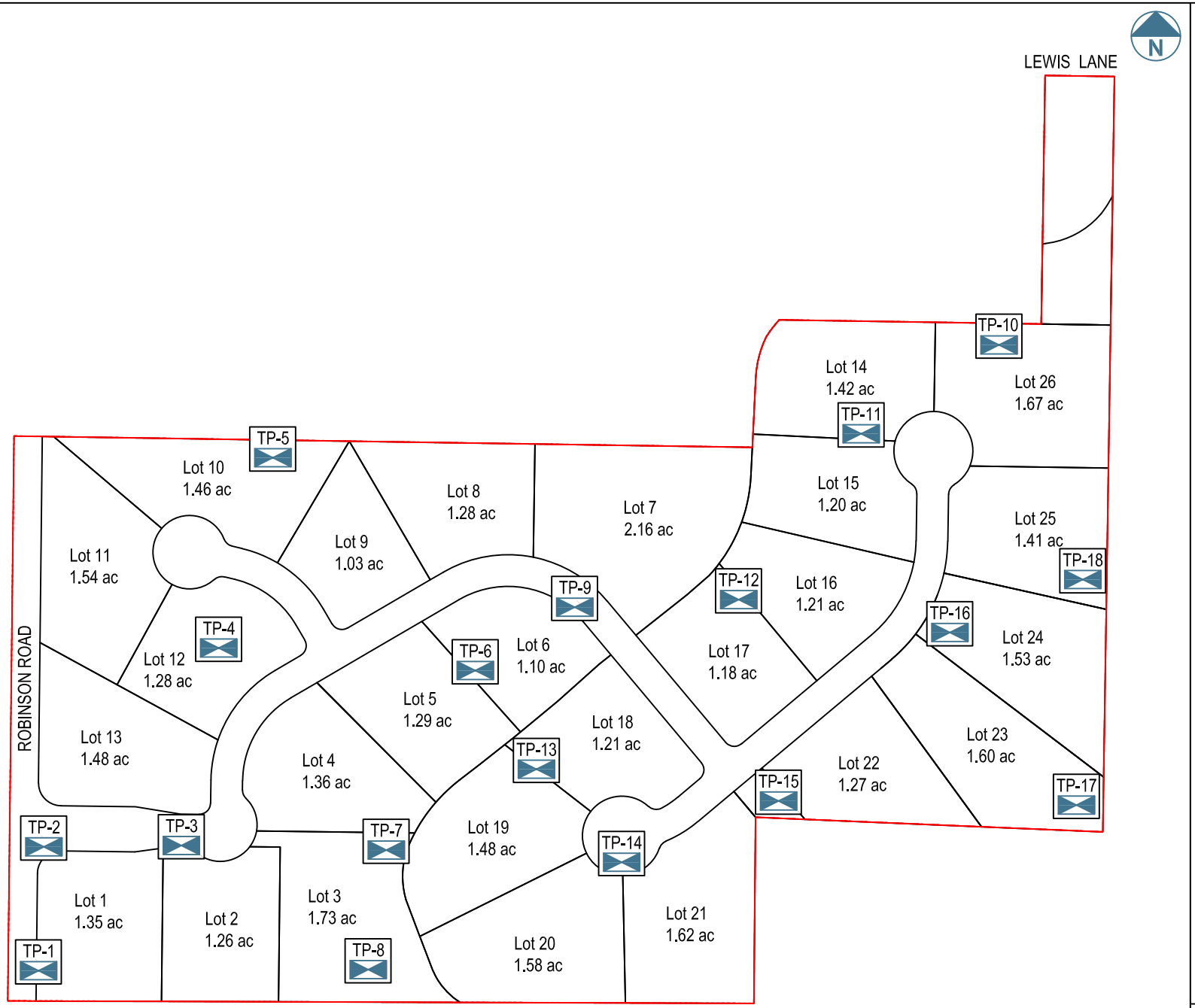
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Appendix III SITE MAP WITH TEST PIT LOCATIONS AND SUBSURFACE INVESTIGATION TEST PIT LOGS

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Site Map with Test Pit Locations

Figure 3



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Approximate Atlas Test Pit Location

SCALE

0 175 350

(Feet)

Haven Creek
9814 Robinson Road
Kuna, ID

Modified by: CBJ
January 14, 2022
Drawing: B212203g

ATLAS
2791 S. Victory View Way
Boise, ID 83709

GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-1
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.513370
Longitude: -116.493220
Depth to Water Table: Not Encountered
Total Depth: 6.1 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.4	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.4-6.1	Sandy Silt (ML): Brown, slightly moist, stiff to very stiff, with fine to medium-grained sand. --Refusal on basalt rock at a depth of 6.1 feet bgs.				

Notes: See Site Map for test pit location.
Infiltration testing conducted at a depth of 6.1 feet bgs.

Test Pit Log #: TP-2
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.513919
Longitude: -116.493232
Depth to Water Table: Not Encountered
Total Depth: 9.2 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.6	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.6-9.2	Sandy Silt (ML): Brown, slightly moist, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 3.5 to 9.2 feet bgs. --Refusal on basalt rock at a depth of 9.2 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-3
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514004
Longitude: -116.492150
Depth to Water Table: Not Encountered
Total Depth: 8.4 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.3	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.3-8.4	Sandy Silt (ML): Brown, slightly moist, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 2.8 to 8.4 feet bgs. --Refusal on basalt rock at a depth of 8.4 feet bgs.				

Notes: See Site Map for test pit location.

Test Pit Log #: TP-4
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514769
Longitude: -116.492048
Depth to Water Table: Not Encountered
Total Depth: 4.5 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.2	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.2-4.5	Sandy Silt (ML): Brown, slightly moist, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 4.5 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-5
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.515734
Longitude: -116.491675
Depth to Water Table: Not Encountered
Total Depth: 5.1 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.4	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.4-5.1	Sandy Silt (ML): Brown, dry, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 2.9 to 5.1 feet bgs. --Refusal on basalt rock at a depth of 5.1 feet bgs.				

Notes: See Site Map for test pit location.
Infiltration testing conducted at a depth of 5.1 feet bgs.

Test Pit Log #: TP-6
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514699
Longitude: -116.490435
Depth to Water Table: Not Encountered
Total Depth: 9.2 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.2	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.2-9.2	Sandy Silt (ML): Brown, dry, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 3.3 to 9.2 feet bgs. --Refusal on basalt rock at a depth of 9.2 feet bgs.				

Notes: See Site Map for test pit location.
Infiltration testing conducted at a depth of 9.2 feet bgs.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-7
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514023
Longitude: -116.490859
Depth to Water Table: Not Encountered
Total Depth: 6.6 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.5	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.	GS	1.0-1.5	0.75	A
1.5-6.6	Sandy Silt (ML): Brown, dry, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 3.1 to 6.6 feet bgs. --Refusal on basalt rock at a depth of 6.6 feet bgs.				

Notes: See Site Map for test pit location.

Lab Test ID	Moisture (%)	LL	PI	Sieve Analysis (% Passing)				
				#4	#10	#40	#100	#200
A	16.3	31	9	99	98	95	90	77.9

Test Pit Log #: TP-8
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.513284
Longitude: -116.491078
Depth to Water Table: Not Encountered
Total Depth: 8.9 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.4	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.4-8.9	Sandy Silt (ML): Brown, dry, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 2.8 to 8.9 feet bgs. --Refusal on basalt rock at a depth of 8.6 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-9
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.515059
Longitude: -116.489707
Depth to Water Table: Not Encountered
Total Depth: 11.6 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.6	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material to a depth of 1 foot bgs.			0.75	
1.6-10.0	Sandy Silt (ML): Brown, dry, very stiff, with fine to coarse-grained sand. --Moderate calcium carbonate cementation from 6.9 to 10.0 feet bgs.				
10.0-11.6	Sandy Lean Clay (CL): Brown, dry, hard, with fine to medium-grained sand. --Refusal on indurated clay at a depth of 11.6 feet bgs.				

Notes: See Site Map for test pit location.
Piezometer installed to a depth of 11.6 feet bgs.

Test Pit Log #: TP-10
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.516354
Longitude: -116.487011
Depth to Water Table: Not Encountered
Total Depth: 8.1 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.4	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.4-8.1	Sandy Silt (ML): Light brown, dry, very stiff to hard, with fine to coarse-grained sand. --Moderate calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 8.1 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-11
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.515509
Longitude: -116.487674
Depth to Water Table: Not Encountered
Total Depth: 10.4 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.8	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.	Bulk	1.0-1.5	0.75	R-value
1.8-10.4	Sandy Silt (ML): Brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 10.4 feet bgs.				

Notes: See Site Map for test pit location.

Test Pit Log #: TP-12
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.515085
Longitude: -116.488617
Depth to Water Table: Not Encountered
Total Depth: 10.4 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.3	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.3-10.4	Sandy Silt (ML): Light brown, dry to slightly moist, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 2.5 to 10.4 feet bgs. --Refusal on basalt rock at a depth of 10.4 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-13
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514232
Longitude: -116.489891
Depth to Water Table: Not Encountered
Total Depth: 13.8 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.3	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.3-11.5	Sandy Silt (ML): Light brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 5.7 to 11.5 feet bgs.				
11.5-13.8	Lean Clay with Sand (CL): Brown, slightly moist, hard, with fine to medium-grained sand. --Refusal on indurated clay at a depth of 13.8 feet bgs.				

Notes: See Site Map for test pit location.

Test Pit Log #: TP-14
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.513946
Longitude: -116.489470
Depth to Water Table: Not Encountered
Total Depth: 9.6 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.9	Lean Clay with Sand (CL): Brown, slightly moist, medium stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			0.75	
1.9-9.6	Sandy Silt (ML): Light brown, dry, stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 4.4 to 9.6 feet bgs. --Refusal on basalt rock at a depth of 9.6 feet bgs.				

Notes: See Site Map for test pit location.
Infiltration testing conducted at a depth of 9.6 feet bgs.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-15
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514030
Longitude: -116.488480
Depth to Water Table: Not Encountered
Total Depth: 10.3 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-2.4	Lean Clay with Sand (CL): Brown, slightly moist, very stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			2.25	
2.4-10.3	Sandy Silt (ML): Light brown to brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation from 4.6 to 10.3 feet bgs. --Refusal on basalt rock at a depth of 10.3 feet bgs.				

Notes: See Site Map for test pit location.

Test Pit Log #: TP-16
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514700
Longitude: -116.487201
Depth to Water Table: Not Encountered
Total Depth: 4.9 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.1	Lean Clay with Sand (CL): Brown, slightly moist, very stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			3.5	
1.1-4.9	Sandy Silt (ML): Brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 4.9 feet bgs.				

Notes: See Site Map for test pit location.

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GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-17
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.514012
Longitude: -116.486229
Depth to Water Table: Not Encountered
Total Depth: 10.3 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.9	Lean Clay with Sand (CL): Brown, slightly moist, very stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			3.5	
1.9-10.3	Sandy Silt (ML): Light brown to brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 10.3 feet bgs.				

Notes: See Site Map for test pit location.

Test Pit Log #: TP-18
Date Advanced: November 8, 2021
Excavated by: Turn of the Century Homes
Logged by: Bryar Jensen, EI

Latitude: 43.515035
Longitude: -116.486296
Depth to Water Table: Not Encountered
Total Depth: 8.9 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.7	Lean Clay with Sand (CL): Brown, slightly moist, very stiff, with fine to medium-grained sand. --Organic material and plow zones to a depth of 1 foot bgs.			2.5	
1.7-8.9	Sandy Silt (ML): Light brown to brown, dry, very stiff to hard, with fine to coarse-grained sand. --Weak calcium carbonate cementation throughout. --Refusal on basalt rock at a depth of 8.9 feet bgs.	GS	8.0-8.5		B

Notes: See Site Map for test pit location.
Infiltration testing conducted at a depth of 8.9 feet bgs.

Lab Test ID	Moisture (%)	LL	PI	Sieve Analysis (% Passing)				
				#4	#10	#40	#100	#200
B	24.1	NP	NP	86	83	81	80	69.6

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GEOTECHNICAL GENERAL NOTES

Unified Soil Classification System			
Major Divisions		**Symbol**	**Soil Descriptions**
Coarse-Grained Soils < 50% passes No.200 sieve	Gravel & Gravelly Soils < 50% coarse	GW	Well-graded gravels; gravel/sand mixtures with little or no fines
		GP	Poorly-graded gravels; gravel/sand mixtures with little or no fines
		GM	Silty gravels; poorly-graded gravel/sand/silt mixtures
		GC	Clayey gravels; poorly-graded gravel/sand/clay mixtures
	Sand & Sandy Soils > 50% coarse fraction	SW	Well-graded sands; gravelly sands with little or no fines
		SP	Poorly-graded sands; gravelly sands with little or no fines
		SM	Silty sands; poorly-graded sand/gravel/silt mixtures
		SC	Clayey sands; poorly-graded sand/gravel/clay mixtures
Fine-Grained Soils > 50% passes No.200 sieve	Silts & Clays LL < 50	ML	Inorganic silts; sandy, gravelly or clayey silts
		CL	Lean clays; inorganic, gravelly, sandy, or silty, low to medium-plasticity clays
		OL	Organic, low-plasticity clays and silts
	Silts & Clays LL > 50	MH	Inorganic, elastic silts; sandy, gravelly or clayey elastic silts
		CH	Fat clays; high-plasticity, inorganic clays
		OH	Organic, medium to high-plasticity clays and silts
Highly Organic Soils		PT	Peat, humus, hydric soils with high organic content

Relative Density and Consistency Classification	
Coarse-Grained Soils	**SPT Blow Counts (N)**
Very Loose:	< 4
Loose:	4-10
Medium Dense:	10-30
Dense:	30-50
Very Dense:	> 50
Fine-Grained Soils	**SPT Blow Counts (N)**
Very Soft:	< 2
Soft:	2-4
Medium Stiff:	4-8
Stiff:	8-15
Very Stiff:	15-30
Hard:	> 30

Moisture Content and Cementation Classification	
Description	**Field Test**
Dry	Absence of moisture, dry to touch
Slightly Moist	Damp, but no visible moisture
Moist	Visible moisture
Wet	Visible free water
Saturated	Soil is usually below water table
Description	**Field Test**
Weak	Crumbles or breaks with handling or slight finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

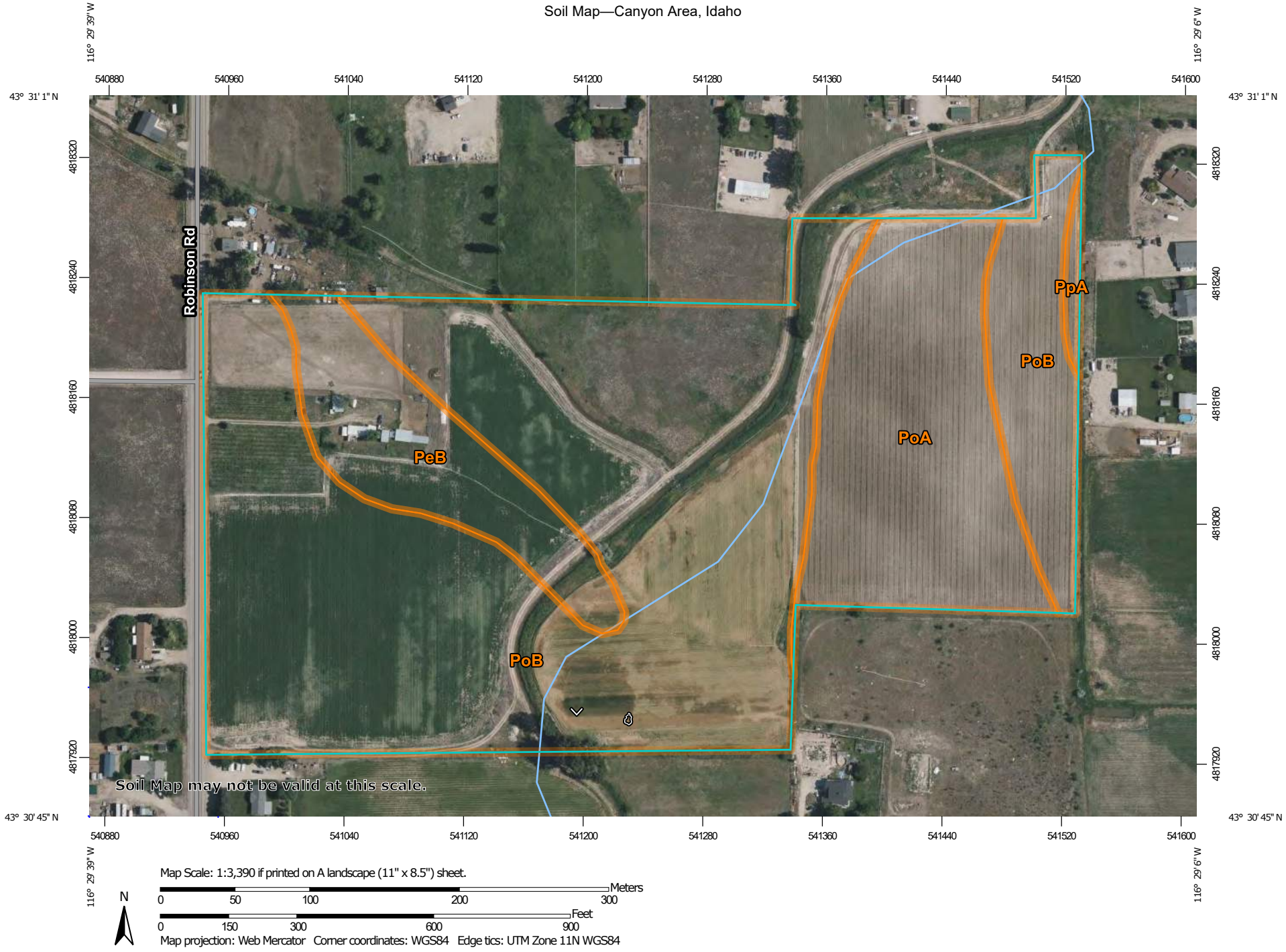
Particle Size	
Boulders:	> 12 in.
Cobbles:	12 to 3 in.
Gravel:	3 in. to 5 mm
Coarse-Grained Sand:	5 to 0.6 mm
Medium-Grained Sand:	0.6 to 0.2 mm
Fine-Grained Sand:	0.2 to 0.075 mm
Silts:	0.075 to 0.005 mm
Clays:	< 0.005 mm

Acronym List	
GS	grab sample
LL	Liquid Limit
M	moisture content
NP	non-plastic
PI	Plasticity Index
Q_p	penetrometer value, unconfined compressive strength, tsf
V	vane value, ultimate shearing strength, tsf

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Appendix IV SOIL SURVEY INFORMATION

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Map Scale: 1:3,390 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

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
PeB	Potratz-Power silt loams, 1 to 3 percent slopes	4.2	10.0%
PoA	Power-Potratz silt loams, 0 to 1 percent slopes	7.9	18.7%
PoB	Power-Potratz silt loams, 1 to 3 percent slopes	29.8	70.7%
PpA	Power-Purdam silt loams, 0 to 1 percent slopes	0.3	0.6%
Totals for Area of Interest		**42.2**	**100.0%**

Canyon Area, Idaho

PeB—Potratz-Power silt loams, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2q3d
Elevation: 2,000 to 4,600 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 170 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Potratz and similar soils: 70 percent
Power and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Potratz

Setting

Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over bedrock derived from basalt

Typical profile

A - 0 to 3 inches: silt loam
Bw - 3 to 10 inches: silt loam
Bk - 10 to 24 inches: loam
R - 24 to 34 inches: bedrock

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 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 supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

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

Description of Power

Setting

Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or loess

Typical profile

Ap - 0 to 9 inches: silt loam
Btk - 9 to 17 inches: silt loam
Bk - 17 to 60 inches: silt loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 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 supply, 0 to 60 inches: High (about 10.6 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

Canyon Area, Idaho

PoA—Power-Potratz silt loams, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2q3m
Elevation: 2,000 to 4,600 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 170 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Power and similar soils: 70 percent
Potratz and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Power

Setting

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

Typical profile

Ap - 0 to 9 inches: silt loam
Btk - 9 to 17 inches: silt loam
Bk - 17 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 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 supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Potratz

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over bedrock derived from basalt

Typical profile

A - 0 to 3 inches: silt loam
Bw - 3 to 10 inches: silt loam
Bk - 10 to 24 inches: loam
R - 24 to 34 inches: bedrock

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 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 supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): 3s
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

Canyon Area, Idaho

PoB—Power-Potratz silt loams, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2q3n
Elevation: 2,000 to 4,600 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 170 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Power and similar soils: 70 percent
Potratz and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Power

Setting

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

Typical profile

Ap - 0 to 9 inches: silt loam
Btk - 9 to 17 inches: silt loam
Bk - 17 to 60 inches: silt loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 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 supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

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

Description of Potratz

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over bedrock derived from basalt

Typical profile

A - 0 to 3 inches: silt loam
Bw - 3 to 10 inches: silt loam
Bk - 10 to 24 inches: loam
R - 24 to 34 inches: bedrock

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 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 supply, 0 to 60 inches: Low (about 4.7 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

Canyon Area, Idaho

PpA—Power-Purdam silt loams, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2q3p
Elevation: 2,000 to 5,000 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 170 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Power and similar soils: 65 percent
Purdam and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Power

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or loess

Typical profile

Ap - 0 to 9 inches: silt loam
Btk - 9 to 17 inches: silt loam
Bk - 17 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 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 supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Purdam

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or lacustrine deposits and/or loess

Typical profile

Ap - 0 to 10 inches: silt loam
Btk - 10 to 13 inches: silty clay loam
Bk - 13 to 24 inches: silt loam
Bkqm - 24 to 38 inches: cemented material
2C - 38 to 60 inches: stratified very gravelly sand to loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

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

Data Source Information

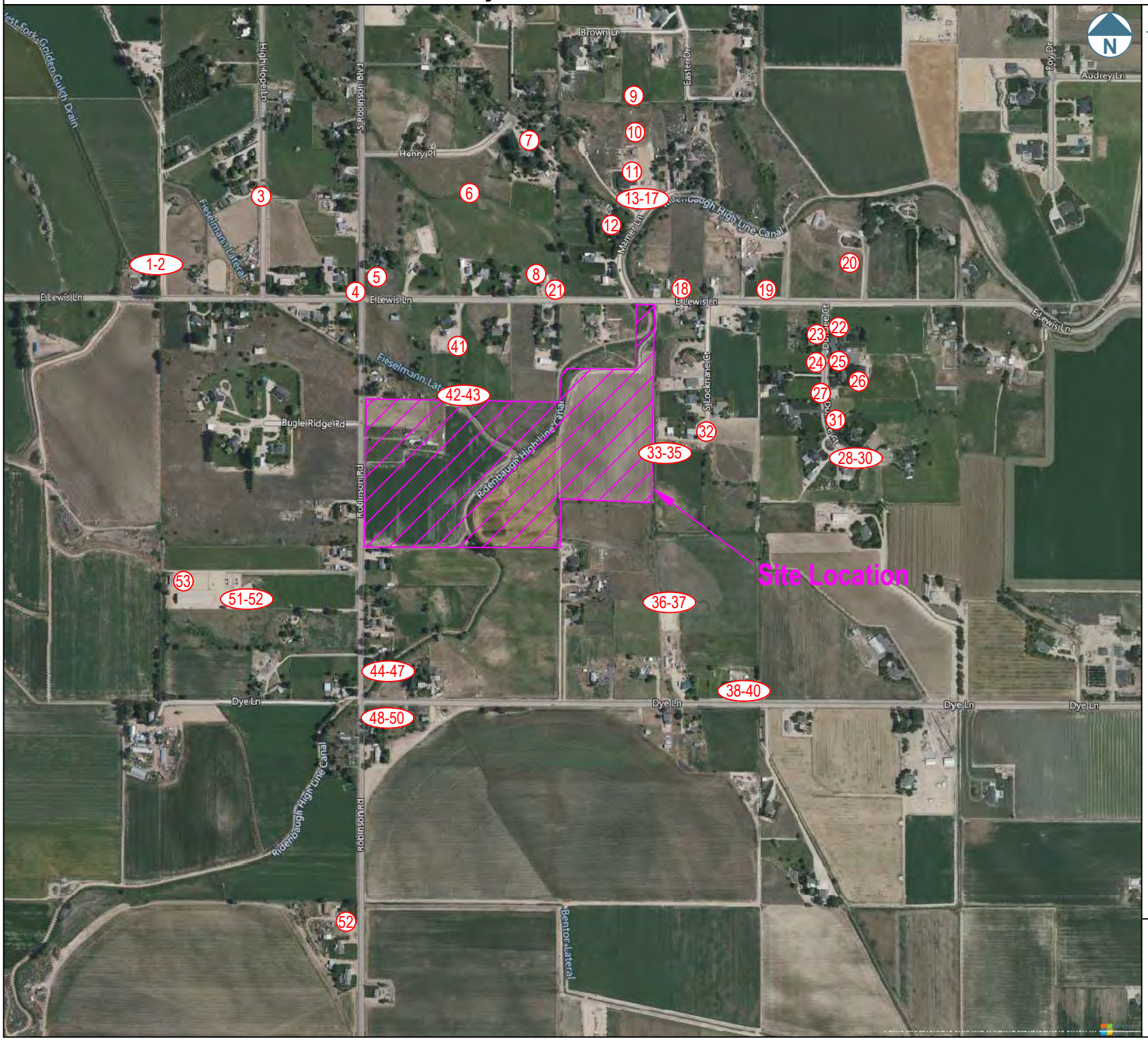
Soil Survey Area: Canyon Area, Idaho
Survey Area Data: Version 17, Jun 3, 2020

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

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Vicinity IDWR Well Locations

Figure 4



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Well Location (#)

SCALE

0 0.125 0.5

(Miles)

Haven Creek
9814 Robinson Road
Kuna, ID

Modified by: CBJ
January 14, 2022
Drawing: B212203g

ATLAS

Boise, ID 83709

Form 238-7
9/82

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.

USE TYPEWRITER OR BALLPOINT PEN

RECEIVED
JUN 29 1989
Department of Water Resources

1. WELL OWNER

Name Robert L. Vaughn
Address 1552 High Hope Lane
Owner's Permit No. 63-88-2-173

7. WATER LEVEL

Static water level 20 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:

2. NATURE OF WORK

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

8. WELL TEST DATA

☐ Pump ☐ Bailer ☑ Air ☐ Other

Discharge G.P.M.	Pumping Level	Hours Pumped
40	60 ft.	2

103525

3. PROPOSED USE

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

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
10"	0	2	Top Soil		✓
10"	2	16	Brown clay		✓
10"	16	19	Black lava Rock		✓
6"	19	20	" " " w/ cracks at bottom & water	✓	

RECEIVED
JUN 30 1989
Department of Water Resources
Western Regional Office

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	inches +	1 feet	20 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 19 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 Sanitary Well Seal

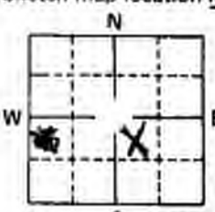
RECEIVED
JUN 21 1991

10.

Work started 6/8/88 finished 6/10/88

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name Robinson Ranchettes
Lot No. 6 Block No. 2
County Canyon
NW ¼ SE ¼ Sec. 7, T. 2 N/S, R. 1 E/W.

11. DRILLERS CERTIFICATION

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

Firm Name Can-Ada Well Drilling RL 1 Firm No. 304
Address Kuna, Id. 83634 Date Sept. 26, 1988
Signed by (Firm Official) Earl Skinner
and
(Operator) Earl Skinner

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

Form 238-7
9/82

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

USE TYPEWRITER OR BALLPOINT PEN

RECEIVED
JUL 18 1988

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 ~~362-5303~~

Name Robert Vaughn

Address Robinson + Lewis Lane Nampa, Id.

Owner's Permit No. 63-88-2-173

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
[illegible] inches	_____ inches +	_____ feet	_____ feet
.250 inches	6 inches	1 feet	18 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

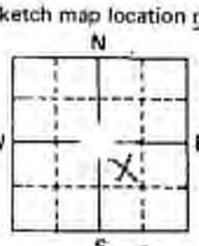
Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

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 ☐ 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 Sanitary Well Seal

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
NW ¼ SE ¼ Sec. 7, T. 2 N/S, R. 1 E/W.

7. WATER LEVEL

Department of Water Resources

Static water level 20 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 51 °F. Quality 17 grains
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
75	50	2

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
9	0	2	top soil		X
9	2	11	brown clay		X
9	11	18	black lava Rock		X
6	18	70	" " "	X	

Dep... Water...

DEPARTMENT OF WATER RESOURCES
JUL 22 1988
Department of Water Resources

10.

Work started 6/8/88 finished 6/9/88

11. DRILLERS CERTIFICATION

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

Firm Name Can-Ada Well Drilling Firm No. 304
Address Rt. 1 Box 1134 Kuna, Id. 83634 Date 6/9/88
Signed by (Firm Official) Earl Skinner
and
(Operator) Earl Skinner

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

USE TYPEWRITER OR BALLPOINT PEN

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

RECEIVED
APR 17 1978
Department of Water Resources

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 Pete Uberuaga

Address Route 6 Nampa, Ida.

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 92 feet

Casing schedule: ☑ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	0 feet	19 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

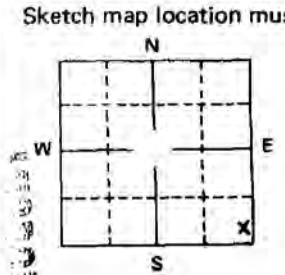
Surface seal depth 19 Material used in seal: ☐ Cement grout ☐ Puddling clay ☑ Well cuttings

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

6. LOCATION OF WELL

63

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County Canyon

SE ¼ SE ¼ Sec. 7, T. 2 N/S, R. 1 E/W

7. WATER LEVEL

Static water level 30 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.	Drawdown	Hours Pumped
30	0	1

9. LITHOLOGIC LOG 105861

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	1	Top soil		✓
"	1	5	hard pan		✓
"	5	30	black lava		✓
"	30	43	hard reddish lava	✓	
"	43	58	black lava	✓	
"	58	85	broken lava	✓	
"	85	92	Sandy clay	✓	

Dept. of Water Resources
Western Regional Office

10. Work started 2/20/78 finished 2/26/78

11. DRILLERS CERTIFICATION

Firm Name Johnston Drilling Firm No. 92

Address Oreana, Idaho Date 2/27/78

Signed by (Firm Official) Elmer D Johnston

and

(Operator) Ralph R Robinson

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

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

057613

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63-8-W-0735-000
Other IDWR No. _____

2. OWNER:
Name Larry Conger
Address 6125 E. Lewis
City Nampa State ID Zip 83686

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

N / W / E / S

Twp 2 North ☒ or South ☐
Rge 4 East ☐ or West ☒
Sec 7 ____ 1/4 SE (40 acres) 1/4 SE (160 acres) 1/4
Gov't Lot ____ County Canyon
Lat: : : Long: : :
Address of Well Site 6216 Lewis
City Nampa
(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
Bentlik	0	18	450	Pour

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	58	250	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:
90 ft. below ground Artesian pressure _____ lb.
Depth flow encountered 106 ft. Describe access port or control devices: CAP

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

Yield gal./min.	Drawdown	Pumping Level	Time
75	100	100	3 Hr.

Water Temp. 56 Bottom hole temp. 56
Water Quality test or comments: _____
Depth first Water Encountered 61

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		
	2	6	Red Sandy Clay		
	6	18	Lava		
6	18	104	" " Cracked	X	
	104	108	Red Clay		
	108		Sand & Gravel	X	

RECEIVED
NOV 0 1 1996
Department of Water Resources

RECEIVED
NOV 0 1 1996
Department of Water Resources

RECEIVED
OCT 22 1996
MICROFILMED WATER RESOURCES WESTERN REGION
DEC 0 6 1996

Completed Depth 108 (Measurable)
Date: Started 9-30-96 Completed 9-31-96

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

Firm Name Treasure Valley Drilling Firm No. 560
Firm Official [signature] Date 10-11-96
and
Supervisor or Operator [signature] Date 10-11-96
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
8/90

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.

USE TYPEWRITER OR BALLPOINT PEN

1. WELL OWNER
Name SHERVIK BUILDERS
Address 1404 MIDLAND BLVD NAMPA 83651
Drilling Permit No. 63-92-W-087
Water Right Permit No. _____

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

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

4. METHOD DRILLED
☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION
Casing schedule: ☐ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches +	1½ feet	37 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 37 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.

AUG 11 1992

N / W / E / S / X

Subdivision Name HENRY HEIGHTS
Lot No. 1 Block No. 1
County CANYON
SW ¼ SW ¼ Sec. 8, T. 2 N ☒ S ☐, R. 1 E ☐ W ☒

7. WATER LEVEL
Static water level 42' 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

9. LITHOLOGIC LOG 079478

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	4	TOPSOIL/HARD PAN		X
	4	16	SOLID LAVA		X
	16	22	LAVA W/CREVICES		X
6	22	43	SOLID LAVA		X
	43	83	LAVA W/ CREVICES	X	

JUN 22 1992
Department of Water Resources
Western Regional Office

10. Work started 2-28-92 finished 2-28-92

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

Firm Name DAVIS WELL & PUMP CO. Firm No. 101
Address 415 N. PITT LANE NAMPA, IDAHO 83687 Date 6-10-92
Signed by (Firm Official) Corene M Davis
and
(Operator) Chuck Davis by Cml.

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

Form 238-7
8/90

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

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

1. WELL OWNER

Name Shervik Builders
Address Robinson & Lewis Lane
204 10th Ave. S. Nampa, Idaho 83651
Drilling Permit No. 63-91-w-458
Water Right Permit No. _____

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches +	1½ feet	31 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

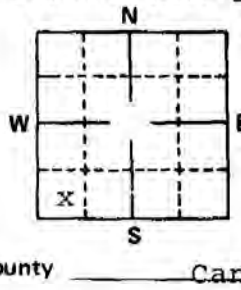
Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 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
SW ¼ SW ¼ Sec. 8, T. 2 N ☐ N ☐ S R. 1 W ☐ E ☐ W

7. WATER LEVEL

Static water level 31 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
	072251	

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	8	Top soil/hard pan		X
	8	10	Loose lava rock;hard pan		X
	10	20	Lava		X
	20	26	Lava crevices		X
	26	40	Solid lava		X
6	40	42	Lava crevices	X	
	42	65	Solid lava		X
	65	86	Lava crevices	X	
	86	88	Solid lava		X

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Department of Water Resources

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MAR 18 1992
Department of Water Resources
Western Regional Office
APR 08 1992

10.

Work started 12/18/91 finished 12/18/91

11. DRILLERS CERTIFICATION

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

Firm Name DAVIS WELL & PUMP CO. Firm No. 101
Address 415 N. PITT LANE NAMPA, IDAHO 83687 Date 1-10-91
Signed by (Firm Official) Carolyn Davis
and
(Operator) Chuck Davis

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

Form 238-7
4/92

C
KJ

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.

Location Corrected by IDWR To:
T02N R01W Sec. 8 NESWSW
By: mciscell 2012-05-04

1. WELL OWNER

Name William Knipe
Address 6603 Henry Pl. Nampa, ID
Drilling Permit No. 63-92-W-0790-000
Water Right Permit No. 63-W-660

2. NATURE OF WORK

☒ 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

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2 feet	28 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

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

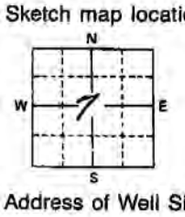
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 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 Top of Well

6. LOCATION OF WELL

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



Subdivision Name HENRY
Lot No. 5 Block No. 1
County CANYON
Address of Well Site 6603 HENRY PL. - NAMPA
(give at least name of road)
NE ¼ NE ¼ Sec. 7, T. 2 N ☒ or S ☐, R. 2 E ☐ or 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 _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
30		½

9. LITHOLOGIC LOG

70550

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8"	0	6	Top Soil		
"	6	28	Lava		
"	28	105	Lava		
"	105	-	Gravel & Sand	X	

RECEIVED
SEP 28 1992
Department of Water Resources
Western Regional Office

MICROFILMED
FEB 09 1994

10.

Work started 9/18/92 finished 9/18/92

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 Adamson Pump & Drilling Firm No. 457
Address Nampa, ID Date 9/21/92
Signed by Drilling Supervisor Dave Adamson
and
(Operator) John Post
(If different than the Drilling Supervisor)

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

Form 238-7
4/92

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 ALLAN CABA
Address 6600 E LEWIS LANE NAMPA
Drilling Permit No. 63-93-W-0699
Water Right Permit No. _____

2. NATURE OF WORK
☑ 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
☑ Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED
☒ Rotary ☒ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION
Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	8 inches	+ 2 feet	53 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

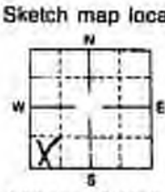
Well screen installed? ☐ Yes ☒ No
Manufacturer _____ Type _____
Top Packer or Headpipe _____
Bottom of Tailpipe _____

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

Surface seal depth 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 HENRY HEIGHTS
Lot No. 43 Block No. 1
County CANYON
Address of Well Site SAME (give at least name of road)
SW ¼ SW ¼ Sec. 8, T. 2 N ☒ or S ☐, R. 1 E ☐ or W ☒

7. WATER LEVEL
Static water level 12 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

9. LITHOLOGIC LOG 70528

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
10	0	4	TOP SOIL/HARD PAN		☒
	4	34	SOLID LAVA		☒
	34	38	LAVA CREVICES		☒
	38	59	SOLID LAVA		☒
8	59	86	LAVA CREVICES	☒	
	86	88	SOLID LAVA		☒

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Department of Water Resources

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AUG 18 1993
Department of Water Resources
Western Regional Office

MICROFILMED
FEB 09 1994

10.
Work started 7-14-93 finished 7-14-93

11. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
DAVIS WELL & PUMP CO.
Firm Name 4145 N. PITT LANE Firm No. 101
NAMPA, IDAHO 83687
Address _____ Date 8-17-93
Signed by Drilling Supervisor Chuck Davis
and
(Operator) _____
(If different than the Drilling Supervisor)

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

Form 238-7
6/07

63

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0087651
Drilling Permit No 896644
Water right or injection well #

2. OWNER:
Name HECTOR MIGUEL CAMACHO MARQUEZ
Address 606 WINTER PL
City NAMPA State ID Zip 83686

3. WELL LOCATION:
Twp 02 North ☒ or South ☐ Rge 01 East ☐ or West ☒
Sec 8 ____ 10 acres 1/4 NE 40 acres 1/4 SW 160 acres 1/4
Gov't Lot ____ County CANYON
Lat 43 ° 31.2798N (Deg. and Decimal minutes)
Long 116 °29.2134W (Deg. and Decimal minutes)
Address of Well Site 6811 BROWN LN
(Give at least name of road + Distance to Road or Landmark) City NAMPA
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
BENONITE 3/8	0	38	1100 LBS	POURED

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	+1.5	40	.250	STEEL	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

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

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method
Manufactured screen ☒ Y ☐ N Type CERTA LOK
Method of installation SET IN

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
40	69	.020		4.5"	PVC	SDR17

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

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
SILICA SAND	38	69	5 YRDS	TAGGED IN
8/16				

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) 30 Static water level (ft) 30
Water temp (°F) 61 Bottom hole temp (°F) 61
Describe access port WELL CAP

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
60'	50 +	60 MIN

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
10	0	2	TOP SOIL		X
10	2	4	BROWN CLAY		X
10	4	8	HARD PAN		X
10	8	22	BLACK BASALT		X
10	22	37	BROKEN BASALT BROWN	X	
10	37	45	BLACK BASALT		X
10	45	48	BROKEN	X	
10	48	60	BLACK BASALT		X
10	60	69	BROKEN BASALT	X	

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FEB 10 2021
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable) 69'
Date Started 11/4/2020 Date Completed 11/7/2020

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 PEARSON WELL DRILLING Co No 771
*Principal Driller [signature] Date 11/9/2020
*Driller Date
*Operator [signature] Date
Operator 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

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WATER RESOURCES
WESTERN REGION

1. WELL TAG NO. D D0083412
Drilling Permit No. 492570
Water right or injection well #

2. OWNER:
Name Jason Perkins
Address 0 Mamer Ln.
City Nampa State Idaho Zip 83686

3.WELL LOCATION:
Twp. 2 North ☒ or South ☐ Rge. 1 East ☐ or West ☒
Sec. 8 ____ 1/4 (10 acres) SE 1/4 (40 acres) SW 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat. 43 ° 31.241'N (Deg. and Decimal minutes)
Long. 116 ° 29.204'W (Deg. and Decimal minutes)
Address of Well Site Same
(Give at least name of road + Distance to Road or Landmark) City Nampa
Lot. 6 Blk. ____ Sub. Name Mamer Sub. (Par. #R24210)

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	0	50	1050 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	4	57	.250	Steel	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

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

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method
Manufactured screen ☒ Y ☐ N Type Certa-Lock PVC Screens
Method of installation Drop In

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
36	96	.020	60'	4.5"	PVC	SDR17

Length of Headpipe N/A Length of Tailpipe N/A
Packer ☐ Y ☒ N Type ----------

10.FILTER PACK:

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

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

12. STATIC WATER LEVEL and WELL TESTS:
Depth first water encountered (ft) ---------- Static water level (ft) 34'
Water temp. (°F) Cold Bottom hole temp. (°F) ----------
Describe access port 6" Turtle Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
50'	100 GPM	1 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
10"	0	2	Top Soil		X
	2	6	Hard Pan		X
	6	11	Broken Lava		X
	11	39	Black Lava		X
	39	42	Red Lava		X
	42	96	Black Lava	X	
6"	96		Sand & Gravel	X	

Completed Depth (Measurable): 96'
Date Started: Dec 12, 2019 Date Completed: Dec 13, 2019

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

Company Name Dennis Phipps Well Drilling In Co. No. 332
*Principal Driller [signature] Date Dec 13, 2019
*Driller ____ Date ____
*Operator II [signature] Date Dec 13, 2019
Operator I [signature] Date Dec 13, 2019

* Signature of Principal Driller and rig operator are required.

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DEC 13 2019
WATER RESOURCES WESTERN REGION

Form 238-7
6/07

63

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D D0083411
Drilling Permit No. 892569
Water right or injection well # _____

2. OWNER:
Name Allen Perkins
Address 5307 Mamer Ln.
City Nampa State Idaho Zip 83686

3.WELL LOCATION:
Twp. 2 North ☒ or South ☐ Rge. 1 East ☐ or West ☒
Sec. 8 ____ (10 acres) 1/4 SE (40 acres) 1/4 SW (160 acres) 1/4
Gov't Lot _____ County Canyon
Lat. 43 ° 31.197'N (Deg. and Decimal minutes)
Long. 116 °29.209'W (Deg. and Decimal minutes)
Address of Well Site Same
(Give at least name of road + Distance to Road or Landmark) City Nampa
Lot 6 Blk. _____ Sub. Name Mamer Sub.

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	0	50	1100 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	2	57	.250	Steel	☒	☐	☐	☒
4.5"	40	60	SD17	PVC	☐	☒	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 57'

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method _____
Manufactured screen ☒ Y ☐ N Type Certa-Lock PVC Screens
Method of installation Drop In

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
60	100	.020	40'	4.5"	PVC	SDR17

Length of Headpipe 20' Length of Tailpipe N/A
Packer ☐ Y ☒ N Type _____

10.FILTER PACK:

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

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

12. STATIC WATER LEVEL and WELL TESTS:
Depth first water encountered (ft) _____ Static water level (ft) 40'
Water temp. (°F) Cold Bottom hole temp. (°F) _____
Describe access port 6" Turtle Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Test method: Pump	Bailer	Air	Flowing artesian
80'	55 GPM	1 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
10"	0	2	Top Soil		X
	2	6	Hard Pan		X
	6	14	Coarse Sand & Gravel		X
	14	42	Black Lava Rock		X
	42	45	Red Lava Rock	X	
	45	84	Black Lava Rock	X	
6"	84	87	Clay		X
	87	92	Black Lava Rock	X	
	92	100	Red Cinders	X	
	100		Sand & Gravel	X	

Completed Depth (Measurable): 100'
Date Started: Dec 10, 2019 Date Completed: Dec 11, 2019

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

Company Name Dennis Phipps Well Drilling In Co. No. 332
*Principal Driller _____ Date Dec 12, 2019
*Driller _____ Date _____
*Operator II _____ Date Dec 12, 2019
Operator I _____ Date Dec 12, 2019

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

Form 238-7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

12

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 Byron Henry

Address Kuna, 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
350 inches	16 inches +	1 1/2 feet	38 1/2 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 38 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 welded plate

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name none

Lot No. _____ Block No. _____

County Canyon

SE ¼ SW ¼ Sec. 8, T. 2 N. R. 1 W.

7. WATER LEVEL

Static water level 38 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

106455

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
	0	10	Top soil & hard pan		X
	10	50	Solid lava		X
	50	55	Lava crevice	X	
	55	71	Lava		X
	71	80	Lava crevice	X	
	80	88	Solid lava		X
	88	90	Lava crevice	X	

RECEIVED
AUG 14 1980
Department of Water Resources

MAY [illegible] 1980
Department of Water Resources
Western Regional Office

10.

Work started 10/17/79 finished 10/17/79

11. DRILLERS CERTIFICATION

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

Firm Name Davis Well & Pump Firm No. 101

Address 415 N. Latah Ave Date 2/15/80

Signed by (Firm Official) Charles Davis

and

(Operator) _____

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

Form 238-7
1/94

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter
or
Ball Point Pen

053407

1. DRILLING PERMIT NO. 63-94-W-0910-000
Other IDWR No.

2. OWNER:
Name MIKE HARN
Address 5119 MAMER LANE
City NAMPA State ID Zip 83686

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

N / W / E / S — X

Twp. 2 North X or South ☐
Rge. 1 East ☐ or West X
Sec. 8 ____ 1/4 SE 1/4 SW 1/4
Gov't Lot ____ County CANYON

Address of Well Site
5119 MAMER LANE City NAMPA
(Give at least name of road + Distance to Road or Landmark)

Lt. ____ Blk. ____ Sub. Name ____

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENT	0	20	4S	OVERBORE

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+3	117	250	STEEL	X	☐	X	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____

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

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

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
50	80	NO	TEST

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

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
11"	0	2	TOPSOIL	NO	
11"	2	5	BRN LAVA BOULDERS/CLAY	NO	
11"	5	20	SOLID BLACK LAVA	NO	
9"	20	50	SOLID BLACK LAVA	NO	
9"	50	53	CRACKS RED CINDERS	NO	
9"	53	59	SOLID BLACK LAVA	NO	
9"	59	70	CRACKS BLACK LAVA	YES	
9"	70	80	CRACKS BLACK LAVA	NO	
9"	80	97	SOLID BLACK LAVA	NO	
9"	97	100	BRN CLAY	NO	
6"	100	114	BRN GRAVEL SAND	YES	
6"	114	118	BRN CLAY	NO	
6"	118	121	BRN SAND GRAVEL	YES	

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Department of Water Resources

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NOV 14 1994
WATER RESOURCES
WESTERN REGION

JUN 2 5 1995

Completed Depth 120' FROM TOP OF CASING (Measurable)
Date: Started 10/1/94 Completed 10/4/94

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

Firm Name S.O.S. WELLDRILLING Firm No. 212
Firm Official Frank Shinn Date 10-21-94
and
Supervisor or Operator Tony Hackett Date 10-21-94
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
4/92

RECEIVED
FEB 12 1993
Department of Water Resources
Western Regional Office

RECEIVED
MAR 2 1993
Department of Water Resources

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 Bob Hardesty

Address 6912 Lewis Ln Nampa Id

Drilling Permit No. 63-92-W-1079

Water Right Permit No. _____

2. NATURE OF WORK

☒ 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

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1 feet	111 feet
.258 inches	5 inches	105 feet	110 feet
.258 inches	5 inches	115 feet	117 feet

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

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

Well screen installed? ☒ Yes ☐ No
Manufacturer Houston Type 304
Top Packer or Headpipe 4' 8"
Bottom of Tailpipe 2'

Diameter 5 Slot size .020 Set from 110 feet to 115 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
☒ Bentonite ☒ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port Well Seal

6. LOCATION OF WELL

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



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
Address of Well Site _____ (give at least name of road)
SE ¼ SW ¼ Sec. 8, T. 2 N ☒ or S ☐, R. 1 E ☐ or W ☒

7. WATER LEVEL

Static water level 100 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
50		1

84308

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
9	0	8	Top Soil		X
	8	98	Lava Rock		X
	98	117	Sand & Gravel	X	

MICROFILMED
AUG 09 1993

10.

Work started 15 Dec 92 finished 2-12-93

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 Dennis Phipps Firm No. 332
Address Meridian Id Date 2-3-93
Signed by Drilling Supervisor Dennis Phipps
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 State Reclamation Engineer within 30 days after completion or abandonment of the well.

Received 3-19-73 WD

1. WELL OWNER

Name Robert A. Hardesty
Address RT 2 Meridian, 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

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6" inches Total depth 72 feet
Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	6 5/8 inches	0 feet	20 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

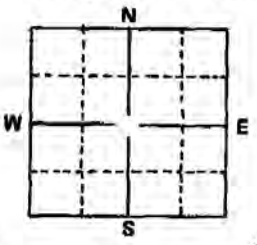
Gravel packed? ☐ Yes ☒ No Size of gravel _____
Placed from _____ feet to _____ feet

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 Ada, County.
SE ¼ SW ¼ Sec. 8, T. 2 N/S, R. 1 E/W of Boise Meridian.

7. WATER LEVEL

Static water level 49 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	NONE	6 hrs

9. LITHOLOGIC LOG 31487

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	2	Top Soil		
	2	4	Caleshie & Hardpan		
	4	31	Gray Lava = "Hard"		
	31	44	Broken Lava "Hard"		
	44	49	Gray Lava "Very Hard"		
	49	69	Gray Lava Porse	X	
	69	72	Black Cinders	X	
			STALLED-OUT-		

10.
Work started Dec-1-72 finished Dec 7-72

11. DRILLER'S CERTIFICATION

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

C.R. Broomfield #29
Driller's or Firm's Name Number
144 Meffon St. Nampa, Ida.
Address
C Bourn Dec-12-1972
Signed By Date

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

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

RECEIVED
APR 8 1976
Department of Water Resources

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 Fred Schwendt
Address 303 Florida Ave
Owner's Permit No. Nampa Idaho

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 88 feet
Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1 feet	19 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 ____
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

MICROFILMED

6. LOCATION OF WELL

Sketch map location must agree with written location. (63)



Subdivision Name ____
Lot No. KHF Block No. ____
County Canyon
SE ¼ SW ¼ Sec. 8 T. 2 N, R. 1 E/W

7. WATER LEVEL

Static water level 49' feet below land surface
Flowing? ☐ Yes ☒ No G.P.M. flow ____
Temperature ____ ° F. Quality FAIR
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	1'	1

033131

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	1	Asbuilt Boulders & Top Soil		X
8	1	2	Hard Pan Basalt Boulders		X
8	2	3	Broken Basalt		X
8	3	5	Basalt (Hard)		X
8	5	10	Basalt		X
8	10	15	Basalt		X
8	15	18	Hard Basalt		X
6	18	25	Basalt		X
6	25	30	Basalt		X
6	30	40	Hard Basalt		X
6	40	50	Hard Basalt		X
6	50	55	Gray Basalt		X
6	55	57	Red Basalt		X
6	57	65	Hard Black Basalt		X
6	65	70	Gray Basalt	X	
6	70	74	Basalt Black	X	
6	74	75	Broken Basalt Some Boy Clay Chunks	X	
6	75	80	Hard Black Basalt	X	
6	80	85	Basalt	X	
6	85	86	Broken Basalt Some Cinders	X	
6	86	88	Basalt	X	

10. Work started 2/28/76 finished 3/13/76

11. DRILLERS CERTIFICATION

Firm Name Jesse Hill Firm No. 216
Address 449 Thirty St Nampa Date 3/13/76
Signed by (Firm Official) Jesse Hill
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 1-14-74 DWR

17

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 Dave Dwyer

Address Rt 3 Nampa 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 68 feet

Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+18" feet	20 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 _____

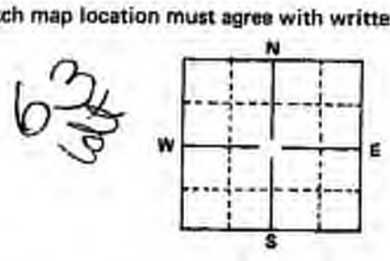
Placed from _____ feet to _____ feet

Surface seal? ☑ Yes ☐ No To what depth 20 feet

Material used in seal ☐ Cement grout ☑ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



County Canyon

SE ¼SW ¼ Sec. 8, T. 2 N/S, R. 1 E/W

7. WATER LEVEL

Static water level 41 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	8	3

033133

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	4	Soil		✓
6	4	50	Lava Black		✓
6	50	65	Lava Red		✓
6	65	68	Lava Black		✓
6	68		Black Cinders	✓	

10.

Work started July 9 finished July 15 1973

11. DRILLER'S CERTIFICATION

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

C.B. Broomfield 29
Driller's or Firm's Name Number

147 Mullen Nampa Ida
Address

C.B. Broomfield July 15 1973
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY

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

Form 238-7
4/92

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.

Location Corrected by IDWR To:
T02N R01W Sec. 8 SESESW
By: mciscell 2012-12-26

1. WELL OWNER

Name Melvin Griffith

Address 6902 E. Lewis Ln Nampa Id. 83651

Drilling Permit No. 63-93-W-0207

Water Right Permit No. _____

2. NATURE OF WORK

☐ 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

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1 feet	110 feet
.258 inches	5 inches	106 feet	111 feet
.258 inches	5 inches	116 feet	118 feet

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

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

Well screen installed? ☒ Yes ☐ No
Manufacturer Wesco Type 304
Top Packer or Headpipe 4' 8"
Bottom of Tailpipe 2'

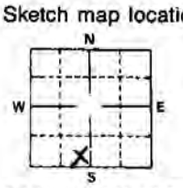
Diameter 5 Slot size .020 Set from 111 feet to 116 feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 18 Material used in seal: ☐ Cement grout
☒ 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 Weld Seal

6. LOCATION OF WELL

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



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
Address of Well Site 6902 E. Lewis Ln
(give at least name of road)
SE ¼ SW ¼ Sec. 8, T. 2 N ☒ or S ☐, R. 1 E ☐ or W ☒

7. WATER LEVEL

Static water level 63 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
40		1

9. LITHOLOGIC LOG

082804

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	2	Top Soil		X
	2	4	Hard Pan		X
	4	75	Lava Rock		X
	75	104	Lava Rock	X	
	104	118	Sand & Gravel	X	

RECEIVED
AUG 04 1993
Department of Water Resources
Southern Regional Office
AUG 09 1993

10.

Work started 3-25-93 finished 4-4-93

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 Dennis Phipps Firm No. 332
Address Mr. D. Nampa Id. Date 4-29-93
Signed by Drilling Supervisor _____
and
(Operator) _____ *(if different than the Drilling Supervisor)*

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

Form 238-7
4/92

FEB 1 2 1993

Department of Water Resources
Western Regional Office

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.

Location Corrected by IDWR To:
T02N R01W Sec. 8 SWSWSE
By: mciscell 2012-08-28

1. WELL OWNER

Name Todd Newby
Address 7114 Lewis Ln. Nampa ID
Drilling Permit No. 63-92-W-1059-001
Water Right Permit No. _____

2. NATURE OF WORK

☐ 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

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches +	1 feet	130 feet
.258 inches	5" inches	126 feet	131 feet
.258 inches	5 inches	136 feet	138 feet

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

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

Well screen installed? ☒ Yes ☐ No
Manufacturer Houston Type 304
Top Packer or Headpipe 4', 8"
Bottom of Tailpipe 2'

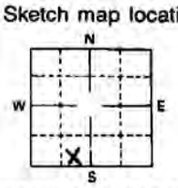
Diameter 5 Slot size .020 Set from 131 feet to 136 feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 18 Material used in seal: ☐ Cement grout
☒ Bentonite ☒ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port Well Seal

6. LOCATION OF WELL

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



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
Address of Well Site 7114 Lewis Ln.
(give at least name of road)
SE ¼ SW ¼ Sec. 8, T. 2 N N ☐ or S ☐, R. 1 W E ☐ or W ☐

7. WATER LEVEL

Static water level 75 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
40		1

9. LITHOLOGIC LOG

84307

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	2	Top Soil		X
	2	15	clay		X
	15	90	Lava Rock		X
	90	120	Sand & Gravel	X	
	120	138	Course Sand	X	

MICROFILMED
AUG 09 1993

10.

Work started 10 Dec 92 finished 5 JAN 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 Dennis Phipps Firm No. 332
Address Meridian Id. Date 2-3-93
Signed by Drilling Supervisor _____
and
(Operator) _____ *(If different than the Drilling Supervisor)*

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

Form 238-7
11/91

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

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

Location Corrected by IDWR To:
T02N R01W Sec. 8 SESWSE
By: mciscell 2012-12-14

1. WELL OWNER

Name KEN or LINDA L. NUNGESSER

Address 7226 E. LEWIS LN. NAMPA, ID 83686

Drilling Permit No. 63-92-C-078

Water Right Permit No. _____

2. NATURE OF WORK

☒ 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

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1.5' feet	98.5' feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

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

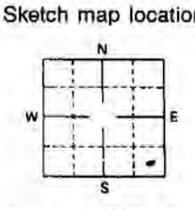
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 96' 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. AUG 11 1992



Subdivision Name LOT 2, MAMER SUBDIVISION
Lot No. _____ Block No. _____
County CANYON
SE ¼ SE ¼ Sec. 8, T. 2N S ☐ R. 1W W ☒ N ☒ E ☐

7. WATER LEVEL

Static water level 68 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	90'	30 MIN.

9. LITHOLOGIC LOG

079482

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	1	TOP SOIL		X
8	1	3	BROKEN ROCK		X
8	3	60	ROCK		X
8	60	72	BROKEN ROCK		X
8	72	80	ROCK		X
8	80	83	CINDERS		X
8	83	87	BROKEN ROCK	X	
8	87	94	ROCK		X
8	94	96	CINDERS	X	
6	96	100	GRAVEL	X	

RECEIVED
MAY 11 1992
Department of Water Resources

RECEIVED
MAY 11 1992
Department of Water Resources

MAY 14 1992
Department of Water Resources
Regional Office

10.

Work started 5-2-92 finished 5-2-92

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 5-5-92
Signed by Drilling Supervisor _____
and
(Operator) _____
(If different than the Drilling Supervisor)

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

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 815452
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0031410
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Bob Goodwin
Address P.O. Box 251
City Nampa State Id Zip 83653

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 2 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 17 NW 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long:
Address of Well Site So. off of Lewis Rd.
City Nampa
(Give at least name of road + Distance to Road or Landmark)
Lt. 9 Blk. 1 Sub. Name Aussie Acres

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
Western Bent	0	19	500 lbs	10' overburden

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	19	250	Steel	☐	☐	☒	☐
4 1/2	10	50		PVC	☒	☐	☐	☐
					☐	☐	☐	☐

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

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
10	50	Solid		4 1/2	PVC	☐	☐
50	70	20		4 1/2	PVC	☒	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

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

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

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

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

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	3	Top Soil		X
10	3	12	Hid pay & Clay		X
10	12	28	Solid Lava		X
6	28	33	Fractured Lava mixed with red cinders		X
	33	54	Solid Lava		X
	54	70	Fractured Lava	X	

RECEIVED
MAY 18 2004
WATER RESOURCES
WESTERN REGION

Completed Depth 70' (Measurable)
Date: Started 5/17/04 Completed 5/17/04

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 Underground Drilling Firm No. 522
Principal Driller Jeff Dawson Date 5/18/04
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
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 8 11534
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0031068
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Bob Goodwin
Address P.O. Box 251
City Nampa State ID Zip 83653

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 3 North X or South ☐
Rge. 1 East ☐ or West X
Sec. 17, NW 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: : :
Address of Well Site ____
City Nampa
(Give at least name of road – Distance to Road or Landmark)
Lt. 1 Blk. 1 Sub. Name Aussie Acres

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 Material	From	To	Weight / Volume	Seal Placement Method
PureGold Bent	0	19'6	500lbs	10" overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	19'6	250	Steel	☐	☐	X	☐
	10	50			☐	☐	☐	☐
					☐	☐	☐	☐

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

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ____
Screen Type & Method of Installation Johnson Set with rig

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
50	80	20		4"	PVC	X	☐
10	50	Solid		4½	PVC	X	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
59 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 X Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
30+		75	1 hr.

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: Good clear color no smell
Depth first Water Encountered 63'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	6	overburden		X
10&6	6	45	Solid lava		X
6	45	52	Fracture lava		X
	52	62	Red cinder & lava		X
	62	80	Fractured lava	X	
	80		med/large Sand	X	

RECEIVED
MAR 25 2004
WATER RESOURCES
WESTERN REGION

Completed Depth 80' (Measurable)
Date: Started 3/15/04 Completed 3/23/04

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 Water Drilling Firm No 522
Principal Driller Jeff Lawson Date 3/23/04
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
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 8/19441
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0031069
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Bob Goodwin
Address P.O. Box 251
City Rupert State ID Zip 83653

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 9 North ☒ or South ☐
Rge. 21 East ☐ or West ☒
Sec. 11 NW 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County
Lat: : : Long: : :
Address of Well Site
City Rupert
(Give at least name of road + Distance ft. Road or Landmark)
Lt. 2 Blk. 1 Sub. Name Aussie Acres

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
Pure Gold Bent	0	196	550 lb	10" overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) Shop built
Was drive shoe seal tested? ☐ Y ☒ N How? from pipe

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	19.6	250	Steel	☐	☐	☒	☐
4 1/2	8	48		PVC	☒	☐	☐	☐
					☐	☐	☐	☐

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

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method
Screen Type & Method of Installation Johnson PVC Set with rig

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
48	89	20		4 1/2	PVC	☒	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
63 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
30+		80'	1 hr.

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

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	8	overburden & Broken lava		X
6	8	45	Solid lava		X
6	45	60	Fractured lava		X
6	60	63	Solid lava		X
6	63	89	Fractured lave	X	
	89		mod/Large Sand	X	

RECEIVED
MAR 25 2004
WATER RESOURCES
WESTERN REGION

Completed Depth 89' (Measurable)
Date: Started 3/24/04 Completed 3/25/04

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 Firm No. 522
Principal Driller J. P. Clawson Date 3/25/04
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
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 815104
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0031408
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Bob Goodwin
Address P.O. Box 251
City Nampa State Id Zip 83653

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 2 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 17 NW 1/4 (10 acres) NW 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: : :
Address of Well Site
(Give street name of road + Distance to Road or Landmark) City Nampa
Lt. 8 Blk. 1 Sub. Name Aussie Acres

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
Pure Gold Grout	0	19	500 lbs	10" overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	19	250	Steel	☐	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

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

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
55	75	20	4½		PVC	☒	☐
15	55	Solid	4½		PVC	☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
54 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
30+		70'	2 hrs.

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: Good clear color
Depth first Water Encountered 56'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	3	Top Soil		X
10	3	8	Hardpan / overburden		X
10-6	8	52	Solid Lava		X
6	52	54	Red Cinders		X
6	54	58	Fractured Lava	X	
6	58	61	Solid Lava		+
6	61	75	Fractured Lava	X	

RECEIVED
MAY 17 2004
WATER RESOURCES
WESTERN REGION

Completed Depth 75' (Measurable)
Date: Started 5/12/04 Completed 5/12/04

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 Pac-West Drilling Firm No. 522
Principal Driller Jeff Aanson Date 5/17/04
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
9/82

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

W

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.

9-

1. WELL OWNER

Name Dwight Higel

Address

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 +	1½ feet	38½ 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 well seal

6. LOCATION OF WELL

Sketch map location must agree with written location.

N / W / E / S

Subdivision Name
Lot No. Block No.
County Canyon
NW¼ NE¼ Sec. 12, T. 2 N, R. 1 W.

MICROFILMED

7. WATER LEVEL

Static water level 54 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

9. LITHOLOGIC LOG

87348

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
	0	8	Top soil & hard pan		X
	8	10	Loose lava		X
	10	30	Solid lava		X
	30	57	Lava crevices		X
	57	50	Solid lava		X
	50	55	Lava crevices		X
	55	72	Solid lava		X
	72	78	Lava w/crevices	X	
	78	84	Solid lava		X
	84	88	Lava w/crevices w/bentonite & loose lava	X	
	88	90	Solid lava		X

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OCT 15 1986
Department of Water Resources

10.

Work started 11-6-85 finished 11-6-85

11. DRILLERS CERTIFICATION

88

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

Firm Name Davis Well & Pump Co. Firm No. 101
Address 415 No. Pitt Lane Date 6-2-86
Nampa, Idaho 83651
Signed by (Firm Official)
and
(Operator)

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

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 812208
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0031126
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Bob Goodwin
Address P.O. Box 851
City Nampa State Id Zip 83653

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 3 North X or South ☐
Rge. 3 East ☐ or West X
Sec. 17 NW 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: :
Address of Well Site So. off of Lewis Ln.
City Nampa
(Give at least name of road + Distance to Road or Landmark)
Lt. 6 Blk. 1 Sub. Name Aussie Acres

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 Material	From	To	Weight / Volume	Seal Placement Method
Enviroplug	0	100	1500 lbs	10" over bore
				Dix pour

Was drive shoe used? X Y ☐ N Shoe Depth(s) 100-4
Was drive shoe seal tested? ☐ Y ☐ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	100-4	.250	Steel	☐	☐	X	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 5 c. Length of Tailpipe 0
Packer X Y ☐ N Type 6-R-6

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
100	110	18		4 1/2	S.S.	☐	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
64 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 X Air ☐ Flowing Artesian

Yield gal./min	Drawdown	Pumping Level	Time
80		105'	2 hrs.

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: Good clear color
No Smell
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	3	Top Soil		X
	3	8	Clay mixed with Hardpan		X
	8	32	Solid Lava		X
	32	41	Red Cinders & Lava		X
	41	47	Fractured Lava		X
	47	64	Solid lava!		X
	64	74	Fractured lava	X	
	74	88	Solid Lava some Fract.	X	X
6	88	94	Fractured	X	
6	94	110	Sand mixed with gravel	X	
			pulled off ordered		
			new hammer bit		

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WATER RESOURCES
WESTERN REGION

Completed Depth 110' (Measurable)
Date: Started 3/25/04-5/19/04 Completed 5/24/04

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 Pierson well drilling Firm No. 522
Principal Driller Jeff Pierson Date 5/24/04
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
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 815453
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0031421
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Bob Goodwin
Address P.O. Box 251
City Nampa State Id Zip 83653

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 2 North ☒ or South ☐
Rge. 2 East ☐ or West ☒
Sec. 17 NW 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long:
Address of Well Site So. off of Lewis Ln.
City Nampa
(Give at least name of road + Distance to Road or Landmark)
Lt. 7 Blk. 1 Sub. Name Aussie Acres

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
Western Bent	0	68	1700 lbs.	10" overbore pour Dry

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 65
Was drive shoe seal tested? ☐ Y ☐ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	65	250	Steel	☐	☐	☒	☐
4½	45	65	1/4"	PVC	☐	☐	☐	☐
					☐	☐	☐	☐

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

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
45	65	solid		4½	PVC	☒	☐
65	85	20		4½	PVC	☒	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
40+		80'	2 hrs.

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: Good clear Color No Smell
Depth first Water Encounter 70'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	2	Top Soil		X
	2	8	Clay & Hardpan		X
	8	28	Solid Lava		X
	28	32	Red Cinders		X
	32	40	Fractured Lava		X
	40	67	Solid Lava		X
	67	85	Fractured Lava	X	

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WATER RESOURCES
WESTERN REGION

Completed Depth 85 ft. (Measurable)
Date: Started 5/18/04 Completed 5/21/04

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 Firm No. 522
Principal Driller Jeff Lawson Date 5/24/04
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
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 811943
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0031125
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Bob Goodwin
Address P.O. Box 251
City Nampa State Id Zip 83653

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 2 North X or South ☐
Rge. 1 East ☐ or West X
Sec. 17 NW 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: : :
Address of Well Site
City Nampa
(Give at least name of road + distance to Road or Landmark)
Lt. 5 Blk. 1 Sub. Name Aussie Acres

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 Material	From	To	Weight / Volume	Seal Placement Method
PureGold Bent	0	20	550 lbs	10" overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	20	250	Steel	☐	☐	X	☐
4 1/2	18	60		PVC	X	Solvent	X	☐
					☐	☐	☐	☐

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

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
60	80	20		4 1/2"	PVC	X	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

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

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

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

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: Good clear color no smell
Depth first Water Encountered 64

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	8	overburden		X
10	8	12	Broken lava		X
10	12	45	Solid lava		X
6	45	64	Lava mixed with Red		
6			Cinders		X
6	64	80	Fractured lava	X	

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MAR 26 2004
WATER RESOURCES
WESTERN REGION

Completed Depth 79' (Measurable)
Date: Started 3/25/04 Completed 3/25/04

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 Firm No. 522
Principal Driller Jeff Lawson Date 3/25/04
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
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 812956
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0031129
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Bob Goodwin
Address P.O. Box 251
City Nampa State ID Zip 83653

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 2 North ☒ or South ☐
Rge. 4 East ☐ or West ☒
Sec. 17 NW 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: : :
Address of Well Site
City Nampa
(Give at least name of road + Distance to Road or Landmark)
Lt. 4 Blk. 1 Sub. Name Assie Acres
So. off of Lewis

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
Western Cent	0	84	31 Bags	10" overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 95'
Was drive shoe seal tested? ☒ Y ☐ N How? Air

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	95	250	Steel	☐	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 5" Length of Tailpipe 0
Packer ☒ Y ☐ N Type 3-R.B

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
96	106	20	6"	Tele	S.S.	☐	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
67.6 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
50+		104	2 hrs.

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: Good clear color
Depth first Water Encounter 65'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	5	overburden		X
	5	32	Solid lava		X
	32	49	Fractured lava		X
	49	64	Solid lava		X
	64	84	Fractured lava	X	
	84	91	Grey Clay		X
	91	93	Sand & gravel	X	
	93	95	Fractured lava		X
	95	106	Sand & gravel	X	

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WATER RESOURCES
WESTERN REGION

Completed Depth 106' (Measurable)
Date: Started 4/13/04 Completed 4/19/04

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 Firm No. 522
Principal Driller J. Lawson Date 4/21/04
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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817707

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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. D0031466

2. OWNER:
Name Wes Waldorf
Address 100 N McDermott
City Kuna State ID Zip 83634

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

N
W E
S

Twp. 2 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 17 1/4 (10 acres) NW 1/4 (40 acres) NE 1/4 (160 acres)

Gov't lot _____ County Canyon
Lat: : : Long: : :
Address of Well Site 9857 DunDee Ct.
City Nampa
(Give at least name of road + Distance to Road or Landmark)
Lt. _____ Blk. _____ Sub. Name _____

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
bentonite	0'	18'	12 sacks	poured

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
8"	+2'	18'	.250	steel	☒	☐	☒	☐
4.5"	12'	98'	Sc40	PVC	☐	☒	☐	☒
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
88'	98'	1/4"	120	4.5"	PVC	☐	☒
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
60ft. 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
50 GPM		80'	1 Hr.

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered 76'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
12"	0'	1'	top soil		☒
12"	1'	6'	dry brown clay		☒
12"	6'	9'	broken lava		☒
12"	9'	18'	solid lava		☒
8"	18'	45'	solid lava		☒
8"	45'	50'	cracks		☒
8"	50'	76'	solid lava		☒
8"	76'	96'	cracks lava	☒	
8"	96'	98'	sand & gravel	☒	

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JUN 28 2004
WATER RESOURCES
WESTERN REGION

Completed Depth: 98 (Measurable)
Date: Started 6/21/04 Completed 6/21/04

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

Firm Name Down Right Drilling & Pum Firm No. 637
Firm Official _____ Date 6-24-04
Supervisor or Operator Larry Herbst Date 6/24/04
(Sign once if Firm Official & Operator)

Date: 6/23/2004 Time: 8:21 AM

812958

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

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. DRILLING PERMIT NO. __ - __ -D -0030 -969
Other IDWR No. _____

2. OWNER:
Name Larry Hays
Address 292 W. Boise St.
City Kuna State ID Zip 83634

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

N
W E
S

Twp. 2 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 17 1/4 (10 acres) NE 1/4 (40 acres) NW 1/4 (160 acres)
Gov't lot _____ County Canyon
Lat: : : Long: : :
Address of Well Site Lewis Ln. Between Robinson & McDermott City Nampa
(Give at least name of road + Distance to Road or Landmark)
Lt. _____ Blk. _____ Sub. Name Tem.#4799

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	19'	550#'s	Overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+1'	19'	.250	Steel	☒	☐	☐	☐
6"	16'	96'	Sc40	PVC	☐	☒	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
86'	96'	1/4"	300	6"	PVC	☐	☒
		X3"				☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
62ft. 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
40		80'	1 Hr.

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: Nitrate 0
Hardness 16 Depth first Water Encountered 80'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
12"	0	2'	Topsoil		☒
12"	2'	7'	Brown Dry Clay		☒
12"	7'	12'	Cleachey Burnt Clay		☒
12"	12'	19'	Solid Black Lava		☒
8"	19'	60'	Solid Black Lava		☒
8"	60'	70'	Cracks in Black Lava		☒
8"	70'	80'	Solid Black Lava		☒
8"	80'	94'	Cracks in Black Lava	☒	
8"	94'	97'	Brown Sand & Gravel	☒	

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APR 21 2004
WATER RESOURCES
WESTERN REGION

Completed Depth: 97 (Measurable)
Date: Started 04/12/04 Completed 04/12/04

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

Firm Name Down Right Drilling & Pum Firm No. 637
Firm Official [signature] Date 4-13-04
Supervisor or Operator [signature] Date 4-13-04
(Sign once if Firm Official & Operator)

Date: 4/13/2004 Time: 9:58 AM

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 SEP 25 1972 Department of Water Administration

1. WELL OWNER

Name Bill Lee

Address Rte. 6 Nampa, 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 75 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	18" feet	38 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

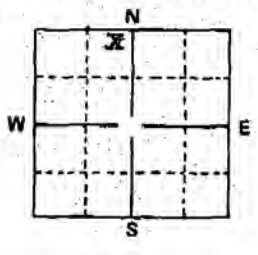
Placed from feet to feet

Surface seal? ☒ Yes ☐ No To what depth 38 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 NW ¼ Sec. 17, T. 2 N/☒, R. 1 ☒/W

7. WATER LEVEL

Static water level 38 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

31395

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
	0	2	Top soil		X
	2	4	Loose Lava		X
	4	19	Solid lava		X
	19	35	Lava with crevices		X
	35	46	Solid lava		X
	46	54	Lava with crevices	X	
	54	59	Solid lava		X
	59	75	Loose lava	X	
			8" to 38'		
			6" from there on		

10.

Work started 8/27/72 finished 9/1/72

11. DRILLER'S CERTIFICATION

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

Davis Well Drilling 101
Driller's or Firm's Name Number

Rte. 6 Box 6209 Nampa, Idaho
Address

Signed By 9/23/72 Date

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

Form 238-7
3/95

C

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

094089

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO 63-96-W-0431-000
Other IDWR No. _____

2. OWNER:
Name Ron Moore
Address 4781 Lewes Ln
City Nampa State ID Zip 83686

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

N / W / E / S

Twp. 2 North X or South ☐
Rge. 1 East ☐ or West X
Sec. 17, ____ 1/4 NE (12 acres) 1/4 NW (40 acres) 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: : :
Address of Well Site 4781 Lewes Ln City Nampa
(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
Bentlik	0	18'	500	Pour

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	38	250	Steel	X	☐	X	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

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

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

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
+6 ft. below ground Artesian pressure _____ lb.
Depth flow encountered 86 ft. Describe access port or control devices: CAP

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

Yield gal./min.	Drawdown	Pumping Level	Time
100	300	80	1½ Hr.

Water Temp. 56 Bottom hole temp 56
Water Quality test or comments: _____
Depth first Water Encountered 56

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		
	2	4	Hard Pan		
	4	7'	Broken Lava		
8	7	38	LAVA		
6	38	84	" "		
	84		Gravel & Sand	X	

RECEIVED
JUL 30 1996
Department of Water Resources

RECEIVED
JUL 17 1996
WATER RESOURCES
WESTERN REGION

SEP 11 1996

Completed Depth 84 (Measurable)
Date: Started 6-26-96 Completed 6-26-96

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

Firm Name Treasure Valley Drilling Firm No. 56
Firm Official _____ Date 7-10-96
and
Supervisor of Operations _____ Date 7-10-96
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
4/92

C

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.

USE TYPEWRITER OR BALLPOINT PEN

RW

1. WELL OWNER

Name LOCKLANE, MIKE
Address 6925 LEWIS LANE
NAMPA, ID 83651
Drilling Permit No. 63-92-W-0985-000
Water Right Permit No. _____

2. NATURE OF WORK

☒ 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

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
250 inches	6 inches	1 feet	240 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

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

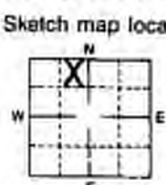
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 100 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 SANITARY WELL CAP

6. LOCATION OF WELL

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



Subdivision Name _____
Lot No. _____ Block No. _____
County CANYON
Address of Well Site LEWIS LANE
(give at least name of road)
T. 2 N ☒ or S ☐
NE ¼ NW ¼ Sec. 17, R. 1 E ☐ or W ☒

7. WATER LEVEL

Static water level _____ 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
150	245	2

9. LITHOLOGIC LOG

84141

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
9"	0	8	TOP SOIL	NO	
9"	8	25	LAVA ROCK	NO	
9"	25	28	RED CINDERS	NO	
9"	28	51	LAVA ROCK	NO	
9"	51	53	CRACK	NO	
9"	53	75	LAVA ROCK/CRACKS	NO	
9"	75	79	SAND	YES	
9"	79	100	GRAVEL	NO	
6"	100	122	GRAVEL	NO	
6"	122	133	SAND	YES	
6"	133	148	CLAY	NO	
6"	148	175	HEAVING SAND	YES	
6"	175	180	CLAY	NO	
6"	180	205	HEAVING SAND	YES	
6"	205	207	CLAY	NO	
6"	207	225	HEAVING SAND	YES	
6"	225	245	BLUE CLAY	NO	
6"	245	250	COARSE SAND	YES	

RECEIVED
DEC 28 1992
Department of Water Resources

RECEIVED
DEC - 1 1992
Department of Water Resources

RECEIVED
AUG 09 1993
Department of Water Resources
Western Regional Office

10.

Work started 11/13/92 finished 11/15/92

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 Can-Ada Well Drilling Firm No. 304
Address 4250 Murphy Road
Kuna, Idaho
Signed by Drilling Supervisor Earl Skinner
and
(Operator) _____
(If different than the Drilling Supervisor)

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

Form 238-7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

35

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 L & H Construction

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 ☐ 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 1/2 feet	38 1/2 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

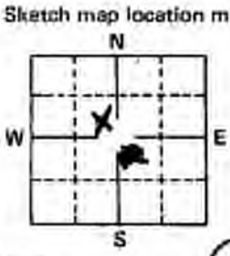
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

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 Welded plate

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name None

Lot No. _____ Block No. _____

County Canyon

SE ¼ NW ¼ Sec. 17, T. 2 N., R. 1 W.

7. WATER LEVEL

Static water level 57 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

106238

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
	0	3	Top soil & hard pan		X
	3	25	Solid lava		X
	25	33	Lava crevices		X
	33	56	Solid lava		X
	56	70	Lava with some crevices	X	
	70	85	Solid lava		X
	85	92	Lava crevices & some lava	X	

RECEIVED
MAY 30 1980
Department of Water Resources

RECEIVED
MAY 27 1980
Department of Water Resources
Western Regional Office

10.

Work started 7/24/79 finished 7/24/79

11. DRILLERS CERTIFICATION

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

Firm Name Dave's Well Drilling Firm No. 10

Address 4150 Pitt. Ramp Date 8/2/79

Signed by (Firm Official) Charles Davis

and

(Operator) _____

MICROFILMED

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

Form 238-7
8/90

RECEIVED
OCT 15 1991
Department of Water Resources

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.

USE TYPEWRITER OR BALLPOINT PEN

1. WELL OWNER

Name Harold Coon
Address 4756 Dye Lane
Nampa, Idhao 83686
Drilling Permit No. 63-91-w-277
Water Right Permit No. _____

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches +	2 feet	39 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

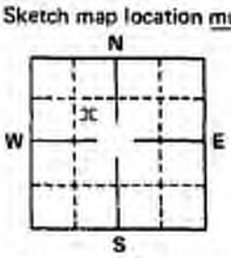
Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 39 Material used in seal: ☐ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☒ Temp. surface casing
☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld
☐ Cemented between strata
Describe access port well seal

6. LOCATION OF WELL

Sketch map location must agree with written lo



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
SE ¼ NW ¼ Sec. 17, T. 2 N S ☐ R. 1 W E ☐ W ☐

MICROFILMED
DEC 04 1991

7. WATER LEVEL

Static water level 59 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

71224

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	5	Top soil/hard pan		x
	5	7	Loose lava		x
	7	28	Solid lava		x
	28	35	Lava crevices		x
	35	37	Solid lava		x
	37	38	Lava crevices		x
6	38	65	Solid lava		x
	65	73	Lava crevices	x	
	73	94	Loose lava/crevices		x
	94	98	Lava/gravel	x	
	98	101	Sand/gravel	x	

RECEIVED
OCT 10 1991
Department of Water Resources
Western Regional Office

10.

Work started 8/5/91 finished 8/5/91

11. DRILLERS CERTIFICATION

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

DAVIS WELL & PUMP CO.
Firm Name PITT LANE Firm No. 101
NAMPA, IDAHO 83687
Address _____ Date 10-9-91
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 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.

1. WELL OWNER

Name E.L. Koontz

Address Dyer Lane Nampa Ida 83651

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 80 feet

Casing schedule: ☑ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+1' feet	20 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 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 Canyon

E½NW¼ ¼ Sec. 17 T. 2 N☑S, R. 1 E/W

7. WATER LEVEL

Static water level 6' 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

Department of Water Resources
Western Regional Office
OCT 1976

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
20	7	2

9. LITHOLOGIC LOG 033156

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	2	Soil		✓
8	2	7	Hardpan		✓
6	7	20	Lava		✓
6	20	80	Lava Broken	✓	

10.

Work started Aug 11 finished Aug 18 1976

11. DRILLERS CERTIFICATION

Firm Name C R Broomfield Firm No. 29

Address 147 Meyer Nampa Id Date Oct 12

Signed by (Firm Official) C R Broomfield

and

(Operator) Same

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 State Reclamation Engineer within 30 days after completion or abandonment of the well.

Received 7-2-73

1. WELL OWNER

Name Richard H. Kolbo

Address 1011 10th Ave So Nampa 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

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 76 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	6" inches	~~FT6~~ feet	20 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 _____

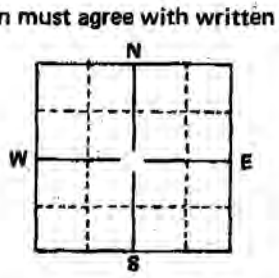
Placed from _____ feet to _____ feet

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

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



6 3

County Canyon County

E ½ ~~X~~ NW ¼ Sec. 17, T. 2 N/~~X~~, R. 1 ~~X~~/W

7. WATER LEVEL

Static water level 49' 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
800 gal per Hr		

9. LITHOLOGIC LOG

31394

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	1	Caliche & Hard pan		
	1	3	Caliche		
	3	24	Gray Lava		
	24	54	Brown Lava Soft Cinders	X	
	54	76	Black Lava Porous Cinders Stalled in Black Cinders	X	

10.

Work started Sept-29-72 finished Oct-4-72

11. DRILLER'S CERTIFICATION

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

C. R. Broomfield #29
Driller's or Firm's Name Number

147 Meffan St Nampa, Ida.
Address

Richard Bourn Oct 5-72
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE, BLUE, AND PINK COPIES 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 State Reclamation Engineer within 30 days after completion or abandonment of the well.

Received 10-19-72

1. WELL OWNER

Name Richard H. Kolbo

Address 1011 10th Ave So Nampa, 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

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 76 feet

Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	6 5/8 inches	0 feet	20 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 _____

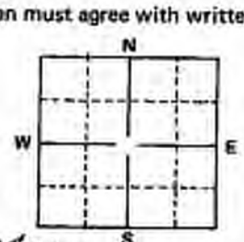
Placed from _____ feet to _____ feet

Surface seal? ☒ Yes ☐ No To what depth 20" feet

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



Canyon County

E ½ NW¼ Sec. 17, T. 2 N/S, R. 1 E/W

Boise Meridian

7. WATER LEVEL

Static water level 49 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 gpm	NONE	6 hrs

9. LITHOLOGIC LOG

31396

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	1	Cobbles & Hardpan		
	1	3	Cobbles "Hard"		
	3	24	Gray Lava		
	24	54	Brown Lava Soft "Fg"	X	
	[illegible]		Some Cinders		
	54	76	Black Lava Rock	X	
			Also some Cinders		
			Bailed out in Cinders		

10.

Work started Sept-29 72 finished Oct 4, 72

11. DRILLER'S CERTIFICATION

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

C. R. Broomfield #29

Driller's or Firm's Name Number

147 W. Jefferson Ste Nampa Ida

Address

C R Bourn Oct-10-1972

Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY

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

816081

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

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. DRILLING PERMIT NO. D 0031457
Other IDWR No. «Other_IDWR_No»

2. OWNER:
Name John Defferies
Address 2012 Stuart Ln.
City Nampa State ID Zip 83687

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

N / W / E / S

Twp 2 North ☒ or South ☐
Rge 1 East ☐ or West ☒
Sec 17 «QQQ» (10 acres) NE 1/4 (40 acres) NW 1/4 (160 acres)
Gov't lot County Canyon
Lat: Long:
Address of Well Site 6549 E. Lewis Ln.
City Nampa
(Give at least name of road + Distance to Road or Landmark)
Lt. «Lt» Blk. «Blk» Sub. Name «Subname»

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	600	overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 140
Was drive shoe seal tested? ☒ Y ☐ N How? Air

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	140	.250	steal	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

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:
48 ft. below ground Artesian Pressure lb
Depth flow encountered 100-140ft. Describe access port or control devices: Cap

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

Yield gal/min.	Drawdown	Pumping Level	Time
75	135	135	1hr

Water Temp. 56 Bottom hole temp. 56
Water Quality test or comments:
Depth first Water Encountered 60

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10	0	2	Top Soil		X
10	2	3	Broken up Lava		X
10	3	18	Lava		X
6	18	25	Lava		X
6	25	41	Red Lava		X
6	41	60	Lava		X
6	60	63	Broken up Lava	X	
6	63	95	Lava & Clay		X
8	95	100	Broken Up Lava & Clay	X	
6	100	140	Gravel	X	

RECEIVED
JUN 24 2004
WATER RESOURCES
WESTERN REGION

Completed Depth: 140 (Measurable)
Date: Started 6/18/04 Completed 6/22/04

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

Firm Name Treasure Valley Drilling Firm No. 560
Firm Official Date 6/24/04
Supervisor or Operator Date 6/24/04
(Sign once if Firm Official & Operator)

Date: 6/23/2004 Time: 11:28 AM

63

838789

41

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 409150
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 000 42638
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Sherlock Homes
Address 524 3rd St. South # 102
City Nampa State ID Zip 83651

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 2N North ☐ or South ☐
Rge. 1W East ☐ or West ☐
Sec. 17 NE 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County
Lat: : : Long: : :
Address of Well Site Southwest corner of Lewis + Permit
(Give at least name of road + Distance to Road or Landmark) City Nampa
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 Material	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	20	1,000 lbs	overbore
Cuttings	20	60		

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 75'
Was drive shoe seal tested? ☐ Y ☒ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	[redacted]	.250	Steel	☒	☐	☒	☐
		[redacted]			☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 6" Length of Tailpipe
Packer ☒ Y ☐ N Type K-packer

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method
Screen Type & Method of Installation Johnson + washdown

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
[redacted]	[redacted]					☐	☐
85	95	.250		5"	SS	☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
60 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
60			

Water Temp. Bottom hole temp.
Water Quality test or comments: Clear + Clear
NO TEST Depth first Water Encounter 60'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	6	Top Soil		
	6	25	Broken Lava		
	25	50	Solid Lava		
	50	60	Lava w/ crevices	X	
6	60	95	Sand + Gravel	X	

RECEIVED
MAR 28 2006
WATER RESOURCES
WESTERN REGION

Completed Depth [redacted] 95' (Measurable)
Date: Started 3/14/06 Completed 3/15/06

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

Company Name Johnson pump + Drilling Firm No. 457
Principal Driller Dave Ackerman Date 3/21/06
and
Driller or Operator II [signature] Date 3/21/06
Operator I [signature] Date 3/21/06
Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
4/92

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 Orrin J Gardner
Address 9814 Robinson Rd Nampa
Drilling Permit No. 63-92-W-1034-000
Water Right Permit No. _____

2. NATURE OF WORK
☒ 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
☒ Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED
☒ Rotary ☒ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION
Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2 feet	18 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

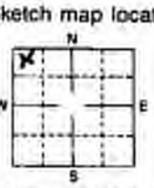
Number		From	To
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet

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

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

Surface seal depth 18 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 Port on Sanitary Seal

6. LOCATION OF WELL
Sketch map location **must** agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
Address of Well Site 9814 Robinson Rd Nampa
(give at least name of road)
NW ¼ NW ¼ Sec. 17, T. 3 N ☒ or S ☐, R. 1 E ☐ or W ☒

7. WATER LEVEL
Static water level 71 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 60 °F. Quality Clear
Describe artesian or temperature zones below.

8. WELL TEST DATA
☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
35	100	1/2

9. LITHOLOGIC LOG 082812

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	1	Soil		X
8	1	7	Broken Lava		X
8	7	18	Solid Lava		X
6	18	27	Solid Lava		X
6	27	35	Broken Lava		X
6	35	37	Red Cinder		X
6	37	109	Solid Lava		X
6	109	113	Orage Cinder	X	
6	113	–	Gravel	X	

RECEIVED
DEC 21 1992
Department of Water Resources

RECEIVED
DEC 16 1992
Department of Water Resources
Western Regional Office

AUG 09 1993

10.
Work started 11/25/92 finished 11/25/92

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 Domestic Pump & Drill Firm No. 483
Address 12630 Orchard Nampa Date 11/27/92
Signed by Drilling Supervisor _____
and
(Operator) _____
(If different than the Drilling Supervisor)

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

Form 238-7
1/78

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.

USE TYPEWRITER OR BALLPOINT PEN

RECEIVED JUN 2 1983

Department of Water Resources

1. WELL OWNER

Name Mrs. Ballard

Address _____

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	+ 1 1/2 feet	29 1/2 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

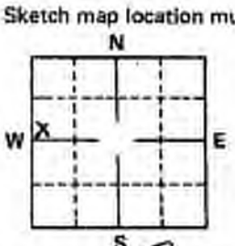
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

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 Welded

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
SW ¼ NW ¼ Sec. 17, T. 2 N., R. 1 W.

7. WATER LEVEL

Static water level 10 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

9. LITHOLOGIC LOG

83675

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
	0	8	Top soil & hardpan		X
	8	10	Hard lava		X
	10	22	Soft lava		X
	22	25	Lava crevices		X
	25	55	Soft lava		X
	55	65	Lava crevices	X	
	65	84	Soft lava		X
	84	88	Hard lava	X	
	88	90	Clay sand & gravel	X	

RECEIVED
JUN 3 1983
Department of Water Resources
Western Regional Office

10.

Work started 8-4-82 finished 8-5-82

11. DRILLERS CERTIFICATION

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

Firm Name Davis Well Drilling No. 401
Address 415 N Rutledge Date 12-7-82
Signed by (Firm Official) Charles Davis
and
(Operator) _____

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

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

62885

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63-96-41-0030-000
Other IDWR No. _____

2. OWNER:
Name ANN COLE
Address RT 1 BOX 177
City THREE FORKS State MT Zip 59752

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

N / W / E / S

Twp. 2 North ✱ or South ☐
Rge. 1 East ☐ or West ✱
Sec 17, SW 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 9522 ROBINSON RD
(GRD DYE LN)
(Give at least name of road + Distance to Road or Landmark)
City NAMPA

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	90	500	GRAVITY
DRILL CUTTINGS	MIXED		250-300	"

Was drive shoe used? ✱ Y ☐ N Shoe Depth(s) 97
Was drive shoe seal tested? ☐ Y ✱ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	97	.25	STEEL	✱	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☐ Screens Screen Type NONE

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

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
48 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
100			1 HR

Water Temp. 58° Bottom hole temp. _____
Water Quality test or comments: <1 TDU / PH 8 / GRN ✱
Depth first Water Encountered 62

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	1	3	TOP SOIL		
	3	8	HARD PAN		
	8	11	CLAY		
	11	20	LAVA ROCK		
8	20	62	LAVA ROCK		
	62	66	CINDER ROCK	✱	
	66	70	LAVA ROCK		
	70	90	CLAY POCKETS W/LAVA	✱	
6	90	97	SAND & GRAVEL LOTS ✱		

RECEIVED
FEB 15 1996
Department of Water Resources
RECEIVED
FEB 09 1996
WATER RESOURCES
WESTERN REGION
MAY 06 1996

Completed Depth 97 (Measurable)
Date Started 1-22-96 Completed 1-23-96

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

Firm Name ADAMSON PUMP & DRILLING Firm No. 0457
Firm Official Dave Adamson Date 1-25-95
and
Supervisor or Operator DAVE ADAMSON Date 1-25-95
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form: 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

776683

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

1. WELL TAG NO. D 0019747
DRILLING PERMIT NO. _____
Other IDWR No. _____

2. OWNER:
Name Tom Young
Address 4528 Dye Lane
City Kuna State Id Zip 83634

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

N / W / E / S

Twp. 2 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 17 SE 1/4 (10 acres) NW 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: : :
Address of Well Site 4528 Dye Lane
City ____
(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	109	2000 #	overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 255'
Was drive shoe seal tested? ☐ Y ☒ N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	255'	250	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 10' Length of Tailpipe ____

9. PERFORATIONS/SCREENS
Perforations Method wash down
Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
256	261	.020		5"	SS	☐	☐
						☐	☐
						☐	☐

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
100			1 hour

Water Temp. 62° Bottom hole temp. ____
Water Quality test or comments: Iron .1 PH 8.0 Grains 3 Sulfur Smell Depth first Water Encounter 109

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		
"	4	7	hard pan		
"	7	26	hard lava		
"	26	28	Soft lava		
"	28	45	hard lava		
"	45	60	hard lava		
"	60	65	Soft lava		
"	65	83	hard lava		
"	83	109	Cinders		
6	109	115	gravel	X	
"	115	186	Sand	X	
"	186	187	Clay		
"	187	192	Sand	X	
"	192	193	Clay		
"	193	220	Sand	X	
"	220	235	Sand	X	
"	236	236	Clay		
"	236	245	Sand	X	
"	245	254	gray clay		
"	254	261	gray Sand	X	

RECEIVED
MAY 13 2002
WATER R...
WESTE...

Completed Depth 261 (Measurable)
Date: Started 5-1-02 Completed 5-4-02

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 ABC Well Drilling Firm No. 621
Firm Official Cindy Payne Date 5-6-02
and
Driller or Operator Randy Payne Date 5-6-02
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

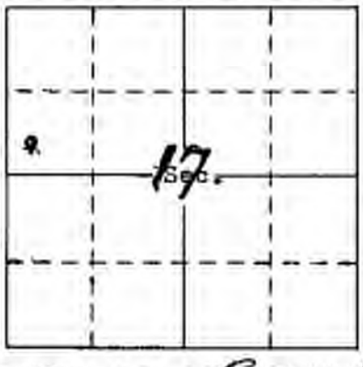
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12.1.67

REPORT OF WELL DRILLER
State of Idaho

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

WELL OWNER:
Name Jesse McClusin
Address Rt 6
Nampa Idaho
Owner's Permit No.
NATURE OF WORK (check): Replacement well ☐
New well ☒ Deepened ☐ Abandoned ☐
Water is to be used for: Domestic
METHOD OF CONSTRUCTION: Rotary ☐ Cable ☒
Dug ☐ Other
(explain)
CASING SCHEDULE: Threaded — Welded X
6 "Diam. from +1 ft. to 105 ft.
"Diam. from ft. to ft.
"Diam. from ft. to ft.
"Diam. from ft. to ft.
Thickness of casing: Material:
Steel ☒ concrete ☐ wood ☐ other ☐
(explain)
PERFORATED? Yes ☐ No ☒ Type of perforator used:
Size of perforations: " by "
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
WAS SCREEN INSTALLED? Yes ☐ No ☒
Manufacturer's name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.
CONSTRUCTION: Well gravel packed? Yes ☐
No. ☒ size of gravel Gravel placed from ft. to ft. Surface seal provided? Yes ☐ No ☐ To what depth?
ft. Material used in seal
Native Clay
Did any strata contain unusable water? Yes ☐
No. ☒ Type of water:
Depth of strata ft. Method of sealing strata off:
Surface casing used? Yes ☐ No. ☒
Cemented in place? Yes ☐ No ☐

Locate well in section



LOCATION OF WELL: County Canyon
SW ¼ NW ¼ Sec. 17 T. 2 N/S R. 1 E/W

Size of drilled hole: Sit in ed Total depth of well: 105 Standing water level below ground: 14 Temp. Fahr. ° Test delivery: 15 gpm or cfs Pump? ☒ Bail ☐
Size of pump and motor used to make test: 2½ Cylinder Pump
Length of time of test: 1 Hrs. 1 Min.
Drawdown: 22 ft. Artesian pressure: ft. above land surface Give flow cfs or gpm. Shutoff pressure:
Controlled by: Valve ☐ Cap ☐ Plug ☐
No control ☐ Does well leak around casing?
Yes ☐ No ☒

DEPTH FROM FEET	DEPTH TO FEET	MATERIAL 31390	WATER YES OR NO
0	3	Top soil	no
3	17	Hardpan Sandy clay Strata	Yes
17	50	Gravel Sand	Yes
50	53	Cracker "Rock"	Yes
53	75	Gravel Sand	Yes
75	97	Lava	no
97	102	Sandy Clay	no
102	9	Sand Gravel	Yes

Work started: Sept. 28 1967
Work finished: Oct. 7 1968
Well Driller's Statement: This well was drilled under my supervision and this report is true to the best of my knowledge.
Name:
Address:
Signed by: William E. Doty
License No. 42 Date: 10-9-68

Use other side for additional remarks

Form 238-7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

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

1. WELL OWNER

Name Gary Henrickson

Address Kuna

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	10 inches	+ 1½ feet	20 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

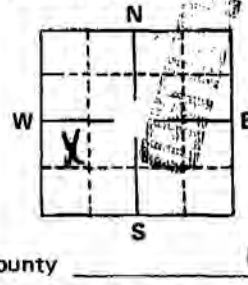
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

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 welded plate

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name None

Lot No. _____ Block No. _____

County Canyon

NW ¼ SW ¼ Sec. 17 T. 2 N. R. 1 W.

7. WATER LEVEL

Static water level 10 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

9. LITHOLOGIC LOG

83425

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
10	0	8	Top dirt & hardpan		X
	8	30	Solid lava		X
	30	34	Lava crevices	X	
	34	59	Solid lava		X
	59	70	Lava with small crevices	X	
	70	88	Solid lava		X
	88	97	Lava crevices,	X	
			some lava &	X	
			some bentonite	X	

RECEIVED
DEC 15 1982
Department of Water Resources

RECEIVED
JUN 30 1981
~~Department of Water Resources~~
~~Western Regional Office~~

10.

Work started 7/5/79 finished 7/9/79

11. DRILLERS CERTIFICATION

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

Firm Name Lers Well Drilling Firm No. 101

Address 415 N. Pitt Lane Date 8/27/79

Signed by (Firm Official) _____

and

(Operator) Charles Davis

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

C

064790

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

63-98-W-0860-000

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

1. DRILLING PERMIT NO. - - - - -
Other IDWR No. D0007916

2. OWNER:
Name Doug Teuscher
Address 6925 E Lewis Ln
City Nampa State ID Zip 83686

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

N / W / E / S

Twp. 2 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 17 1/4 (10 acres) NW 1/4 (40 acres) SW 1/4 (160 acres)
Gov't lot ____ County Canyon
Lat: ____ Long: ____
Address of Well Site Robinson & Dye Ln
City Nampa
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name ____

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	3'	+30'	10	Overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+1'	118'	250	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:
54ft. 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		80	1 hr

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered 65'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0'	1'	brown top soil		☒
10"	2'	4'	white hardpan clay		☒
10"	4'	25'	black/grey lava		☒
8"	25'	26'	crack		☒
8"	26'	65'	black lava w/occasional cracks		☒
8"	65'	74'	broken black lava	☒	
8"	74'	85'	cavy black lava	☒	
8"	85'	90'	broken black lava	☒	
8"	90'	96'	lt brown clay		☒
6"	96'	102'	lt brown clay		☒
6"	102'	120'	brown sand & gravel	☒	

RECEIVED
DEC 04 1998
WATER RESOURCES WESTERN REGION

RECEIVED
DEC 09 1998
Department of Water Resources

MICROFILMED
MAR 08 1999

Completed Depth 120' (Measurable)
Date: Started 11-23-98 Completed 11-24-98

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

Firm Name SOS Welldrilling & Pump Co Firm No. 212
Firm Official ____ Date 12-1-98
Supervisor or Operator ____ Date 12-1-98
(Sign once if Firm Official & Operator)

Date: 12/01/98 Time: 10:07 AM

Form 238-7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

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

1. WELL OWNER

Name Max Finch

Address RT. #1 Dye Lane Nampa, 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	+ 3 feet	112'9" feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

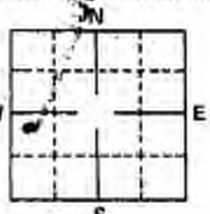
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation inches by inches

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 75 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
NW ¼ SW ¼ Sec. 17 T. 2 N/S R. 1 E/W.

7. WATER LEVEL

Static water level 75 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
50		2

9. LITHOLOGIC LOG

88690

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	1	top soil		x
8	1	3	boulders		x
8	3	75	rock		x
6	75	80	sand		x
6	80	90	gravel	x	
6	90	95	sand	x	
6	95	110	sand and gravel	x	
6	110	115	clay		x
6	115	–	sand	x	

RECEIVED
DEC 17 1981
Department of Water Resources
Western Regional Office

10.

Work started 6-5-81 finished 6-5-81

11. DRILLERS CERTIFICATION

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. 311CALDWELL Date 8-31-81
Signed by (Firm Official) Bill Doty
and
(Operator) Bill Doty

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

Form 238-7
6/07

906779-854183

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D D0053304
Drilling Permit No.
Water right or injection well #

2. OWNER
Name Steve Lambson
Address 9151 Robinson Rd Blvd
City Kuna State ID Zip 83634

3. WELL LOCATION:
Twp. 2 North ☒ or South ☐ Rge. 1 East ☐ or West ☒
Sec. 18 NE 1/4 (10 acres) SE 1/4 (40 acres) SE 1/4 (160 acres)
Gov't Lot County Canyon
Lat. 43 30 ' 22.5 (Deg. and Decimal minutes)
Long. 116 29 ' 38.0 (Deg. and Decimal minutes)
Address of Well Site same
City
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
bentonite	0'	19'	550 lbs	poured

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	+2.	178	.250	steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 178.5

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method
Manufactured screen ☒ Y ☐ N Type telescoping
Method of installation washed in

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
185'	190'	.018		5"	ST ST	
174'	190'			5"	screen ass.	

Length of Headpipe 11.8" Length of Tailpipe
Packer ☒ Y ☐ N Type

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) Static water level (ft) 66
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
180	100+	2 hrs	☐	☐	☒	☐
120	70	1 hr				
100	42	1 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
10"	0'	2'	top soil		X
10"	2'	3'	white baked clay		X
10"	3'	19'	basalt black		X
8"	19'	25'	basalt black		X
8"	25'	45'	red basalt		X
8"	45'	78'	black basalt		X
6"	78'	98'	sand & gravel	X	
6"	98'	138	silty sand	X	
6"	138	141	tan clay		X
6"	141	148	tan clay & sand strips	X	
6"	148	152	tan clay		X
6"	152	169	tan clay & sand strips	X	
6"	169	175	tan clay with cracks	X	
6"	175	180	tan clay		X
6"	180	188	sand medium	X	
			added 32 inches		
			to top of casing		

RECEIVED
DEC 17 2008
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable) 188
Date: Started 11-05-08 Completed 11-08-08

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Down Right Drilling & Pump, Inc Co. No. 637
*Principal Driller Tony Bassett Date 12-15-08
*Driller Tony Bassett Date 12-15-08
*Operator II Date
Operator I Date
* Signature of Principal Driller and rig operator are required.

Form provided by Forms On-A-Disk · (214) 340-8429 · www.FormsOnADisk.com

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 Phillip Estrada

Address Rt 3, Box 3671 Robinson ave, Nampa 83651

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 85 feet

Casing schedule: ☑ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+ 16 feet	18½ 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

63

Sketch map location must agree with written location.

N / W / E / S

Subdivision Name _____

Lot No. _____ Block No. _____

County CANYON

SE ¼ NE ¼ Sec. 18, T. 2 N/S, R. 1 E/W

7. WATER LEVEL

OCT JAN 1978

Static water level 29 feet below land surface.

Flowing? ☐ Yes ☑ No Depth G.P.M. flow _____

Temperature _____ °F. Quality _____

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

Controlled by: ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA 40' ROD PUMP 2½"

☑ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Drawdown	Hours Pumped
20		2

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	1	TOP SOIL		L
6	1	4	HARD PAN		L
6	4	5	BROKEN LAVA		L
6	5	85	LAVA	L	
6	85		SAND & GRAVEL	L	

10. Work started 7/24 1978 finished 8/1/1978

11. DRILLERS CERTIFICATION

Firm Name MYRON E. PROW WELL DRILLING Firm No. 324

Address 913 EAST 2nd STREET MERIDIAN, IDAHO 83642 888-2128 or 466-4128 Date 10/4/1978

Signed by (Firm Official) Myron E Prow

and

(Operator) Myron E Prow

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

Form 238-7
4/92

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 CORNELL, H.D.
Address 9555 ROBINSON RD.
KUNA, ID 83634
Drilling Permit No. 63-92-W-642-000
Water Right Permit No. _____

2. NATURE OF WORK

☐ X 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

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☐ X Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
250 inches	6 inches	+ 1 feet	42 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☐ Yes ☐ X No
Was a packer or seal used? ☐ Yes ☐ X No
Perforated? ☐ Yes ☐ X 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 ☐ X No
Manufacturer _____ Type _____
Top Packer or Headpipe _____
Bottom of Tailpipe _____

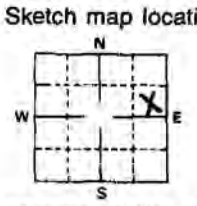
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☐ X No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 18 Material used in seal: ☐ Cement grout
☐ X Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☐ X Overbore to seal depth
Method of joining casing: ☐ Threaded ☐ X 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 ROBINSON & DYE LANE
(give at least name of road)
SE ¼ NE ¼ Sec. 18 T. 2 N ☐ or S ☐ R. 1 E ☐ or W ☐ X

7. WATER LEVEL

Static water level 39 feet below land surface.
Flowing? ☐ Yes ☐ X 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 ☐ X Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
75	44'	1

9. LITHOLOGIC LOG

84969

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
9"	0	1	TOP SOIL		NO
9"	1	3	HARD CLAY		NO
9"	3	18	BLACK LAVA		NO
8"	18	24	BLACK LAVA		NO
8"	24	25	CRACK		NO
8"	25	50	BLACK LAVA		NO
6"	50	61	BLACK LAVA		NO
6"	61	62	CRACK	YES	
6"	62	69	BLACK LAVA		NO
6"	69		GRAVEL	YES	

RECEIVED
OCT 21 1992
Department of Water Resources

RECEIVED
AUG 28 1992
Department of Water Resources
Western Regional Office

DEC 04 1992

10.

Work started 8/10/92 finished 8/12/92

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 SOS Well Drilling Firm No 212
Address 4145 N. Blacktail Road Date 8/25/92
Meridian, Idaho 83642
Signed by Drilling Supervisor _____
and
(Operator) _____
(if different than the Drilling Supervisor)

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

63

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0067277
Drilling Permit No. 9606764 - 872823
Water right or injection well #

2. OWNER:
Name Gordon Cooper
Address 920 W. Ash St.
City Caldwell State ID Zip 83605

3.WELL LOCATION:
Twp. 2 North ☒ or South ☐ Rge. 1 East ☐ or West ☒
Sec. 18 1/4 (10 acres) SE 1/4 (40 acres) NE 1/4 (160 acres)
Gov't Lot County Canyon
Lat. 43 ° 30.762 (Deg. and Decimal minutes)
Long. 116 ° 29.828 (Deg. and Decimal minutes)
Address of Well Site 9605 S. Robinson Rd.
(Give at least name of road + Distance to Road or Landmark) City Nampa
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
3/8 Bentonite	0'	58'	29 bags	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	+2'	58'	.250	Steel	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 58'

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method
Manufactured screen ☒ Y ☐ N Type Certa-lok
Method of installation Set with Sand Line

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
84'	44'	.20		4-1/2"	PVC	SDR17

Length of Headpipe 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) 30' Static water level (ft) 18'
Water temp. (°F) 56 Bottom hole temp. (°F)
Describe access port Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
67'	80 GPM	30 minutes

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
10"	0'	2'	Topsoil		X
10"	2'	12'	Tan Clay		X
10"	12'	30'	Black Basalt		X
10"	30'	32'	Broken Black Basalt	X	
10"	32'	50'	Black Basalt		X
10"	50'	55'	Broken Black Basalt	X	
10"	55'	58'	Black Basalt		X
6"	58'	76'	Black Basalt w/Cracks	X	
6"	76'	85'	Red Basalt	X	
6"	85'	90'	Gravel	X	

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AUG 08 2014
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 84'
Date Started: Jul 29, 2014 Date Completed: Jul 30, 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 Adamson Pump & Drilling Co. No. 457
*Principal Driller Dave Adamson Date Aug 6, 2014
*Driller John Sefton Date Aug 6, 2014
*Operator II Date
Operator I Mateo Chapa Date Aug 6, 2014

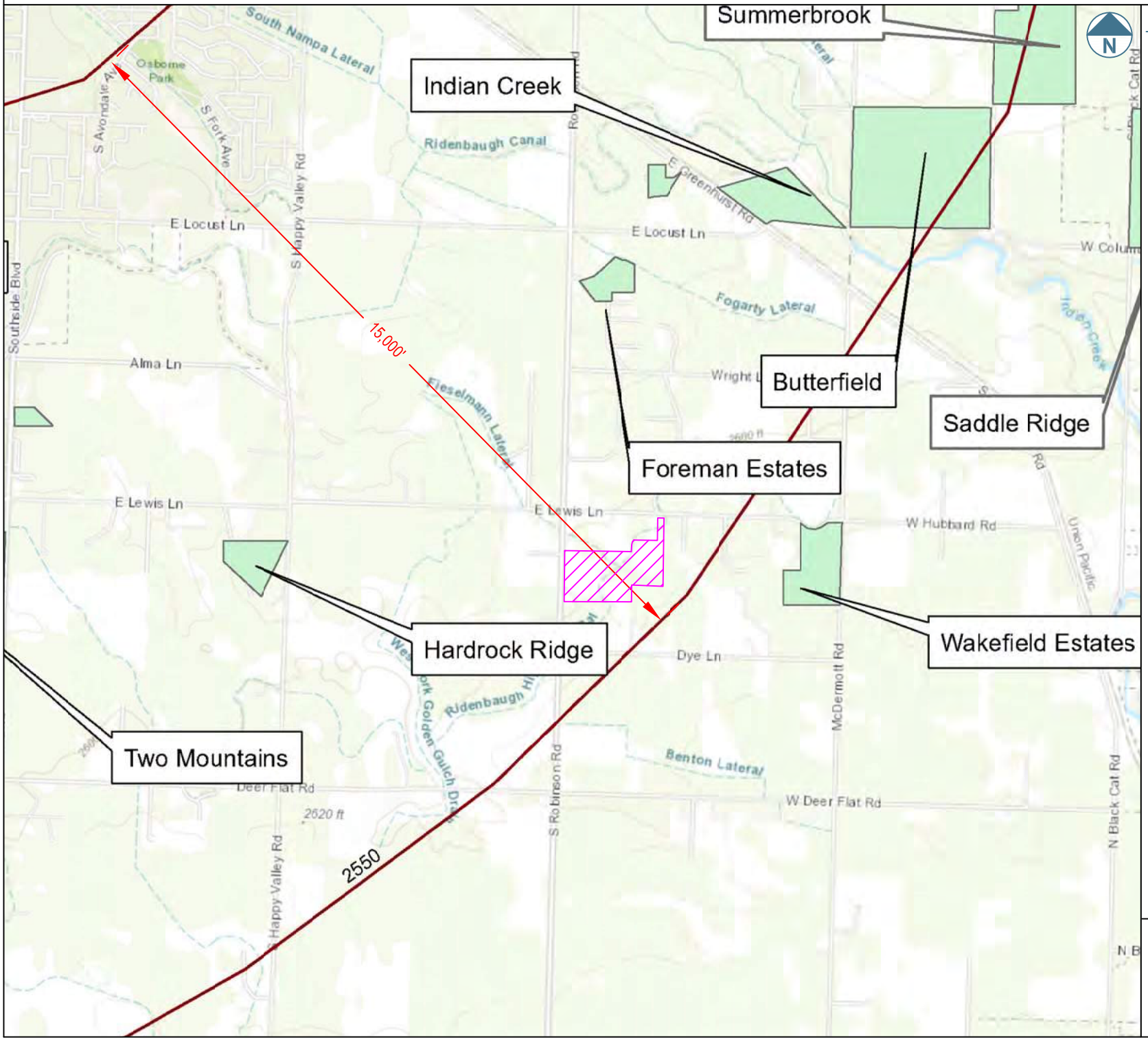
* Signature of Principal Driller and rig operator are required.

Appendix VI IDEQ GROUNDWATER CONTOUR MAP

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IDEQ Groundwater Contours

Figure 5



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

SCALE

0 0.375 0.75

(Miles)

Haven Creek
9814 Robinson Road
Kuna, ID

Modified by: CBJ
January 14, 2022
Drawing: B212203g

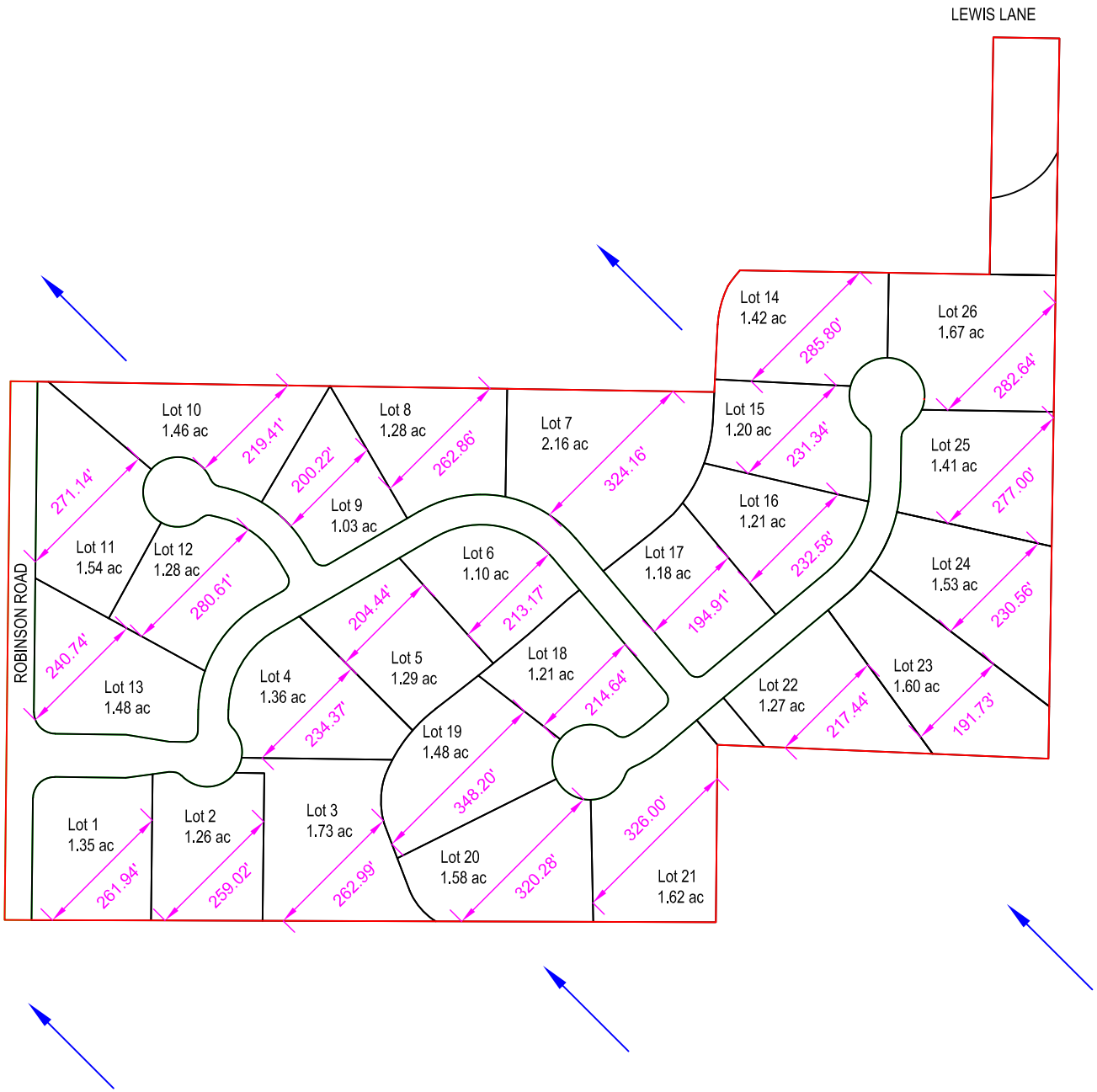
ATLAS
2791 S. Victory View Way
Boise, ID 83709

Appendix VII SITE PLAN WITH AQUIFER WIDTH MAP FOR INDIVIDUAL LOTS

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Site Map with Individual Lot Aquifer Widths Perpendicular to Groundwater Flow Direction

Figure 6



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Groundwater Flow Direction

SCALE

0 200 400

(Feet)

Haven Creek
9814 Robinson Road
Kuna, ID

Modified by: CBJ
January 14, 2022
Drawing: B212203g

ATLAS
2791 S. Victory View Way
Boise, ID 83709

Appendix VIII HISTORIC PRECIPITATION/CLIMATE DATA FOR PROJECT LOCATION

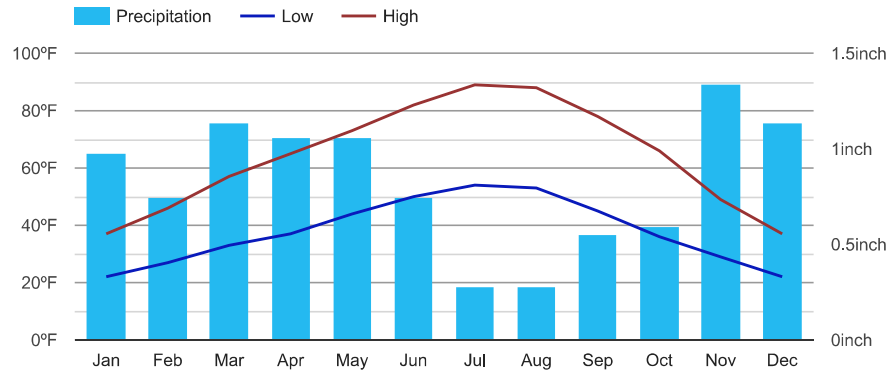
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Climate Kuna - Idaho

	Jan (January)	Feb (February)	Mar (March)	Apr (April)	May (May)	Jun (June)
Av. high	37	46	57	65	73	82
Av. low	22	27	33	37	44	50
Av. precip.	0.98	0.75	1.14	1.06	1.06	0.75

	Jul (July)	Aug (August)	Sep (September)	Oct (October)	Nov (November)	Dec (December)
Av. high	89	88	78	66	49	37
Av. low	54	53	45	36	29	22
Av. precip.	0.28	0.28	0.55	0.59	1.34	1.14

Kuna Climate Graph - Idaho Climate Chart





Kuna weather averages

Annual high temperature	64°F
Annual low temperature	38°F
Average annual precip.	9.92 inch

Share

Station Data

Monthly averages Kuna
Longitude: -116.42, Latitude: 43.49
Average weather Kuna, ID - 83634

Monthly: 1981-2010 normals

Abbreviations

Jan (January): January, Feb (February): February, ...



© US Climate Data 2021 | version 3.0 | by Your Weather Service |

Appendix IX SITE LOCATION WITH VICINITY MONITORING WELLS MAP AND MONITORED WELL DATA

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Vicinity Monitoring Well Locations

Figure 7



NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Well Location (#)

SCALE

0 0.125 0.25

(Miles)

Haven Creek
9814 Robinson Road
Kuna, ID

Modified by: CBJ
January 14, 2022
Drawing: B212203g

ATLAS
2791 S. Victory View Way
Boise, ID 83709

Appendix X NITRATE MASS-BALANCE SPREADSHEETS FOR INDIVIDUAL LOTS

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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)	81.000	Site-specific	
Hydraulic Gradient	0.0033	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	200.22	Site-specific	
Parcel Area (acres)	1.03	Site-specific	
Percent of Parcel That Is Impervious (Percent)	10	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)	5.4	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	8.30E+03	94.6
Effluent	4.14E+02	4.7
Recharge	5.72E+01	0.7
Total Water Volume	**8.78E+03**	

Point of Compliance Nitrate Concentration Goal (mg/l)	**6.4**
Avg. Downgradient Nitrate Concentration in GW (mg/l)	**7.2**
Current/Acceptable Lot Size (Acres)	**1.0**

Yearly Nitrogen Budget		
	Mass (mg)	% of Total
Background GW Nitrate Mass	4.48E+07	70.6
Septic Tank Effluent Nitrate Mass	1.87E+07	29.4
Recharge Nitrate Mass	1.72E+04	0.0
Total Nitrate Mass	**6.35E+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

Haven Creek Subdivision	Site Name
Lot 9 - Regular Septic System	Parcel Identification
1/14/2022	Date
Bryar Jensen, EI	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)	81.000	Site-specific	
Hydraulic Gradient	0.0033	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	200.22	Site-specific	
Parcel Area (acres)	1.03	Site-specific	
Percent of Parcel That Is Impervious (Percent)	10	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)	5.4	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	8.30E+03	94.6
Effluent	4.14E+02	4.7
Recharge	5.72E+01	0.7
Total Water Volume	**8.78E+03**	

Point of Compliance Nitrate Concentration Goal (mg/l)	6.4
Avg. Downgradient Nitrate Concentration in GW (mg/l)	6.4
Current/Acceptable Lot Size (Acres)	1.0

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.48E+07	80.0
Septic Tank Effluent Nitrate Mass	1.12E+07	20.0
Recharge Nitrate Mass	1.72E+04	0.0
Total Nitrate Mass	**5.60E+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

Haven Creek Subdivision	Site Name
Lot 9 - 40% Nitrate Reducing Septic System	Parcel Identification
1/14/2022	Date
Bryar Jensen, EI	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)	81.000	Site-specific	
Hydraulic Gradient	0.0033	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	191.73	Site-specific	
Parcel Area (acres)	1.6	Site-specific	
Percent of Parcel That Is Impervious (Percent)	10	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)	5.4	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	7.95E+03	94.0
Effluent	4.14E+02	4.9
Recharge	8.88E+01	1.1
Total Water Volume	**8.45E+03**	

Point of Compliance Nitrate Concentration Goal (mg/l)	**6.4**
Avg. Downgradient Nitrate Concentration in GW (mg/l)	**7.3**
Current/Acceptable Lot Size (Acres)	**1.6**

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.29E+07	69.7
Septic Tank Effluent Nitrate Mass	1.87E+07	30.3
Recharge Nitrate Mass	2.66E+04	0.0
Total Nitrate Mass	**6.16E+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

Haven Creek Subdivision	Site Name
Lot 23 - Regular Septic System	Parcel Identification
1/14/2022	Date
Bryar Jensen, EI	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)	81.000	Site-specific	
Hydraulic Gradient	0.0033	Site-specific	
Mixing Zone Thickness (ft)	15	15	Default
Aquifer Width Perpendicular to Flow (ft)	191.73	Site-specific	
Parcel Area (acres)	1.6	Site-specific	
Percent of Parcel That Is Impervious (Percent)	10	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)	5.4	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	7.95E+03	94.0
Effluent	4.14E+02	4.9
Recharge	8.88E+01	1.1
Total Water Volume	**8.45E+03**	

Point of Compliance Nitrate Concentration Goal (mg/l)	6.4
Avg. Downgradient Nitrate Concentration in GW (mg/l)	6.4
Current/Acceptable Lot Size (Acres)	1.6

Yearly Nitrogen Budget	Mass (mg)	% of Total
Background GW Nitrate Mass	4.29E+07	79.3
Septic Tank Effluent Nitrate Mass	1.12E+07	20.7
Recharge Nitrate Mass	2.66E+04	0.0
Total Nitrate Mass	**5.42E+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

Haven Creek Subdivision	Site Name
Lot 23 - 40% Nitrate Reducing Septic System	Parcel Identification
1/14/2022	Date
Bryar Jensen, EI	Prepared By

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January 20, 2023

Atlas No. B212203g

Mr. Tanner Verhoeks
Haven Idaho
521 North 10th Avenue #4
Caldwell, ID 83605

Subject: **Accessory Dwelling Unit Letter – Level 1 Nutrient Pathogen Study**
Haven Creek Subdivision
9814 Robinson Road
Kuna, ID

Dear Mr. Verhoeks:

Atlas previously conducted a Nutrient Pathogen (NP) Study for the above-mentioned project (Atlas File Number B212203g). The previous study was based on a total of 26 residential lots, with each residence assumed to be 4 bedrooms in size. This equated to a per lot wastewater flow of 300 gallons per day (gpd). Results of that study indicated that 40 percent nitrate reducing septic systems would be required for each lot in order to meet down-gradient nitrate concentration limits required by the Southwest District Health (SWDH) and Idaho Department of Environmental Quality (IDEQ). The NP Study has been submitted to SWDH and IDEQ for review, though results of that review are not yet available.

Atlas has since been informed that it is desirable to increase the number of residential lots to 29, and that accessory dwelling units (ADUs) may be constructed on at least some of the lots. Atlas preliminarily re-analyzed the site assuming that up to 500 gpd of wastewater flow would be used for each of the proposed 29 lots, which would allow for a 4-bedroom residence and 2-bedroom ADU on a single lot. Wastewater flow could be adjusted as needed for each structure on any given lot, though the total effluent is limited to 500 gpd per lot. Atlas also assumed a minimum lot size of 1 acre in the re-analysis. Results of the analysis indicate that as long as each individual lot width perpendicular to groundwater flow direction is at least 145 feet and advanced treatment capable of 65% nitrate reduction is implemented, the site will meet the point-of-compliance down-gradient nitrate concentrations as required by SWDH and IDEQ. Smaller lots widths perpendicular to groundwater flow could also be considered for lots where no ADUs are planned and flow rates are less than 500 gpd. Once Atlas is provided a revised lot layout showing the proposed 29 lots, a revised NP Study will be prepared and submitted to SWDH and IDEQ for review and approval.

If you have any questions, please call us at [redacted]

Respectfully submitted,

Monica Saculles, PE
Senior Geotechnical Engineer

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March 30, 2026

Atlas No. 83634

Tanner Verhoeks
Haven Idaho
521 North 10th Avenue #4
Caldwell, ID 82605

Subject: Nutrient Pathogen Study Update Letter - Revised
Haven Creek Subdivision
9814 Robinson Road
Kuna, ID

Dear Tanner Verhoeks:

Atlas previously conducted a Nutrient Pathogen (NP) Study for the above-mentioned project (Atlas File Number B212203g). The previous study was based on a total of 26 residential lots, with each residence assumed to be 4 bedrooms in size. This equated to a per lot wastewater flow of 300 gallons per day (gpd). Results of that study indicated that 40 percent nitrate reducing septic systems would be required for each lot in order to meet down-gradient nitrate concentration limits required by the Southwest District Health (SWDH) and Idaho Department of Environmental Quality (IDEQ). The NP Study has been submitted to SWDH and IDEQ for review, though results of that review are not yet available. Since the time of the original NP study, Atlas was asked to re-analyze the NP study to add accessory dwelling units and increase the number of lots from 26 to 29.

At this time, Atlas has been informed that the number of lots has been reduced from 29 to 21, with an average lot size of 1.9 acres. The original NP study and subsequent letter indicated that the point of compliance for nitrates could be achieved for 29 septic systems with lots as small as 1 acre and effluent volumes of up to 500 gallons per day.

The reduction in the lot density will reduce the total impact of nitrates from septic systems on the site. Once the finalized lot layout is available, a revised NP Study will be prepared and submitted to SWDH and IDEQ for review and approval.

If you have any questions, please call us at [redacted]

Respectfully submitted,

Clinton Wyllie, PG
Senior Geologist

Ethan Salove, PE
Senior Geotechnical Engineer

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SPF WATER ENGINEERING

MEMORANDUM



DATE: September 29, 2021

TO: Tanner Verhoeks
Justin Ruthenbeck

FROM: Andrew Francis P.G.
Terry Scanlan P.E., P.G.

RE: Haven Creek Subdivision Water Supply Assessment

Summary

1. The Haven Creek Subdivision will be irrigated using surface water supplied through a pressurized irrigation system. Domestic water supply will be from 27 individual wells.

2. Pumping 27 wells for domestic use will induce less than 0.5 feet of drawdown at a radius of 500 feet from the center of the Subdivision after one year of continuous pumping.

3. The addition of 27 domestic wells to this area will not injure nearby well owners or have a negative impact on local groundwater resources in the area.

Introduction

The Haven Creek Subdivision (Subdivision), consisting of 27 lots, has been proposed in Canyon County, approximately 5 miles east of Lake Lowell. The Subdivision is located south of Lewis Lane and east of Robinson Road in the NW ¼ of Section 17, Township 2 North, Range 1 West, and has a total area of 43.93 acres.

Each residential lot will have its own domestic well and it is anticipated that water from these wells will be used for indoor domestic use only. The residential lots and common areas will be irrigated from water supplies delivered by the Boise Project Board of Control through a pressurized irrigation system.

The purpose of this memorandum is to estimate the impact on local wells due to domestic well pumping at the Subdivision and to make recommendations for the construction of 27 new domestic wells.

To characterize hydrogeologic conditions, driller's reports for wells near the Subdivision were downloaded from the Idaho Department of Water Resources (IDWR) database to determine lithology and existing well capacities. IDWR groundwater-level monitoring data were reviewed to determine regional trends in groundwater levels. The following is an outline of items covered in this document:

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

1. Driller's Reports

A total of 13 well logs within approximately one-half mile of the proposed Subdivision were obtained from IDWR's *Find a Well* map interface. Well locations are presented in Figure 1 with important construction information in Table 1. The well labels in Figure 1 correspond to log numbers in Table 1. Wells 1 through 12 were constructed for domestic water supply and well 13 was constructed for waste disposal/injection purposes (likely for an open-loop heat pump system).

Four well logs within 3 miles of the proposed Subdivision were reviewed for pumping test information. This information was used to determine a range of aquifer transmissivity based on pumping test results. The well locations are presented in Figure 2 with corresponding construction and pumping test information in Table 2.

All well logs reviewed are included in Appendix A.

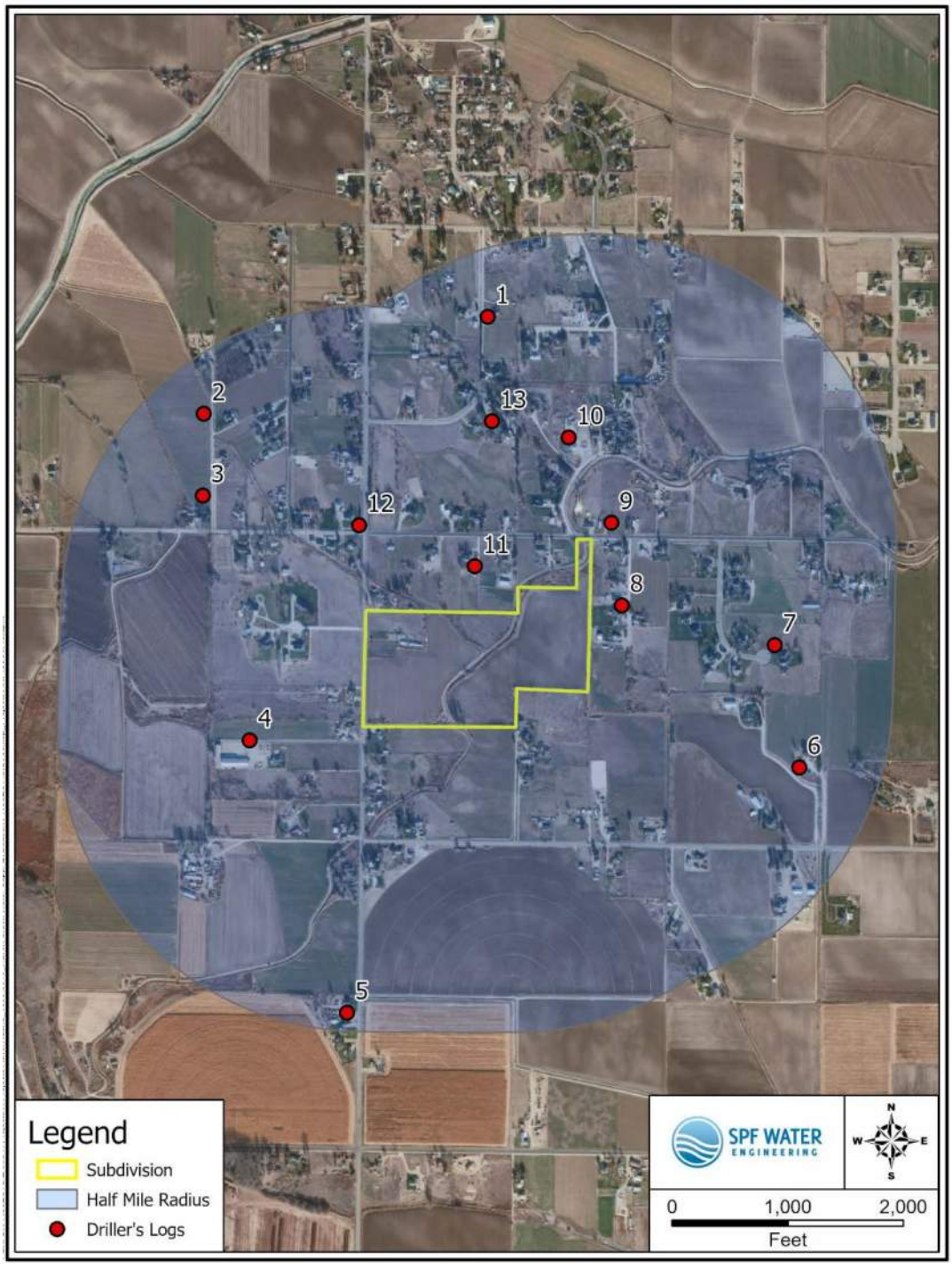


Figure 1. Drillers logs within ½ mile of the proposed Subdivision.

Table 1. Well Construction

Well ID	Total Depth (feet)	Screen Inteval (feet bgs)	Screen Length (feet)	Water Bearing Material	Year of Construction	Static Water Level (feet)	Yield (gpm)	Well Type
1	114	109-114	5	Sand & Gravel	2015	33	60	Domestic
2	90	No Screen	No Screen	Fractured Basalt	1981	16	200	Domestic
3	70	No Screen	No Screen	sandy clay, sand/shale	1988	20	40	Domestic
4	84	44-84	40	Fractured Basalt	2014	18	80	Domestic
5	188	174-190	16	Sand Medium	2008	66	100	Domestic
6	155	145-150	5	Sand	1991	75	43	Domestic
7	110	100-110	10	Sand mixed with gravel	2004	64	80	Domestic
8	97	86-96	10	Fractured Basalt	2004	62	40	Domestic
9	118	111-116	5	Sand and Gravel	1993	63	40	Domestic
10	100	60-100	40	Fractured Basalt	2019	40	55	Domestic
11	140	No Screen	No Screen	Fracture Basalt and Gravel	2015	48	75	Domestic
12	108	No Screen	No Screen	Fracture Basalt and Sand/Gravel	1996	40	75	Domestic
13	105	No Screen	No Screen	Gravel and Sand	1992	45	30	Waste/Injection

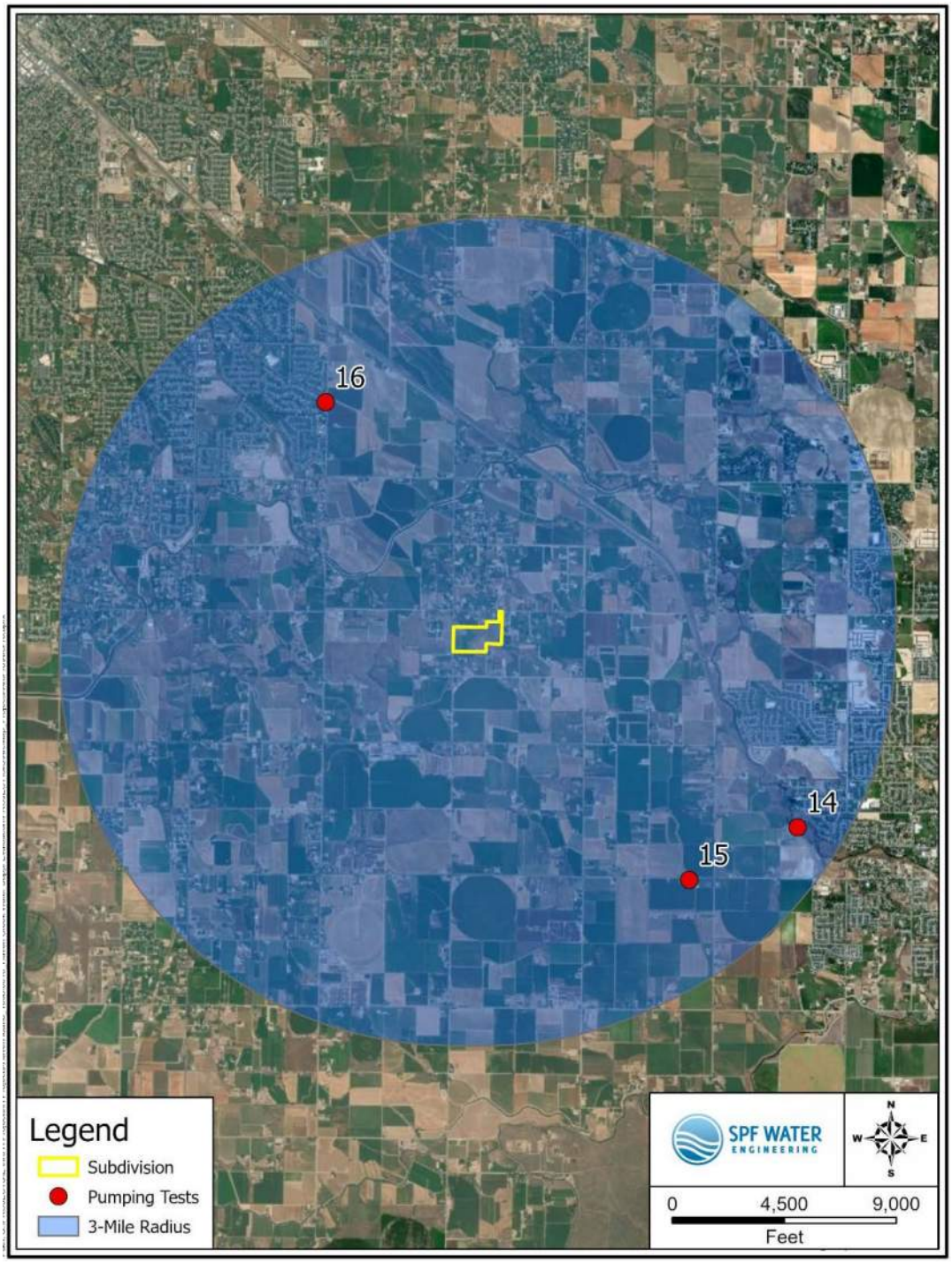


Figure 2. Well Pumping Test Locations

Table 2. Well Testing

Log ID	Yield (gpm)	Static (feet)	Drawdown (feet)	Specific Capcity (gpm/ft)	Transmissivity (gpd/foot)	Screen Interval	Well Type
14	1450	75	110	13	26000	346-475	Muncipal
15	900	90	50	18	36000	100-250	Irrigation
16	400	22	68	6	12000	91-120	Irrigation

a. Well Construction

The depths for the 13 wells reviewed within a half mile of the proposed Subdivision ranged between 70 feet and 188 feet. Eight (8) of the 13 wells are constructed with 6-inch diameter steel casings and either stainless-steel or PVC well screens between 4 and 6 inches in diameter. The remaining five wells are constructed with 6-inch steel casing and produced from an open borehole without screens.

b. Lithology and Aquifer Conditions

The lithologic logs from the driller's reports indicate the subsurface near the Subdivision is primarily alternating layers of alluvial materials and fractured basalt. The water producing zones are fractured basalt or sand/gravel.

c. Water Levels

Depth to water (DTW) listed on well driller's reports for the 13 wells within a half-mile radius of the subdivision was between 16 and 75 feet below ground surface (bgs).

The water-bearing zones tapped by local wells are generally considered "confined" or "semi-confined" because static water levels in completed wells rise to higher elevations than first encountered water and above the tops of the water-bearing zones. Local domestic wells are generally completed within 100 feet of the water-table. Water-bearing zones near the water table are "semi-confined" because pumping impacts can eventually propagate upward to the water table.

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

d. Well Yields and Aquifer Transmissivity

Hydraulic parameters of water-bearing zones can be estimated based on the character of the aquifer materials and from well pumping tests.

Typical hydraulic conductivity (K) for sands, gravels, and basalts range between 100 and 10,000 gallons/day/foot^2 (Freeze and Cherry, 1979). An aquifer thickness of 100 feet was used based on the description of water-bearing units in the irrigation driller's logs. Using the range of potential K for sands and gravels and a saturated thickness of 100 feet results in a range of estimated transmissivity (T) values between 10,000 and 1,000,000 gallons/day/foot (gpd/ft). It should be noted that the 100-foot thickness is conservative, as the aquifer system is likely more than 1000-feet thick in this area.

Storativity (S) values can be estimated based on the specific storage values for sands and gravels and an assumed aquifer thickness of 100 feet. The resulting S value is approximately 0.005, which is typical for semi-confined aquifer zones in the Treasure Valley.

Three well logs within 3 miles of the proposed Subdivision were reviewed for pumping test information. This information was used to determine a range of aquifer transmissivity based on pumping test results. The well locations are presented in Figure 2 with corresponding construction and pumping test information in Table 2.

Table 2 includes the results from well tests reported in the driller's logs. The yield in gallons per minute (gpm) and drawdown in feet from the static water level were used to calculate the specific capacity which indicates the amount of water produced per foot of drawdown (i.e., specific capacity in gpm/ft). The results from these wells are between 6 and 18 gpm/ft. Well testing results from the domestic wells were not used to calculate specific capacity values and aquifer parameters as most were tested by air-lifting which typically underestimate actual well capacities. The shorter screen interval is also less likely to be reflective of the larger aquifer. All of the domestic wells are screened in discrete sand

lenses that are connected to the larger aquifer system consisting of multiple sand lenses. The larger irrigation and municipal wells are screened over multiple sand lenses, so testing results are considered more representative of aquifer parameters. For confined aquifers, specific capacity multiplied by 2000 provides an empirical estimate of transmissivity (T) in gpd/ft.

A nearby municipal well (14) was constructed in 1998 and was test pumped at a rate of 1450 gpm with a drawdown of 110 feet. This results in a specific capacity of 13 gpm/ft and a T of approximately 26,000 gpd/ft. An irrigation well (15) constructed in 2009 was test pumped at 900 gpm with a drawdown of 50 feet resulting in a specific capacity of 18 gpm/ft and a T of about 36,000 gpd/ft. A second irrigation well (16) construed in 1991 was tested at 400 gpm with a drawdown of 68 feet resulting in a specific capacity of 6 gpm/ft and a T of 12,000 gpd/ft. These T values are within the lower end of the range estimated based on aquifer materials.

2. Hydrographs

Hydrographs from IDWR monitoring wells were reviewed to understand regional groundwater level trends. Locations for IDWR hydrographs are presented in Figure 3. The most recent season high water levels at each of the well locations are labeled. These wells are all within four miles from the Subdivision.

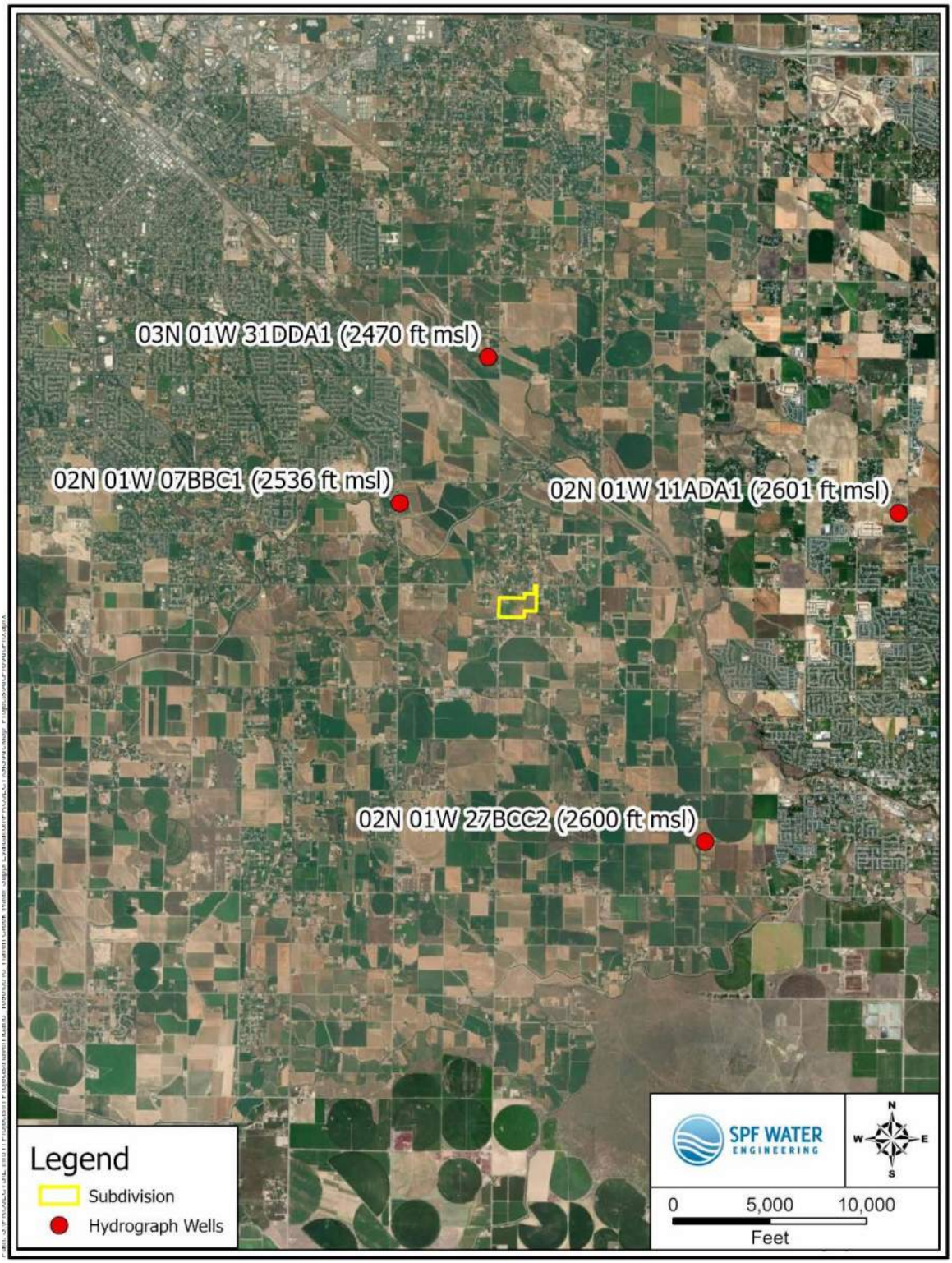


Figure 3. Hydrograph Locations

a. Regional Trends

The individual hydrographs are presented in Figure 4. Water level measurements date back from the early 1950s to current, with groundwater elevations between 2600 and 2450 feet above mean sea level (feet msl). Water levels at **02N 01W 11ADA1** and **02N 01W 27BCC2**, both of which are approximately three miles to the east from the Subdivision, indicate stable to slightly increasing water levels over the past 15 years. Well **02N 01W 07BBC1** located approximately 1.5 miles to the northwest of the Subdivision has exhibited very stable to slightly declining water levels from 1953 to present. Well **03N 01W 31DDA1** is located approximately 2 miles north of the Subdivision and has shown stable water levels since 1969. Included in Figure 4 is an equation representing the slope of each line which represents the average decline or increase in water levels. The average yearly change in water levels for the four monitoring wells range between an increase of 0.07 feet per year and a decrease of 0.1 foot per year.

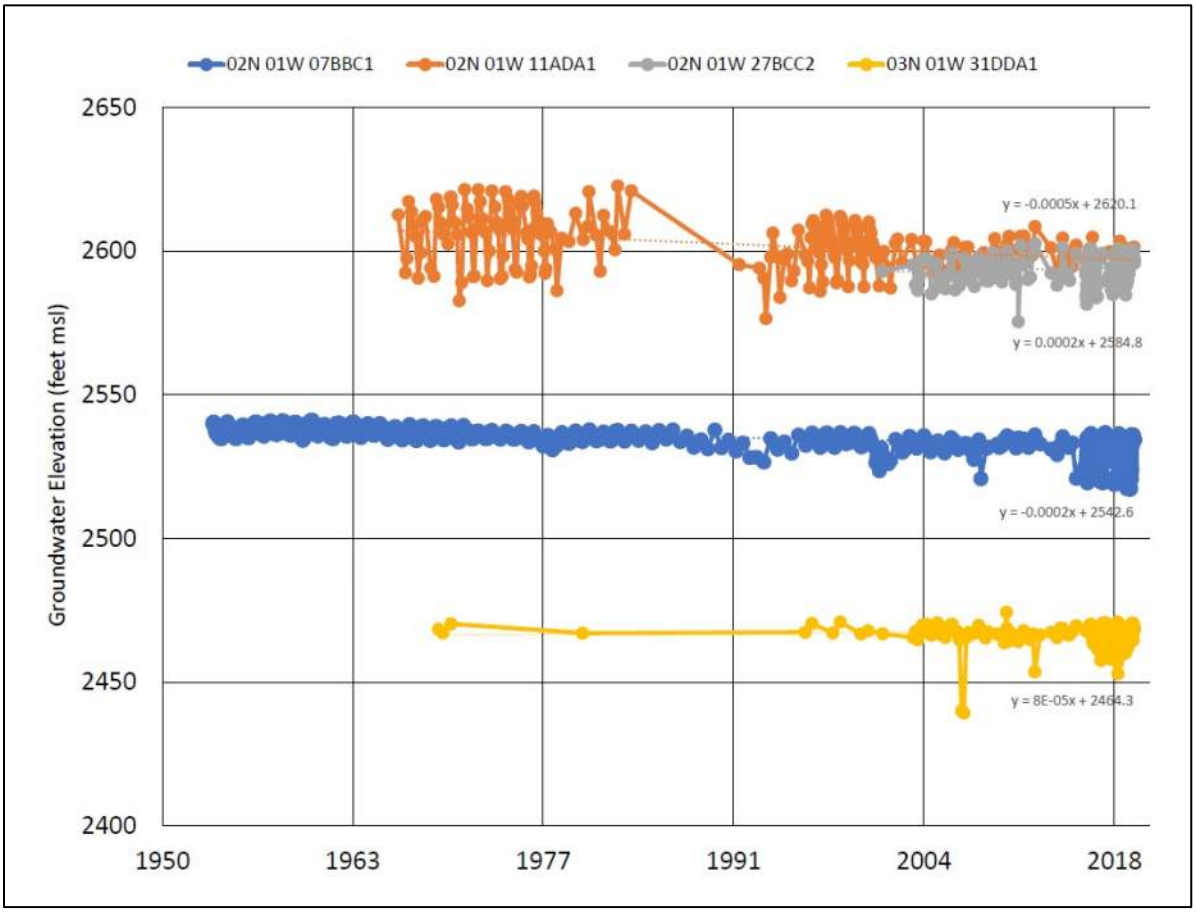


Figure 4. Regional Hydrographs

3. Drawdown Analysis

The predicted drawdown due to the addition of 27 new domestic wells was determined by assuming a daily average use of 300 gallons per day per household. This results in an average year-round, 24-hour per day, demand of 6 gpm for the entire subdivision.

A drawdown analysis was performed using the Theis method to determine the impact of the addition of 27 domestic wells on local groundwater levels. The Theis Non-equilibrium Well Equation is a common analytical approach for determining drawdown from pumping of wells that tap confined aquifers. Drawdown can be calculated for any distance from a pumping well and for any duration of pumping. The Theis equation has a number of assumptions (i.e., no recharge, horizontal flow, infinite aquifer lateral extent, fully penetrating wells, and homogenous hydraulic conductivity) which are never fully satisfied in nature, but are adequately approximated in most conditions to allow reliable estimates of well interference impacts.

The analysis utilized the estimated aquifer transmissivity values determined from the results of well tests and the aquifer materials described in the driller's logs. The water producing zones are comprised of sand, gravels, and fractured basalts. Based on these materials and well test results, it was determined that transmissivity values could range between 10,000 and 36,000 gpd/ft.

The results for the low transmissivity (10,000 gpd/ft) value analysis are presented in Figure 4; the high transmissivity (36,000 gpd/ft) value analysis is presented in Figure 5. These figures represent drawdown with increasing distance from the hypothetical well over different time periods. Drawdown was determined at distances of 500 feet to one mile between 30 and 365 days. Figure 4 shows that with an assumed transmissivity value of 10,000 gpd/ft (low estimate), the drawdown after 365 days of continuous pumping at 6 gpm was 0.4 feet at a radius of 500 feet and 0.1 feet at a radius of one mile. Under the high transmissivity value (36,000 gpd/ft) conditions, the estimated drawdown at 500 feet and one mile were 0.1 feet and 0.06 feet, respectively.

In our experience within this portion of the Treasure Valley, the transmissivity estimates of 10,000 gpd/ft and 36,000 gpd/ft estimates are likely conservative values for calculating long-term drawdown impacts. For pumping durations of longer than a few days or weeks, the aquifer responds as a whole, with effective transmissivities exceeding 100,000 gpd/ft. Similarly, drawdown impacts from shallow aquifer zones propagate upward to the water table, increasing the effective storativity. Lastly, recharge from annual irrigation activities maintain water levels. The result is that drawdown impacts from shallow aquifer pumping typically stabilize after a few days or weeks of pumping, and the projected drawdowns for pumping durations of 180 and 360 days shown in Figures 4 and 5 are overestimates of the anticipated drawdowns.

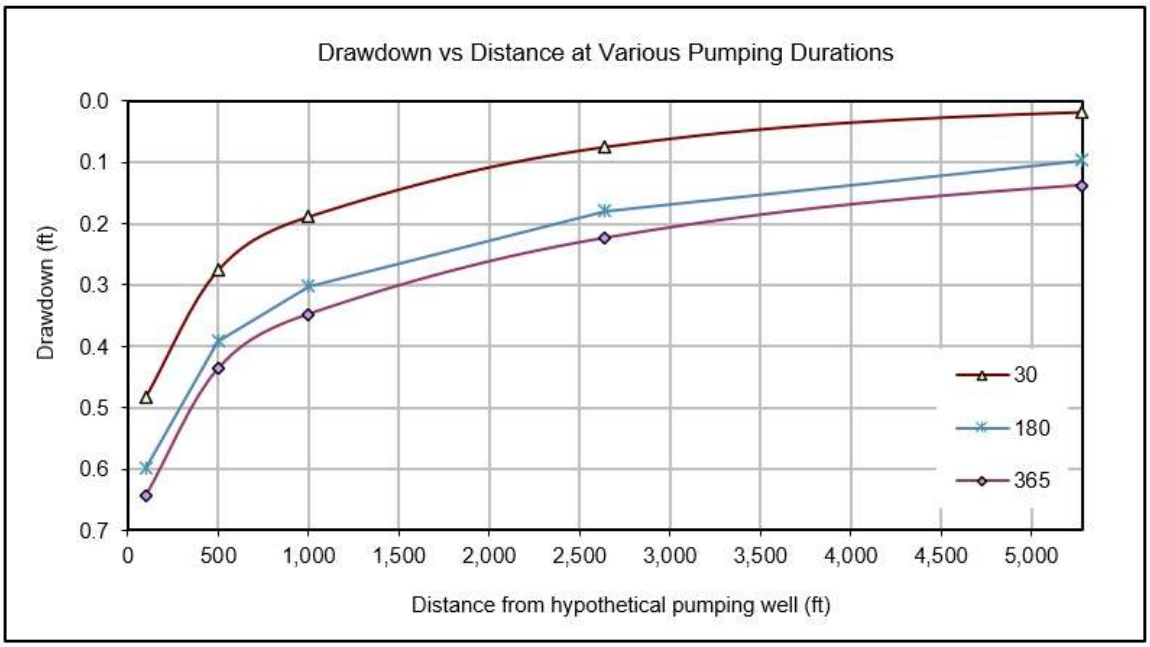


Figure 4. Low Transmissivity Drawdown Analysis.

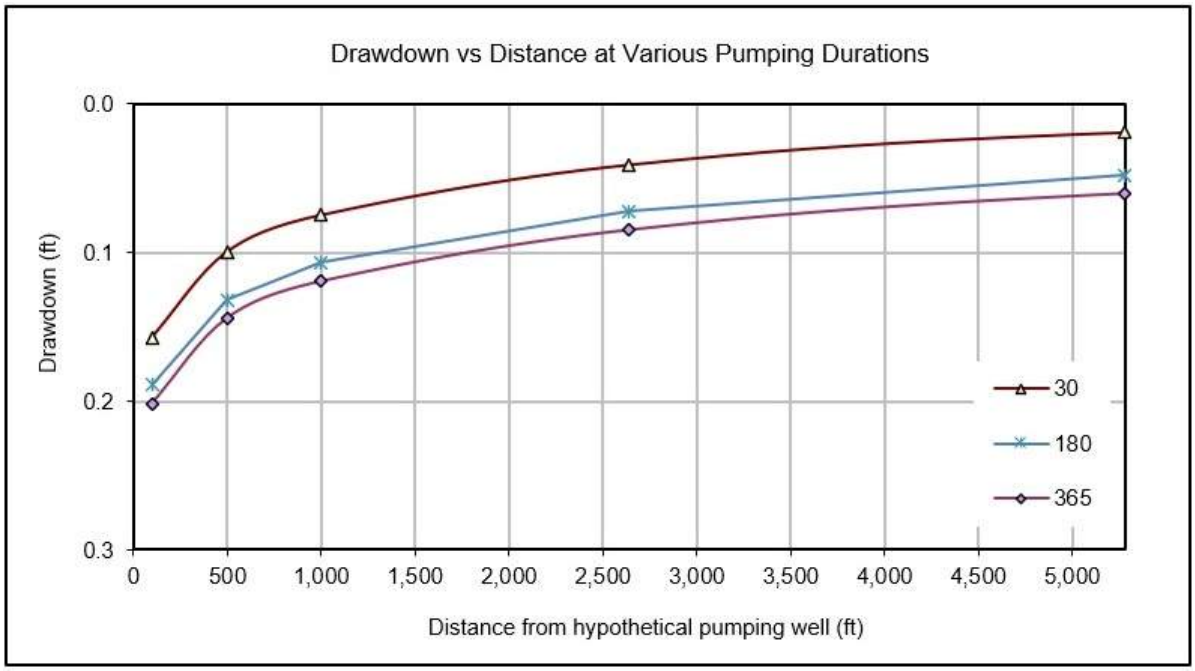


Figure 5. High Transmissivity Drawdown Analysis.

4. Recommendation for Well Construction

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

The following recommendations for well construction are based on the well logs closest to the Subdivision. There are generally two different types of well construction in the area. Wells screened in alluvial materials and wells drilled into basalts that are open hole. Wells west of the Subdivision are more likely to be located in basalts while the wells to the east are more likely to be in alluvial materials. The following includes two potential options for well construction in the Subdivision:

Eastern/Alluvial Wells

- 6-inch steel casing
- 10-foot stainless steel screen (5-inch diameter, 0.018-inch slot size) at depths between 100-150.
- 4-inch diameter pumps set at ~ 80-90 feet.

Western/Basalt Wells

- 6-inch steel casing to a depth between 30 and 60 feet.
- 6-inch borehole drilled to a depth between 100 and 150 feet.
- 4-inch diameter pumps set at ~ 70 feet.

5. Conclusions

The drawdown analysis suggests that the addition of 27 new domestic wells to the area will have a minimal impact on current groundwater levels near the Subdivision. In addition, regional IDWR monitoring wells have shown very stable water levels over the past 15 years. Reported static water levels in the well logs within a half mile of the Subdivision were all between 18 and 75 feet bgs with deeper water levels generally occurring to the east.

Most wells in the area tap water-bearing zones that are 50 to 100 feet below the static water level. This allows pumps to be set tens of feet below the water level, with pumping water levels of less than 100 feet below ground surface. The water-level impact on existing nearby wells that may result from the pumping of 27 new wells at the Subdivision will be a few tenths of a foot or less. This impact is insignificant relative to the productivity of existing wells and will not negatively affect existing water users.

References

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

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

Appendix A

Form 238-7
6/07

63

1

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0068895
Drilling Permit No. 918721 - 874778
Water right or injection well # _____

2. OWNER:
Name Svetlana Zhuchkova
Address 8300 S. Greenhurst Rd.
City Kuna State ID Zip 83634

3.WELL LOCATION:
Twp. 2 North ☒ or South ☐ Rge. 1 East ☐ or West ☒
Sec. 8 ____ 1/4 (10 acres) NW 1/4 (40 acres) SW 1/4 (160 acres)
Gov't Lot _____ County Canyon
Lat. 43 ° 31.368 (Deg. and Decimal minutes)
Long. 116 ° 29.370 (Deg. and Decimal minutes)
Address of Well Site 10 Akre Lane - 1/4 mile South off of Wright Lane (Give at least name of road + Distance to Road or Landmark) City Nampa
Lot. 2 Blk. 1 Sub. Name 10 Akre Woods

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'	97'	62 bags	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	+2	106'	.250	Steel	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 106'

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

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
109'	114'	.25	N/A	5"	SS	N/A

Length of Headpipe 10' Length of Tailpipe _____
Packer ☒ Y ☐ N Type K-packer

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) 40' Static water level (ft) 33'
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
47'	60 GPM	45 min.	☐	☐	☒	☐
			☐	☐	☐	☐

Water quality test or comments: Hardness 13 Iron .1 PH 8.0

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'	1'	Topsoil		X
10"	1'	9'	Hard Pan		X
10"	9'	40'	Lava		X
10"	40'	60'	Fractured Lava	X	
10"	60'	93'	Lava		X
10"	93'	97'	Fractured Lava w/Gray Clay		X
6"	97'	101'	Gray Clay		X
6"	101'	114'	Sand & Gravel	X	

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APR 01 2015
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 114'
Date Started: Mar 23, 2015 Date Completed: Mar 25, 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 Mar 27, 2015
*Driller Sam Navarro Date Mar 27, 2015
*Operator II _____ Date _____
Operator I Josh Young Date Mar 27, 2015

* Signature of Principal Driller and rig operator are required.

Form 238-7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of W
within 30 days after the completion or abandonment of the wel

Location Corrected by IDWR To:
T02N R01W Sec. 7 NESWSE
By: mciscell 2012-09-06

2

1. WELL OWNER
Name Mark Hartman
Address Nampa, 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 _____

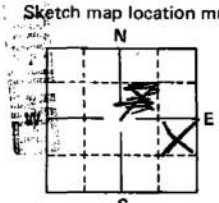
Thickness	Diameter	From	To
.250 inches	8 inches +	1 feet	18 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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 _____

6. LOCATION OF WELL
Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
NE ¼ SE ¼ Sec. 7, T. 2 N/S, R. 1 E/W.

7. WATER LEVEL
Static water level 16 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
200	41	1

9. LITHOLOGIC LOG
73538

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
11"	0	5	Brown Clay		☒
11"	5	16	Black rock		☒
8"	16	18	" "		☒
8"	18	25	" "		☒
8"	25	90	Black rock with cracks		☒

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JUN 29 1981
MAR 2 1982
Department of Water Resources
Western Regional Office
Department of Water Resources

10. Work started 3/16/81 finished 3/18/81

11. DRILLERS CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Firm Name Frank Skinner Well Driller Firm No. 212
Address Meridian, Ida Date 4/4/81
Signed by (Firm Official) Frank Skinner
and
(Operator) Frank Skinner

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

Form 238-7
9/82

C

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.

USE TYPEWRITER OR PRINT

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Department of Water Resources

3

1. WELL OWNER

Name Robert L. Vaughn

Address 1552 High Hope Lane

Owner's Permit No. 63-88-2-173

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	_____ inches +	1 feet	20 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

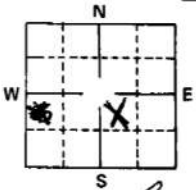
Number		From	To
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet

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 19 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 Sanitary Well Seal

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Department of Water Resources

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name Robinson Ranchettes
Lot No. 6 Block No. 2
County Canyon
NW ¼ SE ¼ Sec. 7, T. 2 N/S, R. 1 E/W.

7. WATER LEVEL

Static water level 20 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
40	60 ft.	2

103525

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
10"	0	2	Top Soil		✓
10"	2	16	Brown clay		✓
10"	16	19	Black lava Rock		✓
6"	19	70	" " " w/ cracks at bottom & water	✓	

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Department of Water Resources
Western Regional Office

JUL 5 1989

10.

Work started 6/8/88 finished 6/10/88

11. DRILLERS CERTIFICATION

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

Firm Name Can-Ada Well Drilling Rt. 1 Firm No. 304
Address Kuna, Id. 83634 Date Sept. 26, 1988
Signed by (Firm Official) Earl Skinner
and
(Operator) Earl Skinner

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

63

Form 238-7
6/07

4

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0067277
Drilling Permit No. 9606764 - 872823
Water right or injection well #

2. OWNER:
Name Gordon Cooper
Address 920 W. Ash St.
City Caldwell State ID Zip 83605

3.WELL LOCATION:
Twp. 2 North ☒ or South ☐ Rge. 1 East ☐ or West ☒
Sec. 18 ____ 1/4 (10 acres) SE 1/4 (40 acres) NE 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat. 43 ° 30.762 (Deg. and Decimal minutes)
Long. 116 ° 29.828 (Deg. and Decimal minutes)
Address of Well Site 9605 S. Robinson Rd.
(Give at least name of road + Distance to Road or Landmark) City Nampa
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
3/8 Bentonite	0'	58'	29 bags	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	+2'	58'	.250	Steel	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 58'

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method ____
Manufactured screen ☒ Y ☐ N Type Certa-lok
Method of installation Set with Sand Line

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
84'	44'	.20		4-1/2"	PVC	SDR17

Length of Headpipe ____ 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) 30' Static water level (ft) 18'
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
67'	80 GPM	30 minutes	☐	☐	☒	☐
			☐	☐	☐	☐

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
10"	0'	2'	Topsoil		X
10"	2'	12'	Tan Clay		X
10"	12'	30'	Black Basalt		X
10"	30'	32'	Broken Black Basalt	X	
10"	32'	50'	Black Basalt		X
10"	50'	55'	Broken Black Basalt	X	
10"	55'	58'	Black Basalt		X
6"	58'	76'	Black Basalt w/Cracks	X	
6"	76'	85'	Red Basalt	X	
6"	85'	90'	Gravel	X	

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AUG 08 2014
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 84'
Date Started: Jul 29, 2014 Date Completed: Jul 30, 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 Adamson Pump & Drilling Co. No. 457
*Principal Driller Dave Adamson Date Aug 6, 2014
*Driller John Sefton Date Aug 6, 2014
*Operator II Mate Date ____
Operator I Mateo Chapa Date Aug 6, 2014

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

Form 238-7
6/07

5

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

906779-854183

1. WELL TAG NO. D D0053304
Drilling Permit No.
Water right or injection well #

2. OWNER
Name Steve Lambson
Address 9151 Robinson Rd Blvd
City Kuna State ID Zip 83634

3. WELL LOCATION:
Twp. 2 North ☒ or South ☐ Rge. 1 East ☐ or West ☒
Sec. 18 NE 1/4 (10 acres) SE 1/4 (40 acres) SE 1/4 (160 acres)
Gov't Lot County Canyon
Lat. 43 30 ° 22.5 (Deg. and Decimal minutes)
Long. 116 29 ° 38.0 (Deg. and Decimal minutes)
Address of Well Site same
City
(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
bentonite	0'	19'	550 lbs	poured

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	+2.	178	.250	steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 178.5

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method
Manufactured screen ☒ Y ☐ N Type telescoping
Method of installation washed in

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
185'	190'	.018		5"	ST ST	
174'	190'			5"	screen ass.	

Length of Headpipe 11.8" Length of Tailpipe
Packer ☒ Y ☐ N Type

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) Static water level (ft) 66
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
180	100+	2 hrs	☐	☐	☒	☐
120	70	1 hr				
100	42	1 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
10"	0'	2'	top soil		X
10"	2'	3'	white baked clay		X
10"	3'	19'	basalt black		X
8"	19'	25'	basalt black		X
8"	25'	45'	red basalt		X
8"	45'	78'	black basalt		X
6"	78'	98'	sand & gravel	X	
6"	98'	138	silty sand	X	
6"	138	141	tan clay		X
6"	141	148	tan clay & sand strips	X	
6"	148	152	tan clay		X
6"	152	169	tan clay & sand strips	X	
6"	169	175	tan clay with cracks	X	
6"	175	180	tan clay		X
6"	180	188	sand medium	X	
			added 32 inches		
			to top of casing		

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DEC 17 2008
WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable) 188
Date: Started 11-05-08 Completed 11-08-08

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Down Right Drilling & Pump, Inc Co. No. 637
*Principal Driller Date 12-15-08
*Driller Date 12-15-08
*Operator II Date
Operator I Date
* Signature of Principal Driller and rig operator are required.

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9/82

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

6

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 Earl Ward

Address R.R. Box 491 Mesickon Idaho 83642

Owner's Permit No. 63-91-W-091-000

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	
.258	inches	8	inches +	-3	feet	23	feet
.250	inches	6	inches +	1'6"	feet	145	feet
.258	inches	5	inches	198	feet	155	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

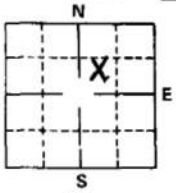
Number		From		To	
_____	perforations	_____	feet	_____	feet
_____	perforations	_____	feet	_____	feet
_____	perforations	_____	feet	_____	feet

Well screen installed? ☑ Yes ☐ No
Manufacturer's name Hoopston
Type 304 stainless Model No. _____
Diameter 5 Slot size 20 Set from 145 feet to 150 feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☑ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 23 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
☐ Cemented between strata
Describe access port Top of casing

MICROFILMED
AUG 11 1992

6. LOCATION OF WELL

Sketch map location must agree with written location



Subdivision Name _____
Lot No. _____ Block No. _____

MICROFILMED
MAY 05 1992

County Canyon
SE ¼ NE ¼ Sec. 17, T. 3 N S, R. 1 E W

7. WATER LEVEL

Static water level 24 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 17 grain
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☑ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
23	100	2

9. LITHOLOGIC LOG

079887

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
10	0	1	Top Soil		X
10	1	5	hard pan		X
10	5	23	Lava		X
8	23	95	Lava		X
6	95	116	gravel	X	
6	116	133	clay		X
6	133	155	sand	X	

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AUG 19 1991
Department of Water Resources

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AUG 12 1991
Department of Water Resources
Western Regional Office

10. Work started 6-15-91 finished 7-19-91

11. DRILLERS CERTIFICATION

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

Firm Name Dufor Well Drilling Firm No. 399
237 W. Iowa
Address Kuna, Id. 83651 Date 7-20-91
Signed by (Firm Official) _____
and
(Operator) Same

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

63

850969

Office Use Only
Well ID No. 304436
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

6

1. WELL TAG NO. D0052693
DRILLING PERMIT NO. Prev. # 63-91-W-091-000
Water Right or Injection Well No. _____

2. OWNER
Name Earl Ward
Address 4188 Dye Ln.
City Kuna State Id Zip 83634

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 2 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 17 ____ 1/4 (10 acres) SW 1/4 (40 acres) NE 1/4 (160 acres)
Gov't Lot _____ County Canyon
Lat: 43:30:730'N Long: 116:28:752'W
Address of Well Site Same
City Kuna
(Give road name of road + Distance in 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 Prev. #724549

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

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume		Seal Placement Method
#5 Bentonite	-4	20	500	lbs.	pour between 8" & 6" casing

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	1.5	150	.250	Steel	☒	☐	☒	☐
5"	146	151	.258	Steel	☐	☒	☒	☐
5"	161	163	.258	Steel	☐	☒	☒	☐

Length of Headpipe 5.0 Length of Tailpipe 2.0
Packer ☒ Y ☐ N Type Rubber K-Packer

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
151	161	.020	304	5"	Stainles	☐	☒
						☐	☐
						☐	☐

10. FILTER PACK

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

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
43 GPM	126'	143'	1 HR.

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

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
6"	145	161	Brown Sand	X	
	161	163	Brown Clay		X

RECEIVED
MAR 31 2008
WATER RESOURCES
WESTERN REGION

Completed Depth 163' (Measurable)
Date: Started 3/28/08 Completed 3/31/08

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Dennis Phipps Well Drilling Inc. Firm No. 332
Principal Driller _____ Date 3/31/08
and
Driller or Operator II _____ Date 3/31/08
Operator I _____ Date 3/31/08
Principal Driller and Rig Operator *Required*.
Operator I must have signature of Driller/Operator II.

FORWARD COPY TO WATER RESOURCES

Form provided by Forms On-A-Disk · (214) 340-9429 · www.FormsOnADisk.com

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

7

Office Use Only
Well ID No. 812208
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0031126
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Bob Goodwin
Address P.O. Box 851
City Nampa State Id Zip 83653

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 3 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 17 NW 1/4 (10 acres) NE 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat: : : Long: :
Address of Well Site So. off of Lewis Ln.
City Nampa
(Give at least name of road + Distance to Road or Landmark)
Lt. 6 Blk. 1 Sub. Name Aussie Acres

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
Envirplug	0	100	1500 lbs	10" overbore
				Dix Poor 100-4

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 100-4
Was drive shoe seal tested? ☐ Y ☐ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	100-4	.250	Steel	☐	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 5" Length of Tailpipe 0
Packer ☒ Y ☐ N Type 6-R-6

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
100	110	18		4 1/2	S.S.	☐	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
80		105'	2 hrs.

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: Good clear color
NO Smell
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	3	Top Soil		X
	3	8	Clay mixed with Hardpan		X
	8	32	Solid Lava		X
	32	41	Red Cinders & Lava		X
	41	47	Fractured Lava		X
	47	64	Solid lava		X
	64	74	Fractured lava	X	
	74	88	Solid Lava some Fract.	X	X
6	88	94	Fractured	X	
6	94	110	Sand mixed with gravel	X	
			pulled off ordered		
			new hammer bit		

RECEIVED
AUG 18 2004
WATER RESOURCES
WESTERN REGION

Completed Depth 110' (Measurable)
Date: Started 3/25/04-5/19/04 Completed 5/24/04

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 Firm No. 522
Principal Driller Jeff Lawson Date 5/24/04
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

812958

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

Form 238-7
3/95-C96

8

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. DRILLING PERMIT NO. __ - __ -D -0030 -969
Other IDWR No. _____

2. OWNER:
Name Larry Hays
Address 292 W. Boise St.
City Kuna State ID Zip 83634

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

N
W E
S

Twp. 2 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 17 1/4 (10 acres) NE 1/4 (40 acres) NW 1/4 (160 acres)
Gov't lot _____ County Canyon
Lat: : : Long: : :
Address of Well Site Lewis Ln. Between Robinson & McDermott City Nampa
(Give at least name of road + Distance to Road or Landmark)
Lt. _____ Blk. _____ Sub. Name Tem.#4799

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	19'	550#'s	Overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+1'	19'	.250	Steel	☒	☐	☐	☐
6"	16'	96'	Sc40	PVC	☐	☒	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
86'	96'	1/4"	300	6"	PVC	☐	☒
		X3"				☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
62ft. 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
40		80'	1 Hr.

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: Nitrate 0
Hardness 16 Depth first Water Encountered 80'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
12"	0	2'	Topsoil		☒
12"	2'	7'	Brown Dry Clay		☒
12"	7'	12'	Cleachey Burnt Clay		☒
12"	12'	19'	Solid Black Lava		☒
8"	19'	60'	Solid Black Lava		☒
8"	60'	70'	Cracks in Black Lava		☒
8"	70'	80'	Solid Black Lava		☒
8"	80'	94'	Cracks in Black Lava	☒	
8"	94'	97'	Brown Sand & Gravel	☒	

RECEIVED
APR 21 2004
WATER RESOURCES
WESTERN REGION

Completed Depth: 97 (Measurable)
Date: Started 04/12/04 Completed 04/12/04

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

Firm Name Down Right Drilling & Pum Firm No. 637
Firm Official _____ Date 4-13-04
Supervisor or Operator _____ Date 4-13-04
(Sign once if Firm Official & Operator)

Date: 4/13/2004 Time: 9:58 AM

Form 238-7
4/92

C

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.

Location Corrected by IDWR To:
T02N R01W Sec. 8 SESESW
By: mciscell 2012-12-26

9

1. WELL OWNER
Name Melvin Griffith
Address 6902 E. Lewis Ln Nampa Id. 83651
Drilling Permit No. 63-93-W-0207
Water Right Permit No. _____

2. NATURE OF WORK
☐ 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
☒ Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED
☒ Rotary ☐ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION
Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1 feet	110 feet
.258 inches	5 inches	106 feet	111 feet
.258 inches	5 inches	116 feet	118 feet

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

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

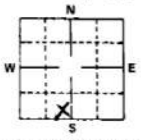
Well screen installed? ☒ Yes ☐ No
Manufacturer Wesco Type 304
Top Packer or Headpipe 4' 8"
Bottom of Tailpipe 2'

Diameter 5 Slot size .020 Set from 111 feet to 116 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
☒ 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 Weld Seal

6. LOCATION OF WELL
Sketch map location **must** agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
Address of Well Site 6902 E. Lewis Ln
(give at least name of road)
SE ¼ SW ¼ Sec. 8, T. 2 N ☒ or S ☐, R. 1 E ☐ or W ☒

7. WATER LEVEL
Static water level 63 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA
☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
40		1

9. LITHOLOGIC LOG 082804

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	2	Top Soil		X
	2	4	Hard Pan		X
	4	75	Lava Rock		X
	75	104	Lava Rock	X	
	104	118	Sand & Gravel	X	

RECEIVED
AUG 04 1993
Department of Water Resources
Western Regional Office
AUG 05 1993

10.
Work started 3-25-93 finished 4-4-93

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 Dennis Phipps Firm No. 332
Address Meridian, ID. Date 4-29-93
Signed by Drilling Supervisor Dennis Phipps
and
(Operator) _____ *(if different than the Drilling Supervisor)*

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

RECEIVED
DEC 13 2019
WATER RESOURCES WESTERN REGION

Form 238-7
6/07

63

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

10

1. WELL TAG NO. D D0083411
Drilling Permit No. 892569
Water right or injection well #

2. OWNER:
Name Allen Perkins
Address 5307 Mamer Ln.
City Nampa State Idaho Zip 83686

3.WELL LOCATION:
Twp. 2 North ☒ or South ☐ Rge. 1 East ☐ or West ☒
Sec. 8 ____ 1/4 (10 acres) SE 1/4 (40 acres) SW 1/4 (160 acres)
Gov't Lot ____ County Canyon
Lat. 43 ° 31.197'N (Deg. and Decimal minutes)
Long. 116 ° 29.209'W (Deg. and Decimal minutes)
Address of Well Site Same
(Give at least name of road + Distance to Road or Landmark) City Nampa
Lot. 6 Blk. ____ Sub. Name Mamer Sub.

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	0	50	1100 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	2	57	.250	Steel	☒	☐	☐	☒
4.5"	40	60	SD17	PVC	☐	☒	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 57'

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method
Manufactured screen ☒ Y ☐ N Type Certa-Lock PVC Screens
Method of installation Drop In

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
60	100	.020	40'	4.5"	PVC	SDR17

Length of Headpipe 20' Length of Tailpipe N/A
Packer ☐ Y ☒ N Type ----------

10.FILTER PACK:

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

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

12. STATIC WATER LEVEL and WELL TESTS:
Depth first water encountered (ft) ---------- Static water level (ft) 40'
Water temp. (°F) Cold Bottom hole temp. (°F) ----------
Describe access port 6" Turtle Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Test method: Pump	Bailer	Air	Flowing artesian
80'	55 GPM	1 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
10"	0	2	Top Soil		X
	2	6	Hard Pan		X
	6	14	Coarse Sand & Gravel		X
	14	42	Black Lava Rock		X
	42	45	Red Lava Rock	X	
	45	84	Black Lava Rock	X	
6"	84	87	Clay		X
	87	92	Black Lava Rock	X	
	92	100	Red Cinders	X	
	100		Sand & Gravel	X	

Completed Depth (Measurable): 100'
Date Started: Dec 10, 2019 Date Completed: Dec 11, 2019

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

Company Name Dennis Phipps Well Drilling In Co. No. 332
*Principal Driller [signature] Date Dec 12, 2019
*Driller Date
*Operator II [signature] Date Dec 12, 2019
Operator I [signature] Date Dec 12, 2019

* Signature of Principal Driller and rig operator are required.

11

816081

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

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. DRILLING PERMIT NO. D 0031457
Other IDWR No. «Other_IDWR_No»

2. OWNER:
Name John Defferies
Address 2012 Stuart Ln.
City Nampa State ID Zip 83687

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

N
W E
S

Twp 2 North ☒ or South ☐
Rge 1 East ☐ or West ☒
Sec 17 «QQQ» (10 acres) NE 1/4 (40 acres) NW 1/4 (160 acres)
Gov't lot County Canyon
Lat: : : Long: : :
Address of Well Site 6549 E. Lewis Ln.
City Nampa
(Give at least name of road + Distance to Road or Landmark)
Lt. «Lt» Blk. «Blk» Sub. Name «Subname»

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	600	overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 140
Was drive shoe seal tested? ☒ Y ☐ N How? Air

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	140	250	steal	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

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:
48 ft. below ground Artesian Pressure lb
Depth flow encountered 100-140ft. Describe access port or control devices: Cap

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

Yield gal/min.	Drawdown	Pumping Level	Time
75	135	135	1hr

Water Temp. 56 Bottom hole temp. 56
Water Quality test or comments:
Depth first Water Encountered 60

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10	0	2	Top Soil		X
10	2	3	Broken up Lava		X
10	3	18	Lava		X
6	18	25	Lava		X
6	25	41	Red Lava		X
6	41	60	Lava		X
6	60	63	Broken up Lava	X	
6	63	95	Lava & Clay		X
8	95	100	Broken Up Lava & Clay	X	
6	100	140	Gravel	X	

RECEIVED
JUN 24 2004
WATER RESOURCES
WESTERN REGION

Completed Depth: 140 (Measurable)
Date: Started 6/18/04 Completed 6/22/04

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

Firm Name Treasure Valley Drilling Firm No. 560
Firm Official Date 6/24/04
Supervisor or Operator Date 6/24/04
(Sign once if Firm Official & Operator)

Date: 6/23/2004 Time: 11:28 AM

Form 238-7
3/95

12

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

057613

● Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63 - 96 - W-6735-000
Other IDWR No. _____

2. OWNER:
Name Larry Conger
Address 6125 E. Lewis
City Nampa State ID Zip 83686

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

N / W / E / S

Twp. 2 North ☒ or South ☐
Rge. 4 East ☐ or West ☒
Sec. 7, ____ 10 acres 1/4 SE 40 acres 1/4 SE 160 acres 1/4
Gov't Lot ____ County Canyon
Lat: : : Long: : :
Address of Well Site 6216 Lewis
City Nampa
(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
Bentik	0	18	4/50	Pour

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	58	250	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:
90 ft. below ground Artesian pressure _____ lb.
Depth flow encountered 106 ft. Describe access port or control devices: CAP

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

Yield gal./min.	Drawdown	Pumping Level	Time
75	100	100	3 Hr

Water Temp. 56 Bottom hole temp. 56
Water Quality test or comments: _____
Depth first Water Encountered 61

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		
	2	16	Brn Sandy Clay		
	16	18	Lava		
6	18	104	" " Cracked	X	
	104	108	Red Clay		
	108		Sand & Gravel	X	

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NOV 0 1 1996
Department of Water Resources

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OCT 22 1996
MICROFILMED WATER RESOURCES WESTERN REGION
DEC 0 6 1996

Completed Depth 108 (Measurable)
Date: Started 9-30-96 Completed 9-31-96

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

Firm Name Treasure Valley Drilling Firm No. 566
Firm Official [signature] Date 10-11-96
and
Supervisor or Operator [signature] Date 10-11-96
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
4/92

13

KJ

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.

Location Corrected by IDWR To:
T02N R01W Sec. 8 NESWSW
By: mciscell 2012-05-04

1. WELL OWNER

Name William Knipe
Address 6603 Henry Pl. Nampa, ID
Drilling Permit No. 63-92-W-0790-000
Water Right Permit No. 63-W-666

2. NATURE OF WORK

☒ 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

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2 feet	28 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

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

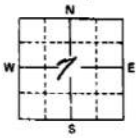
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 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 Top of Well

6. LOCATION OF WELL

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



Subdivision Name HENRY
Lot No. 5 Block No. 1
County CANYON
Address of Well Site 6603 HENRY Pl. NAMPA
(give at least name of road)
NE ¼ NE ¼ Sec. 7, T. 2 N ☒ or S ☐, R. 2 E ☐ or 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 _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
30		½

9. LITHOLOGIC LOG

70550

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8"	0	6	Top Soil		
"	6	28	Lava		
"	28	105	Lava		
"	105	–	Gravel & Sand	X	

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SEP 28 1992
Department of Water Resources
Western Regional Office

FEB 09 1994

10.

Work started 9/18/92 finished 9/18/92

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 Adamson Pump & Drilling Firm No. 457
Address Nampa, ID Date 9/21/92
Signed by Drilling Supervisor Dave Adamson
and
(Operator) John Post
(If different than the Drilling Supervisor)

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

pg. 1 of 2

Form 238-7
3/95

14

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

065427

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

1. DRILLING PERMIT NO. 63 97 W-0455 000
Other IDWR No. 63 12394

2. OWNER:
Name City of Kuna
Address PO Box 13
City Kuna State ID Zip 83634

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Department of Water Resources

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

N / W / E / S

Twp. 2 North XX or South ☐
Rge. 1 East ☐ or West XX
Sec. 22, ____ 10 acres 1/4 N/W 40 acres 1/4 S/E 160 acres 1/4
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site +/- 200' west of N end of Mulhuland Court City Kuna
(Give at least name of road + Distance to Road or Landmark)
Lt. 24 Blk. 5 Sub. Name Discovery Creek Sub #3

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
bentonite chips	0	75	11,500#	poured
8-12 Colorado sand	293	6"-503	36,700#	poured

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
20"	+3	346	.375	steel	XX	☐	XX	☐
10"	296	346	.365	steel	☐	XX	XX	☐
10"	376	415	.365	steel	☐	XX	XX	☐

Length of Headpipe 52'6" Length of Tailpipe 11'

9. PERFORATIONS/SCREENS
☐ Perforations Method
XX Screens Screen Type Johnson 304 stainless vee wire

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
346	376	.35		10"	stnls	☐	XX
415	475	.35		10"	stnls	☐	XX
						☐	☐

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

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

Yield gal./min.	Drawdown	Pumping Level	Time
1450	110'	185'	6 hr

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

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
24	0	5	clay topsoil		X
	5	75	basalt		X
20	75	98	gravel & sand	X	
	98	105	sand & gravel	X	
	105	160	sand	X	
	160	165	sand/clay streaks	X	
	165	170	cemented sand & clay streaks	X	
	170	195	sand	X	
	195	205	sand/clay streaks	X	
	205	228	brown clay		X
	228	236	sand	X	
	236	245	brown clay & sandy clay		X
	245	260	sand/clay streaks	X	
	260	285	sand	X	
	285	320	cemented sand	X	
	320	342	sandy clay	X	
	342	346	sticky sandy clay		X
	346	370	sand	X	
	370	375	sand & cemented sand	X	
	375	382	cemented sand & clay streaks	X	
	382	385	brown clay		X
	385	400	blue clay		X
	400	415	green clay		X
	415	437	fine green sand	X	
	437	440	brown clay		X
	440	475	fine sand	X	
	475	495	fine sand & clay streaks	X	
	495	503	green clay		X
			MICROFILMED		
			SEP 2 3 1998		
			10" 375'9" 486'9" .365 steel		

Completed Depth 486'9" (Measurable)
Date: Started April 1998 Completed July 1998

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

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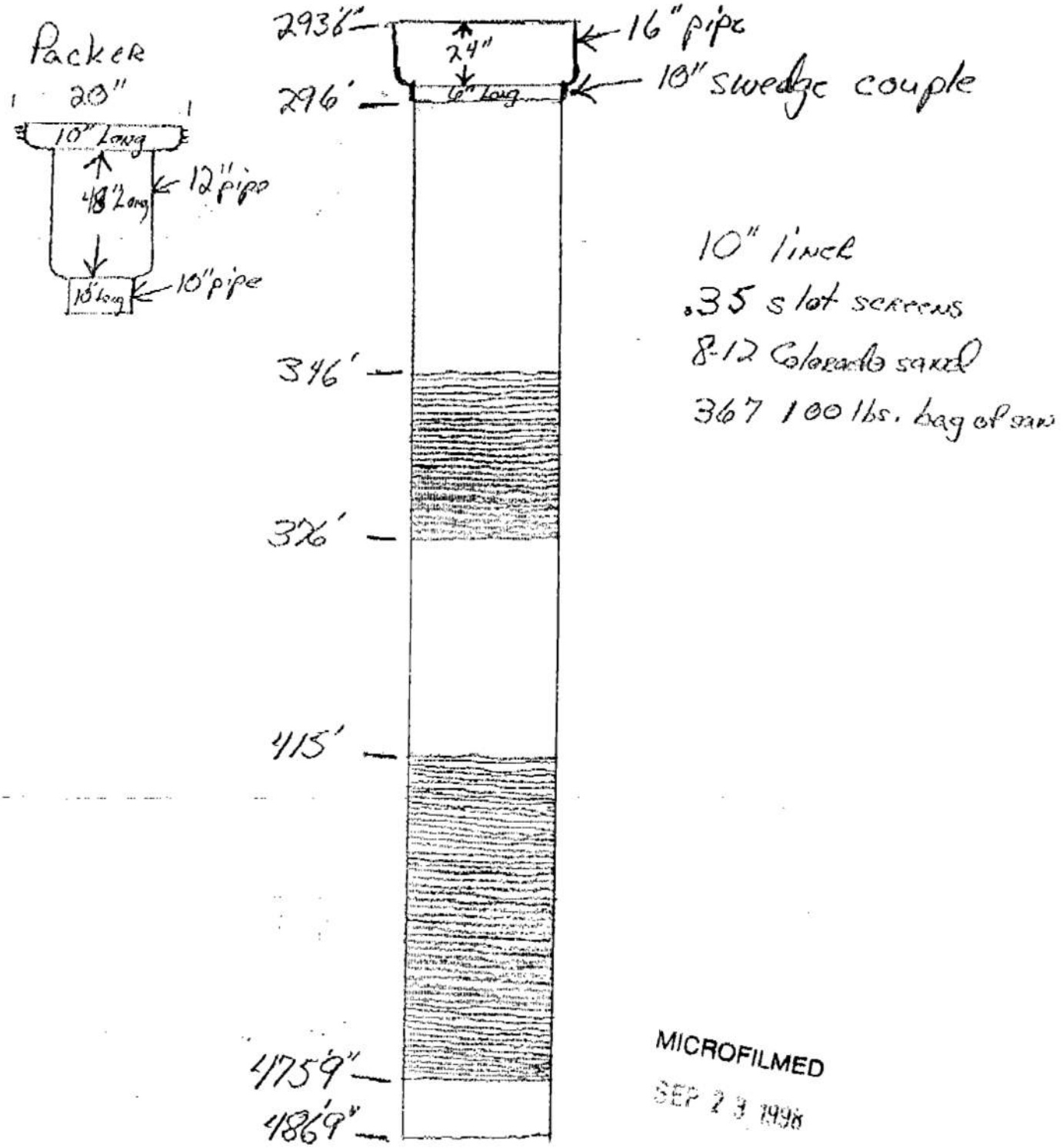
Firm Name Stevens & Sons Firm No. 153
Firm Official Ron Stevens Date 7/25/98
Supervisor or Operator Date
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

2N 1W Sec 22 NW SE

City of
Kuna Well #5
Permit # 63-97AW0155000
Water Right 63-12394

065428



MICROFILMED
SEP 23 1998

Form 238-7
6/07

857085

15

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0055841
Drilling Permit No. 908528-857085
Water right or injection well # 63-12207

2. OWNER: Layne Thornton
Name Layne Thornton
Address 3224 Swan Falls Rd
City Kuna State ID Zip 83634

3.WELL LOCATION:
Twp. 2 North ☑ or South ☐ Rge. 1 East ☐ or West ☑
Sec. 28 NW 1/4 (10 acres) NE 1/4 (40 acres) NE 1/4 (160 acres)
Gov't Lot ____ County ADA
Lat. 43 ° 29.286 (Deg. and Decimal minutes)
Long. 116 ° 27.446 (Deg. and Decimal minutes)
Address of Well Site ½ mi. west of intersection of Kuna Rd and Blacktail Rd. City Kuna
(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
Bentonite	0	60	5000 lbs.	overbore - dry pour
5/8 chip				

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
12	+2	250	¼	steel	☑	☐	☑	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☑ Y ☐ N Shoe Depth(s) 250

9. PERFORATIONS/SCREENS:
Perforations ☑ Y ☐ N Method Factory slot
Manufactured screen ☐ Y ☑ N Type ____
Method of installation Driven

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
100	250	⅛ x 3	3600	12	steel	¼

Length of Headpipe — Length of Tailpipe —
Packer ☐ Y ☑ N Type ____

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) 90 Static water level (ft) 90
Water temp. (°F) 61 Bottom hole temp. (°F) 61
Describe access port 2" pipe weld into casing

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
~~AIR~~	~~TESTED~~	
50	900	120

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

Water quality test or comments: GOOD

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
20	0	8	TOPSOIL		
20	8	13	BASALT - Broken		
20	13	30	BASALT SOLID		
20	30	35	CINDERS - BLACK & ORANGE		
20	35	40	BASALT - SOLID		
16	40	110	BASALT - SOLID	✓	
16	110	121	TAN CINDERS / ASH	✓	
12	121	145	PEA GRAVEL - DIRTY	✓	
	145	155	Gravel - smaller - SAND COARSE	✓	
	155	165	SAND - CLEAN ø050	✓	
	165	180	SAND CLEAN ø040	✓	
	180	196	SAND BROWN HEAVES	✓	
	196	202	TAN YELLOW CLAY		
	202	210	SAND BROWN ø025	✓	
	210	221	SAND - WHITE some gravel	✓	
	221	235	SAND BROWN - SILTY	✓	
	235	250	CLAY WHITE		
	250	-	SAND ø040	✓	
			2 BAGS CEMENT PLACED IN BOTTOM		

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Completed Depth (Measurable): 240
Date Started: 9/7/09 Date Completed: 11/10/09

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 Johnston Drilling Co. No. 92
*Principal Driller Sam Johnston Date 12/5/09
*Driller Sam Johnston Date 12/5/09
*Operator II ____ Date ____
Operator I ____ Date ____

* Signature of Principal Driller and rig operator are required.

WELL ID 504427

Form 238-7
6/89

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

16

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 location 43° 32.472 -116° 30.788

Name PLINE FARMS

Address 2805 LAKE HAZEL/NAMPA, ID. 83687

Owner's Permit No. 63-W-90-083

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness		Diameter		From		To	
.250	inches	12	inches +	1	feet	29	feet
	inches		inches		feet		feet
	inches		inches		feet		feet
	inches		inches		feet		feet

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

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from ___ feet to ___ feet
Diameter ___ Slot size ___ Set from ___ feet to ___ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from ___ feet to ___ feet
Surface seal depth 28 Material used to 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 [illegible]

Lot No. _____ Block No. _____

County CANYON

SE ¼ NE ¼ Sec. 1 T. 2N N S R. 2W E

7. WATER LEVEL

Static water level 22 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
400	90	4

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
16	0	28	SAND & CLAY		X
12	28	91	HARD BASALT		X
12	91	110	SAND W/ SOME CLAY	X	
12	110	120	CEMENTED GRAVEL	X	

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APR 1 8 1991
Department of Water Resources

10. Work started 3/27/91 finished 4/13/91

11. DRILLERS 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 Date 4-16-91
CALDWELL, ID. 83605
Signed by (Firm Official) [signature]
and
(Operator) [signature]

DEC 09 1994

SPF WATER ENGINEERING

MEMORANDUM

DATE: January 14, 2022

TO: Tanner Verhoeks
Justin Ruthenbeck

FROM: Andrew Francis P.G.
Terry Scanlan P.E., P.G.

RE: Haven Creek Subdivision Water Supply Assessment

REGISTERED PROFESSIONAL GEOLOGIST
ANDREW FRANCIS
NO. 1717
STATE OF IDAHO

Andrew Francis
Digitally signed by Andrew Francis
Date: 2022.01.14 16:52:59 -07'00'

Summary

1. The highest potential groundwater demand was determined by the legal limit for irrigating with a domestic well (1/2 acre per well). A demand of 9 gpm per acre was used resulting in a total demand of 121 gpm for 13.5 acres.

2. The period of irrigation was based on historic records from the Boise Project for the date of last delivery for surface water supplies. Drawdown after two months was 11 feet a distance of 100 feet from the center of the subdivision and 2.4 feet of drawdown at a distance of a half mile.

3. Regional cross-sections indicate geology is consistent from regional monitored wells to the Subdivision. The regional geology consists of a relatively thin layer of top soil and alluvium (i.e., sand, gravel, and clay) overlying basalt approximately 100 feet in thickness, underlain by alluvium. The area within a 4-mile radius of the subdivision is one continuous aquifer with similar hydrogeologic conditions.

4. The Mountain Home Groundwater Management Area is an example of an area in Idaho experiencing significant groundwater decline.

Introduction

A hearing with the Canyon County Board of Commissioners was held in December 2021 to discuss the approval of the Haven Creek Subdivision (Subdivision). A water supply assessment was provided by SPF prior to the initial hearing which characterized the impacts of 27 new domestic wells used for indoor use only. This water supply assessment found that there would be less than 0.5 feet of drawdown within 500 feet of the Subdivision. Residents who live near the proposed subdivision raised concerns that (1) the new domestic wells could be used for irrigation and (2) the information indicating drawdown has not occurred is not reflective of conditions near the Subdivision. The purpose of this memorandum is to determine impact the 27 domestic wells being used to irrigate up to ½ acre per well, show that the IDWR monitoring wells are representative of conditions near

the subdivision, and to provide an example of an area where groundwater decline is a problem.

The following outlines the sections covered in this memo:

1. Additional Drawdown Analysis
2. IDWR Monitored Well/Geologic Cross-Sections
3. Areas of Decline in Idaho
4. Conclusions

1. Additional Drawdown Analysis

The original drawdown analysis was performed under the assumption that all groundwater pumping was indoor use only. An additional analysis was performed in order to determine the impact of pumping for short term irrigation when surface water supplies may not be available.

As a follow up to the December hearing, another drawdown analysis assumed 27 domestic wells would be used for irrigation for up to two months. A period of two months was selected based on historical records for the Boise Project surface water supplies. In 1992, surface water supplies were cut off in early August, the earliest curtailment in more than 30 years. With an early August curtailment of surface water supplies, it is assumed that irrigation would continue through the end of September using groundwater. A pumping rate of 9 gpm per acre (i.e., one miner's inch per acre) was used, which is the typical maximum allowable rate for irrigation water rights. The maximum allowable area for irrigation from a domestic well without an irrigation water right (i.e., the domestic exemption of Idaho Code 42-111) is ½ acre resulting in a total demand of 121 gpm for 13.5 acres for 27 domestic wells. Drawdown was determined with the low-end transmissivity estimate of 10,000 gpd/foot. Results are presented in Figure 1.

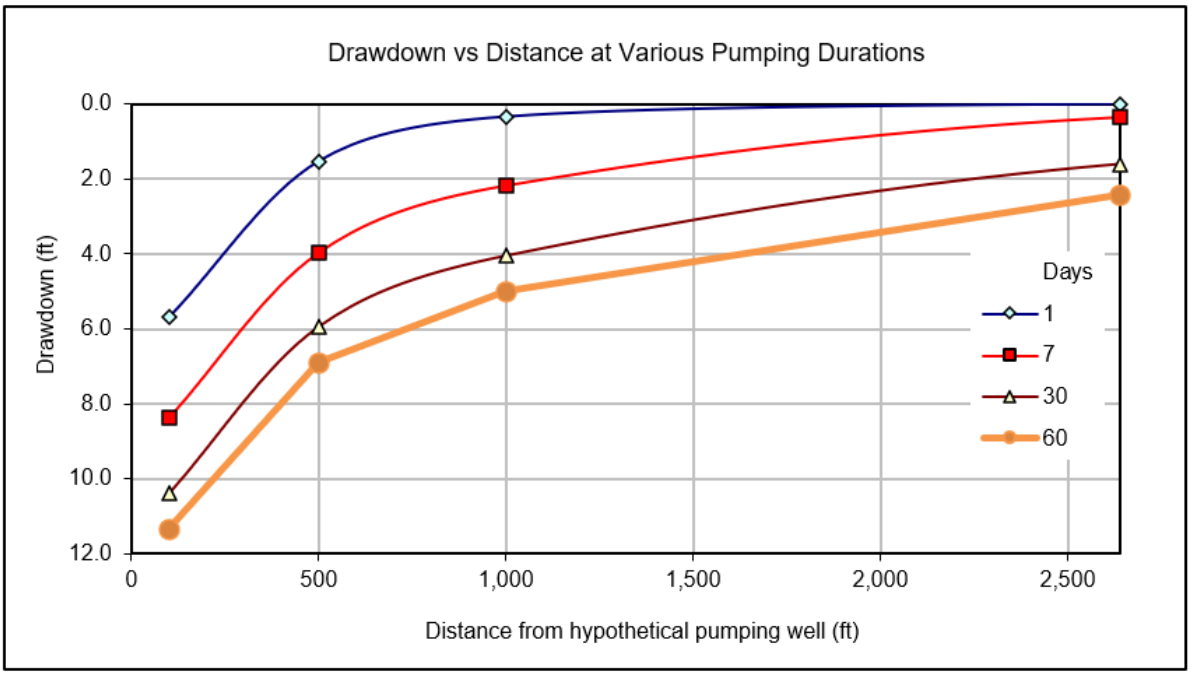


Figure 1. Drawdown due to irrigation

The total drawdown after 60 days of continuous pumping at 121 gpm is just over 11 feet within 100 feet of the center of pumping and just under 2.5 feet drawdown at a distance of a half mile from the subdivision. The drawdown at increased distances from the Subdivision is presented in Figure 2. Figure 2 also includes the location of nearby well driller's logs with additional information presented in Table 1.

It should be noted that the drawdown projection in Figure 2 is considered "worst-case" because it assumes an aquifer transmissivity of only 10,000 gpd/ft. The 10,000 gpd/ft value is useful for determining maximum short-term impacts between wells completed in the same layers of the aquifer at distances of a few hundred feet. As noted in the previous analysis, the pumping durations of longer than a few days or weeks, the aquifer responds as a whole, with effective transmissivities exceeding 100,000 gpd/ft. Similarly, drawdown impacts from shallow aquifer zones propagate upward to the water table, increasing the effective storativity. Lastly, recharge from annual irrigation activities maintain water levels. The result is that drawdown impacts from shallow aquifer pumping typically stabilize after a few days or weeks of pumping, and are expected to be substantially less than the impacts depicted in Figure 2.

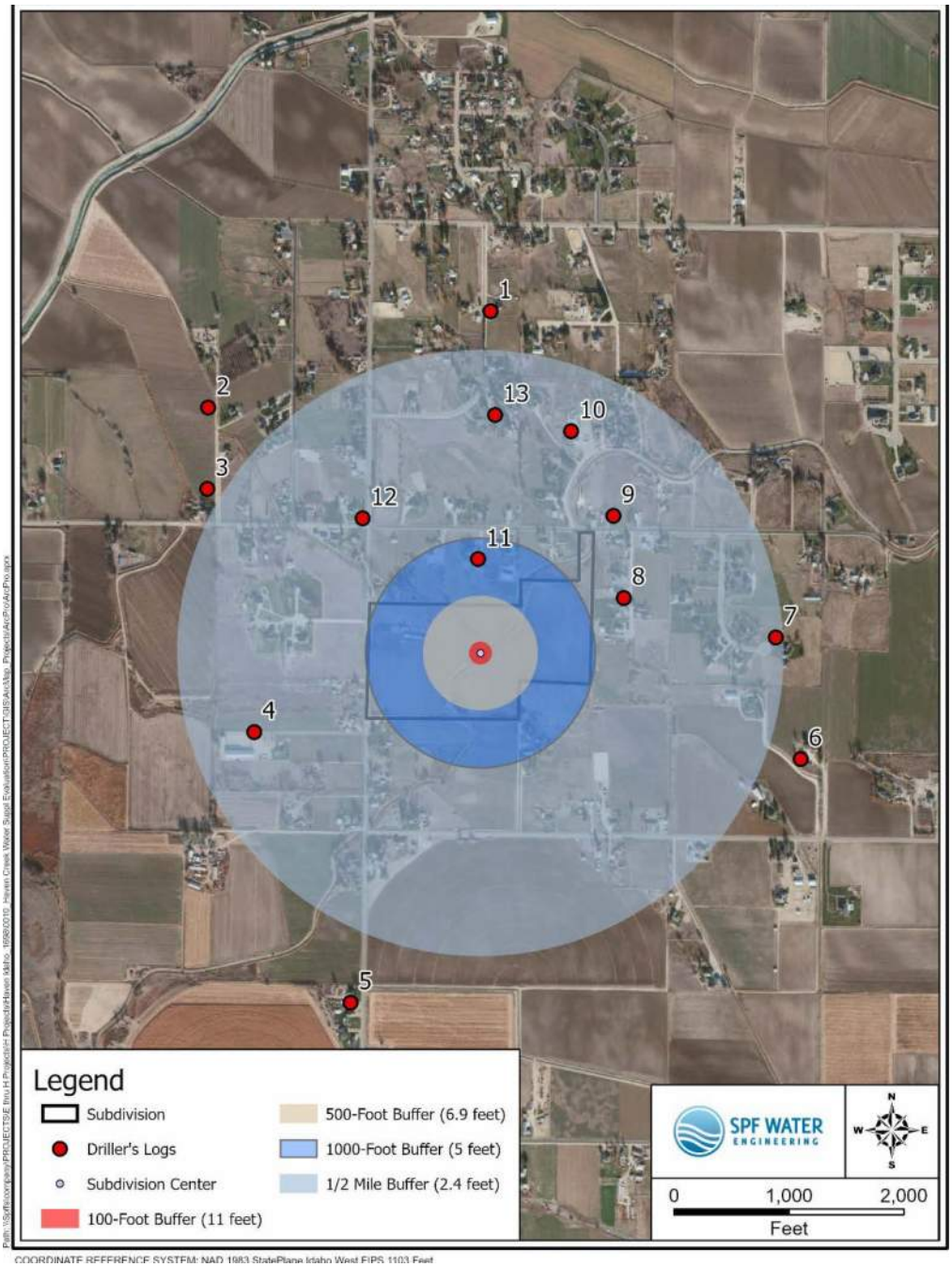


Figure 2. Drawdown at increasing distances from the Subdivision.

Table 1. Well Construction

Well ID	Total Depth (feet)	Screen Inteval (feet bgs)	Screen Length (feet)	Water Bearing Material	Approximate Elevation	Year of Construction	Static Water Level (feet)	Approximate Water Level Elevation	Well Type
1	114	109-114	5	Sand & Gravel	2570	2015	33	2537	Domestic
2	90	No Screen	No Screen	Fractured Basalt	2562	1981	16	2546	Domestic
3	70	No Screen	No Screen	sandy clay, sand/shale	2555	1988	20	2535	Domestic
4	84	44-84	40	Fractured Basalt	2570	2014	18	2552	Domestic
5	188	174-190	16	Sand Medium	2631	2008	66	2565	Domestic
6	155	145-150	5	Sand	2627	1991	75	2552	Domestic
7	110	100-110	10	Sand mixed with gravel	2603	2004	64	2539	Domestic
8	97	86-96	10	Fractured Basalt	2599	2004	62	2537	Domestic
9	118	111-116	5	Sand and Gravel	2602	1993	63	2539	Domestic
10	100	60-100	40	Fractured Basalt	2586	2019	40	2546	Domestic
11	140	No Screen	No Screen	Fracture Basalt and Gravel	2587	2015	48	2539	Domestic
12	108	No Screen	No Screen	Fracture Basalt and Sand/Gravel	2576	1996	40	2536	Domestic
13	105	No Screen	No Screen	Gravel and Sand	2587	1992	45	2542	Waste/Injection

2. IDWR Monitored Wells/ Geologic Cross-Section

The purpose of this section is to provide additional information on IDWR monitored wells and how they are representative of conditions near the Subdivision. The construction and water level of monitored wells and well logs are compared. Also, regional geology based on past studies was compared to the descriptions of driller's logs.

Locations for IDWR hydrographs are presented in Figure 3. The most recent season high water levels at each of the well locations are labeled. These wells are all within 4 miles from the Subdivision. Information on these well's construction is presented in Table 2.

Table 2. Monitor Well Construction

Well Name	Total Depth (feet)	Opening/Screen Interval (feet)	Ground surface elevation
02N 01W 07BBC1	103	97-102	2547
02N 01W 27BCC2	220	145-220	2689
02N 01W 11ADA1	205	141-196	2685
03N 01W 31DDA1	130	31-67	2482

Historical water levels from IDWR monitored wells are presented in Figure 4. Also represented in this figure are the range of approximate water level elevations for reported static water levels on driller's logs near the Subdivision. Groundwater elevations for driller's logs ranged between 2535 and 2565 feet msl. Surface elevations for well logs were determined from Google Earth. The range of water level elevations reported in driller's logs is consistent with the closest IDWR monitored well **02N 01W 07BBC1** for which the most recent measurement was 2536 feet msl. Approximate ground surface and water level elevations for driller's logs are included in Table 1.

To further evaluate whether the IDWR monitored wells were representative of conditions near the Subdivision, a cross-section used for the development of the Treasure Valley Groundwater Flow Model is included in Appendix A. The cross-section runs from south to north, from the Snake River to 1.5 miles northwest of Star. The area between Kuna and Nampa consists of approximately 10 feet of top soil and alluvium overlaying basalt ranging in in thickness from 50 to 100 feet, and the basalt is underlain by alluvium. This geology is consistent with the descriptions provided in the driller's logs near the Subdivision. The consistent geology suggests that the area is one continuous aquifer. A diagram of the local aquifer based on both the cross-section and the description from nearby well driller's logs is presented in Figure 5. Also represented in this figure is the typical construction for a domestic well and approximation of drawdown conditions. Here a static water level of 40 feet is depicted with over 50 feet of available drawdown given the typical construction for a domestic well in the area (Table 1). The well depicted is approximately 105 feet deep with 10 feet of screen.

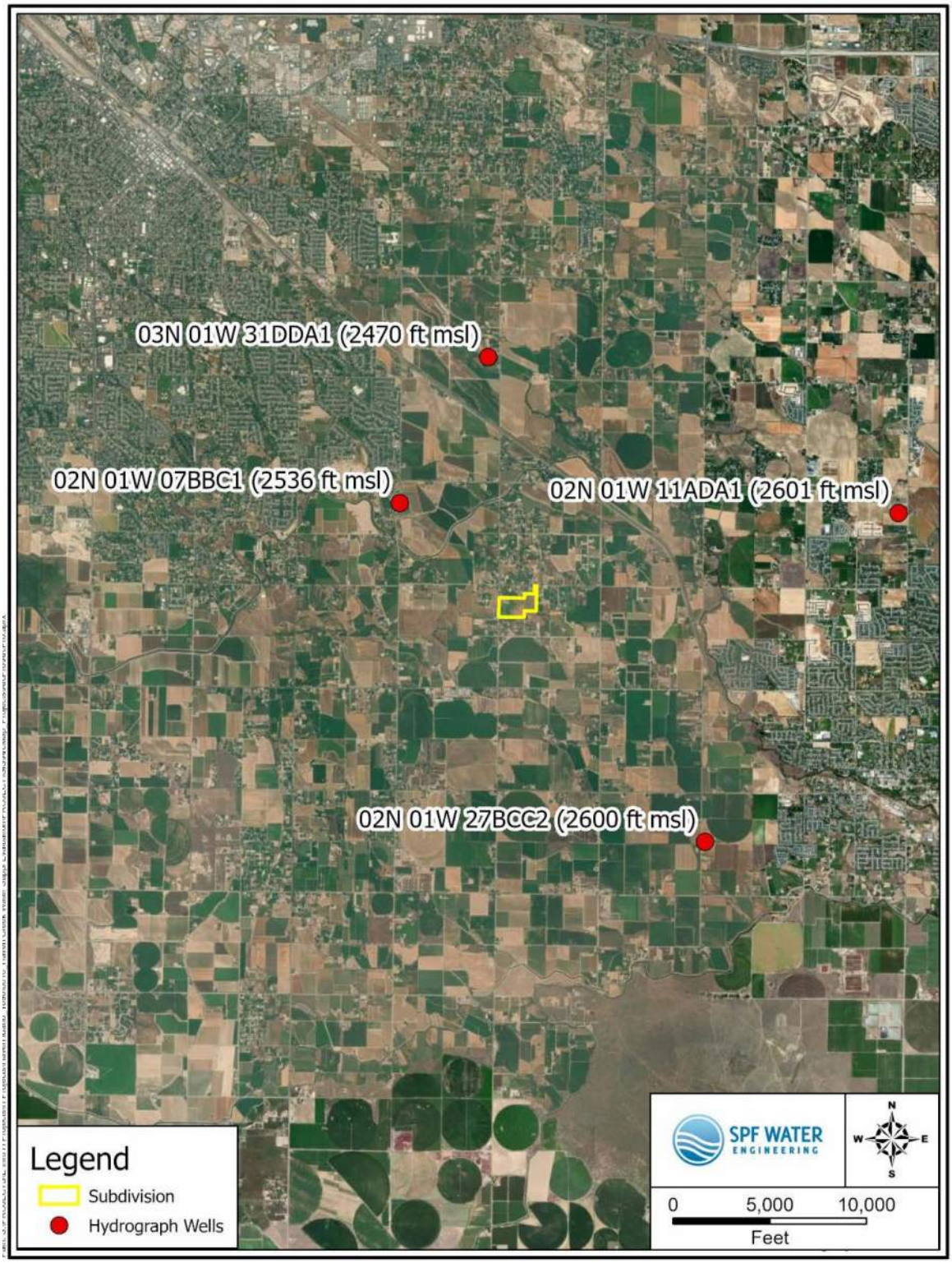


Figure 3. Hydrograph Locations

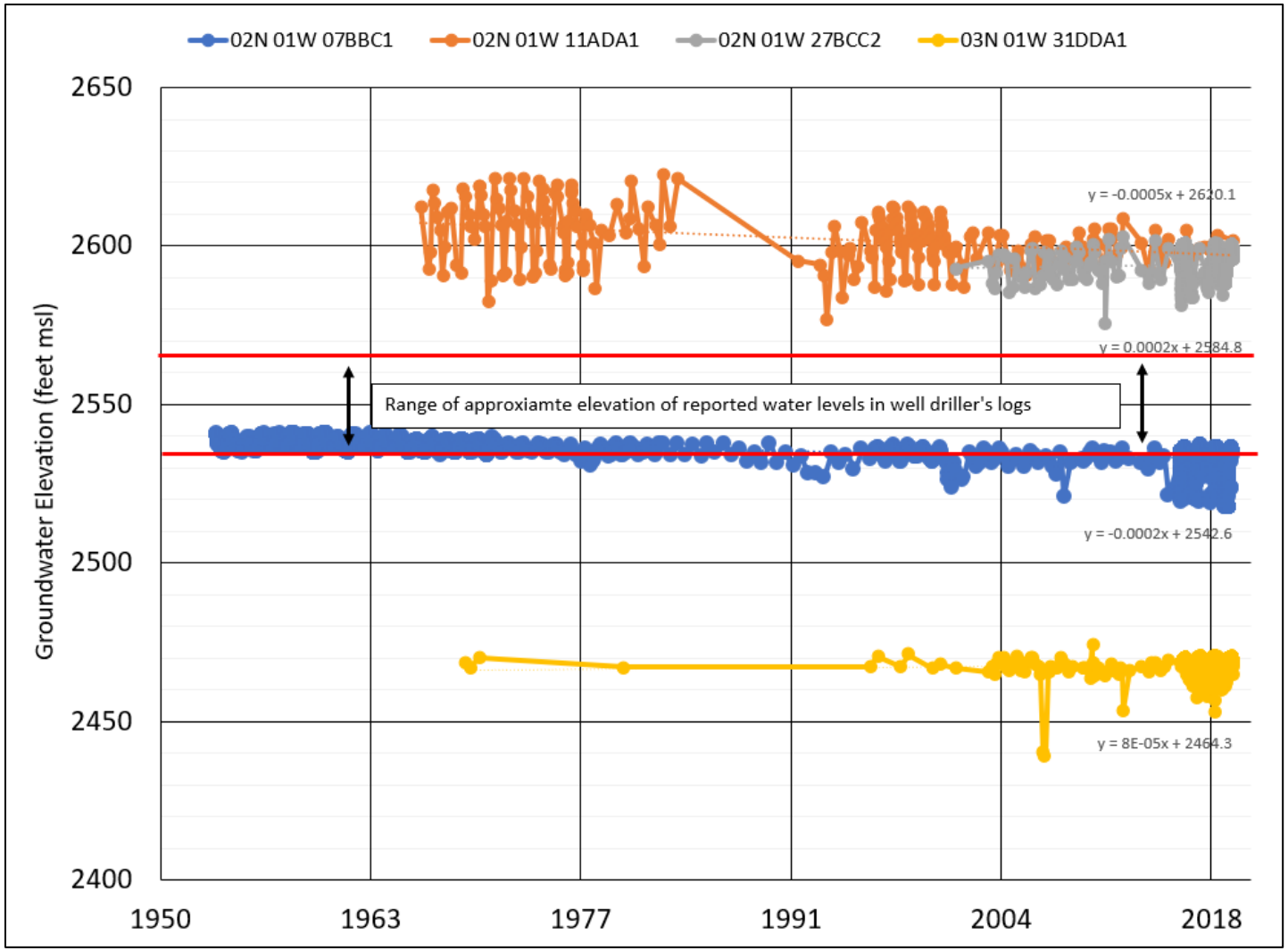


Figure 4. IDWR Monitored Wells

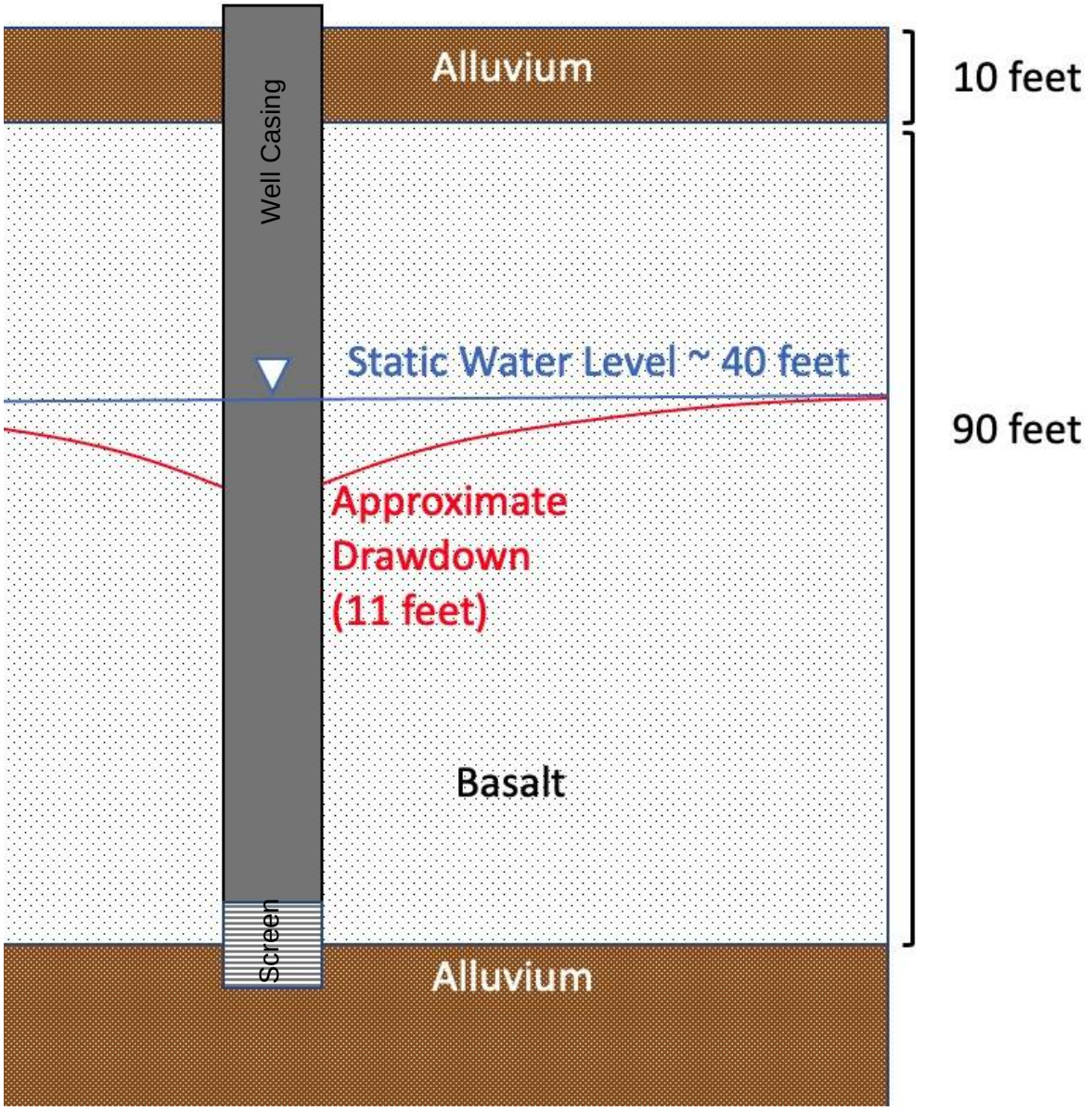


Figure 5. Local Aquifer Diagram and typical Well Construction

3. Areas of Decline in Idaho

A hydrograph for a well located in the Mountain Home Groundwater Management Area is presented in Figure 6. This has been provided in order to provide an example of an area in the State where groundwater decline has been a problem. The Mountain Home Groundwater Management Area is located in Elmore and western Ada County and was designated in 1982 as a result of declining water levels. Water levels at this well have

declined over 50 feet since 1975, and continues to decline each year. In contrast, **02N 01W 07BBC1** has only declined 6 feet going back to 1953 (Figure 4), and shows essentially no decline in the past 20 years.

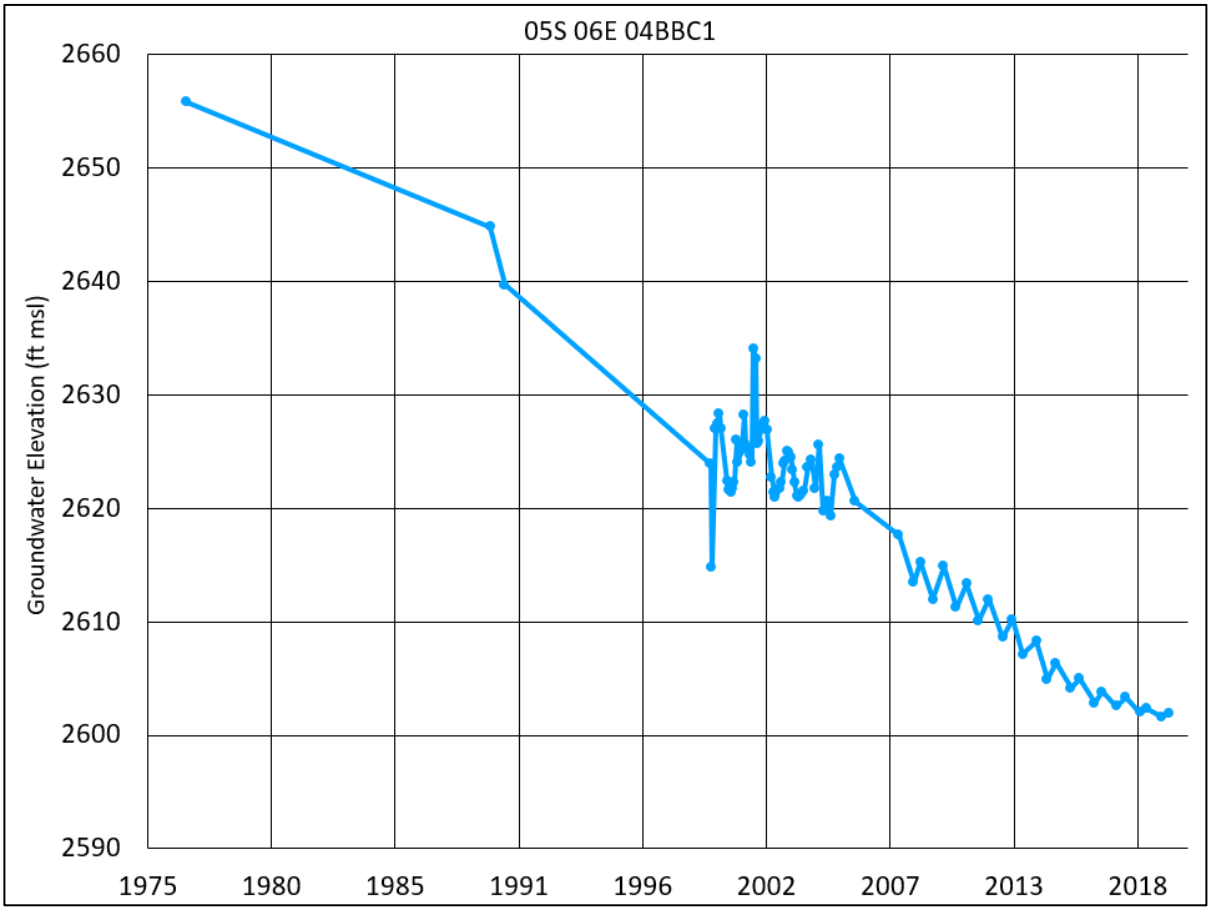


Figure 6. Hydrograph from Mountain Home Groundwater Management Area.

4. Conclusions

Pumping of wells can have two types of impacts on groundwater levels and existing wells.

1. The first impact is caused by direct well interference, where pumping of a well (or group of wells) temporarily lowers the aquifer water levels to induce flow into the well (or wells). This impact recovers after cessation of pumping. The magnitude of such an impact can be calculated. For Haven Creek Subdivision, a worst-case drawdown analysis indicated that two months of continuous irrigation pumping for 13.5 acres would result in less than 3 feet of drawdown at a distance of ½ mile from the subdivision. This analysis does not account for recharge to the aquifer which will lessen the impact of additional pumping. It is also important to note that water levels recover to near static levels when wells are not actively pumping.

2. The second impact of groundwater pumping can be chronic annual water-level declines if pumping exceeds available recharge. Regional IDWR monitored wells are considered to be reflective of groundwater conditions near the Subdivision based on regional geology and similar well construction. In areas where groundwater pumping exceeds the annual aquifer recharge, IDWR monitored wells show chronic annual water-level as is the case for the well near Mountain Home depicted in Figure 6. In the vicinity of Haven Creek Subdivision, reported static water levels in the driller's logs are consistent with the closest IDWR well **02N 01W 07BBC1** which has shown steady water levels over the past 60+ years. In addition to the steady water levels, regional cross-sections used to develop the Treasure Valley Flow model indicate a consistent geology between Nama and Kuna. The regional cross-section and well driller's logs indicate the area consist of a thick basalt layer bounded by alluvium. The area around the subdivision within at least a 4-mile radius is one continuous aquifer with similar hydrogeologic conditions and no annual water-level decline. The lack of annual water-level decline indicates that the aquifer is adequately recharged and can withstand additional development without injury to existing water rights.

The additional groundwater pumping that will result from the Subdivision will have a minimal effect on the existing groundwater conditions in the area. Groundwater pumping for domestic use with the occasional irrigation demand is insignificant when compared to groundwater pumping from large municipal and irrigation wells in the Kuna area. These wells often pump as much as 2000 gpm for extended periods of time without adverse local impacts.

March 17, 2023

Well Monitoring Program Authorization

This Well Monitoring Authorization and Access Agreement (Agreement) is between Haven Idaho, LLC ("Haven") on behalf of The Idaho Department of Water Resources ("IDWR") and RUSLAN LEVANDOVSKY located at 4756 DYE LN., KUNE ID 83634 (the "Property Owner").

The Property Owner, Haven, and IDWR would like to measure the depth-to-water of the property owner's well (the "Well") for regional water level monitoring purposes. Note this monitoring and data collection is not for regulatory or usage purposes.

The parties agree as follows:

1. If available, Property Owner will share known well characteristics of subject Well with IDWR upon commencement of this agreement.
2. A Contractor hired by Haven will install a Monitoring Tube in the well casing (1" Schedule 40 PVC tube or similar) to separate monitoring practices from well and pump operation equipment.
    - ☑ Haven will pay for Monitoring Tube installation
    - ☐ Haven and Property Owner will split the cost of Monitoring Tube installation
    - ☐ Property Owner will pay for Monitoring Tube installation
3. Once the Monitoring Tube is installed, monitoring and associated recording equipment and various other tools and equipment (Equipment) will be deployed in the Well by IDWR.
4. Any Equipment deployed in or near the Well shall remain the property of IDWR and IDWR will be responsible for its maintenance. Equipment will be removed by IDWR at its own expense within a reasonable time after the expiration or termination of this Agreement.
5. The Equipment shall not be used by the Owner unless written permission is obtained from IDWR.
6. The Owner consents and agrees to the presence of IDWR personnel and authorized IDWR contractors on the Property for the purpose of water quality and water level monitoring. The Owner grants to IDWR, its employees and agents, the right to reasonable ingress and egress.
7. IDWR will measure water levels periodically throughout the year. Weather and road conditions will dictate the available times in which the Well can be accessed but ideally will occur in the spring and fall of each year. A continuous recording water level measuring device may be installed in the Well to collect water levels on a daily frequency.
8. IDWR shall follow all standard equipment sanitization and decontamination regulations.
9. IDWR will provide the Owner with reports of the monitoring every year upon request as well as host the data on its public, accessible database.

10. This Agreement shall be for a term of five (5) years, commencing on the date signed by both parties. The Agreement term shall automatically renew unless either party terminates by written notice no less than 30 days before the end of the term.
11. The Property Owner may terminate this agreement upon sixty (60) days' written notice to IDWR.

The parties have signed this Agreement on the date following their respective signatures.

Haven

Tanner Verhoeks

Tanner Verhoeks

Principal

03/17/2023

Date

Property Owner

Ruslan Levandovsky

RUSLAN LEVANDOVSKY

Well Owner

03/24/2023

Date

March 17, 2023

Well Monitoring Program Authorization

This Well Monitoring Authorization and Access Agreement (Agreement) is between Haven Idaho, LLC ("Haven") on behalf of The Idaho Department of Water Resources ("IDWR") and Andrea Eisenbarth located at 6915 E Lewis Ln, Nampa 83686 (the "Property Owner").

The Property Owner, Haven, and IDWR would like to measure the depth-to-water of the property owner's well (the "Well") for regional water level monitoring purposes. Note this monitoring and data collection is not for regulatory or usage purposes.

The parties agree as follows:

1. If available, Property Owner will share known well characteristics of subject Well with IDWR upon commencement of this agreement.
2. A Contractor hired by Haven will install a Monitoring Tube in the well casing (1" Schedule 40 PVC tube or similar) to separate monitoring practices from well and pump operation equipment.
    - ☑ Haven will pay for Monitoring Tube installation
    - ☐ Haven and Property Owner will split the cost of Monitoring Tube installation
    - ☐ Property Owner will pay for Monitoring Tube installation
3. Once the Monitoring Tube is installed, monitoring and associated recording equipment and various other tools and equipment (Equipment) will be deployed in the Well by IDWR.
4. Any Equipment deployed in or near the Well shall remain the property of IDWR and IDWR will be responsible for its maintenance. Equipment will be removed by IDWR at its own expense within a reasonable time after the expiration or termination of this Agreement.
5. The Equipment shall not be used by the Owner unless written permission is obtained from IDWR.
6. The Owner consents and agrees to the presence of IDWR personnel and authorized IDWR contractors on the Property for the purpose of water quality and water level monitoring. The Owner grants to IDWR, its employees and agents, the right to reasonable ingress and egress.
7. IDWR will measure water levels periodically throughout the year. Weather and road conditions will dictate the available times in which the Well can be accessed but ideally will occur in the spring and fall of each year. A continuous recording water level measuring device may be installed in the Well to collect water levels on a daily frequency.
8. IDWR shall follow all standard equipment sanitization and decontamination regulations.
9. IDWR will provide the Owner with reports of the monitoring every year upon request as well as host the data on its public, accessible database.

10. This Agreement shall be for a term of five (5) years, commencing on the date signed by both parties. The Agreement term shall automatically renew unless either party terminates by written notice no less than 30 days before the end of the term.
11. The Property Owner may terminate this agreement upon sixty (60) days' written notice to IDWR.

The parties have signed this Agreement on the date following their respective signatures.

Haven

Tanner Verhoeks

Tanner Verhoeks

Principal

03/17/2023

Date

Property Owner

Andrea Eisenbarth

Andrea Eisenbarth

Well Owner

03/20/2023

Date

March 17, 2023

Well Monitoring Program Authorization

This Well Monitoring Authorization and Access Agreement (Agreement) is between Haven Idaho, LLC ("Haven") on behalf of The Idaho Department of Water Resources ("IDWR") and HTV Creek LLC located at 9814 Robinson Rd, Nampa ID (the "Property Owner").

The Property Owner, Haven, and IDWR would like to measure the depth-to-water of the property owner's well (the "Well") for regional water level monitoring purposes. Note this monitoring and data collection is not for regulatory or usage purposes.

The parties agree as follows:

1. If available, Property Owner will share known well characteristics of subject Well with IDWR upon commencement of this agreement.
2. A Contractor hired by Haven will install a Monitoring Tube in the well casing (1" Schedule 40 PVC tube or similar) to separate monitoring practices from well and pump operation equipment.
    - ☑ Haven will pay for Monitoring Tube installation
    - ☐ Haven and Property Owner will split the cost of Monitoring Tube installation
    - ☐ Property Owner will pay for Monitoring Tube installation
3. Once the Monitoring Tube is installed, monitoring and associated recording equipment and various other tools and equipment (Equipment) will be deployed in the Well by IDWR.
4. Any Equipment deployed in or near the Well shall remain the property of IDWR and IDWR will be responsible for its maintenance. Equipment will be removed by IDWR at its own expense within a reasonable time after the expiration or termination of this Agreement.
5. The Equipment shall not be used by the Owner unless written permission is obtained from IDWR.
6. The Owner consents and agrees to the presence of IDWR personnel and authorized IDWR contractors on the Property for the purpose of water quality and water level monitoring. The Owner grants to IDWR, its employees and agents, the right to reasonable ingress and egress.
7. IDWR will measure water levels periodically throughout the year. Weather and road conditions will dictate the available times in which the Well can be accessed but ideally will occur in the spring and fall of each year. A continuous recording water level measuring device may be installed in the Well to collect water levels on a daily frequency.
8. IDWR shall follow all standard equipment sanitization and decontamination regulations.
9. IDWR will provide the Owner with reports of the monitoring every year upon request as well as host the data on its public, accessible database.

10. This Agreement shall be for a term of five (5) years, commencing on the date signed by both parties. The Agreement term shall automatically renew unless either party terminates by written notice no less than 30 days before the end of the term.
11. The Property Owner may terminate this agreement upon sixty (60) days' written notice to IDWR.

The parties have signed this Agreement on the date following their respective signatures.

Haven

Tanner Verhoeks

Tanner Verhoeks

Principal

03/17/2023

Date

Property Owner

Justin Ruthenbeck

Justin Ruthenbeck

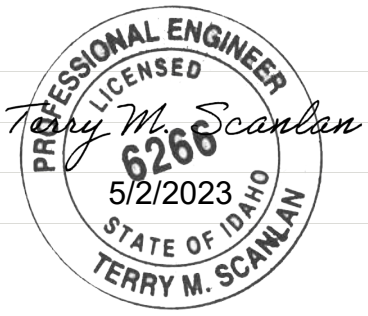
Well Owner

03/17/2023

Date

Memo

Date:	Tuesday, May 02, 2023
Project:	Haven Creek Subdivision Water Supply
To:	Tanner Verhoeks and Justin Ruthenbeck
CC:	Dennis Owsley
From:	Terry Scanlan, P.E., P.G.
Subject:	Robinson Road Well Aquifer Pumping Test



An aquifer pumping test was conducted in April 2023 using the existing domestic well and well pump at 9814 Robinson Road. The purpose of the test was to evaluate aquifer water-level response to well pumping for the purpose of projecting impacts from future groundwater development at the proposed Haven Creek subdivision.

The test indicates that the shallow aquifer at the Haven Creek site is highly productive. Pumping for residential domestic purposes at the proposed subdivision will have a negligible impact on local groundwater levels. Pumping for supplemental irrigation purposes will likely have a measurable impact on nearby wells, although the magnitude of impact is not anticipated to be injurious.

Test Description

The aquifer test consisted of pumping the 9814 Robinson Road well for three days (10:40 am April 10 through 5:37 pm April 13) while monitoring water levels in the pumping well and in two nearby domestic wells. The domestic wells are located at 6915 E Lewis Lane (2000 feet northeast of the pumping well) and 4756 Dye Lane (1400 feet southeast of the pumping well). The Lewis Lane well has a current depth of 75 feet and the Dye Lane well has a current depth of 98 feet. The Robinson Road well has a current depth of 109 feet. Therefore, all three wells draw water from the shallow zone of the aquifer.

Well driller's reports and data regarding current depths are provided in Attachment A. A well driller's report was not located for the 6915 East Lewis Lane well.

Pumping rate was determined by measuring fill time for a 5-gallon bucket. Initial pumping rate for the first 20 minutes of pumping was approximately 5 gpm and then increased to an average rate of 19 gpm for the duration of the test.

Water-level monitoring was conducted by Idaho Department of Water Resources personnel (Dennis Owsley) using data-logging pressure transducers at five-minute intervals. Water levels were monitored beginning four days prior to starting the pumping test and for fourteen hours after the pumping test. Water levels were manually measured with an electric-line well sounder upon installation and removal of the pressure transducers.

Test Results

Test data are plotted in Attachment B. All three wells showed similar water-level trends before and after the pumping test. The Robinson Road well had a rising trend of 0.05 feet per day prior to testing and a rising trend of 0.03 feet during recovery.

Trends in the three wells were also similar during the pumping period, except that the pumping well showed an initial drawdown of 0.7 feet that was attributable to well loss. This 0.7 feet was recovered immediately upon stopping of the pump.

Interpretation of the responses to pumping is difficult due to the small magnitude of response and the significant water-level fluctuations due to barometric pressure influences. All three wells appear to drawdown approximately 0.2 to 0.3 feet during the first 500 minutes of pumping, and then stabilize with barometric fluctuation for the next three days. A semi-logarithmic plot of the trend from the first 500 minutes suggests a transmissivity in the range of 15,000 gpd/ft, but overall aquifer transmissivity appears to be substantially higher due to the stabilization of water levels after 500 minutes. The stabilization is potentially a delayed yield response as the drawdown response propagated to the water table.

Although a 0.2 to 0.3-foot drawdown was observed at each well during the first 500 minutes of pumping, surprisingly a similar recovery was not observed during the first 500 minutes of recovery. This could indicate that the apparent drawdown in the first 500 minutes of pumping was due primarily to something other than pumping of the Robinson Road well, such as a change in barometric pressure. Also odd is that the manual measurements collected at the end of the test were approximately 0.2 feet higher than indicated by the water level transducers. This is likely a barometric influence, as the same water-level sounder was used for all manual measurements.

Conclusions

The pumping test demonstrates that the shallow aquifer below Haven Creek is very productive, with a short-term transmissivity of approximately 15,000 gpd/ft, and a higher

long-term effective transmissivity as suggested by stabilization of drawdown at approximately 500 minutes.

The 19-gpm pumping rate test can be used to project the impact of water use at Haven Creek. Domestic water use by approximately 30 homes, each using 250 gallons per day, is equivalent to an average 24-hour pumping rate of 5 gpm. The impact of 5 gpm will be approximately 26 percent of the impact of the 19-gpm pumping test. Therefore, anticipated drawdowns at distances of 1400 to 2000 feet (the two observations wells) will be approximately 0.07 feet (i.e., 26% of the average 0.25-foot drawdown measured during the test). This impact of approximately one inch is considered negligible.

Similarly, the 19-gpm pumping rate can be used to estimate the impact of pumping groundwater for supplemental irrigation. Assuming an irrigated area of 30 acres, and a supplemental irrigation requirement of 5 gpm per acre, average pumping rate would be approximately 150 gpm, or nearly 8 times the 0.25-foot impact measured from the 19-gpm pumping test. Therefore, drawdown of 2 feet might be expected at 1400 to 2000 feet from a supplemental irrigation well.

In summary, the drawdown projections from the aquifer pumping tests are an indication of likely impacts from groundwater development on the Haven Creek property. The impact of domestic pumping will be negligible. The impact of pumping for supplemental irrigation is likely to be measurable, but unlikely to be injurious to use of local domestic wells.

Attachment A
Well Data

Scanlan, Terry

From: Tanner Verhoeks [redacted] >
Sent: Tuesday, April 4, 2023 5:48 PM
To: Scanlan, Terry
Subject: Monitoring Tubes Set - Haven Creek

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

QTY	DESCRIPTION
3	MONITOR WELLS 9814 ROBINSON RD. 6"X109.3' STATIC-62.5.5' PUMP SET ON 94' OF 1" GALV SOUNDER TUBE SET @ PUMP SETTING 6915 E. LEWIS LN. 6"X75.4' STATIC-61.4' PUMP SET ON 63' OF 1" GALV SOUNDER TUBE SET @ PUMP SETTING 4756 DYE LN 6"X97.7' STATIC-70.2' PUMP SET ON 84' OF 1 1/4" GALV SOUNDER TUBE SET @ PUMP SETTING

Form 238-7
4/92

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 Orrin J Gardner
Address 9814 Robinson Rd Nampa
Drilling Permit No. 63-92-W-1034-000
Water Right Permit No. _____

2. NATURE OF WORK

☒ 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

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2 feet	18 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

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

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

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

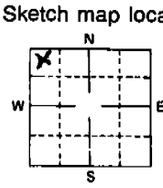
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 18 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 Port on Sanitary Seal

6. LOCATION OF WELL

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



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
Address of Well Site 9814 Robinson Rd Nampa
(give at least name of road)
NW ¼ NW ¼ Sec. 17, T. 2 N ☒ or S ☐, R. 1 E ☐ or W ☒

7. WATER LEVEL

Static water level 71 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 60 °F. Quality Clear
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
35	100	1/2

9. LITHOLOGIC LOG

082812

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	1	Soil		X
8	1	7	Broken Lava		X
8	7	18	Solid Lava		X
6	18	27	Solid Lava		X
6	27	35	Broken Lava		X
6	35	37	Red Cinder		X
6	37	109	Solid Lava		X
6	109	113	Orage Cinder	X	
6	113	–	Gravel	X	

RECEIVED
DEC 2 8 1992
Department of Water Resources

RECEIVED
DEC 16 1992
Department of Water Resources
Western Regional Office

AUG 0 9 1993

10.

Work started 11/25/92 finished 11/25/92

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 Domestic Pump & Drill Firm No. 483
Address 12630 Orchard Nampa Date 11/27/92
Signed by Drilling Supervisor _____
and
(Operator) _____
(If different than the Drilling Supervisor)

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

Form 238-7
8/90

RECEIVED
OCT 15 1991
Department of Water Resources

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.

USE TYPEWRITER OR BALLPOINT PEN

1. WELL OWNER

Name Harold Coon
Address 4756 Dye Lane
Nampa, Idhao 83686
Drilling Permit No. 63-91-w-277
Water Right Permit No. _____

2. NATURE OF WORK

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

3. PROPOSED USE

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

4. METHOD DRILLED

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

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches +	2 feet	39 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

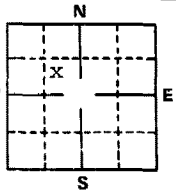
Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

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

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 39 Material used in seal: ☐ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☒ Temp. surface casing
☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld
☐ Cemented between strata
Describe access port well seal

6. LOCATION OF WELL

Sketch map location must agree with written location



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
SE ¼ NW ¼ Sec. 17, T. 2 N S ☐ R. 1 W E ☐ W ☐

MICROFILMED
DEC 04 1991

7. WATER LEVEL

Static water level 59 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

71224

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	5	Top soil/hard pan		x
	5	7	Loose lava		x
	7	28	Solid lava		x
	28	35	Lava crevices		x
	35	37	Solid lava		x
	37	38	Lava crevices		x
6	38	65	Solid lava		x
	65	73	Lava crevices	x	
	73	94	Loose lava/crevices		x
	94	98	Lava/gravel	x	
	98	101	Sand/gravel	x	

RECEIVED
OCT 10 1991
Department of Water Resources
Western Regional Office

10.

Work started 8/5/91 finished 8/5/91

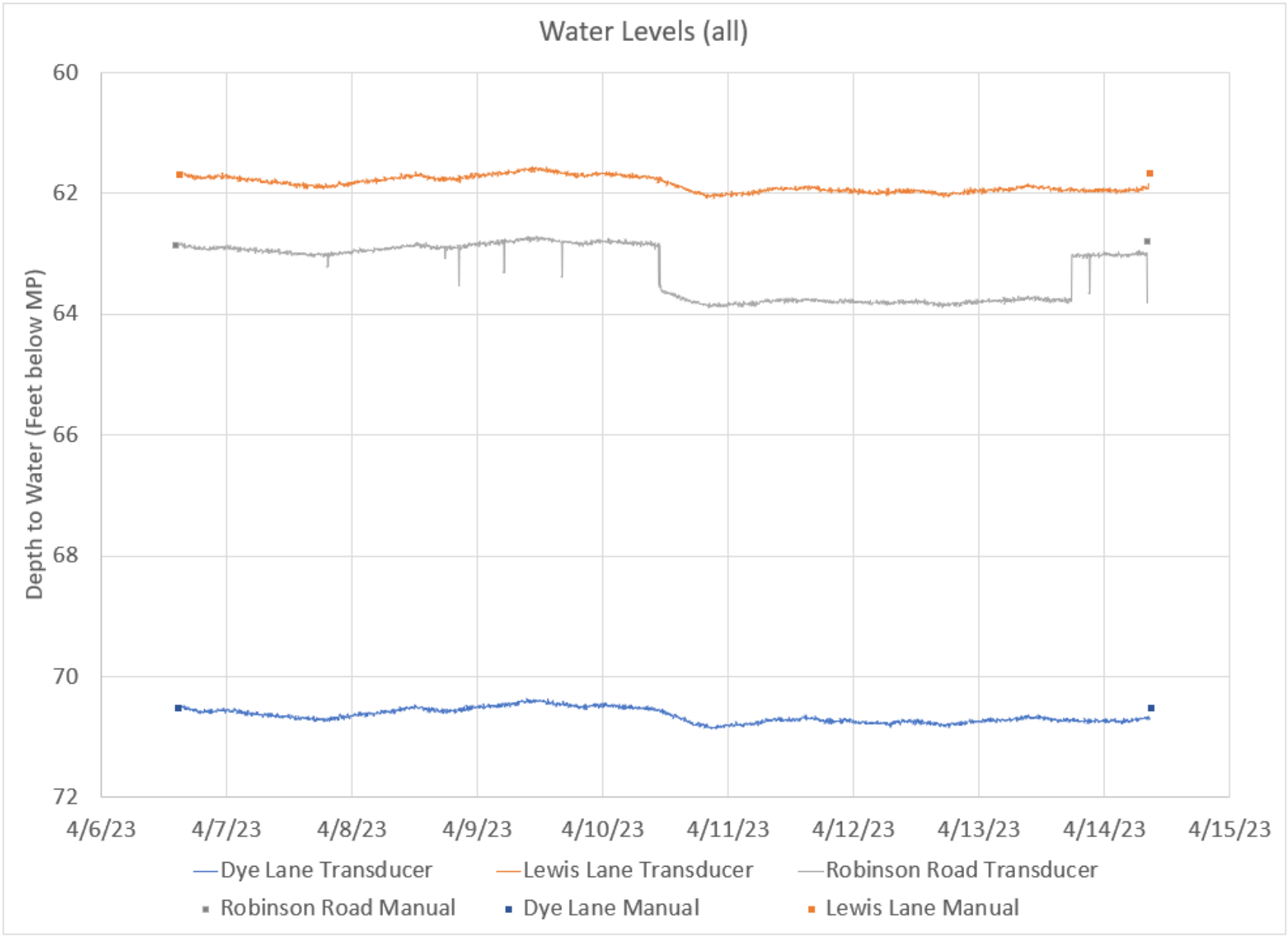
11. DRILLERS CERTIFICATION

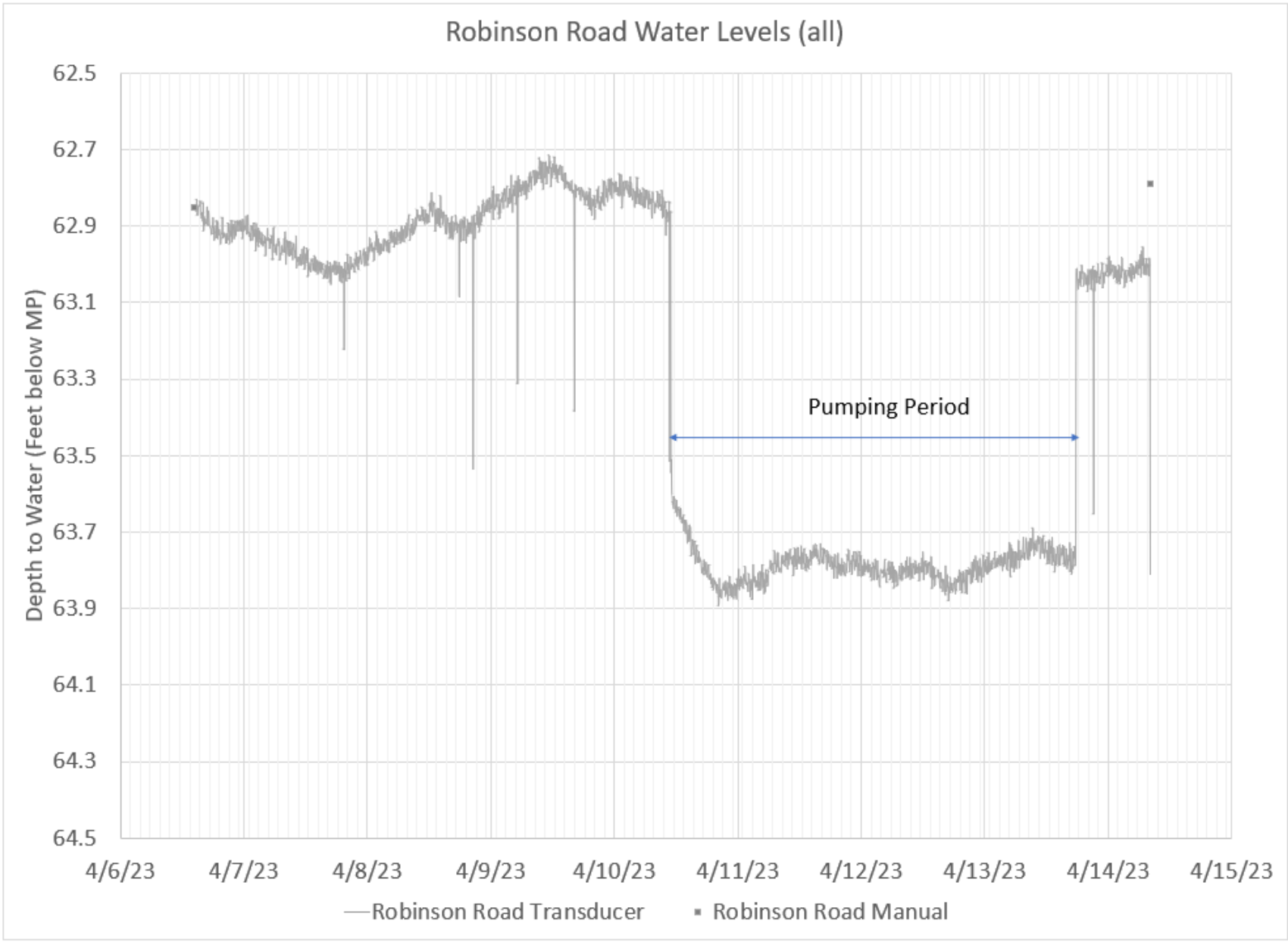
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

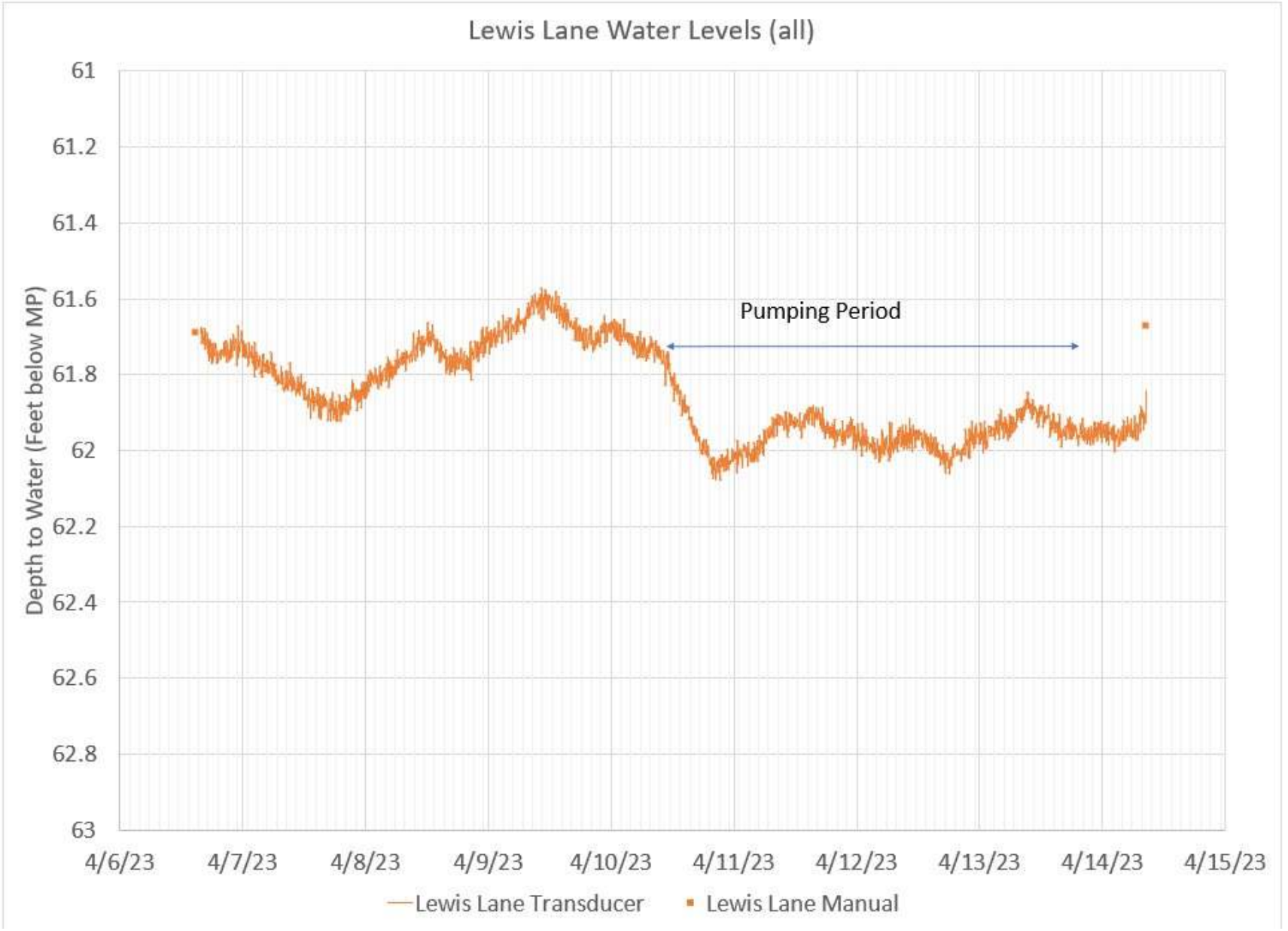
DAVIS WELL & PUMP CO.
Firm Name 1515 N. PITT LANE Firm No. 101
NAMPA, IDAHO 83687
Address _____ Date 10-9-91
Signed by (Firm Official) _____
and
(Operator) _____

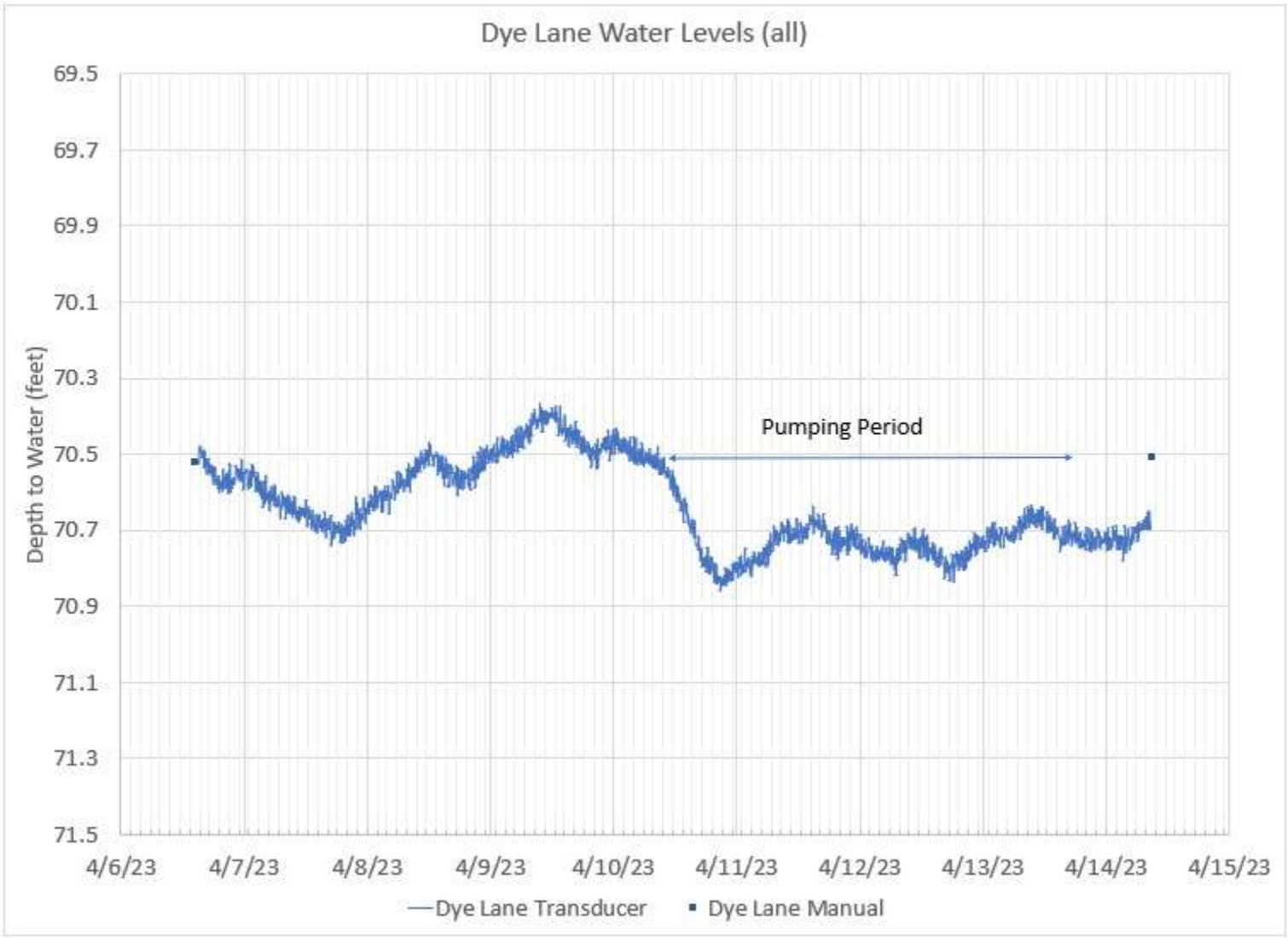
USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

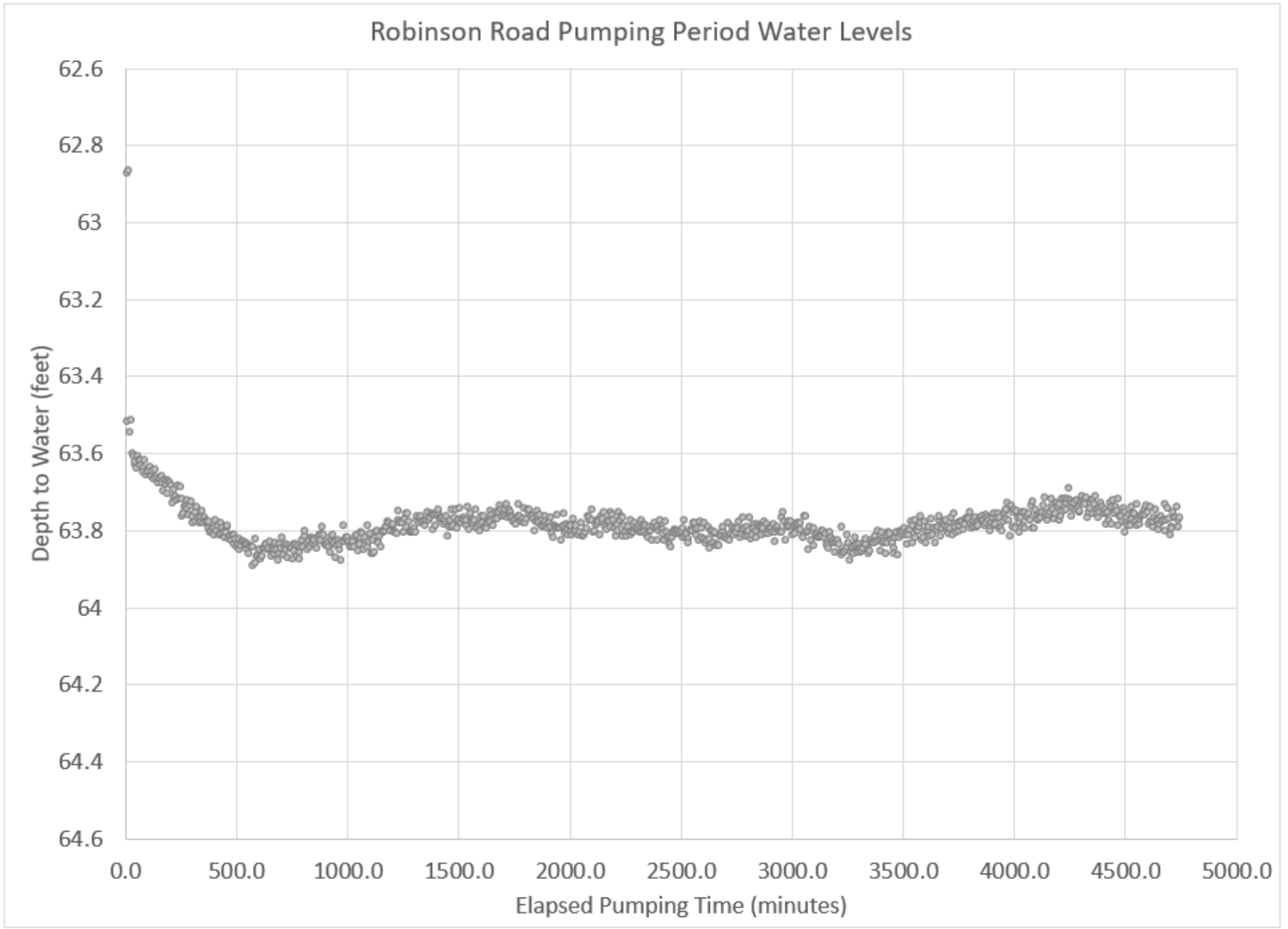
Attachment B
Aquifer Test Data

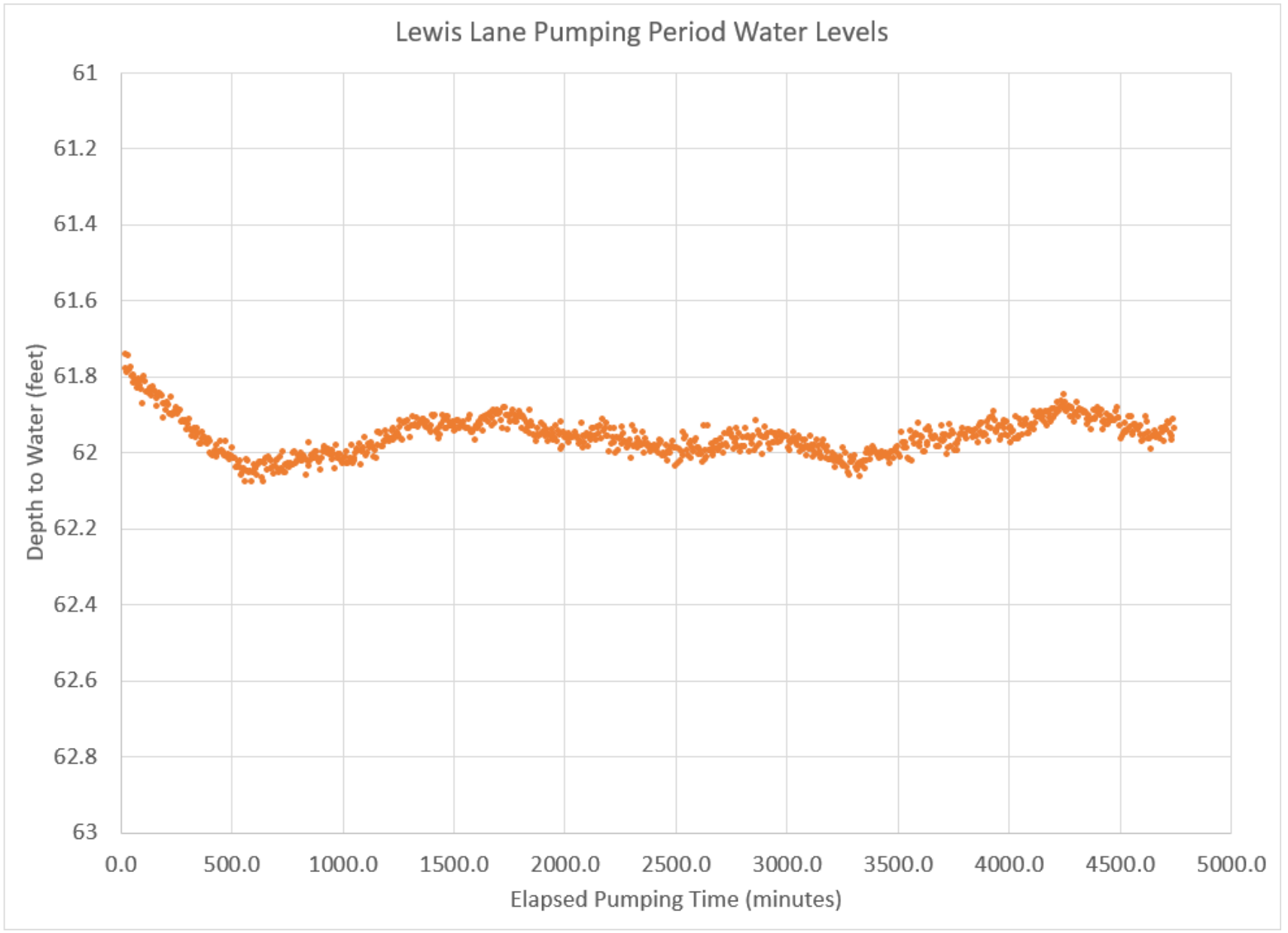

Water Levels (all)
Depth to Water (Feet below MP)
60
62
64
66
68
70
72
4/6/23
4/7/23
4/8/23
4/9/23
4/10/23
4/11/23
4/12/23
4/13/23
4/14/23
4/15/23
Dye Lane Transducer
Lewis Lane Transducer
Robinson Road Transducer
Robinson Road Manual
Dye Lane Manual
Lewis Lane Manual

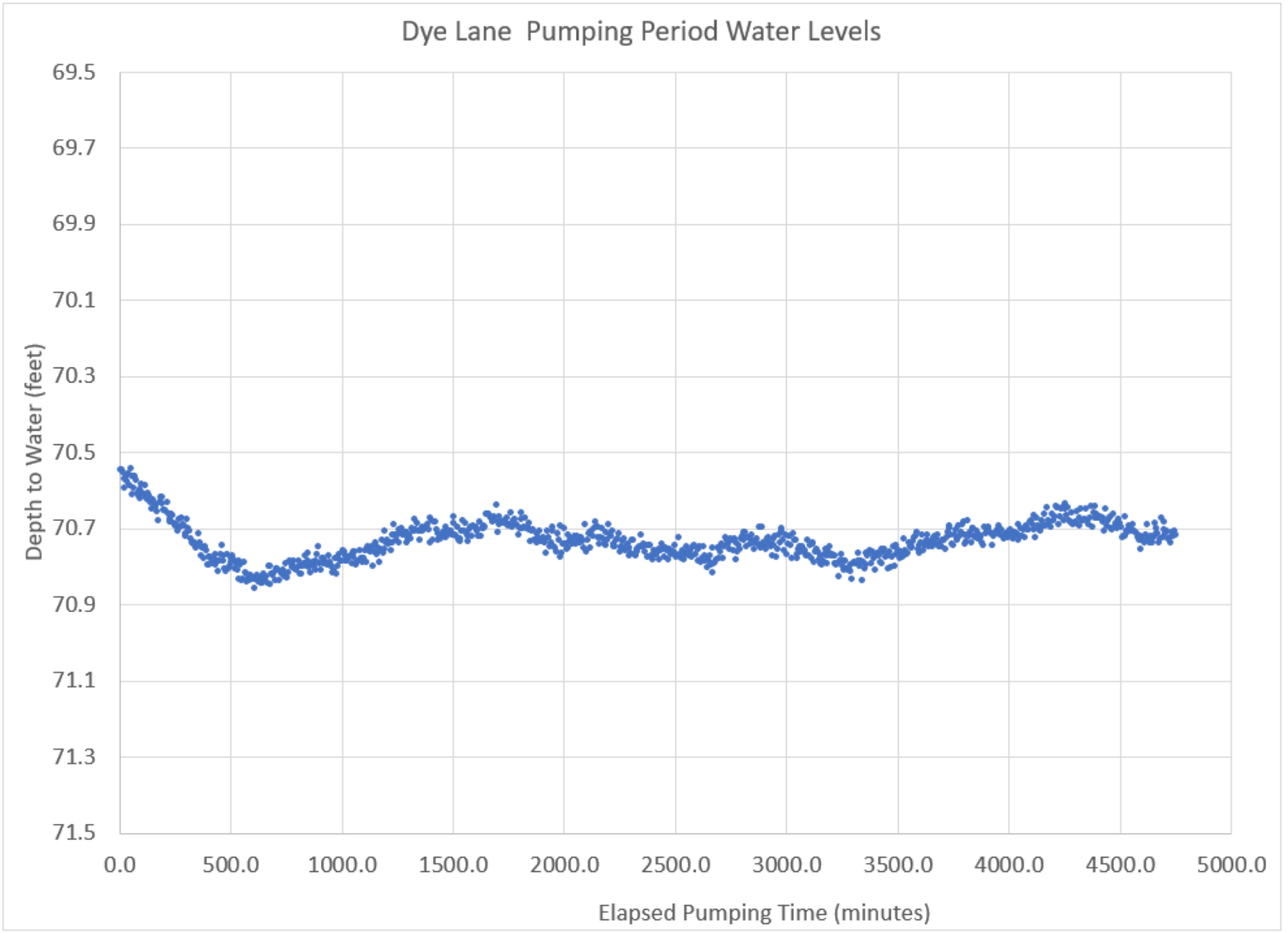

Robinson Road Water Levels (all)
Depth to Water (Feet below MP)
62.5
62.7
62.9
63.1
63.3
63.5
63.7
63.9
64.1
64.3
64.5
Pumping Period
4/6/23
4/7/23
4/8/23
4/9/23
4/10/23
4/11/23
4/12/23
4/13/23
4/14/23
4/15/23
Robinson Road Transducer
Robinson Road Manual

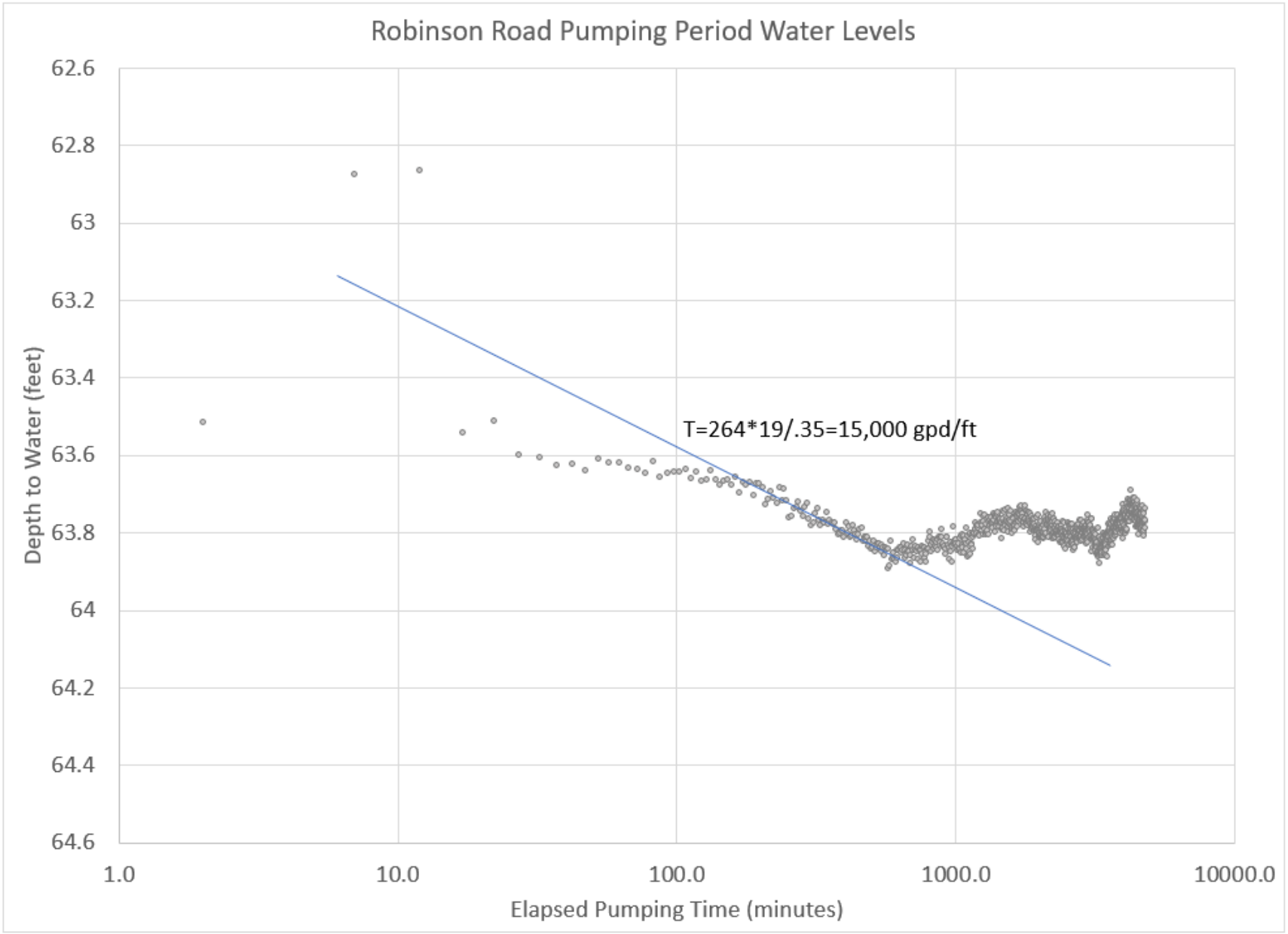

Lewis Lane Water Levels (all)
Depth to Water (Feet below MP)
61
61.2
61.4
61.6
61.8
62
62.2
62.4
62.6
62.8
63
Pumping Period
4/6/23
4/7/23
4/8/23
4/9/23
4/10/23
4/11/23
4/12/23
4/13/23
4/14/23
4/15/23
Lewis Lane Transducer
Lewis Lane Manual

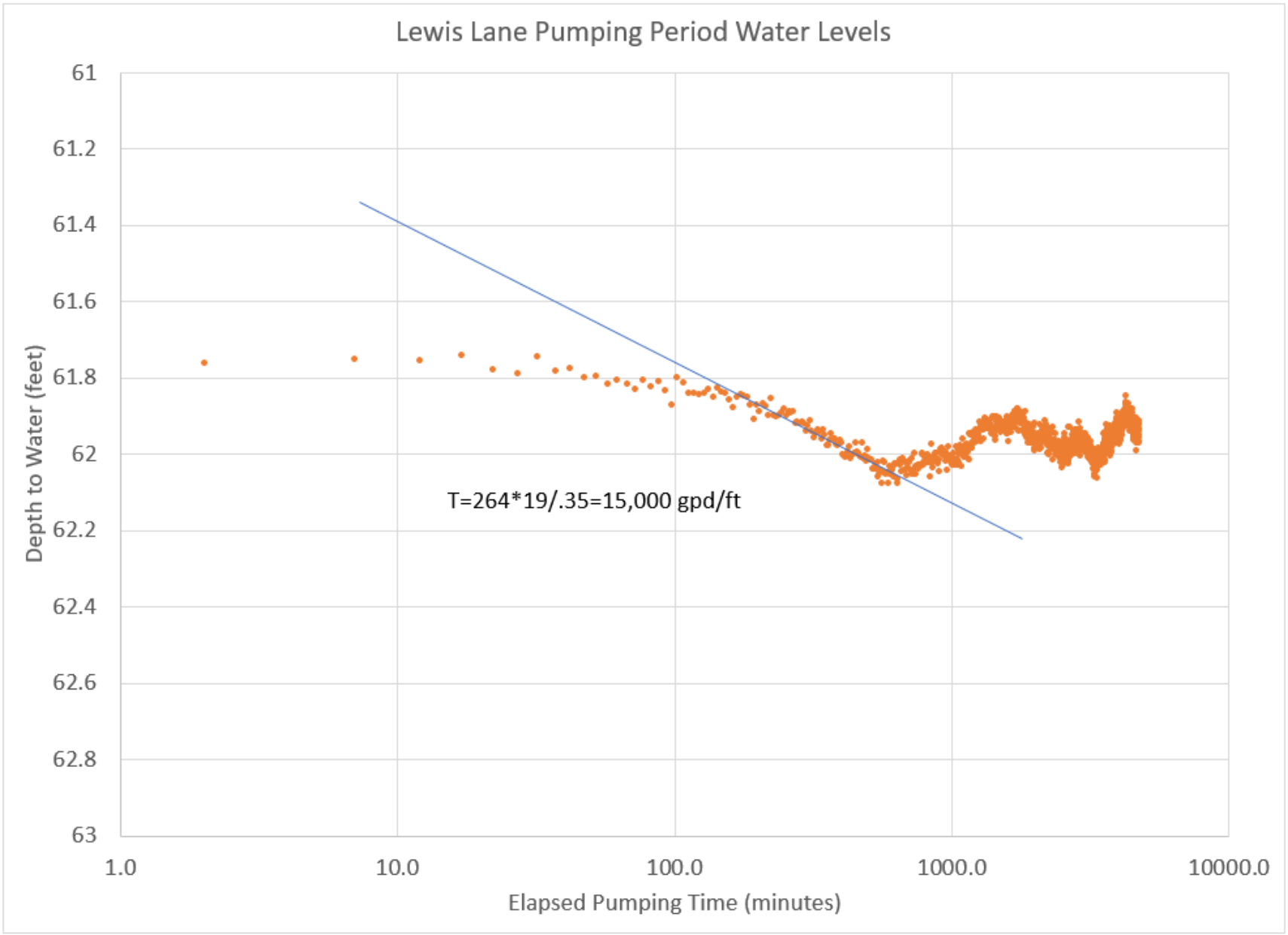

Dye Lane Water Levels (all)
69.5
69.7
69.9
70.1
70.3
70.5
70.7
70.9
71.1
71.3
71.5
Depth to Water (feet)
Pumping Period
4/6/23
4/7/23
4/8/23
4/9/23
4/10/23
4/11/23
4/12/23
4/13/23
4/14/23
4/15/23
Dye Lane Transducer
Dye Lane Manual

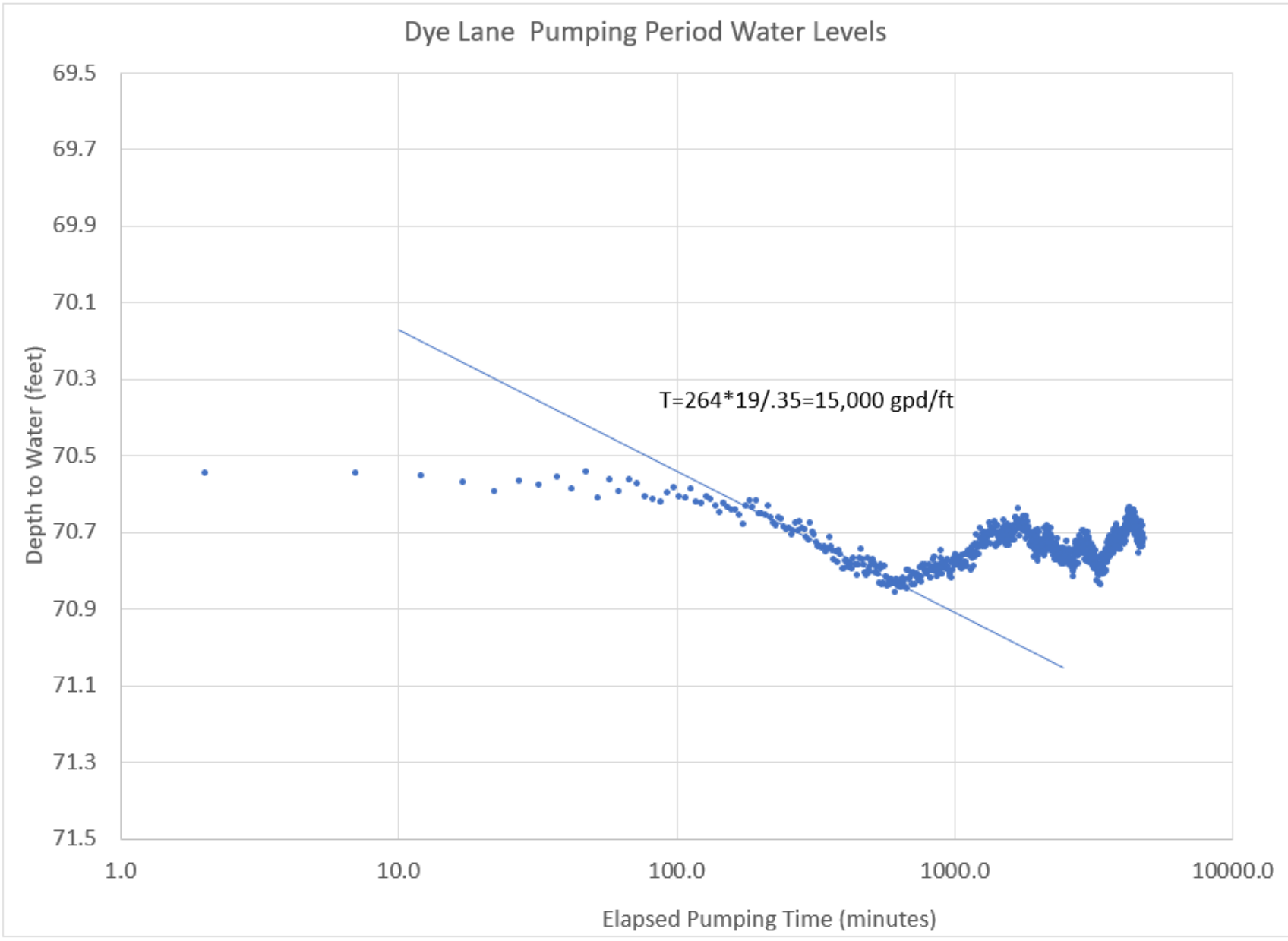

Robinson Road Pumping Period Water Levels
Depth to Water (feet)
62.6
62.8
63
63.2
63.4
63.6
63.8
64
64.2
64.4
64.6
0.0
500.0
1000.0
1500.0
2000.0
2500.0
3000.0
3500.0
4000.0
4500.0
5000.0
Elapsed Pumping Time (minutes)

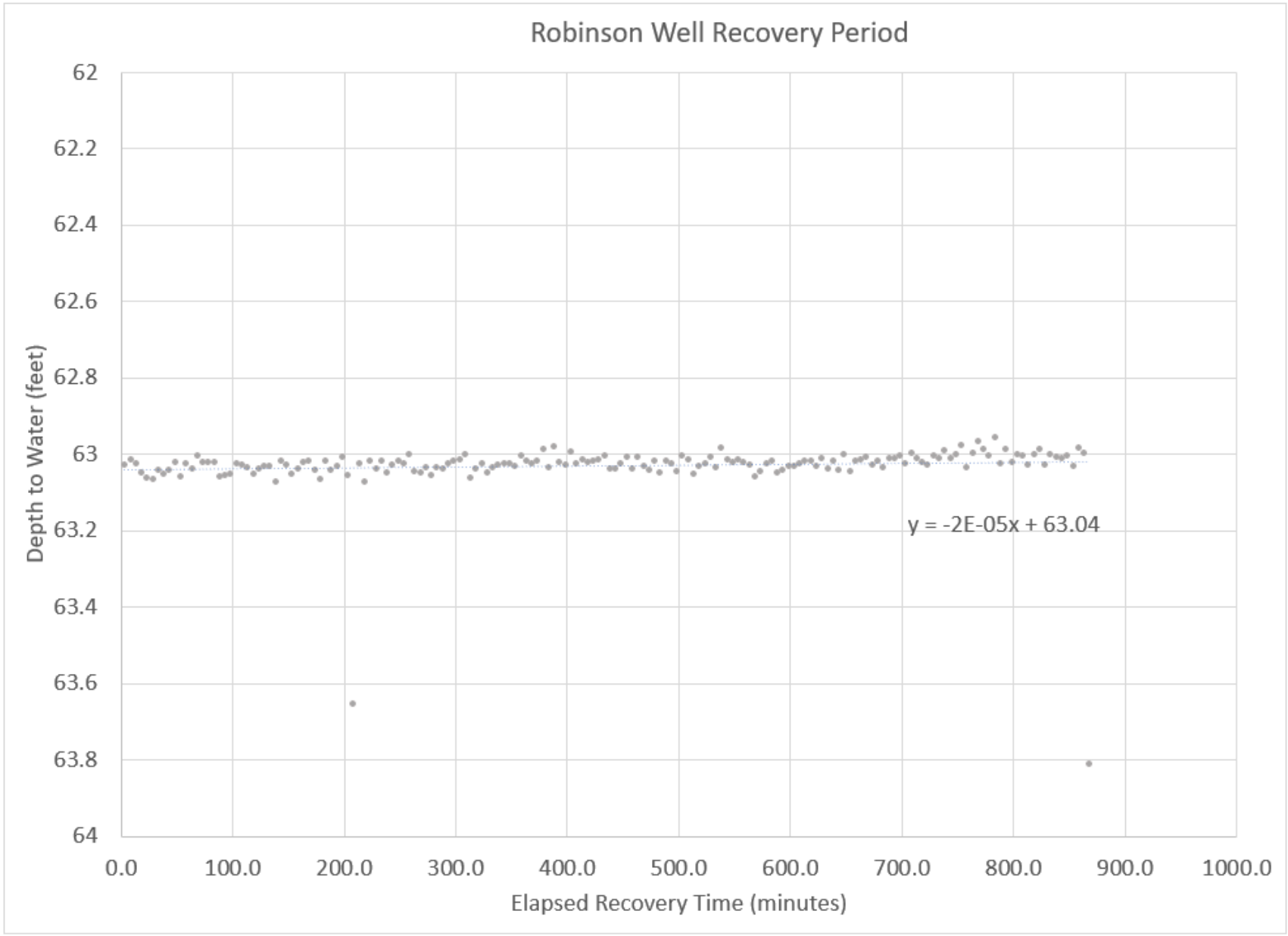

Lewis Lane Pumping Period Water Levels
Depth to Water (feet)
61
61.2
61.4
61.6
61.8
62
62.2
62.4
62.6
62.8
63
0.0
500.0
1000.0
1500.0
2000.0
2500.0
3000.0
3500.0
4000.0
4500.0
5000.0
Elapsed Pumping Time (minutes)

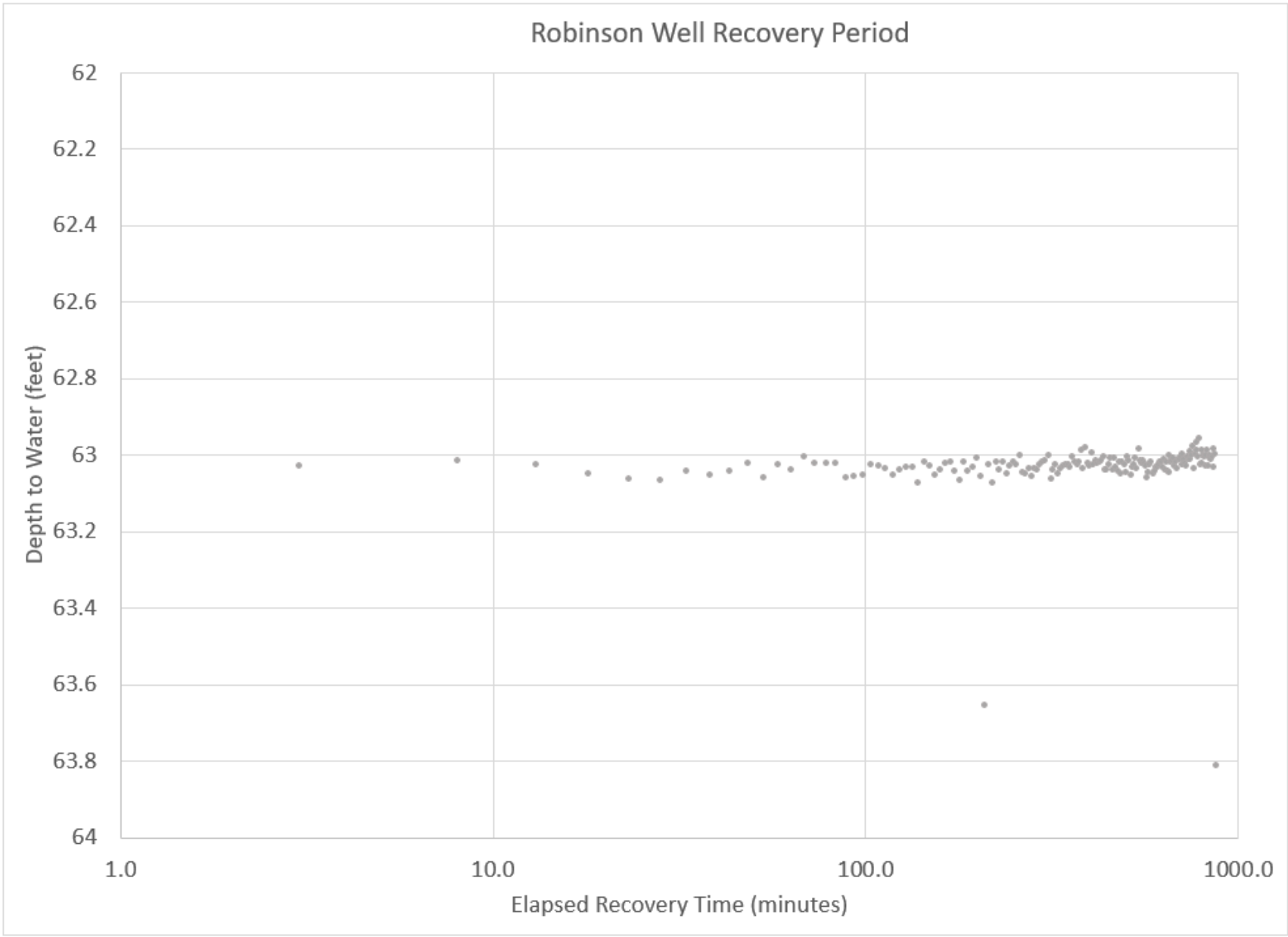

Dye Lane Pumping Period Water Levels
Depth to Water (feet)
69.5
69.7
69.9
70.1
70.3
70.5
70.7
70.9
71.1
71.3
71.5
0.0
500.0
1000.0
1500.0
2000.0
2500.0
3000.0
3500.0
4000.0
4500.0
5000.0
Elapsed Pumping Time (minutes)


Robinson Road Pumping Period Water Levels
62.6
62.8
63
63.2
63.4
63.6
63.8
64
64.2
64.4
64.6
Depth to Water (feet)
T=264*19/.35=15,000 gpd/ft
1.0
10.0
100.0
1000.0
10000.0
Elapsed Pumping Time (minutes)


Lewis Lane Pumping Period Water Levels
61
61.2
61.4
61.6
61.8
62
62.2
62.4
62.6
62.8
63
Depth to Water (feet)
T=264*19/.35=15,000 gpd/ft
1.0
10.0
100.0
1000.0
10000.0
Elapsed Pumping Time (minutes)


Dye Lane Pumping Period Water Levels
69.5
69.7
69.9
70.1
70.3
70.5
70.7
70.9
71.1
71.3
71.5
Depth to Water (feet)
T=264*19/.35=15,000 gpd/ft
1.0
10.0
100.0
1000.0
10000.0
Elapsed Pumping Time (minutes)


Robinson Well Recovery Period
Depth to Water (feet)
62
62.2
62.4
62.6
62.8
63
63.2
63.4
63.6
63.8
64
y = -2E-05x + 63.04
0.0
100.0
200.0
300.0
400.0
500.0
600.0
700.0
800.0
900.0
1000.0
Elapsed Recovery Time (minutes)


Robinson Well Recovery Period
62
62.2
62.4
62.6
62.8
63
63.2
63.4
63.6
63.8
64
Depth to Water (feet)
1.0
10.0
100.0
1000.0
Elapsed Recovery Time (minutes)

Test Period Pumping Rate Measurements

Date	Time	seconds / 5 gallons		Pumping Rate (gpm)
		bucket 1	bucket 2	
10-Apr	10:43	56.7		5.3
10-Apr	11:08	40.2	27.9	18.2
10-Apr	11:22	40.3	28.3	18.0
10-Apr	11:35	38.8	26.9	18.9
13-Apr	17:37	38.6	25.6	19.5
13-Apr	17:45	37.9	26.0	19.5
Average (starting 11:08 on 4/10/23)				18.8

IDAHO DEPARTMENT OF
WATER RESOURCES

Western Region • 2735 W Airport Way • Boise, ID 83705-5082
Phone: 208-334-2190 • Fax: 208-334-2348 • Email: westerninfo@idwr.idaho.gov • Web: idwr.idaho.gov

Governor Brad Little

Director Gary Spackman

May 17, 2023

HTV CREEK LLC
521 N 10TH AVE PMB 4
CALDWELL ID 83605-2925

RE: Permit No. 63-35387

Permit Approval Notice

Dear Permit Holder(s):

The Department of Water Resources ("Department") has issued the enclosed permit authorizing you to establish a new water right. Please be sure to thoroughly review all the conditions of approval listed on your permit. The conditions include requirements that you must accomplish, such as timely submittal of proof of beneficial use or installation of a measuring device, as well as information about how your water use may be administered, such as regulation by a watermaster in a water district. Failure to comply with the conditions of approval may result in your permit lapsing or being canceled.

The permit is a PRELIMINARY ORDER issued pursuant to Rule 730 of the Department's Rules of Procedure (IDAPA 37.01.01.730). It can and will become a final order without further action by the Department unless a party petitions for reconsideration, files exceptions, or requests a hearing as described in the enclosed information sheet.

The final step in the water right process is issuance of a water right license. To receive a water right license, you must divert and use water to the full extent intended and submit a *Statement of Completion for Submitting Proof of Beneficial Use* by the date shown in condition no. 1 of your permit. The Department will send you a *Proof Due Notice* approximately 60 days prior to the date listed in condition no. 1 of your permit.

You may also require approvals from other Department programs, such as Ground Water Protection, Safety of Dams, or Stream Channel Protection, to accomplish your proposed development. Please call or visit any Department office or see the Department's website at idwr.idaho.gov for more information about these programs.

Please be advised that Idaho Code § 42-248, requires you or the owner of this water permit to maintain current ownership and address records on file with the Department. Forms to file an assignment of permit and/or a change in the address of the permit owner are available from any Department office or at the Department's website at www.idwr.idaho.gov.

If you have any questions concerning the enclosed information, please contact me at (208) 605-4624.

Sincerely,

Lynn E Evans

for Scott Storms
Water Rights Supervisor

Enclosure(s)

CERTIFICATE OF SERVICE

I hereby certify that on May 17, 2023, I served a true and correct copy of Permit to Appropriate Water No. 63-35387 by U.S. Mail, postage prepaid, to the following:

HTV CREEK LLC (Current Owner)
521 N 10TH AVE PMB 4
CALDWELL ID 83605-2925

LORI GRAVES
HDR ENGINEERING INC (Representative)
412 E PARKCENTER BLVD STE 100
BOISE ID 83706-6659

Lynne Evans
Administrative Assistant I

State of Idaho
Department of Water Resources

Permit to Appropriate Water

No. 63-35387

Priority: March 15, 2023 **Maximum Diversion Rate:** 0.80 CFS

This is to certify that

HTV CREEK LLC 521 N 10TH AVE PMB 4 CALDWELL ID 83605-2925

has applied for a permit to appropriate water from:

Source : GROUND WATER

and a permit is APPROVED for development of water as follows:

Beneficial Use	Period of Use	Rate of Diversion
IRRIGATION	03/01 to 11/15	0.80 CFS

Location of Point(s) of Diversion

GROUND WATER NW¼ NW¼, Sec. 17, Twp 02N, Rge 01W, B.M. CANYON County

Place of Use: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02N	01W	17					13.0	18.0	9.0										40.0

Total Acres: 40.0

Conditions of Approval

1. Proof of application of water to beneficial use shall be submitted on or before **June 01, 2028.**
2. Subject to all prior water rights.
3. This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.5 afa per acre at the field headgate for irrigation of the place of use.
4. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.
5. Right holder shall comply with the drilling permit requirements of Idaho Code § 42-235 and applicable Well Construction Rules of the Department.
6. The Director retains jurisdiction to require the right holder to provide purchased or leased natural flow or stored water to offset depletion of Lower Snake River flows if needed for salmon migration purposes. The amount of water required to be released into the Snake River or a tributary, if needed for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this permit.

State of Idaho
Department of Water Resources

Permit to Appropriate Water

No. 63-35387

This permit is issued pursuant to the provisions of Idaho Code § 42-204.

Signed this 15th day of May, 2023.

SCOTT STORMS
Water Rights Supervisor

State of Idaho
Department of Water Resources

Attachment to Permit to Appropriate Water

63-35387

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



Memo

Date:	Friday, April 17, 2026
Project:	Haven Creek Water
To:	Tanner Verhoecks
From:	Terry Scanlan
Subject:	Groundwater Impact Analysis for Haven Creek Subdivision

1 Summary

1. Groundwater pumping for domestic purposes at the Haven Creek Subdivision is anticipated to have a negligible impact on local wells, with estimated drawdowns of approximately 1 inch at ¼ to ½ mile from the center of the subdivision.

2. Groundwater pumping for supplemental irrigation, whether for agricultural purposes prior to subdivision development or residential irrigation after subdivision development, could have a measurable impact on local groundwater levels, with drawdowns of approximately 2 feet at ¼ to ½ mile from the center of the subdivision.

3. A drawdown of 2 feet caused by irrigation pumping at Haven Creek will only affect local wells that are already on the verge of failure due shallow construction, low productivity, or inadequate pump setting. Such wells would only be impacted by irrigation pumping in March or April, when groundwater levels are at seasonal lows. From early May through the remainder of the irrigation season, groundwater levels are expected to be more than 2 feet higher than seasonal lows. Thus, a well that will function during the annual seasonal low water in March or April, will likewise function with 2 feet of interference drawdown from irrigation pumping in May through October.

4. Surface water irrigation activities are the primary influence on local groundwater levels. Drought cycles, when canals operate for shorter seasons, provide less recharge resulting in lower groundwater levels. Other activities that may reduce incidental groundwater recharge, such as piping of lateral ditches, conversions from furrow irrigation to sprinkler irrigation, or reductions in irrigated area through residential development will eventually lower groundwater levels in agricultural areas.

5. Domestic wells drilled to between 250 and 300 feet are anticipated to find acceptable drinking water quality. All wells should be tested following construction, and treatment should be provided if any parameters exceed drinking water standards.

2 Haven Creek Subdivision

Haven Creek is a proposed residential subdivision project on 44 acres with 21 buildable lots located in Canyon County, Idaho. The project site is in the northwest quarter of Section 17, Township 2N, Range 1 West (Figure 1). The subdivision is bisected by the Ridenbaugh Highline Canal and bordered on the west side by Robinson Road. The project site touches Lewis Lane on the north. Dye Lane is ¼ mile to the south.



Figure 1. Haven Creek Subdivision location

3 Proposed Water Supply

Drinking water supply for the project will be provided by 21 individual domestic wells and irrigation supply will be provided through a non-potable pressurized irrigation system.

The pressurized irrigation system will be supplied using surface water from Boise Kuna Irrigation District (27.67 assessed acres) and Nampa and Meridian Irrigation District (16.73 assessed acres), delivered by the Boise Project Board of Control. Water is delivered from shared tap Nos. 317 and 318 on Dye Lane.

The surface water supply will be supplemented with groundwater from an on-site well authorized by permit 63-35387 (0.80 cfs for supplemental irrigation of up to 40 acres). A well is authorized in the NW ¼ of the NW ¼ of Section 17 but has yet to be constructed.

Previous Investigations

Groundwater supply to the Haven Creek subdivision has been the subject of the previous investigations described below.

- An initial investigation is detailed in a memo from SPF Water Engineering dated September 29, 2021. This memo evaluated the impact of 27 individual wells used for domestic supply. The analysis concluded that local groundwater levels were stable, with seasonal fluctuations. Drawdown from domestic pumping was estimated at less than 0.5 feet of drawdown within 500 feet of the subdivision using the Theis equation. The Theis equation is a mathematical model of transient flow of water to a pumping well in a nonleaky confined aquifer. A range of assumed aquifer hydraulic parameters were used in the calculation.

- A subsequent investigation detailed in an SPF Water Engineering memo dated January 14, 2022 provided calculations of drawdown from domestic use coupled with groundwater use for supplemental irrigation assuming irrigation of ½ acre per home at a pumping rate of 121 gpm. Calculated drawdown after two months of continuous (24/7) pumping was 11 feet at 100 feet and 2.4 feet of drawdown at a half mile from the center of the subdivision. As with previous calculations, assumed aquifer parameters were used.

- An aquifer pumping test was conducted in April 2023 to obtain site-specific data on aquifer conditions. The test is documented in a May 2, 2023 HDR Engineering memo. Testing consisted of pumping an on-site well at a rate of 19 gpm for three days while monitoring water levels in the pumping well and two nearby domestic wells (1400 and 2000 feet from the pumping well). Water level monitoring was conducted by Idaho Department of Water Resources (IDWR) staff using recording pressure transducers. The test demonstrated that the aquifer is highly productive, with drawdowns in all wells stabilizing after approximately 8 hours of pumping. The test results suggested that pumping of 30 wells for domestic purposes (250 gallons per day each) would induce approximately 1 inch of drawdown in off-site wells located at distances of 1400 to 2000

feet from the center of the subdivision. The results also suggested that a supplemental irrigation well, pumping an average rate of 5 gpm/acre for irrigation of 30 acres, would induce approximately 2 feet of drawdown at similar distances.

Water Level Monitoring

Since the April 2023 pumping test, IDWR has continued to monitor water levels in the three wells monitored during the pumping test. These three wells exhibit identical patterns of fluctuations, with approximately 15 feet of seasonal fluctuation associated with surface water irrigation (Figure 2). Upon filling of the New York Canal and associated laterals each spring, water levels rise until surface water irrigation ceases in early falls. Water levels then decline throughout the fall and winter until surface water irrigation resumes. Seasonal lows typically occur in March or April, and seasonal highs typically occur in September or October. Differences in depth to water between the southernmost well (4756 Dye Lane) and the other two wells is attributable to elevation differences at the well sites.

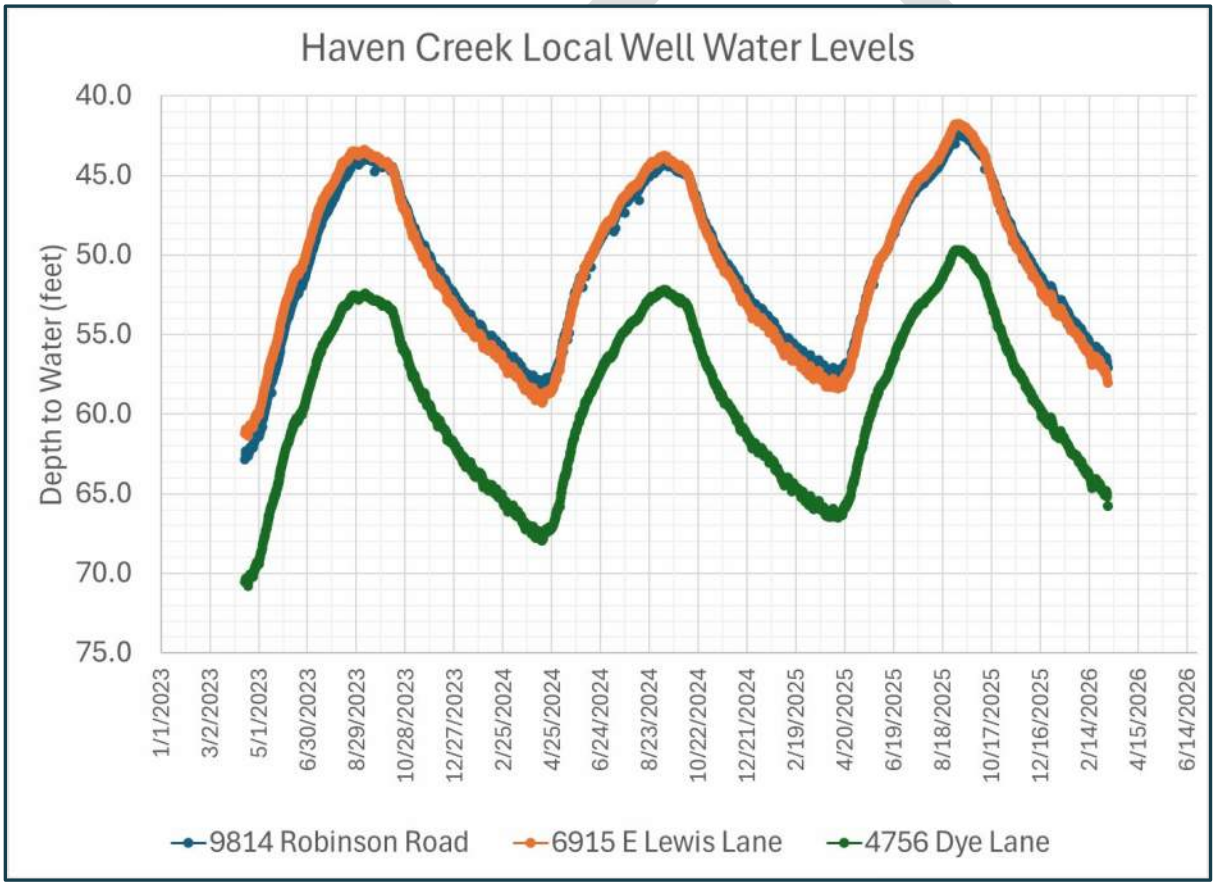


Figure 2. Groundwater level monitoring, April 2023 through March 2026

A rising annual water level trend is suggested in Figure 2 by seasonal low water levels, and to a lesser extent by seasonal high water levels. Although this 3-year trend is real, it is likely indicative of surface water supply availability in recent years rather than a long-term groundwater level trend. A drought year such as anticipated in 2026, when surface water

deliveries will likely be curtailed in September rather than October, will temporarily reverse this trend. As a result, seasonal high and low water levels will vary from year to year in the future based primarily on surface water deliveries. As an example, Figure 3 is a 2016 through 2025 hydrograph for a well on Happy Valley Road, approximately 1 mile northwest of Haven Creek, that is monitored by IDWR. Typical seasonal fluctuation at this location is 5 to 6 feet. Of significance are 2021 and 2022 water levels. In 2021, the New York Canal ceased diversions from the Boise River on September 15, approximately one month earlier than normal. The seasonal high for 2021 was 2 to 3 feet lower than normal. Perhaps more importantly, the 2022 seasonal low was 3 to 4 feet below normal. Water levels have been recovering each year since 2021. The point of this discussion is that annual low and high groundwater levels will fluctuate based primarily on surface water irrigation. Shallow wells may experience problems in March or April due to seasonal lows, exacerbated by reduced recharge surface water irrigation systems in previous low-water years. Similarly, local groundwater levels may eventually fall as a result of reduced surface water recharge piping of canals and laterals, conversions to sprinkler irrigation, or land use changes.

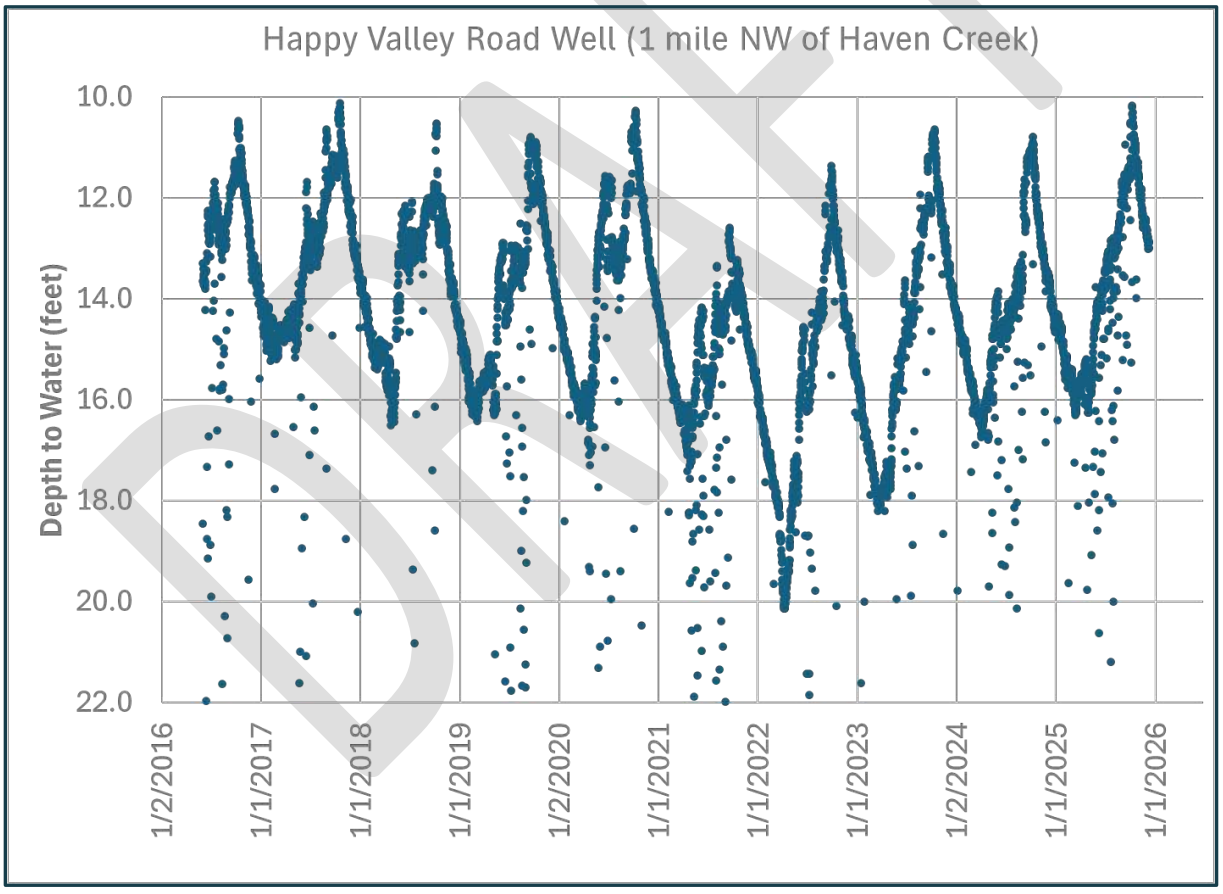


Figure 3. Groundwater level monitoring at well 02N 01W 07BBC1, 2016 through 2025

Impacts of Groundwater Use at Haven Creek on Local Wells

The 2023 aquifer pumping test demonstrated that domestic well pumping at Haven Creek will have a negligible impact on local water levels, with drawdown estimated at approximately 1 inch

at 1400 to 2000 feet distance. Supplemental irrigation pumping, whether for agricultural irrigation prior to development or residential irrigation after development, could have a greater impact. With seasonal groundwater level fluctuations, however, adverse impacts would only occur during the spring when water levels are near seasonal lows. During summer and early fall, when supplemental irrigation is most likely to be needed, drawdown will not impact shallow wells because even with drawdown, local well water levels will be higher than during spring.

Groundwater Quality for Domestic Use

Groundwater quality at the Haven Creek subdivision site is anticipated to be acceptable for domestic water use provided that wells are constructed to appropriate depths to access optimum water quality. Water quality parameters of concern in the area are typically nitrate, arsenic, and uranium. Testing of the 113-foot deep on-site domestic well (9814 Robinson Road) found a nitrate concentration of 9.7 mg/l (slightly less than the EPA standard of 10 mg/L) and an arsenic concentration of 16.1 µg/L (above the EPA standard of 10 µg/L). Uranium concentration was 12 µg/L, substantially less than the EPA standard of 30 µg/L.

Like most locations in the Treasure Valley, nitrate concentrations near Haven Creek will vary by location and well depth, with lower concentrations in deeper wells at any particular location. At Haven Creek, low nitrate concentrations are anticipated below a depth of 200 feet.

Variations in arsenic concentrations with depth are not as predictable as they are for nitrates. Other areas within the Treasure Valley suggest that lower concentrations will generally be found at greater depth, but the minimum depth at which concentrations will be consistently below the 10 µg/L MCL is difficult to predict. Even though concentrations may be acceptable at 200 feet, aquifer zones near 300 feet are anticipated to reduce the risk further and are a safer target.

Uranium does not appear to be problematic within the shallow portion of the aquifer at Haven Creek. Concentrations of uranium often (but not always) decrease with depth. Therefore, uranium concentrations are likely to be acceptable.

Final depths for Haven Creek domestic wells should likely target water-bearing zones between 250 and 300 feet to obtain optimum water quality. Groundwater quality should be tested following domestic well construction, and water treatment systems installed if contaminants are present at concentrations above drinking water standards.

DRAFT

MEMORANDUM

TO: Stephanie Hailey, Canyon County
Nick Lehman, Nampa Highway District

CC: Isaac Josifek, PE, Ardurra
Justin Ruthenbeck, Haven Idaho

FROM: Alex Jondal, PE, Ardurra
Caiti Trimble, Ardurra

DATE: March 31, 2023

SUBJECT: 210590 – Haven Creek Subdivision Threshold Analysis and Trip Comparison

This technical memorandum summarizes the transportation threshold analysis prepared for the Haven Creek Subdivision in Canyon County, ID. The study provides a qualitative assessment of project impacts, developed through an assessment of transportation conditions in comparison to other projects recently proposed and evaluated in the surrounding area south of the City of Nampa. Specifically, the trip generation potentials of the Haven Creek were estimated, with trips assigned to Robinson Road/Lewis Lane, as the nearest impacted intersection. The traffic studies of other development projects were then reviewed to qualify levels-of-service of comparable intersections. The purpose is to determine whether the project has an extraordinary impact, as compared with these other developments, to recommend whether additional traffic analyses might be needed.

1. PROJECT DESCRIPTION

County staff will use this letter to support the application and site design processes. The letter has been prepared for submittal to the County as the lead agency, Nampa Highway District as a supplemental agency, and can be submitted to other agencies as directed by County staff. It should be noted that the unit density and corresponding trip generation totals (forecast) are below the thresholds typical of requirement for a TIS in Canyon County and per Nampa Highway District standards. This study has been performed to help convey assessments of potential traffic impacts to the community, as a part of the project entitlement process.

Haven Creek Subdivision is proposed to develop 29 single family lots on a total of 45.231 acres. **Figure 1** provides a site location map. The land use is currently zoned as Agricultural land (AG) for parcels R28961, R28961011, R28961010, and R28961010. Through permitting and application processes, the project would propose a zoning change from Agricultural land use to Single Family Residential zone (R1). The project would be developed with single family lots that range from 1+ acres. Large lot sizes are intentional, working to maintain a traditional rural feel to the development, as compared to a more suburban density that pushes three-plus lots per acre. The project would be developed and occupied within a timeframe of approximately two years (by 2025).

Access is proposed through a new approach off Robinson Road which would extend to an internal intersection roadway network that utilizes cul-de-sac designs for project circulation versus as opposed to cross-street access. The approach would intersect with Robinson Road approximately half a mile south of the intersection with Lewis Lane. The project site plan is provided in **Figure 2**.

2. Trip Generation Potentials

Development traffic was forecast using the methodologies of the Trip Generation Manual (ITE, 11th Edition, 2021). The Manual is a nationally recognized and locally accepted resource for forecasting traffic for commercial, institutional, and residential developments. The methods were developed based on the survey of other land uses situated throughout the United States. Trip generation was forecast using ITE Land Use Code 210 for Single Family Detached Residential. A description of this code is as follows:

> **Single-Family Detached Housing (ITE Code 210).** A single-family detached housing site includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision.

Trip generation was calculated using variables that relate dwelling unit numbers to trips. Fitted curve equations were used for this assessment as the R^2 value was found to be above 0.90.

As proposed, 29 dwelling units were evaluated for trip generation. Trip generation was forecast for the weekday, and AM and PM peak hours. **Table 1** provides a summary of project trip generation.

Table 1. Trip Generation Potentials, Haven Creek

Land Use	Weekday	AM Peak Generator Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Single Family Residential: 29 dwelling units	323	6	18	24	20	11	31

Source: ITE Trip Generation Manual (11th Edition)

Haven Creek Subdivision is forecast to generate about 323 weekday trips with 24 trips generated during the AM peak hour and 31 trips during the PM peak hour. Peak hour trips comprise 17% of weekday trip totals. For the basis of the comparative analysis, all project trips were assumed to travel north to/from the site to impact the Robinson Road/Lewison Lane intersection, a conservative approach. Thus, the addition of 24 northbound/southbound trips during the AM peak hour and 31 during the PM peak hour are used in the review of intersection entering volumes.

3. Existing Conditions

Comparisons for this memorandum were performed based on a review of daily traffic volumes. L2 Data Collection was engaged to perform average daily traffic counts over two days in March 2023 for Robinson Road between Lewis Lane and Deer Flat Road. The study addresses conditions for Robinson Road/Lewis Lane, as the nearest impacted intersection within the vicinity of the proposed development. All through and turning movements are made from through lanes at this intersection, with stop-controls located on the eastbound and westbound approaches to the intersection.

Counts were performed during a seasonable timeframe, Tuesday to Wednesday, with little to no snow on the ground and during operation hours of the Kuna School District. The tube counts were organized in 15-minute intervals for each 24-hour day, 12 AM to 12 PM, for both the northbound and southbound directions along the roadway, with vehicle classifications. The vehicle classifications were found to have approximately 90% passenger vehicles/delivery vehicles and 10% being larger than 3-axles. The 15-minute intervals were used to distinguish the commute peak hours, as determined by finding the heaviest average volumes for both directions between count days. Through this analysis, the peak hour volumes

for Robinson Road were found by adding up the highest 15-minute intervals in a consecutive hour for both days of the tube counts and finding the average between them, with there being 178 vehicles traveling northbound and southbound for the AM peak hour and 183 vehicles for the PM peak hour.

A summary worksheet of Robinson Road volumes and vehicle classifications is attached. A summary of two-day averages from the L2 count is summarized as follows:

- Average daily traffic (ADT) count, 2,150
    - AM Peak Hour Northbound, 136
    - AM Peak Hour Southbound, 42
    - AM Peak Hour Both Directions, 178
    - PM Peak Hour Northbound, 71
    - PM Peak Hour Southbound, 112
    - PM Peak Hour Both Directions, 183

This count data was used to determine the northbound and southbound approach volumes of the peak hour total entering volumes (TEV) used with the comparative analysis. The entering volumes for Lewis Lane were estimated through a comparison of ADT volumes provided by ITD's AADT Interactive Map. Through this GIS, Robinson Road was noted to have an ADT of 2,400 and Lewis Lane an ADT of 420 as of 2021. It is found that Lewis Lane's ADT is about 20% of what Robinson Road sees daily.

This daily-to-peak hour ration was applied to Robinson Counts to estimate entering volumes for Lewis Lane at Robinson Road. As these are both two lane roadways, the total directional volumes were added together to represent TEV, entering and existing volumes would not vary much between legs of the intersection. This process of estimating TEV is shown below.

- 420 / 2400 = 0.2 or 20%
- 178 x 0.2 = 36 vehicles for the AM peak hour on Lewis Lane
- 183 x 0.2 = 37 vehicles for the PM peak hour on Lewis Lane
- 178 + 36 = 214 vehicles for the TEV of the AM peak hour
- 183 + 37 = 220 vehicles for the TEV of the PM peak hour

As shown, a resulting TEV estimate of 214 was calculated for the AM peak hour with 220 during the PM peak hour for the Robinson Road and Lewis Lane intersection. These TEV provide a basis for the comparative analysis discussed subsequently.

4. COMPARATIVE ANALYSIS

The trip assignments forecast in Section 2 and the TEV's calculated by Section 3 were combined to provide a TEV estimate for the Robinson Road / Lewis Lane intersection. This is the combination of the directional counts, taken as TEV previously, versus the northbound/southbound volumes shown with Table 1 via the following:

- AM Peak Hour = 214 directional vehicles + 24 directional vehicles = 238 total TEV
- PM Peak Hour = 220 directional vehicles + 31 project westbound = 267 total TEV

As shown, a TEV of 238 vehicles was calculated during the AM peak hour with 267 during the PM peak hour. For the purpose of a forecast analysis, a 5% annual growth rate can be assumed to forecast TEV to the 2025 project horizon. Thus, a TEV **262 AM peak hour** TEV, and **294 PM peak hour** TEV were

calculated for the comparative analysis.

To evaluate the impact of the proposed development, the traffic impact studies prepared for other projects were identified and reviewed based on distinctions that include proximity to the site, road functional classifications, size of the residential development, and intersections with similar geometric characteristics to the Robinson Road / Lewis Lane intersection. Several traffic studies were reviewed from the City of Nampa GIS database which contains development TIS. TIS examples were all found to have higher dwelling units than that of the proposed Haven Creek Subdivision, but there were three projects noted to impact intersections of similarity to Robinson Road / Lewis Lane. These TIS include the following projects:

- Harvest Creek Subdivision, a 214-unit subdivision located on the southeast quadrant of Locust Ln and Happy Valley Rd
- Osprey Estates Subdivision, a 189-unit subdivision located on the southwest quadrant of Southside Blvd and Lewis Ln
- Jacks Place, a 88-unit subdivision located on the northeast quadrant of Sunnyside Blvd and Lewis Ln

Five intersections were identified from these studies with TEV volumes like those noted above for Robinson Road / Lewis Lane. Of these intersections, four of these were all-way stops, which represents a higher control condition compared with two-way stop. Thus, an additional three intersections were noted as two-way stops, but with volumes that are much higher than those noted for the study intersection.

Table 2 below summarizes the intersection levels of service from each TIS example, divided into appropriate determinations. Also provided are the existing TEV associated with each intersection, as well as existing LOS as to compare project interference. Although future TEV were presented for Haven Creek, these volumes are compared with the existing TEV of other intersections as the basis for comparison. The thought process is a general LOS can be inferred as acceptable for Robinson Road / Lewis Lane if TEV are equal to or less than those noted for the other intersections during the peak hour.

Table 2. LOS from Comparable TIS					
TIS	Stop Control	Intersection	Existing TEV with Trips (AM/PM)	Existing AM LOS / Delay	Existing PM LOS / Delay
Comparable Total Entering Volumes					
Harvest Creek	All Way Stop	Locust at Robinson	706 / 834	B / 15	B / 13
	Two Way Stop	Locust at Happy Valley	628 / 837	B / 13	C / 16
Osprey Subdivision	All Way Stop	Lewis at Powerline	476 / 358	A / 9	A / 8
	All Way Stop	Lewis at Southside	413 / 389	B / 13	B / 13
	Two Way Stop	Lewis at Happy Valley	298 / 304	B / 12	B / 12
Comparable Two-Way Stop Controls					
Jack's Place	Two Way Stop	12 at Lewis	1024 / 1289	B / 14.1	C / 16.7
	All Way Stop	Lewis at Powerline	538 / 404	A / 8.9	A / 8.6
	All Way Stop	Locust at Powerline	465 / 687	B / 12.4	B / 10

Associations of Canyon County Highway Districts standard is LOS C for rural roadways and D for suburban/urban roadways. By this standard, all of the intersections identified from previous studies were noted to operate at LOS C or better during the peak hour with all-way and two-way stops. Forecast with 298/304 TEV operate at a LOS B, which is at the greater then Robinson Rd / Lewin Ln intersection of 262/294 TEV (with project development) as reviewed by this report, it can be established that Robinson Road / Lewis Lane would likely operate within the LOS A/B range, certainly less than LOS C between peak hours. Thus, the conclusion can be made that this intersection should function within LOS ranges following the development of 29-lots accessing this County roadway during between peak hours.

5. SUMMARY

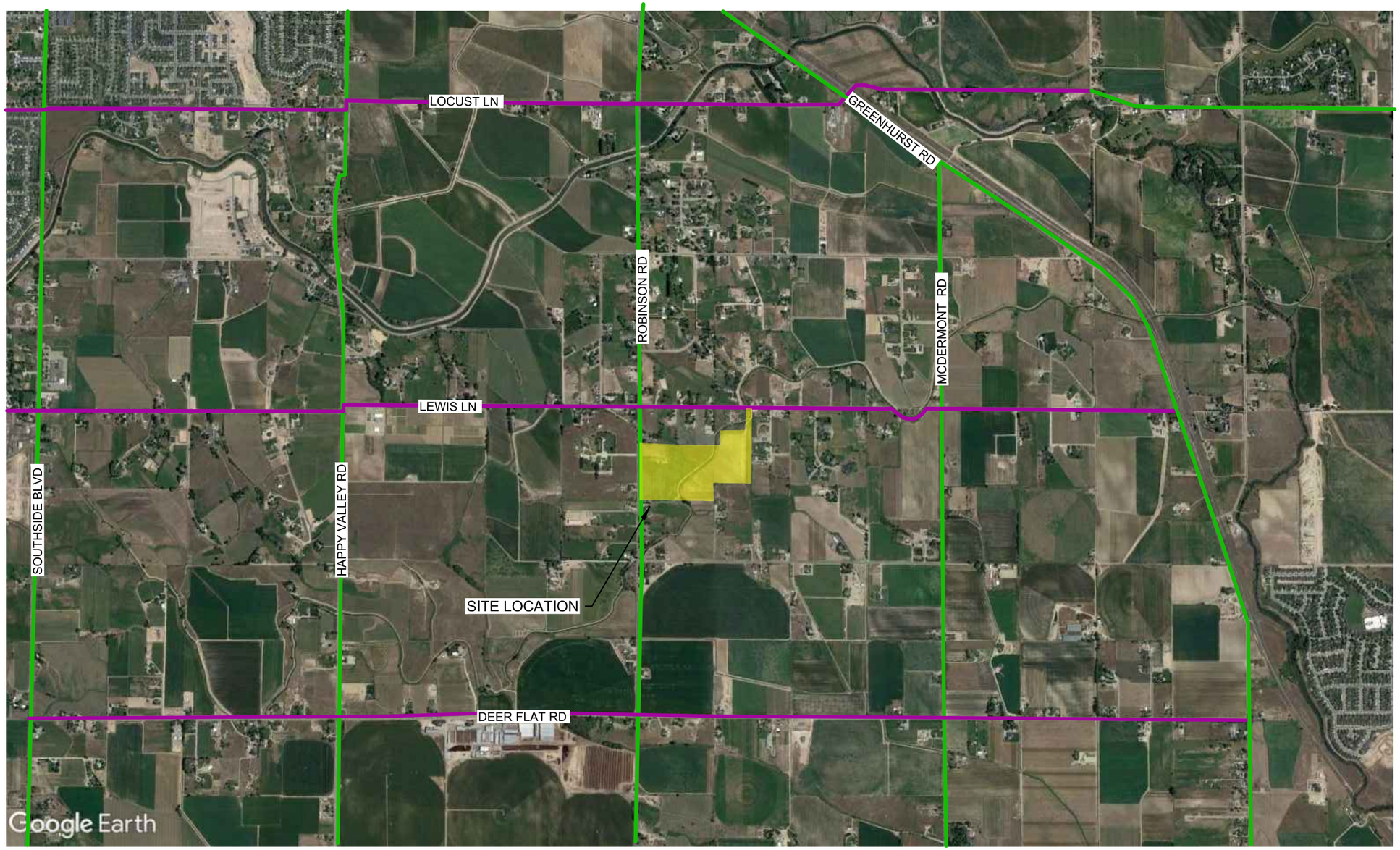
Haven Creek Subdivision is proposed to develop 29 single family lots on a total of 45.231 acres. The land use is currently zoned as Agricultural land (AG) and the project would propose a zoning change from Agricultural land use to Single Family residential zone (R1). The existing traffic in approximately 90% vehicles equal to or smaller than a package delivery vehicle. The full buildout of the site would result in 323 weekday trips accessing the Canyon County roadway network with 24 of these trips generated during the AM peak hour and 31 PM peak hour. Based off experience this will only generate few additional WB-50 truck trips per year for folks moving.. Access is proposed through a new approach off Robinson Road, south of Lewison

Lane. By year 2025, the Robinson Road/Lewis Lane intersection would support about 262 AM peak hour and 294 PM peak hour TEV following project development.

A comparison was made with two-way and all-way stop-controlled intersections that support volumes higher than this projects TEV noted above. A comparative analysis with other TIS performed within the study area suggests the Robinson Road/Lewis Lane intersection would likely function with the LOS A/B range, supporting these TEV as a two-way stop. This is above the LOS C standard the County/Highway District maintains for roadways within this area.

The conclusion from this study is that, even with the trip gains noted at Robison Road/Lewis Lane, as the nearest impacted intersection to the Haven Creek Subdivision, that LOS should be more than sufficient to accommodate development trips. This transportation threshold determination would confirm the County's TIS requirement position that no additional LOS analysis should be needed, given project trip impacts do not substantially impact Canyon County and Nampa Highway District Roadways.

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LEGEND

PRINCIPAL ARTERIAL
MINOR ARTERIAL
COLLECTOR

1 SITE VICINITY
SOURCE: GOOGLE MAPS

HAVEN CREEK SUBDIVISION
THRESHOLD ANALYSIS AND TRIP COMPARISON

DATE: 3/28/23 JOB: #####

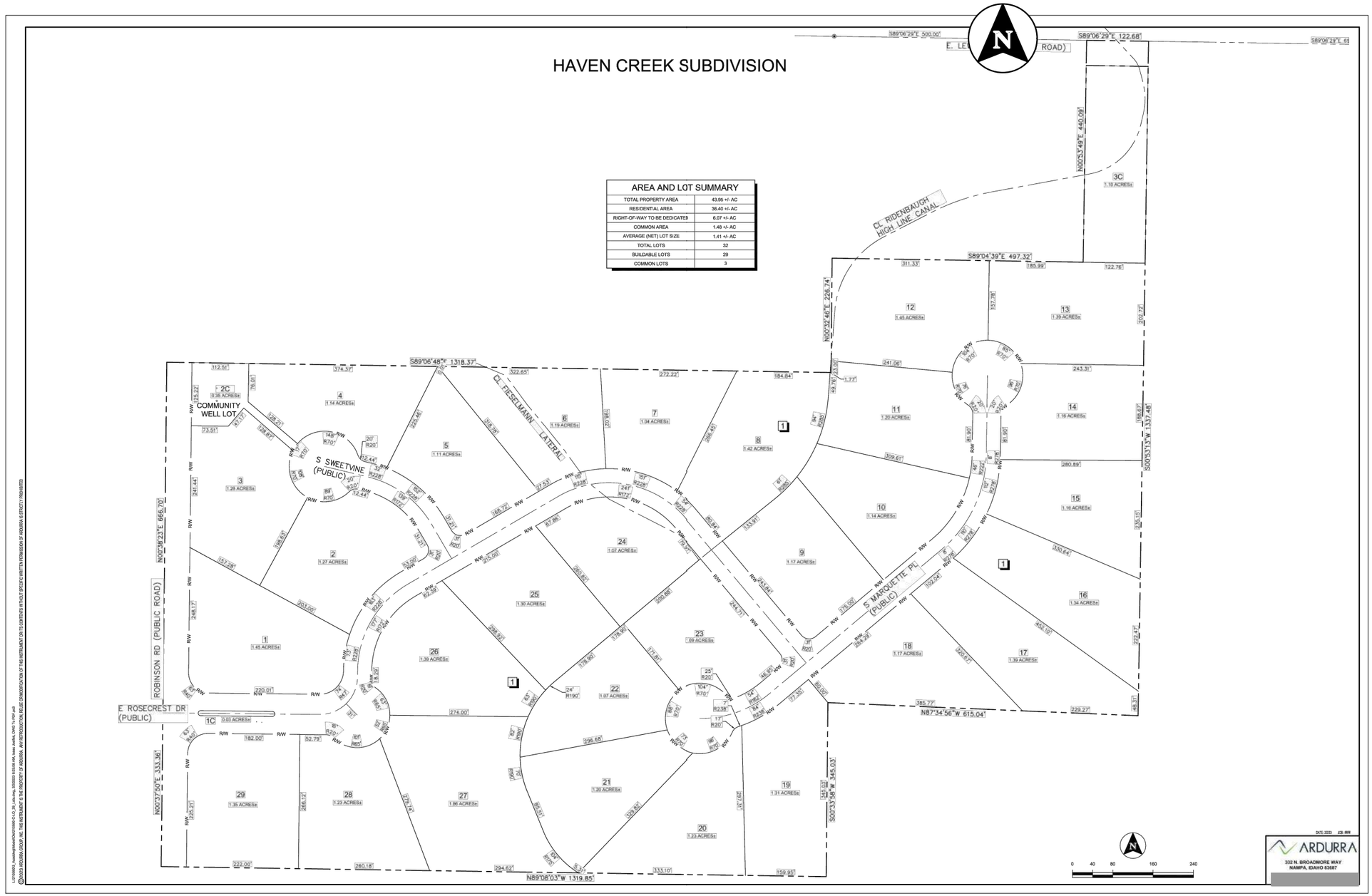
ARDURRA
1717 S. RUSTLE STREET, SUITE 201
SPOKANE, WA 99224

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HAVEN CREEK SUBDIVISION

AREA AND LOT SUMMARY	
TOTAL PROPERTY AREA	43.95 +/- AC
RESIDENTIAL AREA	36.40 +/- AC
RIGHT-OF-WAY TO BE DEDICATED	6.07 +/- AC
COMMON AREA	1.48 +/- AC
AVERAGE (NET) LOT SIZE	1.41 +/- AC
TOTAL LOTS	32
BUILDABLE LOTS	29
COMMON LOTS	3



DATE: 3/28/23 JOB: 210590

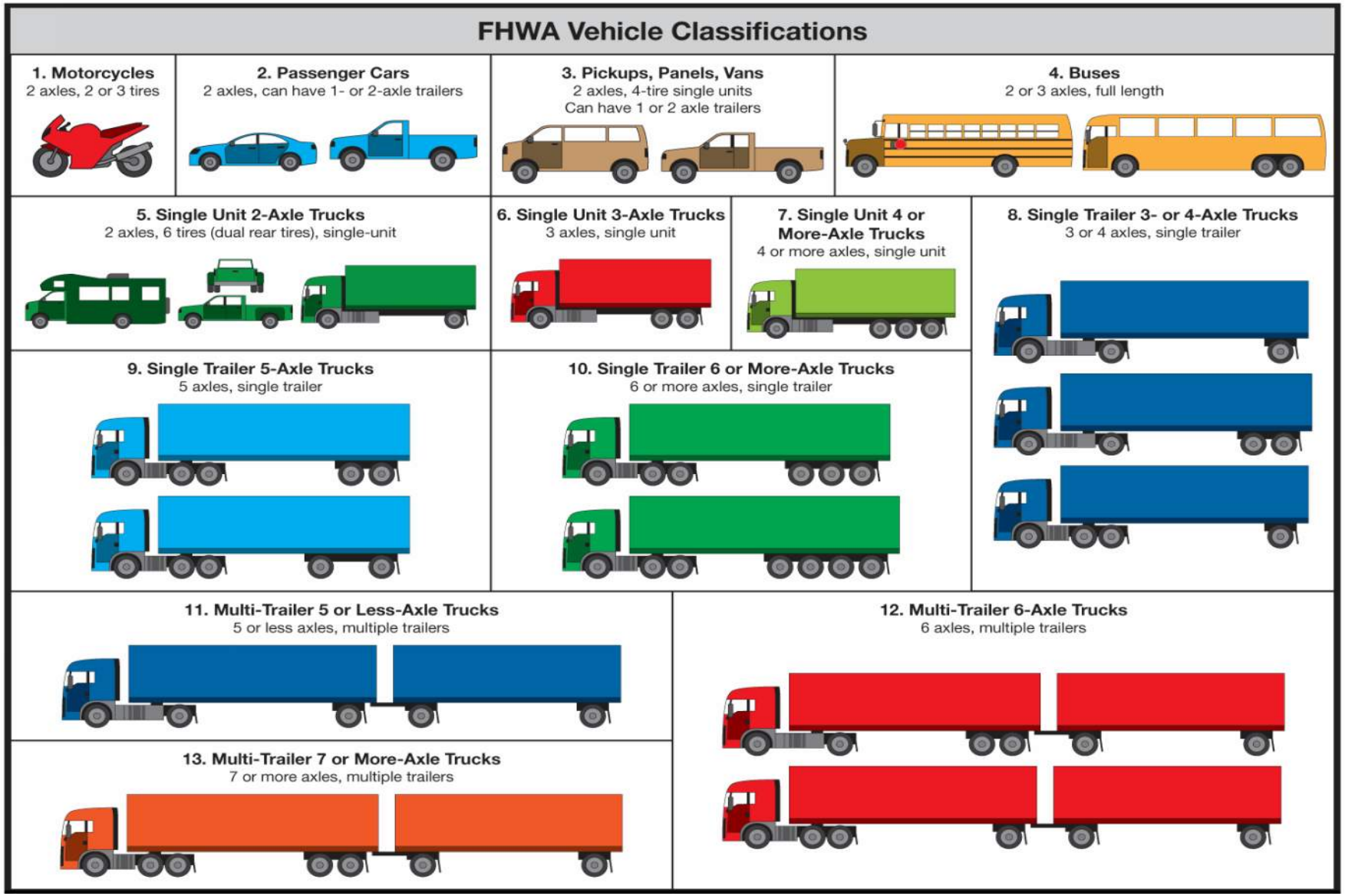
2 SITE PLAN

SOURCE: ARDURRA ENGINEERS

HAVEN CREEK SUBDIVISION
THRESHOLD ANALYSIS AND TRIP COMPARISON

ARDURRA
1717 S. RUSTLE STREET, SUITE 201
SPOKANE, WA 99224

	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	
3/8/2022 Grand Tota	1	932	421	30	343	30	0	64	18	20	0	0	10	42	1911
3/16/2022 Grand Tota	5	1026	453	25	433	18	5	87	24	95	0	1	14	16	2202
General Average	**0.15%**	**47.61%**	**21.25%**	**1.34%**	**18.87%**	**1.17%**	**0.12%**	**3.67%**	**1.02%**	**2.80%**	**0.00%**	**0.02%**	**0.58%**	**1.41%**	



	3/7 to 3/8 2023			3/16/2023			3/16/2023			Hourly	
	NB	SB	Tot	NB	SB	Tot	NB	SB	Tot	Counts	
12:00 AM	0	0	0	1	0	1	1	0	1		
12:15	1	1	2	2	0	2	2	1	3		
12:30	0	1	1	2	3	5	1	2	3		
12:45	0	1	1	2	0	2	1	1	2	9	
1:00	1	1	2	1	1	2	1	1	2	10	
1:15	0	0	0	1	0	1	1	0	1	8	
1:30	0	2	2	0	0	0	0	1	1	6	
1:45	0	1	1	0	2	2	0	2	2	6	
2:00	1	0	1	0	0	0	1	0	1	5	
2:15	0	1	1	1	2	3	1	2	3	7	
2:30	0	0	0	0	1	1	0	1	1	7	
2:45	1	0	1	0	1	1	1	1	2	7	
3:00	0	0	0	0	1	1	0	1	1	7	
3:15	2	2	4	0	0	0	1	1	2	6	
3:30	1	1	2	0	0	0	1	1	2	7	
3:45	0	2	2	0	2	2	0	2	2	7	
4:00	2	0	2	2	1	3	2	1	3	9	
4:15	4	1	5	1	4	5	3	3	6	13	
4:30	2	3	5	7	1	8	5	2	7	18	
4:45	0	2	2	1	4	5	1	3	4	20	
5:00	2	0	2	5	1	6	4	1	5	22	
5:15	14	5	19	5	5	10	10	5	15	31	
5:30	10	8	18	13	7	20	12	8	20	44	
5:45	15	7	22	12	5	17	14	6	20	60	
6:00	24	3	27	17	5	22	21	4	25	80	
6:15	20	11	31	16	2	18	18	7	25	90	
6:30	35	11	46	23	10	33	29	11	40	110	
6:45	25	11	36	24	18	42	25	15	40	130	
7:00	39	9	48	35	7	42	37	8	45	150	
7:15	42	7	49	40	13	53	41	10	51	176	**NB**
7:30	30	9	39	35	9	44	33	9	42	178	136
7:45	30	10	40	27	9	36	29	10	39	177	
8:00	28	7	35	27	12	39	28	10	38	170	
8:15	27	14	41	30	16	46	29	15	44	163	
8:30	19	11	30	28	4	32	24	8	32	153	
8:45	13	9	22	22	16	38	18	13	31	145	
9:00	15	10	25	17	7	24	16	9	25	132	
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11:30	10	13	23	15	19	34	13	16	29	106	
11:45	14	9	23	8	16	24	11	13	24	104	
12:00 PM	20	19	39	21	17	38	21	18	39	117	
12:15	16	15	31	12	19	31	14	17	31	123	
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2:00	9	21	30	20	19	39	15	20	35	120	
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7:15	5	14	19	10	15	25	8	15	23	113	
7:30	6	7	13	12	13	25	9	10	19	104	
7:45	5	12	17	10	9	19	8	11	19	91	
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9:45	2	5	7	5	3	8	4	4	8	41	
10:00	2	6	8	2	4	6	2	5	7	35	
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10:30	1	2	3	1	4	5	1	3	4	27	
10:45	1	2	3	1	3	4	1	3	4	23	
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11:30	1	3	4	3	4	7	2	4	6	17	
11:45	2	1	3	2	0	2	2	1	3	16	
Totals	**1028**	**959**	**1987**	**1167**	**1046**	**2213**	**1124**	**1026**	**2150**		

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030

Type: Volume / Direction
Tech: Judd / Klaren / McComb
Count: Vehicle Volume

Robinson Rd b Lewis Ln & Deer Flat Rd
Start Date: 3/7/2022
End Date: 3/8/2022
Robinson Road between Lewis Lane and Deer Flat Road
Nampa, Idaho

3/7/2022 Time	Southbound	Northbound	Total
12:00 AM	*	*	0
12:15	*	*	0
12:30	*	*	0
12:45	*	*	0
1:00	*	*	0
1:15	*	*	0
1:30	*	*	0
1:45	*	*	0
2:00	*	*	0
2:15	*	*	0
2:30	*	*	0
2:45	*	*	0
3:00	*	*	0
3:15	*	*	0
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10:15	*	*	0
10:30	*	*	0
10:45	*	*	0
11:00	*	*	0
11:15	*	*	0
11:30	*	*	0
11:45	*	*	0
Total	0	0	0
Percent	-	-	
Peak Volume			
Peak Factor			

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030

Type: Volume / Direction
Tech: Judd / Klaren / McComb
Count: Vehicle Volume

Robinson Rd b Lewis Ln & Deer Flat Rd
Start Date: 3/7/2022
End Date: 3/8/2022
Robinson Road between Lewis Lane and Deer Flat Road
Nampa, Idaho

3/7/2022 Time	Southbound	Northbound	Total
12:00 PM	*	*	0
12:15	*	*	0
12:30	*	*	0
12:45	*	*	0
1:00	20	12	32
1:15	11	9	20
1:30	7	13	20
1:45	17	11	28
2:00	21	9	30
2:15	15	9	24
2:30	6	8	14
2:45	15	15	30
3:00	21	23	44
3:15	15	15	30
3:30	23	20	43
3:45	18	16	34
4:00	28	23	51
4:15	18	15	33
4:30	35	14	49
4:45	30	9	39
5:00	30	15	45
5:15	25	23	48
5:30	37	16	53
5:45	33	18	51
6:00	23	10	33
6:15	24	13	37
6:30	13	15	28
6:45	12	12	24
7:00	11	16	27
7:15	14	5	19
7:30	7	6	13
7:45	12	5	17
8:00	7	8	15
8:15	10	2	12
8:30	7	3	10
8:45	8	3	11
9:00	13	4	17
9:15	11	5	16
9:30	5	1	6
9:45	5	2	7
10:00	6	2	8
10:15	4	1	5
10:30	2	1	3
10:45	2	1	3
11:00	2	2	4
11:15	1	1	2
11:30	3	1	4
11:45	1	2	3
Total	628	414	1042
Percent	60.3%	39.7%	
Peak	5:00	3:00	5:00
Volume	125	74	197
Peak Factor	0.845	0.804	0.929

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030

Type: Volume / Direction
Tech: Judd / Klaren / McComb
Count: Vehicle Volume

Robinson Rd b Lewis Ln & Deer Flat Rd
Start Date: 3/7/2022
End Date: 3/8/2022
Robinson Road between Lewis Lane and Deer Flat Road
Nampa, Idaho

3/8/2022 Time	Southbound	Northbound	Total
12:00 AM	0	0	0
12:15	1	1	2
12:30	1	0	1
12:45	1	0	1
1:00	1	1	2
1:15	0	0	0
1:30	2	0	2
1:45	1	0	1
2:00	0	1	1
2:15	1	0	1
2:30	0	0	0
2:45	0	1	1
3:00	0	0	0
3:15	2	2	4
3:30	1	1	2
3:45	2	0	2
4:00	0	2	2
4:15	1	4	5
4:30	3	2	5
4:45	2	0	2
5:00	0	2	2
5:15	5	14	19
5:30	8	10	18
5:45	7	15	22
6:00	3	24	27
6:15	11	20	31
6:30	11	35	46
6:45	11	25	36
7:00	9	39	48
7:15	7	42	49
7:30	9	30	39
7:45	10	30	40
8:00	7	28	35
8:15	14	27	41
8:30	11	19	30
8:45	9	13	22
9:00	10	15	25
9:15	5	17	22
9:30	11	16	27
9:45	10	24	34
10:00	12	9	21
10:15	13	9	22
10:30	10	16	26
10:45	17	13	30
11:00	8	12	20
11:15	9	9	18
11:30	13	10	23
11:45	9	14	23
Total	278	552	830
Percent	33.5%	66.5%	
Peak	10:00	6:30	6:30
Volume	52	141	179
Peak Factor	0.765	0.839	0.913

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030

Robinson Rd b Lewis Ln & Deer Flat Rd

Type: Volume / Direction
Tech: Judd / Klaren / McComb
Count: Vehicle Volume

Start Date: 3/7/2022
End Date: 3/8/2022
Robinson Road between Lewis Lane and Deer Flat Road
Nampa, Idaho

3/8/2022 Time	Southbound	Northbound	Total
12:00 PM	19	20	39
12:15	15	16	31
12:30	8	12	20
12:45	11	14	25
1:00	0	0	0
1:15	*	*	0
1:30	*	*	0
1:45	*	*	0
2:00	*	*	0
2:15	*	*	0
2:30	*	*	0
2:45	*	*	0
3:00	*	*	0
3:15	*	*	0
3:30	*	*	0
3:45	*	*	0
4:00	*	*	0
4:15	*	*	0
4:30	*	*	0
4:45	*	*	0
5:00	*	*	0
5:15	*	*	0
5:30	*	*	0
5:45	*	*	0
6:00	*	*	0
6:15	*	*	0
6:30	*	*	0
6:45	*	*	0
7:00	*	*	0
7:15	*	*	0
7:30	*	*	0
7:45	*	*	0
8:00	*	*	0
8:15	*	*	0
8:30	*	*	0
8:45	*	*	0
9:00	*	*	0
9:15	*	*	0
9:30	*	*	0
9:45	*	*	0
10:00	*	*	0
10:15	*	*	0
10:30	*	*	0
10:45	*	*	0
11:00	*	*	0
11:15	*	*	0
11:30	*	*	0
11:45	*	*	0
Total	53	62	115
Percent	46.1%	53.9%	
Peak	12:00 PM	12:00 PM	12:00 PM
Volume	53	62	115
Peak Factor	0.697	0.775	0.737
Grand Total	959	1028	1987
Percent	48.3%	51.7%	
AADT		ADT: 1,987	AADT: 1,987

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030

Type: Volume / Direction
Tech: Judd / Klaren / McComb
Count: Vehicle Volume

Robinson Rd b Lewis Ln & Deer Flat Rd-d2
Start Date: 3/16/2023
End Date: 3/16/2023
Robinson Road between Lewis Ln & Deer Flat Rd
Nampa, Idaho

3/16/2023 Time	Southbound	Northbound	Total
12:00 AM	0	1	1
12:15	0	2	2
12:30	3	2	5
12:45	0	2	2
1:00	1	1	2
1:15	0	1	1
1:30	0	0	0
1:45	2	0	2
2:00	0	0	0
2:15	2	1	3
2:30	1	0	1
2:45	1	0	1
3:00	1	0	1
3:15	0	0	0
3:30	0	0	0
3:45	2	0	2
4:00	1	2	3
4:15	4	1	5
4:30	1	7	8
4:45	4	1	5
5:00	1	5	6
5:15	5	5	10
5:30	7	13	20
5:45	5	12	17
6:00	5	17	22
6:15	2	16	18
6:30	10	23	33
6:45	18	24	42
7:00	7	35	42
7:15	13	40	53
7:30	9	35	44
7:45	9	27	36
8:00	12	27	39
8:15	16	30	46
8:30	4	28	32
8:45	16	22	38
9:00	7	17	24
9:15	8	15	23
9:30	8	24	32
9:45	14	23	37
10:00	17	14	31
10:15	18	17	35
10:30	15	14	29
10:45	11	10	21
11:00	16	15	31
11:15	13	19	32
11:30	19	15	34
11:45	16	8	24
Total	324	571	895
Percent	36.2%	63.8%	
Peak	9:45	7:00	6:45
Volume	64	137	181
Peak Factor	0.889	0.856	0.854

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030

Type: Volume / Direction
Tech: Judd / Klaren / McComb
Count: Vehicle Volume

Robinson Rd b Lewis Ln & Deer Flat Rd-d2
Start Date: 3/16/2023
End Date: 3/16/2023
Robinson Road between Lewis Ln & Deer Flat Rd
Nampa, Idaho

3/16/2023 Time	Southbound	Northbound	Total
12:00 PM	17	21	38
12:15	19	12	31
12:30	19	23	42
12:45	19	27	46
1:00	16	20	36
1:15	25	13	38
1:30	11	22	33
1:45	10	18	28
2:00	19	20	39
2:15	16	11	27
2:30	16	15	31
2:45	20	14	34
3:00	16	17	33
3:15	27	21	48
3:30	21	14	35
3:45	24	20	44
4:00	26	16	42
4:15	25	22	47
4:30	26	19	45
4:45	34	20	54
5:00	23	17	40
5:15	24	14	38
5:30	19	23	42
5:45	32	19	51
6:00	14	12	26
6:15	17	14	31
6:30	17	11	28
6:45	24	15	39
7:00	21	12	33
7:15	15	10	25
7:30	13	12	25
7:45	9	10	19
8:00	8	9	17
8:15	15	6	21
8:30	9	9	18
8:45	9	12	21
9:00	4	3	7
9:15	7	2	9
9:30	7	1	8
9:45	3	5	8
10:00	4	2	6
10:15	8	2	10
10:30	4	1	5
10:45	3	1	4
11:00	2	3	5
11:15	1	1	2
11:30	4	3	7
11:45	0	2	2
Total	722	596	1318
Percent	54.8%	45.2%	
Peak	4:00	12:00 PM	4:00
Volume	111	83	188
Peak Factor	0.816	0.769	0.870
Grand Total	1046	1167	2213
Percent	47.3%	52.7%	
AADT		ADT: 1,106	AADT: 1,106

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030
Type: Volume / Direction / Classification
Tech: Judd / Klaren / McComb
Count: Vehicle Classification

Robinson Rd b Lewis Ln & Deer Flat Rd
Start Date: 3/7/2022
End Date: 3/8/2022
Robinson Road between Lewis Lane and Deer Flat Road
Nampa, Idaho

Direction: Southbound

3/7/2022 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	0	27	8	1	11	1	0	2	3	1	0	0	1	0	55
2:00	0	25	14	0	11	0	0	4	1	1	0	0	0	1	57
3:00	0	35	17	1	19	1	0	2	0	1	0	0	0	1	77
4:00	0	51	25	3	19	1	0	4	2	3	0	0	0	3	111
5:00	0	78	21	2	20	0	0	3	0	0	0	0	0	1	125
6:00	0	45	14	1	12	0	0	0	0	0	0	0	0	0	72
7:00	0	29	6	0	7	0	0	1	1	0	0	0	0	0	44
8:00	0	16	5	0	9	0	0	1	1	0	0	0	0	0	32
9:00	0	22	10	0	2	0	0	0	0	0	0	0	0	0	34
10:00	0	6	3	0	3	0	0	0	0	0	0	0	0	2	14
11:00	0	5	0	0	2	0	0	0	0	0	0	0	0	0	7
Total	0	339	123	8	115	3	0	17	8	6	0	0	1	8	628
Percent	0.0%	54.0%	19.6%	1.3%	18.3%	0.5%	0.0%	2.7%	1.3%	1.0%	0.0%	0.0%	0.2%	1.3%	
AM Peak															
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
PM Peak		5:00	4:00	4:00	5:00	1:00		2:00	1:00	4:00			1:00	4:00	5:00
	*	78	25	3	20	1	*	4	3	3	*	*	1	3	125

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030
Type: Volume / Direction / Classification
Tech: Judd / Klaren / McComb
Count: Vehicle Classification

Robinson Rd b Lewis Ln & Deer Flat Rd
Start Date: 3/7/2022
End Date: 3/8/2022
Robinson Road between Lewis Lane and Deer Flat Road
Nampa, Idaho

Direction: Southbound

3/8/2022 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
1:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
2:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
3:00	0	4	0	0	1	0	0	0	0	0	0	0	0	0	5
4:00	0	2	2	0	1	0	0	0	1	0	0	0	0	0	6
5:00	0	13	3	0	3	0	0	0	1	0	0	0	0	0	20
6:00	0	19	14	1	0	1	0	0	0	0	0	0	0	1	36
7:00	0	13	10	1	10	0	0	1	0	0	0	0	0	0	35
8:00	0	17	13	1	7	0	0	3	0	0	0	0	0	0	41
9:00	0	10	7	2	10	2	0	2	1	0	0	0	0	2	36
10:00	0	20	14	1	7	2	0	7	0	1	0	0	0	0	52
11:00	0	16	10	2	6	0	0	3	0	0	0	0	2	0	39
12:00 PM	0	4	0	0	3	1	0	3	2	1	0	0	2	3	19
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	0	122	75	8	49	6	0	19	6	2	0	0	4	6	297
Percent	0.0%	41.1%	25.3%	2.7%	16.5%	2.0%	0.0%	6.4%	2.0%	0.7%	0.0%	0.0%	1.3%	2.0%	
AM Peak		10:00	6:00	9:00	7:00	9:00		10:00	2:00	10:00			11:00	9:00	10:00
	*	20	14	2	10	2	*	7	1	1	*	*	2	2	52
PM Peak		12:00 PM			12:00 PM	12:00 PM		12:00 PM	12:00 PM	12:00 PM			12:00 PM	12:00 PM	12:00 PM
	*	4	*	*	3	1	*	3	2	1	*	*	2	3	19
Grand Total	0	461	198	16	164	9	0	36	14	8	0	0	5	14	925
Percent	0.0%	49.8%	21.4%	1.7%	17.7%	1.0%	0.0%	3.9%	1.5%	0.9%	0.0%	0.0%	0.5%	1.5%	

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030
Type: Volume / Direction / Classification
Tech: Judd / Klaren / McComb
Count: Vehicle Classification

Robinson Rd b Lewis Ln & Deer Flat Rd
Start Date: 3/7/2022
End Date: 3/8/2022
Robinson Road between Lewis Lane and Deer Flat Road
Nampa, Idaho

Direction: Northbound

3/7/2022 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	0	15	9	1	10	0	0	4	0	4	0	0	0	2	45
2:00	0	22	9	1	3	0	0	2	0	1	0	0	0	3	41
3:00	1	26	17	2	15	0	0	1	0	5	0	0	0	7	74
4:00	0	31	9	2	12	0	0	2	2	0	0	0	1	2	61
5:00	0	34	20	2	12	0	0	1	0	0	0	0	0	3	72
6:00	0	36	6	0	7	0	0	1	0	0	0	0	0	0	50
7:00	0	14	7	0	8	0	0	1	0	0	0	0	1	1	32
8:00	0	9	5	0	2	0	0	0	0	0	0	0	0	0	16
9:00	0	7	5	0	0	0	0	0	0	0	0	0	0	0	12
10:00	0	2	0	0	3	0	0	0	0	0	0	0	0	0	5
11:00	0	2	2	0	0	0	0	1	0	0	0	0	1	0	6
Total	1	198	89	8	72	0	0	13	2	10	0	0	3	18	414
Percent	0.2%	47.8%	21.5%	1.9%	17.4%	0.0%	0.0%	3.1%	0.5%	2.4%	0.0%	0.0%	0.7%	4.3%	
AM Peak															
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
PM Peak	3:00	6:00	5:00	3:00	3:00			1:00	4:00	3:00			4:00	3:00	3:00
	1	36	20	2	15	*	*	4	2	5	*	*	1	7	74

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030
Type: Volume / Direction / Classification
Tech: Judd / Klaren / McComb
Count: Vehicle Classification

Robinson Rd b Lewis Ln & Deer Flat Rd
Start Date: 3/7/2022
End Date: 3/8/2022
Robinson Road between Lewis Lane and Deer Flat Road
Nampa, Idaho

Direction: Northbound

3/8/2022 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
3:00	0	1	0	0	1	0	0	0	0	0	0	0	0	1	3
4:00	0	4	2	0	1	0	0	0	0	0	0	0	0	1	8
5:00	0	23	11	0	7	0	0	0	0	0	0	0	0	0	41
6:00	0	55	25	0	19	0	0	0	0	1	0	0	0	4	104
7:00	0	75	34	1	22	6	0	2	0	0	0	0	0	1	141
8:00	0	42	17	2	17	5	0	2	0	0	0	0	1	1	87
9:00	0	28	18	1	14	5	0	6	0	0	0	0	0	0	72
10:00	0	20	10	0	13	1	0	0	1	1	0	0	1	0	47
11:00	0	19	9	1	7	4	0	3	0	0	0	0	0	2	45
12:00 PM	0	6	5	1	5	0	0	2	1	0	0	0	0	0	20
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	0	273	134	6	107	21	0	15	2	2	0	0	2	10	572
Percent	0.0%	47.7%	23.4%	1.0%	18.7%	3.7%	0.0%	2.6%	0.3%	0.3%	0.0%	0.0%	0.3%	1.7%	
AM Peak		7:00	7:00	8:00	7:00	7:00		9:00	10:00	6:00			8:00	6:00	7:00
	*	75	34	2	22	6	*	6	1	1	*	*	1	4	141
PM Peak		12:00 PM	12:00 PM	12:00 PM	12:00 PM			12:00 PM	12:00 PM						12:00 PM
	*	6	5	1	5	*	*	2	1	*	*	*	*	*	20
Grand Total	1	471	223	14	179	21	0	28	4	12	0	0	5	28	986
Percent	0.1%	47.8%	22.6%	1.4%	18.2%	2.1%	0.0%	2.8%	0.4%	1.2%	0.0%	0.0%	0.5%	2.8%	

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030
Type: Volume / Direction / Classification
Tech: Judd / Klaren / McComb
Count: Vehicle Classification

Robinson Rd b Lewis Ln & Deer Flat Rd
Start Date: 3/7/2022
End Date: 3/8/2022
Robinson Road between Lewis Lane and Deer Flat Road
Nampa, Idaho

Direction: Combined

3/7/2022 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
12:00 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
1:00	0	42	17	2	21	1	0	6	3	5	0	0	1	2	100
2:00	0	47	23	1	14	0	0	6	1	2	0	0	0	4	98
3:00	1	61	34	3	34	1	0	3	0	6	0	0	0	8	151
4:00	0	82	34	5	31	1	0	6	4	3	0	0	1	5	172
5:00	0	112	41	4	32	0	0	4	0	0	0	0	0	4	197
6:00	0	81	20	1	19	0	0	1	0	0	0	0	0	0	122
7:00	0	43	13	0	15	0	0	2	1	0	0	0	1	1	76
8:00	0	25	10	0	11	0	0	1	1	0	0	0	0	0	48
9:00	0	29	15	0	2	0	0	0	0	0	0	0	0	0	46
10:00	0	8	3	0	6	0	0	0	0	0	0	0	0	2	19
11:00	0	7	2	0	2	0	0	1	0	0	0	0	1	0	13
Total	1	537	212	16	187	3	0	30	10	16	0	0	4	26	1042
Percent	0.1%	51.5%	20.3%	1.5%	17.9%	0.3%	0.0%	2.9%	1.0%	1.5%	0.0%	0.0%	0.4%	2.5%	
AM Peak	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
PM Peak	3:00	5:00	5:00	4:00	3:00	1:00		1:00	4:00	3:00			1:00	3:00	5:00
	1	112	41	5	34	1	*	6	4	6	*	*	1	8	197

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030
Type: Volume / Direction / Classification
Tech: Judd / Klaren / McComb
Count: Vehicle Classification

Robinson Rd b Lewis Ln & Deer Flat Rd
Start Date: 3/7/2022
End Date: 3/8/2022
Robinson Road between Lewis Lane and Deer Flat Road
Nampa, Idaho

Direction: Combined

3/8/2022 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	1	2	0	1	0	0	0	0	0	0	0	0	0	4
1:00	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
2:00	0	0	1	0	1	0	0	0	1	0	0	0	0	0	3
3:00	0	5	0	0	2	0	0	0	0	0	0	0	0	1	8
4:00	0	6	4	0	2	0	0	0	1	0	0	0	0	1	14
5:00	0	36	14	0	10	0	0	0	1	0	0	0	0	0	61
6:00	0	74	39	1	19	1	0	0	0	1	0	0	0	5	140
7:00	0	88	44	2	32	6	0	3	0	0	0	0	0	1	176
8:00	0	59	30	3	24	5	0	5	0	0	0	0	1	1	128
9:00	0	38	25	3	24	7	0	8	1	0	0	0	0	2	108
10:00	0	40	24	1	20	3	0	7	1	2	0	0	1	0	99
11:00	0	35	19	3	13	4	0	6	0	0	0	0	2	2	84
12:00 PM	0	10	5	1	8	1	0	5	3	1	0	0	2	3	39
1:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
4:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
7:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Total	0	395	209	14	156	27	0	34	8	4	0	0	6	16	869
Percent	0.0%	45.5%	24.1%	1.6%	18.0%	3.1%	0.0%	3.9%	0.9%	0.5%	0.0%	0.0%	0.7%	1.8%	
AM Peak		7:00	7:00	8:00	7:00	9:00		9:00	2:00	10:00			11:00	6:00	7:00
	*	88	44	3	32	7	*	8	1	2	*	*	2	5	176
PM Peak		12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM		12:00 PM	12:00 PM	12:00 PM			12:00 PM	12:00 PM	12:00 PM
	*	10	5	1	8	1	*	5	3	1	*	*	2	3	39
Grand Total	1	932	421	30	343	30	0	64	18	20	0	0	10	42	1911
Percent	0.1%	48.8%	22.0%	1.6%	17.9%	1.6%	0.0%	3.3%	0.9%	1.0%	0.0%	0.0%	0.5%	2.2%	

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030
Type: Volume / Direction / Classification
Tech: Judd / Klaren / McComb
Count: Vehicle Classification

Robinson Rd b Lewis Ln & Deer Flat Rd-d2
Start Date: 3/16/2023
End Date: 3/16/2023
Robinson Road between Lewis Ln & Deer Flat Rd
Nampa, Idaho

Direction: Southbound

3/16/2023 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
1:00	0	2	0	0	0	0	0	0	1	0	0	0	0	0	3
2:00	0	3	0	0	0	0	0	0	1	0	0	0	0	0	4
3:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
4:00	0	5	4	0	1	0	0	0	0	0	0	0	0	0	10
5:00	0	12	2	0	2	0	0	0	0	0	0	0	0	2	18
6:00	0	21	7	3	4	0	0	0	0	0	0	0	0	0	35
7:00	0	16	9	1	9	1	0	0	0	2	0	0	0	0	38
8:00	0	18	7	2	10	0	0	1	1	8	0	0	1	0	48
9:00	0	8	11	0	6	1	0	1	2	7	0	0	1	0	37
10:00	0	18	9	1	13	1	0	12	1	5	0	0	0	1	61
11:00	0	24	8	2	20	0	0	3	1	5	0	0	1	0	64
12:00 PM	0	31	19	0	14	1	0	6	2	1	0	0	0	0	74
1:00	1	26	13	0	10	1	0	3	0	7	0	0	1	0	62
2:00	0	25	20	1	11	3	0	4	3	3	0	0	1	0	71
3:00	1	31	16	2	25	3	0	6	0	4	0	0	0	0	88
4:00	0	55	18	2	27	0	0	6	1	1	0	0	1	0	111
5:00	1	58	16	0	20	0	0	1	2	0	0	0	0	0	98
6:00	0	41	11	1	16	0	0	2	0	0	0	1	0	0	72
7:00	1	34	15	0	7	0	0	1	0	0	0	0	0	0	58
8:00	0	19	12	0	8	0	0	2	0	0	0	0	0	0	41
9:00	0	8	5	0	8	0	0	0	0	0	0	0	0	0	21
10:00	0	11	6	0	1	0	0	0	1	0	0	0	0	0	19
11:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
Total	4	470	210	15	214	11	0	48	16	43	0	1	6	3	1041
Percent	0.4%	45.1%	20.2%	1.4%	20.6%	1.1%	0.0%	4.6%	1.5%	4.1%	0.0%	0.1%	0.6%	0.3%	
AM Peak		11:00	9:00	6:00	11:00	7:00		10:00	9:00	8:00			8:00	5:00	11:00
	*	24	11	3	20	1	*	12	2	8	*	*	1	2	64
PM Peak	1:00	5:00	2:00	3:00	4:00	2:00		12:00 PM	2:00	1:00		6:00	1:00		4:00
	1	58	20	2	27	3	*	6	3	7	*	1	1	*	111
Grand Total	4	470	210	15	214	11	0	48	16	43	0	1	6	3	1041
Percent	0.4%	45.1%	20.2%	1.4%	20.6%	1.1%	0.0%	4.6%	1.5%	4.1%	0.0%	0.1%	0.6%	0.3%	

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030
Type: Volume / Direction / Classification
Tech: Judd / Klaren / McComb
Count: Vehicle Classification

Robinson Rd b Lewis Ln & Deer Flat Rd-d2
Start Date: 3/16/2023
End Date: 3/16/2023
Robinson Road between Lewis Ln & Deer Flat Rd
Nampa, Idaho

Direction: Northbound

3/16/2023 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	1	7
1:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	4	3	0	2	0	0	0	0	1	0	0	0	1	11
5:00	0	21	9	0	4	0	0	1	0	0	0	0	0	0	35
6:00	0	43	15	0	20	0	0	0	0	1	0	0	0	1	80
7:00	0	77	25	1	23	1	0	0	1	8	0	0	0	1	137
8:00	0	54	18	2	17	0	0	6	0	9	0	0	1	0	107
9:00	0	39	12	0	17	0	0	3	2	5	0	0	0	1	79
10:00	0	25	13	1	8	0	0	1	0	5	0	0	1	1	55
11:00	0	25	11	0	9	0	0	2	1	7	0	0	1	1	57
12:00 PM	0	35	19	2	15	1	0	2	0	5	0	0	2	2	83
1:00	1	31	17	0	9	3	0	4	1	6	0	0	0	1	73
2:00	0	26	15	1	10	1	1	2	1	3	0	0	0	0	60
3:00	0	26	18	1	18	1	1	3	0	2	0	0	1	1	72
4:00	0	31	18	2	18	0	2	5	0	0	0	0	1	0	77
5:00	0	38	14	0	14	0	0	4	2	0	0	0	0	1	73
6:00	0	27	8	0	13	0	1	2	0	0	0	0	0	1	52
7:00	0	13	15	0	14	0	0	2	0	0	0	0	0	0	44
8:00	0	20	9	0	5	0	0	1	0	0	0	0	1	0	36
9:00	0	9	1	0	1	0	0	0	0	0	0	0	0	0	11
10:00	0	3	1	0	1	0	0	1	0	0	0	0	0	0	6
11:00	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
Total	1	556	243	10	219	7	5	39	8	52	0	0	8	13	1161
Percent	0.1%	47.9%	20.9%	0.9%	18.9%	0.6%	0.4%	3.4%	0.7%	4.5%	0.0%	0.0%	0.7%	1.1%	
AM Peak		7:00	7:00	8:00	7:00	7:00		8:00	9:00	8:00			8:00	12:00 AM	7:00
	*	77	25	2	23	1	*	6	2	9	*	*	1	1	137
PM Peak	1:00	5:00	12:00 PM	12:00 PM	3:00	1:00	4:00	4:00	5:00	1:00			12:00 PM	12:00 PM	12:00 PM
	1	38	19	2	18	3	2	5	2	6	*	*	2	2	83
Grand Total	1	556	243	10	219	7	5	39	8	52	0	0	8	13	1161
Percent	0.1%	47.9%	20.9%	0.9%	18.9%	0.6%	0.4%	3.4%	0.7%	4.5%	0.0%	0.0%	0.7%	1.1%	

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: TO0030
Type: Volume / Direction / Classification
Tech: Judd / Klaren / McComb
Count: Vehicle Classification

Robinson Rd b Lewis Ln & Deer Flat Rd-d2
Start Date: 3/16/2023
End Date: 3/16/2023
Robinson Road between Lewis Ln & Deer Flat Rd
Nampa, Idaho

Direction: Combined

3/16/2023 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	6	2	0	1	0	0	0	0	0	0	0	0	1	10
1:00	0	4	0	0	0	0	0	0	1	0	0	0	0	0	5
2:00	0	4	0	0	0	0	0	0	1	0	0	0	0	0	5
3:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
4:00	0	9	7	0	3	0	0	0	0	1	0	0	0	1	21
5:00	0	33	11	0	6	0	0	1	0	0	0	0	0	2	53
6:00	0	64	22	3	24	0	0	0	0	1	0	0	0	1	115
7:00	0	93	34	2	32	2	0	0	1	10	0	0	0	1	175
8:00	0	72	25	4	27	0	0	7	1	17	0	0	2	0	155
9:00	0	47	23	0	23	1	0	4	4	12	0	0	1	1	116
10:00	0	43	22	2	21	1	0	13	1	10	0	0	1	2	116
11:00	0	49	19	2	29	0	0	5	2	12	0	0	2	1	121
12:00 PM	0	66	38	2	29	2	0	8	2	6	0	0	2	2	157
1:00	2	57	30	0	19	4	0	7	1	13	0	0	1	1	135
2:00	0	51	35	2	21	4	1	6	4	6	0	0	1	0	131
3:00	1	57	34	3	43	4	1	9	0	6	0	0	1	1	160
4:00	0	86	36	4	45	0	2	11	1	1	0	0	2	0	188
5:00	1	96	30	0	34	0	0	5	4	0	0	0	0	1	171
6:00	0	68	19	1	29	0	1	4	0	0	0	1	0	1	124
7:00	1	47	30	0	21	0	0	3	0	0	0	0	0	0	102
8:00	0	39	21	0	13	0	0	3	0	0	0	0	1	0	77
9:00	0	17	6	0	9	0	0	0	0	0	0	0	0	0	32
10:00	0	14	7	0	2	0	0	1	1	0	0	0	0	0	25
11:00	0	2	1	0	2	0	0	0	0	0	0	0	0	0	5
Total	5	1026	453	25	433	18	5	87	24	95	0	1	14	16	2202
Percent	0.2%	46.6%	20.6%	1.1%	19.7%	0.8%	0.2%	4.0%	1.1%	4.3%	0.0%	0.0%	0.6%	0.7%	
AM Peak		7:00	7:00	8:00	7:00	7:00		10:00	9:00	8:00			8:00	5:00	7:00
	*	93	34	4	32	2	*	13	4	17	*	*	2	2	175
PM Peak	1:00	5:00	12:00 PM	4:00	4:00	1:00	4:00	4:00	2:00	1:00		6:00	12:00 PM	12:00 PM	4:00
	2	96	38	4	45	4	2	11	4	13	*	1	2	2	188
Grand Total	5	1026	453	25	433	18	5	87	24	95	0	1	14	16	2202
Percent	0.2%	46.6%	20.6%	1.1%	19.7%	0.8%	0.2%	4.0%	1.1%	4.3%	0.0%	0.0%	0.6%	0.7%	

Stewart Farms Inc.

5459 Deer Flat Rd

Nampa, ID 83686-9447

[redacted]

March 10, 2023

Canyon County Commissioners,

I am Joe Stewart, a third generation dairyman and part owner/manager of Stewart Farms Inc., located at 5459 Deer Flat Road, southwest of the intersection of Deer Flat and Robinson Road in the Nampa/Kuna area. I am writing this letter representing the company Stewart Farms Inc. to provide input on the proposed Haven Creek rezone and community, located near Robinson and Lewis Ln. It is approximately 0.8 miles from our dairy.

I have seen the 29 lot layout concept and have discussed the proposed project with Tanner Verhoeks, one of the landowners and principals of Haven Idaho. The question of compatibility with our agricultural operations has been raised and after much discussion, I believe this residential project is compatible with our operations.

Stewart Farms Inc. supports the proposed Haven Creek project.

Our operation is located south of Deer Flat Rd and includes 550 head of milking cows, and 500 head of heifers or beef cattle. We also produce forage crops on 484 acres of irrigated fields including one property south of Dye lane. My family has operated the dairy for 84 years - since 1939.

Our operations are just south of the Nampa area of impact and we understand that future residential growth in this area is natural and inevitable. We encourage development on land like the proposed property that has rock shelves and results in lower productivity. We support concentrating residential growth within the area of impact as a way to protect our commercial farmland – this higher density means a smaller overall housing footprint that will not sprawl out into the production agricultural areas. The Haven Creek project achieves this.

We support small acreage residential development. This creates a transitional buffer between dense city and production agriculture areas. Rather than ¼ acre lots, we agree that lots closer to 1 acre size are better. Lots larger than 2 acre are often too big to tackle by hand, but too small to justify a tractor and are more likely to become overrun with weeds. This is not the highest and best use of the land. Lots that are 1-1.75 acres in size are manageable, spacious and valuable. The Haven Creek project does this.

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We support new neighbors understanding how living near a dairy might impact them. We take no issue with the new residents and growth, but we do want them to be aware of the practices that take place in the area they are moving to. After expressing this concern, Haven Idaho has agreed to sit with us and draft a custom Right-to-Farm Acknowledgement that describes our operations for new neighbors. Signatures on this document will be required prior to any future home sale in their project. We believe this type of responsible development practices should be generally required. The Haven Creek project does this.

I have been told that there were some concerns about congestion and traffic. I work closely with Nampa Highway District 1 to plan our transport routes and understand that Robinson is planned to be a main thoroughfare in the near future. Various roundabouts and other projects in the area are planned to ensure that Level of Service values are maintained to standards. I appreciate that Haven proactively reached out to us about our dairy traffic and operations to add to their traffic technical memo. Traffic from Stewart Farms Inc. is consistent year round throughout the year.

Commissioners, we need responsible residential development. I hope you have looked closely at the Haven Creek project and the thoughtful tradeoffs it is proposing. This is the type of residential development we should promote within the Area of Impact and I hope this letter encourages your support.

Respectfully,

J A. Stewart

Joe Stewart
Stewart Farms Inc.
[redacted]

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