

Michelle Barron

From: Michelle Tucker <michelle.tucker@nexus-env.com>
Sent: Monday, April 8, 2024 11:00 AM
To: Michelle Barron
Cc: Carl Anderson; David Stephens
Subject: RE: [External] Crimson Bridge Public Hearing
Attachments: CBE Project Summary aerial 040824.pdf

Michelle,

Please see attached.

Michelle Tucker
Environmental Specialist
Phone 208-756-7602
Email michelle.tucker@nexus-env.com
Web www.nexus-env.com



From: Michelle Tucker
Sent: Monday, April 8, 2024 8:35 AM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Cc: Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; David Stephens <david.precisionx@gmail.com>
Subject: RE: [External] Crimson Bridge Public Hearing

I will send this to you later today. Can you give me the address for the public hearing?

Michelle Tucker
Environmental Specialist
Phone 208-756-7602
Email michelle.tucker@nexus-env.com
Web www.nexus-env.com



From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Sunday, April 7, 2024 11:36 PM
To: Michelle Tucker <michelle.tucker@nexus-env.com>
Cc: Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; David Stephens <david.precisionx@gmail.com>
Subject: RE: [External] Crimson Bridge Public Hearing

Hello Michelle,

If you would like to provide me of an overview of the studies that you have been working on and the timeline of competition, I would love to add a little bit of information in my Staff Report about them. Unfortunately, we didn't open up a comment period, so new information would not be accepted at this time. You have the

opportunity to come to the hearing and present any information into the record that you have available as part of the public comment. I know that these are all very beneficial studies that the Planning and Zoning Commission would be interested in hearing about. You can bring any information that you have and ask if it could be accepted as a late exhibit the night of the hearing.

I look forward to a brief synopsis of what has been done.

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Michelle Tucker <michelle.tucker@nexus-env.com>
Sent: Thursday, April 4, 2024 8:18 AM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Cc: Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; David Stephens <david.precisionx@gmail.com>
Subject: [External] Crimson Bridge Public Hearing

Hello Michelle,

I am sorry we have not been able to connect. Premier, with our support, has been working on providing studies for sound, traffic, and ground water for the hearing. My urgent question for you is what the updated deadline is to provide supportive materials for the hearing on the 18th.

I am available anytime to visit prior if you would like an update on the project and permitting activities.

All my best,

Michelle

Michelle Tucker
Environmental Specialist
Phone 208-756-7602
Email michelle.tucker@nexus-env.com
Web www.nexus-env.com



Crimson Bridge Project

Location: 14533 River Road, Caldwell, Idaho

Crimson Bridge Estates is being planned in two phases. Phase 1 is intended to excavate ponds and provide additional resources to enable the development of Phase 2 which is a low-density subdivision. No development is proposed in the floodway and no clearing of vegetation along the river is proposed.

Phase 1 – Gravel Excavation and Pond Development

Premier Aggregates is seeking a condition use permit (CUP) to excavate the ponds and extract gravel. It is anticipated that it will take one to three years to complete this phase. The proposed operating hours are Monday through Friday from 7 am to 7 pm. No business operations or excavation will be conducted on Saturday or Sunday. On-site crushing will be seasonal, and it is anticipated crushing will only occur 3-4 months out of the year. A Reclamation Plan, approved by Idaho Department of Lands, and a Stormwater Pollution Prevention Permit have been developed for this phase. Once the CUP is approved all other necessary permits will be acquired.

Phase 2 – Crimson Bridge Estates Subdivision

The subdivision plan is for approximately 14 lots on 53 acres. The final design includes private walking paths; native plants and landscaping; and improved conditions for the existing irrigation drains to alleviate sediment delivery to the river and erosional pressure to River Road. A conceptual subdivision plan is under development and will be pursued once the CUP is approved. Draft License Agreements are in place with District 2 who manage the drains.

Formal Studies Conducted

- WETLAND DELINEATION – Nexus Environmental Consultants
- SOUND STUDY – Mullins Acoustics
- TRAFFIC DISTRIBUTION REPORT and a TURN LANE WARRANT - Kittlesons and Associates
- OFFICIAL SPECIES LIST FOR SPECIAL STATUS WILDLIFE AND FISHERIES - US Fish and Wildlife Service
- SURFACE AND GROUNDWATER ANALYSIS – Rocky Mountain Environmental and Nexus Environmental Consultants
- STORMWATER MANAGEMENT, DUST ABATEMENT AND DEWATERING PLAN – Syman and Associates
- SITE PLANNING, DEVELOPMENT STANDARDS AND DESIGN– QRS Consulting, PE
- GEOTECHNICAL TESTING – Site Consulting LLC
- CULTURAL AND HISTORICAL SURVEYS – Jerry Jerems, Archeologist, Soil Scientist
- DRAINAGE DISTRICT 2 – Encroachment Application, A-Team, PE
- TITLE RESEARCH – First American Title
- PHASE II ENVIRONMENTAL SITE ASSESSMENT

Consultations to Date

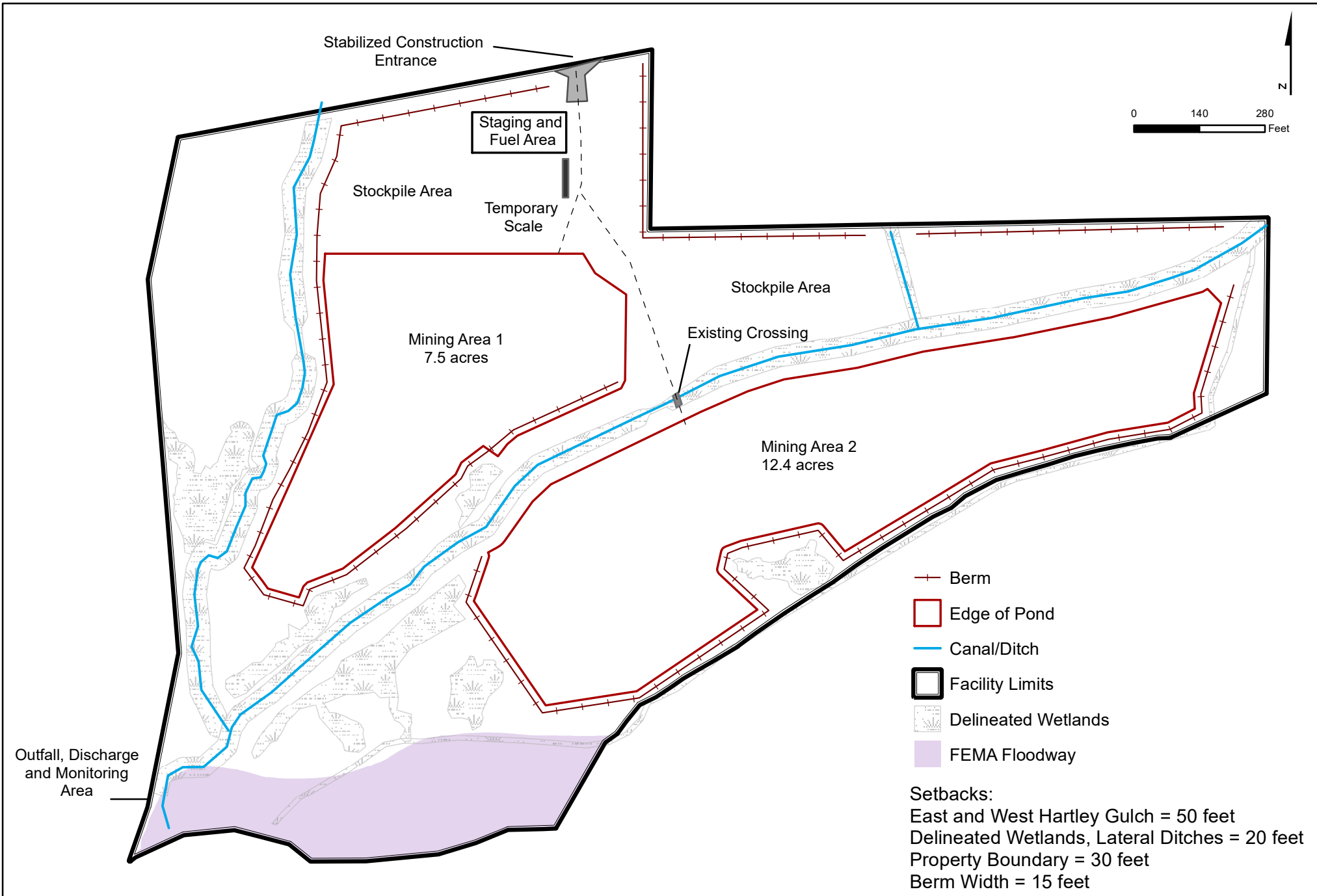
The consultations listed below include communication and permitting consideration for both phases of development as appropriate.

- DRAINAGE DISTRICT 2 - East and West Hartley Gulch - Allen Funkhouser, Drainage District Superintendent and Bryce Farris, Legal Representative
- CANYON COUNTY WATER COMPANY - Flip Phillips, Agent and Dianne Foster, Secretary

- MIDDLETON MILL DITCH COMPANY - Allen Funkhouser, Agent, and Bryce Farris, Legal Representative
- IDAHO TRANSPORTATION DEPARTMENT – Niki Benyakhlef, Development Services Coordinator
- IDAHO DEPARTMENT OF FISH AND GAME – Brandon Flack
- IDAHO DEPARTMENT OF WATER RESOURCES – Katie Gibble
- US ARMY CORPS OF ENGINEERS – Carolyn Smith
- IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY – Chase Cusack, Aaron Scheff
- IDAHO DEPARTMENT OF LANDS – Mekayla Layne
- SOUTHWEST DISTRICT HEALTH – Anthony Lee
- CANYON COUNTY SOIL CONSERVATION DISTRICT, Mike Swartz
- CANYON COUNTY FLOODPLAIN MANAGER – Stephanie Hailey
- CANYON COUNTY HIGHWAY DISTRICT No. 4 – Chris Hopper, PE
- CANYON COUNTY DEVELOPMENT SERVICES – Michelle Barron
- CITY OF MIDDLETON, Planning and community development
- CITY OF CALDWELL PLANNING AND ZONING – Robin Collings

Other Outreach:

- NEIGHBORHOOD MEETINGS – February 8, 2023; and January 31, 2024
- SUSAN COTTRELL, 14499 Channel Road, Caldwell, Idaho 83607, 559-737-3044
- MARY JO NYBLAD, 14529 River Road, Caldwell, Idaho, site visit
- BOB HANNAH, 22499 Channel Rd Caldwell Id 83607, site visit



Notes: Temporary settling pond(s) will be constructed as necessary outside of the floodway, and delineated wetlands adjacent to the mining area for de-watering purposes. These temporary ponds will be discharged to one of two drainage ditches under IPDES permit.

Nexus Project Number: P0287
Date: 4/4/2024
Canyon County, ID
NAD 1983 UTM Zone 11N

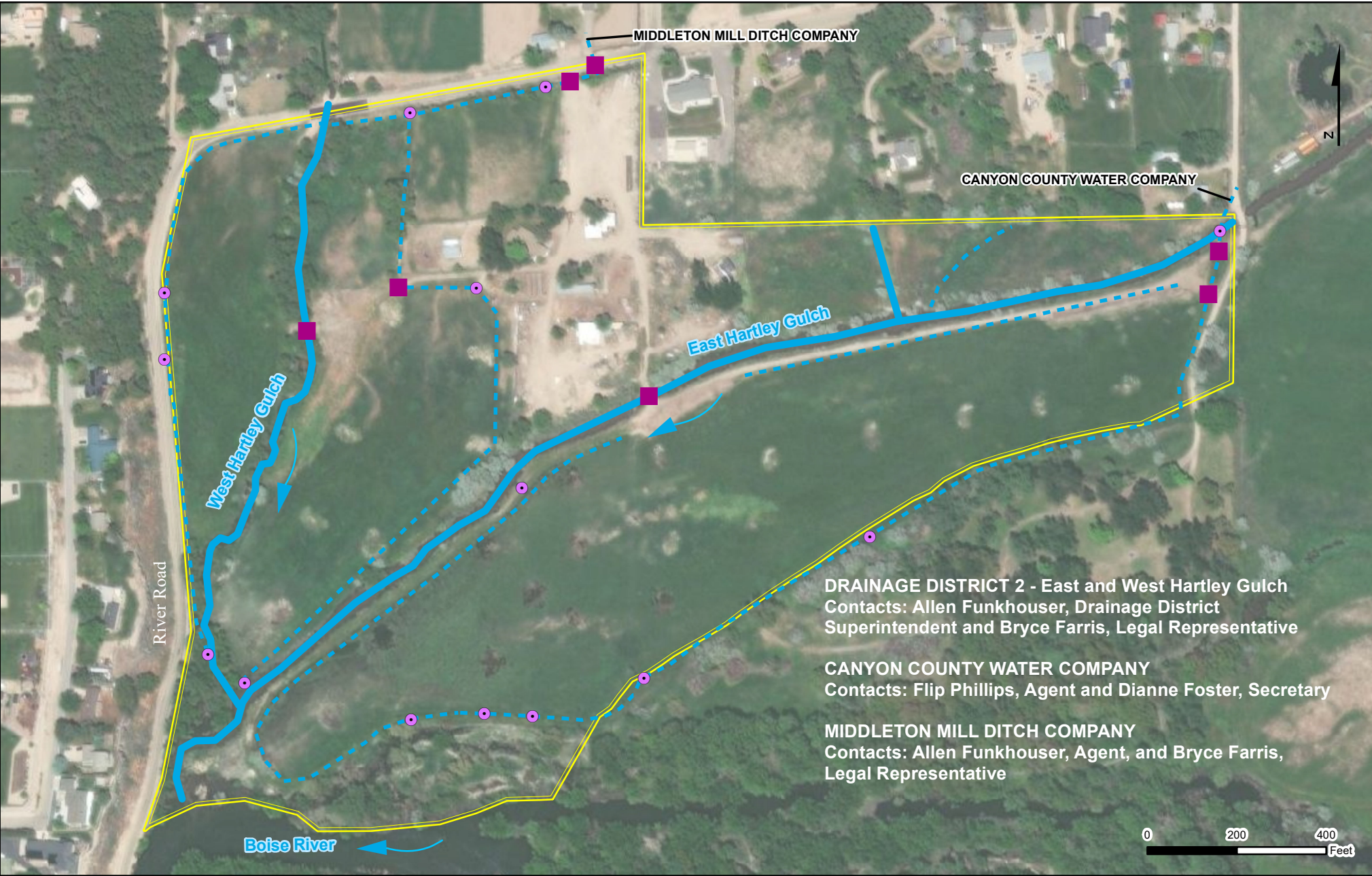


**Premier Aggregates
Phase 1 Pond Development
Canyon County**

Site Plan - Draft

Crimson Bridge Estates 1954

Crimson Bridge Estates 1954



■ Existing Crossing

● Headgate or Diversion

--- Lateral Irrigation Ditch

— Stream or Irrigation Channel

▭ Property Boundary

Crimson Bridge Estates

Piston Aerial Imagery

Nexus Project Number: P0287

Date: 4/3/2024

Canyon County, ID

NAD 1983 UTM Zone 11N

NEXUS

ENVIRONMENTAL CONSULTANTS

05/06/2024

Crimson Bridge Project

Canyon County

Surface Water Resources

Crimson Bridge Estates 1954

Michelle Barron

From: Jeffrey W. Bower <jeffbower@givenspursley.com>
Sent: Thursday, April 18, 2024 9:44 AM
To: Michelle Barron
Cc: Jon Brennan Ag Equity; Jim Herberd Ag Holding; Carl Anderson; 'Derek Kraft'; David Stephens; Michelle Tucker; Kristen McNeill
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]
Attachments: 24-0034-2_Tech_Memo_CrimsonBridge_GW_Impacts.pdf; Crimson Bridge Geotech.pdf
Follow Up Flag: Follow up
Flag Status: Flagged

Hi Michelle:

As mentioned below, please find attached a technical memorandum from Patrick Naylor, P.E., P.G. with Rocky Mountain Environmental concluding that the dewatering the ponds during excavation will not impact area wells that are served from a hydraulically disconnected aquifer. I am also attaching the SITE Consulting's geotech report referenced in Rocky Mountain Environmental's memo.

Due to the file sizes, can you please confirm receipt? Did the link I sent you yesterday work?

Thanks,
Jeff

Jeff Bower
GIVENS PURSLEY LLP
601 W Bannock St, Boise, ID 83702
208-388-1260
jeffbower@givenspursley.com

From: Jeffrey W. Bower
Sent: Wednesday, April 17, 2024 2:46 PM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

Hi Michelle:

We are aware the record is closed for tomorrow's meeting but wanted to provide you with some of the additional materials based on our expectation that this matter will have a second meeting/hearing to address staff and agency comments we received in the staff report last week. I am including a link (<https://file.ac/wmMQEUvyfSg/>) to the following:

1. **Revised comment letter from Caldwell.** We have worked with Caldwell on this and are in full agreement with the requested conditions in the City's letter.
2. **Revised project site plan.** The site plan has been revised to include additional details and mitigation to account for agency comments and to address the findings in the attached wetland delineation and sound study. The site

plan has been revised to avoid all wetland areas identified in the delineation. We have also provided additional berming and specific crushing locations on the site plan to comply with the recommended mitigation in the sound study.

3. **Wetland Delineation Report.** Identifies onsite wetland areas. These will all be avoided based on the site plan.
4. **Noise study.** Concludes that with the recommended mitigation, noise levels generated by the proposal meet the EPA's noise standards.

We also are expecting a ground water study to be finalized today that will send over. The water study drafts we have reviewed indicate the dewatering of the ponds during excavation will not impact any of the surrounding wells.

Can you please confirm receipt of the 4 documents?

Thank you,
Jeff

Jeff Bower
GIVENS PURSLEY LLP
601 W Bannock St, Boise, ID 83702
208-388-1260
jeffbower@givenspursley.com

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Tuesday, April 9, 2024 3:17 PM
To: Jeffrey W. Bower <jeffbower@givenspursley.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

EXTERNAL

Hello All,

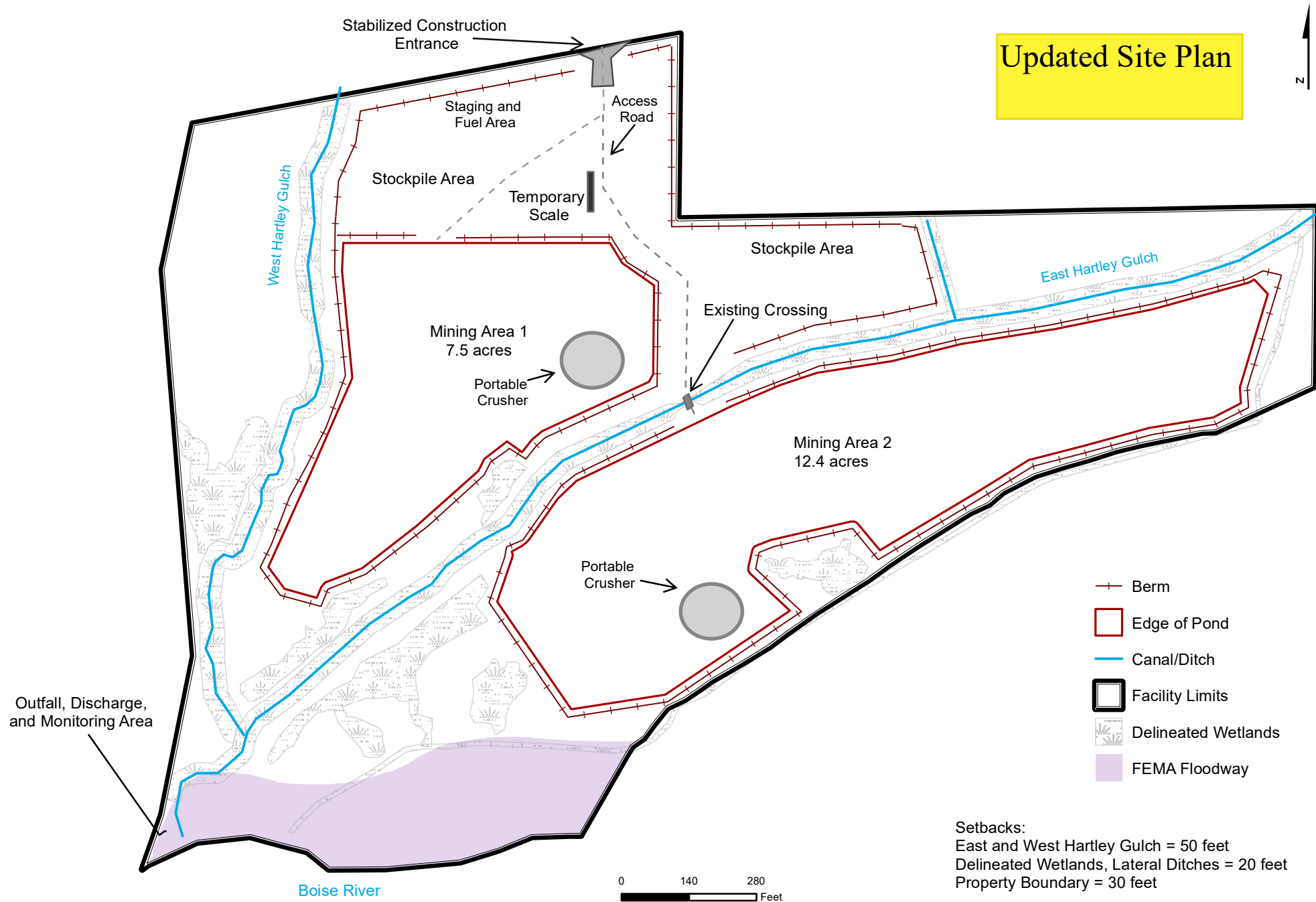
Just wanted to let you know that the Staff Report is out on the Canyon County page. My recommendation is to take testimony and table the hearing to a date certain so that the studies that you have had done, that were not ready by the deadline, can be looked at by the Commission and by the public with a new comment period being extended. I do recommend bringing the studies and additional information to the public hearing. I would also recommend reading it into the record as much as is feasible. Of course, I am not the decision makers, so it would be up to them if they wish to table the hearing or not.

The Staff Report can be found at <https://www.canyoncounty.id.gov/land-hearings/> Then, scroll down to P & Z and find the tab for Ag Equity case on April 18th.

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605

Updated Site Plan



Notes: Temporary settling pond(s) will be constructed as necessary outside of the floodway, and delineated wetlands adjacent to the mining area for de-watering purposes. These temporary ponds will be discharged to one of two drainage ditches under IPDES permit.

Nexus Project Number: P0287
Date: 4/11/2024
Canyon County, ID
NAD 1983 UTM Zone 11N

041624
05/06/2024

Premier Aggregates Gravel Pit
River Road
Canyon County

Site Plan

Crimson Bridge Estates 1954



TECHNICAL MEMORANDUM

To: David Stephens
Precision Excavation &
Construction Inc.

From: Patrick Naylor, P.E., P.G.
Rocky Mtn. Environmental Assoc.

cc: Michelle Tucker, Nexus
Environmental

Date: April 17, 2024

Subject: Preliminary Evaluation of
Impacts, Dewatering of Proposed
Pits, Crimson Bridge Estates

RMEA Project No.: 24-0034

Introduction

Patrick Naylor, P.E., P.G., Principal Hydrogeologist at Rocky Mountain Environmental Associates (RMEA) performed a preliminary evaluation of inspection of the potential impacts associated with dewatering of two aggregate source pits at the proposed Crimson Bridge Estates, located east and south of River Road, in the vicinity of Curtis Park, Caldwell, Idaho (Subject Property), as shown in Figure 1. The intent of this preliminary evaluation was to determine whether groundwater users from wells in the near vicinity of the proposed aggregate pits would be significantly impacted by dewatering of the pits during aggregate excavation.

This preliminary evaluation is intended to identify probable impacts, if any, to users of wells in close proximity to the proposed aggregate pits at the future Crimson Bridge Estates. This evaluation has been prepared to provide the Developer, Precision Excavation and Construction Inc., and its consultants with guidance for determining what may be needed for future characterization and potential mitigation.

Sources of information used in this evaluation have included review of well driller reports (well logs) in the vicinity of the proposed pits as obtained from the Idaho Department of Water Resources (IDWR) online database (<https://idwr.idaho.gov/wells/find-a-well-map/>); draft plan documents prepared for the Developer; a geotechnical report prepared by SITE Consulting LLC, *Geotechnical Recommendations Proposed Crimson Bridge Subdivision 14533 River Road - Caldwell, Idaho*; a report prepared jointly by the Idaho Water Resources Institute and the Idaho Department of Water Resources: *Petrich, C.R., and Urban, S. M., 2004, Characterization of Ground Water Flow in the Lower Boise River Basin*; and site location and boundary information provided by the Developer's consultant, Nexus Environmental Consultants. Preliminary estimates of impacts were prepared using methods presented in *Driscoll, F. G., 1989, Groundwater and Wells: Johnson Filtration Systems, St. Paul, MN*; and *Anderson, K. E., 1993, Ground Water Handbook: National Groundwater Association, Dublin, OH*.

Proposed Project Description

The Developer proposes to excavate two pits on the Subject Property, as shown in Figure 2. The pits would be used as sources of aggregate for construction. The Developer projects that the duration of aggregate extraction would be for approximately 30-36 months. Upon completion of aggregate extraction, the pits would be allowed to fill with groundwater and would be repurposed as visual amenities on the Subject Property, and areas outside the pond footprints would be developed as homesites. As a result of concerns about potential impacts to groundwater users in the vicinity of the Subject Property associated with this proposed development, particularly with regard to temporary dewatering of the pits during aggregate extraction, the Developer has requested RMEA to perform a preliminary evaluation of potential impacts to wells adjacent to the site as a result of pit dewatering.

Site Evaluation

Pit Configurations. Based on the site plan provided by the Developer, RMEA understands that there are two adjacent pits proposed as shown in Figure 2. The proposed West Pit is anticipated to have a footprint of approximately 15.6 acres, and the proposed East Pit is expected to have a footprint of 8 acres. Each pit is expected to have a maximum depth of 35 feet below the water table.

Geotechnical Conditions. The geotechnical evaluation prepared by SITE Consulting indicates that sand, gravel and cobbles are present onsite below a layer of sandy and silty surface soils which was determined to be from about three to six feet deep. Test pits extended to a maximum of about ten feet and did not define conditions below that depth. Groundwater was encountered at depths of three to ten feet in the test pits, with the variability of depth attributed to the different land surface elevations at the locations of the test pits rather than nonuniformity of groundwater elevation.

Subsurface Conditions. Based on information obtained from review of well driller reports (aka well logs) available from IDWR's online database, RMEA identified many wells in the vicinity of the Subject Property. For the purposes of this preliminary evaluation, RMEA confined its review to wells identified by IDWR to be within approximately 1/4 mile (approximately 1320 feet) of the outside footprints of the two pits. RMEA identified 70 wells located within this zone. The estimated locations of these wells are shown in Figure 2. Note that some well locations provided by IDWR represent multiple wells, which may not be at the exact locations shown in Figure 2. Also, locations of wells in Figure 2 are based on well locations shown on IDWR's website, which are not precise but rather approximations. A summary of selected relevant information about these wells, based on well log information, is provided in Table 1, with numbers shown for each well or group of wells in Figure 2 corresponding to numbers shown in Table 1. Well logs are also attached.

It should be noted that well logs are prepared by the drillers who drilled and constructed the wells. Drillers are not trained geologists or engineers and therefore are providing generalized descriptions of subsurface conditions on the basis of their understanding and experience, which

may or may not accurately describe the conditions. Often the driller is focused on the objectives of the well construction, typically meeting the water production needs of the intended well user, and he may not record conditions which are not perceived to be relevant to those needs. Therefore, caution is required in interpretation of well log data. Nonetheless, well logs can provide useful information in understanding subsurface conditions, especially when considered collectively.

The data extracted from the well logs were used to assess information about each well, including the depth of well production (screened or perforated interval or depth below casing bottom); the static water level in each well (as recorded on the well log on the date of completed construction); and the depth of the first significant confining layer below the anticipated maximum depth of pit excavation. The maximum pit depth is assumed to be no greater than 40 feet. Significant confining layers generally consist of either unfractured basalt (or “lava rock”), or clay. A confining layer was considered significant if it is at least four feet thick and is not documented to be fractured. In several instances, the top of the confining layer is less than 40 feet but extends to a depth of at least 44 feet or more, in which case Table 1 indicates the top of the confining layer to be 40 feet because of proposed pit excavation to that depth. The significance of this layer is that it represents a probable hydraulic barrier between the upper water-bearing zone from which water would be pumped for dewatering, and a lower water bearing zone or zones from which wells are producing water.

As shown in Table 1, 24 of the wells indicate static water levels (SWL) above 40 feet, which RMEA considered to be the maximum depth below the ground surface that would be dewatered. However, only one well, Well 1 in Table 1, is open to production from the anticipated zone of dewatering. All of the other wells with static water levels less than 40 feet deep are artesian and, in some instances, flowing artesian. Note that the term “artesian” means that the “static water level” is based on the pressure in the confined aquifer associated with the zone of production in the “open interval”, and does not mean that dewatering down to 40 feet depth would affect the static water level in those artesian wells. Note also that an artesian well may or may not be flowing, but it is confined by an overlying layer that keeps the water-bearing zone pressurized and creates a hydraulic barrier between the pressurized layer and any overlying water-bearing zones.

RMEA also identified a significant hydraulic barrier layer between the zone of dewatering (above 40 feet below ground surface) and the production zone for each well, except for Well 1 Anderson (1993) indicates that, in situations where surface water bodies (streams, lakes, etc.) that are in direct hydraulic connection with the saturated zone of an unconfined aquifer, dewatering generally will not cause aquifer drawdown beyond the edge of the surface water body unless the rate of dewatering exceeds the rate at which surface water can be replenished, or the hydraulic conductivity of the porous medium through which the surface water body interacts with groundwater restricts discharge from the surface to the ground. Based on test pits and well logs, the shallow subsurface is generally coarse-grained and therefore of relatively high permeability. The lower Boise River and associated tributaries (such as East and West Hartley Gulch Creeks) are generally gaining reaches, indicating that groundwater is in direct hydraulic connection with surface water. It is further assumed that the Hill Canal is in hydraulic connection with groundwater when filled.

The proximity of losing reaches of year-round surface water channels on the east, south, and west sides of the proposed dewatered pits indicates that the extent of groundwater drawdown is unlikely to reach beyond these surface water bodies. Thus, drawdown is unlikely to extend beyond these channels in these three directions as a result of dewatering, unless flow in the East and/or West Hartley Gulch creeks declines due to extensive drought conditions of significant duration, or other large-scale groundwater pumping occurs in the immediate area. Therefore, only well 5 is likely to be impacted on these three sides. RMEA understands that this well is proposed for abandonment because it will be within the excavation footprint and therefore will be destroyed.

The radius of drawdown influence in the aquifer north of the proposed pits is unknown. It is likely that most of the flow into the dewatered pits will come from the east, south and north sides because of the year-round surface water seepage from the Boise River and the East and West Hartley Gulch creeks. Some groundwater flow from the north side into the pits is expected, but the radius of influence (distance from the point of discharge to the point of zero aquifer drawdown) is not known.

Determination of the radius of drawdown influence from dewatering under steady-state conditions was used by applying the method presented in Driscoll (1989):

$$Q = (K(H^2 - h^2)/(1055 \log R/r_e))$$

where

K = hydraulic conductivity in gpd/ft²

H = saturated thickness of the aquifer before pumping in ft

h = saturated thickness of the aquifer at the point of maximum drawdown in ft

R = radius of the cone of depression (aka radius of influence) in ft

r_e = effective radius of the dewatered area or well in ft

A typical value of K in sands and gravels is 300 ft/day, which is equivalent to 2,244 gpd/ft². The aquifer saturated thickness H is approximately 35 ft, the thickness of aquifer drawdown in the unconfined gravel aquifer as a result of proposed dewatering. The saturated thickness of the unconfined aquifer at maximum drawdown (h) would occur at a drawdown of 35 ft (~40 ft depth below the ground surface), which is approximately the maximum depth of the proposed gravel pits and therefore the thickness of the unconfined gravel aquifer at the point of dewatering in the bottom of the pits would be approximately 0 ft.

The radius of the cone of depression, R, is unknown on the north side, but it is assumed that the North Canal, at approximately ½ mile (2640 ft) is a reasonable approximation.

The effective radius r_e is estimated by the method of Driscoll when treating the pits as a single, rectangular-shaped excavation with vertical walls and a similar combined surface area as the proposed excavated pits, which in this case was approximated by a rectangle with the long side (a) = 1240 ft roughly parallel to the Boise River, and the short side (b) = 825 ft (a ratio of a/b of

≤ 1.5). The effective radius (r_e) of a “well” centered in this hypothetical rectangular pit is approximated by:

$$r_e = ((ab/\pi))^{0.5}$$

For $a = 1240$ ft and $b = 825$ ft, $r_e = 571$ ft from the center of the hypothetical rectangular pit.

The north side of the proposed pits represents approximately 30 percent of the perimeter. Solving for steady-state flowrate Q using the equation above and multiplying Q by 0.30, the maximum dewatering rate along the north side is estimated to be $Q = 1175$ gpm.

The depth of the water table at any distance (L) within the radius of influence is estimated using the methods of Driscoll (1989) and rearranging to solve for h :

$$h = ((H^2 - ((1055Q \text{ Log } R/L)/K))^{0.5}$$

Other than Well 5 which is expected to be destroyed during construction, no wells are identified within the anticipated radius of influence between the dewatered excavations and the surface water bodies along the east, south, and west sides. Along the north side, at a distance of $L = 1/8$ mile (660 ft), the aquifer thickness h estimated to be 18.2 ft. This estimated aquifer thickness would occur at 660 ft from the center of the theoretical rectangular pit, which would be roughly 250 ft from the north edge of the west pit. The projected drawdown at this distance would be 35 ft – 18.2 ft = 16.8 ft. For the most part, this drawdown would still be on the Subject Property; only Well 3 would be within this range on the north side. For $L = 1000$ ft, approximately 750 ft from the edge of the equivalent rectangle, $h = 31.2$ ft and drawdown = 35 ft – 31.2 ft = 3.8 ft. This probably would include the area of Well 2. Because Wells 2 and 3 are both identified as artesian (see Table 1), it is unlikely that the projected drawdown would have a noticeable effect on water levels in the wells because the drawdown would occur in the shallow unconfined aquifer, and probably would not significantly affect artesian conditions which occur in these wells. Well 1, which is the only well known to be open to the shallow unconfined aquifer, is approximately 1200 ft from the center of the hypothetical well used for estimating drawdown. At $L = 1200$ ft, the estimated aquifer thickness $h = 32.2$ ft, and the estimated drawdown would be 35 ft – 32.2 ft = 2.8 ft. Thus, the projected steady-state drawdown in Well 1 would be less than 3 ft.

These estimates project that steady-state drawdown in the vicinity of all but a few of the wells within $1/2$ mile of the edge of the pits would be minimal in the unconfined water table aquifer. Because all but one of these wells are producing from deeper, confined artesian aquifer zones, little if any drawdown at injurious levels is likely to occur in wells as a result of dewatering of the gravel pits. As noted previously, the exception is Well 1 which is producing from the unconfined water table aquifer, but given that Well 1 is about 900 ft from the northern edge of the west gravel pit, drawdown at that location is unlikely to be significant.

These calculations are based on limited data and include assumptions pertaining to important parameters, including hydraulic conductivity and radius of influence. Additional data would be

required for more definitive estimates of drawdown at the wells identified in Figure 2 and Table 1.

Conclusions

Because all but one of the wells evaluated are producing from hydraulically-separate zones (which appear to be separated from the shallow water table aquifer by a confining layer, and in many cases are artesian) below the depth of maximum projected excavation and dewatering, it appears unlikely that these wells would be significantly affected by dewatering of the unconfined, shallow water-bearing sands and gravels over the anticipated 30 to 36 months of dewatering. This is further supported by the artesian conditions which have an upward hydraulic gradient. It is likely that recharge to these confined zones is not from the Boise River, which is in direct hydraulic connection with the upper water table aquifer that would be dewatered in connection with gravel pit extraction. If recharge to the confined water-bearing zones is from the Boise River, it probably occurs far upstream and therefore would not be affected by dewatering at the Subject Property. The exception to this is Well 1, which extends to only 38 feet and produces from the shallow unconfined aquifer, but calculations suggest that drawdown at Well 1 would not be injurious.

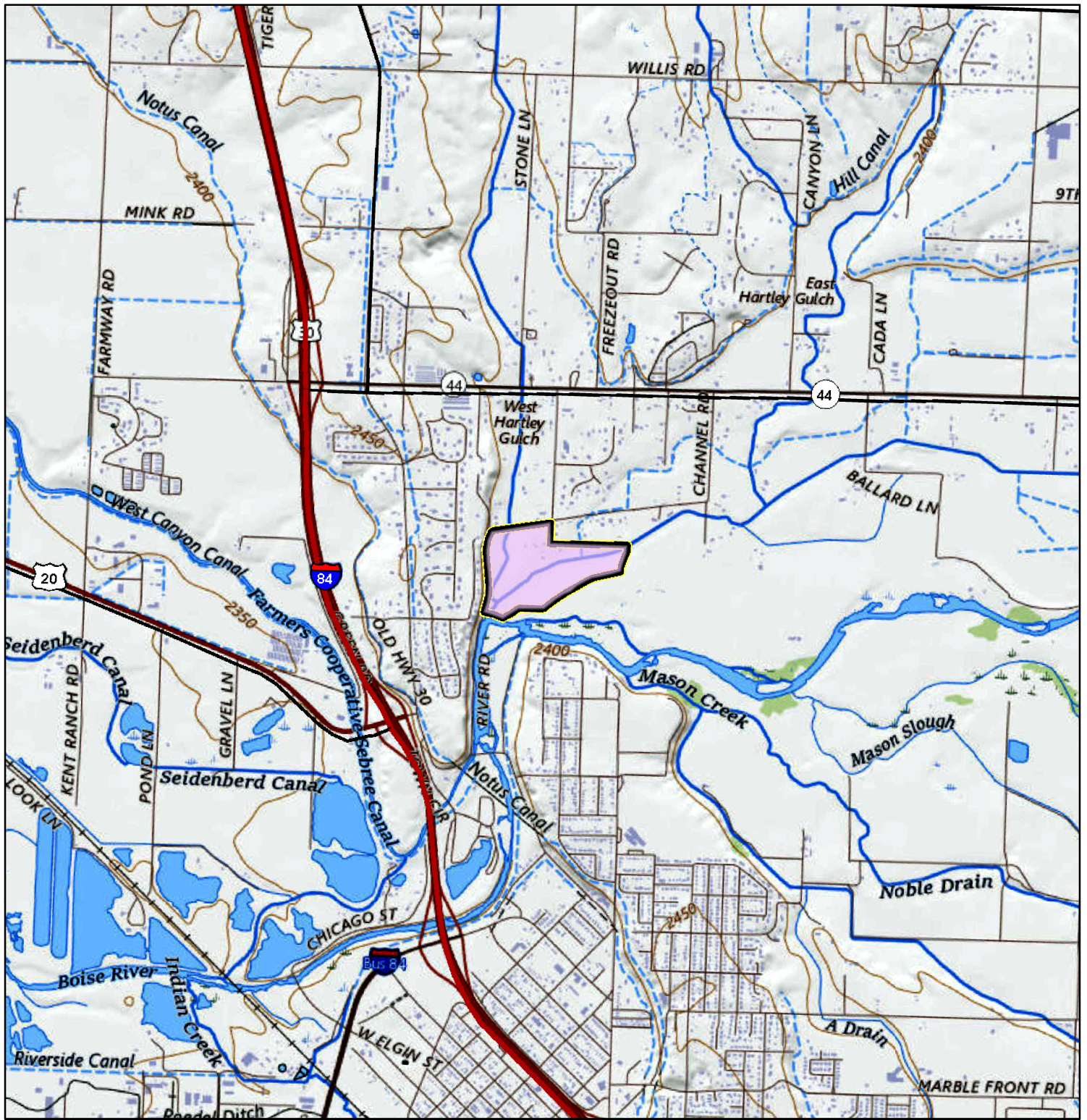
After the aggregate extraction period, the need for dewatering will cease and dewatering for aggregate removal will be discontinued. The excavated areas will gradually fill with water, and eventually (over a period of a few weeks to a few months) the water level in the excavations will equilibrate with the water table. At this point, water levels in the shallow unconfined aquifer be approximately the same as water levels in the excavations, which will become ponds. Any aquifer impacts associated with dewatering of the excavations will return to pre-dewatered conditions. The Owner has indicated that the area around the ponds will be landscaped and will become amenities for a proposed subdivision development.

Limitations

This Preliminary Evaluation has been completed with only limited data from the Subject Property, a limited subsurface investigation of soils beneath the site based on the shallow geotechnical investigation, and general information from well logs and regional reports. Without extensive, expensive, intrusive characterization of hydrogeologic conditions, which was beyond the scope of this assessment, no statement of greater scientific certainty can be made regarding latent subsurface hydrologic conditions on the Subject Property. The findings and conclusions of this report are not scientific certainties; rather, they are probabilities based on professional judgment concerning the significance of the data gathered during the course of this Evaluation and should not be used in whole or in part for anything other than the purposes stated herein.

Table 1
Crimson Bridge Estates
Data from Wells Within 1/2 Mile of Proposed Gravel Pits

Location ID	Owner	Well ID	Casing Depth	Total Depth	Top Open Interval	Bottom Open Interval	SWL	Depth to Top of 4+ ft Thick Confining Layer Below Excavation (Min. 40 ft bgs)	Notes
1	Tim Nielsen	443683	38	38	38	38	15	>38	Open bottom
2	H. Thomas Powell	423403	92	99	94	99	4	40	Artesian
3a	Sean Hackett	844737	106	117	106	111	9	40	Artesian
3b	John E. Walker	347298	142	172	142	142	68	40	Artesian; Open bottom
3c	DougHoyt	381170	98	115	102	112	5	42	Artesian
3d	Sunrise Fine Homes	381256	97	107	97	107	8	45	Artesian
3e	Sunrise Fine Homes	381456	107	118	108	118	7	40	Artesian
3f	Kirshner Homes	380481	182	196	183	193	2	40	Artesian
4	Francis Musty	347295	160	180	160	190	90	40	Basalt/Clay 38-108
5	Pat Wallace	382152	118	140	118	140	+1	40	Flowing Artesian
6	Green Castle Homes	448404	223	223	211	221	82	72	
7	Pioneer Homes Inc.	459355	177	188	177	187	72	40	
8	Bob Harrison	406258	126	132	126	132	4	40	Artesian
9a	Garald "Gary" M Lies	418855	80	90	80	90	+2	40	Flowing Artesian
9b	David Hurley	377150	97	120	97	97	+3	40	Flowing Artesian; Open bottom
9c	Keystone Custom Homes	379024	117.6	128	118	128	6	40	Artesian
9d	LloydDKuck	361669	84	84	84	84	+8	40	Flowing Artesian; Open bottom
9e	Sunrise Fine Homes	376798	144	160	145	155	0	40	Artesian
9f	Sunrise Fine Homes	381157	182	188	183	188	2	40	Artesian
10	Zach Puffe	475008	NA	160	NA	NA	2	NA	
11a	Keith Mertz	347819	138	152	138	148	139	123	
11b	Ed Lambert-Portner	296278	110	118	113	118	3	40	Artesian
11c	Holton Homes	295269	98	105	NA	NA	0	90	Artesian; Open bottom
11d	Gary Tuttle Construction Co	295355	183	184	NA	NA	NA	58	Open bottom
12	Melvin Priest	297855	168	168	157	168	80	142	Artesian
NOT USED									
14a	Sunrise Homes	443129	201	209	204	209	74	88	Artesian
14b	Bruce Field Construction	444401	250	210	205	210	80	40	
15	Tradition Custom Homes	446459	306	313	307	312	79	43	
16	Green Castle Homes	446497	238	238	226	236	84	52	
17	Green Castle Homes	448638	239	239	227	237	84	115	Artesian
18	Green Castle Homes	448588	225	225	213	223	85	69	
19	Aaron Dickson	442201	223	235	225	235	78	80	
20	Waltman Homes	446020	231	237	232	237	78	73	
21	Green Castle Homes	443685	213	213	202	212	75	42	
22a	Dewey Bowman	363434	202	220	170	193	NA	60	
22b	Richard D. Rutledge	363513	150	177	NA	NA	72	101	Artesian; Open bottom
22c	Whitmire Homes	294474	178	200	NA	NA	80	136	Artesian; Open bottom
22d	Bart Gepner	303640	147	155	140	152	70	120	Artesian
23	Waltman Homes	447312	201	209	204	209	80	58	
24	Green Castle Homes	444153	201	255	175	255	80	199	Artesian
25	Green Castle Homes	443643	180	190	180	190	74	44	
26	Green Castle Homes	450868	215	215	203	213	72	64	
27	Pioneer Homes	443709	135	475	135	435	120	40	
28	Green Castle Homes	447736	233	233	221	231	79	80	
29	Green Castle Homes	447705	214	214	202	212	79	48	
30	Hallmark Homes	440815	181	191	181	191	71	45	
31	Green Castle Homes	450964	241	241	229	239	70	65	
32	Woodhaven Properties	443645	251	258	253	258	68	44	
33	Big Pine Construction	448302	285	296	286	291	74	122	Artesian
34	Jack Falcon	440196	178	199	193	198	64	41	
35	Green Castle Homes	443150	189	199	189	199	76	100	Artesian
36	Douglas F. Miller	427599	58	59	NA	NA	NA	40	No Water
37	Douglas F. Miller	427605	153	153	148	153	72	40	
38	Waltman Homes	447006	257	268	257	267	75	77	
39	Green Castle Homes	444994	201	201	189	199	80	42	
40	Green Castle Homes	442378	213	213	202	212	72	40	
41	Pioneer Homes Inc.	447102	227	227	216	226	75	134	Artesian
42	Pioneer Homes Inc.	447671	242	242	230	240	89	215	Artesian
43	Greencastle Homes of Idaho	441142	242	255	49	54	70	58	
44	Greencastle Homes	435103	153	153	147	152	64	65	
45	DaveFarris	302688	180	185	180	186	50	43	
46a	H. R. Berquist	392366	120	125	120	125	26	40	Artesian
46b	Ben Shuey	306280	138	162	138	162	70	40	
46c	Fannie Mae	380900	155	163	156	161	+4	40	Flowing Artesian
46d	Fannie Mae	381475	NA	55				Abandoned	
46e	John L. Jenkins	392198	47	50	47	50	5	40	Artesian
46f	Mill Right Custom Homes	389421	118	135	125	135	7	43	Artesian
46g	O. F. Coons	305452	80	90	80	80	6	40	Artesian; Open bottom
46h	Oral Kraus	347297	184	200	184	200	+5	56	Flowing Artesian
46i	Tim Nielson	301230	152	158	152	157	25	40	Artesian



0 0.25 0.5 0.75 1 Miles

Basemap: Nexus Environmental Consultants


 Study Area

Figure 1: Location of Project Area

Crescent Bridge Estates

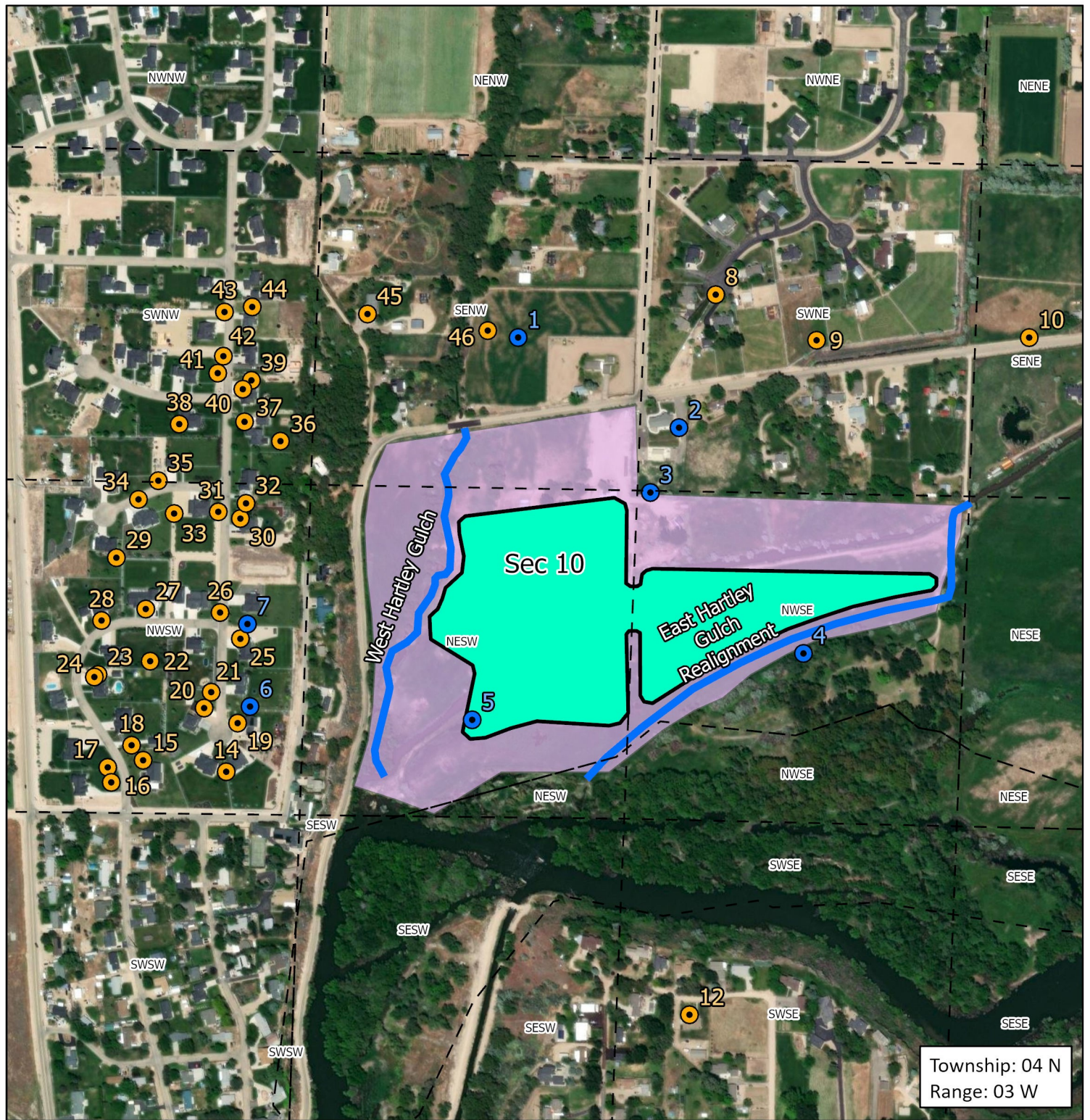


Project #: 24-0034

Drawn by: TK

Date: 3/11/2024





0 300 600 900 1,200
Feet

Maxar

- Wells within a Quarter Mile
- Wells within an Eighth Mile
- Approximate Study Area
- Pond
- Stream/Canal



Figure 2: Wells Surrounding Project Area

Crimson Bridge Estates

Project #: 22-0164

Drawn by: TK

Date: 4/17/2024



Crimson Bridge Estates 1034

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.

[illegible]

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

WELL DRILLER'S REPORT

1. WELL TAG NO. D

DRILLING PERMIT NO.

Water Right or Injection Well No.

2. OWNER:

Name Freddie Smith
Bob Harrison
Address 2673 W. Creek Stone Court
City Meridian State Id Zip 83642

3. LOCATION OF WELL by legal description:

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

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 10 1/4 NW 1/4 NW 1/4
Gov't Lot _____ County Canyon

Lat: _____ Long: _____
Address of Well Site 14453 Silver Creek Rd
City Caldwell
Blk. _____ Sub. Name River Rd Estates

4. USE:

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

5. TYPE OF WORK check all that apply

(Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
<u>Bentonite</u>	<u>0</u>	<u>20</u>	<u>600*</u>	<u>overbore</u>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 126'Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6"</u>	<u>+2</u>	<u>126</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 10' 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
<u>126</u>	<u>132</u>	<u>.020</u>		<u>5"</u>	<u>SS</u>	<input type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

835761

Office Use Only

Well ID No. 406258

Inspected by _____

Twp _____ Rge _____ Sec _____

1/4 1/4 1/4

Lat: _____ Long: _____

12. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>30-40</u>			<u>1 hour</u>

Water Temp. 60° Bottom hole temp. _____Water Quality test or comments: Iron .5 PH 7.5Grains 6 Depth first Water Encounter 85'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>10</u>	<u>0</u>	<u>2</u>	<u>top soil</u>		
<u>"</u>	<u>2</u>	<u>15</u>	<u>Brown clay</u>		
<u>"</u>	<u>15</u>	<u>20</u>	<u>gravel & sand</u>		
<u>6</u>	<u>20</u>	<u>30</u>	<u>gravel & sand</u>		
<u>"</u>	<u>30</u>	<u>35</u>	<u>sand</u>		
<u>"</u>	<u>35</u>	<u>55</u>	<u>hard clay</u>		
<u>"</u>	<u>55</u>	<u>75</u>	<u>sand</u>		
<u>"</u>	<u>75</u>	<u>80</u>	<u>clay</u>		
<u>"</u>	<u>80</u>	<u>85</u>	<u>blue clay</u>		
<u>"</u>	<u>85</u>	<u>88</u>	<u>sand w/ clay</u>	<input checked="" type="checkbox"/>	
<u>"</u>	<u>88</u>	<u>97</u>	<u>blue clay</u>		
<u>"</u>	<u>97</u>	<u>105</u>	<u>brown clay</u>		
<u>"</u>	<u>105</u>	<u>115</u>	<u>sand</u>	<input checked="" type="checkbox"/>	
<u>"</u>	<u>115</u>	<u>121</u>	<u>clay</u>		
<u>"</u>	<u>121</u>	<u>123</u>	<u>sand</u>	<input checked="" type="checkbox"/>	
<u>"</u>	<u>123</u>	<u>128</u>	<u>clay</u>		
<u>"</u>	<u>128</u>	<u>132</u>	<u>sand</u>	<input checked="" type="checkbox"/>	

RECEIVED

SEP 12 2005

WATER RESOURCES
WESTERN REGIONCompleted Depth 132' (Measurable)Date: Started 09.02.05 Completed 09.06.05

14. DRILLER'S CERTIFICATION

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

Company Name Adamson Pump & Drill Firm No. 457Principal Driller Dave Adamson Date 09-07-05and Driller or Operator II Dave Adamson Date 09-07-05

Operator I _____ Date _____

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

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

848959

Office Use Only
Well ID No. 418855
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat: _____ : _____ Long: _____ : _____

1. WELL TAG NO. D 0052253
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Gary lies
Address 14337 Channel Rd.
City Caldwell State Id Zip 83607

3. LOCATION OF WELL by legal description:

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

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 10 SW 1/4 NE 1/4 1/4 1/4
Gov't Lot _____ County Canyon

Lat: _____ : _____ Long: _____ : _____
Address of Well Site 14337 Channel Rd.
City Caldwell

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

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

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

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

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
<u>Permaplug</u>	<u>0</u>	<u>20</u>	<u>500lbs</u>	<u>10" over bore dry pour</u>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 80'

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>10</u>	<u>0</u>	<u>20</u>	<u>250</u>	<u>Steel</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>6</u>	<u>2</u>	<u>80</u>	<u>250</u>	<u>Steel</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 5' Length of Tailpipe 0

Packer ☒ Y ☐ N Type 3-Rib

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____

Screen Type & Method of Installation Johnson / crush Du. Valve.

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>80'</u>	<u>90'</u>	<u>18</u>	<u>6"</u>	<u>Tele S.S.</u>		<input type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

_____ ft. below ground Artesian pressure 4 lb.

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

Well seal well cap

Flowing 5.8 gpm

12. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>100</u>			<u>1 hr.</u>

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: Good clear color

no smell Depth first Water Encounter 6'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
	<u>10</u>	<u>0</u>	<u>Top Soil</u>		<input checked="" type="checkbox"/>
	<u>10</u>	<u>4</u>	<u>Sand</u>	<input checked="" type="checkbox"/>	
	<u>10</u>	<u>6</u>	<u>Sand</u>	<input checked="" type="checkbox"/>	
	<u>10</u>	<u>66</u>	<u>Sand & gravel</u>	<input checked="" type="checkbox"/>	
	<u>6</u>	<u>28</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>35</u>	<u>44</u>	<u>Sand & clay</u>	<input checked="" type="checkbox"/>	
	<u>44</u>	<u>51</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>51</u>	<u>54</u>	<u>Sand</u>	<input checked="" type="checkbox"/>	
	<u>54</u>	<u>67</u>	<u>Brn clay & Sand (Fract)</u>	<input checked="" type="checkbox"/>	
	<u>67</u>	<u>69</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>69</u>	<u>74</u>	<u>Sand</u>	<input checked="" type="checkbox"/>	
	<u>74</u>	<u>80</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>80</u>	<u>90</u>	<u>Fine med Sand</u>	<input checked="" type="checkbox"/>	

RECEIVED

DEC 28 2007

WATER RESOURCES
WESTERN REGION

Completed Depth 90ft. (Measurable)

Date: Started 9/7/07 Completed 9/9/07

14. DRILLER'S CERTIFICATION

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

Company Name Precision Well Drilling Firm No. 522

Principal Driller Jeff Hanson Date 9/10/07

and Driller or Operator II _____ Date _____

Operator I _____ Date _____

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

05/06/2024

FORWARD WHITE COPY TO WATER RESOURCES

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

853675

1. WELL TAG NO. D 0053224

Drilling Permit No. _____

Water right or injection well # _____

2. OWNER: Thomas Powell

Name (Same)

Address 14499 Channel Rd.

City Caldwell State Id. Zip 83607

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒

Sec. 10 SW 1/4 SW 1/4 NE 1/4

Gov't Lot _____ County Curry

Lat. 43 0 41.976 (Deg. and Decimal minutes)

Long. 116 0 40.955 (Deg. and Decimal minutes)

Address of Well Site 14499 Channel Rd.

City Caldwell

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

Lot. _____ Blk. _____ Sub. Name _____

4. USE:

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

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
<u>Hole plug</u>	<u>0</u>	<u>18</u>	<u>450/lbs.</u>	<u>10" overbore</u>
<u>Benlate</u>				<u>pipe/retract 10"</u>
				<u>p.p.c</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
<u>6</u>	<u>12</u>	<u>92</u>	<u>2.50</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 92ft

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____

Manufactured screen ☒ Y ☐ N Type Johnson

Method of installation Wash Dr. Valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>94</u>	<u>99</u>	<u>20</u>	<u>6"</u>	<u>7/8"</u>	<u>S.S.</u>	

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

Packer ☒ Y ☐ N Type 7-Rib

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 22' Static water level (ft) 4ft

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

Describe access port Sani Seal Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
	<u>1.50</u>	

Test method:

Pump ☐ Bailer ☐ Air ☒ Flowing artesian ☐

Water quality test or comments: good Clear Color

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>10</u>	<u>0</u>	<u>5</u>	<u>Top Soil</u>		<input checked="" type="checkbox"/>
<u>10</u>	<u>5</u>	<u>13</u>	<u>Clay</u>		<input checked="" type="checkbox"/>
<u>10-6</u>	<u>13</u>	<u>22</u>	<u>Clay mixed with gravel</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>22</u>	<u>28</u>	<u>Gravel</u>	<input checked="" type="checkbox"/>	
	<u>28</u>	<u>35</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>35</u>	<u>60</u>	<u>Fine Silty Brn Sand</u>	<input checked="" type="checkbox"/>	
	<u>60</u>	<u>72</u>	<u>Hrd Brn clay</u>		<input checked="" type="checkbox"/>
	<u>72</u>	<u>83</u>	<u>Blue Clay</u>		<input checked="" type="checkbox"/>
	<u>83</u>	<u>92</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>92</u>	<u>99</u>	<u>Med/white Sand</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

RECEIVED

NOV 28 2008

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 99ft.

Date Started: 10/1/08 Date Completed: 10/2/08

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Well Drilling Co. No. 522

*Principal Driller Jeff Dawson Date 10/9/08

*Driller _____ Date _____

*Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

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.

1. WELL OWNER

Name Francis Musty
Address P.O.Box 212 Parma, Idaho.
Owner's Permit No. _____

7. WATER LEVEL

Static water level 90 feet below land surface
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Temperature _____ ° F. Quality GOOD
Artesian closed-in pressure _____ p.s.i.
Controlled by ☐ Valve ☐ Cap ☐ Plug

2. NATURE OF WORK

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

8. WELL TEST DATA

☐ Pump ☒ Bailor ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
<u>7</u>	<u>15</u>	<u>1</u>

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test
☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 180 feet
Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
<u>.250</u> inches	<u>6</u> inches	<u>+1</u> feet	<u>160</u> feet

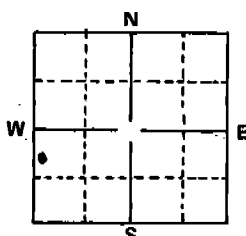
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

Number	From	To

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 _____ feetGravel packed? ☐ Yes ☒ No Size of gravel _____
Placed from _____ feet to _____ feetSurface seal? ☒ Yes ☐ No To what depth 70 feet
Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.

County CANYON
NW 1/4 SW 1/4 Sec. 10, T. 4, N. R. 3
Plotted by _____ Date _____

10.

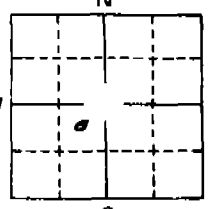
Work started DEC. 15-69 finished DEC. 28-69

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is
true to the best of my knowledge.METZER WELL DRILLING 93
Driller's or Firm's Name NumberHOMEDALE IDAHO
AddressKenneth D. Metzger JAN. 10-70
Signed By Date
Crimson Bridge Estates 1964

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 <u>Rat Wallace</u> Address <u>Channel Rd. Caldwell, Idaho</u> Owner's Permit No. _____		7. WATER LEVEL Static water level _____ feet below land surface. Flowing? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No G.P.M. flow <u>5</u> Artesian closed-in pressure <u>2</u> p.s.i. Controlled by: <input checked="" type="checkbox"/> Valve <input checked="" type="checkbox"/> Cap <input type="checkbox"/> Plug Temperature ____ °F. Quality _____ <i>Describe artesian or temperature zones below.</i>	
2. NATURE OF WORK <input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement <input type="checkbox"/> Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)		8. WELL TEST DATA <input type="checkbox"/> Pump <input type="checkbox"/> Bailer <input checked="" type="checkbox"/> Air <input type="checkbox"/> Other _____	
3. PROPOSED USE <input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Test <input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input type="checkbox"/> Waste Disposal or Injection <input type="checkbox"/> Other _____ (specify type) _____		Discharge G.P.M. Pumping Level Hours Pumped <u>100</u> <u>100'</u> <u>1</u>	
4. METHOD DRILLED <input checked="" type="checkbox"/> Rotary <input checked="" type="checkbox"/> Air <input type="checkbox"/> Hydraulic <input type="checkbox"/> Reverse rotary <input type="checkbox"/> Cable <input type="checkbox"/> Dug <input type="checkbox"/> Other _____		9. LITHOLOGIC LOG 86609	
5. WELL CONSTRUCTION Casing schedule: <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____ Thickness Diameter From To <u>.250</u> inches <u>6</u> inches + <u>2.5</u> feet <u>118</u> feet _____ inches _____ inches _____ feet _____ feet _____ inches _____ inches _____ feet _____ feet _____ inches _____ inches _____ feet _____ feet Was casing drive shoe used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Was a packer or seal used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Perforated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No How perforated? <input type="checkbox"/> Factory <input type="checkbox"/> Knife <input type="checkbox"/> Torch Size of perforation _____ inches by _____ inches Number From To _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet Well screen installed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>20'</u> Material used in seal: <input type="checkbox"/> Cement grout <input checked="" type="checkbox"/> Bentonite <input checked="" type="checkbox"/> Puddling clay <input type="checkbox"/> _____ Sealing procedure used: <input type="checkbox"/> Slurry pit <input type="checkbox"/> Temp. surface casing <input checked="" type="checkbox"/> Overbore to seal depth Method of joining casing: <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Solvent Weld <input type="checkbox"/> Cemented between strata Describe access port _____		Bore Diam. Depth From To Material Water Yes No <u>8</u> <u>0</u> <u>10'</u> Sand & Clay x <u>8</u> <u>10'</u> <u>20'</u> Sand & Gravel x <u>6</u> <u>20'</u> <u>30'</u> Sand & Gravel x <u>6</u> <u>30'</u> <u>90'</u> Sand & Clay layers x <u>6</u> <u>90'</u> <u>116'</u> Sand x <u>6</u> <u>116'</u> <u>120'</u> Clay x <u>6</u> <u>120'</u> <u>140'</u> Sand x	
6. LOCATION OF WELL Sketch map location must agree with written location.  Subdivision Name _____ Lot No. _____ Block No. _____ County <u>Canyon</u> <u>NE ¼ SW ¼ Sec. 10 T. 40 S. R. 3 E/W</u>		10. Work started <u>11-21-85</u> finished <u>11-22-86</u>	
		11. DRILLERS CERTIFICATION <u>DJ</u> I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Bill Doty Drilling & Pump Co.</u> Firm No. <u>42</u> Address <u>Route 7 Box 311</u> Date <u>3-13-86</u> Signed by (Firm Official) <u>[Signature]</u> and (Operator) <u>Boo Doty</u>	

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT1. WELL TAG NO. D 0070387Drilling Permit No. 971324-877381

Water right or injection well # _____

2. OWNER: Surprise Homes

Name _____

Address P.O. Box 414City Star State ID. Zip 83669

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒Sec. 10 1/4 NW 1/4 SW 1/4Gov't Lot _____ County CanyonLat. 43 ° 41:74.3 (Deg. and Decimal minutes)Long. 116 ° 41:35.3 (Deg. and Decimal minutes)Address of Well Site 22304 Big Horn WayCity CaldwellLot. 16 Blk. 3 Sub. Name Taylor Ridge

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

4. USE:

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

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method/procedure
<u>3/8 Best</u>	<u>0</u>	<u>48</u>	<u>20 Bags</u>	<u>Dry Pour</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner	Threaded	Welded
<u>6</u>	<u>42</u>	<u>201-8"</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 201-8"

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☐ N Method _____Manufactured screen ☒ Y ☐ N Type JohnsonMethod of installation Wash DN. Valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>204</u>	<u>209</u>	<u>12</u>	<u>6"</u>	<u>7/8"</u>	<u>S.S.</u>	

Length of Headpipe 5'-8" Length of Tailpipe 0Packer ☒ Y ☐ N Type 3-Rib

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) 182 Static water level (ft) 74Water temp. (°F) 62 Bottom hole temp. (°F) _____Describe access port Sani Seal Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
<u>180</u>	<u>80</u>	<u>3 hrs.</u>
<u>120</u>	<u>70</u>	<u>1 hr.</u>

Test method:

Pump ☐ Bailor ☐ Air ☒ Flowing artesian ☐

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>10</u>	<u>0</u>	<u>5</u>	<u>Top Soil</u>		<input checked="" type="checkbox"/>
<u>1</u>	<u>5</u>	<u>7</u>	<u>Coarse gravel</u>		<input checked="" type="checkbox"/>
<u>1</u>	<u>7</u>	<u>51</u>	<u>Blk solid lava</u>		<input checked="" type="checkbox"/>
<u>16</u>	<u>51</u>	<u>70</u>	<u>gravel</u>		<input checked="" type="checkbox"/>
	<u>70</u>	<u>74</u>	<u>Red cinders</u>		<input checked="" type="checkbox"/>
	<u>74</u>	<u>88</u>	<u>Fine Brn Sand</u>		<input checked="" type="checkbox"/>
	<u>88</u>	<u>97</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>97</u>	<u>125</u>	<u>Brn clay & Sand</u>		<input checked="" type="checkbox"/>
	<u>125</u>	<u>129</u>	<u>Fine Brn Sand</u>		<input checked="" type="checkbox"/>
	<u>129</u>	<u>133</u>	<u>Sticky Brn clay</u>		<input checked="" type="checkbox"/>
	<u>133</u>	<u>137</u>	<u>Fine Brn Sand</u>		<input checked="" type="checkbox"/>
	<u>137</u>	<u>158</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>158</u>	<u>162</u>	<u>Fractured Brn & Blue clay</u>		<input checked="" type="checkbox"/>
			<u>& Fine Sand</u>		<input checked="" type="checkbox"/>
	<u>162</u>	<u>174</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>174</u>	<u>182</u>	<u>Fractured Brn clay</u>		<input checked="" type="checkbox"/>
	<u>182</u>	<u>185</u>	<u>Fine Brn Sand</u>		<input checked="" type="checkbox"/>
	<u>185</u>	<u>187</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
	<u>187</u>	<u>190</u>	<u>Fine Sand</u>		<input checked="" type="checkbox"/>
	<u>190</u>	<u>192</u>	<u>Sandy Brn clay</u>		<input checked="" type="checkbox"/>
	<u>192</u>	<u>199</u>	<u>Fine Brn Sand</u>		<input checked="" type="checkbox"/>
	<u>199</u>	<u>202</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>202</u>	<u>209</u>	<u>Fine Sand (white)</u>		<input checked="" type="checkbox"/>

RECEIVED

NOV 25 2015

WATER RESOURCES
WESTERN REGIONCompleted Depth (Measurable): 209.4Date Started: 11/13/15 Date Completed: 11/18/15

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Well Drilling Co. No. 522*Principal Driller Jeff Ransom Date 11/21/15*Driller Jeff Ransom Date 11/21/15

*Operator I _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

RECEIVED

SEP 22 2015

WATER RESOURCES
WESTERN REGION

1. WELL TAG NO. D 0070166
Drilling Permit No. 4770358-876415
Water right or injection well # _____

2. OWNER: Aaron Dickson
Name _____
Address P.O. Box 732
City Marsing State Id. Zip 83639

3. WELL LOCATION:
Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 10 1/4 NW 1/4 SW 1/4

Gov't Lot _____ County Canyon
Lat. 43 ° 41:745 (Deg. and Decimal minutes)
Long. 116 ° 41:345 (Deg. and Decimal minutes)
Address of Well Site 22320 Big Horn way City Caldwell
(Give at least name of road - Distance to Road or Landmark)
Lot. 15 Blk. 3 Sub. Name Taylor Ridge

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
38 bent 0 61 29 bags Dry Pour

8. CASING/LINER:
Diameter (nominal) From (ft) To (ft) Gauge/Schedule Material Casing Liner Threaded Welded
6 42 223 250 Steel ☒ ☐ ☐ ☒

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 223

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☐ N Method _____

Manufactured screen ☒ Y ☐ N Type Johnson
Method of installation Wash DN- Valve

From (ft) To (ft) Slot size Number/ft Diameter (nominal) Material Gauge or Schedule
225 235 15 6" Tele S.S.

Length of Headpipe 5'-8" Length of Tailpipe @
Packer ☒ Y ☐ N Type 3-Rib

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) 162 Static water level (ft) 78
Water temp. (°F) 60 Bottom hole temp. (°F) _____
Describe access port Sani-Seal well cap

Well test: Test method:
Drawdown (feet) Discharge or yield (gpm) Test duration (minutes) Pump Bailer Air Flowing artesian
225 120 1hr. ☐ ☐ ☒ ☐
180 110 3hrs.

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10	0	8	TOP SOIL		
1	8	40	Solid Lava		
1	40	59	Fractured Lava		
6	59	61	Blue/Brn clay		
	61	70	gravel		
	70	71	Sand & brn clay		
	71	80	Fine Brn Sand		
	80	88	Sandy clay		
	88	93	med Brn Sand/clay		
	93	95	Fine Brn Sand		
	95	96	Brn clay		
	96	102	Fine Brn Sand		
	102	108	Brn clay		
	108	124	Fine Sandy clay		
	124	127	Brn clay		
	127	145	Sandy clay		
	145	150	Blue & Brn clay mixed		
	150	160	med Brn Sand 10gpm		
	160	170	Fractured Sand & clay		
	170	172	Brn clay		
	172	184	Sandy clay		
	184	188	Dark Brn clay		
	188	191	Fine Brn Sand		
	191	194	Brn clay		
	194	212	Sandy clay		
	212	215	Brn clay		
	215	220	Fine Brn Sand		
	220	223	Brn clay		
	223	225	Fine/red Sand (white)		

Completed Depth (Measurable): 235 ft.
Date Started: 8/18/15 Date Completed: 8/26/15

14. DRILLER'S CERTIFICATION:

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

Company Name Precision well drilling Co. No. 522
*Principal Driller Jeff P. Johnson Date 8/29/15
*Driller Jim Carson Date _____
*Operator II _____ Date _____
Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT1. WELL TAG NO. D 0073048Drilling Permit No. 974364-880421

Water right or injection well # _____

2. OWNER: Wattman Homes

Name _____

Address 14233 Silver Ridge Rd.City Caldwell State Id. Zip 83607

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒Sec. 10 1/4 NW 1/4 SW 1/4Gov't Lot _____ County CanyonLat. 43 ° 41:787 (Deg. and Decimal minutes)Long. 116 ° 41:372 (Deg. and Decimal minutes)Address of Well Site 22327 Big Horn WayCity Caldwell

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

Lot 33 Blk. 2 Sub. Name Taylor Ridge

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 bent 0 5H 5.3 bags Dry Pour

8. CASING/LINER:

Diameter (nominal) _____ From (ft) _____ To (ft) _____ Gauge/Schedule _____ Material _____ Casing Liner Threaded Welded

6 12 231-4" 250 Steel ☒ ☐ ☐ ☒☐ ☐ ☐ ☐☐ ☐ ☐ ☐☐ ☐ ☐ ☐☐ ☐ ☐ ☐Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 231-4"

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☐ N Method _____Manufactured screen ☒ Y ☐ N Type JohnsonMethod of installation Wash DN - Valve

From (ft) _____ To (ft) _____ Slot size _____ Number/ft _____ Diameter (nominal) _____ Material _____ Gauge or Schedule _____

832237 12 6" Tele SS.☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐Length of Headpipe 5'-8" Length of Tailpipe 0Packer ☒ Y ☐ N Type 3-Rib

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) 152 Static water level (ft) 78Water temp. (°F) 62 Bottom hole temp. (°F) _____Describe access port SNAP Seal Well Cap

Well test: _____ Test method: _____

Drawdown (feet) _____ Discharge or yield (gpm) _____ Test duration (minutes) _____ Pump ☐ Bailor ☐ Air ☒ Flowing artesian ☐220 180 1hr.160 100 1hr.

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in) _____ From (ft) _____ To (ft) _____ Remarks, lithology or description of repairs or abandonment, water temp. _____ Water Y N

12 0 4 Top Soil _____4 8 Hrd pan clay _____8 14 Sandy clay _____14 21 Cemented gravel _____10 21 43 Blk lava / some gravel _____43 45 Brn clay _____16 45 73 Cemented gravel _____73 90 Sandy clay _____90 93 Brn clay _____93 138 Fractured clay & sand _____138 141 Fractured Blue & Brn _____141 148 clay w/ fine blk sand _____148 151 Brn clay _____151 158 Fractured Blue clay _____& fine sand strips _____158 161 Fractured Brn clay _____161 173 med. sand & frnt clay _____173 175 Brn clay _____175 182 med Brn sand _____182 185 Brn clay _____185 194 Brn clay & sand _____194 197 Brn clay _____197 200 med Brn sand _____200 203 Brn clay _____203 213 coarse Brn sand silty _____213 215 Brn clay _____215 217 coarse silty sand _____217 219 Brn clay _____219 229 coarse Brn sand silty _____229 231 Brn clay _____231 237 med/fine sand (c&st) _____☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐

63

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D D0071646

Drilling Permit No. 971804-877921
Water right or injection well # _____

2. OWNER:

Name Greencastle Homes
Address P.O. Box 213
City Star State Idaho Zip 83669

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 10 1/4 NW 1/4 SW 1/4

Gov't Lot _____ County Canyon
Lat. 43 ° 41.829'N (Deg. and Decimal minutes)
Long. 116 ° 41.346'W (Deg. and Decimal minutes)
Address of Well Site 22383 Big Loon Way

City Caldwell
Lot 13 Blk. 3 Sub. Name Taylor Ridge 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 ft)	Placement method/procedure
3/8" Bentonite	0	40	1000 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6"	2	178	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	175	180	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 178'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____

Manufactured screen ☒ Y ☐ N Type Johnson

Method of installation _____

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
180	190	.015	10'	5"	Stainless	304

Length of Headpipe 5' Length of Tailpipe 7"

Packer ☒ Y ☐ N Type Rubber K-Packer

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft)	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) 73'

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)
150'	50+ GPM	1 HR.

Test method:

Pump	Bailer	Air	Flowing artesian
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (In)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10"	0	3	Top Soil		X
	3	8	Brown Clay		X
	8	15	Clay w/Gravel		X
	15	39	Lava Rock		X
6"	39	44	Gravel		X
	44	51	Brown Clay		X
	51	63	Gravel		X
	63	76	Brown Clay		X
	76	81	Sand	X	
	81	146	Sandy Clay w/ Sand	X	
	146	175	Brown Clay		X
	175	178	Sandy Clay		X
	178	190	Sand	X	

RECEIVED

FEB 24 2016

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 190'
Date Started: Feb 15, 2016 Date Completed: Feb 18, 2016

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 Feb 19, 2016

*Driller _____ Date _____

*Operator II [Signature] Date Feb 19, 2016

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

1. WELL TAG NO. D D0086811

2. OWNER:

3.WELL LOCATION:

5. TYPE OF WORK:

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
3/8" Bentonite	0	40	1000 lbs.	10" Overbore
3/8" Bentonite	167	174	250 lbs.	12" Under Reamed

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
6"	2	176	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	165	177	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 176'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____

Manufactured screen ☒ Y ☐ N Type Johnson

Method of installation **Washdown**

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
177	187	.016	10'	5"	Stainless	304

Length of Headpipe 12' Length of Tailpipe 7"

Packer ☒ Y ☐ N Type Rubber K-Packer

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) -----

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) _____ Static water level (ft) 72'

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)
120'	60 GPM	1 HR.

Test method:

Pump	Bailer	Air	Flowing artesian
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments:

13. LITHOLOGIC LOG and/or repairs or abandonment:

[illegible]

Completed Depth (Measurable): 188'

Date Started: Jun 26, 2020 Date Completed: Jun 30, 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 **Dennis Phipps Well Drilling In** Co. No. **332**

*Principal Driller Mark H Date Jul 2, 2020

*Driller _____ Date _____

*Operator II [Signature] Date Jul 2, 2020

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D D0077561

Drilling Permit No. 885619
Water right or injection well # _____

2. OWNER:

Name Greencastle Homes
Address P.O. Box 213
City Star State Idaho Zip 83669

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 10 1/4 NW 1/4 SW 1/4Gov't Lot _____ County Canyon
Lat. 43 ° 41.844'N (Deg. and Decimal minutes)
Long. 116 ° 41.365'W (Deg. and Decimal minutes)
Address of Well Site 22397 Rams Horn WayCity Caldwell
(Give at least name of road + Distance to Road or Landmark)
Lot. 18 Blk. 2 Sub. Name Taylor Ridge 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 ft ³)	Placement method/procedure
3/8" Bentonite	0	40	1000 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6"	2	202	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	197	203	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	213	215	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 202'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____
Manufactured screen ☒ Y ☐ N Type Johnson
Method of installation Pullback

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
203	213	.015	10'	5"	Stainless	304

Length of Headpipe 5.8 Length of Tailpipe 2'Packer ☒ Y ☐ N Type Rubber K-Packer

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

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

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) _____ Static water level (ft) 72'
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)
150'	60 GPM	1 HR.

Test method:

Pump	Bailer	Air	Flowing artesian
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10"	0	2	Top Soil		X
	2	10	Sandy Clay		X
	10	40	Lava Rock		X
6"	40	64	Gravel		X
	64	118	Sandy Tan Clay		X
	118	161	Tan Clay w/ Sand Streaks	X	
	161	180	Tan Clay		X
	180	188	Tan Sandy Clay		X
	188	214	Medium Coarse Sand	X	
	214	215	Brown Clay		X

RECEIVED

MAY 18 2018

WATER RESOURCES
WESTERN REGIONCompleted Depth (Measurable): 215'Date Started: Apr 25, 2018 Date Completed: Feb 27, 2018

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 Apr 30, 2018

*Driller _____ Date _____

*Operator II [Signature] Date Apr 30, 2018

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

63

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0071729

Drilling Permit No. ~~0071729~~ 971844-877923

Water right or injection well #

2. OWNER: Woodhaver Properties

Name

Address 3784 N. Fairlight Place

City Boise State ID Zip 83713

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒

Sec. 10 1/4 NW 1/4 SW 1/4

Gov't Lot County Canyon

Lat. 43° 41' 9" (Deg. and Decimal minutes)

Long. 116° 41' 38" (Deg. and Decimal minutes)

Address of Well Site 22506 Big Horn Way

City Caldwell

Lot. 8 Blk. 3 Sub. Name Taylor Ridge

4. USE:

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

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method/procedure
3/8 bent	0	41	28 bags	Dry Pack

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6	251	250		Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 251'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☐ N MethodManufactured screen ☒ Y ☐ N Type Johnson

Method of installation Wash DN- Valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
253	258	1/2"	6"	6"	Tele S.S.	

Length of Headpipe 5'-8" Length of Tailpipe 0

Packer ☒ Y ☐ N Type 3-Rib

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG)

Describe control device

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 175 Static water level (ft) 68'

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

Describe access port San-Seal Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
750	100	2415.
700	90	1 hr.

Test method:

Pump	Bailer	Air	Flowing artesian
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments:

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
12	0	4	Top Soil		
	4	16	Hard Pan & gravel		
	16	37	Blk. Lamin. (Solid)		
	37	40	Sticky Brn Clay		
6	40	44	Cemented gravel		
	44	48	Brn Clay		
	48	68	Brn Clay & gravel		
	68	74	Sticky Brn Clay		
	74	84	Fine Brn Sand		
	84	97	Sandy clay		
	97	100	Brn Clay		
	100	106	Med Sand		
	106	123	Brn Clay		
	123	134	Med Sand		
	134	137	Brn Clay		
	137	180	Blue clay		
	180	182	Brn clay		
	182	190	Fine/med Sandy clay		
	190	201	Brn clay		
	201	220	Fractured clay & sand		
	220	241	Heavy Brn Sand		
	241	245	Brn Clay		
	245	251	Fine Brn Sand		
	251	253	Brn clay		
	253	258	Fine white sand		

RECEIVED

MAR 08 2016

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 258 ft.

Date Started: 2-16-16 Date Completed: 2-21-16

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Wellbore Co. No. 532

*Principal Driller [Signature] Date 2-24-16

*Driller [Signature] Date 2-24-16

*Operator [Signature] Date

Operator [Signature] Date

* Signature of Principal Driller and rig operator are required.

Crimson Bridge Estates^{38 of 316}

Crimson Bridge Estates 29 of 34

Crimson Bridge Estates 40 of 16

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D D0070184

Drilling Permit No. 970542-876599
Water right or injection well # _____

2. OWNER:

Name Greencastle Homes
Address P.O. Box 213
City Star State Idaho Zip 83669

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 10 1/4 SW 1/4 NW 1/4Gov't Lot _____ County Canyon
Lat. 43 41.997'N (Deg. and Decimal minutes)
Long. 116 41.344'W (Deg. and Decimal minutes)
Address of Well Site 22598 Big Loon WayCity Caldwell
Lot 5 Blk. 3 Sub. Name Taylor Ridge 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 ft ³)	Placement method/procedure
3/8" Bentonite	0	41	1100 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6"	2	199	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	197	202	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	212	213	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 199'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____Manufactured screen ☒ Y ☐ N Type JohnsonMethod of installation Washdown

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
202	212	.015	10'	5"	Stainless	304

Length of Headpipe 5' Length of Tailpipe 1'Packer ☒ Y ☐ N Type Rubber K-Packer

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) _____ Static water level (ft) 72'Water temp. (°F) Cold Bottom hole temp. (°F) _____

Describe access port _____

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
180'	80+ GPM	1 HR.

Test method:

Pump	Bailer	Air	Flowing artesian
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10"	0	2	Top Soil		X
	2	22	Sandy Clay		X
	22	24	Fractured Rock		X
	24	41	Lava Rock		X
6"	41	55	Sand w/ Clay		X
	55	69	Gravel		X
	69	80	Sand w/ Clay		X
	80	88	Sand	X	
	88	110	Tan Clay		X
	110	115	Sand	X	
	115	160	Sandy Clay		X
	160	165	Fine Sand	X	
	165	195	Sand w/ Clay	X	
	195	201	Clay		X
	201	213	Medium Coarse Sand	X	

Completed Depth (Measurable): 213'Date Started: Sep 4, 2015Date Completed: Sep 10, 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 Dennis Phipps Well Drilling In Co. No. 332*Principal Driller [Signature] Date Sep 11, 2015

*Driller _____ Date _____

*Operator II [Signature] Date Sep 11, 2015Operator I [Signature] Date Sep 11, 2015

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D D0070184

Drilling Permit No. 170542-876599
Water right or injection well # _____

2. OWNER:

Name Greencastle Homes
Address P.O. Box 213
City Star State Idaho Zip 83669

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 10 1/4 SW 1/4 NW 1/4Gov't Lot _____ County Canyon
Lat. 43 ° 41.997'N (Deg. and Decimal minutes)
Long. 116 ° 41.344'W (Deg. and Decimal minutes)
Address of Well Site 22598 Big Loon WayCity Caldwell
Lot. 5 Blk. 3 Sub. Name Taylor Ridge 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 ft ³)	Placement method/procedure
3/8" Bentonite	0	41	1100 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6"	2	199	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	197	202	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	212	213	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 199'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____Manufactured screen ☒ Y ☐ N Type JohnsonMethod of installation Washdown

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
202	212	.015	10'	5"	Stainless	304

Length of Headpipe 5' Length of Tailpipe 1'Packer ☒ Y ☐ N Type Rubber K-Packer

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) _____ Static water level (ft) 72'Water temp. (°F) Cold Bottom hole temp. (°F) _____

Describe access port _____

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
180'	80+ GPM	1 HR.

Test method:

Pump	Bailer	Air	Flowing artesian
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10"	0	2	Top Soil		X
	2	22	Sandy Clay		X
	22	24	Fractured Rock		X
	24	41	Lava Rock		X
6"	41	55	Sand w/ Clay		X
	55	69	Gravel		X
	69	80	Sand w/ Clay		X
	80	88	Sand	X	
	88	110	Tan Clay		X
	110	115	Sand	X	
	115	160	Sandy Clay		X
	160	165	Fine Sand	X	
	165	195	Sand w/ Clay	X	
	195	201	Clay		X
	201	213	Medium Coarse Sand	X	

Completed Depth (Measurable): 213'Date Started: Sep 4, 2015 Date Completed: Sep 10, 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 Dennis Phipps Well Drilling Inc. Co. No. 332*Principal Driller [Signature] Date Sep 11, 2015

*Driller _____ Date _____

*Operator II [Signature] Date Sep 11, 2015Operator I [Signature] Date Sep 11, 2015

* Signature of Principal Driller and rig operator are required.

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.

[illegible]

870671-775968
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. _____ - **D** -0019 -769

Other IDWR No. _____

2. OWNER:

Name Keith Mertz

Address P.O. Box 1299

City Caldwell State ID _____ Zip 83606

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location

N

W	E	Twp. <u>4</u> North <input checked="" type="checkbox"/> or South <input type="checkbox"/>			
		Rge. <u>3</u> East <input type="checkbox"/> or West <input checked="" type="checkbox"/>			
		Sec. <u>10</u>	<u>1/4</u>	<u>SE 1/4</u>	<u>NE 1/4</u>
		10 acres 40 acres 160 acres			

S

Gov't lot _____ County Canyon

Lat: _____ Long: _____

Address of Well Site 14141 Channel Rd.

City Middleton

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

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

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

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

- ☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

- ☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	18'	10S	Overbore
				10" Casing

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 138'

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing Liner	Welded	Threaded
6"	+2	138'	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 14' Length of Tailpipe _____

9. PERFORATIONS/SCREENS

- ☐ Perforations Method wash in
☒ Screens Screen Type s.s.telescoping

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
138'	148'	.015		5"	S.S.	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN

PRESSURE:

Flowft. below ground Artesian Pressure 3 lb

Depth flow encountered 139 ft. Describe access port or control

devices: Artesian Control

11. WELL TESTS:

- ☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
100		130'	2Hrs

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encountered 9

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Water

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Y	N
10"	0	2'	Brown Top Soil		<input checked="" type="checkbox"/>
10"	2'	6'	Brown Clay		<input checked="" type="checkbox"/>
10"	6'	9'	Brown Sand & Gravel		<input checked="" type="checkbox"/>
10"	9'	18'	Brown Cobbles & Sand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6"	18'	27'	Brown Cobbles & Sand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6"	27'	54'	Brown Clay W/Cracks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6"	54'	61'	Brown Sand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6"	61'	118'	Brown Clay W/Cracks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6"	118'	123'	Brown Sand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6"	123'	128'	Brown Clay	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6"	128'	135'	Brown Sand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6"	135'	139'	Brown Clay	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6"	139'	147'	Brown Sand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6"	147'	148'	Brown Clay	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6"	148'	152'	Brown Sand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

RECEIVED

APR 19 2002

WATER RESOURCES
WESTERN REGION

Completed Depth: 150 (Measurable)

Date: Started 04/03/02 Completed 04/05/02

13. DRILLER'S CERTIFICATION

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

Firm Name Down Right Drilling & Pump Firm No. 637

Firm Official [Signature] Date 4-6-02

Supervisor or Operator _____ Date _____

(Sign once if Firm Official & Operator)

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

061976

Office Use Only			
Inspected by _____			
Twp _____	Rge _____	Sec _____	
1/4 _____		1/4 _____	
Lat: _____		Long: _____	
<input checked="" type="checkbox"/> Air <input type="checkbox"/> Flowing Artesian			

1. DRILLING PERMIT NO. DD001412
Other IDWR No. 03 97 W 0708 000

2. OWNER:

Name Ed Lambert
Address 2718 E. Chicago
City Caldwell State Id Zip 83605

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N		Twp. <u>4N</u>		North <input checked="" type="checkbox"/> or South <input type="checkbox"/>
W		Rge. <u>3</u>		East <input type="checkbox"/> or West <input checked="" type="checkbox"/>
E		Sec. <u>10</u>		<u>SE</u> 1/4 <u>NE</u> 1/4 1/4
S		Gov't Lot _____		County <u>Canyon</u> 10 acres 40 acres 160 acres
		Lat: _____		Long: _____

Address of Well Site Channel Rd. 1/4 mi. So.
at Intersection of Hwy 44 + Channel Rd. City Middleton
(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

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

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

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
<u>Bentonite</u>	<u>0</u>	<u>20'</u>	<u>500#</u>	<u>Overbore</u>

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
<u>6"</u>	<u>+2</u>	<u>110</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 10' Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☐ Perforations Method _____☒ Screens Screen Type Houston

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>113</u>	<u>118</u>	<u>.020</u>		<u>5"</u>	<u>St. St.</u>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

+3 ft. below ground Artesian pressure 3 PSI lb.Depth flow encountered 112 ft. Describe access port orcontrol devices: Temporary welded plate

11. WELL TESTS:

☐ Pump ☐ Bailor

Yield gal./min.	Drawdown	Pumping Level	Time
<u>75</u>			<u>1 hr.</u>

Water Temp. 58° Bottom hole temp. _____Water Quality test or comments: Tan 1.0, Ph 7.5,Grains 3 Depth first Water Encountered 3'

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

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>10</u>	<u>0</u>	<u>3</u>	<u>Clay Top Soil</u>		
<u>"</u>	<u>3</u>	<u>6</u>	<u>sand</u>	<input checked="" type="checkbox"/>	
<u>"</u>	<u>6</u>	<u>14</u>	<u>Clay</u>		<input checked="" type="checkbox"/>
<u>10</u>	<u>14</u>	<u>20</u>	<u>sand + Gravel</u>	<input checked="" type="checkbox"/>	
<u>6</u>	<u>20</u>	<u>25</u>	<u>sand + Gravel</u>	<input checked="" type="checkbox"/>	
<u>6</u>	<u>25</u>	<u>56</u>	<u>Clay, Blue</u>		
<u>6</u>	<u>56</u>	<u>61</u>	<u>sand</u>	<input checked="" type="checkbox"/>	
<u>6</u>	<u>61</u>	<u>70</u>	<u>Clay Tan</u>		
<u>6</u>	<u>70</u>	<u>77</u>	<u>Blue clay</u>		
<u>6</u>	<u>77</u>	<u>84</u>	<u>Tan Clay</u>		
<u>6</u>	<u>84</u>	<u>87</u>	<u>sand</u>	<input checked="" type="checkbox"/>	
<u>6</u>	<u>87</u>	<u>102</u>	<u>Tan clay</u>		
<u>6</u>	<u>102</u>	<u>105</u>	<u>sand</u>	<input checked="" type="checkbox"/>	
<u>6</u>	<u>105</u>	<u>162</u>	<u>Clay</u>		
<u>6</u>	<u>112</u>	<u>118</u>	<u>sand</u>	<input checked="" type="checkbox"/>	

RECEIVED

NOV 12 1997

RECEIVED

Department of Water Resources

NOV - 7 1997

WATER RESOURCES
WESTERN REGION

RECEIVED

OCT 29 1997

WATER RESOURCES
WESTERN REGION

MICROFILMED

APR 07 1998

Completed Depth 118 (Measurable)Date: Started 10-17-97 Completed 10-20-97

13. DRILLER'S CERTIFICATION

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

Firm Name Adamsen Pump & Drilling Firm No. 0459Firm Official Miriam Adamsen Date 10-23-97and Supervisor or Operator Bill Tanner Date 10-23-97

(Sign once in field, initials & company)

WELL DRILLER'S REPORT

94171

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

1. WELL TAG NO. D

DRILLING PERMIT NO. 28-99-W 0051-000
Other IDWR No. _____

2. OWNER:

Name Holton Homes
Address 166299 Franklin Rd.
City Nampa State ID Zip 83687

3. LOCATION OF WELL by legal description:

Sketch, map location must agree with written location.

N		E		S	

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 10 1/4 SE 1/4 NE 1/4
Gov't Lot _____ County Canyon
Lat: _____ Long: _____
Address of Well Site 22701 Channel Rd.
City Caldwell

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

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

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

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

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
<u>Benziter</u>	<u>0</u>	<u>18</u>	<u>400</u>		<u>Pail</u>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 98Was drive shoe seal tested? ☒ Y ☐ N How? Air

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6</u>	<u>12</u>	<u>98</u>	<u>280</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
Screens _____ Screen Type _____

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

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

0 ft. below ground Artesian pressure 2 lb.
Depth flow encountered 105 ft. Describe access port or control devices: CAP

11. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>150</u>	<u>80</u>	<u>80</u>	<u>5 Hr.</u>

Water Temp. 60 Bottom hole temp. 60

Water Quality test or comments: _____

Depth first Water Encounter 15

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

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>10</u>	<u>0</u>	<u>3</u>	<u>TOP Soil</u>		
	<u>3</u>	<u>5</u>	<u>Hard Pan</u>		
	<u>5</u>	<u>15</u>	<u>Red CLAY</u>		
	<u>15</u>	<u>18</u>	<u>Gravel & Sand</u>	<input checked="" type="checkbox"/>	
<u>6</u>	<u>18</u>	<u>46</u>	<u>" "</u>	<input checked="" type="checkbox"/>	
	<u>46</u>	<u>80</u>	<u>Red CLAY</u>		
	<u>80</u>	<u>90</u>	<u>SAND Fine</u>	<input checked="" type="checkbox"/>	
	<u>90</u>	<u>105</u>	<u>Blue CLAY</u>		
	<u>105</u>		<u>SAND</u>	<input checked="" type="checkbox"/>	

RECEIVED

RECEIVED

FEB 23 1999

FEB 18 1999

MICROFILMED

Department of Water Resources

WATER RESOURCES
WESTERN REGION

MAR 08 1999

Completed _____ Depth 105 (Measurable)
Date: Started 1-28-99 Completed 1-28-99

13. DRILLER'S CERTIFICATION

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

Company Name T. V. Drilling Firm No. 560Firm Official J. H. [Signature] Date 2-10-99

and

Driller or Operator _____ Date _____

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

1. DRILLING PERMIT NO. 63-96-W-0076-100
Other IDWR No. Original Permit 63-94-C-0403-000

2. OWNER:

Name Melvin Frest
Address 1405 Wilson
City Caldwell State Id Zip 83605

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N
 W E S
 Twp. 4 North ☒ or South ☐
 Rge. 3 East ☐ or West ☒
 Sec. 10
 Gov't Lot _____ 1/4 SE 1/4 SW 1/4
 10 acres 10 acres 160 acres
 County Canyon
 Address of Well Site same
 City _____

Lt. _____ Blk. _____ Sub. Name _____

4. PROPOSED USE:

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

5. TYPE OF WORK

☐ New Well ☒ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD

☐ Mud Rotary ☐ Air Rotary ☒ Cable ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	

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	Line	Welded	Threaded
6"	140	160	250		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 6' Length of Tailpipe 0'

9. PERFORATIONS/SCREENS

☐ Perforations Method _____
☒ Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
157	168	15	5	5"		<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

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
40	10"	165"	2 hr.

Water Temp. 55 Bottom hole temp. 55

Water Quality test or comments: 90017

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

[illegible]

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 Cleanwater Drilling Inc Firm No. 382

Firm Official Bruce Ranson Date 2-25-96

Supervisor or Operator _____ Date _____

(Sign once if Firm Official & Operator)

05/06/2024

63

Form 238-7
6/07IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D0076933

Drilling Permit No. 883232

Water right or injection well # _____

2. OWNER:

Name Greencastle HomesAddress P.O. Box 213City Star State Idaho Zip 83669

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒Sec. 10 10 acres 1/4 NW 1/4 SW 1/4 160 acresGov't Lot _____ County CanyonLat. 43 41.756'N (Deg. and Decimal minutes)Long. 116 41.439'W (Deg. and Decimal minutes)Address of Well Site 22320 Rams Horn WayCity Caldwell

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

Lot. 19 Blk. 3 Sub. Name Taylor Ridge 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 ft ³)	Placement method/procedure
3/8" Bentonite	0	43	1000 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6"	1.5	211	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	208	213	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5"	223	225	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 211'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____Manufactured screen ☒ Y ☐ N Type JohnsonMethod of installation Pullback

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
213	223	.012	10'	5"	Stainless	304

Length of Headpipe 5' Length of Tailpipe 2.1Packer ☒ Y ☐ N Type Rubber K-Packer

10. FILTER PACK:

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

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) 85'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)
110'	36 GPM	1 HR.

Test method:

Pump	Bailer	Air	Flowing artesian
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10"	0	2	Top Soil		X
	2	20	Cemented Gravel		X
	20	45	Lava Rock		X
6"	45	61	Gravel		X
	61	69	Sand & Gravel		X
	69	84	Brown Clay		X
	84	106	Sand	X	
	106	120	Brown Clay		X
	120	168	Clay w/ Sand Streaks	X	
	168	175	Clay		X
	175	202	Clay w/ Sand	X	
	202	223	Sand	X	
	223	225	Clay		X

RECEIVED

AUG 03 2017

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 225'

Date Started: Jul 14, 2017 Date Completed: Jul 20, 2017

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 Co. No. 332*Principal Driller [Signature] Date Jul 27, 2017*Driller [Signature] Date _____*Operator II [Signature] Date Jul 27, 2017Operator I [Signature] Date _____

* Signature of Principal Driller and rig operator are required.

RECEIVED

JUL 12 1965

026407 WELL LOG AND REPORT TO THE
STATE RECLAMATION ENGINEER OF IDAHO

Department of Reclamation

SUBMIT WITHIN 30 DAYS AFTER COMPLETION OF WELL: SEE IDAHO STATUTES 42-238

Permit No. Well No. County Canyon

Owner Dewey Bowman

Address R#1 Caldwell

Driller Rich Kyncl

Address R#3 Caldwell

Well location NW 1/4 SW 1/4 Sec. 10, T. 4 N. R. 3 E. W

Size of drilled hole 3"

Locate well in section

NW 1/4		NE 1/4	
Sec. 10			
SW 1/4		SE 1/4	

Total depth of well 220

Give depth to standing water from the ground Water temp. °Fahr.

Test delivery was 90 g.p.m. or c.f.s. Drawdown was feet. Pump? Bail?

Size of pump and motor used to make test Compressor

Length of time of test 2 hours minutes.

If flowing well, give flow c.f.s. or g.p.m. and of shut off pressure

If flowing well, described control works

(TYPE AND SIZE OF VALVE, ETC.)

Water will be used for Weight of casing per lineal foot 17

Thickness of casing Casing material Steel
(STEEL, CONCRETE, WOOD, ETC.)

Diameter, length and location of casing
(CASING 12" IN DIAMETER OR LESS, GIVE INSIDE DIAMETER;
CASING OVER 12" IN DIAMETER, GIVE OUTSIDE DIAMETER)

CASING RECORD

Diam. Casing	From Feet	To Feet	Length	Remarks—seals, grouting, etc.
5"	0	171	171	
4"	160	202	42 1/2	

Number and size of perforations 50 1/8" x 2 1/2" located 170 feet to 193 feet from ground

Date of commencement of well 5/25/65 Date of completion of well 6/20/65

NWSW S. 10 4N 3W

usll

WELL LOG

From Feet	To Feet	Type of Material	Water-bearing Formation Ans. Yes or No	Casing Perforated Ans. Yes or No
0	2	lite soil	no	
2	3	heavy gravel	"	
3	42	Faba	"	
42	60	Cement gravel & sand	"	
60	87	Silt Clay	"	
87	96	Blue Shale	"	
96	105	lite Brown Silt	"	
105	140	lite Sandy Clay	"	
140	168	Silt	"	
168	175	Blue Shale	yes	
175	270	Silt Clay streaks of silt & sand	yes	

If more space is required use Sheet No. 2

WELL DRILLER'S STATEMENT

This well was drilled under my supervision and the above information is complete, true and correct to the best of my knowledge and belief.

Signed Rich Kroll

By _____

Dated 7/7, 1965.

License No. 3

Well Driller's Helper_____

026408

TRW 451

026389 WELL LOG AND REPORT OF THE
STATE RECLAMATION ENGINEER OF IDAHO

Department of Reclamation

Permit No. _____ Well No. _____ County Canyon
Owner R. D. Rutledge
Address Caldwell
Driller Rich Knappoch
Address Caldwell
Well location NW 1/4 SW 1/4 Sec. 10, T. 4 N, R. 3 W
Size of drilled hole 5"

Locate well in section

NW 1/4	NE 1/4
SW 1/4	SE 1/4

Total depth of well 175

Give depth to standing water from the ground 72 Water temp. _____ °Fahr.

On "Pumping Test" delivery was 100 g.p.m. or _____ e.f.s. Drawdown was 7 feet.

Size of pump and motor used to make test Compressor

Length of time of test 6 hours _____ minutes.

If flowing well, give flow _____ c.f.s. or _____ g.p.m. and of shut off pressure _____

If flowing well, described control works _____

Water will be used for Domestic (TYPE AND SIZE OF VALVE, ETC.)

Weight of casing per lineal foot 18

Thickness of casing _____ Casing material Steel
(STEEL, CONCRETE, WOOD, ETC.)

Diameter, length and location of casing 150' of 5"
(CASING 12" IN DIAMETER OR LESS, GIVE INSIDE DIAMETER;
CASING OVER 12" IN DIAMETER, GIVE OUTSIDE DIAMETER)

CASING RECORD

Diam. Casing	From Feet	To Feet	Length	Remarks—seals, grouting, etc.
5"	0	150	150	

Number and size of perforations _____ located _____ feet to _____ feet from ground

Date of commencement of well 2/5/61 Date of completion of well 2/30/61

NWSW 5.10 4N 3W

well

026390

WELL LOG

[illegible]

WELL DRILLER'S STATEMENT

This well was drilled under my supervision and the above information is true and correct to the best of my knowledge and belief.

Signed Rich Froeloe

By _____

Dated 8/10, 1961

License No. 37

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

1. WELL OWNER

Name BART GEPNER
Address 22430 Rutledge Caldwell, Id. 83605
Drilling Permit No. 63-92-C-1060-000
Water Right Permit No. _____

7. WATER LEVEL

Static water level 70' 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
-
- ☐
- Well diameter increase
- ☐
- Modification
-
- ☐
- Abandoned (describe abandonment or modification procedures
-
- such as liners, screen, materials, plug depths, etc. in lithologic
-
- log, section 9.)

8. WELL TEST DATA

☒ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
<u>50</u>	<u>130</u>	<u>4</u>

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.)

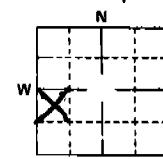
5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____
Thickness _____ Diameter _____ From _____ To _____
.250 inches 6 inches + 1 feet 147 feet
_____ inches _____ inches _____ feet _____ feet
_____ inches _____ inches _____ feet _____ feetWas 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 _____ feetWell screen installed? ☒ Yes ☐ No
Manufacturer JOHNSON Type 15 SLOT SS.
Top Packer or Headpipe 5'
Bottom of Tailpipe 1'Diameter 6.5" Slot size 15 Set from 140 feet to 152 feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feetSurface seal depth 50 Material used in seal: ☐ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name Rutledge
RANCH
Lot No. _____ Block No. _____
County CANYON
Address of Well Site 22430 Rutledge
(give at least name of road)
NW 1/4 SW 1/4 Sec. 10 T. 4 N ☒ or S ☐
R. 3 E ☐ or W ☒

9. LITHOLOGIC LOG

082738

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
10"	0	3	Fill		X
10"	3	25	LAVA		X
10"	25	50	SAND / GRAVEL		X
6"	50	120	SANDY CLAY		X
6"	120	130	CLAY BLUE		X
6"	130	135	BROWN CLAY	X	
6"	135	143	SANDY CLAY		X
6"	143	146	BROWN CLAY		X
6"	146	155	CLAY CHUNKS QUARTZ SAND AND GRAVEL	X	

RECEIVED

DEC 23 1992

Department of Water Resources
Western Regional Office

RECEIVED

DEC 18 1992

MICROFILMED
AUG 09 1993

Department of Water Resources

10.

Work started 12-14-92 finished 12-16-92

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 Knip Firm No. 417Address 815 W. Plymouth Date 12-17-92Signed by Drilling Supervisor Mike Knipand
(Operator) Red Ramsey
(If different than the Drilling Supervisor)

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT1. WELL TAG NO. D 0074594Drilling Permit No. 9751010-881943

Water right or injection well # _____

2. OWNER: Wattman Homes

Name _____

Address 17233 Silver Ridge Rd.City Caldwell State Id. Zip 83607

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒Sec. 10 1/4 NW 1/4 SW 1/4Gov't Lot _____ County CanyonLat. 43 0 41:884 (Deg. and Decimal minutes)Long. 116 0 41:468 (Deg. and Decimal minutes)Address of Well Site 22382 Ramshorn WayCity Caldwell

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

Lot 21 Blk. 2 Sub. Name Taylor Ridge

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/procedure3/8 Best 0 47 35 bags Dry Pour

8. CASING/LINER:

Diameter (nominal) From (ft) To (ft) Gauge/Schedule Material Casing Liner Threaded Welded

6 42 201-7 1/2 250 Steel ☒ ☐ ☐ ☒☐ ☐ ☐ ☐☐ ☐ ☐ ☐☐ ☐ ☐ ☐Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 201'-7 1/2"

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☐ N Method _____Manufactured screen ☒ Y ☐ N Type JohnsonMethod of installation Wash Dr. Valve

From (ft) To (ft) Slot size Number/ft Diameter (nominal) Material Gauge or Schedule

204 209 16 6" 4ele S.S. _____☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐☐ ☐ ☐ ☐ ☐ ☐Length of Headpipe 5'-8" Length of Tailpipe 0Packer ☒ Y ☐ N Type 3-Rib

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) 186* Static water level (ft) 80Water temp. (°F) 68 Bottom hole temp. (°F) _____Describe access port San Seal well cap

Well test: _____ Test method: _____

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
<u>200</u>	<u>130</u>	<u>1 hr.</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>140</u>	<u>110</u>	<u>1 hr.</u>				

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>11</u>	<u>0</u>	<u>6</u>	<u>Top Soil</u>		<input checked="" type="checkbox"/>
	<u>6</u>	<u>17</u>	<u>Sand</u>		<input checked="" type="checkbox"/>
	<u>17</u>	<u>53</u>	<u>Blk Solid Lava</u>		<input checked="" type="checkbox"/>
	<u>53</u>	<u>55</u>	<u>Red Cinders</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>55</u>	<u>58</u>	<u>gravel</u>		<input checked="" type="checkbox"/>
	<u>58</u>	<u>61</u>	<u>Brn Clay</u>		<input checked="" type="checkbox"/>
	<u>61</u>	<u>83</u>	<u>gravel</u>		<input checked="" type="checkbox"/>
	<u>83</u>	<u>138</u>	<u>Brn clay & Sand</u>		<input checked="" type="checkbox"/>
	<u>138</u>	<u>145</u>	<u>med Sand</u>		<input checked="" type="checkbox"/>
	<u>145</u>	<u>182</u>	<u>Stripes of Brn clay & Sand</u>		<input checked="" type="checkbox"/>
	<u>182</u>	<u>186</u>	<u>Fractured Blue Clay</u>		<input checked="" type="checkbox"/>
	<u>186</u>	<u>191</u>	<u>med Sand</u>		<input checked="" type="checkbox"/>
	<u>191</u>	<u>198</u>	<u>Brn clay & Sand</u>		<input checked="" type="checkbox"/>
	<u>198</u>	<u>201</u>	<u>Brn Clay</u>		<input checked="" type="checkbox"/>
	<u>201</u>	<u>209</u>	<u>med Sand</u>		<input checked="" type="checkbox"/>

RECEIVED

MAY 08 2017

WATER RESOURCES
WESTERN REGIONCompleted Depth (Measurable): 209 ft.Date Started: 3-28-17 Date Completed: 3-31-17

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Drilling Co. No. 522*Principal Driller Jeff Larson Date 4-9-17*Driller Jeff Larson Date 4-9-17*Operator II Mark Rasm Date 4/9/17

Operator I _____ Date _____

Operator I _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D D0071745

Drilling Permit No. 971932-877989
Water right or injection well # _____

2. OWNER:

Name Pioneer Homes (Kristi Santy)
Address 22391 Rams Horn Way
City Caldwell State Idaho Zip 83607

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 10 1/4 NW 1/4 SW 1/4Gov't Lot _____ County Canyon
Lat. 43 ° 41.847'N (Deg. and Decimal minutes)
Long. 116 ° 41.433'W (Deg. and Decimal minutes)
Address of Well Site Same City Caldwell

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

Lot. 19 Blk. 2 Sub. Name Taylor Ridge 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 ft ³)	Placement method/procedure
3/8" Bentonite	0	45	1250 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Linear	Threaded	Welded
6"	2	198	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	193	198	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 198'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____Manufactured screen ☒ Y ☐ N Type JohnsonMethod of installation Washdown

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
198	208	.012	10'	5"	Stainless	304

Length of Headpipe 5' Length of Tailpipe 7"Packer ☒ Y ☐ N Type Rubber K-Packer

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) _____ Static water level (ft) 60'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)
170'	37 GPM	1 HR.

Test method:

Pump	Bailer	Air	Flowing artesian
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10"	0	3	Top Soil		X
	3	10	Brown Clay		X
	10	27	Clay w/ Gravel		X
	27	46	Lava Rock		X
6"	46	50	Brown Clay		X
	50	71	Gravel		X
	71	106	Sandy Brown Clay		X
	106	113	Sand	X	
	113	122	Sandy Clay		X
	122	128	Brown Clay		X
	128	136	Sandy Clay		X
	136	151	Clay		X
	151	162	Tan Clay		X
	162	180	Sandy Clay		X
	180	208	Sand	X	

RECEIVED

APR 15 2016

WATER RESOURCES
WESTERN REGIONCompleted Depth (Measurable): 208'Date Started: Feb 25, 2016Date Completed: Mar 7, 2016

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 Co. No. 332*Principal Driller [Signature] Date Mar 8, 2016*Driller [Signature] Date Mar 8, 2016*Operator II [Signature] Date Mar 8, 2016

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D0074695

Drilling Permit No. 976268-882325

Water right or injection well #

2. OWNER:

Name Greencastle Homes

Address P.O. Box 213

City Star State Idaho Zip 83669

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒

Sec. 10 1/4 NW 1/4 SW 1/4

Gov't Lot County Canyon

Lat. 43 41.840'N (Deg. and Decimal minutes)

Long. 116 41.465'W (Deg. and Decimal minutes)

Address of Well Site 22379 Rams Horn Way

City Caldwell

Lot. 20 Blk. 2 Sub. Name Taylor Ridge 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 ft ³)	Placement method/procedure
3/8" Bentonite	0	63	1250 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Linear	Threaded	Welded
6"	2	222	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	216	221	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	231	233	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 233'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N MethodManufactured screen ☒ Y ☐ N Type Johnson

Method of installation Pullback

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
221	231	.015	10'	5"	Stainless	304

Length of Headpipe 5' Length of Tailpipe 2.1

Packer ☒ Y ☐ N Type Rubber K-Packer

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG)

Describe control device

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) Static water level (ft) 79'

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)
90'	41 GPM	1 HR.

Test method:

Pump	Bailer	Air	Flowing artesian
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments:

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10"	0	2	Top Soil		X
	2	20	Sandy Brown Clay		X
	20	63	Lava Rock		X
6"	63	68	Gravel		X
	68	80	Sandy Brown Clay		X
	80	115	Brown Clay		X
	115	125	Sand	X	
	125	135	Sandy Clay		X
	135	142	Brown Clay		X
	142	157	Sandy Clay		X
	157	162	Sand	X	
	162	194	Sandy Clay		X
	194	198	Sand	X	
	198	211	Brown Clay		X
	211	231	Sand	X	
	231	233	Sandy Clay		X

RECEIVED

JUN 02 2017

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 233'

Date Started: May 18, 2017 Date Completed: May 24, 2017

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 May 31, 2017

*Driller Date May 31, 2017

*Operator II Date May 31, 2017

Operator I Date May 31, 2017

* Signature of Principal Driller and rig operator are required.

Crimson Bridge Estates 65 of 316

63

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

RECEIVED

AUG 07 2017

WATER RESOURCES
WESTERN REGION1. WELL TAG NO. D 0076858
Drilling Permit No. 882935

Water right or injection well # _____

2. OWNER: Big Pine Construction

Name _____

Address 1750 SandHollow Rd.City Caldwell State Id. Zip 83607

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒Sec. 10 1/4 NW 1/4 SW 1/4Gov't Lot _____ County CanyonLat. 43 ° 41: 909 (Deg. and Decimal minutes)Long. 116 ° 41: 410 (Deg. and Decimal minutes)Address of Well Site 14871 Velvet FallsCity CaldwellLot. 16 Blk. 2 Sub. Name Taylor Ridge

4. USE:

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

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
<u>3/8 Bent O</u>	<u>48</u>	<u>39 bags</u>	<u>DIY POW</u>	

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner	Threaded	Welded
<u>6</u>	<u>12</u>	<u>285'</u>	<u>2"</u>	<u>350 Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 285'-2"

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☐ N Method _____Manufactured screen ☒ Y ☐ N Type JohnsonMethod of installation Wash DN Valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>286</u>	<u>291</u>	<u>1/4"</u>	<u>6"</u>	<u>Tele</u>	<u>S.S.</u>	

Length of Headpipe 6'-8" Length of Tailpipe 0Packer ☒ Y ☐ N Type 3-Rib

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 234 Static water level (ft) 74Water temp. (°F) 62 Bottom hole temp. (°F) _____Describe access port Sani Seal well cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
<u>275</u>	<u>200</u>	<u>1 hr.</u>
<u>220</u>	<u>200</u>	<u>1 1/2 hr.</u>

Test method:

Pump	Bailer	Air	Flowing artesian
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>11</u>	<u>0</u>	<u>6</u>	<u>Top Soil</u>		<input checked="" type="checkbox"/>
	<u>6</u>	<u>13</u>	<u>Gravel</u>		<input checked="" type="checkbox"/>
	<u>13</u>	<u>44</u>	<u>Solid Blk Lava</u>		<input checked="" type="checkbox"/>
	<u>44</u>	<u>46</u>	<u>Red cinders</u>		<input checked="" type="checkbox"/>
	<u>46</u>	<u>50</u>	<u>Bm clay</u>		<input checked="" type="checkbox"/>
	<u>50</u>	<u>68</u>	<u>Gravel</u>		<input checked="" type="checkbox"/>
	<u>68</u>	<u>70</u>	<u>Bm clay</u>		<input checked="" type="checkbox"/>
	<u>70</u>	<u>122</u>	<u>Fine Silty Sand & Clay</u>		<input checked="" type="checkbox"/>
	<u>122</u>	<u>131</u>	<u>Sandy Bm Clay</u>		<input checked="" type="checkbox"/>
	<u>131</u>	<u>155</u>	<u>Fine Sand & Clay Strips</u>		<input checked="" type="checkbox"/>
	<u>155</u>	<u>163</u>	<u>Fine Bm Sand</u>		<input checked="" type="checkbox"/>
	<u>163</u>	<u>165</u>	<u>Bm & Blue clay mixed</u>		<input checked="" type="checkbox"/>
	<u>165</u>	<u>178</u>	<u>(Fract) Blue clay & Sand</u>		<input checked="" type="checkbox"/>
	<u>178</u>	<u>185</u>	<u>Sandy Bm Clay</u>		<input checked="" type="checkbox"/>
	<u>185</u>	<u>188</u>	<u>Bm clay</u>		<input checked="" type="checkbox"/>
	<u>188</u>	<u>204</u>	<u>med Silty Sand</u>		<input checked="" type="checkbox"/>
	<u>204</u>	<u>212</u>	<u>Fine Med Sand & clay</u>		<input checked="" type="checkbox"/>
	<u>212</u>	<u>214</u>	<u>Bm clay</u>		<input checked="" type="checkbox"/>
	<u>214</u>	<u>234</u>	<u>Fine Silty Sand & clay</u>		<input checked="" type="checkbox"/>
	<u>234</u>	<u>238</u>	<u>Fine Silty Sand</u>		<input checked="" type="checkbox"/>
	<u>238</u>	<u>239</u>	<u>Bm clay</u>		<input checked="" type="checkbox"/>
	<u>239</u>	<u>243</u>	<u>Fine Silty Sand</u>		<input checked="" type="checkbox"/>
	<u>243</u>	<u>252</u>	<u>Sandy Bm Clay</u>		<input checked="" type="checkbox"/>
	<u>252</u>	<u>266</u>	<u>Fine Silty Sand & clay</u>		<input checked="" type="checkbox"/>
	<u>266</u>	<u>281</u>	<u>Coarse Bm Sand</u>		<input checked="" type="checkbox"/>
	<u>281</u>	<u>285</u>	<u>Bm clay</u>		<input checked="" type="checkbox"/>
	<u>285</u>	<u>296</u>	<u>med white Sand</u>		<input checked="" type="checkbox"/>

Completed Depth (Measurable): 291 ft.Date Started: 6/25/17 Date Completed: 6/29/17

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Well Drilling Co. No. 522*Principal Driller Jeff Ransom Date 7/8/17*Driller Jeff Ransom Date 7-8-17*Operator II Mike Roman Date 7/8/17

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D D0070349

Drilling Permit No. 071346-877403

Water right or injection well # _____

2. OWNER:

Name Greencastle HomesAddress P.O. Box 213City Star State Idaho Zip 83669

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 10 10 acres 1/4 SW 1/4 NW 1/4Gov't Lot _____ County CanyonLat. 43 ° 41.930'N (Deg. and Decimal minutes)Long. 116 ° 41.424'W (Deg. and Decimal minutes)Address of Well Site 14844 Velvet Falls WayCity Caldwell

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

Lot. 12 Blk. 2 Sub. Name Taylor Ridge 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 58 1150 lbs. 10" Overbore

3/8" Bentonite 137 147 150 lbs. 12" Overbore

8. CASING/LINER:

Diameter (nominal) From (ft) To (ft) Gauge/Schedule Material Casing Liner Threaded Welded

6" 2 178 .250 Steel ☒ ☐ ☐ ☒5" 171 189 .258 Steel ☐ ☒ ☐ ☒☐ ☐ ☐ ☐☐ ☐ ☐ ☐Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 178'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____Manufactured screen ☒ Y ☐ N Type JohnsonMethod of installation Washdown

From (ft) To (ft) Slot size Number/ft Diameter (nominal) Material Gauge or Schedule

189 199 .015 10' 5" Stainless 304

☐ ☐ ☐ ☐ ☐ ☐Length of Headpipe 17.7 Length of Tailpipe 7"Packer ☒ Y ☐ N Type Rubber K-Packer

10. FILTER PACK:

Filter Material From (ft) To (ft) Quantity (lbs or ft³) Placement methodN/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) 76'Water temp. (°F) Cold Bottom hole temp. (°F) _____Describe access port 6" Turtle Cap

Well test: Test method:

Drawdown (feet) Discharge or yield (gpm) Test duration (minutes) Pump Bailer Air Flowing artesian

180' 30 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 N

10" 0 4 Top Soil ☐ ☒4 13 Sand & Gravel ☐ ☒13 38 Lava Rock ☐ ☒38 46 Red Cinders ☐ ☒46 54 Brown Clay w/ Gravel ☐ ☒6" 54 67 Lava Rock ☐ ☒67 76 Sand & Gravel ☐ ☒76 100 Sandy Brown Clay ☐ ☒100 137 Tan Clay ☐ ☒12" 137 147 Blue Clay ☐ ☒147 156 Blue Clay w/ Sand ☒ ☐156 160 Gray Clay ☐ ☒160 172 Gray Sandy Clay ☐ ☒172 188 Gray Clay ☐ ☒188 199 Brown Med Coarse Sand ☒ ☐

RECEIVED

DEC 11 2015

WATER RESOURCES
WESTERN REGIONCompleted Depth (Measurable): 199'Date Started: Nov 16, 2015 Date Completed: Nov 18, 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 Dennis Phipps Well Drilling In Co. No. 332*Principal Driller [Signature] Date Nov 19, 2015

*Driller _____ Date _____

*Operator II [Signature] Date Nov 19, 2015Operator I [Signature] Date Nov 19, 2015

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D. 0074592

Drilling Permit No. _____

Water right or injection well # _____

2. OWNER: Waltman Homes

Name _____

Address 14233 Silver Ridge Rd

City Caldwell State Id. Zip 83609

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒

Sec. 10 1/4 NW 1/4 SW 1/4

Gov't Lot _____ County Canyon

Lat. 43 ° 41:969 (Deg. and Decimal minutes)

Long. 116 ° 41:409 (Deg. and Decimal minutes)

Address of Well Site 14883 Dagger Falls Way

City Caldwell

Lot 11 Blk. 1 Sub. Name Taylor Ridge

4. USE:

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

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well

☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
<u>3/8 Bert O 54</u>	<u>250</u>	<u>250</u>	<u>bags</u>	<u>Dry Pour</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
<u>6</u>	<u>257</u>	<u>5</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 257'-5"

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☐ N Method _____

Manufactured screen ☒ Y ☐ N Type Solomon

Method of installation Wash DN. Valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>257</u>	<u>267</u>	<u>14</u>	<u>6"</u>	<u>Tele</u>	<u>S.S.</u>	

Length of Headpipe 5'-6" Length of Tailpipe 0

Packer ☒ Y ☐ N Type 3-Rib

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 167 Static water level (ft) 75

Water temp. (°F) 64 Bottom hole temp. (°F) _____

Describe access port Sani Seal well cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
<u>260</u>	<u>110</u>	<u>7 hrs.</u>
<u>180</u>	<u>110</u>	<u>1 hr.</u>

Test method:

Pump ☐ Bailer ☐ Air ☒ Flowing artesian ☐

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>11</u>	<u>0</u>	<u>6</u>	<u>Top Soil</u>		<input checked="" type="checkbox"/>
	<u>6</u>	<u>16</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
	<u>16</u>	<u>50</u>	<u>Solid Blk Lava</u>		<input checked="" type="checkbox"/>
	<u>50</u>	<u>52</u>	<u>Red cinders</u>		<input checked="" type="checkbox"/>
	<u>52</u>	<u>54</u>	<u>gravel</u>		<input checked="" type="checkbox"/>
	<u>54</u>	<u>56</u>	<u>Bin Clay</u>		<input checked="" type="checkbox"/>
	<u>56</u>	<u>77</u>	<u>gravel</u>		<input checked="" type="checkbox"/>
	<u>77</u>	<u>80</u>	<u>Bin Clay</u>		<input checked="" type="checkbox"/>
	<u>80</u>	<u>102</u>	<u>Fine Sand w/ clay strips</u>		<input checked="" type="checkbox"/>
	<u>102</u>	<u>163</u>	<u>Fract clay & Fine Sand</u>		<input checked="" type="checkbox"/>
	<u>163</u>	<u>167</u>	<u>Bin Clay</u>		<input checked="" type="checkbox"/>
	<u>167</u>	<u>181</u>	<u>Bin Fine Sand</u>		<input checked="" type="checkbox"/>
	<u>181</u>	<u>196</u>	<u>Fract Bin Clay & Fine Sand</u>		<input checked="" type="checkbox"/>
	<u>196</u>	<u>217</u>	<u>Fract Bin clay & Fine Sand</u>		<input checked="" type="checkbox"/>
	<u>217</u>	<u>230</u>	<u>Sticky Bin Clay</u>		<input checked="" type="checkbox"/>
	<u>230</u>	<u>254</u>	<u>Strips of clay muck</u>		<input checked="" type="checkbox"/>
			<u>Sand</u>		<input checked="" type="checkbox"/>
	<u>254</u>	<u>258</u>	<u>Sticky Bin Clay</u>		<input checked="" type="checkbox"/>
	<u>258</u>	<u>268</u>	<u>med Fine Sand</u>		<input checked="" type="checkbox"/>

RECEIVED

MAR 23 2017

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 267 ft.

Date Started: 2-22-17 Date Completed: 2-27-17

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Well Drilling Co. No. 522

*Principal Driller Jeff Ransom Date 3-11-17

*Driller Mike Date 3-11-17

*Operator Michael Ransom Date 3-11-17

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D D0074693

Drilling Permit No. 9716193-882250
Water right or injection well # _____

2. OWNER:

Name Pioneer Homes Inc.
Address 719 1st South (Suite B)
City Nampa State Idaho Zip 83651

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 10 1/4 SW 1/4 NW 1/4

Gov't Lot _____ County Canyon
Lat. 43 ° 42.012'N (Deg. and Decimal minutes)
Long. 116 ° 41.373'W (Deg. and Decimal minutes)
Address of Well Site 22613 Big Loon Way

City Caldwell
(Give at least name of road + Distance to Road or Landmark)
Lot 4 Blk. 2 Sub. Name Taylor Ridge 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 ft ³)	Placement method/procedure
3/8" Bentonite	0	45	1300 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6"	2	228	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	224	230	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	240	242	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 228'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____
Manufactured screen ☒ Y ☐ N Type Johnson
Method of installation Pullback

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
230	240	.015	10'	5"	Stainless	304

Length of Headpipe 5.8 Length of Tailpipe 2.1

Packer ☒ Y ☐ N Type Rubber K-Packer

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

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

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) _____ Static water level (ft) 89'
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)
135'	41 GPM	1 HR.

Test method:

Pump	Bailer	Air	Flowing artesian
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10"	0	2	Top Soil		X
	2	15	Sandy Brown Clay		X
	15	45	Lava Rock		X
6"	45	78	Gravel		X
	78	121	Sandy Brown Clay		X
	121	138	Sand w/ Clay Streaks	X	
	138	160	Sand	X	
	160	175	Sand w/ Clay Streaks	X	
	175	189	Sand	X	
	189	201	Sandy Clay		X
	201	206	Sand	X	
	206	215	Brown Clay		X
	215	228	Sand	X	
	228	230	Snady Clay		X
	230	240	Sand	X	
	240	242	Brown Clay		X

RECEIVED

JUN 02 2017

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 242'
Date Started: May 12, 2017 Date Completed: May 24, 2017

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 May 24, 2017
*Driller [Signature] Date _____
*Operator II [Signature] Date May 24, 2017
Operator I [Signature] Date May 24, 2017

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0068870

Drilling Permit No. 969239-875296

Water right or injection well # _____

2. OWNER: Greencastle Homes of Idaho

Name Greencastle Homes of IdahoAddress PO Box 213City Star State Id Zip 83669

3. WELL LOCATION:

Twp. 04 North ☒ or South ☐ Rge. 03 East ☐ or West ☒Sec. 10 1/4 SW 1/4 NW 1/4Gov't Lot _____ County CanyonLat. 43 42.0420 (Deg. and Decimal minutes)Long. 116 41.3700 (Deg. and Decimal minutes)Address of Well Site 22649 Big Loon WayCity Caldwell

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

Lot. _____ Blk. _____ Sub. Name _____

4. USE:

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

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
Bentonite 3/4 C	0	45	1700	Pour

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6	+1	242	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 242'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____Manufactured screen ☒ Y ☐ N Type Johnson Stainless SteelMethod of installation Washdown

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
49	54	.018		5"	Stainless	

Length of Headpipe 8'8" Length of Tailpipe 8Packer ☒ Y ☐ N Type K-Packer

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 70' Static water level (ft) 70'Water temp. (°F) Cold Bottom hole temp. (°F) _____

Describe access port _____

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
250'	35	60

Test method:

Pump	Bailer	Air	Flowing artesian
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
12	0	16	Brown Clay		X
10	16	34	Basalt		X
10	34	42	Brown Clay		X
6	42	58	Sand & Gravel		X
6	58	70	Brown Clay		X
6	70	112	Brown Clay w/sand streaks		X
6	112	118	Gray Clay		X
6	118	121	Fine Brown Sand	X	
6	121	140	Fine Sand w/clay streaks	X	
6	140	157	Gray Clay		X
6	157	161	Brown Clay		X
6	161	164	Coarse Brown Sand	X	
6	164	192	Brown Clay		X
6	192	193	Very Fine Sand	X	
6	193	229	Brown Clay		X
6	229	232	Very Fine Sand	X	
6	232	246	Brown Clay		X
6	246	255	Fine Brown Sand	X	

RECEIVED

JUN 12 2015

WATER RESOURCES
WESTERN REGIONCompleted Depth (Measurable): 255'Date Started: 05/14/2015 Date Completed: 05/26/2015

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 McLeran Well Drilling, LLC Co. No. 641*Principal Driller [Signature] Date 06/10/2015

*Driller _____ Date _____

*Operator II _____ Date _____

Operator I Josh McLeran Date 06/10/2015

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

1. WELL TAG NO. D D0064499

Drilling Permit No. 912836-268895

Water right or injection well # _____

2. OWNER:

Name Greencastle Homes

Address P.O. Box 213

City Star State Idaho Zip 83669

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
Sec. 10 10 acres 1/4 SW 1/4 NW 1/4

Gov't Lot _____ County Canyon

Lat 43 ° 42.045'N (Deg. and Decimal minutes)

Long. 116 ° 41.349'W (Deg. and Decimal minutes)

Address of Well Site 22626 Big Loon Way

City Caldwell

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

Lot 4 Blk. 3 Sub. Name Taylor Ridge 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	43	1100 lbs.	10" Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6"	2	139	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	135	147	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	152	153	.258	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 139'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____

Manufactured screen ☒ Y ☐ N Type Johnson

Method of installation Washdown

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
147	152	.015	5'	5"	Stainless	304

Length of Headpipe 12.8 Length of Tailpipe .7"

Packer ☒ Y ☐ N Type Rubber K-Packer

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) 64'

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

Describe access port _____

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
145'	35 GPM	1 HR.

Test method:

Pump	Bailer	Air	Flowing artesian
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10"	0	2	Top Soil		X
	2	11	Hard Pan		X
	11	20	Lava Rock		X
	20	28	Sandy Brown Clay		X
	28	43	Gravel		X
6"	43	65	Gravel	X	
	65	85	Brown Clay		X
	85	101	Sandy Clay w/ Sand	X	
	101	108	Brown Clay		X
	108	109	Blue Clay		X
	109	119	Brown Sandy Clay w/ Sand	X	
	119	134	Brown Clay w/ Sand	X	
	134	140	Sand	X	

RECEIVED

JUN 25 2013

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 153'
Date Started: Jun 18, 2013 Date Completed: Jun 19, 2013

14. DRILLER'S CERTIFICATION:

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

Company Name Dennis Phipps Well Drilling Inc Co. No. 332

*Principal Driller [Signature] Date Jun 19, 2013

*Driller _____ Date _____

*Operator II [Signature] Date Jun 19, 2013

Operator I [Signature] Date Jun 19, 2013

* Signature of Principal Driller and rig operator are required.

Crimson Bridge Estates 1954

RECEIVED

JUL 19 1970

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.

Department of Water Resources

1. WELL OWNER

Name

John Jenkins

Address

323 Mahan, Caldwell Idaho

Owner's Permit No.

2. NATURE OF WORK

☒ New well

☐ Deepened

☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic

☐ Irrigation

☐ Test

☐ Other (specify type)

☐ Municipal

☐ Industrial

☐ Stock

☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable

☐ Rotary

☐ Dug

☐ Other

5. WELL CONSTRUCTION

Diameter of hole

6

inches

Total depth

50

feet

Casing schedule:

☒ Steel

☐ Concrete

Thickness

250

inches

Diameter

6 7/8

inches

From

1

feet

To

47

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

☐ Shurry pit

☐ Temporary surface casing

☒ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.

N

E

S

W

X

Subdivision Name

Lot No.

Block No.

County

SE 1/4 NW 1/4 Sec. 10 T. 4 N. R. 3

7. WATER LEVEL

Static water level

5'

feet below land surface

Flowing?

☐ Yes

☐ No

G.P.M. flow

Temperature

° F.

Quality

Good

Artesian closed-in pressure

p.s.i.

Controlled by

☐ Valve

☐ Cap

☐ Plug

8. WELL TEST DATA

☐ Pump

☐ Bailer

☒ Other

Compressor

Discharge G.P.M.

43

Draw Down

Not Known

Hours Pumped

5

9. LITHOLOGIC LOG

Hole Diam.

6"

6"

6"

8"

Depth

From

To

Material

Top Soil & Hard Pan

Sand

Sandy clay

gravel clay

Sand & well completed open bottom

Water

Yes

No

10.

Work started

Aug 9 1976

finished

Aug 12 1976

11. DRILLERS CERTIFICATION

Firm Name

Daniel W. Knie Drilling

Firm No.

208

Address

323 Mahan, Caldwell Idaho

Date

Signed by (Firm Official)

Daniel W. Knie

and

(Operator)

Same

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 O.F. COONS

Address 5910 Hornet Rd

Owner's Permit No. 63-89-W-042

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 2.50 inches Diameter 6 inches From 1 feet To 80 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 ☒ Pudding 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 SEAL

6. LOCATION OF WELL

Sketch map location must agree with written location.
N
W E
S
County CANYON
NE 1/4 SW 1/4 Sec. 10, T. 4 N, R. 2 W.
Subdivision Name Green View Acres
Lot No. 5 Block No. _____
MICROFILMED JUN 10 1991

7. WATER LEVEL

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

8. WELL TEST DATA

☒ Pump ☐ Bailer ☒ Air ☐ Other _____
Discharge G.P.M. 20 Pumping Level 40 Hours Pumped 1

9. LITHOLOGIC LOG

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
	0	1	TOP Soil		<input checked="" type="checkbox"/>
	1	7	Brown clay		<input checked="" type="checkbox"/>
	7	15	Sand - coarse gravel		<input checked="" type="checkbox"/>
	15	20	Gravel - coarse sand		<input checked="" type="checkbox"/>
	20	40	sand & gravel		<input checked="" type="checkbox"/>
	40	50	Brown clay		<input checked="" type="checkbox"/>
	50	60	Sandy yellow clay		<input checked="" type="checkbox"/>
	60	70	Sandy yellow clay		<input checked="" type="checkbox"/>
	70	80	Brown clay		<input checked="" type="checkbox"/>
	80	85	Brown clay		<input checked="" type="checkbox"/>
	85	90	Coarse white sand		<input checked="" type="checkbox"/>

10.

Work started 3-17-89 finished 3-17-89

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Firm Name SCOTT DRILLING CO Firm No. 327
CALDWELL, ID 83606
Address (208) 459-6686 Date _____
Signed by (Firm Official) James A. Scott
and J. Scott
(Operator)

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 -Carl-Kraus Oral Kraus

Address RT. 1 Caldwell, Ida.

Owner's Permit No. _____

NATURE OF WORK (check): Replacement well ☒

New well ☐ Deepened ☐ Abandoned ☐

Water is to be used for: Domestic use

METHOD OF CONSTRUCTION: Rotary ☐ Cable ☒
Dug ☐ Other _____

(explain)

CASING SCHEDULE: Threaded _____ Welded ☒
6 "Diam. from 0 ft. to 184 ft.

"Diam. from _____ ft. to _____ ft.

"Diam. from _____ ft. to _____ ft.

"Diam. from _____ ft. to _____ ft.

Thickness of casing: .250 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: _____

Did any strata contain unusable water? Yes ☐

No. ☒ Type of water: _____

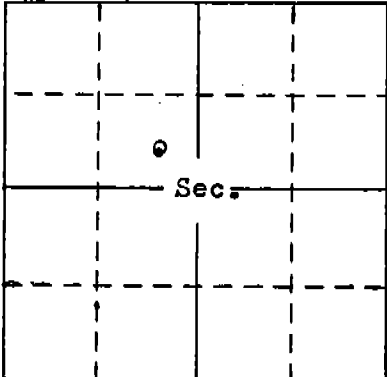
Depth of strata _____ ft. Method of sealing

strata off: _____

Surface casing used? Yes ☒ No. ☐

Cemented in place? Yes ☐ No ☒

Locate well in section



LOCATION OF WELL: County Canyon

SE 1/4 NW 1/4 Sec. 10 T. 4 N. R. 3 E. W

Size of drilled hole: 6" Total
depth of well: 200' Standing water
level below ground: +5' Temp.
Fahr. 55 Test delivery: 24 gpm
or _____ cfs Pump? ☒ Bail ☐

Size of pump and motor used to make test:
1 H. Sub.

Length of time of test: 18 Hrs. Min.

Drawdown: 10' ft. Artesian pressure: ft.

above land surface 5' Give flow _____ cfs

or _____ gpm. Shutoff pressure:

Controlled by: Valve ☒ Cap ☐ Plug ☐

No control ☐ Does well leak around casing?

Yes ☐ No ☒

DEPTH MATERIAL WATER

FROM TO YES OR NO

FEET FEET

0 9 Brown Loam no

9 56 sand gravel water yes

56 176 fine sand-silt poor clay yes

176 198 clay no

198 200 A little better sand, water yes

001186

Work started: 9/29/67

Work finished: 10/4/67

Well Driller's Statement: This well was
drilled under my supervision and this report
is true to the best of my knowledge.

Name: C.F. Baker & Son

Address: Box 41 Middleton, Ida.

Signed by: C.F. Baker

License No. 9 Date: 10/10/67

Use other side for additional remarks

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only				
Well ID No.	808229			
Inspected by				
Twp	Rge	Sec		
1/4	1/4	1/4		
Lat:	:	Long:	:	:

1. WELL TAG NO. D 10030684
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Keystone Custom Homes
Address 208 Atlantic Ave.
City Middleton State Id Zip 83644

3. LOCATION OF WELL by legal description:

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

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 10 1/4 SW 1/4 NE 1/4
Gov't Lot _____
County Canyon
Lat: : : Long: : :
Address of Well Site 14398 Silver Creek Rd.
City Caldwell

(Give at least name of road + Distance to Road or Landmark)
Lt. 10 Blk. 1 Sub. Name River Rd

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 Best	0	18	450/lbs	10" over bore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 117'-6"

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	72	117'-6"	250	Steel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 5' Length of Tailpipe 0

Packer ☒ Y ☐ N Type 3-Rib

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____

Screen Type & Method of Installation Johnson Setback

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
118	128	20	6"	Tele	S.S.	<input type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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 ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
50		127'	2 hrs

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: Good clear color

no smell Depth first Water Encounter 23'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10	0	4	Top Soil		<input checked="" type="checkbox"/>
10	4	8	Clay		<input checked="" type="checkbox"/>
10	8	19	Sand & clay		<input checked="" type="checkbox"/>
6	19	34	Sand & gravel	<input checked="" type="checkbox"/>	
3	34	67	Brn clay		<input checked="" type="checkbox"/>
6	67	77	Sand mixed with clay	<input checked="" type="checkbox"/>	
7	77	79	Sand	<input checked="" type="checkbox"/>	
7	79	81	Brn Clay		<input checked="" type="checkbox"/>
8	81	84	Blue clay		<input checked="" type="checkbox"/>
8	84	117	Brn clay		<input checked="" type="checkbox"/>
11	117	128	Sand	<input checked="" type="checkbox"/>	
12	128		Brn clay		<input checked="" type="checkbox"/>

RECEIVED

NOV 10 2003

WATER RESOURCES
WESTERN REGION

Completed Depth 128' (Measurable)

Date: Started 10/24/03 Completed 10/26/03

14. DRILLER'S CERTIFICATION

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

Company Name Precision Well Drilling Firm No. 522

Principal Driller J. J. Plauson Date 10/30/03

and Driller or Operator II _____ Date _____

Operator I _____ Date _____

024994

RECEIVED

DEC 12 1962

WELL LOG AND REPORT OF THE
STATE RECLAMATION ENGINEER OF IDAHO

Department of Reclamation

Permit No. _____ Well No. 1 County CANYON

Owner LLOYD KUCK

Address CAULDWELL IDAHO

Driller GUY F DOTY

Address BOX 18 HUSTON, IDAHO

Well location S.W. 1/4 N.E. 1/4 Sec. 10, T. 4 N. 3 R. 3 1/4 W

Size of drilled hole 4 2 in

Locate well in section

NW 1/4	NE 1/4
SW 1/4	SE 1/4

Total depth of well 84

Give depth to standing water from the ground ART Water temp. _____ °Fahr.

On "Pumping Test" delivery was _____ g.p.m. or _____ c.f.s. Drawdown was _____ feet.

Size of pump and motor used to make test _____

Length of time of test _____ hours _____ minutes.

If flowing well, give flow _____ c.f.s. or 36 g.p.m. and of shut off pressure 4 lbs

If flowing well, described control works well seal 1 1/2 valve

(TYPE AND SIZE OF VALVE, ETC.)

Water will be used for DOMESTIC PURPOSES Weight of casing per lineal foot _____

Thickness of casing 1 IN Casing material STEEL

(STEEL, CONCRETE, WOOD, ETC.)

Diameter, length and location of casing 4 in,) oto 62 ft

(CASING 12" IN DIAMETER OR LESS, GIVE INSIDE DIAMETER;
CASING OVER 12" IN DIAMETER, GIVE OUTSIDE DIAMETER)

CASING RECORD

Diam. Casing	From Feet	To Feet	Length	Remarks—seals, grouting, etc.

Number and size of perforations NONE located _____ feet to _____ feet from ground

Date of commencement of well 6-22-62 Date of completion of well 6-22-62

SWNE S. 10 4N 3W

WMS

024995

WELL LOG

From Feet	To Feet	Type of Material	Water-bearing Formation Ans. Yes or No	Casing Perforated Ans. Yes or No
0	2	TOP SOIL		
2 "	II	SAND @ GRAVEL	NO YES	NO
II	22	HARD PAN		
22	46	YELLOW CLAY.		
46	84	BLUE SHALE.		
	84	BLUE SAND, FINE	YES	
If more space is required use Sheet No. 2				

WELL DRILLER'S STATEMENT

This well was drilled under my supervision and the above information is true and correct to the best of my knowledge and belief.

Signed_____

By _____

Dated 6-24-62, 1962

License No. I86

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Well ID No.	805957		
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat:	:	Long:	:

1. WELL TAG NO. D 0029919
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Sunrise Fine Homes
Address 24799 Lansing Ln.
City Middleton State Id Zip 83644

3. LOCATION OF WELL by legal description:

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

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 10 SW 1/4 NE 1/4 1/4 1/4
Gov't Lot _____
County Canyon

Lat: _____ Long: _____
Address of Well Site 22702 Clearwater Dr.

(Give at least name of road - Distance to Road or Landmark)
City Caldwell
L.t. 2 Blk. 1 Sub. Name River Rd. Est.

4. USE:

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

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

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Lexstern Be-4	0	18	500/lbs	10" over bore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 144

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	72	144	250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 5' Length of Tailpipe 5'

Packer ☒ Y ☐ N Type 3-Rib

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
145	155	20	6"	7 1/2"	S.S.	<input type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

gnd level below ground Artesian pressure _____ lb.

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

Sand Seal well cap

12. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
150		155	2 hrs.

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: Good clear color

Depth first Water Encounter 55'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water	Y	N
10	0	4	Top Soil			<input checked="" type="checkbox"/>
10	4	19	Clay			<input checked="" type="checkbox"/>
6	19	26	Sand & gravel		<input checked="" type="checkbox"/>	
26	26	44	Clay			<input checked="" type="checkbox"/>
44	44	51	Sandy clay			<input checked="" type="checkbox"/>
51	51	55	Brn clay			<input checked="" type="checkbox"/>
55	55	61	Sand		<input checked="" type="checkbox"/>	
61	61	69	Brn clay			<input checked="" type="checkbox"/>
69	69	74	Sandy clay			<input checked="" type="checkbox"/>
74	74	91	Brn clay			<input checked="" type="checkbox"/>
91	91	118	Sandy clay		<input checked="" type="checkbox"/>	
118	118	132	Hrd Brn clay			<input checked="" type="checkbox"/>
132	132	137	Sandy clay			<input checked="" type="checkbox"/>
137	137	140	Hrd Brn clay			<input checked="" type="checkbox"/>
140	140	157	med Sand		<input checked="" type="checkbox"/>	
157	157	160	Hrd Brn clay			<input checked="" type="checkbox"/>

RECEIVED

SEP 12 2003

WATER RESOURCES
WESTERN REGION

Completed Depth 160ft. (Measurable)

Date: Started 8/21/03 Completed 8/25/03

14. DRILLER'S CERTIFICATION

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

Company Name Precision Drilling & Pump Firm No. 522

Principal Driller Jeff Plauen Date 9/10/03

Driller or Operator II _____ Date _____

Operator I _____ Date _____

Piston Bridge Est. & Machinery

05/06/2024

Principal Driller and Rig Operator Required
Operator I must have signed on Driller or Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only		
Well ID No.	810441	
Inspected by		
Twp	Rge	Sec
1/4	1/4	1/4
Lat:	Long:	

1. WELL TAG NO. D 0030959
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Sunrise Fine Homes
Address 34799 Lansing Ln.
City Middleton State SD Zip 83644

3. LOCATION OF WELL by legal description:

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

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 10 SW 1/4 NE 1/4
Gov't Lot _____ 10 acres 40 acres 160 acres

Lat: _____ Long: _____
Address of Well Site 22689 Clearwater Dr.

City Caldwell
Lt. 3 Blk. 1 Sub. Name River Rd. Est.
Phase II

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	18	450 lbs	10' over bore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 182'
Was drive shoe seal tested? ☒ Y ☐ N How? A-1

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6" FR	182	250		Steel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____
Screen Type & Method of Installation Sohnsen Leash DU Valve

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
183	188	20	6"	7ek	S.S.	<input type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

2 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: Sand Seal well Cap.

12. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
100		185'	1 hr.

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: Good clear color

Depth first Water Encounter 21

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10	0	3	Top Soil		<input checked="" type="checkbox"/>
10	3	6	Sand		<input checked="" type="checkbox"/>
10	6	10	Sand & clay		<input checked="" type="checkbox"/>
10	10	18	clay		<input checked="" type="checkbox"/>
6	18	29	Sand & gravel	<input checked="" type="checkbox"/>	
6	29	38	Brn Clay		<input checked="" type="checkbox"/>
6	38	73	Fine Sand & clay	<input checked="" type="checkbox"/>	
6	73	86	Hrd Brn Clay		<input checked="" type="checkbox"/>
6	86	104	Blue clay		<input checked="" type="checkbox"/>
6	104	109	Sand & clay mixed	<input checked="" type="checkbox"/>	
6	109	121	Hrd Brn Clay		<input checked="" type="checkbox"/>
6	121	143	Sandy clay (Fractured)	<input checked="" type="checkbox"/>	
6	143	157	Hrd Brn Clay		<input checked="" type="checkbox"/>
6	157	174	Fine Silty Sand	<input checked="" type="checkbox"/>	
6	174	182	Hrd Brn Clay		<input checked="" type="checkbox"/>
6	182	188	med Sand	<input checked="" type="checkbox"/>	

RECEIVED

FEB 03 2004

WATER RESOURCES
WESTERN REGION

Completed Depth 188' (Measurable)
Date: Started 1-26-04 Completed 1-30-04

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 & Pump Inc Firm No. 522

Principal Driller Jeff Pearson Date 1-31-04

Driller or Operator II _____ Date _____

Operator I _____ Date _____

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

USE TYPEWRITER OR
BALL POINT PEN

State of Idaho
Department of Reclamation

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
JUL 14 1970

1. WELL OWNER

Name John Walker
Address R# 5 Caldwell Ida
Owner's Permit No. _____

7. WATER LEVEL

Static water level 68 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

2. NATURE OF WORK

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

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other
Discharge G.P.M. 150 - 200 Draw Down Complete Hours Pumped 1 1/2

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test
☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6" inches Total depth 172 feet
Casing schedule: ☒ Steel ☐ Concrete
Thickness 2.50 inches Diameter 6" inches From 1' feet To 142 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 26 feet
Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.

Southerly 30' of lot 2 + Northerly 30' of lot 1 in Block 3 of R28 Veta A.C.B. addition to Caldwell
3rd NW 1/4 Sec 10 T.4N R.3W
County Carriger

10.

Work started 7/15 finished 7/28/70

11. DRILLER'S CERTIFICATION

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

Rich Knobloch 30
Driller's or Firm's Name Number
R# 3 Caldwell
Address
Rich Knobloch 8/13/70
Signed By
Crimson Bridge Estates

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

Office Use Only			
Well ID No.	810542		
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat:	:	Long:	:

1. WELL TAG NO. D 0030984
 DRILLING PERMIT NO. _____
 Water Right or Injection Well No. _____

2. OWNER:
 Name Sunrise Fine Homes
 Address 24799 Lansing Ln.
 City Middleton State Id Zip 83644

3. LOCATION OF WELL by legal description:

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

Twp. 4 North ☒ or South ☐
 Rge. 3 East ☐ or West ☒
 Sec. 10 SW 1/4 NE 1/4 1/4
 Gov't Lot _____
 County Canyon 10 acres 40 acres 160 acres
 Lat: _____ Long: _____

Address of Well Site 14437 Clearcreek Dr.
 City Caldwell
 (Give at least name of road + Distance to Road or Landmark)
 Lt. 6 Blk. 1 Sub. Name River Rd. E St.

4. USE:

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

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

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
<u>Wye Berthane</u>	<u>0</u>	<u>18</u>	<u>300 lbs</u>	<u>10" over bore</u>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 97'
 Was drive shoe seal tested? ☒ Y ☐ N How? Air

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6</u>	<u>12</u>	<u>97</u>	<u>260</u>	<u>Steel</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____

Screen Type & Method of Installation Johnson/Wash PN Valve

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>97</u>	<u>107</u>	<u>20</u>	<u>6"</u>	<u>7/8"</u>	<u>S.S.</u>	<input type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

12. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>100</u>		<u>105'</u>	<u>1 Hr.</u>

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: Good clear clear

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>10</u>	<u>0</u>	<u>4</u>	<u>Top Soil</u>		<input checked="" type="checkbox"/>
	<u>4</u>	<u>7</u>	<u>Sand</u>		<input checked="" type="checkbox"/>
	<u>7</u>	<u>10</u>	<u>Sand & clay</u>		<input checked="" type="checkbox"/>
	<u>10</u>	<u>16</u>	<u>Clay</u>		<input checked="" type="checkbox"/>
<u>16</u>	<u>16</u>	<u>28</u>	<u>Sand & gravel</u>	<input checked="" type="checkbox"/>	
	<u>28</u>	<u>36</u>	<u>Hrd Brn clay</u>		<input checked="" type="checkbox"/>
	<u>36</u>	<u>42</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
	<u>42</u>	<u>45</u>	<u>Fine sand</u>	<input checked="" type="checkbox"/>	
	<u>45</u>	<u>57</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>57</u>	<u>66</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
	<u>66</u>	<u>70</u>	<u>Clay</u>		<input checked="" type="checkbox"/>
	<u>70</u>	<u>73</u>	<u>med sand</u>	<input checked="" type="checkbox"/>	
	<u>73</u>	<u>88</u>	<u>Sandy clay (Fractured)</u>	<input checked="" type="checkbox"/>	
	<u>88</u>	<u>97</u>	<u>Hrd Brn clay</u>		<input checked="" type="checkbox"/>
	<u>97</u>	<u>107</u>	<u>med sand</u>	<input checked="" type="checkbox"/>	

RECEIVED

FEB 05 2004

WATER RESOURCES
WESTERN REGION

Completed Depth 107' (Measurable)
 Date: Started 2/4/04 Completed 2/5/04

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 Pumping Firm No. 522

Principal Driller Jeff Hanson Date 2/5/04

Driller or Operator II _____ Date _____

Operator I _____ Date _____

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Well ID No.	810746		
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat:	:	Long:	:

1. WELL TAG NO. D 0030989
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Sunrise Fire Homes
Address 24799 Fairway Ln.
City Middleton State Id Zip 83644

3. LOCATION OF WELL by legal description:

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

Twp. 4 North ☒ or South ☐
Rge. 3 East ☐ or West ☒
Sec. 10 SW 1/4 NE 1/4 1/4
Gov't Lot _____
County Carver

Lat: _____ Long: _____
Address of Well Site 14431 Clearcreek Rd.
City Caldwell
Lt. 9 Blk. 1 Sub. Name River Rd Est.

4. USE:

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

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

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
<u>Wyo Butonik</u>	<u>0</u>	<u>18</u>	<u>350 lbs</u>	<u>10" over bore</u>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 107'
Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6" + 2</u>	<u>107</u>	<u>250</u>	<u>Steel</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____

Screen Type & Method of Installation Johnson Wash Dr. Valve

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>108</u>	<u>118</u>	<u>20</u>	<u>6"</u>	<u>7/8"</u>	<u>S.S.</u>	<input type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

12. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>100</u>		<u>105</u>	<u>4 hrs.</u>

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: Good clear color

Depth first Water Encounter 20'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>10</u>	<u>0</u>	<u>5</u>	<u>Top Soil</u>		<input checked="" type="checkbox"/>
<u>10</u>	<u>5</u>	<u>8</u>	<u>Sand</u>		<input checked="" type="checkbox"/>
<u>10</u>	<u>8</u>	<u>11</u>	<u>Sand & clay</u>		<input checked="" type="checkbox"/>
<u>10</u>	<u>11</u>	<u>18</u>	<u>Clay</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>18</u>	<u>29</u>	<u>Sand & gravel</u>	<input checked="" type="checkbox"/>	
<u>29</u>	<u>37</u>	<u>45</u>	<u>Hard Brown clay</u>		<input checked="" type="checkbox"/>
<u>37</u>	<u>45</u>	<u>54</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
<u>45</u>	<u>54</u>	<u>69</u>	<u>Hard Brn clay</u>		<input checked="" type="checkbox"/>
<u>54</u>	<u>69</u>	<u>74</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
<u>69</u>	<u>74</u>	<u>77</u>	<u>Hard Brn clay</u>		<input checked="" type="checkbox"/>
<u>74</u>	<u>77</u>	<u>85</u>	<u>med Sand</u>	<input checked="" type="checkbox"/>	
<u>77</u>	<u>85</u>	<u>96</u>	<u>Sandy clay (Fractured)</u>	<input checked="" type="checkbox"/>	
<u>85</u>	<u>96</u>	<u>107</u>	<u>Hard Brn clay</u>		<input checked="" type="checkbox"/>
<u>96</u>	<u>107</u>	<u>118</u>	<u>Blue clay</u>		<input checked="" type="checkbox"/>
<u>107</u>	<u>118</u>		<u>med Sand</u>	<input checked="" type="checkbox"/>	

RECEIVED

FEB 23 2004

WATER RESOURCES
WESTERN REGION

Completed Depth 118' (Measurable)
Date: Started 2/6/04 Completed 2/7/04

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 Pearson Date 2/16/04

Driller or Operator II _____ Date _____

Operator I _____ Date _____

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

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0030764
 DRILLING PERMIT NO. _____
 Water Right or Injection Well No. _____

2. OWNER:

Name Kirshner Homes
 Address 14385 Silver Creek Rd
 City Caldwell State ID Zip 83605

3. LOCATION OF WELL by legal description:

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

Twp. 4 North ☒ or South ☐
 Rge. 3 East ☐ or West ☒
 Sec. 10 SW 1/4 NE 1/4 1/4 160 acres
 Gov't Lot _____ County _____

Lat: _____ Long: _____
 Address of Well Site 14385 Silver Creek Rd
 City Caldwell ID
 (Give at least name of road + Distance to Road or Landmark)
 Lt. 4 Blk. 1 Sub. Name Phase II

4. USE:

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

5. TYPE OF WORK check all that apply

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____ (Replacement etc.)

6. DRILL METHOD:

☐ Air Rotary ☒ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
<u>Bentonite</u>	<u>0</u>	<u>18</u>	<u>105 lbs</u>	<u>over-bore</u>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 182
 Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6"</u>	<u>+2</u>	<u>182</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 7 Length of Tailpipe 2
 Packer ☒ Y ☐ N Type E Packer

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____

Screen Type & Method of Installation Johnson SS

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>183</u>	<u>193</u>	<u>.16</u>		<u>5"</u>	<u>SS</u>	<input type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

2 ft. below ground Artesian pressure _____ lb.
 Depth flow encountered 185 ft. Describe access port or control devices:
Wall car

Office Use Only
 Well ID No. 809741
 Inspected by _____
 Twp _____ Rge _____ Sec _____
 1/4 _____ 1/4 _____ 1/4 _____
 Lat: _____ Long: _____

12. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>70</u>	<u>20</u>	<u>195</u>	<u>2 Hrs</u>

Water Temp. 65 Bottom hole temp. 65

Water Quality test or comments: 600 d

Depth first Water Encounter 50

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>10</u>	<u>0</u>	<u>5</u>	<u>Over-burden</u>		<input checked="" type="checkbox"/>
<u>10</u>	<u>5</u>	<u>18</u>	<u>Sand</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>18</u>	<u>36</u>	<u>Gravel</u>		<input checked="" type="checkbox"/>
	<u>36</u>	<u>50</u>	<u>clay</u>		<input checked="" type="checkbox"/>
	<u>50</u>	<u>53</u>	<u>Sand</u>	<input checked="" type="checkbox"/>	
	<u>53</u>	<u>89</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
	<u>89</u>	<u>110</u>	<u>tan clay</u>		<input checked="" type="checkbox"/>
	<u>110</u>	<u>112</u>	<u>Sand</u>	<input checked="" type="checkbox"/>	
	<u>112</u>	<u>140</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
	<u>140</u>	<u>143</u>	<u>Sand</u>	<input checked="" type="checkbox"/>	
	<u>143</u>	<u>153</u>	<u>tan clay</u>		<input checked="" type="checkbox"/>
	<u>153</u>	<u>195</u>	<u>Sand</u>	<input checked="" type="checkbox"/>	
	<u>195</u>		<u>tan clay</u>		<input checked="" type="checkbox"/>

RECEIVED

JAN 23 2004

WATER RESOURCES
WESTERN REGION

Completed Depth 195 (Measurable)

Date: Started 12/17/2003 Completed 2/3/2004

14. DRILLER'S CERTIFICATION

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

Company Name Precision Well Drilling Inc Firm No. 522

Principal Driller Jeff Plummer Date 1-20-04

Driller or Operator Ed J. Galden Date 2/3/2004

Operator I _____ Date _____

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

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT1. WELL TAG NO. D 0071914Drilling Permit No. 972677-878734

Water right or injection well # _____

2. OWNER: Bruce Field Construction

Name _____

Address 14031 Silver Ridge Rd.City Caldwell State Id Zip 83607

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒Sec. 10 1/4 NW 1/4 SW 1/4Gov't Lot _____ County CanyonLat. 43 ° 41:744 (Deg. and Decimal minutes)Long. 116 ° 41:354 (Deg. and Decimal minutes)Address of Well Site 22307 Big Moon WayCity CaldwellLot. 17 Blk. 3 Sub. Name Taylor Ridge

4. USE:

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

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method/procedure
<u>3/8 Best</u>	<u>0</u>	<u>47</u>	<u>26 bags</u>	<u>Dry Pour</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner	Threaded	Welded
<u>6</u>	<u>42</u>	<u>203</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 203'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☐ N Method _____Manufactured screen ☒ Y ☐ N Type JohnsonMethod of installation Wash Dr. Valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>205</u>	<u>210</u>	<u>12</u>	<u>6"</u>	<u>Tele</u>	<u>S.S.</u>	

Length of Headpipe 6'-7" Length of Tailpipe 0Packer ☒ Y ☐ N Type 3-Rib

10. FILTER PACK:

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

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 180 Static water level (ft) 80Water temp. (°F) 60 Bottom hole temp. (°F) _____Describe access port Sani Seal Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
<u>200</u>	<u>90</u>	<u>1 hr.</u>
<u>190</u>	<u>80</u>	<u>1 hr.</u>

Test method:

Pump ☐ Bailer ☐ Air ☒ Flowing artesian ☐

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>12</u>	<u>0</u>	<u>5</u>	<u>Top Soil</u>		<input checked="" type="checkbox"/>
<u>1</u>	<u>5</u>	<u>7</u>	<u>Hrd Pan</u>		<input checked="" type="checkbox"/>
<u>1</u>	<u>7</u>	<u>11</u>	<u>gravel</u>		<input checked="" type="checkbox"/>
<u>10</u>	<u>11</u>	<u>51</u>	<u>Solid Blk lava</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>51</u>	<u>72</u>	<u>gravel</u>		<input checked="" type="checkbox"/>
	<u>72</u>	<u>74</u>	<u>Red cinders</u>		<input checked="" type="checkbox"/>
	<u>74</u>	<u>88</u>	<u>Fine Brn Sand</u>		<input checked="" type="checkbox"/>
	<u>88</u>	<u>99</u>	<u>Fractured Brn clay</u>		<input checked="" type="checkbox"/>
	<u>99</u>	<u>123</u>	<u>Fractured Brn clay & sand</u>		<input checked="" type="checkbox"/>
	<u>123</u>	<u>130</u>	<u>Fine Brn Sand</u>		<input checked="" type="checkbox"/>
	<u>130</u>	<u>132</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>132</u>	<u>138</u>	<u>Fine Brn clay</u>		<input checked="" type="checkbox"/>
	<u>138</u>	<u>156</u>	<u>Brn clay & Shad</u>		<input checked="" type="checkbox"/>
	<u>156</u>	<u>163</u>	<u>Fractured Brn & Blue clay</u>		<input checked="" type="checkbox"/>
			<u>42 Fine Sand</u>		<input checked="" type="checkbox"/>
	<u>163</u>	<u>175</u>	<u>Fractured Brn clay</u>		<input checked="" type="checkbox"/>
	<u>175</u>	<u>180</u>	<u>Brn clay & Sand</u>		<input checked="" type="checkbox"/>
	<u>180</u>	<u>184</u>	<u>Fine Brn Sand</u>		<input checked="" type="checkbox"/>
	<u>184</u>	<u>187</u>	<u>Sandy Brn clay</u>		<input checked="" type="checkbox"/>
	<u>187</u>	<u>191</u>	<u>Fine mucky Sand</u>		<input checked="" type="checkbox"/>
	<u>191</u>	<u>193</u>	<u>Sandy Brn clay</u>		<input checked="" type="checkbox"/>
	<u>193</u>	<u>197</u>	<u>Fine Brn Sand</u>		<input checked="" type="checkbox"/>
	<u>197</u>	<u>200</u>	<u>Fractured clay</u>		<input checked="" type="checkbox"/>
	<u>200</u>	<u>203</u>	<u>Hrd Brn clay</u>		<input checked="" type="checkbox"/>
	<u>203</u>	<u>210</u>	<u>Fine White Sand</u>		<input checked="" type="checkbox"/>

Completed Depth (Measurable): 210 ft.Date Started: 5-11-16 Date Completed: 5-13-16

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Well Drilling Co. No. 532Principal Driller Jeff Dawson Date 6-15-16Driller Jeff Dawson Date 6-15-16

Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

RECEIVED

JUN 22 2016

WATER RESOURCES
WESTERN REGION



Post Office Box 190537 - Boise, Idaho 83719
site.consulting.idaho@gmail.com - 208-440-6276

David Stephens
Precision Excavation & Construction Inc.
9160 West Chinden Boulevard
Meridian, Idaho 83646-5054

January 2, 2023
File # 23796-A
Page 1 of 28

Re: Geotechnical Recommendations
Proposed Crimson Bridge Subdivision
14533 River Road - Caldwell, Idaho

David:

As per your request, SITE has completed the testing and classification of all samples taken during the field exploration performed on July 14, 2022. This investigation was intended to determine the depth and quality of the onsite pitrun, (sand and gravel) and determine site suitability for construction of a residential subdivision. As requested, this report also contains soil testing and classification data for the purpose of onsite septic system design. It is noted that the test pits were excavated in randomly selected locations well before the provided Preliminary Plat was generated. Both engineering and sanitary classifications of each soil sampled are included in the test pit logs. The data indicates that the proposed subdivision and homes with onsite septic systems are feasible and that specification aggregate products can be generated from onsite an onsite source.

We appreciate this opportunity to be of service. We look forward to working with your design and construction team in the future. Should you have any questions or require additional information, please contact our office at your convenience.

Respectfully submitted:
SITE Consulting, LLC
Bob J. Arnold, PE



Digital Signed by
Bob J. Arnold, PE
Date:

01/03/2022



FIELD INVESTIGATION

SITE observed the excavation of nine test pits at locations intended to provide full coverage of the subject property. This investigation was performed on property located at 14533 River Road in Caldwell, Idaho. The property is just north of the Boise River and the City of Caldwell's Curtis Park. Nine rural properties that front Channel Road are along the north property boundary. The following information was obtained from the Canyon County Assessor's records utilizing landprodata.com

#	Parcel Number	Address	Acres
1	R-3466800000	Boise River Road	7.09
2	E-3466701100	144533 River Road	49.74
		Total Acres	56.83

Near surface soils were generally similar in all test pits. Sand and silt soils are the most prevalent surface soil and typically extend from three to six feet deep. No clay soils were sampled. In TP-5 (10') and TP-8 & TP-9 (9.0') the overburden soils extend to the bottom of the test pit where sloughing soil prevented deeper excavation. Pitrun type sand and gravel was encountered below the above-described surface layer in TP-3 to TP-7 but not in TP-8 & TP-9. The encountered sand and gravel materials varied from fine gravel in TP-4 (max size 2") to large cobble (12") in test pit #5. Groundwater was encountered in all test pits at three to ten feet deep. This range is due to surface elevation differences and not a fluctuating groundwater surface.

Additional research was performed searching for well logs within the section where the subject property is located. Well logs for section 10, township 4 north, range 3 west were reviewed on the IDWR website. The well logs for the subject and two adjacent/nearby properties were located and have been included in the Appendix. These logs indicate that groundwater is very near the ground surface. The onsite well reported a small (5 gpm) artesian flow and the other two wells indicate the static groundwater is two and four feet deep. It can be assumed that groundwater on the subject property dictated by flow in the adjacent Boise River.



GEOTECHNICAL RECOMMENDATIONS

Site Work

Grubbing depths of up to 2 to 12 inches can be anticipated to remove most organic materials. Deeper roots may exist where large trees are or were present. Stripping depth is to be adjusted in the field at the time of construction.

Excavations caused by grubbing of ditches or over excavation of soft or wet areas are to be backfilled with structural fill. All subgrade soils present in the test pits can be used as structural fill on building lots and within the subgrade of onsite right of ways.

Compaction of any fill placed within building pads or right of ways must exceed 95% of the maximum dry density as determined by Standard Proctor testing. Structural fill must pass compaction testing and visual inspection for stability. Fill that passes compaction but is observed to rut or deflect under construction traffic is to be rejected. Ripping of compacted fill in yard areas after homes are completed and before fine grading is highly recommended.

Onsite Pavement Section

A sample of the surface silt/sand was sent to a specialty soil lab for R-Value Testing. Based upon an R-Value result of R=8 and a traffic Index of TI=6, a pavement section of 2.5" / 4.0" /13.0" is recommended for all subdivision interior streets. Placement of granular structural fill in the subgrade of proposed roadways will reduce the needed pavement section. All materials and methods used for subdivision construction are to comply with ACCHD and / or ISPWC requirements.



Residential Foundation System

Single-family residential structures may be supported on conventional, continuous, and isolated pad foundations founded upon the native soils or upon structural fill extending to these soils. Based upon proper placement and compaction of structural fill, bearing pressures of up to 1500 psf are allowed for foundations founded on the native soils or compacted structural fill. Crawlspace or slab on grade floors are acceptable. If lot conditions are as described herein, lot specific geotechnical reports are not needed. If conditions on an individual lot are different or not address by these recommendations, a geotechnical engineer should be retained for lot specific recommendations.

Slab on Grade Concrete

Care must be taken so that all excavations below both interior and exterior slab on grade concrete are properly backfilled in accordance with the structural fill recommendations. Trenches and wall backfill areas are to be filled in lifts and benched each lift so that fill is not placed against a vertical soil face greater than three feet tall. Areas of excessive yielding should be excavated and backfilled with structural fill. Any fill used to increase the elevation of slab on grade concrete should meet the requirement for structural fill. Slab on grade floors, sidewalks and pavements should be placed atop a mat of at least 0.5 feet of granular structural fill materials. Mat material should all pass a 3/4-inch sieve and should contain less than seven percent passing the # 200 sieve. ISPWC 3/4" base is acceptable.



Storm Water

It is recommended that storm runoff be directed away from all open excavations and not be allowed to puddle on subgrade soils. Based upon the anticipated depth to groundwater and the existing soils, storm water can be directed to roadside swales or the planned pond system. For design, a percolation rate of $P=6$ in / hr. is recommended for this project. A drain time not exceeding twelve hours should also be used for design. Due to anticipated variation in subsurface soils, percolation rates are to be confirmed at the time of construction.

Inspection & Testing

A qualified engineer or his representative should monitor fill placement to ensure the work is performed in accordance with these recommendations. Testing should be performed in accordance with ASTM Test Methods D3017-88 and D2922-91 (nuclear densometer) or other approved method. For mass filling testing shall be performed on each lift of compacted fill for each lot. Trench backfill and right of ways are to be tested to ISPWC requirements. It is noted that structural fill can pass compaction tests and still be unacceptable if pumping, rutting, or deflecting under vehicle or foot traffic.

General Comments

Testing and inspection services are recommended herein. Proper quality control during construction is required to confirm materials and methods and thereby obtain a desirable finished product. Monitoring and testing should also be performed to verify suitability of materials used for structural fills and to confirm proper demolition, subgrade grubbing, subgrade stability, and proper placement and compaction of fills. Any deviations from the herein described subsurface conditions must be brought to the attention of this consultant.



SEPTIC DESIGN RECOMMENDATIONS

As per your request, SITE has completed the testing and classification of all samples taken during the field exploration performed on 07/14/2022. This report contains soil testing and classification data for the purpose of onsite septic system design. Both engineering and sanitary classifications of each soil sampled are included in the test pit logs. As per the IDEQ - Technical Guidance Manual, the sanitary (USDA) classifications are based on scalping each sample on a #10 screen. The data indicates that an onsite septic system can be constructed where each test pit is located. It is assumed SWDH will require a confirmation test pit on each lot prior to construction of any onsite septic system.

AGGREGATES SOURCE SUITABILITY

General

Two random samples of the native pitrun were selected for laboratory testing. Sieve Analysis and Los Angeles Abrasion testing was performed. Test Results are in the Appendix. Results indicate the onsite pitrun materials can be used as subbase for onsite road construction. These materials also appear acceptable for production of specification base and subbase materials. Additional testing will/may be required depending upon the approval/jurisdictional agency.



Post Office Box 190537 - Boise, Idaho 83719
site.consulting.idaho@gmail.com - 208-440-6276

APPENDIX

Preliminary Plat

Aerial Photo (Test Pit Locations)

Test Pit Logs (9 pages)

Soil Log Legend

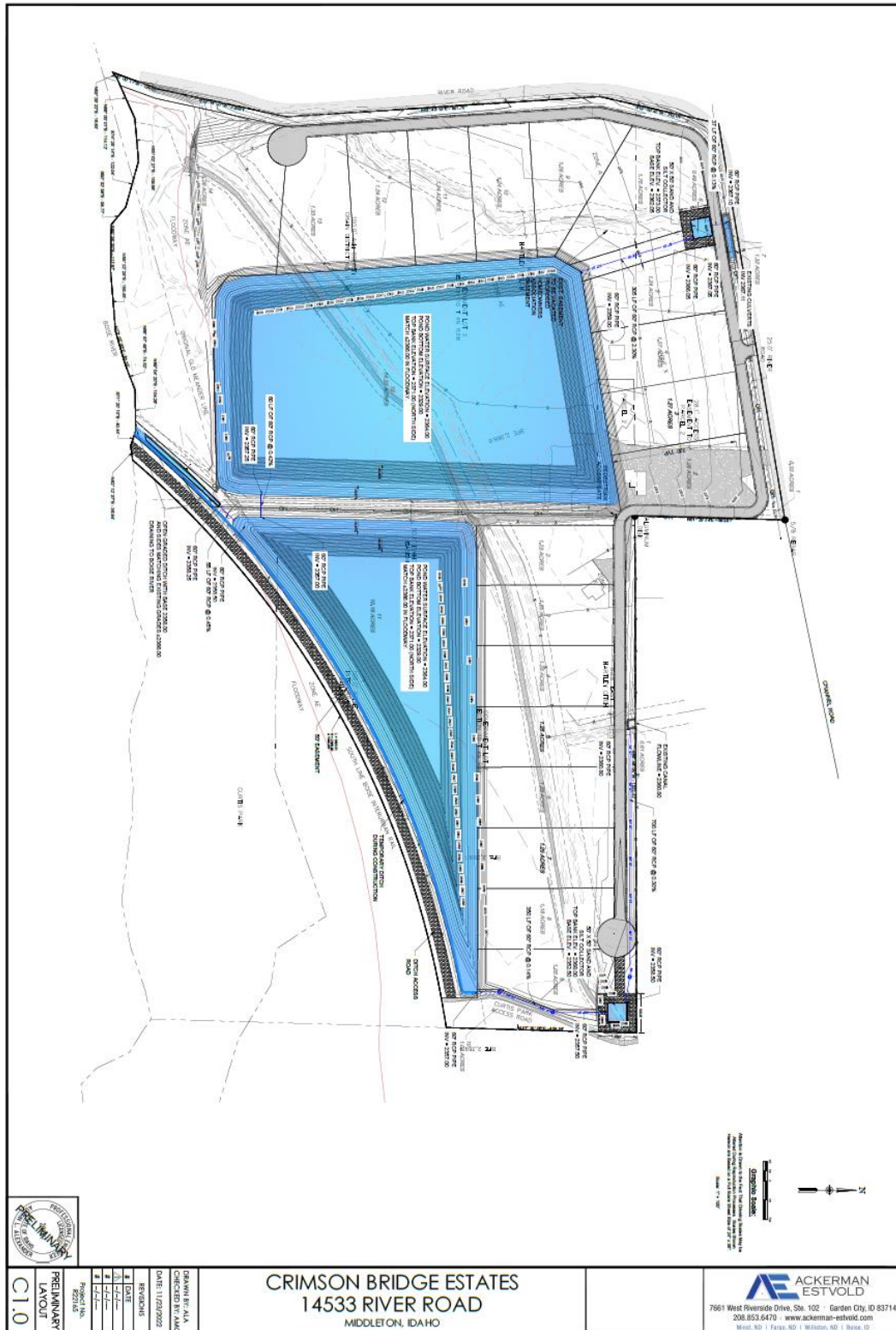
Aggregate Suitability Test Reports (4 pages)

R-Value Report

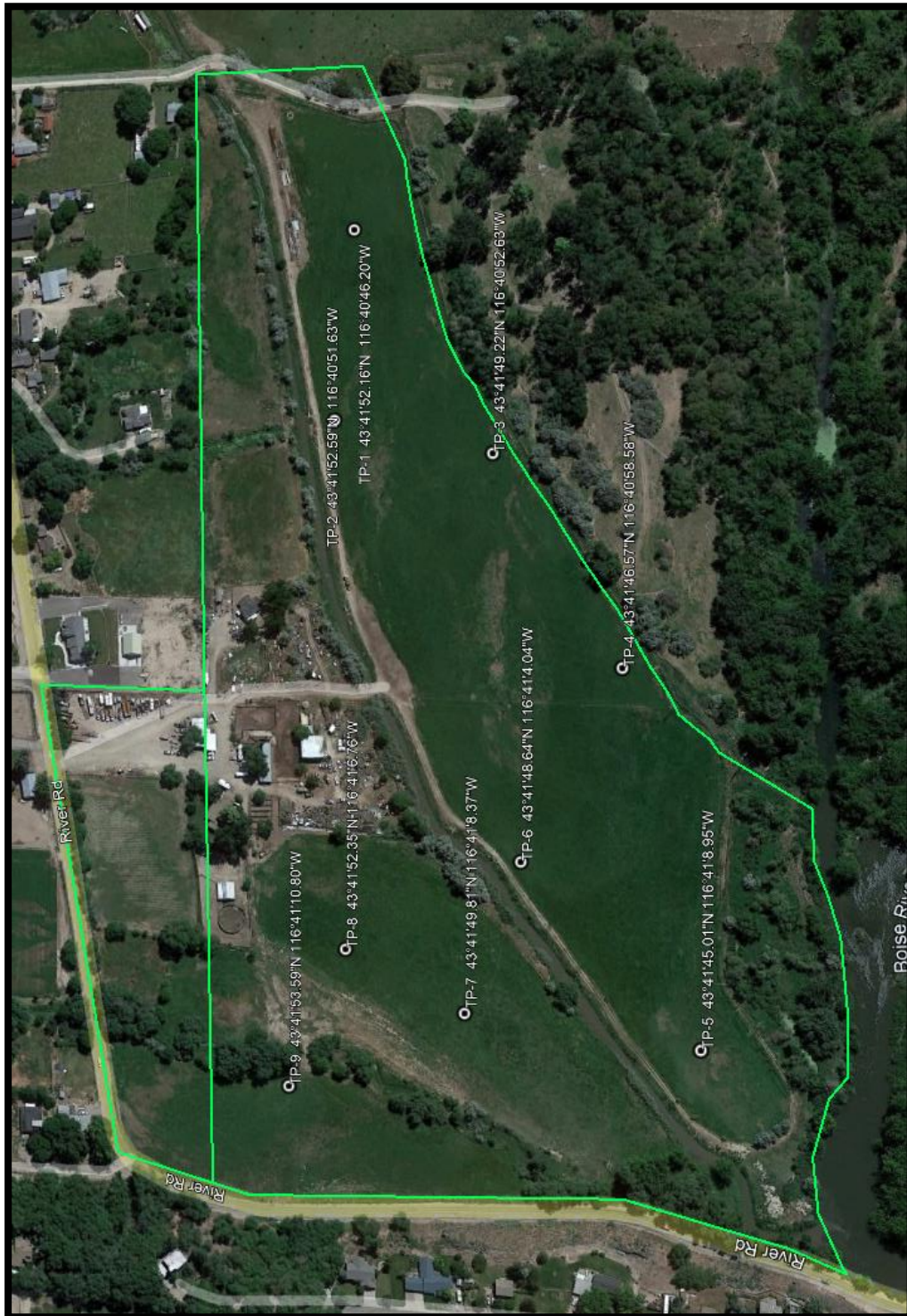
Pavement Section Calcs

IDWR Well Logs (3 pages)

PRELIMINARY PLAT



AERIAL PHOTO with test pit locations



Google Earth & Handheld GPS



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

TEST PIT LOG

Test Pit:	TP-1					File #:			23796-A				
Client:	Precision Excavation					Date Excavated:			07/14/2022				
Project:	Crimson Bridge Subdivision					Excavated By:			Client				
Location:	See Location Map					Logged By:			B. Arnold, PE - SITE				
DEPTH	SOILS DESCRIPTION												
(feet)	1.0"	3/4"	1/2"	3/8"	# 4	# 10	# 40	#100	#200	%M	LL	PI	
0.0-3.0	Grey to black, Dry to saturated, Silty, Sand (SM) 6-8" rootzone / organic layer B-2 – SILTY LOAM												
2.0						100	95	84	72.4	27.8	29	6	
3.0	GRAVEL CONTACT												
3.0-5.5	Pitrun, (sand and gravel)												
5.5	Bottom of Excavation due to sloughing Groundwater encountered at 3.0 feet Monitoring Well Installed												



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

TEST PIT LOG

Test Pit:	TP-2					File #:		23796-A					
Client:	Precision Excavation					Date Excavated:		07/14/2022					
Project:	Crimson Bridge Subdivision					Excavated By:		Client					
Location:	See Location Map					Logged By:		B. Arnold, PE - SITE					
DEPTH	SOILS DESCRIPTION												
(feet)	1.0"	3/4"	1/2"	3/8"	# 4	# 10	# 40	#100	#200	%M	LL	PI	
0.0-4.0	Grey to black, Dry to saturated, Sandy, Silt (ML) 6-8" rootzone / organic layer R-Value Result R=8 B-2 – SILTY LOAM												
3.0					100	99	95	85	69.9	19.1	31	5	
4.0-6.0	Black, Wet to Saturated, Soft, Silty, Sand (SM) A-2 – LOAM SAND												
5.0				100	98	88	75	55.5	28.7	22.2	NP	NP	
6.0	GRAVEL CONTACT												
6.0-7.5	Pitrun (sand and gravel)												
7.5	Bottom of Excavation due to sloughing Groundwater encountered at 6.0 feet Monitoring Well Installed												



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

TEST PIT LOG

Test Pit:	TP-3					File #:	23796-A						
Client:	Precision Excavation					Date Excavated:	07/14/2022						
Project:	Crimson Bridge Subdivision					Excavated By:	Client						
Location:	See Location Map					Logged By:	B. Arnold, PE - SITE						
DEPTH	SOILS DESCRIPTION												
(feet)	1.0"	3/4"	1/2"	3/8"	# 4	# 10	# 40	#100	#200	%M	LL	PI	
0.0-3.0	Grey to black, Dry to saturated, Sandy, Silt (ML) 6-8" rootzone / organic layer B-2 –SILTY LOAM												
2.0				100	99	98	88	72	51.3	14.4	NP	NP	
3.0-4.0	Brown, Moist, Silty, Sand (SM) A-SAND												
3.5				100	98	80	63	40	14.4	22.2	NP	NP	
4.0	GRAVEL CONTACT												
4.0-5.5	Pitrun, (sand and gravel)												
5.0	71	56	48	44	35	25	11	4	3.6	8.8	NP	NP	
5.5	Bottom of Excavation due to sloughing Groundwater encountered at 3.5 feet Monitoring Well Installed												



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

TEST PIT LOG

Test Pit:	TP-4						File #:		23796-A				
Client:	Precision Excavation						Date Excavated:		07/14/2022				
Project:	Crimson Bridge Subdivision						Excavated By:		Client				
Location:	See Location Map						Logged By:		B. Arnold, PE - SITE				
DEPTH	SOILS DESCRIPTION												
(feet)	1.0"	3/4"	1/2"	3/8"	# 4	# 10	# 40	#100	#200	%M	LL	PI	
0.0-2.0	Grey to black, Dry to saturated, Silty, Sand 6-8" rootzone / organic layer												
2.0-3.5	Brown, Wet, Sand (SP) A-SAND												
3.0				100	95	82	58	36	12.2	18.8	NP	NP	
3.5	GRAVEL CONTACT												
3.5-7.0	Pitrun, (sand and fine gravel)												
6.0	56			100	95	82	58	36	12.2	18.8	NP	NP	
7.0	Bottom of Excavation due to sloughing Groundwater encountered at 4.0 feet Monitoring Well Installed												



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

TEST PIT LOG

Test Pit:	TP-5					File #:		23796-A					
Client:	Precision Excavation					Date Excavated:		07/14/2022					
Project:	Crimson Bridge Subdivision					Excavated By:		Client					
Location:	See Location Map					Logged By:		B. Arnold, PE - SITE					
DEPTH	SOILS DESCRIPTION												
(feet)	1.0"	3/4"	1/2"	3/8"	# 4	# 10	# 40	#100	#200	%M	LL	PI	
0.0-5.0	Grey to black, Dry to saturated, Silty, Sand (SM) 8-12" rootzone / organic layer B1-Sandy Loam												
4.0					100	95	86	69	464	16.2	NP	NP	
5.0-10.0	Dark Gray, Wet to Saturated, Sandy, Silt (ML) C1-SILT												
6.0					100	99	96	93	89.6	26.2	38	8	
10.0	GRAVEL CONTACT												
10.0-11.0	Pitrun, (sand and fine gravel)												
10.0	63	54	45	41	32	23	9	4	3.2	8.0	NP	NP	
11.0	Bottom of Excavation Limit of excavator Groundwater encountered at 10.0 feet Monitoring Well Installed												



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

TEST PIT LOG

Test Pit:	TP-6					File #:	23796-A						
Client:	Precision Excavation					Date Excavated:	07/14/2022						
Project:	Crimson Bridge Subdivision					Excavated By:	Client						
Location:	See Location Map					Logged By:	B. Arnold, PE - SITE						
DEPTH	SOILS DESCRIPTION												
(feet)	1.0"	3/4"	1/2"	3/8"	# 4	# 10	# 40	#100	#200	%M	LL	PI	
0.0-4.0	Grey to black, Dry to saturated, Silty, Sand (SM) 2-4" rootzone / organic layer A – SAND												
3.0				100	99	98	32	12	7.4	17.0	NP	NP	
4.0	GRAVEL CONTACT												
4.0-7.0	Pitrun, (sand and gravel)												
7.0	Bottom of Excavation due to sloughing Groundwater encountered at 4.0 feet Monitoring Well Installed												



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

TEST PIT LOG

Test Pit:	TP-7				File #:				23796-A			
Client:	Precision Excavation				Date Excavated:				07/14/2022			
Project:	Crimson Bridge Subdivision				Excavated By:				Client			
Location:	See Location Map				Logged By:				B. Arnold, PE - SITE			
DEPTH	SOILS DESCRIPTION											
(feet)	1.0"	3/4"	1/2"	3/8"	# 4	# 10	# 40	#100	#200	%M	LL	PI
0.0-2.5	Grey to black, Dry to saturated, Sandy, Silt (ML) 2-4" rootzone / organic layer C-1 – SILT											
2.0					100	99	98	95	89.6	16	38	8
2.5-4.5	Grey to black, Dry to saturated, Silty, Sand (SM) 2-4" rootzone / organic layer A – SAND											
4.0					100	92	62	32	11.5	11.0	NP	NP
	Bottom of Excavation due to sloughing Groundwater encountered at 4.0 feet Monitoring Well Installed											



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

TEST PIT LOG

Test Pit:	TP-8					File #:		23796-A					
Client:	Precision Excavation					Date Excavated:		07/14/2022					
Project:	Crimson Bridge Subdivision					Excavated By:		Client					
Location:	See Location Map					Logged By:		B. Arnold, PE - SITE					
DEPTH	SOILS DESCRIPTION												
(feet)	1.0"	3/4"	1/2"	3/8"	# 4	# 10	# 40	#100	#200	%M	LL	PI	
0.0-3.5	Grey to black, Dry to saturated, Sandy, Silt (ML) 2-4" rootzone / organic layer C-1 – SILT												
2.5				100	99	98	96	92	91.8	17.6	46	16	
3.5-9.0	Brown to White, Wet to Saturated, Clean, Coarse, SAND (SW) A-SAND												
5.0				100	91	75	58	28	8.0	8.1	NP	NP	
9.0	Bottom of Excavation due to sloughing. Could feel/hear top of gravel with digger Groundwater encountered at 4.0 feet Monitoring Well Installed												



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

TEST PIT LOG

Test Pit:	TP-9				File #:				23796-A				
Client:	Precision Excavation				Date Excavated:				07/14/2022				
Project:	Crimson Bridge Subdivision				Excavated By:				Client				
Location:	See Location Map				Logged By:				B. Arnold, PE - SITE				
DEPTH	SOILS DESCRIPTION												
(feet)	1.0"	3/4"	1/2"	3/8"	# 4	# 10	# 40	#100	#200	%M	LL	PI	
0.0-3.0	Grey to black, Dry to saturated, Sandy Silt (SM) 6-10" rootzone / organic layer B2-SILTY LOAM												
2.0					100	99	94	85	69.9	19.1	31	5	
3.0-6.0	Brown, Wet to Saturated, Silty, SAND (SM) B1-SANDY LOAM												
5.0				100	95	81	67	48	28.8	8.1	NP	NP	
6.0-9.0	Brown to White, Wet to Saturated, Clean, Coarse, SAND (SW)												
9.0	Bottom of Excavation due to sloughing. Could not reach gravel with digger Groundwater encountered at 4.5 feet Monitoring Well Installed												



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

SOIL LOG LEGEND

UNIFIED SOIL CLASSIFICATION SYSTEM

(ASTM STANDARD TEST METHOD D 2487 FOR CLASSIFICATION OF SOIL FOR ENGINEERING PURPOSES)

MAJOR DIVISIONS				TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS < 50% - #200	GRAVEL & GRAVELLY SOILS <50% - #4	< 5% - #200	GW	Well-graded gravel, gravel-sand mixture, little or no fines.
			GP	Poorly graded gravel, gravel sand mixture, little or no fines
		5-12% - #200	GM	Silty gravel, gravel-sand-silt mixtures
		>12% - #200	GC	Clayey gravel, gravel-sand-clay mixtures
	SAND & SANDY SOILS ≥ 50% - # 4	< 5% - #200	SW	Well-graded sand, gravelly sand, little or no fines.
			SP	Poorly graded sand, gravelly sand, little or no fines
		>12% - #200	SM	Silty sand, sand-silt mixtures
			SC	Clayey sand, sand-clay mixtures
FINE GRAINED SOILS ≥ 50% - #200	SILTS & CLAYS LL < 50%	INORGANIC	ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or clayey silt with slight plasticity
			CL	Lean clay-low to medium plasticity, gravelly, sandy, or silty clay
		ORGANIC	OL	Organic silt and organic silty clay of low plasticity
	SILTS & CLAYS LL ≥ 50%	INORGANIC	MH	Elastic silt, micaceous or diatomaceous fine sand or silty soil.
			CH	Fat clay - high plasticity
		ORGANIC	OH	Organic clay-med. or high plasticity: organic silt
	HIGHLY ORGANIC SOILS			PT



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

AGGREGATE SUITABILITY TEST RESULTS

David Stephens
 Precision Excavation & Construction Inc.
 9160 West Chinden Boulevard
 Meridian, Idaho 83646-5054

December 28, 2022
 Page 1 of 4
 File 23796-B

Re: Laboratory Report
 River Road Gravel Source
 Caldwell, Idaho
 Sampled 07/14/2022

David:

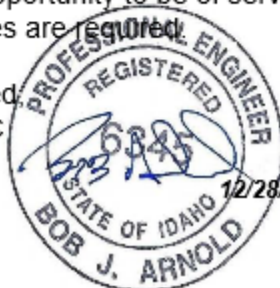
As per your request, SITE has performed Sieve Analysis and Los Angeles Abrasion testing on two random samples of the native pitrun sampled at your proposed River Road Gravel Pit. Results are as follows:

SAMPLE DESCRIPTION	TP-4	TP-5	ISPCW Spec
SIEVE ANALYSIS			3" Spec
Sieve Size 3.0"		98	100
2.0"	100	80	
1.5"	82	76	
1.0"	71	63	
3/4"	56	54	
1/2"	48	45	
3/8"	44	41	
# 4	35	32	25-60
# 8	28	25	
# 16	20	19	
# 30	13	11	
# 50	7	6	
# 100	4	4	
# 200	3.6	3.2	0-12
L A ABRASION			
C-131-Percent Loss	27.9	28.3	<35
C-535-Percent Loss		23.3	<35

Tested in general accordance with ASTM Methods C-117, C-136, C-131, C-535

We appreciate this opportunity to be of service. Please contact our office if additional information or services are required.

Respectfully submitted,
 SITE Consulting, LLC
 Bob J. Arnold, PE




12/28/2022



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

AGGREGATE SUITABILITY TEST RESULTS



Pavement Engineering Inc.
 Redding • Sacramento • San Luis Obispo
 Concord • Santa Clara

Abrasion Resistance by the L.A. Rattler
 ASTM C 131

Project No.: 220021

Project Name: 2022 Laboratory Testing

Client: Site Consulting LLC

Sampled By / Date: Client /

Tested By / Date: N. Trease / 8-8-2022

Sample No.: 22571

Material: Grading A, #2

Lab No.: L222117

Grading	Number of Spheres	Mass of Charge, g
A	12	5000 ± 25
B	10	4584 ± 25
C	8	3330 ± 20
D	6	2500 ± 15

Sieve Size		Mass of Indicated Sizes, g			
		Grading			
Passing	Retained on	A	B	C	D
37.5 mm	25.0 mm	1250 ± 25			
25.0 mm	19.0 mm	1250 ± 25			
19.0 mm	12.5 mm	1250 ± 10	2500 ± 10		
12.5 mm	9.5 mm	1250 ± 10	2500 ± 10		
9.5 mm	6.3 mm			2500 ± 10	
6.3 mm	4.75 mm			2500 ± 10	
4.75 mm	2.36 mm				5000 ± 10
Total		5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

After 100 Revolutions

Beginning Weight

#4 Sieve Retained

#12 Sieve Retained

After 500 Revolutions

Beginning Weight 5010

#4 Sieve Retained 3061

#12 Sieve Retained 3610

Percent Loss₁₀₀: _____

Percent Loss₅₀₀: 27.9

Percent Loss = [(Mi - Mf) / Mi] × 100

Craig Long

 Craig W. Long
 Laboratory Operations Manager


Serving California since 1987

www.pavementengineering.com



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

AGGREGATE SUITABILITY TEST RESULTS



Pavement Engineering Inc.
 Redding • Sacramento • San Luis Obispo
 Concord • Santa Clara

Abrasion Resistance by the L.A. Rattler
 ASTM C 131

Project No.: 220021

Project Name: 2022 Laboratory Testing

Client: Site Consulting LLC

Sampled By / Date: Client /

Tested By / Date: N. Trease / 8-8-2022

Sample No.: 22572

Material: Grading A, #3

Lab No.: L222117

Grading	Number of Spheres	Mass of Charge, g
A	12	5000 ± 25
B	10	4584 ± 25
C	8	3330 ± 20
D	6	2500 ± 15

Sieve Size		Mass of Indicated Sizes, g			
		Grading			
Passing	Retained on	A	B	C	D
37.5 mm	25.0 mm	1250 ± 25			
25.0 mm	19.0 mm	1250 ± 25			
19.0 mm	12.5 mm	1250 ± 10	2500 ± 10		
12.5 mm	9.5 mm	1250 ± 10	2500 ± 10		
9.5 mm	6.3 mm			2500 ± 10	
6.3 mm	4.75 mm			2500 ± 10	
4.75 mm	2.36 mm				5000 ± 10
Total		5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

After 100 Revolutions

Beginning Weight	
#4 Sieve Retained	
#12 Sieve Retained	

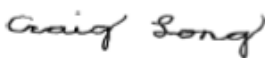
After 500 Revolutions

Beginning Weight	5004
#4 Sieve Retained	3065
#12 Sieve Retained	3587

Percent Loss₁₀₀: _____

Percent Loss = $[(M_i - M_f) / M_i] \times 100$

Percent Loss₅₀₀: 28.3


 Craig W. Long
 Laboratory Operations Manager


Serving California since 1987

www.pavementengineering.com



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

AGGREGATE SUITABILITY TEST RESULTS



Pavement Engineering Inc.
 Redding • Sacramento • San Luis Obispo
 Concord • Santa Clarita

Abrasion Resistance by the L.A. Rattler
 ASTM C535

Project No.: 220021

Project Name: 2022 Laboratory Testing

Client: Site Consulting LLC

Sampled By / Date: Client /

Tested By / Date: N. Trease / 8-8-2022

Sample No.: 22570

Material: Grading #2

Lab No.: L222117

Grading	Number of Spheres	Mass of Charge, g
1	12	5000 ± 25
2	12	5000 ± 25
3	12	5000 ± 25

Sieve Size		Mass of Indicated Sizes, g			
		Grading			
Passing	Retained on	1	2	3	
75 mm	63 mm	2500 ± 50			
63 mm	50 mm	2500 ± 50			
50 mm	37.5 mm	5000 ± 50		5000 ± 50	
37.5 mm	25.0 mm			5000 ± 25	5000 ± 25
25.0 mm	19.0 mm				5000 ± 25
Total		10000 ± 100	10000 ± 75	10000 ± 50	

After 200 Revolutions

Beginning Weight	
#4 Sieve Retained	
#12 Sieve Retained	

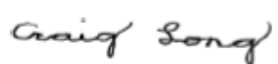
After 1000 Revolutions

Beginning Weight	10045
#4 Sieve Retained	7575
#12 Sieve Retained	7708

Percent Loss₁₀₀: _____

Percent Loss₅₀₀: 23.3

Percent Loss = [(M_i - M_f) / M_i] × 100


 Craig W. Long
 Laboratory Operations Manager

Serving California since 1987

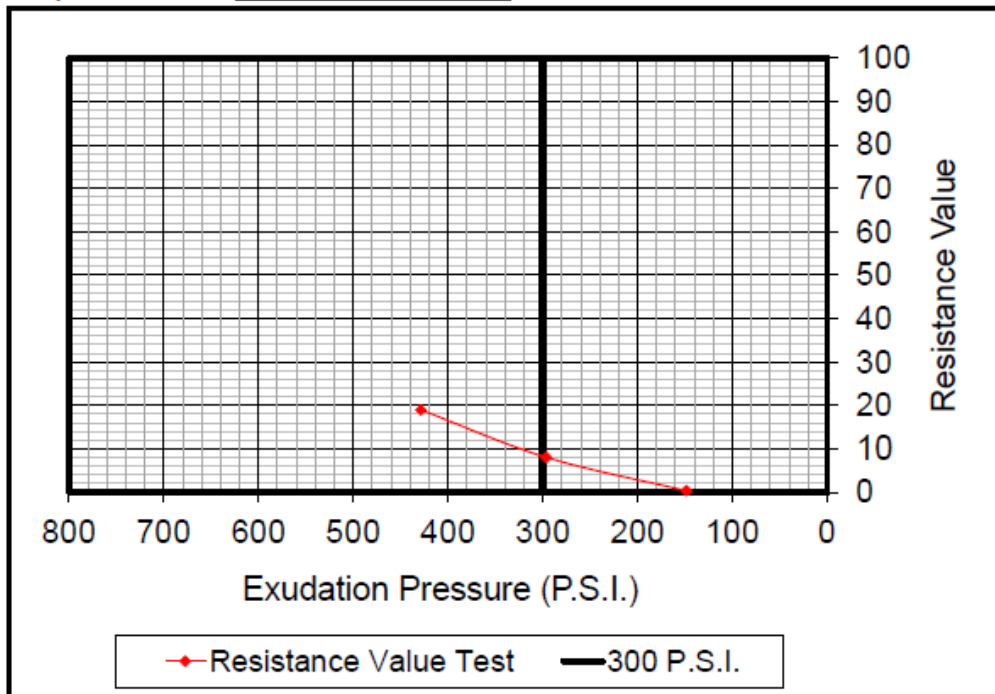
www.pavementengineering.com

**R-VALUE REPORT
Test Pit #2**



**RESISTANCE (R) VALUE TEST
ASTM D 2844**

Laboratory No.: L222127
Project No.: 220021
Sample Date: n/a
Report Date: August 9, 2022
Client: Site Consulting LLC
Project Name: River Road Gravel Pit
Sample Description: Brown Silty Clay
Sample Location: River Road Gravel Pit, #22569



Specimen No.	1	2	3
Moisture Content (%)	17.5	18.7	20.1
Dry Density (PCF)	106.7	104.9	103.5
Resistance Value (R)	19	8	0
Exudation Pressure (PSI)	429	296	148
Expansion Pressure	95	48	0
As Received Moisture Content (%)	17.5		

RESISTANCE VALUE AT 300 P.S.I. 8



Reviewed By: _____

Brandon Rodebaugh
Materials Engineer

Serving California since 1987

www.pavementengineering.com



PAVEMENT SECTION CALCS

NAMPA DESIGN SECTION CALCULATIONS

(Based upon ITD method)

Project: **Crimson Bridge**
River Road - Middleton
Client: **Precision Excavation**

File No.: **23796**
Calc By: **B. Arnold**
Date: **01/02/23**

Design Thickness Equation:

$$T = (0.0384) (TI) (100-R) = GE \text{ (inches)}$$

T = Design Thickness TI = Traffic Index = **6** By Agency
GE = Gravel Equivalent R = R-Value = **8** By Soils Test

GE= 21.2 Inches

ACHD ACP, 3/4" Road Base and Aggregate Subbase

	Actual Thickness	Equivalent Thickness
ACHD Asphalt Concrete Thickness =	2.5 Inches	ACE= 5.5 Inches
3/4" Road Base Thickness Desired =	4.0 Inches	RBE= 4.0 Inches

Calculated Aggregate Subbase Thickness Equation:

SB= 13.0 Inches

RECOMMENDED DESIGN SECTION

Asphaltic Concrete = **2.5 inches**
3/4" Road Base = **4.0 inches**
Aggregate Subbase = **13.0 inches**



Post Office Box 190537 - Boise, Idaho 83719
site.consulting.idaho@gmail.com - 208-440-6276

IDWR WELL LOG Subject Property

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

1. WELL OWNER
Name Pat Wallace
Address Channel Rd. Caldwell, Idaho
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 _____ inches Diameter _____ inches From _____ feet To _____ 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 _____ feet To _____ feet
perforations _____ feet
perforations _____ feet
perforations _____ 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 _____ feet
Placed from _____ feet to _____ feet
Surface seal depth 20' Material used in seal: ☐ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing
☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld
☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL
Sketch map location must agree with written location.
Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon
NE 1/4 SW 1/4 Sec. 10, T. 40 S., R. 3 E.

7. WATER LEVEL
Static water level _____ feet below land surface.
Flowing? ☒ Yes ☐ No G.P.M. flow 5
Artesian closed-in pressure 2 p.s.i.
Controlled by: ☒ Valve ☒ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below:

8. WELL TEST DATA
☐ Pump ☐ Bailor ☒ Air ☐ Other _____
Discharge G.P.M. _____ Pumping Level _____ Hours Pumped _____
100 100' 1

9. LITHOLOGIC LOG **86309**
Bore Diam. _____ Depth _____ Material _____ Water Yes No
8 0 10' Sand & Clay x
8 10' 20' Sand & Gravel x
6 20' 30' Sand & Gravel x
6 30' 90' Sand & clay layers x
6 90' 116' Sand x
6 116' 120' Clay x
6 120' 140' Sand x

10. Work started 11-21-85 finished 11-22-86

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 & Pump Co. Firm No. 42
Address Route 7 Box 311 Date 3-13-86
Signed by (Firm Official) Bill Doty
and (Operator) Bob Doty

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



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

IDWR WELL LOG Across River Road to the north

Form 238-7 6/02 IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT		Office Use Only Well ID No. <u>809741</u> Inspected by _____ Twp _____ Rge _____ Sec _____ 1/4 _____ 1/4 _____ 1/4 _____ Lat: _____ Long: _____																																																																																					
1. WELL TAG NO. D <u>0030764</u> DRILLING PERMIT NO. _____ Water Right or Injection Well No. _____		12. WELL TESTS: <input type="checkbox"/> Pump <input type="checkbox"/> Bailor <input checked="" type="checkbox"/> Air <input type="checkbox"/> Flowing Artesian <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Yield gal/min.</th> <th>Drawdown</th> <th>Pumping Level</th> <th>Time</th> </tr> <tr> <td style="text-align: center;">70</td> <td style="text-align: center;">20</td> <td style="text-align: center;">195</td> <td style="text-align: center;">2 Hrs</td> </tr> </table> Water Temp. <u>65</u> Bottom hole temp. <u>65</u> Water Quality test or comments: <u>600 d</u>		Yield gal/min.	Drawdown	Pumping Level	Time	70	20	195	2 Hrs																																																																												
Yield gal/min.	Drawdown	Pumping Level	Time																																																																																				
70	20	195	2 Hrs																																																																																				
2. OWNER: Name <u>Kirshner Homos</u> Address <u>14385 Silver Creek Rd</u> City <u>Caldwell</u> State <u>ID</u> Zip <u>83605</u>		13. LITHOLOGIC LOG: (Describe repairs or abandonment) Water <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Bore Dia.</th> <th>From</th> <th>To</th> <th>Remarks: Lithology, Water Quality & Temperature</th> <th>Y</th> <th>N</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>5</td> <td>10</td> <td>Over burden</td> <td></td> <td>X</td> </tr> <tr> <td>10</td> <td>5</td> <td>18</td> <td>Sand</td> <td></td> <td>X</td> </tr> <tr> <td>6</td> <td>18</td> <td>36</td> <td>gravel</td> <td></td> <td>X</td> </tr> <tr> <td>36</td> <td>50</td> <td>50</td> <td>clay</td> <td></td> <td>X</td> </tr> <tr> <td>50</td> <td>53</td> <td>53</td> <td>Sand</td> <td>X</td> <td></td> </tr> <tr> <td>53</td> <td>89</td> <td>89</td> <td>Sandy clay</td> <td>X</td> <td></td> </tr> <tr> <td>89</td> <td>110</td> <td>110</td> <td>tan clay</td> <td>X</td> <td></td> </tr> <tr> <td>110</td> <td>112</td> <td>112</td> <td>Sand</td> <td>X</td> <td></td> </tr> <tr> <td>112</td> <td>140</td> <td>140</td> <td>Sandy clay</td> <td>X</td> <td></td> </tr> <tr> <td>140</td> <td>143</td> <td>143</td> <td>Sand</td> <td>X</td> <td></td> </tr> <tr> <td>143</td> <td>153</td> <td>153</td> <td>tan clay</td> <td>X</td> <td></td> </tr> <tr> <td>153</td> <td>155</td> <td>155</td> <td>Sand</td> <td>X</td> <td></td> </tr> <tr> <td>155</td> <td>196</td> <td>196</td> <td>tan clay</td> <td>X</td> <td></td> </tr> </tbody> </table>		Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N	10	5	10	Over burden		X	10	5	18	Sand		X	6	18	36	gravel		X	36	50	50	clay		X	50	53	53	Sand	X		53	89	89	Sandy clay	X		89	110	110	tan clay	X		110	112	112	Sand	X		112	140	140	Sandy clay	X		140	143	143	Sand	X		143	153	153	tan clay	X		153	155	155	Sand	X		155	196	196	tan clay	X	
Bore Dia.	From			To	Remarks: Lithology, Water Quality & Temperature	Y	N																																																																																
10	5			10	Over burden		X																																																																																
10	5			18	Sand		X																																																																																
6	18	36	gravel		X																																																																																		
36	50	50	clay		X																																																																																		
50	53	53	Sand	X																																																																																			
53	89	89	Sandy clay	X																																																																																			
89	110	110	tan clay	X																																																																																			
110	112	112	Sand	X																																																																																			
112	140	140	Sandy clay	X																																																																																			
140	143	143	Sand	X																																																																																			
143	153	153	tan clay	X																																																																																			
153	155	155	Sand	X																																																																																			
155	196	196	tan clay	X																																																																																			
3. LOCATION OF WELL by legal description: You must provide address or Lot, Blk, Sub. or Directions to well. Twp <u>4</u> North <input checked="" type="checkbox"/> or South <input type="checkbox"/> Rge <u>3</u> East <input type="checkbox"/> or West <input checked="" type="checkbox"/> Sec <u>10</u> SW 1/4 NE 1/4 1/4 Gov't Lot _____ Lat: _____ Long: _____ Address of Well Site <u>14385 Silver Creek Rd</u> City <u>Caldwell</u> State <u>ID</u> Zip <u>83605</u> Li <u>4</u> Blk. <u>1</u> Sub. Name <u>Phase II</u>																																																																																							
4. USE: <input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Municipal <input type="checkbox"/> Monitor <input type="checkbox"/> Irrigation <input type="checkbox"/> Thermal <input type="checkbox"/> Injection <input type="checkbox"/> Other _____																																																																																							
5. TYPE OF WORK check all that apply (Replacement etc.) <input checked="" type="checkbox"/> New Well <input type="checkbox"/> Modify <input type="checkbox"/> Abandonment <input type="checkbox"/> Other _____																																																																																							
6. DRILL METHOD: <input type="checkbox"/> Air Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Mud Rotary <input type="checkbox"/> Other _____																																																																																							
7. SEALING PROCEDURES <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Seal Material</th> <th>From</th> <th>To</th> <th>Weight / Volume</th> <th>Seal Placement Method</th> </tr> </thead> <tbody> <tr> <td><u>Ben-ton-ne</u></td> <td><u>0</u></td> <td><u>18</u></td> <td><u>105 lbs</u></td> <td><u>over-bore</u></td> </tr> </tbody> </table> Was drive shoe used? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Shoe Depth(s) <u>182</u> Was drive shoe seal tested? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N How? _____		Seal Material	From	To	Weight / Volume	Seal Placement Method	<u>Ben-ton-ne</u>	<u>0</u>	<u>18</u>	<u>105 lbs</u>	<u>over-bore</u>																																																																												
Seal Material	From	To	Weight / Volume	Seal Placement Method																																																																																			
<u>Ben-ton-ne</u>	<u>0</u>	<u>18</u>	<u>105 lbs</u>	<u>over-bore</u>																																																																																			
8. CASING/LINER: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Diameter</th> <th>From</th> <th>To</th> <th>Gauge</th> <th>Material</th> <th>Casing</th> <th>Liner</th> <th>Welded</th> <th>Threaded</th> </tr> </thead> <tbody> <tr> <td><u>6"</u></td> <td><u>+2</u></td> <td><u>152</u></td> <td><u>250</u></td> <td><u>Steel</u></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> Length of Headpipe <u>7</u> Length of Tailpipe <u>2</u> Packer <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Type <u>E Packer</u>		Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded	<u>6"</u>	<u>+2</u>	<u>152</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																																																																				
Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded																																																																															
<u>6"</u>	<u>+2</u>	<u>152</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																																																																															
9. PERFORATIONS/SCREENS PACKER TYPE Perforation Method _____ Screen Type & Method of Installation <u>Jordan SS.</u> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>From</th> <th>To</th> <th>Slot Size</th> <th>Number</th> <th>Diameter</th> <th>Material</th> <th>Casing</th> <th>Liner</th> </tr> </thead> <tbody> <tr> <td><u>153</u></td> <td><u>193</u></td> <td><u>1/16</u></td> <td></td> <td><u>5"</u></td> <td><u>SS.</u></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		From	To	Slot Size	Number	Diameter	Material	Casing	Liner	<u>153</u>	<u>193</u>	<u>1/16</u>		<u>5"</u>	<u>SS.</u>	<input type="checkbox"/>	<input type="checkbox"/>																																																																						
From	To	Slot Size	Number	Diameter	Material	Casing	Liner																																																																																
<u>153</u>	<u>193</u>	<u>1/16</u>		<u>5"</u>	<u>SS.</u>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																
10. FILTER PACK <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Filter Material</th> <th>From</th> <th>To</th> <th>Weight / Volume</th> <th>Placement Method</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		Filter Material	From	To	Weight / Volume	Placement Method																																																																																	
Filter Material	From	To	Weight / Volume	Placement Method																																																																																			
11. STATIC WATER LEVEL OR ARTESIAN PRESSURE: <u>2</u> ft. below ground Artesian pressure _____ lb. Depth flow encountered <u>185</u> ft. Describe access port or control devices: <u>Well Cap</u>																																																																																							
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 <u>Precision Well Drilling Inc</u> Firm No. <u>522</u> Principal Driller <u>Jeff Newton</u> Date <u>1-20-04</u> and <u>Carl J. Halden</u> Date <u>2/3/2004</u> Driller or Operator _____ Operator I _____ Date _____ Principal Driller and Rig Operator Required. Operator I must have signature of Driller/Operator II.																																																																																							

FORWARD WHITE COPY TO WATER RESOURCES



Post Office Box 190537 - Boise, Idaho 83719
 site.consulting.idaho@gmail.com - 208-440-6276

IDWR WELL LOG North of property along River (Channel) Road

Form 238-7
 6/07

IDAHO DEPARTMENT OF WATER RESOURCES
 WELL DRILLER'S REPORT

853675

1. WELL TAG NO. D 0053224
 Drilling Permit No. _____
 Water right or injection well # _____

2. OWNER: Thomas Powell
 Name (Same)
 Address 14499 Channel Rd.
 City Caldwell State Id. Zip 83607

3. WELL LOCATION:
 Twp. 4 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
 Sec. 10 SW 1/4 SW 1/4 NE 1/4
 Gov't Lot _____ County Canyon
 Lat. 43 ° 41.976 (Deg. and Decimal minutes)
 Long. 116 ° 40.955 (Deg. and Decimal minutes)
 Address of Well Site 14499 Channel Rd.
 City Caldwell
 Lot _____ Blk. _____ Sub. Name _____

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

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

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

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lb or ft)	Placement method/procedure
Hole plug	0	18	450 lbs	10" over bore
Bentonite				pipe/retract 10"

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner	Threaded	Welded
6" x 2	92	250		Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 92 ft

9. PERFORATIONS/SCREENS:
 Perforations ☐ Y ☒ N Method _____
 Manufactured screen ☒ Y ☐ N Type Johnson
 Method of installation Wash Dr. Valve

From (ft)	To (ft)	Slot size	Number	Diameter (nominal)	Material	Gauge or Schedule
94	99	20	6	7/8"	S.S.	

Length of Headpipe 6' 1/2" Length of Tailpipe 8'
 Packer ☒ Y ☐ N Type 7-Rib

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lb or ft)	Placement method

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

12. STATIC WATER LEVEL and WELL TESTS:
 Depth first water encountered (ft) 22' Static water level (ft) 4 ft
 Water temp. (°F) _____ Bottom hole temp. (°F) _____
 Describe access port Sani Seal Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
	<u>1.50</u>	

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

Water quality test or comments: good clear color

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water
				Y N
10	0	5	Top Soil	X
10	5	13	Clay	X
10-6	13	22	Clay mixed with gravel	X
6	22	28	gravel	X
	28	35	Brn clay	X
	35	60	fine silty Brn Sand	X
	60	72	Hard Brn clay	X
	72	83	Blue clay	X
	83	92	Brn clay	X
	92	99	med. white Sand	X

Completed Depth (Measurable): 99 ft
 Date Started: 10/1/08 Date Completed: 10/2/08

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

Company Name Precision Well Drilling No. 522
 *Principal Driller Jeff Dawson Date 10/9/08
 *Driller _____ Date _____
 *Operator II _____ Date _____
 Operator I _____ Date _____
 * Signature of Principal Driller and rig operator are required.

NOTHING FOLLOWS

**WETLAND DELINEATION REPORT
CRIMSON BRIDGE ESTATES
CANYON COUNTY, IDAHO**

Prepared for:

Crimson Bridge Holdings, LLC
9160 West Chinden Boulevard
Meridian, Idaho 83646

Prepared by:



Nexus Environmental Consultants, Inc.
P.O. Box 18922
Reno, Nevada 89511

Nexus Project Number P0287

November 28, 2023

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	Contact Information.....	1
1.2	Survey Area Location	1
2.0	METHODS	2
2.1	Data Collection.....	2
2.2	Stream Channel Delineation.....	2
2.3	Wetland Delineation.....	3
2.4	Reporting.....	4
3.0	EXISTING CONDITIONS	5
3.1	Landscape Setting	5
3.2	Survey Weather and Precipitation	5
4.0	AQUATIC RESOURCE FINDINGS	7
4.1	Non-Jurisdictional Aquatic Resources.....	7
4.2	Vegetation	7
4.3	Hydrology	9
4.4	Soils.....	10
5.0	REFERENCES	11

TABLES

Table 1	Weather Data for Boise, Idaho	5
Table 2	Aquatic Resources Delineated in the Survey Area	7
Table 3	Plants Encountered During Field Surveys	8
Table 4	NRCS Soil Map Units Present in the Survey Area.....	10

APPENDICES

Appendix A	Figure 1. Location Map
Appendix B	Figure 2. Aquatic Resource Map
Appendix C	Wetland Delineation Data Sheets
Appendix D	Representative Photographs
Appendix E	Supplementary Information
	Figure 3. Data Points and Survey Tracks
	Figure 4. Aerial Imagery Binder
	Figure 5. Ecological Site Descriptions
	Figure 6. Preliminary Site Survey
	Figure 7. Federal Emergency Management Agency Flood Insurance Rate Map
	Figure 8. National Hydrographic Database
	Figure 9. National Wetland Inventory Data
	Figure 10. National Resource Conservation Service Soil Survey Maps

ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
CFR	Code of Federal Regulations
FEMA	Federal Emergency Management System

FIRM	Federal Insurance Rate Map
GPS	Global Positioning System
IDEQ	Idaho Department of Environmental Quality
IDWR	Idaho Department of Water Resources
MUS	Map Unit Symbol
Nexus	Nexus Environmental Consultants, Inc.
NHD	National Hydrography Database
NRCS	Natural Resources Conservation Service
NOAA	National Oceanic and Atmospheric Administration
NWI	National Wetland Inventory
OHWM	Ordinary High-Water Mark
Project	Crimson Bridge Estates Project
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey

REPORT SUMMARY

This Wetland Delineation Report summarizes findings from a wetland delineation study completed by Nexus Environmental Consultants, Inc. (Nexus) on behalf of Crimson Bridge Holdings, LLC. The survey area is located on private property, approximately three miles west of Middleton, Idaho in Canyon County. The survey was completed by Nexus on October 4 and November 9, 2023, within a 54.4-acre survey area.

The results of this survey determined that 8.33 acres of palustrine emergent and riverine intermittent wetland occur in the survey area. These wetlands are the result of natural drainage patterns, streams and irrigation.

1.0 INTRODUCTION

The purpose of this delineation is to confirm wetland occurrence within the proposed Crimson Bridge Estates Project (Project). It is intended to provide information for an approved jurisdictional determination, and support Project approval and permitting by local, state, and federal authorities, including the United States Army Corps of Engineers (USACE), Walla Walla District.

1.1 Contact Information

Property Owner

Crimson Bridge Holdings, LLC
9160 West Chinden Boulevard
Meridian, Idaho 83646
David Stephens, Project Manager
Phone: 208-870-7035
Email: david.precisionx@gmail.com

Property Owner's Agent

Nexus Environmental Consultants, Inc.
P.O. Box 18922
Reno, Nevada 89511

Michelle Tucker, Project Manager
Kuna, Idaho 83634
Phone: 208-756-7602
Email: michelle.tucker@nexus-env.com

1.2 Survey Area Location

The survey area is located at 14533 River Road, Caldwell, Idaho in Canyon County (**Appendix A**). It can be accessed from Exit 26 on Interstate 84 to Old Highway 30. Turning south on Old Highway 30, travel 0.3 miles to the River Road intersection. Travel north for 0.9 miles on River Road. The subject property is on the south side of River Road, prior to the entrance to Curtis Park.

The survey area is located on private property in Township 4 North, Range 3 West East, Section 10, Boise Meridian. Latitude and longitude in decimal degrees of the center point of the survey area are latitude 43.697811, and longitude -116.683162 Decimal Degrees. It is comprised of approximately 54.4 acres of agricultural and private residential property adjacent to the Boise River.

2.0 METHODS

Prior to conducting field surveys, publicly available data for the survey area was reviewed and consolidated. Much of this information was also considered during field surveys on digital tablets. This includes the following resources:

- United States Fish and Wildlife Service (USFWS), National Wetland Inventory (NWI) (USFWS, 2023);
- United States Geologic Survey (USGS) topographic maps (USGS, 1955, 2023);
- Natural Resources Conservation Service (NRCS) Web Soil Survey for Canyon County (NRCS, 2023);
- USGS National Hydrography Dataset (NHD) (USGS, 2017);
- Idaho Department of Water Resources (IDWR), Water Rights Search (IDWR, 2023);
- Idaho Department of Environmental Quality (IDEQ), Final 2022 §305(b) Integrated Report (IDEQ, 2022);
- Federal Emergency Management Agency (FEMA) Floodplain Maps (FEMA, 2019);
- National Weather Service climatological data for Boise, Idaho (National Oceanic and Atmospheric Administration [NOAA], 2023);
- Google Earth Aerial Imagery (Google Earth, 2003-2023);
- Preliminary Site Survey (A Team Land Consultants, 2022); and
- ESRI Basemap Aerial Imagery (ESRI, 2023).

2.1 Data Collection

Field surveys were completed by Nexus Environmental Consultants, Inc. (Nexus) on October 4 and November 9, 2023. Mapping was completed using sub-meter Global Positioning System (GPS) data generated in the field. Data points and polygons were further analyzed using Google Earth imagery within ArcGIS to help determine the connection between the photo signature on the aerial imagery and the ground condition of the site.

Findings from field surveys are provided in **Appendix B** and **Table 2** in Section 4.0 of this report. Datasheets (**Appendix C**), representative photographs (**Appendix D**) and supplementary information (**Appendix E**), are also provided to support the confirmation of the photographic signature, topographic condition, and wetland occurrence findings.

2.2 Stream Channel Delineation

Streams and irrigation channels, as defined by the ordinary high water mark (OHWM), were field-verified and assessed for presence of water, and followed to their connection with a persistent water body, or termination. Identification of the OHWM was conducted using the appropriate physical characteristics, as defined in 33 Code of Federal Regulations (CFR) § 328.3(e) and 33 CFR § 329.11(a)(1) including the natural line impressed on the bank, shelving, changes in the

character of soil and vegetation, and localized topographic features. All water channels encountered in the field, including irrigation canals, were compared to NWI, NHD, IDWR, and IDEQ data to better inform their potential derivation and contribution to the natural hydrology of the survey area, (**Appendix B**).

2.3 Wetland Delineation

Potential wetlands were inspected in accordance with the 1987 USACE's Wetland Delineation Manual (USACE, 1987) and the Regional Supplement for the Arid West (USACE, 2008). Wetland Determination Data Forms are provided in **Appendix C**.

Surveys included walking the site and determining the dominant vegetation in both wet and dry sites (**Appendix E, Figure 3**). If vegetative cover clearly indicated upland vegetation and lack of hydrology, no soil pits were dug. Wet areas that were not associated with a defined drainage or out-of-channel were evaluated with matched pairs of data points. At least one soil pit was established within the wetland boundary and one outside. The wetland boundary was delineated based on the surface expression of vegetation and hydrology, once hydric soils were confirmed, or additional test pits were dug, as necessary. Surveyors walked the boundaries of wetland areas with GPS units once their distinguishing characteristics, such as dominant vegetation and geographic position, were confirmed. Digital imagery was further considered for determining wetland boundaries once the three-parameter wetland criteria was established for each site.

Wetland sites associated with a water channel were walked with GPS units where accessible. Some areas were heavily vegetated with riparian trees and shrubs that made access difficult. These GPS boundaries were transcribed to aerial imagery and digitized. Adjacent wetland associated with each channel was further determined by averaging cross sections from aerial imagery at five representative sites along the channel. In most cases the water channels have a clearly defined top of bank or berm that separates the channel from the floodplain. Test pits were not dug in wetland areas if they were clearly within the channel's OHWM or top of bank. These areas were considered stream adjacent wetland.

The survey area was considered problematic for hydrophytic vegetation based on its location in a floodplain, grazing and mowing practices, and conversion of upland to irrigated pasture and crop land. It represents a managed plant community that has been cleared, seeded and plowed for grazing and hay production. At the time of survey, the fields had been mowed and several test pits dug that created small depressional areas where irrigation water could collect. Reference sites adjacent to the mowed portions of the property, and knowledge of common agricultural species seeded in the region were used to assist in plant identification, especially for grasses.

The survey area was considered problematic for induced hydric soil indicators. It lies in the floodplain of the Boise River and is subject to flood irrigation which would likely result in relic hydric soil indicators, or lacking indicators due to sediment deposition from frequent flooding. Historic aerial imagery was relied upon to determine the extent of flooding throughout the property from the imagery available.

The survey area was considered problematic for hydrology due to flood irrigation and agricultural practices. Plant species present are predominantly facultative grasses and forbs which can be influenced by flooding within one growing season. By definition, a facultative rating indicates a plant species is equally likely to occur in wetlands and non-wetlands (USACE, 2012). As such, historic aerial imagery from Google Earth was used to better understand local topography and irrigation influence, particularly imagery from drier years. These images provide insight into the

extent of irrigation water and naturally drier areas when irrigation was not in use, or seasonal limitations to the effective use of irrigation occurred (**Appendix E, Figure 4**).

Ecological Site Descriptions from the NRCS were also considered to better understand the vegetation and soil characteristics that would naturally occur in the survey area if irrigation was not occurring (**Appendix E, Figure 5**).

Numerous outbuildings and parking areas occupy the central portion of the property and lack vegetation. These areas were not considered further by the survey team.

2.4 Reporting

Nexus prepared this report in accordance with the USACE, Walla Walla District Guidance for Aquatic Resource Delineation Reports (USACE, 2019). The results of the wetland delineation are shown in **Appendix B**. A summary of the wetland resources identified within the Project area is provided in **Table 2** in Section 4.0 of this report.

3.0 EXISTING CONDITIONS

3.1 Landscape Setting

The survey area is located along the Boise River in an agricultural and residential setting. Elevation in the survey area ranges from 2,363 to 2,375 feet above mean sea level. The property is in the floodplain of the Boise River and based on historic imagery was converted to irrigated pasture, cattle grazing, and crop land prior to 1954 (**Appendix E, Figure 3**). Riparian habitat is restricted to a narrow stringer on the river's edge and adjacent to larger streams and irrigation channels.

3.2 Survey Weather and Precipitation

Weather data for the survey area is derived from the NOAA for the Boise Air Terminal. The period of record for monthly average temperature and precipitation is 2000 to 2023. The NWS reports the average temperature for August is 76.5 degrees Fahrenheit (°F) and 66.7°F for September. The average precipitation for August is 0.41 inches and 0.96 inches for September (NOAA, 2023). Temperature and precipitation data were not available for October at the time of this reporting.

During September 2023, the average temperature in the Boise area was 76.8°F, and 68.2°F for September. Precipitation averages were 2.51 inches and 0.45 inches respectively (NOAA, 2023). Temperatures during the 2023 field surveys were consistent with the climate summaries provided by the NOAA for the period of record. Precipitation was much higher than normal with a much wetter summer than in recent years. **Table 1** provides the average monthly temperature and precipitation data available for the year preceding the field surveys (2021 through 2022).

Table 1 Weather Data for Boise, Idaho

Month	Temperature (°F)			Precipitation (inches)		
	Mean for POR	2021	2022	Mean for POR	2021	2022
January	32.0	36.4	28.9	1.28	1.24	1.08
February	36.9	35.1	33	0.98	1.62	0.08
March	44.9	44.8	45.6	1.44	0.95	0.39
April	50.8	51.8	46.7	1.18	0.96	1.15
May	60.0	59.5	55.5	1.41	0.77	2.46
June	68.8	75.9	67.3	0.66	0.71	1.03
July	78.9	83.8	80.7	0.19	0.91	T
August	76.5	74.4	81.9	0.29	0.19	0.09
September	66.7	66.5	71.2	0.41	0.37	0.24
October	53.4	54.9	56.8	0.96	1.95	0.88
November	40.2	44.4	34.2	1.17	1.05	2.22
December	32.0	34.1	29.2	1.59	1.54	2
Annual Average	53.6	55.1	52.6	11.48	12.26	11.62

Source: NOAA, 2023

POR = Period of Record – 2000-2023

An above normal snowpack during the 2022 and 2023 winter yielded a high spring water supply with above normal reservoir storage across Idaho. Warmer than normal temperatures during May drove rapid snowmelt. In August, precipitation was more than twice the normal average. Tropical

storms brought unprecedented rain making August in the Boise area the highest precipitation on record (NOAA, 2023). September temperatures were somewhat warmer than average (two degrees) extending the growing season later into fall. As such, surveys were conducted in October, while the growing season was still occurring, with near normal precipitation.

4.0 AQUATIC RESOURCE FINDINGS

Field surveys indicate that approximately 8.3 acres of wetland occur in the survey area. These wetlands are considered palustrine, emergent, persistent, and seasonally or temporarily flooded by the USFWS NWI (Cowardin et al., 1979). In some areas of the northern portion of the survey area, these wetlands may also be represented as riverine intermittent, stream. The headwaters of two streams originate at the county line and account for 2.3 stream miles of intermittent and ephemeral channel. Approximately 0.4 miles of side channel, runoff, or irrigation ditches also occur. The results of these findings are shown **Appendix B** and **Table 2**.

Table 2 Aquatic Resources Delineated in the Survey Area

Aquatic Resource Name	Aquatic Resources Classification			² Aquatic Resource Area (acres)	³ Aquatic Resource Length (Ditches and Streams) (linear feet)
	¹ Cowardin Classification	Location			
		Latitude	Longitude		
Wetland 01	PEM1A	43.696876	-116.681957	0.27	-
Wetland 02	PEM1A	43.696033	-116.684495	0.26	-
Wetland 03	PEM1C	43.696179	-116.685477	0.91	-
Wetland 04	PEM1C	43.697326	-116.684623	0.12	-
Wetland 05	PEM1C	43.696433	-116.685958	0.33	-
Wetland 06	PEM1C	43.697177	-116.686818	0.64	-
Wetland 07	PEM1A	43.698683	-116.678320	0.62	
East Hartley Gu	R4SBCx	44.916375	-116.169321	0.04	215.3
Adjacent Wetland (average width = 8 feet)				0.09	-
Mill Slough	R4SBCx	44.918305	-116.170046	1.30	2,752.4
Adjacent Wetland (average width = 12 feet)				1.48	-
West Hartley Gulch	PEM1K	44.899933	-116.164458	0.50	1,440.1
Adjacent Wetland (average width = 18 feet)				1.17	-
Main Lateral	PEM1K	44.899933	-116.164458	0.31	2,710.0
Adjacent Wetland (average width 5)				0.31	-
Total				8.33	7,117.8

¹ PEM1A = Palustrine, Emergent, Persistent, Temporarily Flooded PEM1C = Palustrine, Emergent, Persistent, Seasonally Flooded; PEM1K = Palustrine, Emergent, Persistent, Artificially Flooded. R4SBCx = Riverine, Intermittent, Streambed, excavated.

²NWI, NHD, and IDWR stream data were field-verified and digitized, assessed for presence of water, and followed to their connection with a persistent water body, or termination.

³Average width of stream channel used to calculate resource size. See text below in Section 4.3 for further descriptions.

4.1 Non-Jurisdictional Aquatic Resources

All delineated aquatic resources (e.g. rivers, streams, ditches, canals, and wetlands) are depicted in **Appendix B** and summarized in **Table 2**. Per Walla Walla Regulatory District Guidance for Aquatic Resource Reports (USACE, 2019), only the USACE determines the jurisdictional status of each aquatic resource. No assumptions regarding jurisdictional status have been made by the survey team.

4.2 Vegetation

Dominant upland vegetation in the survey area is comprised of forbs and grasses. These are a mix of native and seeded species suitable for agricultural production. Upland areas were

commonly inhabited by western wheatgrass (*Pascopyrum smithii*), white clover (*Trifolium repens*), alfalfa (*Medicago sativa*), and kochia (*Bassia prostrata*). Due to the season, most grasses had completed flowering and had been mowed.

Wetland vegetation is predominantly facultative wet tufted hairgrass (*Deschampsia cespitosa*) and reed canarygrass (*Phalaris arundinacea*). Some obligate vegetation occurs in the stream channels and some depressional areas such as cattails (*Typha latifolia*), Nebraska sedge (*Carex nebrascensis*) and common spikerush (*Eleocharis palustris*).

Transitional areas between upland and wetland commonly host curly dock (*Rumex crispus*), rough cocklebur (*Xanthium strumarium*), white clover, foxtail barley (*Hordeum jubatum*) and western wheatgrass. Other perennial grass species are likely present during the growing season but have cured or reached the end of their vegetative cycle for the year.

Noxious and invasive weed species observed at site include spotted knapweed (*Centaurea stoebe*), Canada thistle (*Cirsium arvense*), cheatgrass (*Bromus tectorum*), and nodding thistle (*Carduus nutans*).

A complete list of plants encountered in the survey area is provided in **Table 3**.

Table 3 Plants Encountered During Field Surveys

Species	1WMVC	Common Name
<i>Kochia</i> sp.	Not Listed	Kochia
<i>Bromus tectorum</i>	Not Listed	Cheatgrass
<i>Carex nebrascensis</i>	OBL	Nebraska sedge
<i>Carex microptera</i>	FAC	Small wing sedge
<i>Carduus nutans</i>	FACU	Nodding thistle
<i>Chenopodium album</i>	FACU	Lambs quarter
<i>Chicorium intybus</i>	FACU	Chicory
<i>Cirsium arvense</i>	FAC	Canada thistle
<i>Cirsium vulgare</i>	FACU	Bull thistle
<i>Conium maculatum</i>	F	Poison hemlock
<i>Deschampsia cespitosa</i>	FACW	Tufted hairgrass
<i>Dipsacus</i> sp.	FAC	Teasel
<i>Elaeagnus angustifolia</i>	FAC	Russian olive
<i>Hordeum jubatum</i>	FAC	Foxtail barley
<i>Juncus arcticus</i>	FACW	Baltic rush
<i>Lolium perenne</i>	FAC	Perennial rye
<i>Medicago sativa</i>	UPL	Alfalfa
<i>Pascopyrum smithii</i>	FAC	Western wheatgrass
<i>Phalaris arundinacea</i>	FACW	Reed canarygrass
<i>Phleum pratense</i>	FAC	Timothy
<i>Poa pratensis</i>	FAC	Kentucky bluegrass
<i>Polygonum persicaria</i>	FACW	Lady's thumb
<i>Rumex crispus</i>	FAC	Curly dock
<i>Salix nigra</i>	OBL	Black willow
<i>Solidago canadensis</i>	Not Listed	Canada goldenrod
<i>Taraxacum officinale</i>	FACU	Common dandelion
<i>Trifolium repens</i>	FACU	White clover
<i>Typha latifolia</i>	OBL	Cattail

Species	¹ WMVC	Common Name
<i>Verbascum thapsus</i>	FACU	Common mullein
<i>Xanthium strumarium</i>	FAC	Rough cocklebur

¹Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (WMVC) Wetland Plant List (2020).

OBL = Obligate

FACW = Facultative Wet

FAC = Facultative

FACU = Facultative Upland

4.3 Hydrology

The Bureau of Reclamation and the USACE manage three upstream dams on the Boise River that provide irrigation water storage and flood control to Ada and Canyon counties. The survey area is within the Boise River Flood Control District #10. According to FEMA, most of the property lies in Flood Zone AE with predetermined base flood elevations (2,368.0 to 2,369.4 feet) (**Appendix E, Figure 6**). Flood Zone A aligns with the northwest corner of the property and West Hartley Gulch. No base flood elevations are determined for this Flood Zone A. The remainder of the survey area is in Flood Zone X with a two percent annual chance of flood hazard at depths of less than one foot. The southwestern corner of the survey area lies in a regulatory floodway of the Boise River (FEMA, 2019). The flood insurance rate map (FIRM) is provided in **Appendix E, Figure 6**.

The survey area is in the Lower Boise Watershed (Hydrologic Unit Code 17050114). It includes the East Hartley Gulch and Mill Slough-Boise River Subwatersheds. The NHD indicates that two unnamed perennial streams flow through the survey area (**Appendix E, Figure 7**). Topographic maps and IDEQ data indicate that the westernmost channel is named West Hartley Gulch and flows south toward the Boise River. Mill Slough flows west, centrally through the property. Both channels are considered perennial streams by the NHD and the IDEQ. A third artificial channel is identified by the NHD, East Hartley Gulch which terminates at Mill Slough. Review of historic topographic data indicates that East Hartley Gulch was associated with a natural stream channel prior to development of private land and the existing irrigation network. All three of these channels flow south and southwest toward the Boise River (USGS, 2023).

According to the IDWR, the Middleton Irrigation Association, Middleton Mill Ditch Company and Canyon County Water Company provide surface water rights to the property (IDWR, 2023). Drainage Ditch Company #2 manages water use and ditch maintenance. The season of use is from March to November each year with water derived from Willow Slough and the Boise River. Numerous headgates, culverts, surface pipes, and small lateral ditches convey irrigation water across the property. Irrigation is by flooding; no pivots or pumps are present (**Appendix B**). Of the smaller lateral ditches on site, one irrigation channel flows from a Mill Slough headgate in the northeast corner of the property along the southern boundary terminating at the Boise River. This is the only lateral channel that supports a consistent channel and bank.

The USFWS NWI indicates that two riverine channels flow through the property, connecting to the Boise River in the southwest corner. One freshwater emergent wetland channel is indicated and aligns with the East Hartley Gulch channel (**Appendix E, Figure 8**). Limited wetland fringe is associated with all three of the primary channels in the survey area. These channels are incised and have steep banks which prevent flooding access over the top of bank in most areas. **Table 2** summarizes the streams, irrigation channels and wetlands that occur in the survey area.

4.4 Soils

The Soil Survey Geographic Database and the NRCS Web Soil Survey were used to identify mapped soils in the survey area. The Canyon County Soil Survey (ID655) indicates that the survey area is considered prime farmland if irrigated (NRCS, 2023). Soils are predominantly Mollisols and Entisols comprised of fine to coarse loam.

According to the NRCS, there are eight mapped soils in the survey area (**Appendix E, Figure 9**). Of these, one mapped soil is considered partially hydric (90 percent). Mapped soils are composed of one or more map unit components or soil types. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform (**Table 4**) (NRCS, 2023).

Table 4 NRCS Soil Map Units Present in the Survey Area

MUS	Map Unit Name	Acres	Percent	Hydric Rating Percent	Ecological Site Description
Ch	Chance fine sandy loam	3.3	6.2	90	R011XY019ID
DrA	Draper loam, 0 to 1 percent slopes	0.5	0.8	0	R011XY001ID
DrB	Draper loam, 1 to 3 percent slopes	0.2	0.3	0	R011XY001ID
FaA	Falk fine sandy loam, 0 to 2 percent slopes	7.3	13.7	5	R011XY004ID
MvA	Moulton loam, 0 to 1 percent slopes	30.0	56.6	0	R011XY001ID
No	Notus soils	9.7	18.4	0	R011XY016OR
PhC	Power silt loam, 3 to 7 percent slopes	0.5	0.9	0	R011XY001ID
Tc	Terrace escarpments	1.6	3.0	0	N/A
Totals for Area of Interest		53.1	100.0%		

Source: NRCS, 2023

MUS = Map Unit Symbol

Four ecological site descriptions are defined by the NRCS for the soil and vegetation associations that would naturally occur in the survey area (**Appendix E, Figure 9**). These descriptions rely on physiography, climate, soil, and water features to summarize ecological dynamics and vegetation states.

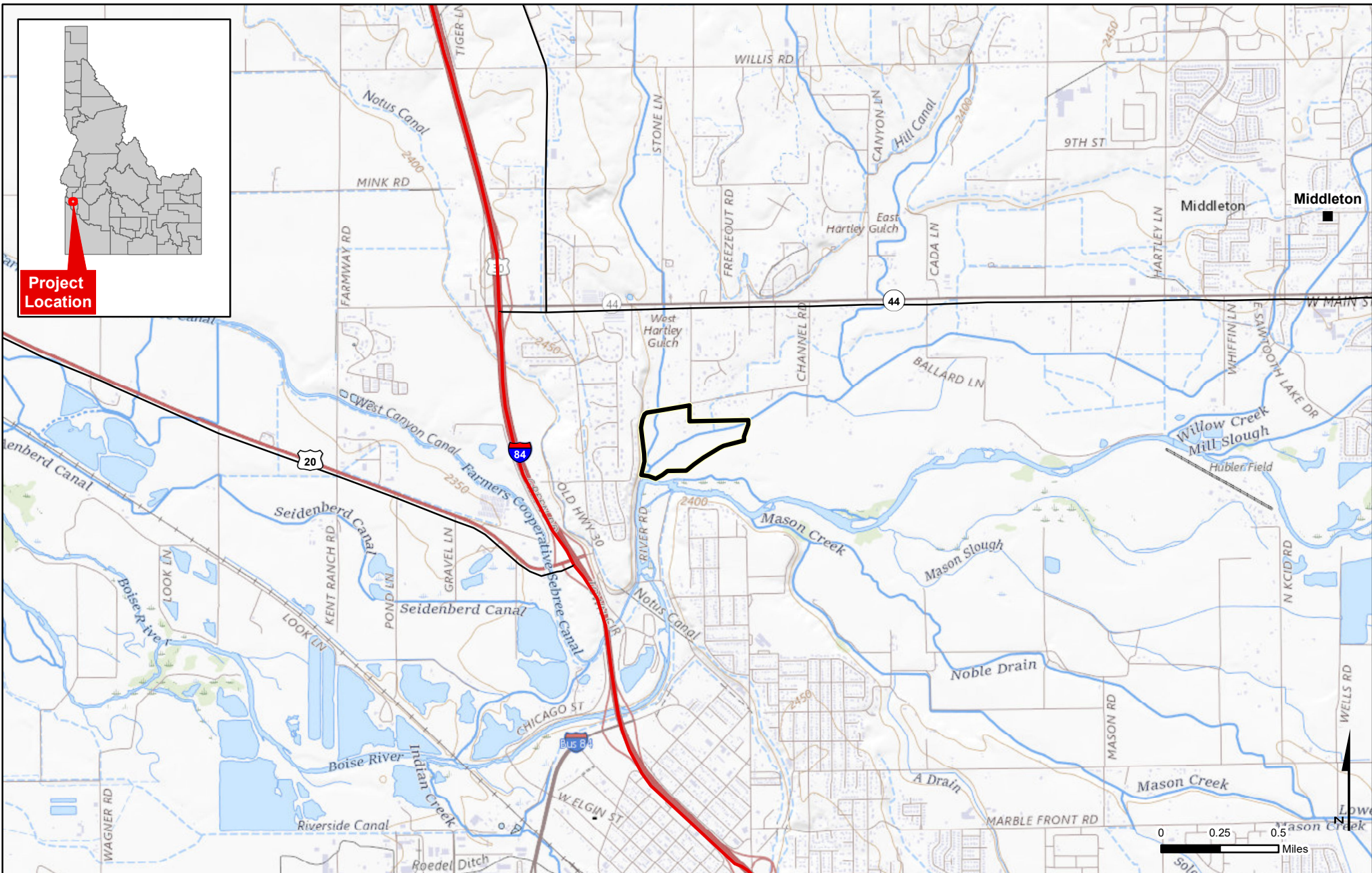
Ecological site descriptions for the survey area indicate that without irrigation 90.8 percent of the survey area would support upland communities with Wyoming big sagebrush (*Artemisia tridentata sub species. Wyomingensis*), fourwing saltbush (*Atriplex canescens*) and with an understory of bluebunch wheatgrass (*Pseudoroegneria spicata*) and Thurber's needlegrass (*Eriocoma thurberiana*) (NRCS, 2023). In the southwest corner of the survey area, the survey area ecosite is described as generally occurring on sloping to nearly level stream valleys and dominated by grasses (*Poa* species) and sedges (*Carex* species) with scattered shrubs. The site usually occurs within a complex of wetland and meadows.

5.0 REFERENCES

- A Team Land Consultants. 2022. Preliminary Site Survey. Crimson Bridge Estates. Project Number R22165.
- Cowardin LM, Carter V, Golet FC, LaRoe ET. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish & Wildlife Service Pub. FWS/OBS-79/31, Washington, DC.
- ESRI. 2023. World Basemap Aerial Imagery. Source date May 29, 2023.
- Federal Emergency Management Agency (FEMA). 2019. Floodplain Maps. Available online at: <https://www.fema.gov/flood-maps>
- Google Earth. 2023. Historic Aerial Imagery. Google Earth, 2003-2023.
- Idaho Department of Environmental Quality. 2022. Final 2022 §305(b) Integrated Report. Boise, ID.
- Idaho Department of Water Resources (IDWR). 2023. Water Rights Search. Available online at: <https://research.idwr.idaho.gov/apps/waterrights/wrajsearch/wradjsearch.aspx>
- National Oceanic and Atmospheric Administration (NOAA) 2023. National Weather Service climatological data for McCall, Idaho. National Weather Service. McCall Idaho Airport. Available online at: <https://www.weather.gov/>
- Natural Resources Conservation Service (NRCS). 2023. Soil Conservation Service. Soil Survey for Canyon Area. Available online at: <https://websoilsurvey.nrcs.usda.gov/app/>
- United States Army Corps of Engineers (USACE). 1987. Wetland Delineation Manual. Wetlands Research Technical Report Y-87-1. Washington, DC. Available online at: <https://el.erdc.dren.mil/elpubs/pdf/wlman87.pdf>
- United State Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0). Washington, DC.
- United State Army Corps of Engineers (USACE). 2012. Nation Wetland Plant List Indicator Rating Definitions. July 2012.
- United State Army Corps of Engineers (USACE). 2019. Guidance for Aquatic Resource Delineation Reports and Report Template. June 2019. Walla Walla District Regulatory Division. Available online at: <https://usace.contentdm.oclc.org/digital/api/collection/p16021coll7/id/11582/download>
- United States Fish and Wildlife Service (USFWS). 2023. National Wetland Inventory. Available online at: <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>.
- United States Geologic Survey (USGS). 2017. National Hydrography Dataset. Available online at: <https://www.usgs.gov/national-hydrography/national-hydrography-dataset>
- United States Geologic Survey (USGS). 2023. Historic topographic maps for 1955 and 2023. Available online at: <https://livingatlas.arcgis.com/topoexplorer/index.html>

APPENDIX A

Location Map



Project Area
 City/Town

Interstate
 Major Road

Nexus Project Number: P0287
 Date: 11/15/2023
 Canyon County, ID
 NAD 1983 UTM Zone 11N

**Precision Excavation and Construction Inc.
 Crimson Bridge Permitting**



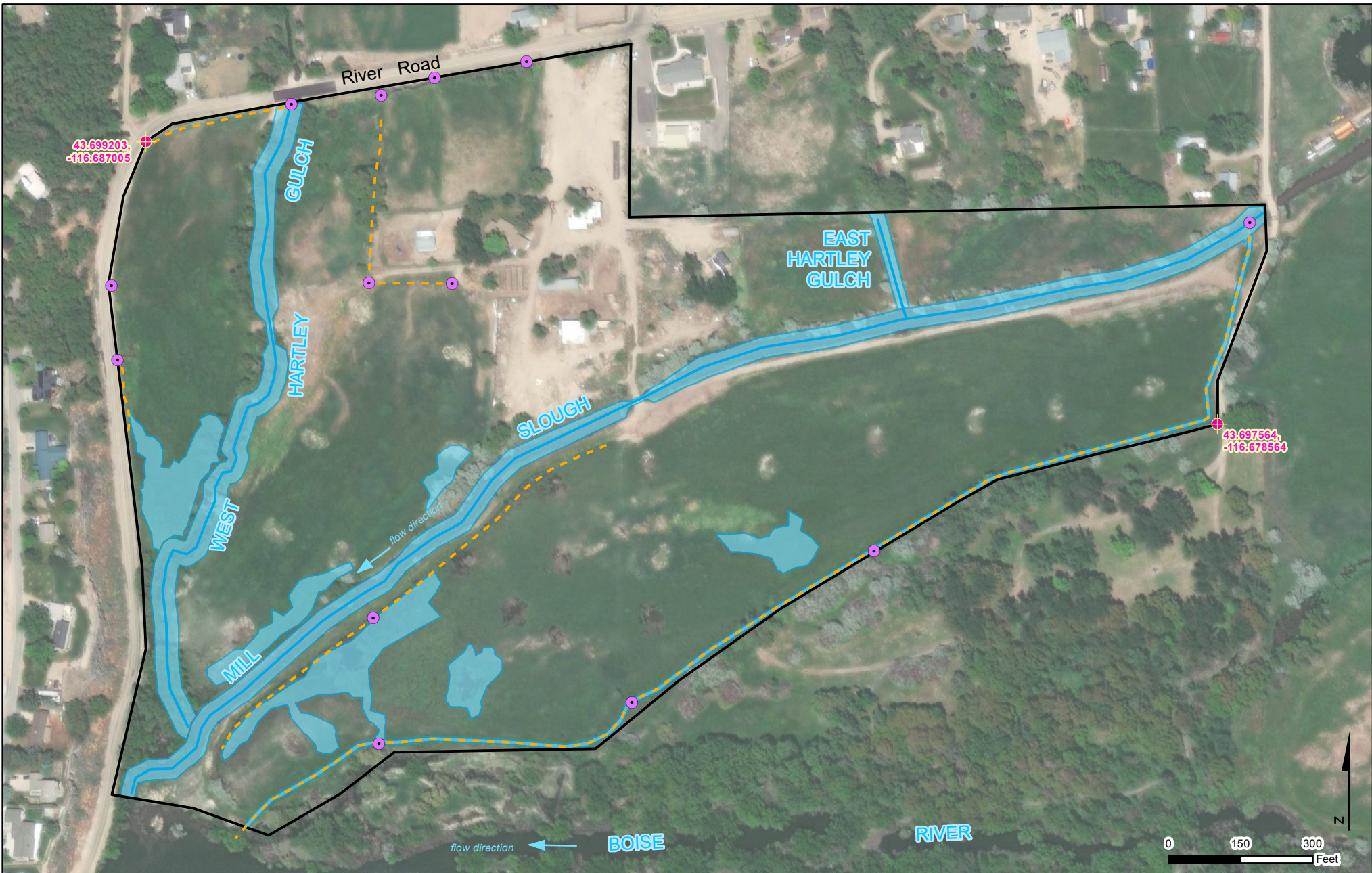
05/06/2024

**Figure 1
 Project Location**

Crimson Bridge Estates 138-1034

APPENDIX B

Aquatic Resource Map



<p> Headgate or Diversion Survey Area Coordinates Lateral Ditches Stream or Irrigation Delineated Wetlands Project Area </p>	<p> Nexus Project Number: P0287 Date: 11/21/2023 Canyon County, ID NAD 1983 UTM Zone 11N </p> <div> <p>NEXUS ENVIRONMENTAL CONSULTANTS</p> </div> <p>05/06/2024</p>	<p> Precision Excavation and Construction Inc. Crimson Bridge Permitting </p> <p> Figure 2 Aquatic Resources Crimson Bridge Estates 149 of 154 </p>
---	---	--

APPENDIX C

Wetland Determination Data Forms

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 10/04/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C03U
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): LRR B Lat: 43.698094 Long: --116.678662 Datum: NAD83
Soil Map Unit Name: Moulton Loam 0 to 1 % Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x , Soil x , or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u> x </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> x </u>
Hydric Soil Present? Yes <u> </u> No <u> x </u>	
Wetland Hydrology Present? Yes <u> </u> No <u> x </u>	
Remarks: The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 1 </u> (A) Total Number of Dominant Species Across All Strata: <u> 1 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 100.0% </u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u> </u> =Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u> 0 </u> x 1 = <u> 0 </u> FACW species <u> 0 </u> x 2 = <u> 0 </u> FAC species <u> 90 </u> x 3 = <u> 270 </u> FACU species <u> 10 </u> x 4 = <u> 40 </u> UPL species <u> 0 </u> x 5 = <u> 0 </u> Column Totals: <u> 100 </u> (A) <u> 310 </u> (B) Prevalence Index = B/A = <u> 3.10 </u>
Sapling/Shrub Stratum (Plot size: <u> </u>)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Indicators: <u> x </u> Dominance Test is >50% <u> </u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u> </u> =Total Cover				
Herb Stratum (Plot size: <u> 15' </u>)				
1. <u>Pascopyrum smithii</u>	<u> 85 </u>	<u> Yes </u>	<u> FAC </u>	
2. <u>Trifolium repens</u>	<u> 10 </u>	<u> No </u>	<u> FACU </u>	Hydrophytic Vegetation Present? Yes <u> </u> No <u> x </u>
3. <u>Plantago lanceolata</u>	<u> 5 </u>	<u> No </u>	<u> FAC </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Present? Yes <u> </u> No <u> x </u>
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u> 100 </u> =Total Cover				
Woody Vine Stratum (Plot size: <u> </u>)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u> </u> =Total Cover				
% Bare Ground in Herb Stratum <u> 0 </u> % Cover of Biotic Crust <u> </u>				
Remarks: Pasture recently mowed. Reference grass used to identify PASM. Ligule rounded, not jagged.				

SOIL

Sampling Point: C03U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 3/2	100					Loam	Sandy, dry

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
Remarks: Root zone to 5 inches.	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? Yes _____ No <u>x</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>x</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>x</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Flood irrigated pasture. Below closed headgate. No surface water connection.	

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 10/04/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C06U
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): LRR B Lat: 43.698094 Long: -116.678662 Datum: NAD83
Soil Map Unit Name: Moulton Loam 0 to 1 % Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation X, Soil X, or Hydrology X naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>x</u> Hydric Soil Present? Yes <u> </u> No <u>x</u> Wetland Hydrology Present? Yes <u> </u> No <u>x</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
---	--

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> <u> </u> =Total Cover	Absolute % Cover <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominant Species? <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Indicator Status <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)	
Sapling/Shrub Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>75</u> (A) <u>240</u> (B) Prevalence Index = B/A = <u>3.20</u>
Herb Stratum (Plot size: <u>15'</u>) 1. <u>Pascopyrum smithii</u> 2. <u>Trifolium repens</u> 3. <u> </u> 4. <u> </u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> <u>75</u> =Total Cover	<u>60</u> <u>15</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>Yes</u> <u>Yes</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>FAC</u> <u>FACU</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		
Woody Vine Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>				Hydrophytic Vegetation Indicators: <u> </u> Dominance Test is >50% <u> </u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Remarks: No hydrology. Considered problematic vegetation				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	

SOIL

Sampling Point: C06U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2	100					Sandy	Loam
10-18	10YR 3/1	100					Sandy	Loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present?
Type: _____ Depth (inches): _____	Yes _____ No <input checked="" type="checkbox"/>

Remarks:
Dry compacted soil

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:				Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present?	Yes _____ No _____	Depth (inches): _____		
Water Table Present?	Yes _____ No _____	Depth (inches): _____		
Saturation Present?	Yes _____ No _____	Depth (inches): _____		

(includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
See Attached Imagery Binder

Remarks:
Flood irrigated pasture.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R			OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)		
Project/Site: <u>Crimson Bridge Estates</u>		City/County: <u>Canyon</u>		Sampling Date: <u>10/04/23</u>	
Applicant/Owner: <u>Crimson Bridge Holdings</u>		State: <u> </u> ID: <u> </u>		Sampling Point: <u>C06W</u>	
Investigator(s): <u>Nexus - MT</u>		Section, Township, Range: <u>T4N R3W Section 10</u>			
Landform (hillside, terrace, etc.): <u> </u>		Pasture <u> </u>		Local relief (concave, convex, none): <u>none</u>	
Slope (%): <u>0</u>		Subregion (LRR): <u>LRR B</u>		Lat: <u>43.698094</u>	
Long: <u>-116.678662</u>		Datum: <u>NAD83</u>		Soil Map Unit Name: <u>Moulton Loam 0 to 1 % Slopes</u>	
NW1 classification: <u>N/A</u>		Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>x</u> No <u> </u> (If no, explain in Remarks.)			
Are Vegetation <u> </u> , Soil <u> </u> , or Hydrology <u> </u> significantly disturbed?		Are "Normal Circumstances" present? Yes <u>x</u> No <u> </u>			
Are Vegetation <u>x</u> , Soil <u>X</u> , or Hydrology <u>X</u> naturally problematic?		(If needed, explain any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u>			Is the Sampled Area within a Wetland? Yes <u>x</u> No <u> </u>		
Hydric Soil Present? Yes <u>x</u> No <u> </u>					
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>					
Remarks: The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.					
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size: <u> </u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u> </u> =Total Cover			Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>95</u> (A) <u>290</u> (B) Prevalence Index = B/A = <u>3.05</u>
Sapling/Shrub Stratum (Plot size: <u> </u>)					
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u> </u> =Total Cover			
Herb Stratum (Plot size: <u>15'</u>)					Hydrophytic Vegetation Indicators: <u>X</u> Dominance Test is >50% <u> </u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Pascopyrum smithii</u>		<u>85</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Trifolium repens</u>		<u>5</u>	<u>No</u>	<u>FACU</u>	
3. <u>Plantago lanceolata</u>		<u>5</u>	<u>No</u>	<u>FAC</u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>95</u> =Total Cover			
Woody Vine Stratum (Plot size: <u> </u>)					Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u> </u> =Total Cover			
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u> </u>			
Remarks: Dominated by pasture grass. No FACW or OBL however, irrigaiton water is present.					

Crimson Bridge Estates
1461050

ENG FORM 6116-1, JUL 2018

05/06/2024

Crimson Bridge Estates
1461050
Arid West – Version 2.0

SOIL

Sampling Point: C06W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2	100					Sandy	Loam
10-18	10YR 3/1	98	5YR 5/6	2	C	PL	Sandy	Loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input checked="" type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present?
Type: _____ Depth (inches): _____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks:
Very faint pore lining. Slightly depressional area where sediment may have deposited during high irrigation or rain.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:				Wetland Hydrology Present?
Surface Water Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): _____		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____		
Saturation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 0		
(includes capillary fringe)				

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See attached imagery binder

Remarks:
Flood irrigated pasture. No surface water connection but appears to be an area where irrigation water collects.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 10/04/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C07U
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): LRR B Lat: 43.696831 Long: -116.682214 Datum: NAD83
Soil Map Unit Name: Moulton Loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x, Soil x, or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>x</u> Wetland Hydrology Present? Yes <u> </u> No <u>x</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
---	---

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> <u> </u> =Total Cover	Absolute % Cover <u> </u> <u> </u> <u> </u> <u> </u>	Dominant Species? <u> </u> <u> </u> <u> </u> <u> </u>	Indicator Status <u> </u> <u> </u> <u> </u> <u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
Sapling/Shrub Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>350</u> (B) Prevalence Index = B/A = <u>3.33</u>
Herb Stratum (Plot size: <u>15'</u>) 1. <u>Pascopyrum smithii</u> 2. <u>Trifolium repens</u> 3. <u>Taraxacum officinale</u> 4. <u>Hordeum jubatum</u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> <u>105</u> =Total Cover	<u>40</u> <u>15</u> <u>20</u> <u>30</u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>Yes</u> <u>No</u> <u>No</u> <u>Yes</u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>FAC</u> <u>FACU</u> <u>FACU</u> <u>FAC</u> <u> </u> <u> </u> <u> </u> <u> </u>		
Woody Vine Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>				Hydrophytic Vegetation Indicators: <u>X</u> Dominance Test is >50% <u> </u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Remarks:				Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u>	

SOIL

Sampling Point: C07U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	100					Sandy	Loam
6-18	10YR 4/2	100					Sandy	Loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present?	Yes	No
Type: _____ Depth (inches): _____			

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:				Wetland Hydrology Present?	Yes	No
Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____			
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____			
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____			
(includes capillary fringe)						

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
See attached aerial image binder

Remarks:
Flood irrigated pasture

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 10/04/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C09U
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): LRR B Lat: 43.695913 Long: -116.684321 Datum: NAD83
Soil Map Unit Name: Chance fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x, Soil X, or Hydrology X naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>x</u> Wetland Hydrology Present? Yes <u> </u> No <u>x</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
---	---

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> <u> </u> =Total Cover	Absolute % Cover <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominant Species? <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Indicator Status <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
Sapling/Shrub Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>95</u> x 3 = <u>285</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>345</u> (B) Prevalence Index = B/A = <u>3.14</u>
Herb Stratum (Plot size: <u>15'</u>) 1. <u>Pascopyrum smithii</u> 2. <u>Trifolium repens</u> 3. <u>Euthamia graminifolia</u> 4. <u>Plantago lanceolata</u> 5. <u>Chicorium intybus</u> 6. <u> </u> 7. <u> </u> 8. <u> </u> <u>110</u> =Total Cover	<u>60</u> <u>5</u> <u>20</u> <u>15</u> <u>10</u> <u> </u> <u> </u> <u> </u>	<u>Yes</u> <u>No</u> <u>No</u> <u>No</u> <u>No</u> <u> </u> <u> </u> <u> </u>	<u>FAC</u> <u>FACU</u> <u>FAC</u> <u>FAC</u> <u>FACU</u> <u> </u> <u> </u> <u> </u>		
Woody Vine Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>				Hydrophytic Vegetation Indicators: <u>X</u> Dominance Test is >50% <u> </u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Remarks: No hydrology or soils Considered problematic vegetation. No obligate or FACW present.					

SOIL

Sampling Point: C09U

[illegible]

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>				<u>Secondary Indicators (minimum of two required)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)			
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe)				Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				See attached imagery binder	
Remarks: Irrigated pasture. Tire tracks indicate common use area by vehicles.					

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 10/04/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C09W
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): LRR B Lat: 43.696047 Long: -116.684491 Datum: NAD83
Soil Map Unit Name: Moulton Loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x, Soil x, or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> Hydric Soil Present? Yes <u>x</u> No <u> </u> Wetland Hydrology Present? Yes <u>x</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
---	---

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> =Total Cover	Absolute % Cover <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominant Species? <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Indicator Status <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
Sapling/Shrub Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>15</u> x 1 = <u>15</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>70</u> (A) <u>150</u> (B) Prevalence Index = B/A = <u>2.14</u>
Herb Stratum (Plot size: <u>15'</u>) 1. <u>Pascopyrum smithii</u> 2. <u>Typha latifolia</u> 3. <u>Carex microptera</u> 4. <u>Juncus balticus</u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> =Total Cover	<u>5</u> <u>15</u> <u>20</u> <u>30</u> <u> </u> <u> </u> <u> </u> <u> </u> <u>70</u>	<u>No</u> <u>Yes</u> <u>Yes</u> <u>Yes</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>FAC</u> <u>OBL</u> <u>FAC</u> <u>FACW</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		
Woody Vine Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>				Hydrophytic Vegetation Indicators: <u>X</u> Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Remarks:				Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u>	

SOIL

Sampling Point: C09W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-19	7.5YR 4/2	80	5YR 5/6	20	C	PL/M	Sandy	Loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See attached aerial image binder Remarks: Depressional area near headgate	

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 10/04/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C10U
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): LRR B Lat: 43.69592 Long: -116.685135 Datum: NAD83
Soil Map Unit Name: Chance fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x, Soil x, or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>x</u> Wetland Hydrology Present? Yes <u> </u> No <u>x</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>x</u>
---	---

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> <u> </u> =Total Cover	Absolute % Cover <u> </u> <u> </u> <u> </u> <u> </u>	Dominant Species? <u> </u> <u> </u> <u> </u> <u> </u>	Indicator Status <u> </u> <u> </u> <u> </u> <u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
Sapling/Shrub Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Herb Stratum (Plot size: <u>15'</u>) 1. <u>Pascopyrum smithii</u> 2. <u>Trifolium repens</u> 3. <u>Euthamia graminifolia</u> 4. <u>Plantago lanceolata</u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> <u>105</u> =Total Cover	<u>80</u> <u>5</u> <u>5</u> <u>15</u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>Yes</u> <u>No</u> <u>No</u> <u>No</u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>FAC</u> <u>FACU</u> <u>FAC</u> <u>FAC</u> <u> </u> <u> </u> <u> </u> <u> </u>		
Woody Vine Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>				Hydrophytic Vegetation Indicators: <u>x</u> Dominance Test is >50% <u> </u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Remarks: No hydrology. Considered problematic vegetation				Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u>	

SOIL

Sampling Point: C10U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/2	100					Sandy	Loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present?	Yes	No	X
Type: _____ Depth (inches): _____				

Remarks:
Dry soil, compacted

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:				Wetland Hydrology Present? Yes _____ No <u>X</u>
Surface Water Present?	Yes _____ No <u>x</u>	Depth (inches): _____		
Water Table Present?	Yes _____ No <u>x</u>	Depth (inches): _____		
Saturation Present?	Yes _____ No <u>x</u>	Depth (inches): _____		
(includes capillary fringe)				

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See attached imagery binder

Remarks:
Irrigated pasture

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 10/04/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C10W
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): LRR B Lat: 43.695905 Long: -116.685222 Datum: NAD83
Soil Map Unit Name: Chance fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x, Soil x, or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> Hydric Soil Present? Yes <u>x</u> No <u> </u> Wetland Hydrology Present? Yes <u>x</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
---	---

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> <u> </u> =Total Cover	Absolute % Cover <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominant Species? <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Indicator Status <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
Sapling/Shrub Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>95</u> (A) <u>290</u> (B) Prevalence Index = B/A = <u>3.05</u>
Herb Stratum (Plot size: <u>15'</u>) 1. <u>Pascopyrum smithii</u> 2. <u>Trifolium repens</u> 3. <u>Carex microptera</u> 4. <u>Plantago lanceolata</u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> <u>95</u> =Total Cover	<u>60</u> <u>5</u> <u>20</u> <u>10</u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>Yes</u> <u>No</u> <u>Yes</u> <u>No</u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>FAC</u> <u>FACU</u> <u>FAC</u> <u>FAC</u> <u> </u> <u> </u> <u> </u> <u> </u>		
Woody Vine Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>				Hydrophytic Vegetation Indicators: <u>X</u> Dominance Test is >50% <u> </u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Remarks:				Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u>	

SOIL

Sampling Point: C10W

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
See attached aerial image binder			
Remarks:			
Depressional area near headgate			

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 10/04/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C12W
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): LRR B Lat: 43.696169 Long: -116.685475 Datum: NAD83
Soil Map Unit Name: Falk fine sandy loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x, Soil x, or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>x</u> No <u> </u>
Hydric Soil Present? Yes <u>x</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>x</u> No <u> </u>	

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u> </u> =Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>95</u> x 2 = <u>190</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>235</u> (B) Prevalence Index = B/A = <u>2.14</u>
Sapling/Shrub Stratum (Plot size: <u> </u>)				
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				Hydrophytic Vegetation Indicators: <u>X</u> Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. <u> </u>				
<u> </u> =Total Cover				
Herb Stratum (Plot size: <u>15'</u>)				
1. <u>Hordeum jubatum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
2. <u>Dactylis glomerata</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u>
3. <u>Phalaris arundinacea</u>	<u>95</u>	<u>Yes</u>	<u>FACW</u>	
4. <u>Xanthium strumarium</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
5. <u> </u>				
6. <u> </u>				
7. <u> </u>				Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u>
8. <u> </u>				
<u>110</u> =Total Cover				
Woody Vine Stratum (Plot size: <u> </u>)				
1. <u> </u>				
2. <u> </u>				Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u>
<u> </u> =Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>				
Remarks: In area where Boise River may access and irrigation outlet.				

SOIL

Sampling Point: C12W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	7.5YR 4/2	80	5YR 5/6	20	C	M	Sandy	Loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 8 (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See attached aerial image binder Remarks:	

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 10/04/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C35U
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): LRR B Lat: 43.698273 Long: -116.684924 Datum: NAD83
Soil Map Unit Name: Falk fine sandy loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x, Soil x, or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>x</u> Hydric Soil Present? Yes <u> </u> No <u>x</u> Wetland Hydrology Present? Yes <u> </u> No <u>x</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
---	--

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> <u> </u> =Total Cover	Absolute % Cover <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominant Species? <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Indicator Status <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)	
Sapling/Shrub Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>345</u> (B) Prevalence Index = B/A = <u>3.45</u>
Herb Stratum (Plot size: <u>15'</u>) 1. <u>Phleum pratense</u> 2. <u>Dactylis glomerata</u> 3. <u>Phalaris arundinacea</u> 4. <u>Hordeum jubatum</u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> <u>100</u> =Total Cover	<u>50</u> <u>40</u> <u>5</u> <u>5</u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>Yes</u> <u>Yes</u> <u>No</u> <u>No</u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>FACU</u> <u>FAC</u> <u>FACW</u> <u>FAC</u> <u> </u> <u> </u> <u> </u> <u> </u>		
Woody Vine Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>				Hydrophytic Vegetation Indicators: <u> </u> Dominance Test is >50% <u> </u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Remarks: Pasture grass. Likely used to house horse and cattle.				Hydrophytic Vegetation Present? Yes <u> </u> No <u>x</u>	

SOIL

Sampling Point: C35U

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
See attached aerial image binder			
Remarks:			
Flood irrigated with overland pipe and small ditch diversions.			

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 10/04/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C36U
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): LRR B Lat: 43.697967 Long: -116.684356 Datum: NAD83
Soil Map Unit Name: Falk fine sandy loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x, Soil x, or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>x</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>x</u>
Hydric Soil Present? Yes <u>x</u> No <u> </u>	
Wetland Hydrology Present? Yes <u> </u> No <u>x</u>	

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u> </u> =Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>55</u> (A) <u>205</u> (B) Prevalence Index = B/A = <u>3.73</u>
Sapling/Shrub Stratum (Plot size: <u> </u>)				
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				Hydrophytic Vegetation Indicators: <u> </u> Dominance Test is >50% <u> </u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. <u> </u>				
<u> </u> =Total Cover				
Herb Stratum (Plot size: <u>15'</u>)				
1. <u>Phleum pratense</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Pascopyrum smithii</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Malva neglecta</u>	<u>10</u>	<u>No</u>	<u>UPL</u>	
4. <u>Xanthium strumarium</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
5. <u> </u>				Hydrophytic Vegetation Present? Yes <u> </u> No <u>x</u>
6. <u> </u>				
7. <u> </u>				
8. <u> </u>				
<u>55</u> =Total Cover				
Woody Vine Stratum (Plot size: <u> </u>)				Hydrophytic Vegetation Present? Yes <u> </u> No <u>x</u>
1. <u> </u>				
2. <u> </u>				
<u> </u> =Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>				
Remarks: Near larger development test pit.				

SOIL

Sampling Point: C36U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/2	100					Sandy	Loam
4-24	10YR 3/3	100					Sandy	Loam
24-28	10YR 3/2	95	7.5YR 5*6	5		PL/M	Loamy/Clayey	Faint

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Type: _____			
Depth (inches): _____			

Remarks:
Very faint redox at depth. Likely remnant based on veg cover and geographic position.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:				Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	_____	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	_____	
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	_____	
(includes capillary fringe)				

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
See attached aerial image binder

Remarks:
Upland area adjacent to house. Flood irrigated by overland pipe.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 11/09/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C37U
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): LRR B Lat: 43.697435 Long: -116.684342 Datum: NAD83
Soil Map Unit Name: Moulton NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x, Soil x, or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>x</u> Hydric Soil Present? Yes <u> </u> No <u>x</u> Wetland Hydrology Present? Yes <u>x</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>x</u>
---	--

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> <u> </u> =Total Cover	Absolute % Cover <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominant Species? <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Indicator Status <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)	
Sapling/Shrub Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>15</u> x 5 = <u>75</u> Column Totals: <u>70</u> (A) <u>275</u> (B) Prevalence Index = B/A = <u>3.93</u>
Herb Stratum (Plot size: <u>15'</u>) 1. <u>Kochia</u> 2. <u>Cirsium vulgare</u> 3. <u>Pascopyrum smithii</u> 4. <u> </u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> <u>70</u> =Total Cover	<u>15</u> <u>35</u> <u>20</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>Yes</u> <u>Yes</u> <u>Yes</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>UPL</u> <u>FACU</u> <u>FAC</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		
Woody Vine Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>	Hydrophytic Vegetation Indicators: <u> </u> Dominance Test is >50% <u> </u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>					Hydrophytic Vegetation Present? Yes <u> </u> No <u>x</u>
Remarks: Scabby areas with numerous thistles					

SOIL

Sampling Point: C37U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/3	100					Sandy	Loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present?
Type: _____ Depth (inches): _____	Yes _____ No <input checked="" type="checkbox"/>

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:				Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____		
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____		
Saturation Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____		

(includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
See attached aerial image binder

Remarks:
Leeward side of Mill Slough. Adjacent to depressional wetland area. Flood irrigation water collects here.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: <u>Crimson Bridge Estates</u>	City/County: <u>Canyon</u>	Sampling Date: <u>11/09/23</u>
Applicant/Owner: <u>Crimson Bridge Holdings</u>	State: <u> </u> ID: <u> </u>	Sampling Point: <u>C38W</u>
Investigator(s): <u>Nexus - MT</u> Section, Township, Range: <u>T4N R3W Section 10</u>		
Landform (hillside, terrace, etc.): <u>Pasture</u>	Local relief (concave, convex, none): <u>none</u>	Slope (%): <u>0</u>
Subregion (LRR): <u>LRR B</u>	Lat: <u>43.69743</u>	Long: <u>-116.68446</u> Datum: <u>NAD83</u>
Soil Map Unit Name: <u>Moulton</u>		NWI classification: <u>N/A</u>

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No

Are Vegetation x , Soil x , or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> x </u> No <u> </u> Hydric Soil Present? Yes <u> x </u> No <u> </u> Wetland Hydrology Present? Yes <u> x </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> x </u> No <u> </u>
--	---

Remarks:
 The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 1 </u> (A) Total Number of Dominant Species Across All Strata: <u> 1 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 100.0% </u> (A/B)																								
1. <u> </u>																													
2. <u> </u>																													
3. <u> </u>																													
4. <u> </u>																													
				=Total Cover																									
Sapling/Shrub Stratum (Plot size: <u> </u>)																													
1. <u> </u>																													
2. <u> </u>																													
3. <u> </u>																													
4. <u> </u>																													
5. <u> </u>																													
				=Total Cover																									
Herb Stratum (Plot size: <u> 15' </u>)																													
1. <u>Phalaris arundinacea</u>		90	Yes	FACW																									
2. <u>Rumex crispus</u>		15	No	FAC																									
3. <u> </u>																													
4. <u> </u>																													
5. <u> </u>																													
6. <u> </u>																													
7. <u> </u>																													
8. <u> </u>																													
				105 =Total Cover																									
Woody Vine Stratum (Plot size: <u> </u>)																													
1. <u> </u>																													
2. <u> </u>																													
				=Total Cover																									
% Bare Ground in Herb Stratum <u> 0 </u>		% Cover of Biotic Crust <u> </u>			Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <th style="width:40%;">Total % Cover of:</th> <th style="width:20%;">Multiply by:</th> <th style="width:40%;"></th> </tr> <tr> <td>OBL species <u> 0 </u></td> <td>x 1 =</td> <td><u> 0 </u></td> </tr> <tr> <td>FACW species <u> 90 </u></td> <td>x 2 =</td> <td><u> 180 </u></td> </tr> <tr> <td>FAC species <u> 15 </u></td> <td>x 3 =</td> <td><u> 45 </u></td> </tr> <tr> <td>FACU species <u> 0 </u></td> <td>x 4 =</td> <td><u> 0 </u></td> </tr> <tr> <td>UPL species <u> 0 </u></td> <td>x 5 =</td> <td><u> 0 </u></td> </tr> <tr> <td>Column Totals: <u> 105 </u> (A)</td> <td></td> <td><u> 225 </u> (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = <u> 2.14 </u></td> </tr> </table>	Total % Cover of:	Multiply by:		OBL species <u> 0 </u>	x 1 =	<u> 0 </u>	FACW species <u> 90 </u>	x 2 =	<u> 180 </u>	FAC species <u> 15 </u>	x 3 =	<u> 45 </u>	FACU species <u> 0 </u>	x 4 =	<u> 0 </u>	UPL species <u> 0 </u>	x 5 =	<u> 0 </u>	Column Totals: <u> 105 </u> (A)		<u> 225 </u> (B)	Prevalence Index = B/A = <u> 2.14 </u>		
Total % Cover of:	Multiply by:																												
OBL species <u> 0 </u>	x 1 =	<u> 0 </u>																											
FACW species <u> 90 </u>	x 2 =	<u> 180 </u>																											
FAC species <u> 15 </u>	x 3 =	<u> 45 </u>																											
FACU species <u> 0 </u>	x 4 =	<u> 0 </u>																											
UPL species <u> 0 </u>	x 5 =	<u> 0 </u>																											
Column Totals: <u> 105 </u> (A)		<u> 225 </u> (B)																											
Prevalence Index = B/A = <u> 2.14 </u>																													

Hydrophytic Vegetation Indicators:
 X Dominance Test is >50%
 X Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks:
 Heavy canary reed grass

SOIL

Sampling Point: C38W

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
See attached aerial image binder			
Remarks:			
Leeward side of Mill Slough. Irrigation water collects here in depressional area.			

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R				OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)	
Project/Site: <u>Crimson Bridge Estates</u>		City/County: <u>Canyon</u>		Sampling Date: <u>11/09/23</u>	
Applicant/Owner: <u>Crimson Bridge Holdings</u>		State: <u> </u> ID: <u> </u>		Sampling Point: <u>C44U</u>	
Investigator(s): <u>Nexus - MT</u>		Section, Township, Range: <u>T4N R3W Section 10</u>			
Landform (hillside, terrace, etc.): <u>Pasture</u>		Local relief (concave, convex, none): <u>none</u>		Slope (%): <u>0</u>	
Subregion (LRR): <u>LRR B</u>		Lat: <u>43.697650</u>		Long: <u>-116.686634</u>	
		Datum: <u>NAD83</u>			
Soil Map Unit Name: <u>Notus</u>		NW1 classification: <u>N/A</u>			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>x</u> No <u> </u> (If no, explain in Remarks.)					
Are Vegetation <u> </u> , Soil <u> </u> , or Hydrology <u> </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>x</u> No <u> </u>					
Are Vegetation <u>x</u> , Soil <u>x</u> , or Hydrology <u>x</u> naturally problematic? (If needed, explain any answers in Remarks.)					
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Yes <u> </u> No <u>x</u>			Is the Sampled Area within a Wetland? Yes <u> </u> No <u>x</u>		
Hydric Soil Present? Yes <u>x</u> No <u> </u>					
Wetland Hydrology Present? Yes <u> </u> No <u>x</u>					
Remarks: The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.					
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size: <u> </u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		=Total Cover			
Sapling/Shrub Stratum (Plot size: <u> </u>)					Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>15</u> x 5 = <u>75</u> Column Totals: <u>105</u> (A) <u>395</u> (B) Prevalence Index = B/A = <u>3.76</u>
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		=Total Cover			
Herb Stratum (Plot size: <u>15'</u>)					Hydrophytic Vegetation Indicators: <u> </u> Dominance Test is >50% <u> </u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Trifolium repens</u>		<u>50</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Pascopyrum smithii</u>		<u>40</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Medicago sativa</u>		<u>15</u>	<u>No</u>	<u>UPL</u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>105</u>	=Total Cover		
Woody Vine Stratum (Plot size: <u> </u>)					Hydrophytic Vegetation Present? Yes <u> </u> No <u>x</u>
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		=Total Cover			
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>					
Remarks: Agricultural crop, recently inundated by headgate accidentally left open from adjacent property for many days. Transitional area adjacent to a persistent wetland.					

Crimson Bridge Estates
168-1050
ENG FORM 6116-1, JUL 2018

05/06/2024

Crimson Bridge Estates
168-1050
Arid West – Version 2.0

SOIL

Sampling Point: C44U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 3/3	98	7.5YR 4/6	2			Sandy	Loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present?
Type: _____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Depth (inches): _____	

Remarks:
Very faint.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:				Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):		
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):		

(includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
See attached aerial image binder

Remarks:
Agricultural production crop. Flood irrigated but supports upland species.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 11/09/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C45W
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): LRR B Lat: 43.697435 Long: -116.684342 Datum: NAD83
Soil Map Unit Name: Notus NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x, Soil x, or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> Hydric Soil Present? Yes <u>x</u> No <u> </u> Wetland Hydrology Present? Yes <u>x</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>x</u> No <u> </u>
---	---

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> <u> </u> =Total Cover	Absolute % Cover <u> </u> <u> </u> <u> </u> <u> </u>	Dominant Species? <u> </u> <u> </u> <u> </u> <u> </u>	Indicator Status <u> </u> <u> </u> <u> </u> <u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
Sapling/Shrub Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>90</u> (A) <u>180</u> (B) Prevalence Index = B/A = <u>2.00</u>
Herb Stratum (Plot size: <u>15'</u>) 1. <u>Deschampsia cespitosa</u> 2. <u>Phalaris arundinacea</u> 3. <u> </u> 4. <u> </u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> <u>90</u> =Total Cover	<u>50</u> <u>40</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>Yes</u> <u>Yes</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>FACW</u> <u>FACW</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		
Woody Vine Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>				Hydrophytic Vegetation Indicators: <u>X</u> Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Remarks: Scabby areas with numerous thistles.				Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u>	

SOIL

Sampling Point: C45W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 4/2	90	7.5YR 4/6	10			Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present?
Type: _____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Depth (inches): _____	

Remarks:
Same as C46. Fine sediment on surface likely deposited by irrigation.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	
Saturation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	8
(includes capillary fringe)			
Wetland Hydrology Present?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
See attached aerial image binder

Remarks:
At the end of the pasture near the creek where irrigation water collects. In October this area was completely flooded from a headgate that was left open on adjacent property. Leeward side of West Hartley Gulch where irrigation water flows against berm.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Crimson Bridge Estates City/County: Canyon Sampling Date: 11/09/23
Applicant/Owner: Crimson Bridge Holdings State: ID: Sampling Point: C46W
Investigator(s): Nexus - MT Section, Township, Range: T4N R3W Section 10
Landform (hillside, terrace, etc.): Pasture Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): LRR B Lat: 43.697435 Long: -116.684342 Datum: NAD83
Soil Map Unit Name: Notus NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation x, Soil x, or Hydrology x naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> Hydric Soil Present? Yes <u>x</u> No <u> </u> Wetland Hydrology Present? Yes <u>x</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>x</u> No <u> </u>
---	--

Remarks:
The survey area is in the floodplain of the Boise River in a historic riparian area that has been grazed for at least 50 years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> <u> </u> =Total Cover	Absolute % Cover <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominant Species? <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Indicator Status <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
Sapling/Shrub Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>100</u> x 2 = <u>200</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>215</u> (B) Prevalence Index = B/A = <u>2.05</u>
Herb Stratum (Plot size: <u>15'</u>) 1. <u>Deschampsia cespitosa</u> 2. <u>Phalaris arundinacea</u> 3. <u>Rumex crispus</u> 4. <u> </u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> <u>105</u> =Total Cover	<u>60</u> <u>40</u> <u>5</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>Yes</u> <u>Yes</u> <u>No</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u>FACW</u> <u>FACW</u> <u>FAC</u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		
Woody Vine Stratum (Plot size: <u> </u>) 1. <u> </u> 2. <u> </u> <u> </u> =Total Cover	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u>		
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u> </u>				Hydrophytic Vegetation Indicators: <u>X</u> Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0 ¹ <u> </u> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Remarks: Scabby areas with numerous thistles				Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u>	

SOIL

Sampling Point: C46W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 4/2	90	7.5YR 4/6	10			Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present?
Type: _____ Depth (inches): _____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:				Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):		
Saturation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	8	
(includes capillary fringe)				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
See attached aerial image binder				
Remarks:				
At the end of the pasture near the creek where irrigaiton water collects. In October this area was completely flooded from a headgate that was left open on adjacent property.				

APPENDIX D

Representative Photos







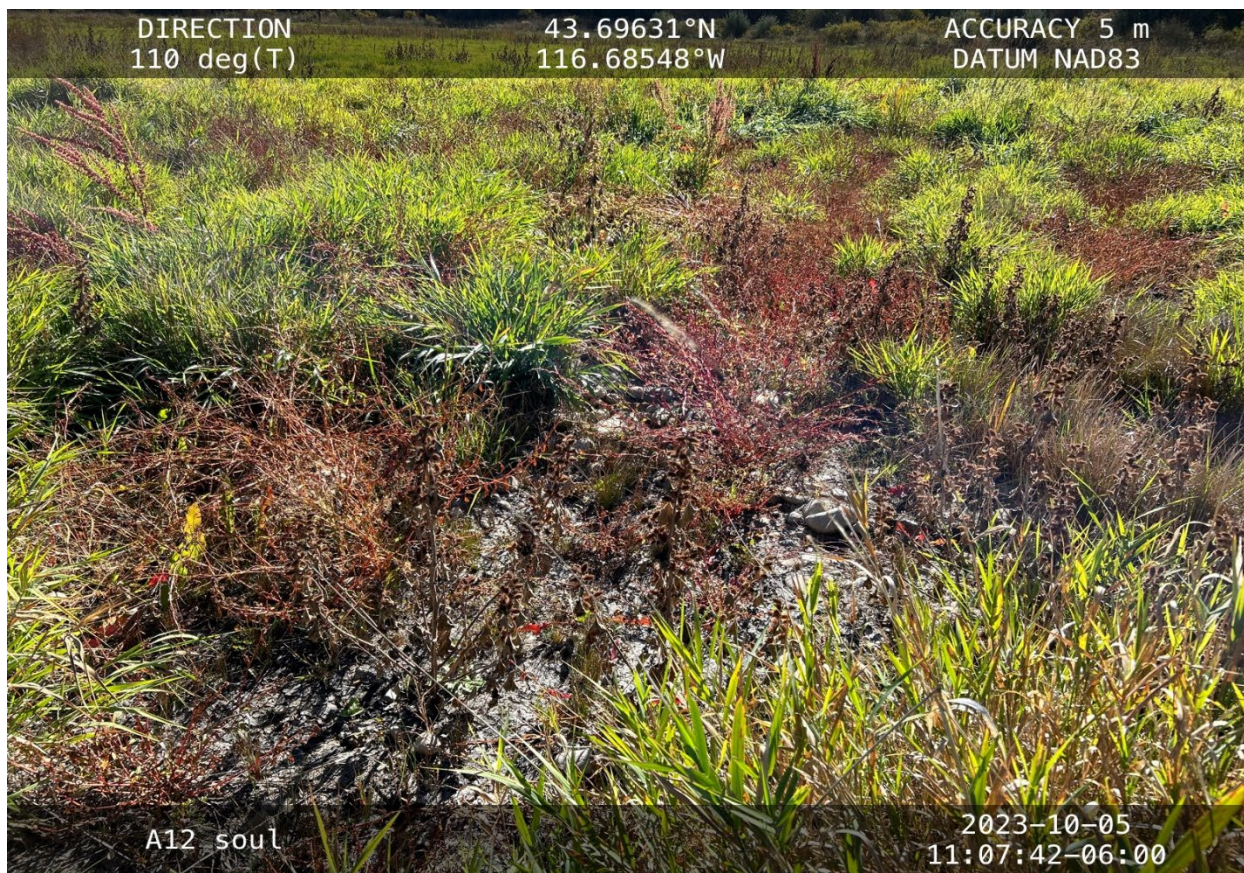




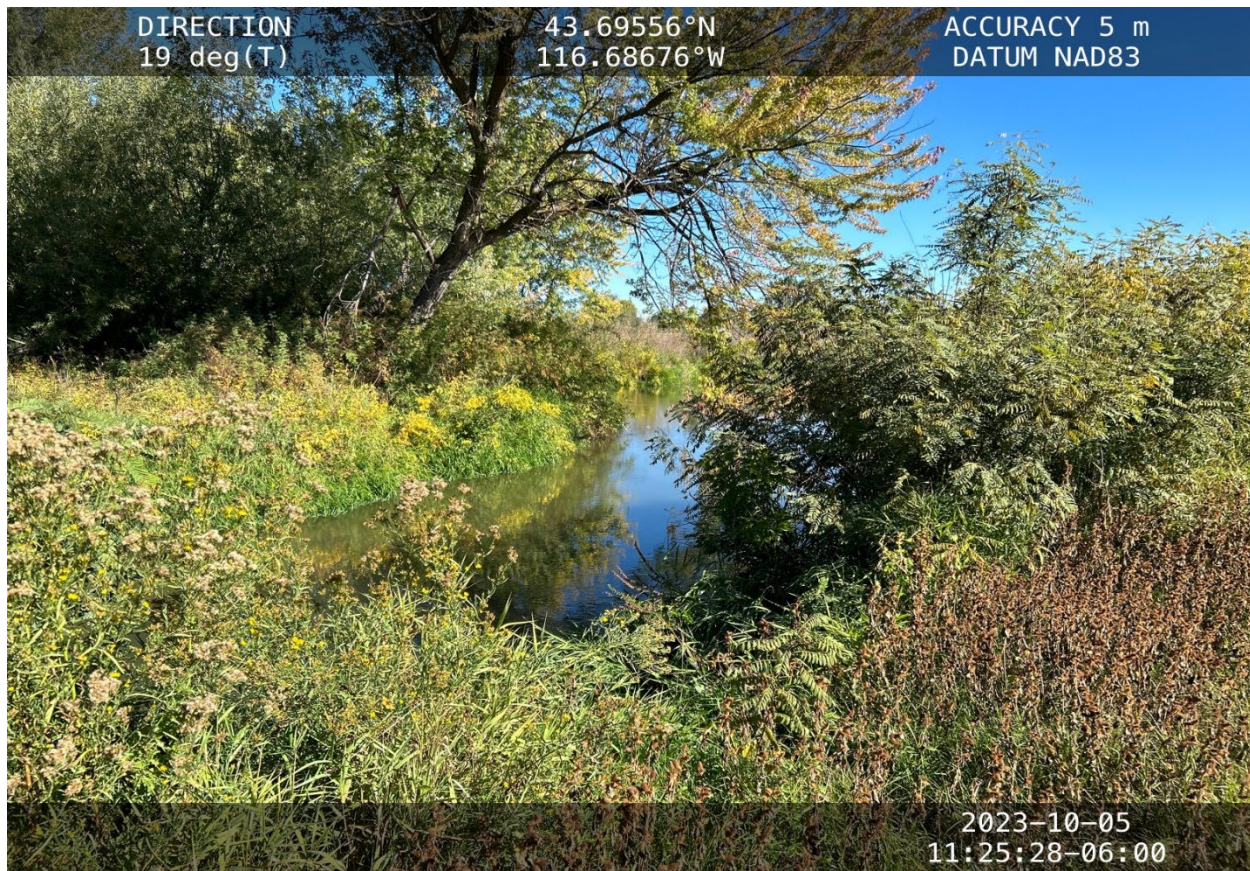








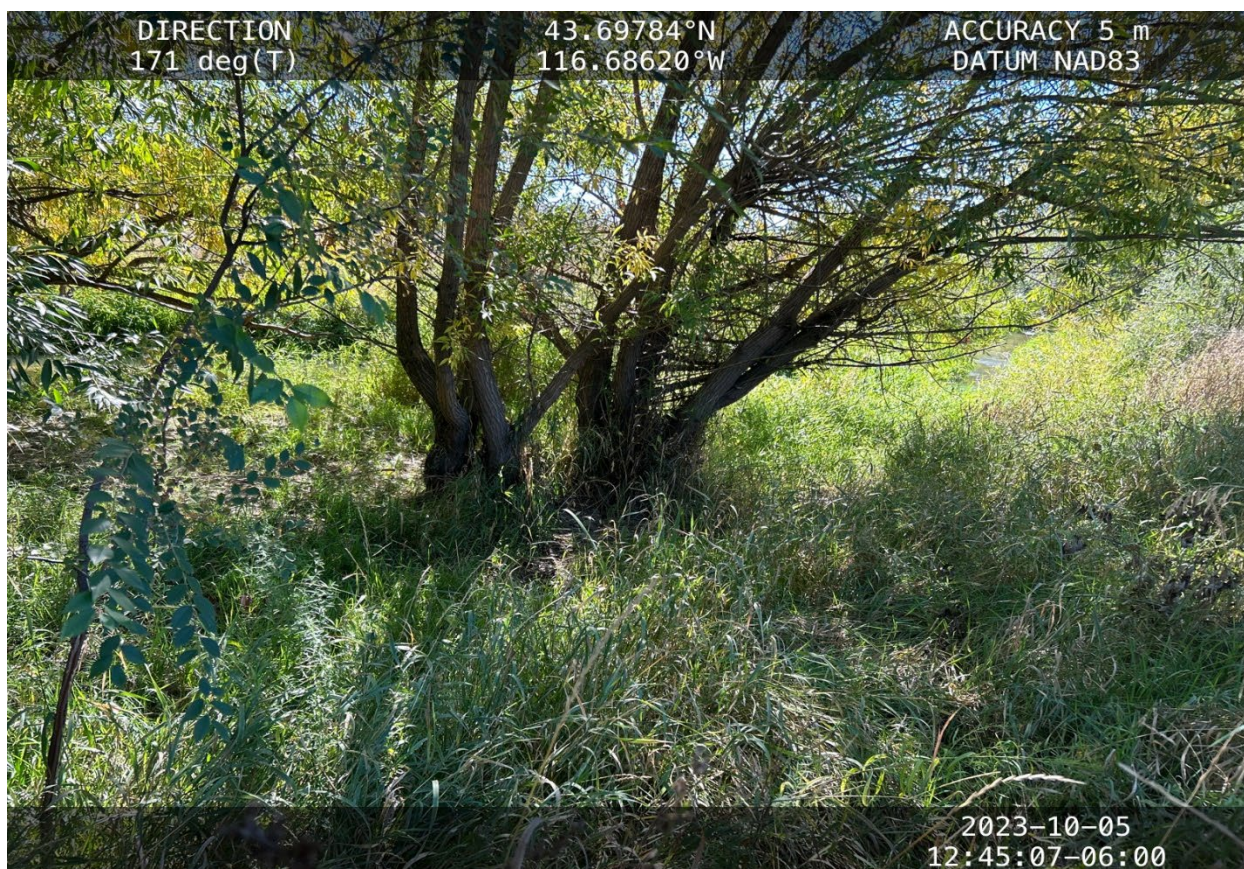












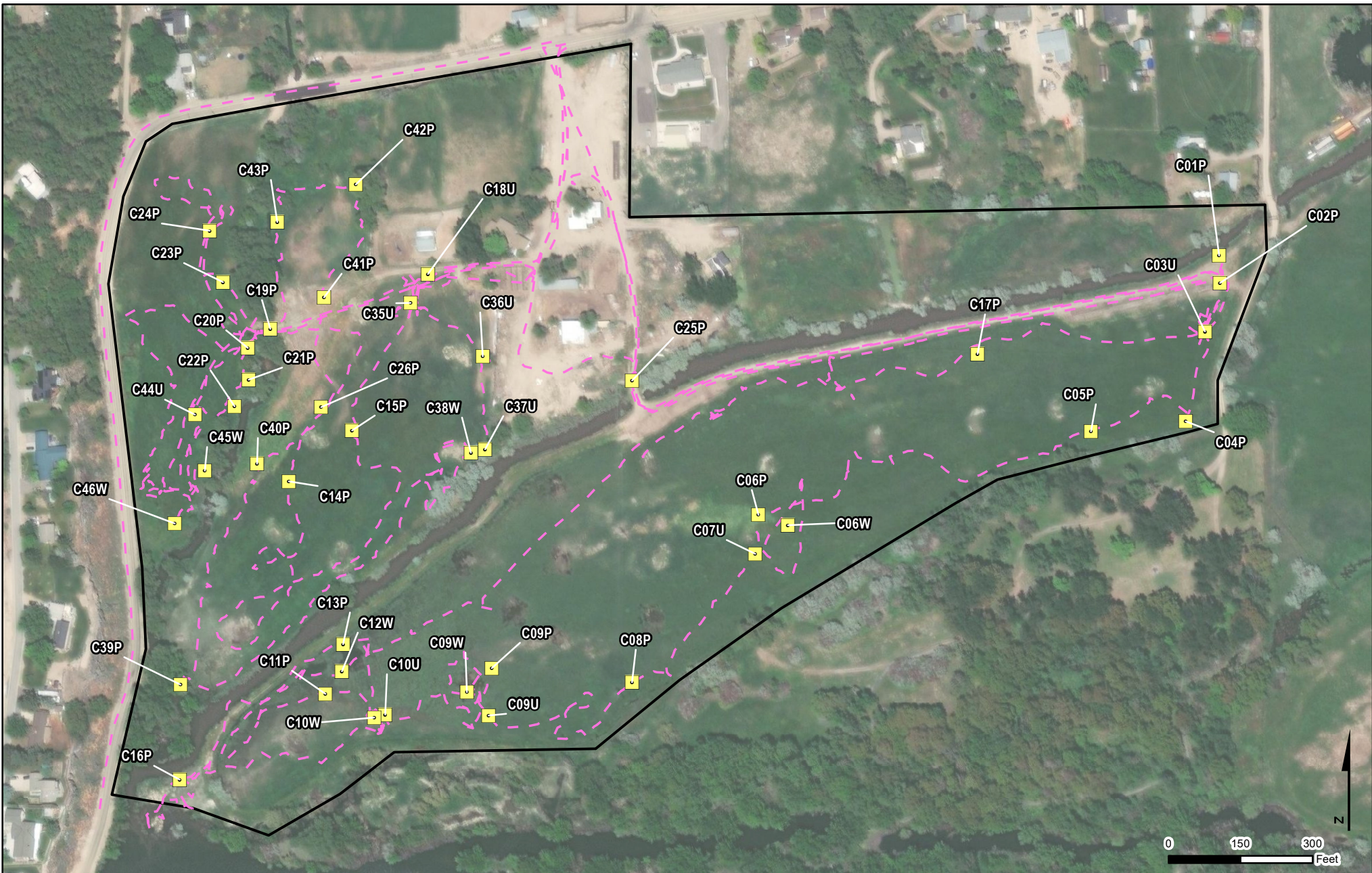






APPENDIX E

Supplementary Information



■ Data Points
 --- Survey Tracks
 Project Area

Nexus Project Number: P0287
 Date: 11/17/2023
 Canyon County, ID
 NAD 1983 UTM Zone 11N

Precision Excavation and Construction Inc.
Crimson Bridge Permitting



05/06/2024

Figure 3
Data Points and Survey Tracks


Crimson Bridge Estates 1954




Crimson Estates

Google Earth 2003

Legend

 Curtis Park

West Hartley Gulch

 Curtis Park

Curtis Park

Boise River

Google Earth

05/06/2024

Crimson Bridge Estates 195 493 4




600 ft

Crimson Estates

Google Earth 2005

Legend

 Curtis Park

West Hartley Gulch

 Curtis Park

Curtis Park

Boise River

Google Earth

Image U.S. Geological Survey

05/06/2024

Crimson Bridge Est. 1934




600 ft



Crimson Estates

Google Earth 2013

Legend

 Curtis Park



Google Earth

800 ft




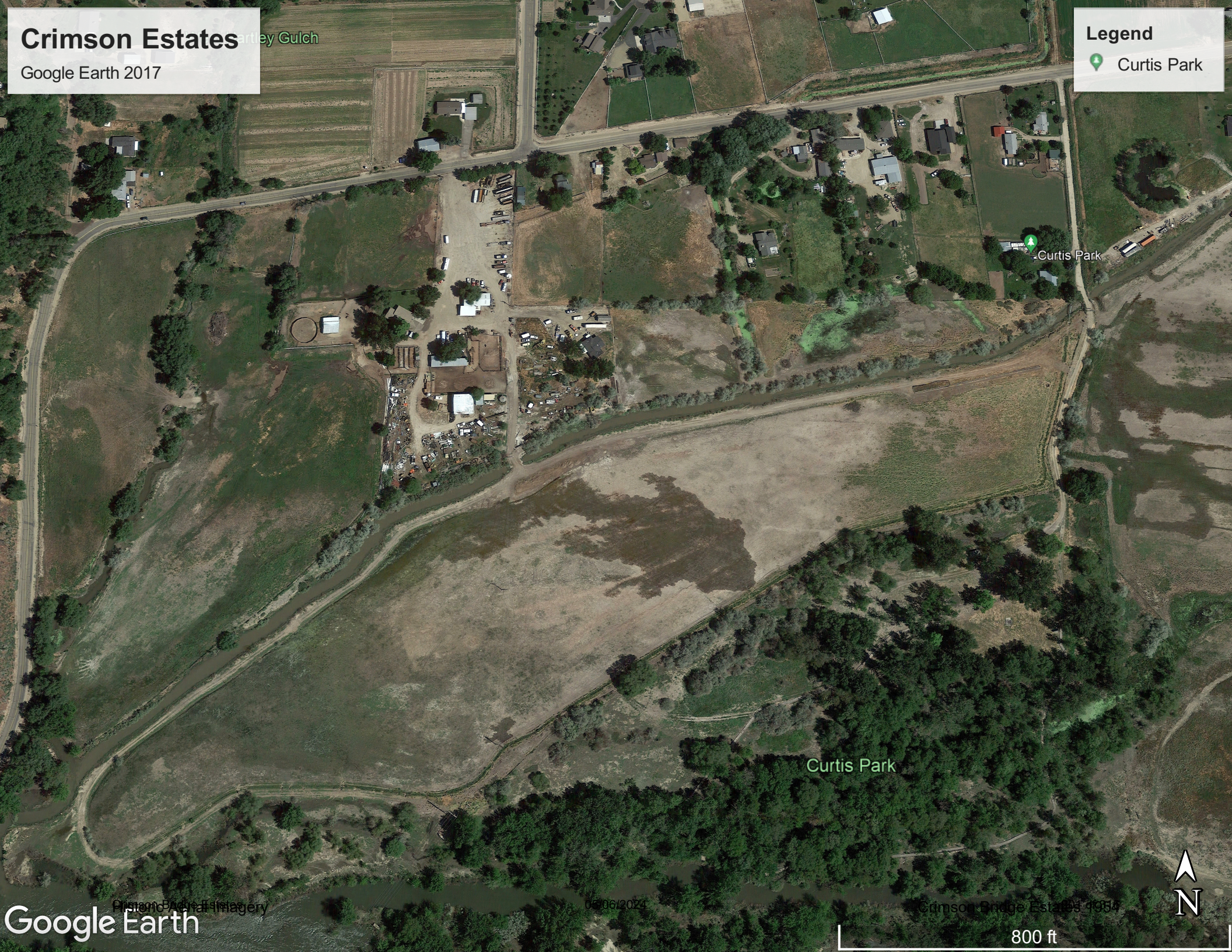


Crimson Estates

Google Earth 2017

Legend

 Curtis Park






Crimson Estates

Google Earth 2022

Legend

 Curtis Park

Google Earth

Image © 2023 Maxar Technologies

Curtis Park


800 ft



Crimson Estates

Google Earth 2023

Legend

 Curtis Park

West Harley Gulch

 Curtis Park

Curtis Park

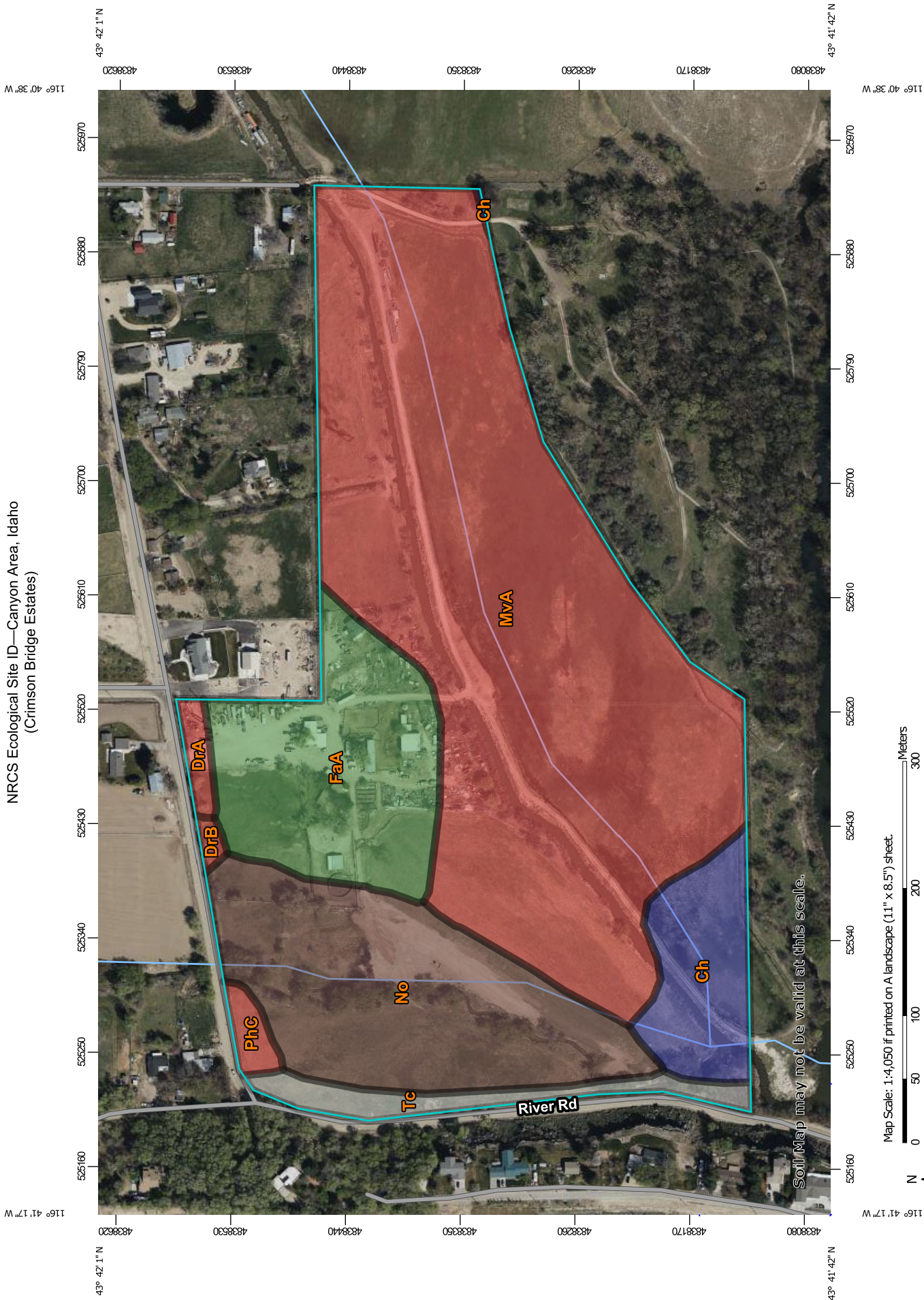
Google Earth

Image © 2023 Airbus



1000 ft

NRCS Ecological Site ID—Canyon Area, Idaho
(Crimson Bridge Estates)



Map Scale: 1:4,050 if printed on A landscape (11" x 8.5") sheet.




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



MAP LEGEND


MAP INFORMATION


Area of Interest (AOI)


 Area of Interest (AOI)


Soils


Soil Rating Polygons






 R011XY001ID

 R011XY004ID

 R011XY016OR

 R011XY019ID

 Not rated or not available

Soil Rating Lines	
	R011XY001ID
	R011XY004ID
	R011XY016OR
	R011XY019ID
	Not rated or not available

Soil Rating Points	
	R011XY001ID
	R011XY004ID
	R011XY016OR
	R011XY019ID
	Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes
Major Roads
Local Roads
Background
Aerial Photography

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 20, Aug 31, 2023

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

Date(s) aerial images were photographed: Apr 19, 2021—Apr 21, 2021

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.

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.

NRCS Ecological Site ID

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ch	Chance fine sandy loam	R011XY019ID	3.3	6.2%
DrA	Draper loam, 0 to 1 percent slopes	R011XY001ID	0.5	0.8%
DrB	Draper loam, 1 to 3 percent slopes	R011XY001ID	0.2	0.3%
FaA	Falk fine sandy loam, 0 to 2 percent slopes	R011XY004ID	7.3	13.7%
MvA	Moulton loam, 0 to 1 percent slopes	R011XY001ID	30.0	56.6%
No	Notus soils	R011XY016OR	9.7	18.4%
PhC	Power silt loam, 3 to 7 percent slopes	R011XY001ID	0.5	0.9%
Tc	Terrace escarpments		1.6	3.0%
Totals for Area of Interest			53.1	100.0%

Description

An "ecological site ID" is the symbol assigned to a specific ecological site. An "ecological site" is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. For example, the hydrology of the site is influenced by development of the soil and plant community. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Ecological site R011XY001ID Loamy 8-12 PZ

Last updated: 10/30/2018
Accessed: 11/12/2023

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

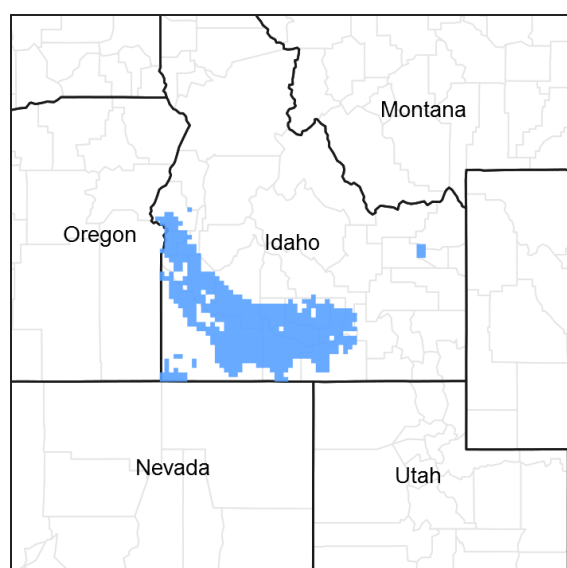


Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Classification relationships

Artemisia wyomingensis/ Agropyron spicatum HT in “Hironaka, M., M.A. Fosberg, A. H. Winward. 1983. Sagebrush- Grass Habitat Types of Southern Idaho. University of Idaho. Moscow, Idaho. Bulletin Number 35”.

Ecological site concept

This ecological site meets the NESH 2014 requirements for PROVISIONAL. A provisional ecological site is established after ecological site concepts are developed and an initial state-and-transition model is drafted. Following quality control and quality assurance reviews of the ecological site concepts, an identification number and name for the provisional ecological site are entered into ESIS. A provisional ecological site may include literature reviews, land use history information, some soils data, legacy data, ocular estimates for canopy and/or species composition by weight, and even some line-point intercept information. A provisional ecological site does not meet the NESH 2014 standards for an Approved ESD, but does provide the conceptual framework of soil-site correlation for the development of the ESD.

Associated sites

R011XY004ID	Shallow Loamy 8-12 PZ
R011XY007ID	Gravelly 10-12 PZ

R011XY008ID	South Slope 10-12 PZ
R011XY009ID	Silty 7-10 PZ KRLA2/ACHY
R011XY010ID	Calcareous Loam 7-10 PZ ATCO-PIDE4/ACHY-ACTH7
R011XY011ID	Sand 8-12 PZ ARTRT/ACHY
R011XY014ID	Sandy Loam 8-12 PZ ARTRW8/ACHY-HECOC8
R011XY015ID	Loamy Bottom 8-14 PZ ARTRT/LECI4

Similar sites

R011XY004ID	Shallow Loamy 8-12 PZ
-------------	-----------------------

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>
Herbaceous	(1) <i>Pseudoroegneria spicata</i> ssp. <i>spicata</i> (2) <i>Achnatherum thurberianum</i>

Physiographic features

This site occurs on nearly level to rolling plains, terraces, fans, ridges and valley floors. Slopes range from 1 to 30 percent. Elevations range from 2500 to 5000 feet (762-1515 meters). It occurs on all aspects.

Table 2. Representative physiographic features

Landforms	(1) Plain (2) Terrace (3) Fan
Flooding frequency	None
Ponding frequency	None
Elevation	2,500–5,000 ft
Slope	1–30%
Aspect	N, S, W

Climatic features

MLRA 11 is part of Idaho’s Snake River Plain. The elevation ranges from 2,077 to 7,549 feet, with a mean of 3,992 feet. Most of the precipitation falls as rain in the fall, winter and spring. Very little precipitation occurs during the summer months. In general this MLRA receives more sun than the U.S. average during the summer, but less than average during the winter.

The average annual precipitation is 10.01 inches (based on 10 long term climate stations located throughout the MLRA), with minimum and maximum values of 8.38 and 11.62 inches, respectively. The average annual temperature ranges from 38° to 65° Fahrenheit. With a maximum average temperature of 65 degrees F. and a minimum average of 38 degrees F. The frost free interval ranges from 139 to 165 days and the freeze free interval ranges from 168 to 196 days.

Table 3. Representative climatic features

Frost-free period (average)	165 days
Freeze-free period (average)	196 days
Precipitation total (average)	12 in

Influencing water features

This site is not influenced by adjacent wetlands, streams or run on.

Soil features

The soils supporting this site have medium textured surfaces that may be gravelly. They are generally moderately deep, but can be shallow over fractured basalt or fractured duripan. They also can be deep. The subsoil is loam to clay loam over basalt or fractured duripan. The soil is well drained with moderately slow to rapid permeability. Runoff is moderately slow to moderately high and erosion hazard is slight to moderate.

Table 4. Representative soil features

Parent material	(1) Alluvium–sandstone (2) Colluvium–limestone and sandstone
Surface texture	(1) Very gravelly sandy loam (2) Stony loam (3) Very stony sandy clay loam
Drainage class	Well drained to somewhat excessively drained
Permeability class	Rapid
Soil depth	8–60 in
Surface fragment cover <=3"	0–20%
Surface fragment cover >3"	0–30%
Available water capacity (0-40in)	0.4–8.3 in
Calcium carbonate equivalent (0-40in)	0–15%
Electrical conductivity (0-40in)	0–8 mmhos/cm
Sodium adsorption ratio (0-40in)	0–15
Soil reaction (1:1 water) (0-40in)	6.1–9
Subsurface fragment volume <=3" (Depth not specified)	0–40%
Subsurface fragment volume >3" (Depth not specified)	0–35%

Ecological dynamics

The dominant visual aspect of this site is Wyoming big sagebrush with an understory of bluebunch wheatgrass and Thurber's needlegrass. Composition by weight is approximately 45 to 55 percent grasses, 10 to 20 percent forbs, and 25 to 35 percent shrubs.

During the last few thousand years, this site has evolved in a semi-arid climate characterized by dry summers and cold, moist winters. Herbivory has historically occurred on this site at low levels of utilization. Herbivores include mule deer, pronghorn antelope, lagomorphs and small rodents and Rocky Mountain elk in severe winters.

Fire has historically occurred on the site at intervals of 50-70 years.

The Historic Climax Plant Community (HCPC), the Reference State (State 1), moves through many phases depending on the natural and man-made forces that impact the community over time. State 1, described later, indicates some of these phases. The Reference Plant Community Phase is Phase 1.1. This plant community is

dominated by bluebunch wheatgrass and Thurber's needlegrass in the understory and Wyoming big sagebrush in the overstory. Subdominant species include Sandberg bluegrass, bottlebrush squirreltail, arrowleaf balsamroot, and tapertip hawksbeard. There is a large variety of other grasses, forbs and shrubs that can occur in minor amounts. The plant species composition of Phase 1.1 is listed later under "Reference Plant Community Phase Plant Species Composition".

Total annual production is 700 pounds per acre (784 kilograms per hectare) in a normal year. Production in a favorable year is 900 pounds per acre (1008 kilograms per hectare). Production in an unfavorable year is 400 pounds per acre (448 kilograms per hectare). Structurally, cool season deep rooted perennial bunchgrasses are very dominant, followed by tall shrubs being more dominant than perennial forbs while shallow rooted bunchgrasses are subdominant.

FUNCTION:

This site is suited for livestock grazing in the spring, early summer, and fall. There are few limitations to grazing. The distance to water may be a problem in some areas. Usually this site is often the key area in a management program.

The site provides winter and spring range for mule deer. It has some value for sage grouse brood rearing.

The site has limited value for recreation but does provide some hunting, hiking, photography opportunities, and off-road vehicle use.

Due to gentle slopes and relatively low production, this site can easily be degraded from improper livestock management. A mixed stand of shrubs and perennial grasses is necessary to reach the potential of the site.

Impacts on the Plant Community.

Influence of fire:

In the absence of normal fire frequency, Wyoming big sagebrush can gradually increase on the site. Grasses and forbs decrease as shrubs increase. With the continued absence of fire, Wyoming big sagebrush can displace most of the primary understory species.

When fires become more frequent than historic levels (50-70 years), Wyoming big sagebrush is reduced significantly. Rabbitbrush can increase slightly. With continued short fire frequency, Wyoming big sagebrush can be completely eliminated along with many of the desirable understory species such as bluebunch wheatgrass, Indian ricegrass and Thurber's needlegrass. These species may be replaced by Sandberg bluegrass and bulbous bluegrass along with a variety of annual and perennial forbs including noxious and invasive plants. Cheatgrass will invade the site. These fine fuels will increase the fire frequency.

Influence of improper grazing management:

Season-long grazing and/or excessive utilization can be very detrimental to this site. This type of management leads to reduced vigor of the bunchgrasses. With reduced vigor, recruitment of these species declines. As these species decline, the plant community becomes susceptible to increase in Wyoming big sagebrush and noxious and invasive plants.

Continued improper grazing management influences fire frequency by increasing fine fuels. If cheatgrass and/or medusahead increase due to improper grazing management and they become co-dominant with Sandberg bluegrass and other annuals, fires become more frequent.

Proper grazing management that addresses frequency, duration, and intensity of grazing can also keep fine fuels from developing, thereby reducing fire frequency. This can lead to gradual increases in Wyoming big sagebrush. A planned grazing system can be developed to intentionally accumulate fine fuels in preparation for a prescribed burn. Any brush management should be carefully planned, as a reduction in shrubs without a suitable understory of

perennial grasses, can increase cheatgrass and/or medusahead which can lead to more frequent fire intervals.

Weather influences:

Above normal precipitation in March, April and May can dramatically increase total annual production of the plant community. These weather patterns can also increase viable seed production of desirable species to provide for recruitment. Likewise, below normal precipitation during these spring months can significantly reduce total annual production and be detrimental to viable seed production. Overall plant composition is normally not affected when perennials have good vigor.

Below normal temperatures in the spring can have an adverse impact on total production regardless of the precipitation. An early, hard freeze can occasionally kill some plants.

Prolonged drought adversely affects this plant community in several ways. Vigor, recruitment, and production are usually reduced. Mortality can occur. Prolonged drought can lead to a reduction in fire frequency.

Influence of Insects and disease:

Outbreaks can affect vegetation health. The sagebrush defoliator moth (*Aroga websterii*) causes mortality in relatively small patches. It seldom kills the entire stand. Mormon cricket and grasshopper outbreaks occur periodically. Outbreaks seldom cause plant mortality since defoliation of the plant occurs only once during the year of the outbreak.

Influence of noxious and invasive plants:

Many of these species add to the fine-fuel component and lead to increased fire frequency. Annual and perennial invasive species compete with desirable plants for moisture and nutrients. The result is reduced production and change in composition of the understory.

Influence of wildlife:

Big game animals use this site in the spring, summer, and fall and in moderate winters. Their numbers are seldom high enough to adversely affect the plant community.

Watershed:

Decreased infiltration and increased runoff occur with an increase in Wyoming big sagebrush. Desired understory species can be reduced. This composition change can affect nutrient and water cycles. Increased runoff also causes sheet and rill erosion. Abnormally short fire frequency also gives the same results, but to a lesser degree. The long term effect is a transition to a different state.

Plant Community and Sequence:

Transition pathways between common vegetation states and phases:

State 1.

Phase 1.1 to 1.2. Develops with improper grazing management.

Phase 1.1 to 1.3. Develops with fire.

Phase 1.2 to 1.1. Develops with prescribed grazing.

Phase 1.3 to 1.1. Develops with prescribed grazing and no fire.

State 1, Phase 1.2 to State 2. Develops through fire and improper grazing management. The site has crossed the threshold. It is generally not economically feasible to move this state back to State 1 with accelerated practices.

State 1, Phase 1.3 to State 2. Develops through frequent fire and/or continued improper grazing management. The site has crossed the threshold. It is generally not economically feasible to move this state back to State 1 with accelerated practices.

State 2 to State 3: Is a result of rangeland seeding.

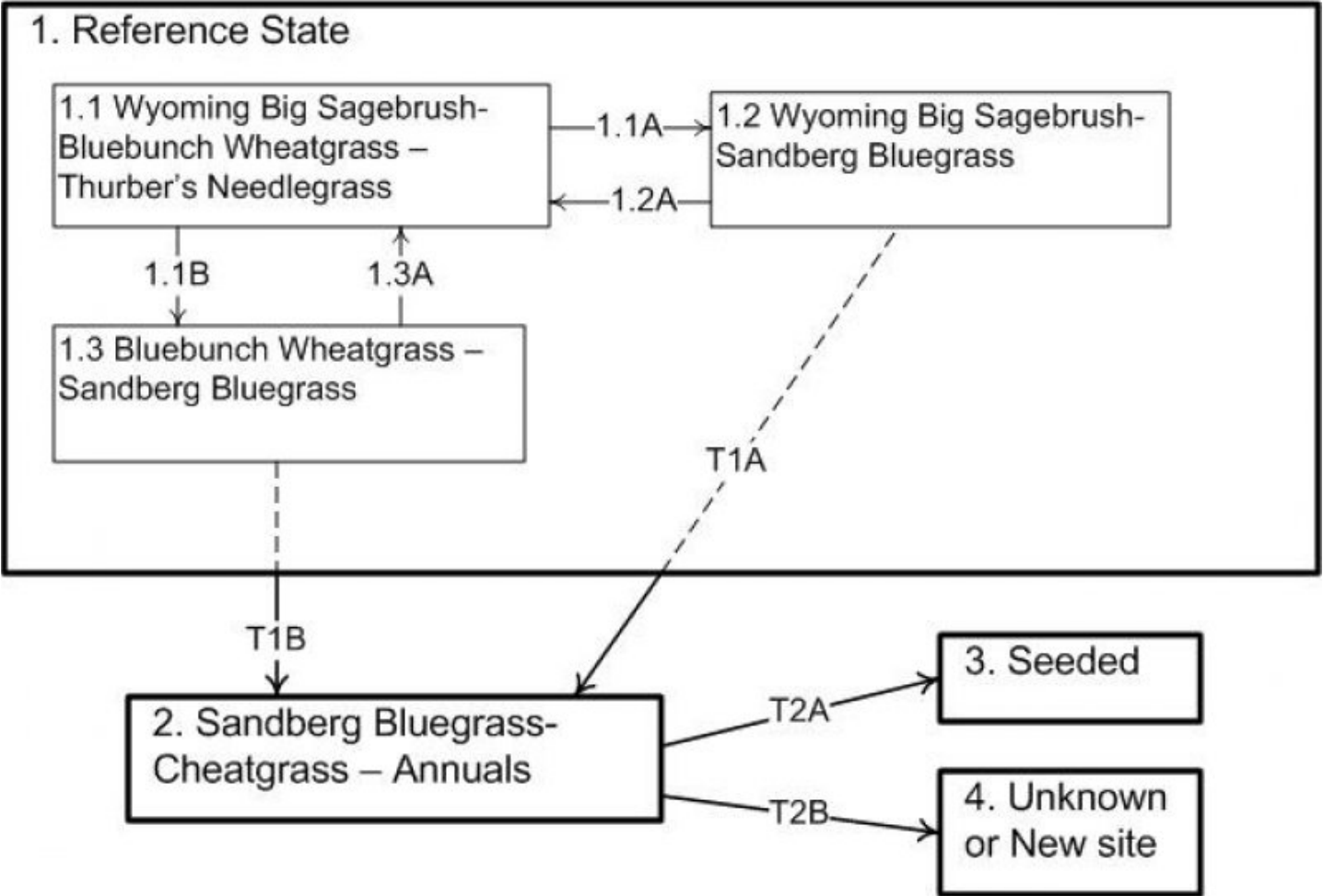
State 2 to unknown site. Excessive soil loss and changes in the hydrologic cycle caused by continued improper grazing management and/or frequent fire cause this state to cross a threshold and retrogress to a new site with reduced potential. It is generally not economically feasible to move this state back to State 1 with accelerated practices.

Practice Limitations:

There are no physical limitations to prevent seeding of this site. Proper seedbed preparation is critical on this site. There is a high chance of seeding failure during unfavorable moisture years. There are no physical limitations for brush management on this site, but careful planning is necessary. Removal of Wyoming big sagebrush can result in a significant invasion of cheatgrass.

State and transition model

R011XY001ID – Loamy 8-12 ARTRW8/PSSPS-ACTH7



State 1
Reference State

Community 1.1
Reference Plant Community (HCPC)



Figure 4. State 1

The HCPC has Wyoming big sagebrush in the overstory with bluebunch wheatgrass dominating the understory. Thurber’s needlegrass is the subdominant grass. Other significant species include Sandberg bluegrass, bottlebrush squirreltail, and arrowleaf balsamroot. There can be a variety of other grasses, forbs and shrubs in minor amounts. Natural fire frequency is 50-70 years.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	220	350	450
Shrub/Vine	120	225	275
Forb	60	125	175
Total	400	700	900

Figure 6. Plant community growth curve (percent production by month). ID0505, ARTRW8 -PSSPS . State 1.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	15	25	30	25	0	0	0	5	0	0

Community 1.2
Wyoming Big Sagebrush - Sandberg Bluegrass

This plant community is dominated by Wyoming big sagebrush with reduced amounts of bluebunch wheatgrass. Sandberg bluegrass and bottlebrush squirreltail has increased in the understory. Thurber’s needlegrass gradually decreases. There is a reduced amount of Indian ricegrass and perennial grasses. All deep-rooted perennial bunchgrasses are typically in low vigor. Wyoming big sagebrush has increased. This state has developed due to improper grazing management. Some cheatgrass may have invaded the site.

Figure 7. Plant community growth curve (percent production by month). ID0505, ARTRW8 -PSSPS . State 1.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	15	25	30	25	0	0	0	5	0	0

Community 1.3
Bluebunch Wheatgrass- Sandberg Bluegrass

This plant community is dominated by bluebunch wheatgrass and Sandberg bluegrass. Some Thurber’s needlegrass may be lost due to fire. Some Indian ricegrass or foxtail wheatgrass may be present. Bottlebrush squirreltail has increased. Forbs remain about in the same proportion as Plant Community A. Very little Wyoming big sagebrush is present due to wildfire, but some rabbitbrush and horsebrush are present due to sprouting. Some

cheatgrass has invaded the site. This plant community is the result of wildfire.

Figure 8. Plant community growth curve (percent production by month). ID0505, ARTRW8 -PSSPS . State 1.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	15	25	30	25	0	0	0	5	0	0

State 2
Sandberg Bluegrass - Annuals

Community 2.1
Sandberg Bluegrass- Annuals

This plant community is dominated by Sandberg bluegrass, cheatgrass, and other annuals. Root sprouting shrubs such as rabbitbrush and horsebrush can be present, dependent upon, how frequent, fire has occurred. Some soil loss has occurred. This state has developed due to frequent fires or improper grazing management from Phase C State 1 and fire and improper grazing management from Phase B State 1. The site has crossed the threshold. It is generally not economically feasible to move this state back to State 1 with accelerated practices.

Figure 9. Plant community growth curve (percent production by month). ID0511, BRTE-ANNUALS. State 2.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	15	25	40	5	0	0	5	5	5	0

State 3
Seeded

Community 3.1
Seeded

This plant community is dominated by seeded species. The seeding may be introduced species or natives to mimic the HCPC.

State 4
Unknown or New Site

Community 4.1
Unknown or New Site

This plant community has gone over the threshold to a new site. Site potential has been reduced. Significant soil loss has occurred. Infiltration has been reduced and run-off has become more rapid. This state has developed due to continued improper grazing management and/or frequent fires. It is generally not economically feasible to move this state back to State 1 with accelerated practices.

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	Grass/Grasslike			220–450	
	bluebunch wheatgrass	PSSPS	<i>Pseudoroegneria spicata ssp. spicata</i>	100–225	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	8–180	–

	squirreltail	ELEL5	<i>Elymus elymoides</i>	25–45	–
	thickspike wheatgrass	ELLA3	<i>Elymus lanceolatus</i>	0–45	–
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	25–45	–
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	0–20	–
	needle and thread	HECO26	<i>Hesperostipa comata</i>	0–20	–
	basin wildrye	LECI4	<i>Leymus cinereus</i>	0–20	–
	foxtail wheatgrass	PSSA2	* <i>Pseudelymus saxicola</i>	0–5	–

Forb

2	Forbs			60–175	
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	10–25	–
	tapertip hawksbeard	CRAC2	<i>Crepis acuminata</i>	1–25	–
	little larkspur	DEBI	<i>Delphinium bicolor</i>	0–5	–
	fleabane	ERIGE2	<i>Erigeron</i>	0–5	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0–5	–
	desert biscuitroot	LOFO	<i>Lomatium foeniculaceum</i>	0–5	–
	desertparsley	LOMAT	<i>Lomatium</i>	0–5	–
	lupine	LUPIN	<i>Lupinus</i>	0–5	–
	oblongleaf bluebells	MEOB	<i>Mertensia oblongifolia</i>	0–5	–
	beardtongue	PENST	<i>Penstemon</i>	0–5	–
	spiny phlox	PHHO	<i>Phlox hoodii</i>	0–5	–
	longleaf phlox	PHLO2	<i>Phlox longifolia</i>	0–5	–
	scarlet globemallow	SPCO	<i>Sphaeralcea coccinea</i>	0–5	–
	foothill deathcamas	ZIPA2	<i>Zigadenus paniculatus</i>	0–5	–
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0–5	–
	tapertip onion	ALAC4	<i>Allium acuminatum</i>	0–5	–
	onion	ALLIU	<i>Allium</i>	0–5	–
	pussytoes	ANTEN	<i>Antennaria</i>	0–5	–
	aster	ASTER	<i>Aster</i>	0–5	–
	milkvetch	ASTRA	<i>Astragalus</i>	0–5	–
	Hooker's balsamroot	BAHO	<i>Balsamorhiza hookeri</i>	0–5	–
	pincushion	CHAEN	<i>Chaenactis</i>	0–5	–

Shrub/Vine

3	Shrub			120–275	
	Wyoming big sagebrush	ARTRW8	<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>	100–225	–
	yellow rabbitbrush	CHVIV4	<i>Chrysothamnus viscidiflorus</i> ssp. <i>viscidiflorus</i> var. <i>viscidiflorus</i>	0–20	–
	basin big sagebrush	ARTRT	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	0–20	–

	yellow rabbitbrush	CHV10	<i>Chrysothamnus viscidiflorus</i>	0–10	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	0–10	–
	spiny hopsage	GRSP	<i>Grayia spinosa</i>	0–10	–
	threetip sagebrush	ARTR4	<i>Artemisia tripartita</i>	0–10	–
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0–5	–
	plains pricklypear	OPPO	<i>Opuntia polyacantha</i>	0–5	–
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	0–5	–
	spineless horsebrush	TECA2	<i>Tetradymia canescens</i>	0–5	–

Animal community

Wildlife Interpretations.

Animal Community – Wildlife Interpretations

This rangeland ecological site provides diverse habitat for many native wildlife species. Large herbivore use of this ecological site is dominated by mule deer and pronghorn antelope. Important seasonal habitat is provided for resident and migratory animals including western toad, sagebrush lizard, western rattlesnake, shrews, bats, jackrabbits, ground squirrels, mice, coyote, red fox, badger, sage-grouse, Ferruginous hawk, prairie falcon, horned lark, and western meadowlark. Encroachment of noxious and invasive plant species (cheatgrass, Rush skeleton weed, and knapweed) can replace native plant species which provide critical feed, brood-rearing, and nesting cover for a variety of native wildlife. Area sensitive species include pygmy rabbit, burrowing owl, Great Basin ground squirrel, long-nosed snake, groundsnake, Great Basin collared lizard, and Townsend pocket gopher. Water features are sparse provided by seasonal streams, artificial water catchments, and springs.

State 1 Phase 1.1 - Wyoming Big Sagebrush/ Bluebunch Wheatgrass/ Thurber's Needlegrass Reference Plant Community (RPC): This plant community provides a diversity of grasses, forbs, and shrubs, used by native insect communities that assist in pollination. The reptile and amphibian community is represented by leopard lizard, short horned lizard, sagebrush lizard, western skink, western rattlesnake, and western toad. Amphibians are associated with springs and isolated water bodies adjacent to this plant community. Spring developments that capture all available water would preclude the use of these sites by amphibians. Native shrub-steppe obligate avian species include the Brewer's sparrow, sage sparrow, sage thrasher and sage-grouse. Critical habitat (brood-rearing and winter cover) for sage-grouse is provided by this diverse plant community. The plant community supports seasonal needs of large mammals (mule deer and antelope) providing food and cover. Wyoming big sagebrush is preferred browse for wild ungulates. A diverse small mammal population including golden-mantled ground squirrels, chipmunks, and yellow-bellied marmots would utilize this plant community.

State 1 Phase 1.2 - Wyoming Big Sagebrush/ Sandberg Bluegrass Plant Community: This plant community is the result of improper grazing management. An increase in canopy cover of sagebrush contributes to a sparse herbaceous understory. Grasses, forbs, and shrubs, are used by native insects that assist in pollination but the reduced herbaceous understory results in lower diversity and numbers of insects which will reduce reptile diversity and populations. Reduced herbaceous understory is a key factor in limiting the use of this plant community by avian species. Key shrub-steppe obligate avian species include Brewer's sparrow, sage sparrow, sage thrasher, and sage-grouse. Critical habitat (brood-rearing and winter cover) for sage grouse is limited due to a less diverse herbaceous plant community. The plant community supports seasonal needs of large mammals (mule deer and antelope) providing food and cover. Wyoming big sagebrush is preferred browse for wild ungulates. A diverse small mammal population including golden-mantled ground squirrels, chipmunks, and yellow-bellied marmots would utilize this plant community.

State 1 Phase 1.3 - Bluebunch Wheatgrass/ Sandberg Bluegrass/ Bottlebrush Squirreltail Plant Community: This plant community is the result of frequent fire. The plant community, dominated by herbaceous vegetation with little or no sagebrush provides less vertical structure and limits use by shrub obligate animals. Insect diversity would be reduced but a native forb plant community would still support select pollinators. Reptile use, including short horned lizard, sagebrush lizard, and western rattlesnakes would be limited or excluded due to the absence of sagebrush. The dominance of herbaceous vegetation with little sagebrush canopy cover would prevent use of these areas for

nesting by Brewer's sparrow, sage sparrow, sage thrasher, and sage-grouse. This plant community provides limited brood-rearing habitat for sage-grouse if sagebrush cover is nearby. The site is not suitable as winter or nesting cover for sage grouse. The herbaceous vegetation improves habitat for grassland avian species (horned lark and western meadowlark). Large mammal (mule deer and antelope) forage use would be seasonal but the site would offer little thermal and young of year cover. Small mammal diversity would be reduced with an increase in hunting success by predators.

State 2 - Sandberg Bluegrass/ Cheatgrass and Annual Plant Community: This plant community is the result of continued improper grazing management and/or frequent fire. The loss of the native shrub and herbaceous plant community would not support a diverse insect community. The reduced forb component in the plant community would support a very limited population of pollinators. Most native reptilian species are not supported with food, water, or cover. This plant community does not support the habitat requirements for sage-grouse, sage thrasher, Brewer's sparrow, or sage sparrow. Diversity of grassland avian species is reduced due to poor cover and food. Birds of prey including hawks and falcons may range throughout these areas looking for prey species. Large mammals may utilize the herbaceous vegetation in the early part of the year when the invasive annuals (cheatgrass) are more palatable. At other times of the year large mammals would not regularly utilize these areas due to poor food and cover conditions. The reduction of insect population and diversity would reduce suitability of the site for bats. The populations of small mammals would be dominated by open grassland species like the Columbian ground squirrel.

State 3 - Range Seeding Plant Community: The seeding mixture (native or non-native) determines the animal species that utilize this site. A diverse seed mixture of grasses and forbs would provide similar habitat conditions as in the herbaceous plant community described in State 1 phase 1.3. A diverse seed mixture of grasses, forbs, and shrubs would provide similar habitat conditions as described in State 1 phase 1.1 or 1.2. A monoculture of non-native grass species would not support diverse populations of insects, reptiles, avians, mammals, or sagebrush obligate species. Grassland animal species including western meadowlark, horned lark, savannah sparrow, deer mouse, and kangaroo rat would utilize this site for nesting. Birds of prey including hawks and falcons may range throughout this community looking for prey species.

Grazing Interpretations.

There are few limitations to grazing. The site is suited for grazing in the spring, early summer and fall for livestock. The distance to water may be a problem in some areas and water developments may be necessary. Hauling water is also an option. This site is often the key area in a management program. Estimated initial stocking rate will be determined with the landowner or decision-maker. They will be based on the inventory which includes species, composition, similarity index, production, past use history, season of use and seasonal preference. Calculations used to determine estimated initial stocking rate will be based on forage preference ratings

Hydrological functions

The soils in this site are generally in hydrologic group B or C.

Recreational uses

This site has limited recreational opportunities. Some hunting, hiking, horseback riding and off-road vehicle use do occur. Early spring flowers offer some opportunities for photography.

Wood products

None

Other products

None

Inventory data references

Information presented here has been derived from NRCS clipping and other inventory data. Also, field knowledge of range-trained personnel was used. Those involved in developing this site description include;

Dave Franzen, co-owner, Intermountain Rangeland Consultants, LLC

Jacy Gibbs, co-owner, Intermountain Rangeland Consultants, LLC

Jim Cornwell, Range Management Specialist, IASCD

Brendan Brazee, State Rangeland Management Specialist, NRCS, Idaho

Lee Brooks, Range Management Specialist, IASCD

Type locality

Location 1: Payette County, ID	
Township/Range/Section	T3 R7 S22
General legal description	3 S 7 E NW ¼, SW ¼, Sec. 22 2 S 6 E NW ¼, NE ¼, Sec. 13 Field Offices. Meridian, ID Caldwell, ID Mountain Home, ID Marsing, ID Payette, ID Weiser, ID Emmett, ID

Other references

Hironaka, M., M.A. Fosberg, A. H. Winward. 1983. Sagebrush- Grass Habitat Types of Southern Idaho. University of Idaho. Moscow, Idaho. Bulletin Number 35

USDA Forest Service, Rocky Mountain Research Station. 2004. Restoring Western Ranges and Wildlands. General Technical Report RMRS-GTR-136-vols. 1-3.

USDA, NRCS.2001. The PLANTS Database, Version 3.1 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA

USDA, Forest Service, Fire Effects Information Database. 2004. www.fs.fed.us/database/feis

USDI Bureau of Land Management, US Geological Survey; USDA Natural Resources Conservation Service, Agricultural Research Service; Interpreting Indicators of Rangeland Health. Technical Reference 1734-6; Version 4-2005.

Contributors

Dave Franzen

DLF

Approval

Kendra Moseley, 10/30/2018

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	Dave Franzen and Jacy Gibbs Idaho BLM
--------------------------	--

Contact for lead author	Brendan Brazee, State Rangeland Management Specialist USDA-NRCS 9173 W. Barnes Drive, Suite C Boise, ID 83709
Date	03/27/2007
Approved by	Brendan Brazee
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- Number and extent of rills:** Rills rarely occur on this site. If they do occur they are most likely to be on slopes greater than 15% and immediately following wildfire but remain short (<3 feet) and shallow (<1 inch), generally equating to the distance of burned shrub patches. When present, gravels on the surface reduce erosion.
- Presence of water flow patterns:** Water-Flow Patterns rarely occur on this site. On slopes greater than 15% a few water flow patterns may be present, but they are short and disconnected, disrupted by cool season perennial grasses and tall shrubs and are not extensive. After wildfires, water-flow patterns may be longer (2-4 ft. generally the distance of shrub canopies that were burned) on slopes >15% where they may initiate from burned shrub patches if fire intensity is high enough to burn the duff and all woody material.
- Number and height of erosional pedestals or terracettes:** Pedestals and/or Terracettes are rare to nonexistent on this site. In areas susceptible to wind and on slopes greater than 15% where flow patterns and/or rills are present, a few pedestals and terracettes may be expected after a wildfire, but these should be less than ½ inch and should not expose roots.
- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 5 - 20% cover (top layer cover data). Bare areas should be small and scattered across the site; harvester ant mounds and small mammal burrows may cause isolated patches to exceed 5 ft. in diameter. Playettes (slickspots) are common and can range in size from 2 to 30 feet, and may be connected.
- Number of gullies and erosion associated with gullies:** Gullies do not occur on this site.
- Extent of wind scoured, blowouts and/or depositional areas:** Wind-Scoured, Blowouts, and/or Deposition Areas are usually not present. In rare occasions scouring may be associated with harvester ant discs or rodent burrows. After one growing season post-fire, herbaceous cover should be sufficient to protect the site from wind erosion.
- Amount of litter movement (describe size and distance expected to travel):** Fine litter in the interspaces may move up to 2 feet or further following a significant run-off event. Coarse litter generally does not move.
- Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface stability values should be >4. Soil disturbances associated with rodent burrows and ant mounds will create values near 1.

-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The surface horizon is typically 2 to 7 inches thick. Structure typically includes weak thin and moderately thick platy, weak fine and moderate fine granular, and weak fine to medium sub-angular blocky. Soil organic matter (SOM) ranges from 0.5 to 4 percent.
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Plant Community Composition and Distribution Relative to Infiltration: Deep-rooted perennial bunchgrasses and shrubs are distributed to catch snow, slow run-off, and increase infiltration.
-
11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** Compaction Layer: not present.
-
12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**
- Dominant: Dominant: cool season deep-rooted perennial bunchgrasses; >>
Subdominant: shrubs (non-sprouting); >
Minor: shallow rooted perennial grasses; =
Minor: forbs; >
Trace: native annual grasses
- After fire
Dominant: cool season deep-rooted perennial bunchgrasses, >>
Minor: shallow rooted grasses; >=
Minor: perennial forbs; >
Trace: shrubs (non-sprouting); =
Trace: native annual grasses
- Additional: Biological soil crusts should cover most interspaces among perennial plants and be common under shrubs except after wildfires, when they will be consumed under shrubs and other plants, but should remain in interspaces.
- Sub-dominant:
- Other:
- Additional:
-
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Wyoming big sagebrush may show some dead branches as plants age and experience insect defoliation or snow molds. Dead centers may occur in bunchgrasses.
-
14. **Average percent litter cover (%) and depth (in):** Total litter cover will be 30 - 40 percent to a depth of <0.1. Under mature shrubs litter is greater than 0.5 inches.
-

-
15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Annual Production is 700 lbs. per acre in a year with normal precipitation and temperatures. Low and high production years should yield 400 and 900 lbs/ac. Perennial grasses produce 45-55 percent of the total, forbs 10-20 percent, and shrubs 25-35 percent.
-
16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:** This includes species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, these species are NOT expected in the reference state for the ecological site: cheatgrass, burr buttercup, spotted and diffuse knapweed, Russian knapweed, scotch thistle, Canada thistle, among others.
-
17. **Perennial plant reproductive capability:** All functional groups have the potential to reproduce in normal or above normal years.
-

Ecological site R011XY004ID Shallow Loamy 8-12 PZ

Last updated: 4/06/2020
 Accessed: 11/12/2023

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

MLRA notes

Major Land Resource Area (MLRA): 011X–Snake River Plains

Major Land Resource Area (MLRA): 011X – Snake River Plains
 Precipitation or Climate Zone: 8-12" P.Z.

Classification relationships

Artemisia wyomingensis/ Agropyron spicatum HT in “Hironaka, M., M.A. Fosberg, A. H. Winward. 1983.
 Sagebrush- Grass Habitat Types of Southern Idaho. University of Idaho. Moscow, Idaho. Bulletin Number 35”.

Land Resource Region: B (Northwest Wheat and Range)
 MLRA: 11 (Snake River Plains)
 EPA Eco Region: Level III (Snake River Plain)

Ecological site concept

Site does not receive additional moisture

Soils are:

Not saline or saline sodic

Shallow to moderately deep, with >35% coarse fragments (by volume) with a mixture of fragment sizes <3” and >3”, skeletal

not strongly or violently effervescent in the surface mineral 10”

Textures range from silt loam to silty clay loam in the surface mineral 4”

Slope is <30%

Clay content is =<35% in surface mineral 4”

Site does not have an argillic horizon with >35% clay

Associated sites

R011XY001ID	Loamy 8-12 PZ
R011XY007ID	Gravelly 10-12 PZ
R011XY008ID	South Slope 10-12 PZ
R011XY009ID	Silty 7-10 PZ KRLA2/ACHY
R011XY010ID	Calcareous Loam 7-10 PZ ATCO-PIDE4/ACHY-ACTH7
R011XY011ID	Sand 8-12 PZ ARTRT/ACHY
R011XY014ID	Sandy Loam 8-12 PZ ARTRW8/ACHY-HECOC8
R011XY015ID	Loamy Bottom 8-14 PZ ARTRT/LECI4

Similar sites

R011XY001ID	Loamy 8-12 PZ
-------------	---------------

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>
Herbaceous	(1) <i>Pseudoroegneria spicata</i> ssp. <i>spicata</i>

Physiographic features

This site occurs on nearly level to hilly slopes that range from 1 to 25 percent and occurs on all aspects. Elevation ranges from 2300 to 4500 feet (700-1370 meters).

Table 2. Representative physiographic features

Landforms	(1) Lava plain (2) Terrace (3) Butte
Flooding frequency	None
Ponding frequency	None
Elevation	2,300–4,500 ft
Slope	1–25%
Aspect	Aspect is not a significant factor

Climatic features

MLRA 11 is part of Idaho’s Snake River Plain. The elevation ranges from 2,077 to 7,549 feet, with a mean of 3,992 feet. Most of the precipitation falls as rain in the fall, winter and spring. Very little precipitation occurs during the summer months. In general this MLRA receives more sun than the U.S. average during the summer, but less than average during the winter.

The average annual precipitation is 10.01 inches (based on 10 long term climate stations located throughout the MLRA), with minimum and maximum values of 8.38 and 11.62 inches, respectively.

The average annual temperature ranges from 38° to 65° Fahrenheit. With a maximum average temperature of 65 degrees F. and a minimum average of 38 degrees F. The frost free interval ranges from 139 to 165 days and the freeze free interval ranges from 168 to 196 days.

Table 3. Representative climatic features

Frost-free period (average)	165 days
Freeze-free period (average)	196 days
Precipitation total (average)	12 in

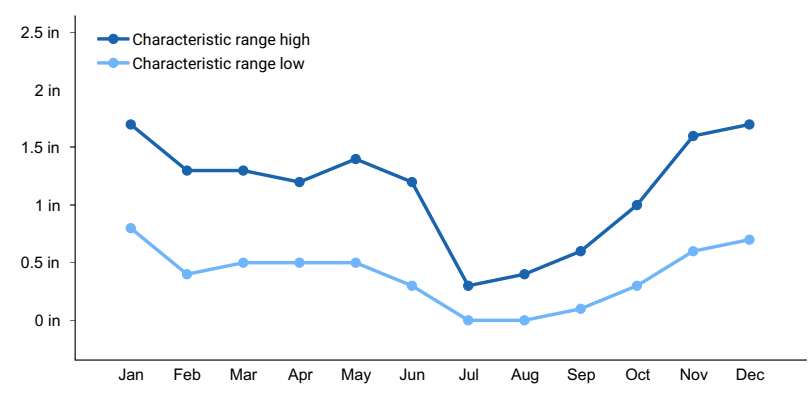


Figure 1. Monthly precipitation range

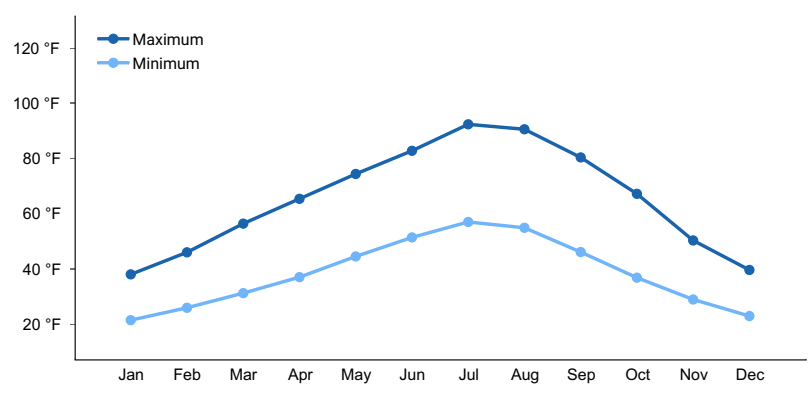


Figure 2. Monthly average minimum and maximum temperature

Influencing water features

This site is not influenced by adjacent wetlands, streams or run on.

Soil features

The soils on this site are characterized by shallow or moderately deep depth to hardpan or bedrock. They are well drained, with very slow to moderate permeability and very low to low available water holding capacity (AWC). Runoff is low to very high. The erosion hazard is slight to severe by water and slight to severe by wind. The surface texture is generally loamy with surface stones in some areas. These soils are characterized by a xeric or aridic soil moisture regime that borders on xeric. Soil temperature regime is either mesic or frigid.

Table 4. Representative soil features

Parent material	(1) Loess–basalt
Surface texture	(1) Extremely stony silt loam (2) Very cobbly silty clay loam (3) Cobbly loam
Drainage class	Well drained
Permeability class	Very slow to moderate
Soil depth	8–31 in
Surface fragment cover <=3"	0–20%
Surface fragment cover >3"	0–30%
Available water capacity (0-40in)	0.9–4.4 in
Calcium carbonate equivalent (0-40in)	0–10%

Sodium adsorption ratio (0-40in)	0–15
Subsurface fragment volume <=3" (Depth not specified)	0–34%
Subsurface fragment volume >3" (Depth not specified)	0–60%

Ecological dynamics

Ecological Dynamics of the Site:

The dominant visual aspect of this site is Wyoming big sagebrush with bluebunch wheatgrass in the understory. Composition by weight is approximately 50 to 65 percent grasses, 10 to 20 percent forbs and 20 to 30 percent shrubs.

During the last few thousand years, this site has evolved in an arid climate characterized by dry summers and cold, wet winters. Herbivory has historically occurred on this site at low levels of utilization. Herbivores include mule deer, pronghorn antelope, lagomorphs and small rodents.

Fire has historically occurred on the site at intervals of 50-70 years.

The Historic Climax Plant Community (HCPC) moves through many phases depending on the natural and man-made forces that impact the community over time. State 1, described later, indicates some of these phases. The HCPC is Phase 1.1. This plant community is dominated by bluebunch wheatgrass in the understory and Wyoming big sagebrush in the overstory. Subdominant species include Sandberg bluegrass, bottlebrush squirreltail, Thurber's needlegrass, Indian ricegrass, arrowleaf balsamroot, and tapertip hawksbeard. There is a large variety of other grasses, forbs, and shrubs that can occur in minor amounts. The plant species composition of Phase 1.1 is listed later under "HCPC Plant Species Composition".

Total annual production is 450 pounds per acre (504 kilograms per hectare) in a normal year. Production in a favorable year is 650 pounds per acre (728 kilograms per hectare). Production in an unfavorable year is 250 pounds per acre (280 kilograms per hectare). Structurally, cool season deep rooted perennial bunchgrasses are very dominant, followed by tall shrubs being more dominant than perennial forbs while shallow rooted bunchgrasses are subdominant.

FUNCTION:

This site is suited for livestock grazing in the spring and fall. There are few limitations to grazing. The distance to water may be a problem in some areas.

The site provides winter and spring range for mule deer and pronghorn antelope. It has some value as brood rearing areas for sage grouse.

The site has limited value for recreation but does provide some hunting, hiking, photography opportunities, and off-road vehicle use.

Due to gentle slopes and relatively low production, this site can easily be degraded from improper livestock management. A mixed stand of shrubs and perennial grasses is necessary to reach the potential of the site.

Impacts on the Plant Community.

Influence of fire:

In the absence of normal fire frequency, Wyoming big sagebrush can gradually increase on the site. Grasses and forbs decrease as shrubs increase. With the continued absence of fire, Wyoming big sagebrush can displace most

of the primary understory species.

When fires become more frequent than historic levels (50-70 years), Wyoming big sagebrush is reduced significantly. Rabbitbrush can increase slightly. With continued short fire frequency, Wyoming big sagebrush can be completely eliminated along with many of the desirable understory species such as bluebunch wheatgrass, Indian ricegrass, and Thurber's needlegrass. These species may be replaced by Sandberg bluegrass and bulbous bluegrass along with a variety of annual and perennial forbs including noxious and invasive species. Cheatgrass will invade the site. These fine fuels will increase the fire frequency.

Influence of improper grazing management:

Season-long grazing and/or excessive utilization can be very detrimental to this site. This type of management leads to reduced vigor of the bunchgrasses. With reduced vigor, recruitment of these species declines. As these species decline, the plant community becomes susceptible to increase in Wyoming big sagebrush and noxious and invasive plants.

Continued improper grazing management influences fire frequency by increasing fine fuels that carry fires. As cheatgrass increases and becomes co-dominant with Sandberg bluegrass and other annuals, fires become more frequent.

Proper grazing management that addresses frequency, duration, and intensity of grazing can also keep fine fuels from developing, thereby reducing fire frequency. This can lead to gradual increases in Wyoming big sagebrush. A planned grazing system can be developed to intentionally accumulate fine fuels in preparation for a prescribed burn. Any brush management should be carefully planned, as a reduction in shrubs without a suitable understory of perennial grasses, can increase cheatgrass which leads to more frequent fire intervals.

Weather influences:

Above normal precipitation in March, April, and May can dramatically increase total annual production of the plant community. These weather patterns can also increase viable seed production of desirable species to provide for recruitment. Likewise, below normal precipitation during these spring months can significantly reduce total annual production and be detrimental to viable seed production. Overall plant composition is normally not affected when perennials have good vigor.

Below normal temperatures in the spring can have an adverse impact on total production regardless of precipitation. An early, hard freeze can occasionally kill some plants.

Prolonged drought adversely affects this plant community in several ways. Vigor, recruitment, and production are usually reduced. Mortality can occur. Prolonged drought can lead to a reduction in fire frequency.

Influence of Insects and disease:

Outbreaks can affect vegetation health. The sagebrush defoliator moth (*Aroga websterii*) causes mortality in relatively small patches. It seldom kills the entire stand. Mormon cricket and grasshopper outbreaks occur periodically. Outbreaks seldom cause plant mortality since defoliation of the plant occurs only once during the year of the outbreak.

Influence of noxious and invasive plants:

Many of these species add to the fine-fuel component and lead to increased fire frequency. Perennial and annual invasive species compete with desirable plants for moisture and nutrients. The result is reduced production and change in composition of the understory.

Influence of wildlife:

Big game animals use this site in the spring and fall and in moderate winters. Their numbers are seldom high enough to adversely affect the plant community.

Watershed:

Decreased infiltration and increased runoff occur with an increase in Wyoming big sagebrush. Desired understory species can be reduced. This composition change can affect nutrient and water cycles. Increased runoff also causes sheet and rill erosion. Abnormally short fire frequency also gives the same results, but to a lesser degree. The long term effect is a transition to a different state.

Plant Community and Sequence:

Transition pathways between common vegetation states and phases:

State 1.

Phase 1.1 to 1.2. Develops with improper grazing management.

Phase 1.1 to 1.3. Develops with fire.

Phase 1.2 to 1.1. Develops with prescribed grazing.

Phase 1.3 to 1.1. Develops with prescribed grazing and no fire.

State 1 Phase 1.3 to State 2. Develops through frequent fire or continued improper grazing management. The site has crossed the threshold. It is generally not economically feasible to move this state back to State 1 with accelerated practices.

State 2 to State 3: Is a result of rangeland seeding.

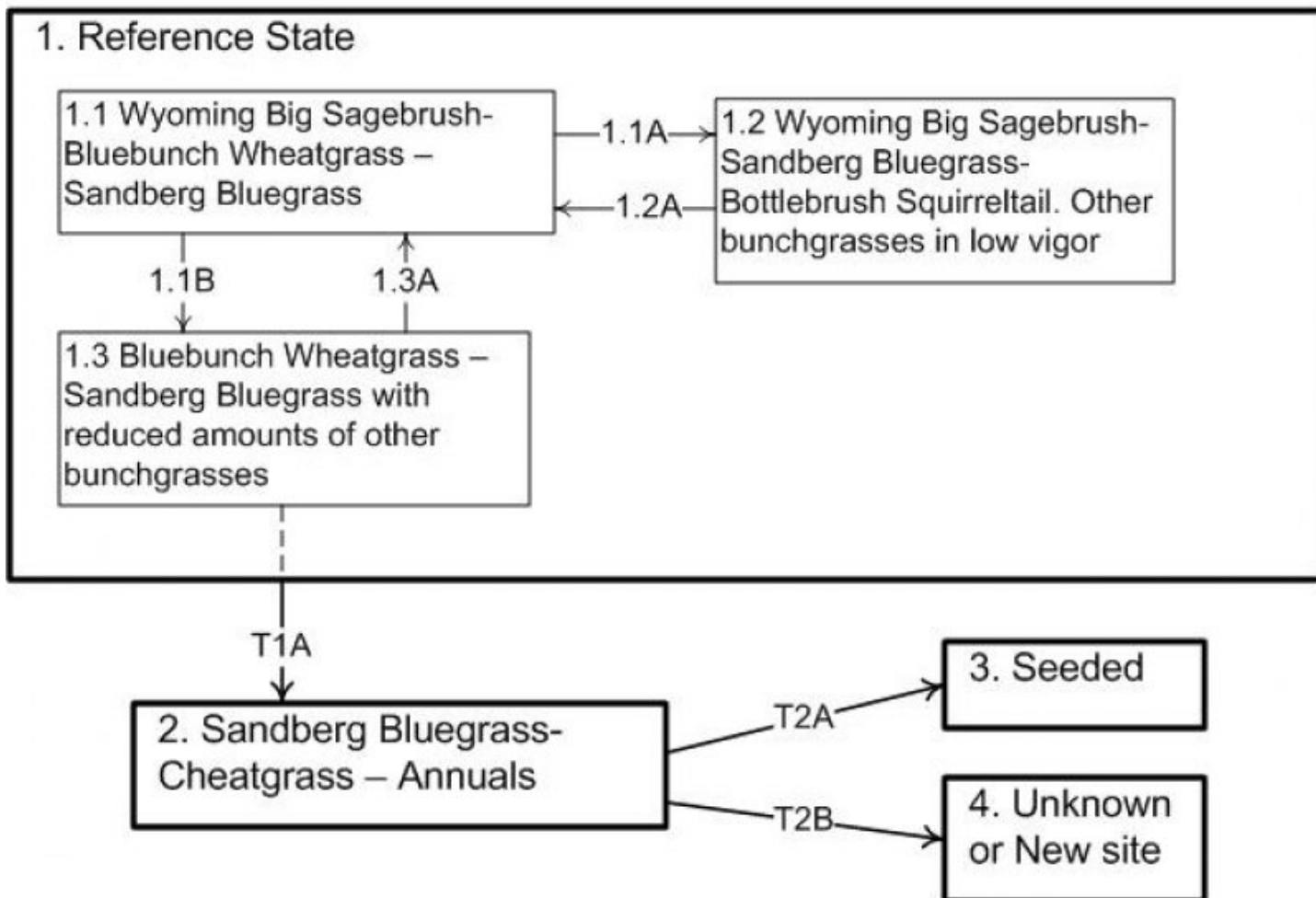
State 2 to unknown site. Excessive soil loss and changes in the hydrologic cycle caused by continued improper grazing management and/or frequent fire cause this state to cross a threshold and retrogress to a new site with reduced potential. It is generally not economically feasible to move this state back to State 1 with accelerated practices.

Practice Limitations:

There are no physical limitations to prevent seeding of this site. Proper seedbed preparation is critical on this site. There is a high chance of seeding failure during unfavorable moisture years. There are no physical limitations for brush management on this site, but careful planning is necessary. Removal of Wyoming big sagebrush without a suitable understory of perennial grasses, can result in a significant invasion of cheatgrass.

State and transition model

R011XY004ID – Shallow Loamy 8-12 ARTRW8/PSSPS



State 1 Reference State

Community 1.1 Reference Plant Community (HCPC)

The HCPC has Wyoming big sagebrush in the overstory with bluebunch wheatgrass dominating the understory. Subdominant species include Sandberg bluegrass, bottlebrush squirreltail, Thurber's needlegrass, Indian ricegrass, arrowleaf balsamroot, and tapertip hawksbeard. There is a large variety of other grasses, forbs and shrubs that can occur in minor amounts. Natural fire frequency is 50-70 years.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	150	270	390
Shrub/Vine	60	110	160
Forb	40	70	100
Total	250	450	650

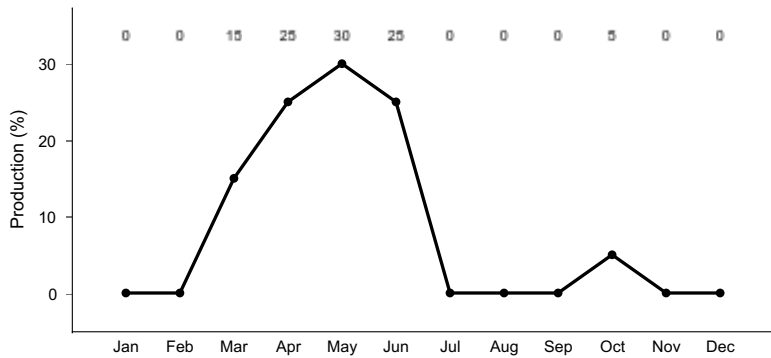


Figure 4. Plant community growth curve (percent production by month).
ID0505, ARTRW8 -PSSPS . State 1.

Community 1.2
Wyoming Big Sagebrush - Low Vigor Bunchgrasses

This plant community is dominated by Wyoming big sagebrush with reduced amounts of bluebunch wheatgrass. Sandberg bluegrass and bottlebrush squirreltail has increased in the understory. Thurber’s needlegrass gradually decreases. There is a reduced amount of Indian ricegrass and other perennial grasses. All deep-rooted bunchgrasses are typically in low vigor. Wyoming big sagebrush has increased. This state has developed due to improper grazing management. Some cheatgrass may have invaded the site.

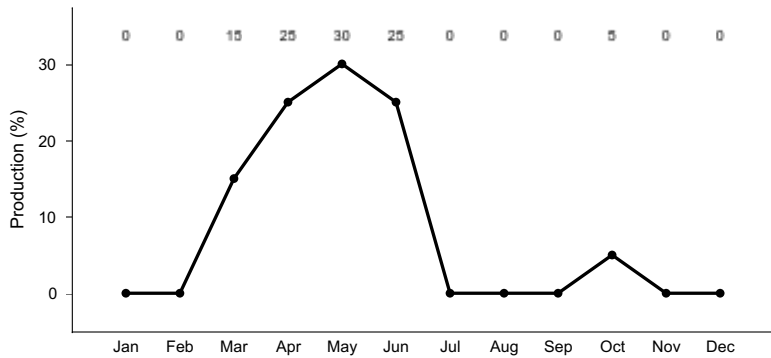


Figure 5. Plant community growth curve (percent production by month).
ID0505, ARTRW8 -PSSPS . State 1.

Community 1.3
Bluebunch Wheatgrass - Sandberg Bluegrass

This plant community is dominated by bluebunch wheatgrass and Sandberg bluegrass. Some Thurber’s needlegrass may be lost due to fire. Some Indian ricegrass may be present. Bottlebrush squirreltail has increased. Forbs remain about in the same proportion as Plant Community A. Very little Wyoming sagebrush is present due to wildfire, but some rabbitbrush is present due to sprouting. Some cheatgrass has invaded the site. This plant community is the result of wildfire.

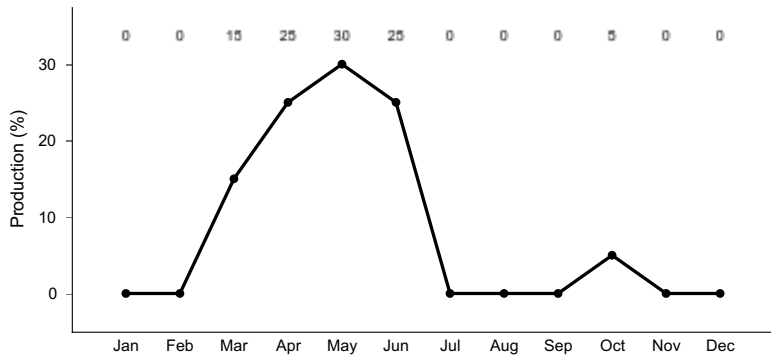


Figure 6. Plant community growth curve (percent production by month).
ID0505, ARTRW8 -PSSPS . State 1.

State 2
Sandberg Bluegrass - Annuals

Community 2.1
Sandberg Bluegrass - Annuals

This plant community is dominated by Sandberg bluegrass, cheatgrass and other annuals. Root sprouting shrubs such as rabbitbrush can be present, dependent upon, how frequent, fire has occurred. Some soil loss has occurred. This state has developed due to frequent fires or improper grazing management. The site has crossed the threshold. It is generally not economically feasible to move this state back to State 1 with accelerated practices.

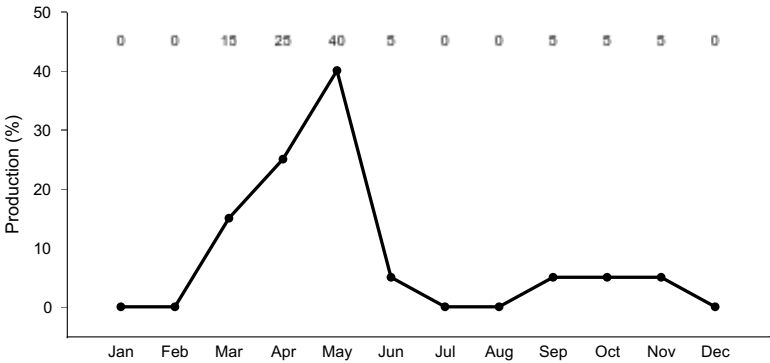


Figure 7. Plant community growth curve (percent production by month). ID0511, BRTE-ANNUALS. State 2.

State 3
Seeded

Community 3.1
Seeded

This plant community is dominated by seeded species. The seeding may be introduced species or natives to mimic the HCPC.

State 4
Unknown or New Site

Community 4.1
Unknown or New Site

This plant community has gone over the threshold to a new site. Site potential has been reduced. Significant soil loss has occurred. Infiltration has been reduced and run-off has become more rapid. This state has developed due to continued improper grazing management and/or frequent fires. It is generally not economically feasible to move this state back to State 1 with accelerated practices.

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	Grass/Grasslike			150–390	
	bluebunch wheatgrass	PSSPS	<i>Pseudoroegneria spicata ssp. spicata</i>	60–160	–
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	20–50	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	15–40	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	15–35	–
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	10–30	–
	thickspike wheatgrass	ELLA3	<i>Elymus lanceolatus</i>	0–15	–
	needle and thread	HECO26	<i>Hesperostipa comata</i>	0–15	–
	basin wildrye	LECI4	<i>Leymus cinereus</i>	0–10	–
	sedge	CAREX	<i>Carex</i>	0–10	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	0–5	–
Forb					
2	Forbs			40–100	
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	10–26	–
	tapertip hawksbeard	CRAC2	<i>Crepis acuminata</i>	10–25	–
	lupine	LUPIN	<i>Lupinus</i>	5–15	–
	spiny phlox	PHHO	<i>Phlox hoodii</i>	1–15	–
	longleaf phlox	PHLO2	<i>Phlox longifolia</i>	1–15	–
	desertparsley	LOMAT	<i>Lomatium</i>	0–10	–
	milkvetch	ASTRA	<i>Astragalus</i>	1–10	–
	Hooker's balsamroot	BAHO	<i>Balsamorhiza hookeri</i>	0–10	–
	onion	ALLIU	<i>Allium</i>	0–5	–
	pussytoes	ANTEN	<i>Antennaria</i>	0–5	–
	aster	ASTER	<i>Aster</i>	0–5	–
	fleabane	ERIGE2	<i>Erigeron</i>	0–5	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0–5	–
	curlycup gumweed	GRSQ	<i>Grindelia squarrosa</i>	0–5	–
	Henderson's biscuitroot	LOHE2	<i>Lomatium hendersonii</i>	0–5	–
	scarlet globemallow	SPCO	<i>Sphaeralcea coccinea</i>	0–5	–
	beardtongue	PENST	<i>Penstemon</i>	0–5	–
Shrub/Vine					
3	Shrub			60–160	
	Wyoming big sagebrush	ARTRW8	<i>Artemisia tridentata ssp. wyomingensis</i>	60–150	–
	yellow rabbitbrush	CHVI8	<i>Chrysothamnus viscidiflorus</i>	1–20	–
	spiny hopsage	GRSP	<i>Grayia spinosa</i>	0–10	–
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0–10	–
	shadscale saltbush	ATCO	<i>Atriplex confertifolia</i>	0–10	–
	plains pricklypear	OPPO	<i>Opuntia polyacantha</i>	0–5	–

Animal community

Wildlife Interpretations.

Animal Community – Wildlife Interpretations

This rangeland ecological site provides diverse habitat for many native wildlife species. Large herbivore use of this ecological site is dominated by mule deer and pronghorn antelope. Important seasonal habitat is provided for resident and migratory animals including western toad, sagebrush lizard, western rattlesnake, shrews, bats, jackrabbits, ground squirrels, mice, coyote, red fox, badger, sage-grouse, Ferruginous hawk, prairie falcon, horned lark, and western meadowlark. Changes in the plant community composition can reduce the number and diversity of wildlife species in the area. Area sensitive species include pygmy rabbit, burrowing owl, Great Basin ground squirrel, long-nosed snake, groundsnake, Great Basin collared lizard, and Townsend pocket gopher. With reduced shrub cover, shrub obligate avian and mammal species become rare including sage-grouse, brewer's sparrow, sage sparrow, sage thrasher, and pygmy rabbits. Encroachment of noxious and invasive plant species (cheatgrass, Rush skeleton weed, and knapweed) can replace native plant species which provide critical feed, brood-rearing, and nesting cover for a variety of native wildlife. Water features are sparse provided by seasonal streams, artificial water catchments, and springs.

State 1 Phase 1.1 - Wyoming Big Sagebrush/ Bluebunch Wheatgrass/ Sandberg Bluegrass Reference Plant Community (RPC): This plant community provides a diversity of grasses, forbs, and shrubs used by native insect communities that assist in pollination. The reptile and amphibian community is represented by leopard lizard, short horned lizard, sagebrush lizard, western skink, western rattlesnake, and western toad. Amphibians are associated with springs and isolated water bodies adjacent to this plant community. Spring developments that capture all available water would preclude the use of these sites by amphibians. Native shrub-steppe obligate avian species include the Brewer's sparrow, sage sparrow, sage thrasher, and sage-grouse. Critical habitat (brood-rearing, nesting areas and winter cover) for sage-grouse is provided by this diverse plant community. The plant community supports seasonal needs of large mammals (mule deer and antelope) providing food and cover. Wyoming big sagebrush is preferred browse for wild ungulates. A diverse small mammal population including golden-mantled ground squirrels, chipmunks, yellow-bellied marmots, and pygmy rabbits would utilize this plant community.

State 1 Phase 1.2 - Wyoming Big Sagebrush/ Sandberg Bluegrass/ Bottlebrush Squirreltail Plant Community: This plant community is the result of improper grazing management. An increase in canopy cover of sagebrush contributes to a sparse herbaceous understory. Grasses, forbs, and shrubs, are used by native insects that assist in pollination but the reduced herbaceous understory results in lower populations of insects. The reduced diversity and population of insects would reduce reptile diversity. Reduced herbaceous understory is a key factor in limiting the use of this plant community by avian species. Key shrub-steppe obligates avian species including Brewer's sparrow, sage sparrow, sage thrasher, and sage-grouse are still supported in the plant community but populations may be reduced. Critical habitat (brood-rearing, nesting areas, winter cover) for sage-grouse is limited due to a less diverse herbaceous plant community. The plant community supports seasonal needs of large mammals (mule deer and antelope) providing food, thermal cover, and young of year cover. Wyoming big sagebrush is preferred browse for wild ungulates. A diverse small mammal population including golden-mantled ground squirrels, chipmunks, yellow-bellied marmots, and pygmy rabbits would utilize this plant community.

State 1 Phase 1.3 - Bluebunch Wheatgrass/ Sandberg Bluegrass Plant Community: This plant community is the result of frequent fire. The plant community, dominated by herbaceous vegetation with little or no sagebrush provides less vertical structure and limits use by shrub obligate animals. Insect diversity would be reduced but a diverse native forb plant community would still support select pollinators. Reptile use, including short horned lizard, sagebrush lizard, and western rattlesnakes, would be limited or excluded due to the absence of sagebrush. The dominance of herbaceous vegetation with little sagebrush canopy cover would prevent use of these areas for nesting by Brewer's sparrow, sage sparrow, sage thrasher, and sage-grouse. This plant community provides brood-rearing habitat for sage-grouse when sagebrush cover is nearby. The site does not provide suitable winter or nesting cover for sage grouse. The herbaceous vegetation improves habitat for grassland avian species (horned lark and western meadowlark). Large mammal (mule deer and antelope) use for foraging would be seasonal but the site would offer little thermal and young of year cover. Antelope use may increase with the reduction of shrub cover. Small mammal diversity would be reduced with an increase in predator hunting success. The plant community would not provide suitable habitat for pygmy rabbits.

State 2 - Sandberg Bluegrass/ Cheatgrass and Annual Plant Community: This plant community is the result of

continued improper grazing management and/or frequent fire. The loss of the native shrub and herbaceous plant community would not support a diverse insect community. The reduced forb component in the plant community would support a very limited population of pollinators. An increase in grasshopper population may occur. Forb production would be limited to invasive plants and annuals. Most native reptilian species are not supported with food, water, or cover. This plant community does not support the habitat requirements for sage-grouse, sage thrasher, Brewer's sparrow, or sage sparrow. Diversity of grassland avian species is reduced due to poor cover and food. Birds of prey including hawks and falcons may range throughout these areas looking for prey species. Large mammals may utilize the herbaceous vegetation in the early part of the year when the invasive annuals (cheatgrass) are more palatable. At other times of the year large mammals would not regularly utilize these areas due to poor food and cover conditions. Predator hunting success would increase and as a result, small mammal populations may decrease. The populations of small mammals would be dominated by open grassland species like the Columbian ground squirrel.

State 3 - Range Seeding Plant Community: The seeding mixture (native or non-native) determines the animal species that utilize this site. A diverse seed mixture of grasses and forbs would provide similar habitat conditions as in the herbaceous plant community described in State 1 phase 1.3. A diverse seed mixture of grasses, forbs and shrubs would provide similar habitat conditions as described in State 1 phase 1.1 or 1.2. A monoculture of non-native grass species would not support diverse populations of insects, reptiles, avians, mammals, or sagebrush obligate species. Grassland animal species including western meadowlark, horned lark, savannah sparrow, deer mouse, kangaroo rat, and elk would utilize this site for nesting and/or foraging. Birds of prey including hawks and falcons may range throughout this community looking for prey species.

Grazing Interpretations.

This site is best suited for grazing by livestock in the spring and fall. There are few limitations to grazing. The distance to water may be a problem in some areas. Estimated initial stocking rate will be determined with the landowner or decision-maker. They will be based on the inventory which includes species, composition, similarity index, production, past use history, season of use and seasonal preference. Calculations used to determine estimated initial stocking rate will be based on forage preference ratings.

Hydrological functions

The soils in this site are in hydrologic group C. When hydrologic conditions of the vegetative cover is good, natural erosion hazard is slight.

Recreational uses

This site has very little recreational value. Some use may occur with off-road vehicles. Some value exists for hunting, hiking, photography and sightseeing of wildlife.

Wood products

None

Other products

None

Inventory data references

Information presented here has been derived from NRCS clipping and other inventory data. Also, field knowledge of range-trained personnel was used. Those involved in developing this site description include:

Dave Franzen, co-owner, Intermountain Rangeland Consultants, LLC

Jacy Gibbs, co-owner, Intermountain Rangeland Consultants, LLC

Jim Cornwell, Range Management Specialist, IASCD

Brendan Brazee, State Rangeland Management Specialist, NRCS, Idaho

Leah Juarros, Resource Soil Scientist, NRCS, Idaho
Lee Brooks, Range Management Specialist, IASCD

Other references

Hironaka, M., M.A. Fosberg, A. H. Winward. 1983. Sagebrush- Grass Habitat Types of Southern Idaho. University of Idaho. Moscow, Idaho. Bulletin Number 35

USDA Forest Service, Rocky Mountain Research Station. 2004. Restoring Western Ranges and Wildlands. General Technical Report RMRS-GTR-136-vols. 1-3.

USDA, NRCS.2001. The PLANTS Database, Version 3.1 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA

USDA, Forest Service, Fire Effects Information Database. 2004. www.fs.fed.us/database/feis

USDI Bureau of Land Management, US Geological Survey; USDA Natural Resources Conservation Service, Agricultural Research Service; Interpreting Indicators of Rangeland Health. Technical Reference 1734-6; version 4-2005.

Contributors

Dave Franzen
DLF

Approval

Kendra Moseley, 4/06/2020

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	Dave Franzen and Jacy Gibbs.
Contact for lead author	Brendan Brazee, State RMS, USDA-NRCS 9173 W. Barnes, Suite C Boise, ID 83709
Date	03/28/2007
Approved by	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Rills: rarely occur on this site. If they do occur they are most likely to be on slopes greater than 15% and immediately following wildfire. Stones, when present on the surface, reduce erosion in some areas.

-
2. **Presence of water flow patterns:** Water-Flow Patterns: rarely occur on this site except on slopes greater than 15%.

When they do occur, they are short, disrupted by cool season perennial grasses and tall shrubs and are not extensive.

3. **Number and height of erosional pedestals or terracettes:** Pedestals and/or Terracettes: are rare on this site. In areas of greater than 15% slopes where flow patterns and/or rills are present a few pedestals and terracettes may be expected.
-
4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground: expected to range from 30-40 percent.
-
5. **Number of gullies and erosion associated with gullies:** Gullies: do not occur on this site.
-
6. **Extent of wind scoured, blowouts and/or depositional areas:** Wind-Scoured, Blowouts, and/or Deposition Areas: usually not present. Immediately following wildfire some soil movement may occur on lighter textured soils.
-
7. **Amount of litter movement (describe size and distance expected to travel):** Litter Movement: fine litter in the interspaces may move up to 2 feet or further following a significant run-off event. Coarse litter generally does not move.
-
8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil Surface Resistance to Erosion: values should range from 4 to 6 .
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil Surface Loss or Degradation: the A or A1 horizon is typically 1 to 8 inches thick. Structure ranges from weak fine or very fine granular to weak very thin or thin, or strong thick play. Soil organic matter (SOM) ranges from 0.5 to 3 percent.
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Plant Community Composition and Distribution Relative to Infiltration: Bunchgrasses, especially deep-rooted perennials, slow run-off and increase infiltration. Shrubs accumulate snow in the interspaces. Terracettes provide a favorable micro-site for vegetation establishment, which further increases infiltration.
-
11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** Compaction Layer: not present.
-
12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

Dominant: Functional/Structural Groups: cool season deep-rooted perennial bunchgrasses >>tall shrubs> perennial forbs> shallow rooted grasses.

Sub-dominant:

Other:

Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Plant Mortality/ Decadence: Wyoming big sagebrush will become decadent in the absence of fire and ungulate grazing. Grass and forb mortality will occur as tall shrubs increase.
-

14. **Average percent litter cover (%) and depth (in):** Litter Amount: annual litter cover in the interspaces will be 5-10 percent to a depth of <0.1" Under the mature shrubs litter is greater than 0.5 inches. Fine litter can accumulate on the terracettes.
-

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Annual Production: 450 lbs. per acre in a year with normal precipitation and temperatures. Perennial grasses produce 50-65 percent of the total, forbs 10-20 percent, and shrubs 20-30 percent.
-

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:** Invasive Plants: cheatgrass, bulbous bluegrass, rush skeletonweed, scotch thistle, medusahead, spotted and diffuse knapweed, Russian thistle, annual kochia, and halogeton.
-

17. **Perennial plant reproductive capability:** Reproductive Capability of Perennial Plants: all functional groups have the potential to reproduce in favorable years.
-

Ecological site R011XY016OR

Sandy 8-11 PZ

Accessed: 11/12/2023

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.



Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Associated sites

R011XY012OR	Silty 8-11 PZ Silty 8-11 PZ
R011XY020OR	South Slopes 8-11 PZ South Slopes 8-11 PZ
R011XY034OR	Sandy North Slopes 8-11 PZ Sandy North Slopes 8-11 PZ

Similar sites

R011XY034OR	Sandy North Slopes 8-11 PZ Sandy North 8-11 PZ (north aspect, higher production)
R011XY012OR	Silty 8-11 PZ Silty 8-11 PZ (silty to fsl surface, different composition - beardless wheatgrass dominant)

Table 1. Dominant plant species

Tree	Not specified
------	---------------

Shrub	(1) <i>Atriplex canescens</i> (2) <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>
Herbaceous	(1) <i>Hesperostipa comata</i> (2) <i>Poa secunda</i>

Physiographic features

This site occurs on low elevation terraces in the Malheur, Owyhee and adjacent Snake River drainage. Slopes typically range from 0 to 12%. Elevations vary from 2,100 to 3,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Terrace
Elevation	2,100–3,000 ft
Slope	0–12%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 8 to 11 inches, most of which occurs in the form of rain during the months of December through April. The soil temperature regime is mesic with a mean air temperature of 53 degrees F. Temperature extremes range from 110 to -10 degrees F. The frost free period ranges from 150 to 190 days. The optimum growth period for plant growth is late March through June.

Table 3. Representative climatic features

Frost-free period (average)	190 days
Freeze-free period (average)	0 days
Precipitation total (average)	11 in

Influencing water features

Soil features

The soils of this site are typically deep and well to somewhat excessively drained. Typically the surface layer is a fine sandy loam to a loamy fine sand. The subsoil is a loamy sand to sand 15 to 40 inches thick. Depth to lacustrine, alluvial or tuffaceous sediments ranges from 40 to greater than 60 inches. An indurate pan may be present. Permeability is moderately rapid to rapid. The available water holding capacity (AWC) is about 4 to 6 inches for the profile. The erosion potential, both wind and water, is severe.

Table 4. Representative soil features

Surface texture	(1) Fine sandy loam (2) Loamy fine sand
Family particle size	(1) Sandy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderately rapid to rapid
Soil depth	40–60 in
Available water capacity (0-40in)	4–6 in

Ecological dynamics

The potential native plant community is dominated by four-wing saltbush and needle and thread. Wyoming big sagebrush, Indian ricegrass and Thurber’s needlegrass are prominent. Sandberg bluegrass, a variety of forbs and other shrubs are present. Vegetative composition of the community is approximately 80 percent grasses, 5 percent forbs and 15 percent shrubs. The approximate ground cover is 60 to 70 percent (basal and crown).

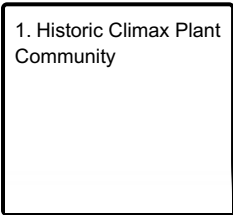
Range in Characteristics:
Variability in plant composition on this site results from variations in soil surface texture. Four-wing saltbush and needle and thread increase on loamy sand surfaces. Indian ricegrass increases on coarse sandy surfaces. Thurber’s needlegrass increases on fine sandy loam surfaces. Antelope bitterbrush occurs over gravels. Production increases at the upper end of the precipitation zone.
Fourwing saltbush and Wyoming Sagebrush are the dominant shrubs.

Response to Disturbance:
When the condition of the site deteriorates as a result of over grazing four-wing saltbush, needle and thread and Indian ricegrass decrease. Wyoming big sagebrush, rabbitbrush, broom snakeweed and sand dropseed increase. Cheatgrass invades along with other annuals and biennial weeds. Bare ground increases. With fire and continued disturbance fourwing saltbush sagebrush is severely impacted. Rabbitbrush increases slightly and annuals and noxious biennial forbs continue to invade. Under deteriorated conditions excessive wind erosion in the bare soil interspaces reduces the site potential. Small migration dunes, blowouts and hummocks develop. Water erosion increases with excessive erosion most pronounced in drainage areas where deep incised gully’s form.

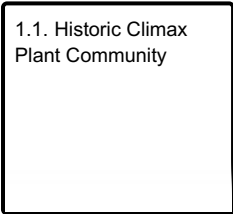
States: ARTRW/BRTE-bare ground; BRTE/biennial forbs-bare ground (following fire on degraded range)

State and transition model

Ecosystem states



State 1 submodel, plant communities



State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

The potential native plant community is dominated by four-wing saltbush and needle and thread. Wyoming big sagebrush, Indian ricegrass and Thurber’s needlegrass are prominent. Sandberg bluegrass, a variety of forbs and other shrubs are present. Vegetative composition of the community is approximately 80 percent grasses, 5 percent forbs and 15 percent shrubs. The approximate ground cover is 60 to 70 percent (basal and crown).

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	400	560	800
Shrub/Vine	75	105	150
Forb	25	35	50
Total	500	700	1000

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	Dominant, perennial, deep rooted bunchgrass			420–560	
	needle and thread	HECO26	<i>Hesperostipa comata</i>	420–560	–
2	Sub-dominant, perennial, deep-rooted bunchgrass			70–140	
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	35–70	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	35–70	–
4	Sub-dominant, perennial, shallow-rooted grass			14–35	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	14–35	–
5	Other perennial grasses			15–90	
	squirreltail	ELEL5	<i>Elymus elymoides</i>	5–14	–
	thickspike wheatgrass	ELLA3	<i>Elymus lanceolatus</i>	5–14	–
	basin wildrye	LECI4	<i>Leymus cinereus</i>	5–14	–
	beardless wheatgrass	PSSPI	<i>Pseudoroegneria spicata</i> ssp. <i>inermis</i>	0–14	–
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	0–10	–
	foxtail wheatgrass	PSSA2	× <i>Pseudelymus saxicola</i>	0–10	–
Forb					
8	Dominant, perennial forb			31–55	
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	14–21	–
	buckwheat	ERIOG	<i>Eriogonum</i>	7–14	–
	phlox	PHLOX	<i>Phlox</i>	5–10	–
	fleabane	ERIGE2	<i>Erigeron</i>	5–10	–
9	Other forbs			12–55	
	milkvetch	ASTRA	<i>Astragalus</i>	3–7	–
	common yarrow	ACMI2	<i>Achillea millefolium</i>	3–7	–
	desertparsley	LOMAT	<i>Lomatium</i>	3–7	–
	lupine	LUPIN	<i>Lupinus</i>	3–7	–
	plains pricklypear	OPPO	<i>Opuntia polyacantha</i>	0–7	–
	showy penstemon	PESP3	<i>Penstemon spectabilis</i>	0–4	–
	scarlet globemallow	SPCO	<i>Sphaeralcea coccinea</i>	0–4	–
	deathcamas	ZIGAD	<i>Zigadenus</i>	0–4	–
	onion	ALLIU	<i>Allium</i>	0–4	–
	common woolly sunflower	ERLA6	<i>Eriophyllum lanatum</i>	0–4	–

Shrub/Vine					
11	Dominant shrubs			49–105	
	fourwing saltbush	ATCA2	<i>Atriplex canescens</i>	35–70	–
15	Other shrubs			12–28	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	3–7	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	3–7	–
	spiny hopsage	GRSP	<i>Grayia spinosa</i>	3–7	–
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0–7	–
	winterfat	KRLA2	<i>Krascheninnikovia lanata</i>	0–7	–
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	0–7	–
	littleleaf horsebrush	TEGL	<i>Tetradymia glabrata</i>	0–7	–

Animal community

Livestock Grazing:

This site is suitable for livestock grazing use in the late winter, spring, and fall under a planned grazing system. Use should be postponed until the soils are firm enough to prevent trampling damage and soil compaction. Grazing management should be keyed to four wing saltbush, needle and thread and Thurber's needlegrass. Deferred grazing or rest is recommended at least once every three years.

Native Wildlife Associated with the Potential Climax Community:

This site is commonly used by pronghorn antelope, mule deer, rabbits, rodents, upland birds and various predators. Antelope and mule deer make excellent use of the site for winter and spring forage.

Hydrological functions

The soils of this site are subject to both wind and water erosion. When the hydrologic cover is high they have high wind erosion resistance, low runoff potential and high infiltration rates. Hydrologic cover is high when needle and thread, Thurber's needlegrass and other deep rooted bunchgrass components is greater than 70 percent of potential.

Contributors

T. Bloomer, E.Petersen, A.Bahn

T.Bloomer, E.Petersen, A.Bahn

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Ecological site R011XY019ID Meadow DECA18-CANE2

Last updated: 4/06/2020
 Accessed: 11/12/2023

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

MLRA notes

Major Land Resource Area (MLRA): 011X–Snake River Plains

Major Land Resource Area (MLRA): 011X – Snake River Plains
 Precipitation or Climate Zone: Additional moisture site

Classification relationships

Land Resource Region: B (Northwest Wheat and Range)
 MLRA: 11 (Snake River Plains)
 EPA Eco Region: Level III (Snake River Plain)

Ecological site concept

Site does receive additional moisture
 Soils are:
 Not saline or saline sodic
 Somewhat poorly drained, with fluctuating water table from surface to 20-40"
 Moderately deep to very deep, with <35% coarse fragments (by volume). Not skeletal
 not strongly or violently effervescent in the surface mineral 10"
 Textures range from silty clay loam to clay in the surface mineral 4"
 Slope is <30%
 Clay content is =>35% in surface mineral 4"

Associated sites

R011XY015ID	Loamy Bottom 8-14 PZ ARTRT/LECI4
R011XY020ID	Dry Meadow POSE-PHAL2

Similar sites

R011XY020ID	Dry Meadow POSE-PHAL2
-------------	------------------------------

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site generally occurs on gently sloping to nearly level stream valleys and high mountain valleys on flood plains with slopes of 0 to 4 percent. It also occurs around localized seeps and springs. This site is frequently dissected by old stream courses, oxbows, and potholes. The surface is generally not flat but slightly undulating with small depressions and high spots. Elevations range between 2000-5000 feet (600-1550 meters).

Table 2. Representative physiographic features

Landforms	(1) Hill
Flooding duration	Very brief (4 to 48 hours) to brief (2 to 7 days)
Flooding frequency	Occasional
Ponding duration	Very brief (4 to 48 hours) to brief (2 to 7 days)
Ponding frequency	Occasional
Elevation	2,000–5,000 ft
Slope	0–4%
Ponding depth	2–6 in
Water table depth	0–40 in
Aspect	Aspect is not a significant factor

Climatic features

MLRA 11 is part of Idaho’s Snake River Plain. The elevation ranges from 2,077 to 7,549 feet, with a mean of 3,992 feet. Most of the precipitation falls as rain in the fall, winter and spring. Very little precipitation occurs during the summer months. In general this MLRA receives more sun than the U.S. average during the summer, but less than average during the winter.

The average annual precipitation is 10.01 inches (based on 10 long term climate stations located throughout the MLRA), with minimum and maximum values of 8.38 and 11.62 inches, respectively.

The average annual temperature ranges from 38° to 65° Fahrenheit. With a maximum average temperature of 65 degrees F. and a minimum average of 38 degrees F. The frost free interval ranges from 139 to 165 days and the freeze free interval ranges from 168 to 196 days.

Table 3. Representative climatic features

Frost-free period (average)	165 days
Freeze-free period (average)	196 days
Precipitation total (average)	12 in

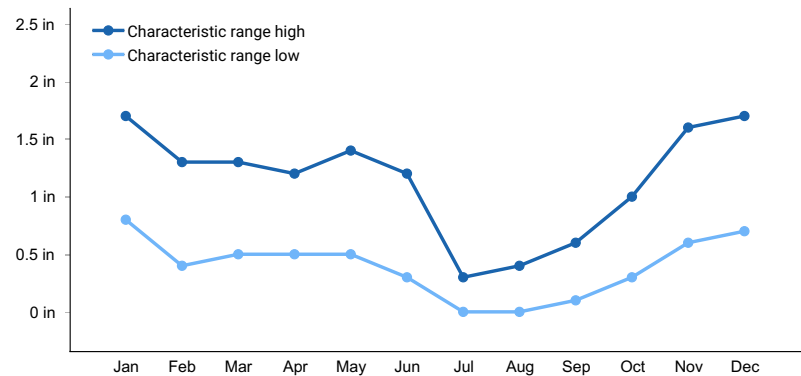


Figure 1. Monthly precipitation range

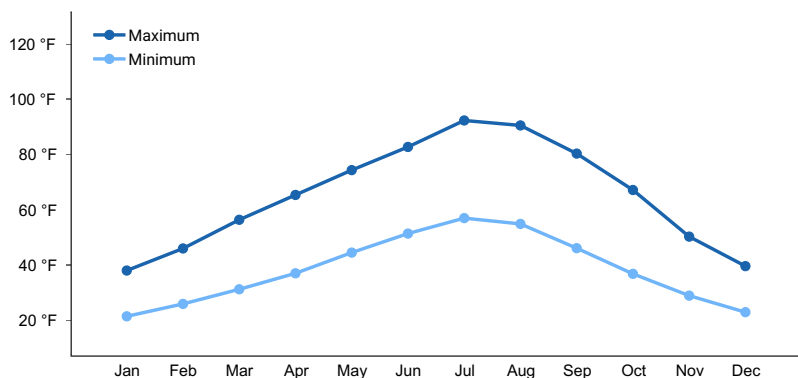


Figure 2. Monthly average minimum and maximum temperature

Influencing water features

The meadow site is influenced by additional water from either adjacent streams through seasonal flooding, water table, seeps or springs, or from run-on from adjacent sites. The site may include the following wetlands and stream types.

Soil features

Soils on this site are mainly clays, clay loams, or silty clay loams over 20 inches (50 cm.), moderately deep to deep, alluvial in origin, and may be somewhat stony or gravelly. The soils range from slightly alkaline to slightly acid in pH. The available water holding capacity (AWC) is moderate to high and is supplemented by upward capillary movement from the shallow water table. The effective rooting depth is limited by the water table.

Erosion hazard is slight, however, the peaty and high organic soils tend to hummock severely from trampling. These soils are susceptible to gully formation which intercepts normal overflow patterns and results in site degradation. The soils are somewhat poorly drained and have a water table at or near the surface at the beginning of the growing season and down to a depth of 20-40 inches by the end of the growing season. Flooding occurs occasionally during snowmelt and just after snowmelt. Ponding can occur in small depressional areas during this time period. The plant community is dependent on nearly saturated soils during a major portion of the growing season. The water table is influenced by seasonal flooding, stream flows, seeps or springs, or from run-on from adjacent sites. Soil characteristics, flooding, and water table can vary across the complex of meadow sites.

Soil Series Correlated to this Ecological Site -

No data

Ecological dynamics

The dominant visual aspect of this site is grass and sedges with scattered forbs and shrubs. The dominant plant community has tufted hairgrass, Nebraska sedge and other *Carex* species as major components. The site usually occurs within a complex of wetland sites. The soil surface of the site is typically slightly undulating causing small depressions and high spots with variable soil moisture regimes. The plant communities found on these areas are sites within the complex. The dominant species in these included plant communities are as follows:

1. Marsh site. Deeper depressions with the water table at or near the surface or slightly above the surface for the entire growing season. This site is dominated by broadleaf cattail, hardstem bulrush, and common threesquare.
2. Wet Meadow site. Shallow to depression areas with the water table at or near the surface for the entire growing season. This site is dominated by *Carex* spp. and *Junus* spp.
3. Dry Meadow site. Slightly higher areas that are drier during the growing season and the water table is > 40 inches deep by the end of the growing season. The plant community is dominated by Nevada bluegrass and alpine timothy.

Composition by weight is 80-90 percent grasses and grass-like, 5-15 percent forbs, and 0-10 percent shrubs. The depressional plant communities are inclusions and may have sedges and rushes making up nearly 100 percent of the community.

During the last few thousand years, this site has evolved in a semi-arid climate characterized by dry summers and cold, wet winters. The site has evolved on deep alluvial soils that are saturated to the surface in the beginning of the growing season and move down to about 20 – 40 inches deep by the end of the growing season. Herbivory has historically occurred on this site at low levels of utilization. Herbivores include pronghorn antelope, mule deer, moose, and Rocky Mountain elk.

Fire has had some influence on the development of the site. Wildfires can occur mid-summer to early fall and are more likely to happen following consecutive drought years. When fires do occur they are usually a result of an adjacent site burning.

The conditions for the plant community of this site are highly variable due to a wide variation of soils, duration and frequency of flooding, water table fluctuations, air and soil temperatures, and competition between mostly rhizomatous plants. These conditions can vary within the site at a given location. At any one point within the site, one species can occupy nearly 100 percent of a small area. Another point nearby, may have another species fully occupying that area. Due to these situations, the plant community in this ESD is written broadly.

The soils within any complex of meadow sites are highly variable. Factors that affect the determination of the site include depth to water table at end of growing season, micro-topography, and drainage class. Depth to water table and micro-topography are measurable features. Determination of drainage class requires the use of soil interpretation tables. Other interpretive factors that may be used for site determination are the frequency and duration of flooding and the depth, frequency, and duration of ponding.

Micro-topography is a feature that has a dramatic affect on depth to water table and the resulting plant communities. A few inches of change in surface elevation changes species composition and/ or production. Slightly undulating topography is common in meadow complexes, therefore, more than one site should be expected.

An infinite number of combinations of factors that influence the ecology of potential plant communities exist. For practical purposes, four (4) plant communities where the depth to the water table drives the vegetative composition have been described. They are:

- Dry meadow Water table at >40" at end of growing season
- Meadow Water table at 20-40" at end of growing season
- Wet meadow Water table at 10-20" at end of growing season
- Marsh Water at surface to <10" at end of growing season

Most wetland species have a wide range of tolerance for variations in soil moisture. Most species occur in more than one site, although most are dominant on just one site.

The Historic Climax Plant Community (HCPC), the Reference State (State 1), moves through many phases depending on the natural and man-made forces that impact the community over time. State 1, described later, indicates some of these phases. The Reference Plant Community Phase is Phase A. This plant community is dominated by tufted hairgrass and Nebraska sedge. There are a wide variety of grasses and grass-like species and forbs that may occur in minor amounts. Some of these species may be dominant in small areas due to soil and water variations as stated above. Willows and shrubby cinquefoil can occur in small amounts. The plant species composition of Phase A is listed later under "Reference Plant community Phase Plant Species Composition".

The total annual production is 3600 pounds per acre (4032 kilograms per hectare) in a normal year. Production in a favorable year is 4500 pounds per acre (5040 kilograms per hectare). Production in an unfavorable year is 2500 pounds per acre (2800 kilograms per hectare). Structurally, cool season deep-rooted perennial grasses and sedges are very dominant, followed by perennial forbs being more dominant than shrubs.

FUNCTION:

This site is suitable for big game and livestock grazing in the late spring, summer, and fall. Wet soils can limit grazing opportunities, particularly early in the year.

This site can be used for hiking, access to fishing, hunting, viewing wildlife and plants, and horseback riding. The wet soils can limit access. Motorized vehicles can be very detrimental to the site especially when soils are saturated to the surface.

Due to the deep soils, fertility, inherent high productivity, rhizomatous plants, and relatively flat slopes, the site is fairly resistant to disturbances that can potentially degrade it. Site degradation is usually the result of lowering of the water table. This can occur with down cutting of adjacent stream channels or significant run-off following prolonged drought. This can result from on-site improper grazing or off-site conditions in the upper watershed. Once adjacent streams down-cut, concentrated flows lower the water table.

Impacts on the Plant Community:

Influence of fire:

This site usually does not burn from wildfire. If a fire occurs, it usually does not adversely affect the plant community. Most plants including shrubs sprout back with sufficient moisture and during the next growing season.

Influence of improper grazing management:

Season-long grazing and/or excessive utilization can be very detrimental to this site. The grasses in the plant community will decline in the stand and sedges, rushes, and forbs will increase.

Continued improper grazing management will result in a stand of forbs and Kentucky bluegrass with sedges and rushes. The reduced ability of the community to withstand seasonal flooding is reduced and down cutting of adjacent streams can result or initiation of headcuts can occur. This down cutting will lower the water table and thus reduce the potential of the site

Proper grazing management that addresses frequency, duration, and intensity of grazing can maintain the integrity of the plant community and the water table on which it is dependent.

Weather influences:

Because of the deep soils, the influence of the water table, seasonal flooding and run-on, the production of this site changes little during wet or dry precipitation years. The overall plant production can be adversely influenced with prolonged drought. Overall plant composition is normally not affected when perennials have good vigor.

Below normal temperatures in the spring can have an adverse impact on total production regardless of the precipitation. An early, hard freeze can occasionally kill some plants.

Influence of Insects and disease:

Periodic disease and insect outbreaks can affect vegetation health. Mormon cricket and grasshopper outbreaks occur periodically. Outbreaks seldom cause plant mortality since defoliation of the plant occurs only once during the year of the outbreak. An outbreak of a particular insect is usually influenced by weather but no specific data for this site is available.

Influence of noxious and invasive plants:

Annual and perennial invasive species can compete with desirable plants for moisture and nutrients. The result is reduced production and change in composition of the plant community. The plants on this site are very competitive against potential invasive species.

Influence of wildlife:

This site is important for many species of mammals for food and life cycles. The site is primarily used in the late spring, summer, and fall by big game. Many birds use the site for food, nesting, or brood raising in the late spring, summer, and fall. Sage grouse use the site for brood rearing and forage.

Total numbers are seldom high enough to adversely affect the plant community.

Watershed:

The largest threat to degradation of this site is the lowering of the water table. Off-site conditions can affect the gradient of adjacent stream channels that can affect the water table. If the perennial grass and sedge cover is depleted, down cutting can be accelerated within the site. High run-off events from the adjacent uplands can severely damage or change the normal stream channel on the site. As the water table is lowered, productive potential is lost. Eventually the water table is below the root zone of the adapted perennial grasses and grass-like sedges and rushes. These are ultimately replaced by perennial forbs and shallow rooted grasses. Extreme down cutting and lowering of the water table can move the site across the threshold to a new, less productive site. Severe down-cutting can result in a plant community that resembles an upland site.

Plant Community and Sequence:

Transition pathways between common vegetation states and phases:

State 1.

Phase A to B. Develops with improper grazing management.

Phase B to A. Results from prescribed grazing.

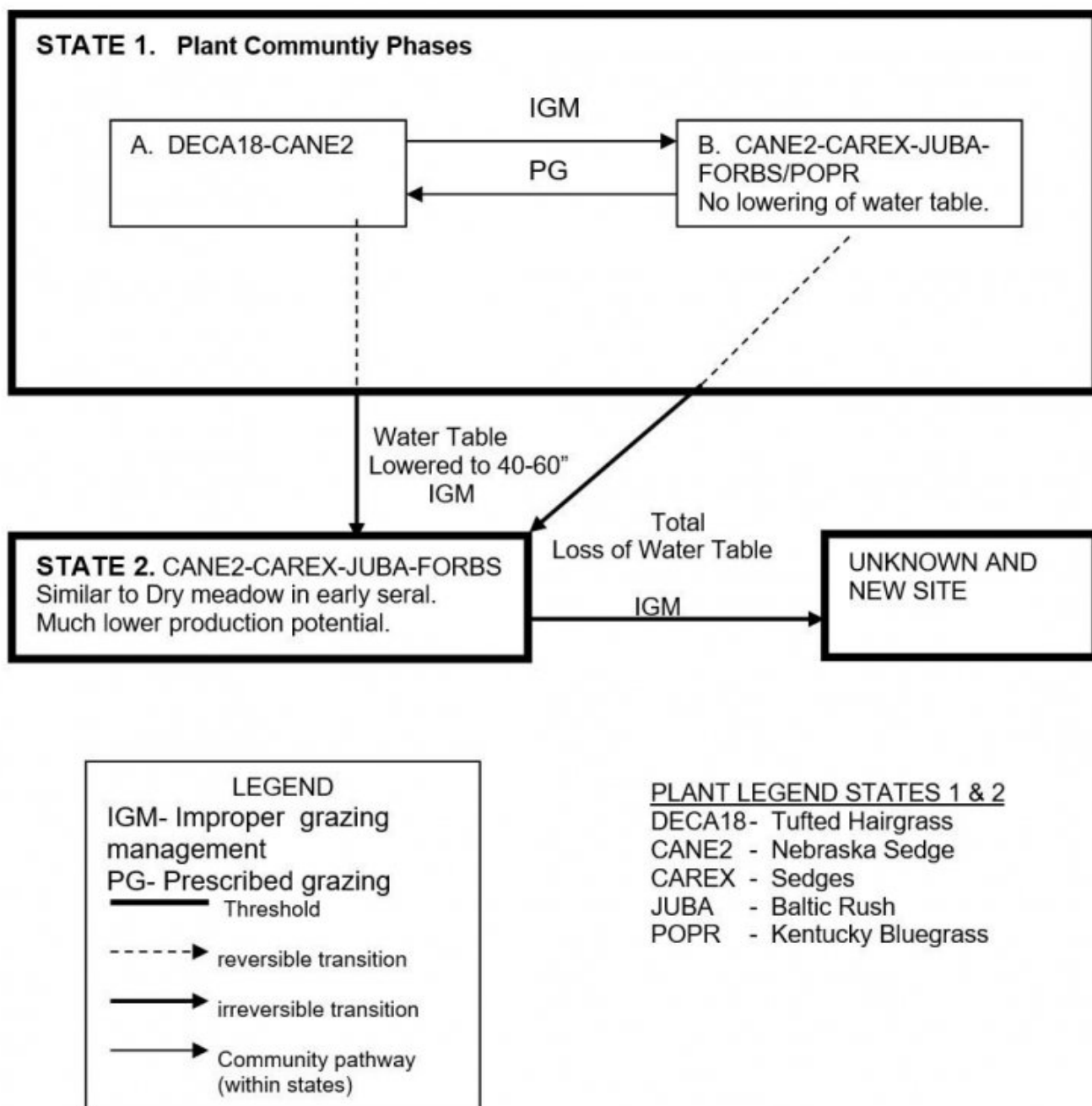
State 1 Phase A or B to State 2. Develops through permanently lowering the late growing season water table to 40 to 60 inches. This can occur with continued improper grazing management. It may also occur with proper grazing on the site, but channel erosion may continue if poor off-site conditions cause frequent and/or severe flooding. The site has crossed the threshold. This state cannot be returned to State 1 without raising the water table. This might be done over time using structures or bio-engineering practices, but the plant community may take many years to approach the plant community in State 1.

State 2 to unknown site. Results from permanently losing the water table in the soil profile through down cutting of the stream channel. The site crosses the threshold and retrogresses to a new site with reduced potential due to significant loss of available soil moisture from the loss of the water table. It occurs with continued improper grazing management or repeated significant run-off events. This state cannot be returned to State 1 without raising the water table. This might be done over time using structures or bio-engineering practices, but the plant community may take many years to approach the plant community in State 1.

Practice Limitations:

There are moderate to severe seeding limitations on this site due to difficulty in preparing an adequate seedbed. Elimination of existing vegetation prior to planting is difficult in wet seasons and high water table periods. Grade stabilization structures may be needed to prevent further down-cutting of the channel. Other options for rehabilitation may include application of fertilizer, prescribed grazing, and off-site livestock water development. Fencing of the site for better livestock control might also be a consideration.

State and transition model



State 1

State 1 Phase A

Community 1.1

State 1 Phase A

Reference Plant Community Phase. This plant community has tufted hairgrass and Nebraska sedge as co-dominants in the herbaceous layer. There are a wide variety of grasses and grass-like species and forbs that may occur in minor amounts. Some of these species may be dominant in small areas due to soil and water variations as stated in the "Ecological Dynamics of the Site". Willows and shrubby cinquefoil can occur in small amounts.

Table 4. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	0%

Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	90-95%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	0%

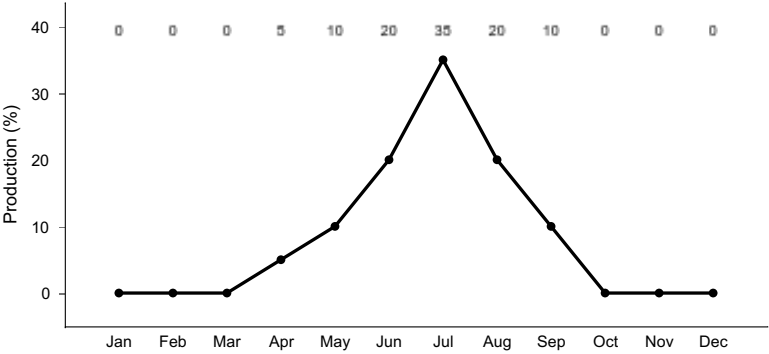


Figure 3. Plant community growth curve (percent production by month). ID0414, MEADOW. State 1.

State 2
State 1 Phase B

Community 2.1
State 1 Phase B

This plant community is dominated by Nebraska sedge and other sedges and Baltic rush. Forbs have increased in the community and Kentucky bluegrass may have invaded. This phase has developed due to improper grazing management. The water table has not been lowered from that of Phase A.

Table 5. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	0%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	90-95%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	0%

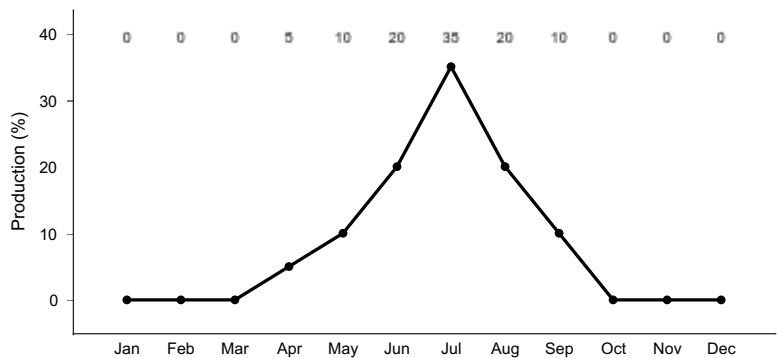


Figure 4. Plant community growth curve (percent production by month). ID0414, MEADOW. State 1.

State 3
State 2

Community 3.1
State 2

This plant community is dominated by Nebraska sedge and other sedges and Baltic rush but the overall production potential of the site is much lower than State 1. There is an increase in forbs and grasses that require less soil moisture. Kentucky bluegrass, redtop bentgrass, and meadow foxtail may have invaded the community. This state developed due to continued improper grazing management and a permanent lowering of the water table from 20-40 inches to 40-60 inches below the surface. This state can be similar to Dry Meadow in early seral state. The site has crossed the threshold. This state cannot be returned to State 1 without raising the water table. This might be done over time using structures or bio-engineering practices, but the plant community may take many years to approach the plant community in State 1.

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	0%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	90-95%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	0%



Figure 5. Plant community growth curve (percent production by month).
ID0415, DRY MEADOW - early to mid seral. State 2.

State 4 State 3

Community 4.1 State 3

Unknown new site: This plant community has gone over the threshold to a new site. Site potential has been reduced. Significant loss of available soil moisture has occurred due to the loss of the water table. Some soil loss from the surface has occurred. This state has developed due to continued improper grazing management and loss of the water table. The new site may be similar to upland sites such as Loamy Bottom other loamy sites in early seral state. This state cannot be returned to State 1 without raising the water table. This might be done over time using structures or bio-engineering practices, but the plant community may take many years to approach the plant community in State 1.

Additional community tables

Animal community

Wildlife Interpretations.

Animal Community – Wildlife Interpretations

This meadow ecological site provides diverse habitat for wetland and upland wildlife species. The seasonal hydrology results in abundant forage attracting invertebrate and vertebrate animals to this ecological site. Important seasonal habitat is provided for over 80% of adjacent rangeland resident and migratory animals including western toad, western rattlesnake, shrews, bats, jackrabbits, ground squirrels, mice, coyote, red fox, badger, sage-grouse, Ferruginous hawk, prairie falcon, horned lark, and western meadowlark. Large herbivore use of this ecological site includes mule deer, pronghorn antelope, and elk. Native reptiles and amphibians are reliant on these meadow sites throughout the year. Open water is seasonal, only being provided by seasonal runoff, ponding, seasonal high water table, and natural springs.

State 1 Phase 1.1 –Tufted Hairgrass/ Nebraska Sedge Reference Plant Community (RPC): The RPC provides a diversity of grasses and forbs used by native insect communities who assist in pollination of the plant community. The insects are food for the many predator species utilizing the site. The reptile and amphibian community is represented by leopard lizard, western skink, rubber boa, western rattlesnake, western toad, boreal chorus frog, and northern leopard frog. A diverse amphibian population is a key indicator of good ecological health on this site. Loss of hydrology will limit or exclude amphibians from this ecological site. Water loving birds including ducks, geese, cranes, and shorebirds may utilize the available habitat for nesting and feeding. Sage-grouse utilize the meadows as summer and fall brood-rearing habitat. Isolated patches of woody vegetation add horizontal and vertical structure for nesting and roosting sites for resident and migratory avian species. Bird species can include warbling vireo, black-capped chickadee, MacGillivray's warbler, fox sparrow, song sparrow, and long-billed curlew. The plant community supports seasonal (spring, summer and fall) forage needs of antelope, mule deer, and elk. The dominant plant community is preferred forage for the ungulates utilizing the site. Limited thermal cover for ungulates is provided by isolated patches of woody vegetation within the plant community. A diverse small mammal population including deer mouse, montane vole, and western jumping mouse may utilize available habitat on a

seasonal basis.

State 1 Phase 1.2- Nebraska Sedge/ Sedges/ Baltic Rush/ Forbs/ Kentucky Bluegrass Plant Community: This plant community is the result of improper grazing management. The new plant community would have similar insect diversity and populations to the reference plant community or possibly greater with the increase in forbs. With the hydrologic conditions similar to Phase 1.1, and proper management similar amphibian habitat would be available and prey species would be abundant. Continued improper grazing management would reduce the value of habitat for reptiles and amphibians. The plant community provides summer and fall brood-rearing habitat for sage-grouse when sagebrush cover is nearby. Large mammal (antelope, mule deer, and elk) use would be seasonal. The dominant plant community provides reduced amounts of quality forage for ungulates. Small mammal populations and diversity would be reduced under an improper grazing management scenario, reducing vertical structure and increasing vulnerability to predators.

State 2 – Nebraska Sedge/ Sedges/ Baltic Rush/Forbs/Grasses Plant Community: This state developed due to continued improper grazing management and a permanent lowering of the water table. Loss of historic hydrology has reduced the habitat value for many animals present in State 1. Pollinators would be supported by forbs requiring less moisture than plants in State 1. The loss of historic hydrology will limit or exclude use of the site by amphibians and many reptiles. Suitable habitat cover for the northern leopard frog, a species of concern, would not be provided. With improper grazing management the loss of vertical and horizontal structure would reduce diversity and populations of all species of birds. The site would be more suitable for killdeer, western meadowlark, and horned lark. Birds of prey (northern harrier and Cooper's hawk) may range throughout these areas looking for prey species. With continued improper grazing management forage for ungulates would be available for a shorter duration in the summer and fall. Small mammal populations and diversity would be reduced under an improper grazing management scenario reducing vertical structure and increasing vulnerability to predators.

Grazing Interpretations.

This site is best suited for livestock grazing in the late spring, summer, and fall. Wet soils can limit grazing opportunities, particularly in the late spring.

Estimated initial stocking rate will be determined with the landowner or decision-maker. They will be based on the inventory, past use history and type, condition of vegetation, production, season of use, and seasonal preference. Calculations used to determine estimated initial stocking rate will be based on forage preference ratings.

Hydrological functions

Soils in this site are generally grouped in hydrologic group D. When hydrologic condition of the vegetative cover is good, natural erosion hazard is slight.

Recreational uses

This site presents an aesthetically pleasing view of lush vegetation consisting primarily of grasses and grass-like plants. When livestock or big game are grazing or browsing on the site it presents a pleasant pastoral panorama. Hikers and fisherman often traverse the edges of this site. Picnickers and campers frequent the site in late summer and early fall as sometime adjacent shaded wooded areas become less pleasant on cool days. Vehicular use can be very detrimental to this site, especially during wet weather and high water table conditions.

Wood products

None

Other products

None

Other information

Field Offices

Meridian, ID
Caldwell, ID
Mountain Home, ID
Marsing, ID
Payette, ID
Weiser, ID
Emmett, ID
Gooding, ID
Twin Falls, ID
Jerome, ID
Shoshone, ID
Burley, ID
Rupert, ID

Inventory data references

Information presented here has been derived from NRCS clipping and other inventory data. Also, field knowledge of range-trained personnel was used. Those involved in developing this site description include:

Dave Franzen, co-owner, Intermountain Rangeland Consultants, LLC
Jacy Gibbs, co-owner, Intermountain Rangeland Consultants, LLC
Jim Cornwell, Range Management Specialist, IASCD
Dan Ogle, Plant Materials Specialist, Acting State Rangeland Management Specialist, NRCS, Idaho
Brendan Brazee, State Rangeland Management Specialist, NRCS, Idaho
Chris Hoag, Wetland Plant Ecologist, NRCS, Idaho
Leah Juarros, Resource Soil Scientist, NRCS, Idaho
Lee Brooks, Range Management Specialist, IASCD

Other references

USDA, NRCS.2001. The PLANTS Database, Version 3.1 (<http://plants.usda.gov>.) National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
USDA NRCS. 1992. Major Land Resource Area, Owyhee High Plateau, Range Site Descriptions. Reno, Nevada.
USDA NRCS. Major Land Resource Area, Owyhee High Plateau, Range Site Descriptions. Portland, Oregon.
USDA, Forest Service. 2004. (www.fs.fed.us/database/feis/plants.)
USDI Bureau of Land Management, US Geological Survey; USDA Natural Resources Conservation Service, Agricultural Research Service; Interpreting Indicators of Rangeland Health. Technical Reference 1734-6; Version 4-2005.

Approval

Kendra Moseley, 4/06/2020

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	Dave Franzen and Jacy Gibbs Intermountain Range Consultants 17700 Fargo Rd. Wilder, ID 83676
--------------------------	---

○ — POWER POLE	— — GUY WIRE
⊙ — VAULT	· — POST
—— JT ——	—— JOINT UTILITY TRENCH
ST — ST	—— STORM SEWER
—— OH ——	—— OVERHEAD LINE
—— SS ——	—— SANITARY SEWER
—— W —— W ——	—— WATER
—— — — ——	—— FENCE
—— — ——	—— PARCEL BOUNDARY
—— — ——	—— CENTERLINE
—— — ——	—— EASEMENT

ALUMINUM DISK MARKING CENTER OF
SECTION 10
EL: 2,370.31 NAVD 88

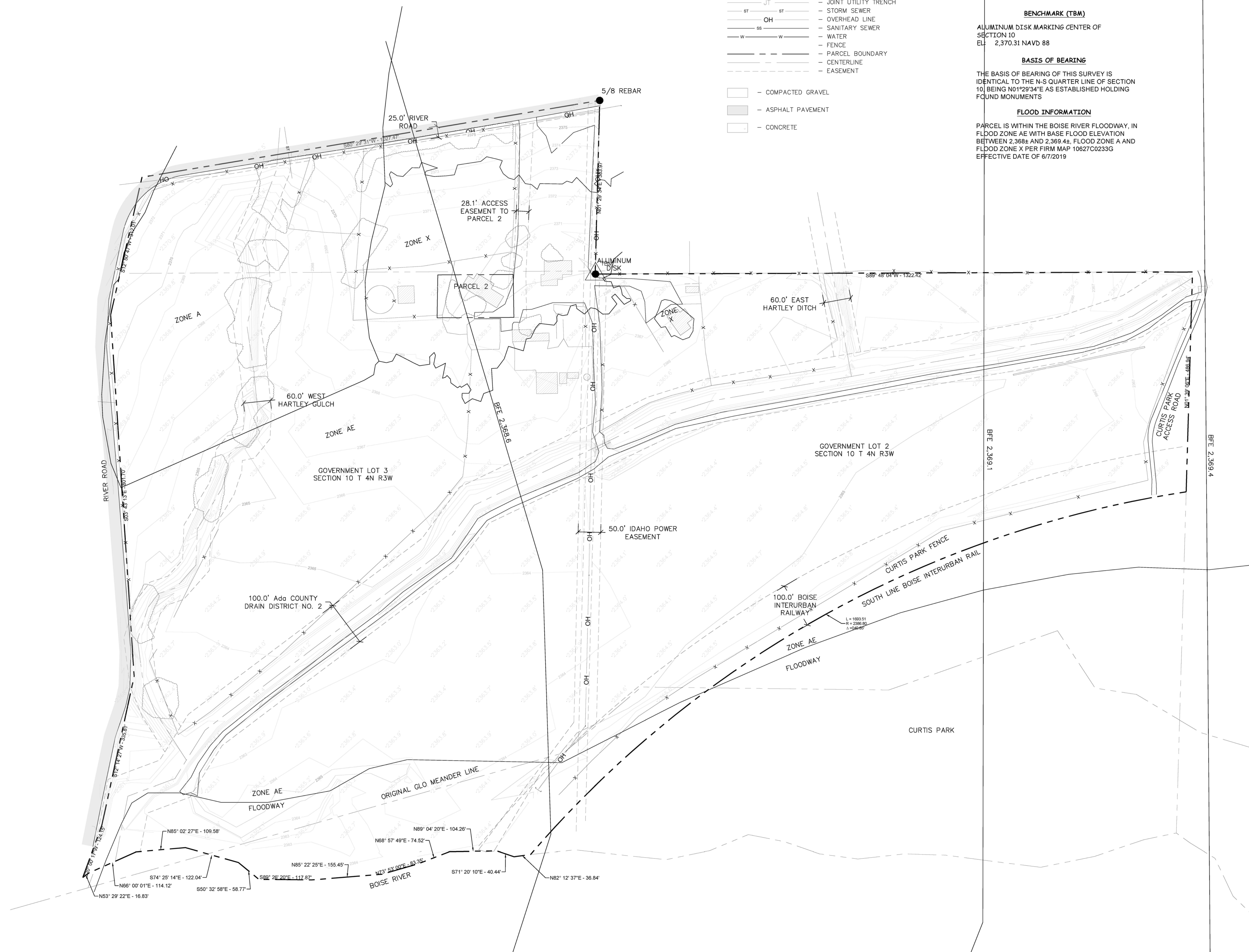
THE BASIS OF BEARING OF THIS SURVEY IS
IDENTICAL TO THE N-S QUARTER LINE OF SECTION
10, BEING N01°29'34"E AS ESTABLISHED HOLDING
FOUND MONUMENTS

PARCEL IS WITHIN THE BOISE RIVER FLOODWAY, IN
FLOOD ZONE AE WITH BASE FLOOD ELEVATION
BETWEEN 2,368± AND 2,369.4±, FLOOD ZONE A AND
FLOOD ZONE X PER FIRM MAP 10627C0233G
EFFECTIVE DATE OF 6/7/2019



Attention is Drawn to the Fact That Drawing Scales May be Altered During Reproduction Processes. Scales Shown Hereon are Based on a Full Scale Sheet Size of 24" x 36".

Scale: 1" = 100'



CRIMSON BRIDGE ESTATES
14533 RIVER ROAD
MIDDLETON, IDAHO

#	--/--/----
---	------------

PRELIMINARY
SURVEY

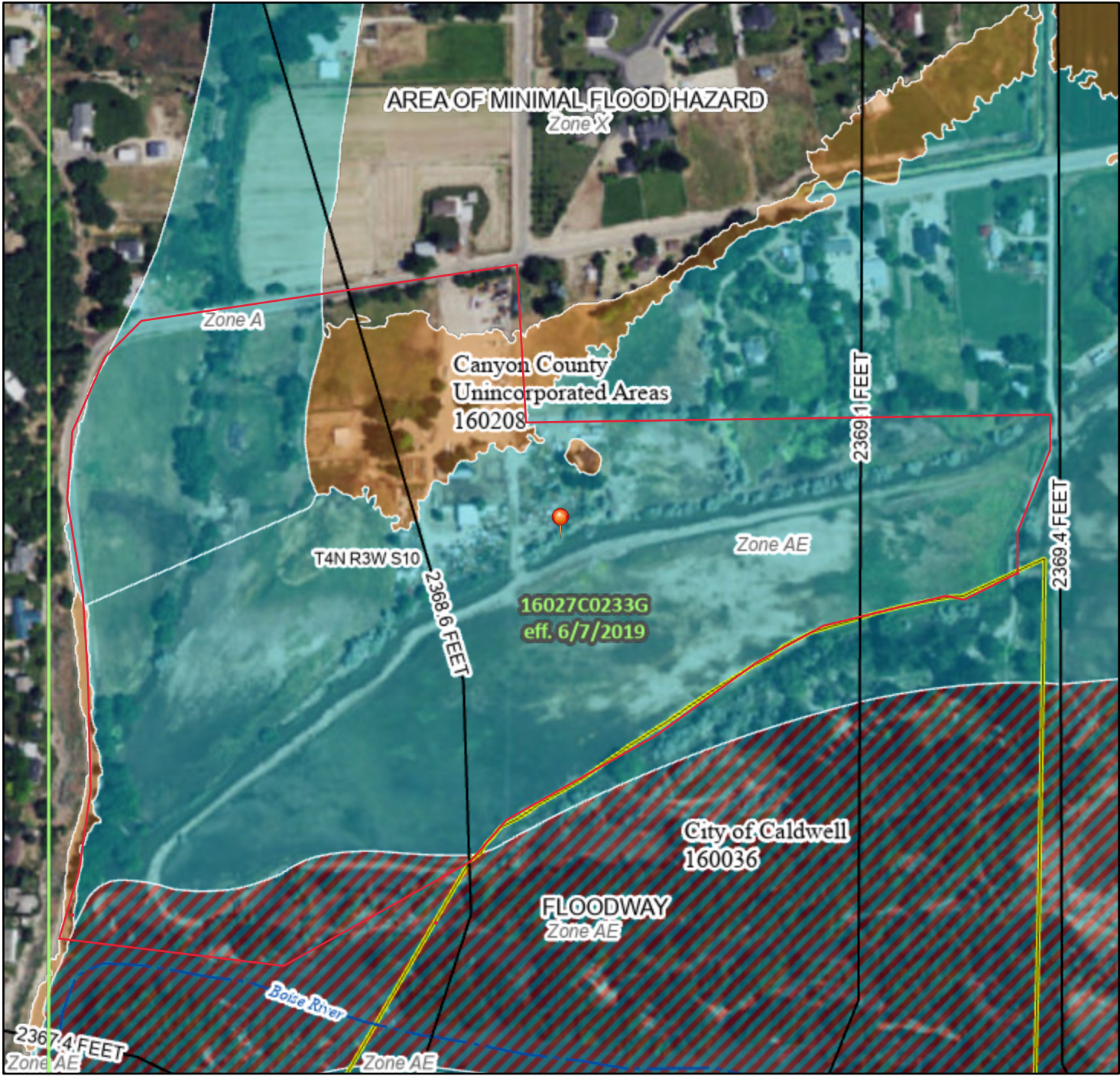
C1.0



National Flood Hazard Layer FIRMMette



116°41'17"W 43°42'6"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

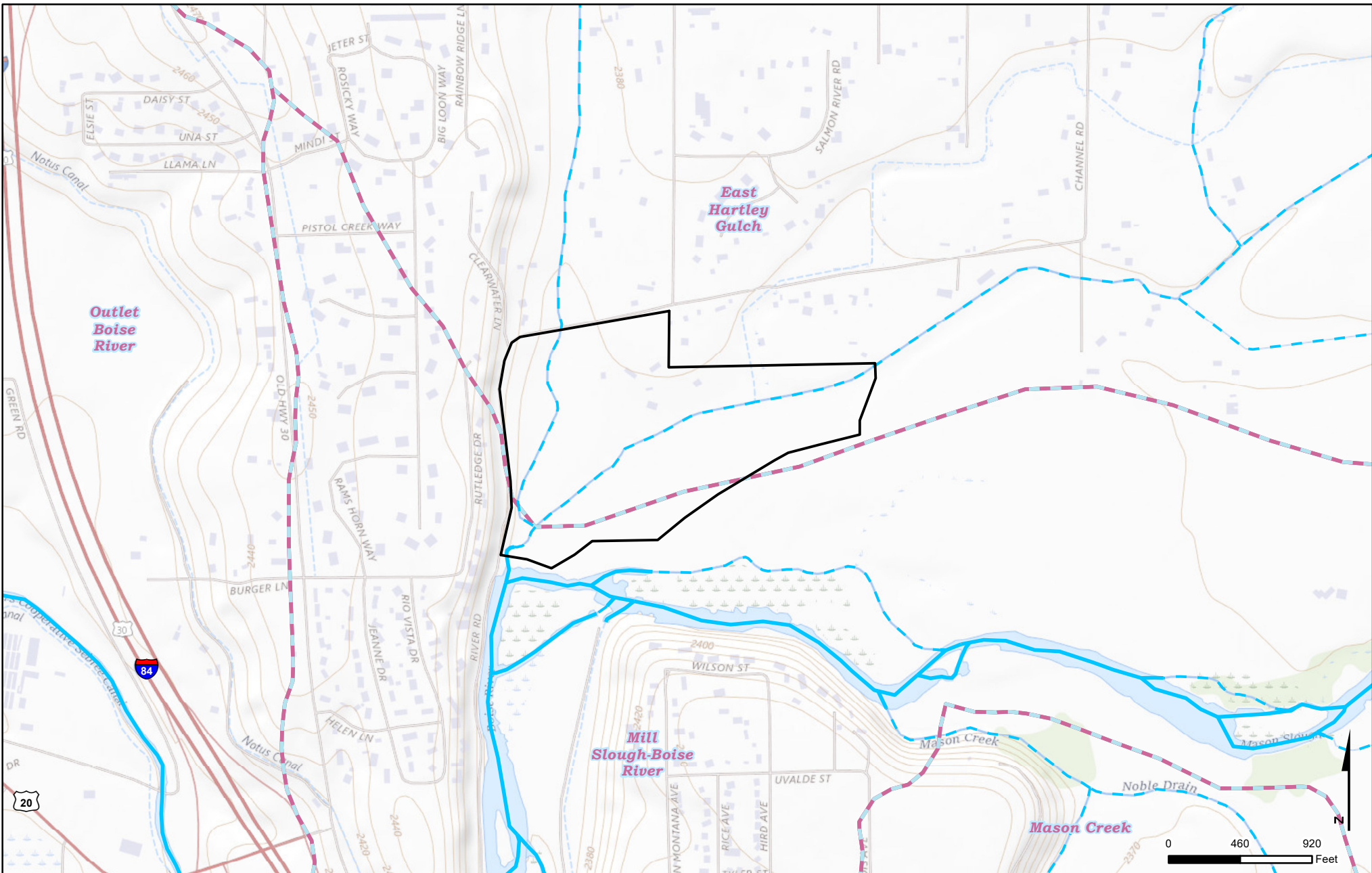


The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/10/2023 at 4:17 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unincorporated areas are not to be used for regulatory purposes.



NHD Stream/Channel

— Perennial Stream

— Artificial Path/Channel

— NHD HUC 12

— Project Area

Nexus Project Number: P0287

Date: 11/21/2023

Canyon County, ID

NAD 1983 UTM Zone 11N

Precision Excavation and Construction Inc.
Crimson Bridge Permitting



05/06/2024

Figure 8
National Hydrography Dataset
(USGS)

Crimson Bridge Estates 1954

Service Layer Credits: USGS The National Map; National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed April, 2023.

Nexus Environmental Consultants, Inc. is not responsible for the precision or accuracy of data presented. All data is provided without warranty. The user of data product accepts it with all limitations and assumes responsibility for the use thereof.



U.S. Fish and Wildlife Service

National Wetlands Inventory

Crimson Bridge Estates



November 13, 2023

Wetlands

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Lake

Other

Riverine

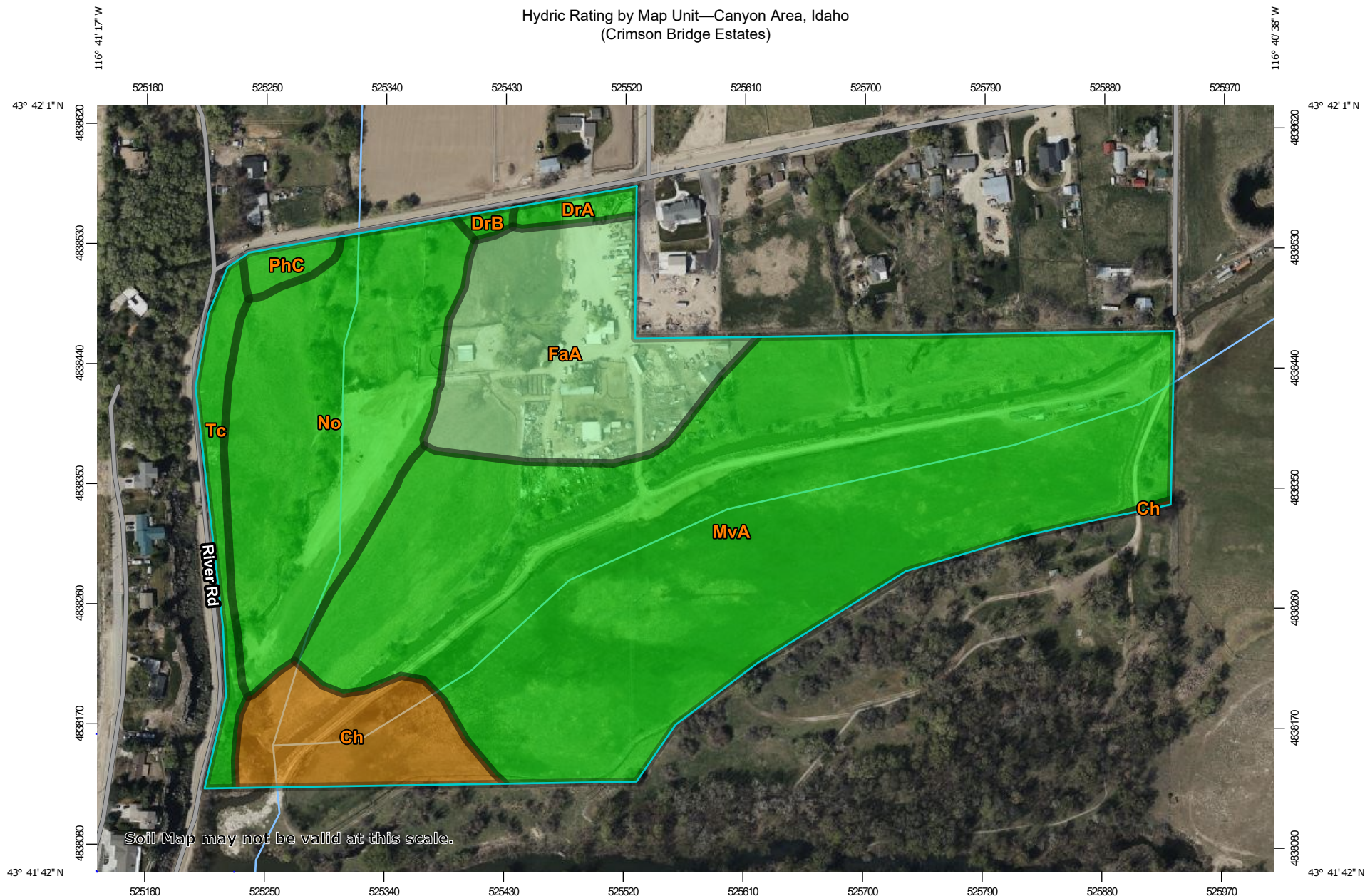
05/06/2024

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Crimson Bridge Estates 1954
National Wetlands Inventory (NWI)

This page was produced by the NWI mapper

Hydric Rating by Map Unit—Canyon Area, Idaho (Crimson Bridge Estates)



Soil Map may not be valid at this scale.

Map Scale: 1:4,050 if printed on A landscape (11" x 8.5") sheet.

0 50 100 200 300 Meters

0 150 300 600 900 Feet


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



Hydric Rating by Map Unit—Canyon Area, Idaho (Crimson Bridge Estates)







MAP LEGEND

Area of Interest (AOI)







 Area of Interest (AOI)

Soils







Soil Rating Polygons

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available


Soil Rating Lines

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available






Soil Rating Points

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available


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 19, Sep 2, 2022

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

Date(s) aerial images were photographed: Apr 19, 2021—Apr 21, 2021

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.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ch	Chance fine sandy loam	90	3.3	6.2%
DrA	Draper loam, 0 to 1 percent slopes	0	0.5	0.8%
DrB	Draper loam, 1 to 3 percent slopes	0	0.2	0.3%
FaA	Falk fine sandy loam, 0 to 2 percent slopes	5	7.3	13.7%
MvA	Moulton loam, 0 to 1 percent slopes	0	30.0	56.6%
No	Notus soils	0	9.7	18.4%
PhC	Power silt loam, 3 to 7 percent slopes	0	0.5	0.9%
Tc	Terrace escarpments	0	1.6	3.0%
Totals for Area of Interest			53.1	100.0%

Soil Map—Canyon Area, Idaho (Crimson Bridge Estates)



Map Scale: 1:4,050 if printed on A landscape (11" x 8.5") sheet.

0 50 100 200 300 Meters

0 150 300 600 900 Feet


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




Soil Map—Canyon Area, Idaho
(Crimson Bridge Estates)


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 19, Sep 2, 2022

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

Date(s) aerial images were photographed: Apr 19, 2021—Apr 21, 2021

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
Ch	Chance fine sandy loam	3.3	6.2%
DrA	Draper loam, 0 to 1 percent slopes	0.5	0.8%
DrB	Draper loam, 1 to 3 percent slopes	0.2	0.3%
FaA	Falk fine sandy loam, 0 to 2 percent slopes	7.3	13.7%
MvA	Moulton loam, 0 to 1 percent slopes	30.0	56.6%
No	Notus soils	9.7	18.4%
PhC	Power silt loam, 3 to 7 percent slopes	0.5	0.9%
Tc	Terrace escarpments	1.6	3.0%
Totals for Area of Interest		53.1	100.0%

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower



April 15, 2024

Derek Kraft, Connor MacMahon
Premier Aggregates LLC
779 E. State Street
Eagle, ID 83616

Subject: Middleton Gravel Pit
Noise Study

project #4107

Gentlemen:

As requested, I have performed noise measurements and analysis associated with a gravel mining / crushing operation planned in the Middleton area.

The address of the parcel to be mined is 14533 River Road, Caldwell, ID. One home on the same level as the parcel is at the bend at 14676 River Road. There is another home directly across from the driveway of this parcel, at 14529 River Road, plus a home adjacent to this site's driveway at 14499 River Road. There are several homes on the bluff overlooking the proposed gravel pit, sitting roughly 70 feet in elevation above the site. Noise was measured at two of these homes (22286 and 22430 Rutledge Lane).

NOISE LIMITS

Mullins Acoustics did not find a Canyon County noise ordinance or a defined CUP condition with applicable sound level limits. A noise ordinance defines what that community determines is "reasonable".

The City of Caldwell has an ordinance which defines night hours (11 pm to 7 am) as periods, "*.... during which loud or offensive noise will be considered a disturbance...*". That ordinance does not define numerical limits or list other technical requirements. That code appears to be directed at amplified sound that is audible inside residential structures at night. Most local codes (Boise, Ada County, Nampa, Meridian, etc) are similar. Very few jurisdictions in Idaho have well-defined numerical noise limits as part of their municipal codes. Most ordinances, if one is present at all, are these subjective "nuisance" codes. Gravel mining operations will not occur during nighttime hours.

Assessing potential noise impacts becomes more complicated when there is no defined numerical target. Any ordinance that is based on nuisance or audibility is inherently subjective and much more difficult to apply, and is difficult to legally defend. Where there is not an expressed numerical target, it is common to fall back to the sample limits described in the EPA Model Noise Ordinance.

The Model Noise Ordinance from 1973 is often used as the basis for codes and ordinances nationwide. The typical limits for noise impinging on residences are 50 dBA during nighttime hours and 60 dBA during daytime hours (7 am to 10 pm). The gravel mining operations will be daytime only, so the appropriate limit under the EPA standard at any home would therefore be **60 dBA**.

EQUIPMENT NOISE

Two currently operating gravel pits were visited to measure noise emissions from the same equipment that will eventually be used at this River Road site. To summarize the data, normal equipment operations will create an equipment sound level of **76 dBA at 140 feet**, averaged over a typical hour. That includes all component noises: a direct view from an elevation slightly above the trailer-mounted generator, the fairly constant sound from crushers / screens and the conveyors, and intermittent noises from trucks and loaders moving around the site. The genset is the single loudest piece of equipment and runs steadily. The crushers also run steadily when in active use. This information was used to predict the sound levels that are expected at different relevant distances.

NEAREST HOMES

In this case, the east facade of closest home on the bluff (22430 Rutledge Lane) is ~790 feet from the noise monitor location, and most are further away (up to ~1500 feet). This point was chosen as a representative spot and the likely closest edge of the extraction area (see sketch). Crushing equipment can be located further away to the east. The dominant noise is from steadily operating crushers, conveyers, and especially the generator. These elements will be more perceptible than the lower level intermittent noises from excavators and loaders, which is more like typical construction site noise. There are also homes to the immediate east of the site entry, with the nearest at 14499 River Road and a distance of about 550 feet from the nearest potential crusher location. To the east and southeast of the extraction area is Curtis Park.

Short-term “spot” measurements and live observations were made concurrently along Rutledge Lane. On the afternoon of Thursday March 28 the average existing ambient sound level at homes on the bluff was 49-50 dBA. Homes on the bluff are exposed to fairly steady traffic noise from I-84, which is 1800 feet from the corner of Burger Lane and Rutledge Lane, near one of the spot measurements locations.

During the spot measurements at all sites, there were numerous distant gunshots that were plainly audible. Investigation showed that the Caldwell Shotgun Complex operates a shotgun-only range located about 5400 feet to the southwest, across the freeway. The loudest single intermittent noise events observed near homes were these distant gunshots. Momentary gunshot levels typically measured 55-63 dBA with some at 67 dBA, but each event only lasts a fraction of a second. These levels are roughly equivalent in magnitude to a car door slamming from about 20-25 feet away. During the spot measurements, the shots did not raise the observed average ambient levels caused by traffic noise versus periods without any gunshots.

The noise monitor placed on the gravel pit site logged sound levels for forty-eight consecutive hours, from Thursday afternoon to Saturday afternoon. The hourly level

during the daytime hours was Leq 50-52 dBA (Leq can be considered the functional “average” level for the hour). That includes noise from local traffic on River Road. For clarity, the chart shows only the daytime hours on Friday, during the hours of planned operation between 7 am and 7 pm. Data is on file for all hours measured. Noise levels logged during the nighttime hours were never less than Leq 45 dB during the 2 am hour, and most hours were similar to data from daytime hours. The background noise level in this area is dominated by freeway traffic. There is not a significant variation in noise levels between the day and night background environment.

A spot measurement made on Wednesday afternoon at the monitoring site was Leq 49 during the 2 pm hour without any noteworthy local traffic on River Road, and essentially agrees with the monitor data. The lower elevation of this site shields it partially from highway noise and some gunshot noise, so the ambient noise on the “flat” is slightly quieter than on the bluff – in the absence of local traffic on River Road. Local traffic on River Road was about 350 feet from the monitor position, and local traffic often contributed more sound to the average than the distant highway during certain hours.

Based on the data using the monitor location as a reference, we anticipate the following gravel pit sound levels:

address	distance (ft)	north crusher	distance	south crusher
14676 River Road	775	61 dBA	1360	56 dBA
14499 River Road*	550	64 dBA	935	60 dBA
22430 Rutledge Lane	790	61 dBA	1230	57 dBA

Distances listed are relative to the closest potential locations of the crusher, as shown on the attached aerial diagram. There are two potential crusher locations, called north and south on the attached site plan. North is closer to the homes, and south is further away.

Compare these values to the Model Noise Ordinance that allows 60 dBA on average at homes during daytime hours. As can be seen, the more distant (south) crusher location is preferable overall, since it yields fully compliant sound levels. The closer north location puts predicted levels at the nearest homes at slightly over the target of 60 dBA.

The basic distance or setback to meet 60 dBA at homes is ~900 feet, based on equipment sound data taken at other sites. When the crushers and generator are placed at least 900 feet from the nearest homes, the 60 dBA target will be met without any further mitigating action.

*For the closest home on the same side at 14499 River Road, the distance from equipment is at a minimum, meaning that predicted sound levels are somewhat higher. However, it will be feasible to add local noise barriers to protect that home, in the form of gravel piles or conex containers used as barriers and placed close to the common property line with that parcel. Barriers or berms need to be at least as high as the crushers and/or generator, roughly 12 feet. Berms or barriers as mitigation will not be feasible or applicable to homes on the bluff, and may not be feasible to protect 14676 River Road. The required property line barrier would extend along the River Road frontage from the driveway plus approximately 150 feet southward around the curve,

totaling roughly 800 linear feet of barrier. Noise barriers have the most effect when placed fairly close to either the noise source or a noise receiver location. They are least effective when occurring in the middle, since sound can diffract or bend around a barrier.

This degree of change for 14676 River Road is about ten decibels louder than the current ambient noise, which would usually be considered a “significant change”, even though it meets the target. At a predicted level of 61 dBA, the excess of one decibel would be considered as a “very minor” exceedance of the 60 dBA goal in most cases, and that difference would not normally be perceptible. It is also possible that the levels will be slightly lower than predicted.

A level of 64 dBA would exceed the defined limit of 60 dBA during daytime hours at the immediately adjacent homes fronting along River Road, and would be perceptibly louder than 60 dBA. This exceedance can be mitigated by placing the crusher equipment further away on the site, and possibly by other means as described below.

When looking at the attached chart showing ambient logged sound levels, it is necessary to define and explain certain terms regarding sound levels. The chart shows the L10 (10% level), Leq (average), and L90 (90% level) for each hour. See the Appendix for definitions.

MITIGATION

Because the analysis shows an increase above the pre-existing background noise levels, some mitigation measures are appropriate. Some relatively easy actions can be taken to reduce the local noise footprint of the gravel mining operation on nearby homes. These include:

1. Place the crushers and generator as far away from homes as is practical, with a recommended distance of 900 feet. The south crusher location meets that criterion and needs no additional mitigation. A distance of 900 feet yields a predicted level of 60 dBA at all nearby homes. It is easier to transport raw materials farther on the site than it is to build a very high barrier or to implement other mitigation measures that will effectively protect elevated homes on the bluff, or even nearby homes on the flat along River Road. The north location will need additional mitigation to yield a predicted level of 60 dBA.
2. Orient the generator pointed to the east, aimed away from homes. The 750 KW diesel generator that powers the other apparatus is the noisiest single piece of equipment in the operation. Currently the doors to the semi trailer containing the generator are locked back flush along the side of the trailer. If they can be secured in a position of about 45° or 90° from the long axis of the trailer, they would tend to channel generator noise in the opposite direction. The generator noise could then be reduced by up to 5 dB at homes simply by aiming the genset trailer eastward, plus the attenuation provided by additional distance.
3. The crushers have an essentially omni-directional noise pattern. In addition to more distance, using intervening barriers are the only available options to reduce their noise at any given location.

4. Use stockpiles of gravel and soil as berms to protect the closest homes along River Road, located at the same general elevation. Shipping containers (Conex) have also been successfully used as portable temporary noise barriers around particularly noisy equipment. Standard shipping containers are readily available, not very expensive, and can be moved around a site as needed.

CONCLUSIONS

- The design noise goal is 60 dBA at homes based on the EPA Model Noise Ordinance for daytime hours at residences. This is the best option in the absence of an applicable local noise code.
- A level of 60 dBA can be achieved at homes on the bluff if the crushers and genset are placed at least 900 feet from the homes. If quieter equipment or partial enclosures of the noisiest apparatus can be used (which may not be practical) distances can become much closer to homes without added adverse effects.
- A level of 60 dBA can be achieved at 14676 River Road without any mitigation if the crushers are placed ~900 feet away from the house. For the "north" crusher position, the distance is ~775 feet and the resulting level is 61 dBA. 61 dBA versus 60 dBA is not a perceptible difference. At 14499 River Road, some on-site noise barriers are needed to meet 60 dBA, because of the reduced distance.
- The use of barriers (such as berms, gravel piles, or shipping containers) would further reduce equipment noise at all homes. Any noise barrier must fully block the direct line-of-sight between the tops of the crushers or generator and windows facing the gravel pit in any home of interest.

Let me know if there are questions about this information.

Sincerely,



Earl Mullins, PE

attached: annotated site map, 24-hour ambient chart, appendix, parcel plan

APPENDIX

dBA (A-weighted sound level)

A-weighting is the standard way to measure sound for judging loudness and annoyance. Humans hear different frequencies better than others. It takes a much higher level of very low frequency sound (thunder, bass guitar, rumble) to sound equally as loud as a high frequency sound (cymbals, whistles, turbines, squeals). The "A" weighting filter on the sound meter applies a correction factor to certain frequencies that corresponds to perceived loudness. Two sources like a diesel railroad locomotive and a cymbal, both measuring 80 dBA, will sound comparably loud despite the radical difference in frequency content.

decibel (dB)

Sound is simply fluctuating air pressure. The human ear can detect changes in air pressure over a huge range -- a ratio of trillions to one -- between the threshold of hearing and the onset of pain. A scale with the same dynamic range as your ear you could weigh a both single human hair and a skyscraper using the same device. The decibel mathematically compresses the range using logarithms, rather than describing the actual sound pressure measured for each noise. Sound levels expressed in decibels are similar to earthquake values using the Richter scale. An earthquake measuring 6.0 releases ten times as much energy as a 5.0 quake, and 100 times as much as a 4.0 event. Similarly, a sound level increase of ten decibels requires ten times the sound intensity -- but is perceived as being only twice as loud.

Loudness

Changes (either increase or decreases) in loudness are generally judged as follows:

- + 1 dB measurable using a quality sound meter, but not perceptible
- + 3 dB possibly noticeable if you are actively listening or expecting a change
- + 5 dB noticeable without prompting
- + 10 dB twice as loud as the original sound

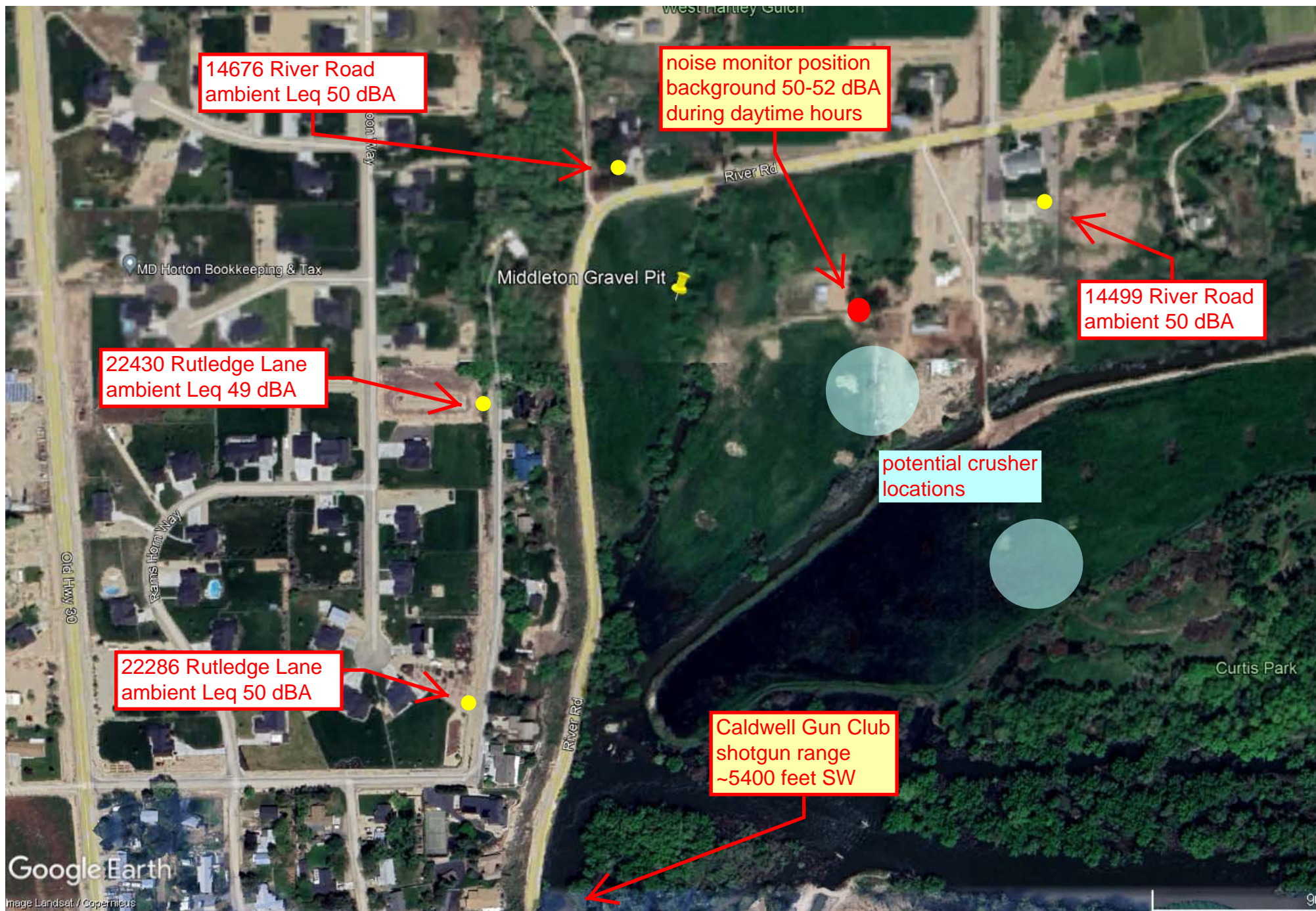
Leq (Equivalent Level)

Leq is a quantity routinely used in environmental noise analysis. Since noise typically varies over time, an overall descriptor is needed. The Leq is determined by summing the total sound energy each second, then dividing the total energy by the total time. While not mathematically correct, think of Leq as the "average" sound level that occurred during the measurement period.

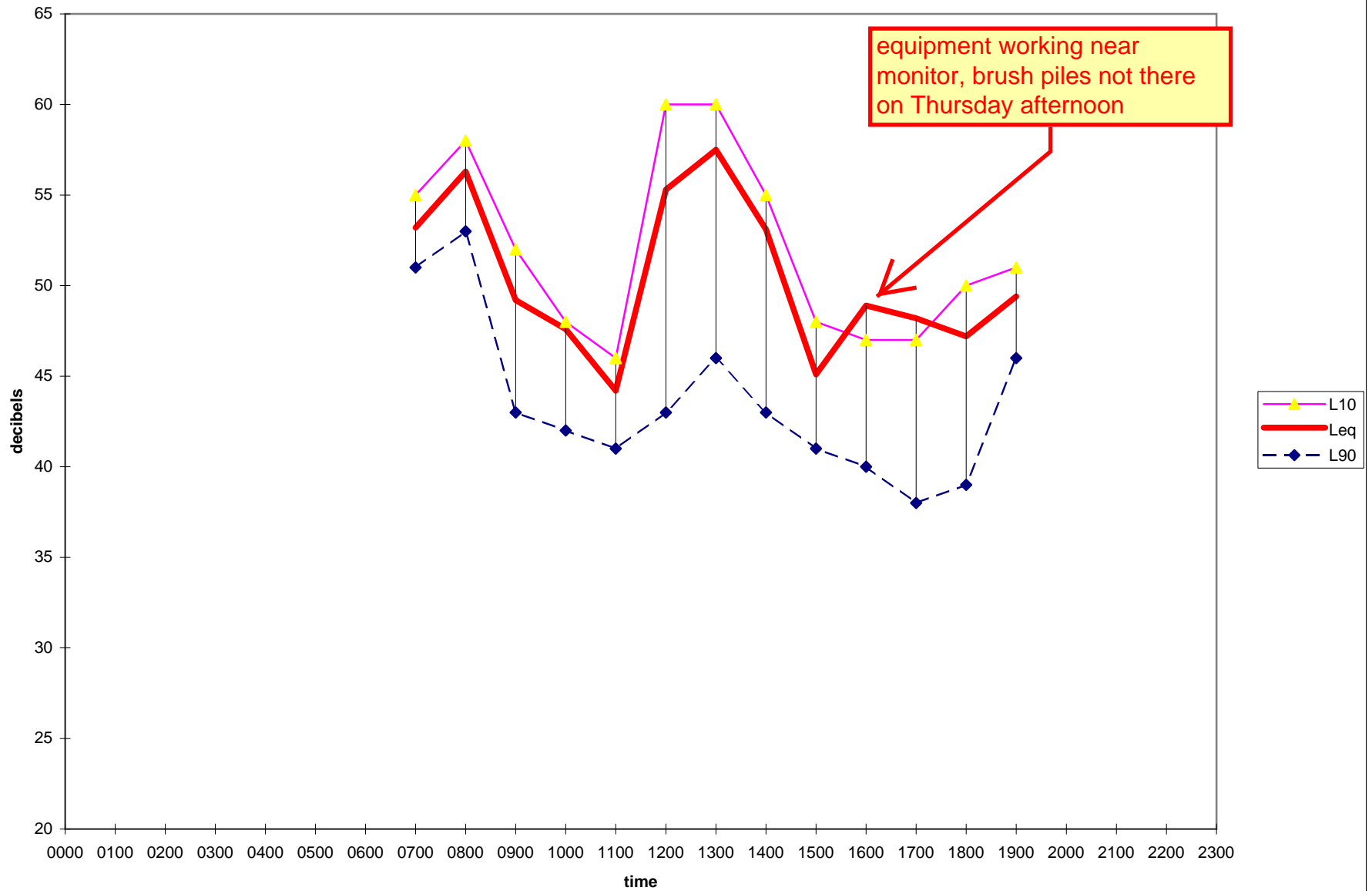
Lnn (Percentile Level)

Quantities like L10 or L90 are often used to describe the noise environment. L10 is simply the level during the loudest 10% of the measurement period. In an hour-long measurement, L10 is the level exceed for six minutes. L90 is a comparable quantity, where the sound is louder for 90% of the period, or louder for 54 minutes out of the hour. L10 is usually considered to be the highest recurring noise level, excluding unusual or exceptional events. L90 is often considered to be the noise "floor". There might be a few moments during the hour when no noise events are occurring and the environment is very still. That situation would be slightly quieter than the L90 level, and is called the Lmin (minimum). The loudest momentary sound is the Lmax (maximum) and usually tracks well with the L01 (highest 1% level).

NOISE MEASUREMENT AND ASSESSMENT SITES

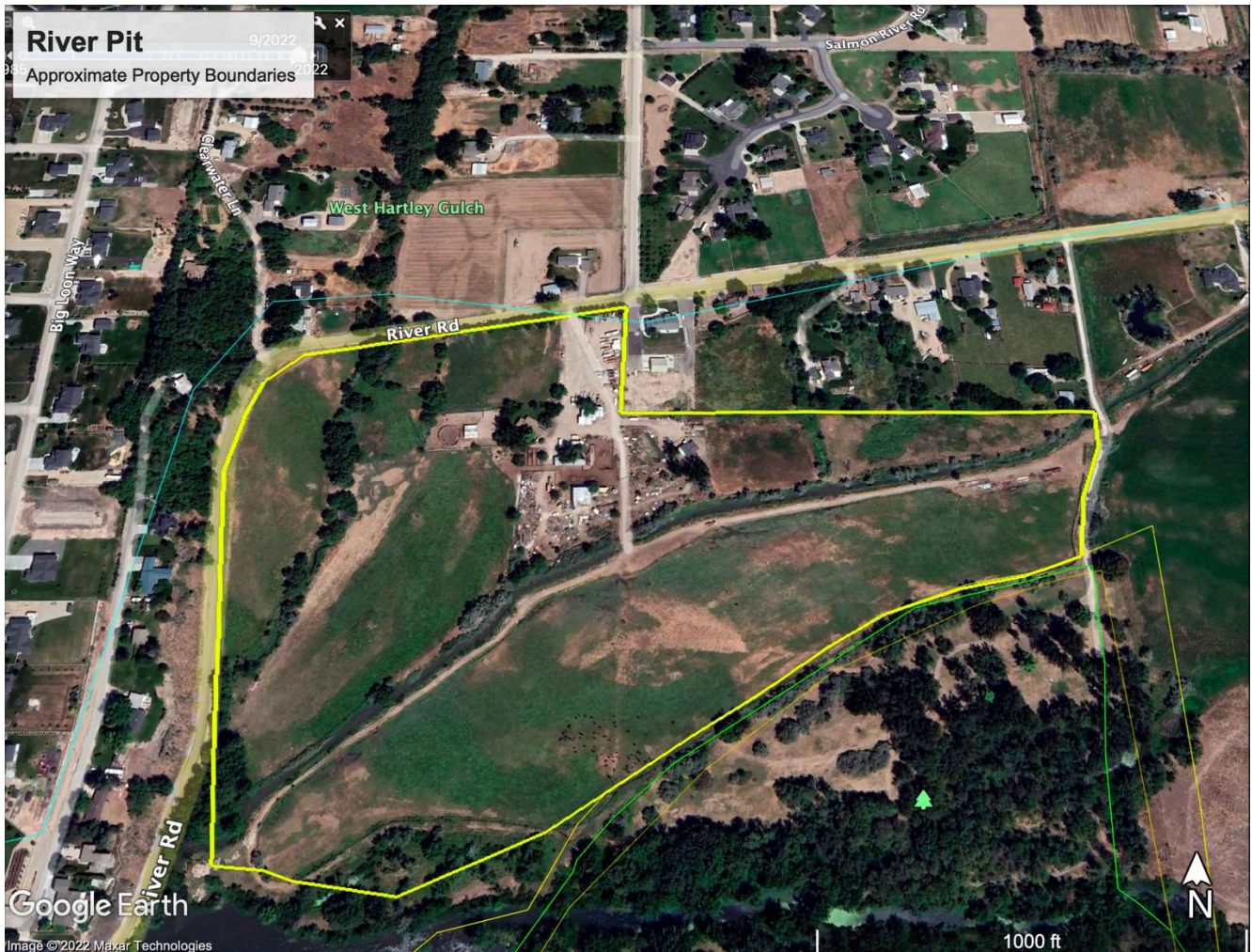


24 hour noise monitor
River Road Middleton gravel pit ambient 28-30 MAR 2024



**Mineral Extraction Reclamation Plan
for
Operator: Premier, LLC DBA Premier Aggregates
Owner: Crimson Bridge Holdings, LLC**

Canyon County Parcel Numbers R34668 & R34667011





JAROM WAGONER
Mayor

208.455.3011
(f) 208.455.3003

City Hall
411 Blaine Street
Caldwell, Idaho 83605

Post Office Box
P.O. Box 1179
Caldwell, Idaho 83606

For a list of the City
Council members, visit:
Website
www.cityofcaldwell.org

CITY OF *Caldwell, Idaho*

City of Caldwell
updated letter

Original Response: April 21, 2023
Updated Response: April 17, 2024

Michelle Barron
Case Planner
Canyon County Development Services Dept.
111 North 11th Ave. Ste. 340
Caldwell, Idaho 83605

Re: Jeff Bower / Kristen McNeil
Mineral Extraction Use – CU2023-0004
14533 River Road
Caldwell, Idaho

Dear Ms. Barron,

Our office received a public agency notification back in April of 2023 regarding the conditional use application for mineral extraction use on the property located at 14533 River Road in Caldwell, Idaho.

This parcel is not within the City of Caldwell's Area of City Impact but is contiguous to the City of Caldwell incorporated area and is contiguous to the City of Caldwell's Area of City Impact.



Zoning Map Legend:

Light Grey = Low Density Residential
Light Red = Service Commercial



Comprehensive Plan Map Legend:

Light Orange = Low Density Residential
 Medium Orange = Residential Estates
 Red = Commercial and Service
 Green = Environmentally Sensitive
 Grey = Public

Although this is not in the City of Caldwell's Area of City Impact, the city had concerns about having mineral extraction use next to residential zones. These concerns resulted in a letter dated April 21, 2023, indicating the city's opposition to the proposed land use.

Since that time, we have had the opportunity to further discuss the intent behind the mineral extraction project and the long-term plans for the site. Based on the new information, the city's position on the approval of the conditional use permit is neutral. However, if the County should choose to approve the conditional use permit for mineral extraction, the city would request the following conditions of approval.

1. The conditional use permit approvals for mineral extraction be limited to a maximum of 2.5 years, at such time either the residential development occurs or the required reclamation plan that would be implemented.
2. The applicant provides a permanent easement to the city for access into Curtis Park for the public, to include widening, resurfacing and drainage.
3. The hours of operation for crushing and gravel extraction be limited to 7:00 am – 7:00 pm, Monday through Friday, with no operations occurring on weekends.
4. No blasting be conducted as part of this conditional use permit.
5. Berming is put into place to help mitigate noise to the surrounding residential properties.
6. On site excavation equipment utilized white noise alarms to reduce noise generation.
7. A mobile crusher is utilized to provide additional sound mitigation and to reduce the equipment and hauling on site.
8. The applicant will take precautions to mitigate fugitive dust becoming airborne.

Sincerely,

Robin Collins

Digitally signed by Robin Collins
 DN: cn=Robin Collins, o=Caldwell Planning and
 Zoning, ou=Director,
 email=rcollins@cityofcaldwell.org, c=US
 Date: 2024.04.17 13:51:28 -06'00'

Robin Collins

Director

City of Caldwell Planning and Zoning Department

BOISE RIVER FLOOD CONTROL DISTRICT #10

PO Box 140396
Garden City, Idaho 83714-0396



April 23, 2024

Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Attention Michelle Barron, Principal Planner
Michelle.Barron@canyoncounty.id.gov

RE: Crimson Bridge Development – 14533 River Road, Caldwell, Idaho

Dear Ms. Barron,

Flood Control District 10 is supportive in water quality benefits to the Boise River. The above referenced project intends to construct a pond for purposes of allowing the Hartley Drain to flow into the pond for purposes of allowing sediment to be collected and removed from the pond. The collection of sediment in the pond will discharge cleaner water to the Boise River. Water quality improvements to the Boise River will provide better maintenance opportunities as well as improved environmental conditions.

There have been a lot of efforts to provide better irrigation and drainage practices which will result in less sediment discharge to the Boise River.

Should you have any questions or comments, please do not hesitate to contact me.

Regards,

A handwritten signature in blue ink, appearing to read "M. Zirschky".

Mark Zirschky
District Manager
Boise River Flood Control District 10
208-861-2766

Michelle Barron

From: Michelle Tucker <michelle.tucker@nexus-env.com>
Sent: Monday, April 8, 2024 11:00 AM
To: Michelle Barron
Cc: Carl Anderson; David Stephens
Subject: RE: [External] Crimson Bridge Public Hearing
Attachments: CBE Project Summary aerial 040824.pdf

Michelle,

Please see attached.

Michelle Tucker
Environmental Specialist
Phone 208-756-7602
Email michelle.tucker@nexus-env.com
Web www.nexus-env.com



From: Michelle Tucker
Sent: Monday, April 8, 2024 8:35 AM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Cc: Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; David Stephens <david.precisionx@gmail.com>
Subject: RE: [External] Crimson Bridge Public Hearing

I will send this to you later today. Can you give me the address for the public hearing?

Michelle Tucker
Environmental Specialist
Phone 208-756-7602
Email michelle.tucker@nexus-env.com
Web www.nexus-env.com



From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Sunday, April 7, 2024 11:36 PM
To: Michelle Tucker <michelle.tucker@nexus-env.com>
Cc: Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; David Stephens <david.precisionx@gmail.com>
Subject: RE: [External] Crimson Bridge Public Hearing

Hello Michelle,

If you would like to provide me of an overview of the studies that you have been working on and the timeline of competition, I would love to add a little bit of information in my Staff Report about them. Unfortunately, we didn't open up a comment period, so new information would not be accepted at this time. You have the

opportunity to come to the hearing and present any information into the record that you have available as part of the public comment. I know that these are all very beneficial studies that the Planning and Zoning Commission would be interested in hearing about. You can bring any information that you have and ask if it could be accepted as a late exhibit the night of the hearing.

I look forward to a brief synopsis of what has been done.

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Michelle Tucker <michelle.tucker@nexus-env.com>
Sent: Thursday, April 4, 2024 8:18 AM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Cc: Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; David Stephens <david.precisionx@gmail.com>
Subject: [External] Crimson Bridge Public Hearing

Hello Michelle,

I am sorry we have not been able to connect. Premier, with our support, has been working on providing studies for sound, traffic, and ground water for the hearing. My urgent question for you is what the updated deadline is to provide supportive materials for the hearing on the 18th.

I am available anytime to visit prior if you would like an update on the project and permitting activities.

All my best,

Michelle

Michelle Tucker
Environmental Specialist
Phone 208-756-7602
Email michelle.tucker@nexus-env.com
Web www.nexus-env.com



Crimson Bridge Project

Location: 14533 River Road, Caldwell, Idaho

Crimson Bridge Estates is being planned in two phases. Phase 1 is intended to excavate ponds and provide additional resources to enable the development of Phase 2 which is a low-density subdivision. No development is proposed in the floodway and no clearing of vegetation along the river is proposed.

Phase 1 – Gravel Excavation and Pond Development

Premier Aggregates is seeking a condition use permit (CUP) to excavate the ponds and extract gravel. It is anticipated that it will take one to three years to complete this phase. The proposed operating hours are Monday through Friday from 7 am to 7 pm. No business operations or excavation will be conducted on Saturday or Sunday. On-site crushing will be seasonal, and it is anticipated crushing will only occur 3-4 months out of the year. A Reclamation Plan, approved by Idaho Department of Lands, and a Stormwater Pollution Prevention Permit have been developed for this phase. Once the CUP is approved all other necessary permits will be acquired.

Phase 2 – Crimson Bridge Estates Subdivision

The subdivision plan is for approximately 14 lots on 53 acres. The final design includes private walking paths; native plants and landscaping; and improved conditions for the existing irrigation drains to alleviate sediment delivery to the river and erosional pressure to River Road. A conceptual subdivision plan is under development and will be pursued once the CUP is approved. Draft License Agreements are in place with District 2 who manage the drains.

Formal Studies Conducted

- WETLAND DELINEATION – Nexus Environmental Consultants
- SOUND STUDY – Mullins Acoustics
- TRAFFIC DISTRIBUTION REPORT and a TURN LANE WARRANT - Kittlesons and Associates
- OFFICIAL SPECIES LIST FOR SPECIAL STATUS WILDLIFE AND FISHERIES - US Fish and Wildlife Service
- SURFACE AND GROUNDWATER ANALYSIS – Rocky Mountain Environmental and Nexus Environmental Consultants
- STORMWATER MANAGEMENT, DUST ABATEMENT AND DEWATERING PLAN – Syman and Associates
- SITE PLANNING, DEVELOPMENT STANDARDS AND DESIGN– QRS Consulting, PE
- GEOTECHNICAL TESTING – Site Consulting LLC
- CULTURAL AND HISTORICAL SURVEYS – Jerry Jerems, Archeologist, Soil Scientist
- DRAINAGE DISTRICT 2 – Encroachment Application, A-Team, PE
- TITLE RESEARCH – First American Title
- PHASE II ENVIRONMENTAL SITE ASSESSMENT

Consultations to Date

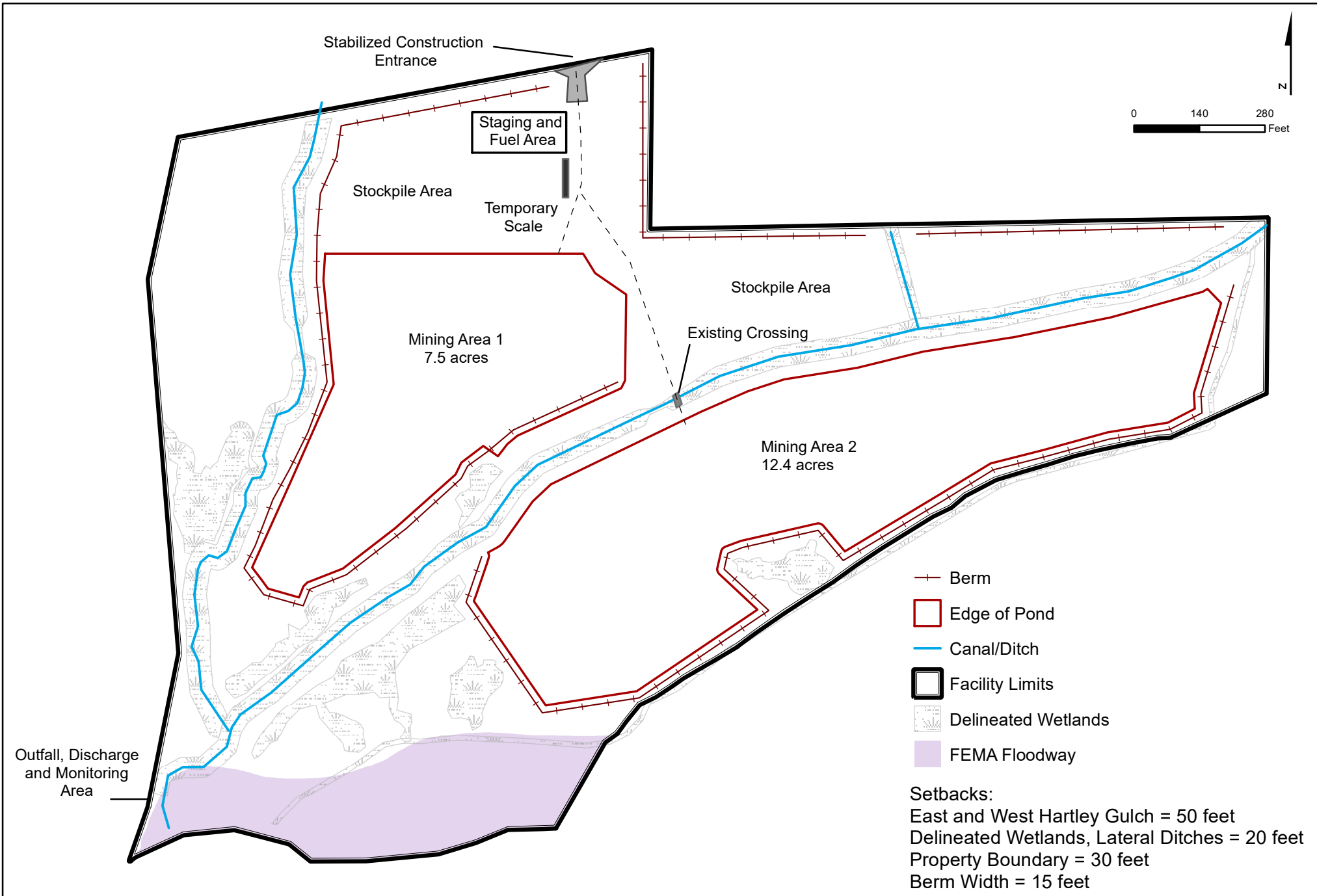
The consultations listed below include communication and permitting consideration for both phases of development as appropriate.

- DRAINAGE DISTRICT 2 - East and West Hartley Gulch - Allen Funkhouser, Drainage District Superintendent and Bryce Farris, Legal Representative
- CANYON COUNTY WATER COMPANY - Flip Phillips, Agent and Dianne Foster, Secretary

- MIDDLETON MILL DITCH COMPANY - Allen Funkhouser, Agent, and Bryce Farris, Legal Representative
- IDAHO TRANSPORTATION DEPARTMENT – Niki Benyakhlef, Development Services Coordinator
- IDAHO DEPARTMENT OF FISH AND GAME – Brandon Flack
- IDAHO DEPARTMENT OF WATER RESOURCES – Katie Gibble
- US ARMY CORPS OF ENGINEERS – Carolyn Smith
- IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY – Chase Cusack, Aaron Scheff
- IDAHO DEPARTMENT OF LANDS – Mekayla Layne
- SOUTHWEST DISTRICT HEALTH – Anthony Lee
- CANYON COUNTY SOIL CONSERVATION DISTRICT, Mike Swartz
- CANYON COUNTY FLOODPLAIN MANAGER – Stephanie Hailey
- CANYON COUNTY HIGHWAY DISTRICT No. 4 – Chris Hopper, PE
- CANYON COUNTY DEVELOPMENT SERVICES – Michelle Barron
- CITY OF MIDDLETON, Planning and community development
- CITY OF CALDWELL PLANNING AND ZONING – Robin Collings

Other Outreach:

- NEIGHBORHOOD MEETINGS – February 8, 2023; and January 31, 2024
- SUSAN COTTRELL, 14499 Channel Road, Caldwell, Idaho 83607, 559-737-3044
- MARY JO NYBLAD, 14529 River Road, Caldwell, Idaho, site visit
- BOB HANNAH, 22499 Channel Rd Caldwell Id 83607, site visit



Notes: Temporary settling pond(s) will be constructed as necessary outside of the floodway, and delineated wetlands adjacent to the mining area for de-watering purposes. These temporary ponds will be discharged to one of two drainage ditches under IPDES permit.

Nexus Project Number: P0287
Date: 4/4/2024
Canyon County, ID
NAD 1983 UTM Zone 11N

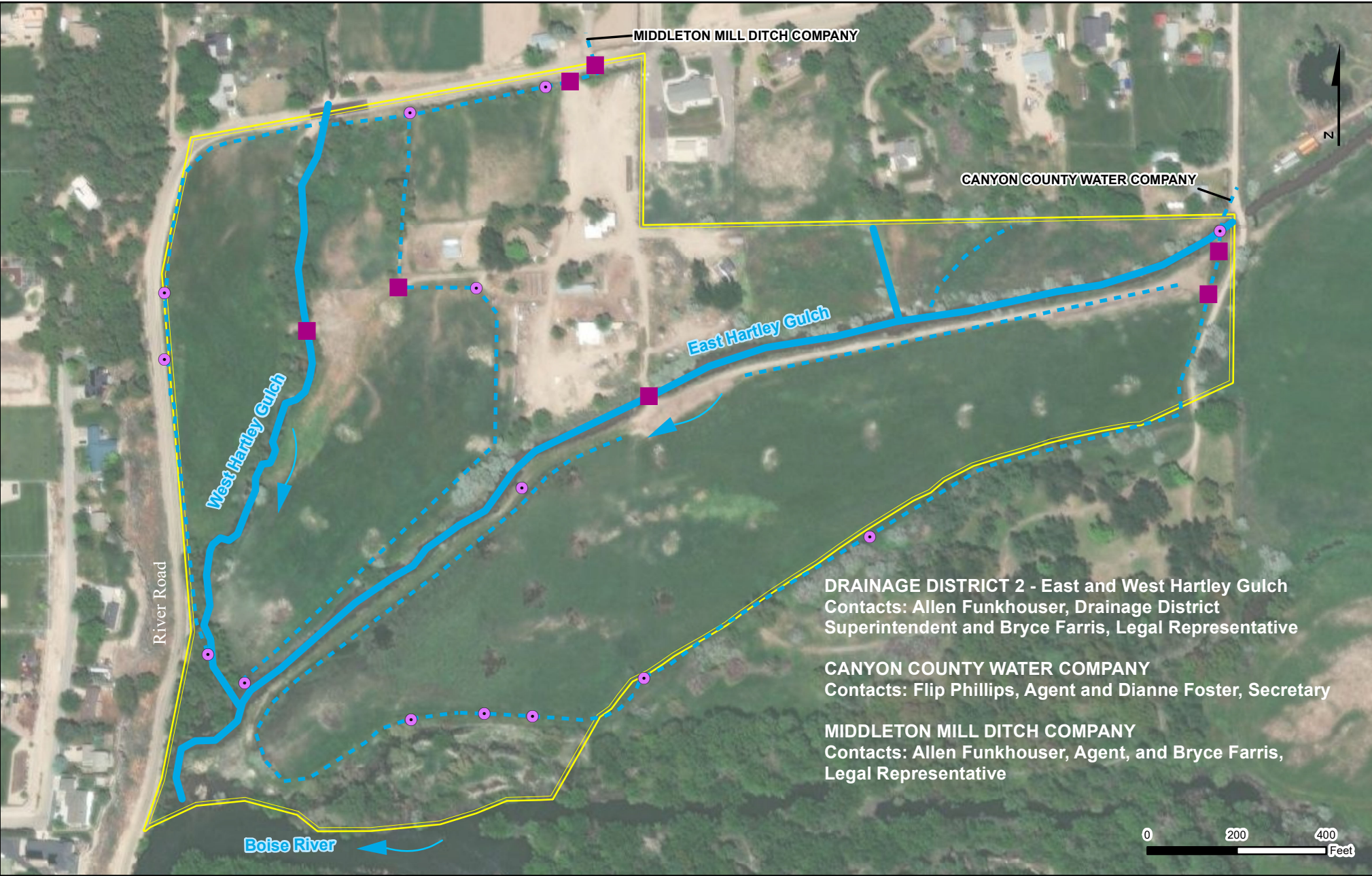


**Premier Aggregates
Phase 1 Pond Development
Canyon County**

Site Plan - Draft

Crimson Bridge Estates

Crimson Bridge Estates



■ Existing Crossing

● Headgate or Diversion


--- Lateral Irrigation Ditch

— Stream or Irrigation Channel

□ Property Boundary

Crimson Bridge Estates
Piston Aerial Imagery

Nexus Project Number: P0287
Date: 4/3/2024
Canyon County, ID
NAD 1983 UTM Zone 11N

NEXUS
ENVIRONMENTAL CONSULTANTS

05/06/2024

Crimson Bridge Project
Canyon County

Surface Water Resources
Crimson Bridge Estates 1954

Conditional Use Permit

Canyon County Planning and Zoning Commission

April 18, 2024

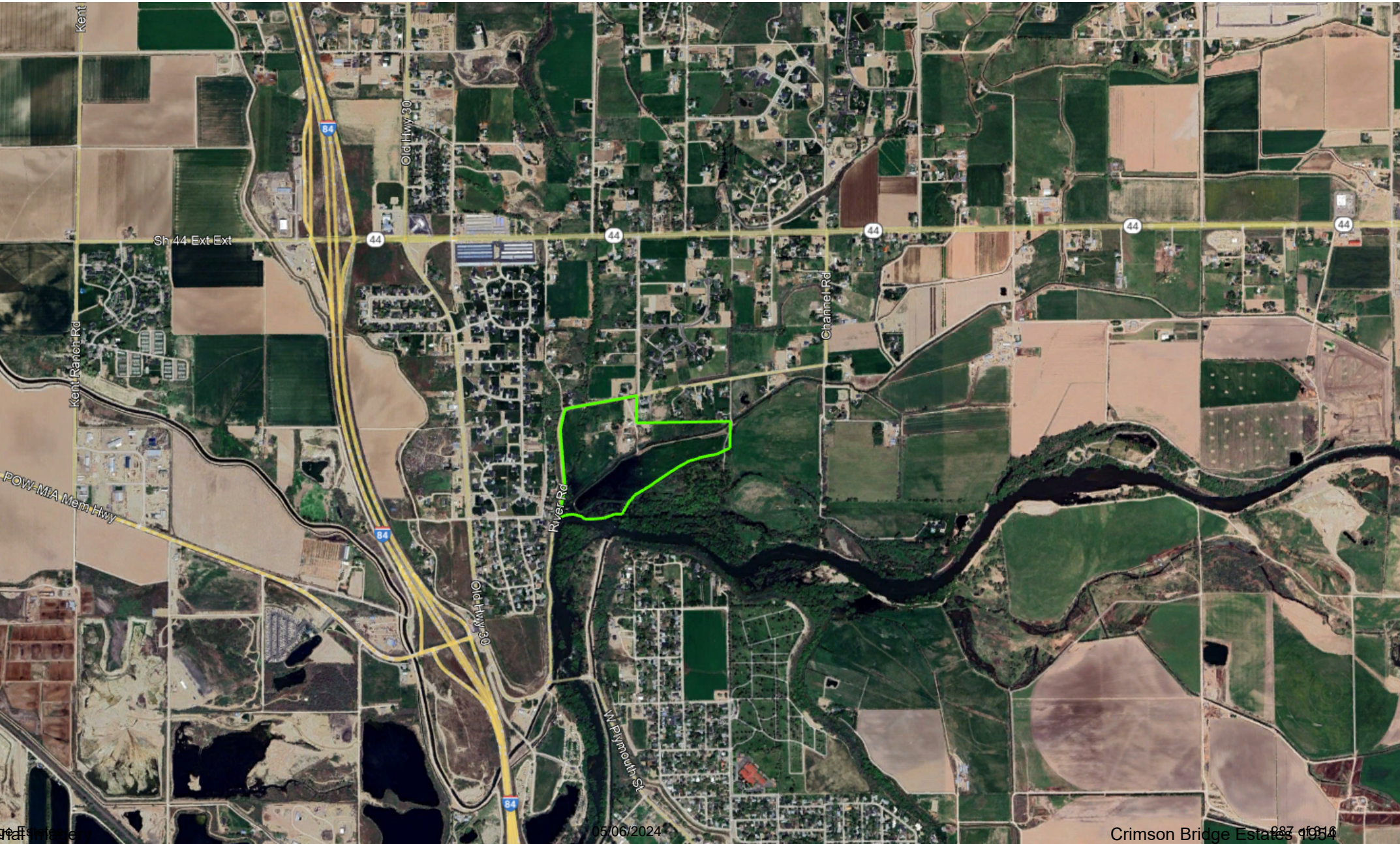
Applicant Presentation
for 4/18/24

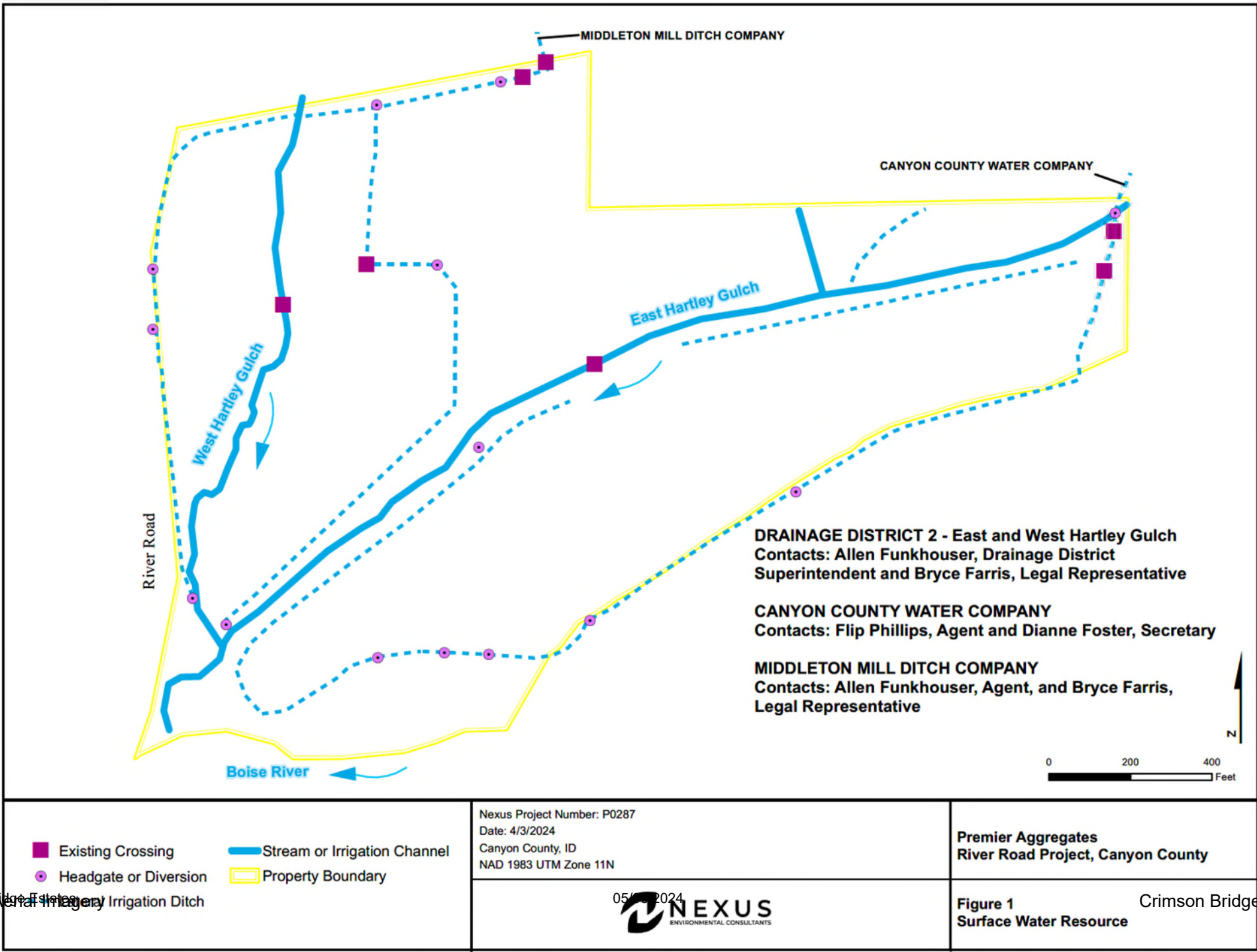
Applicant: Premier Aggregates



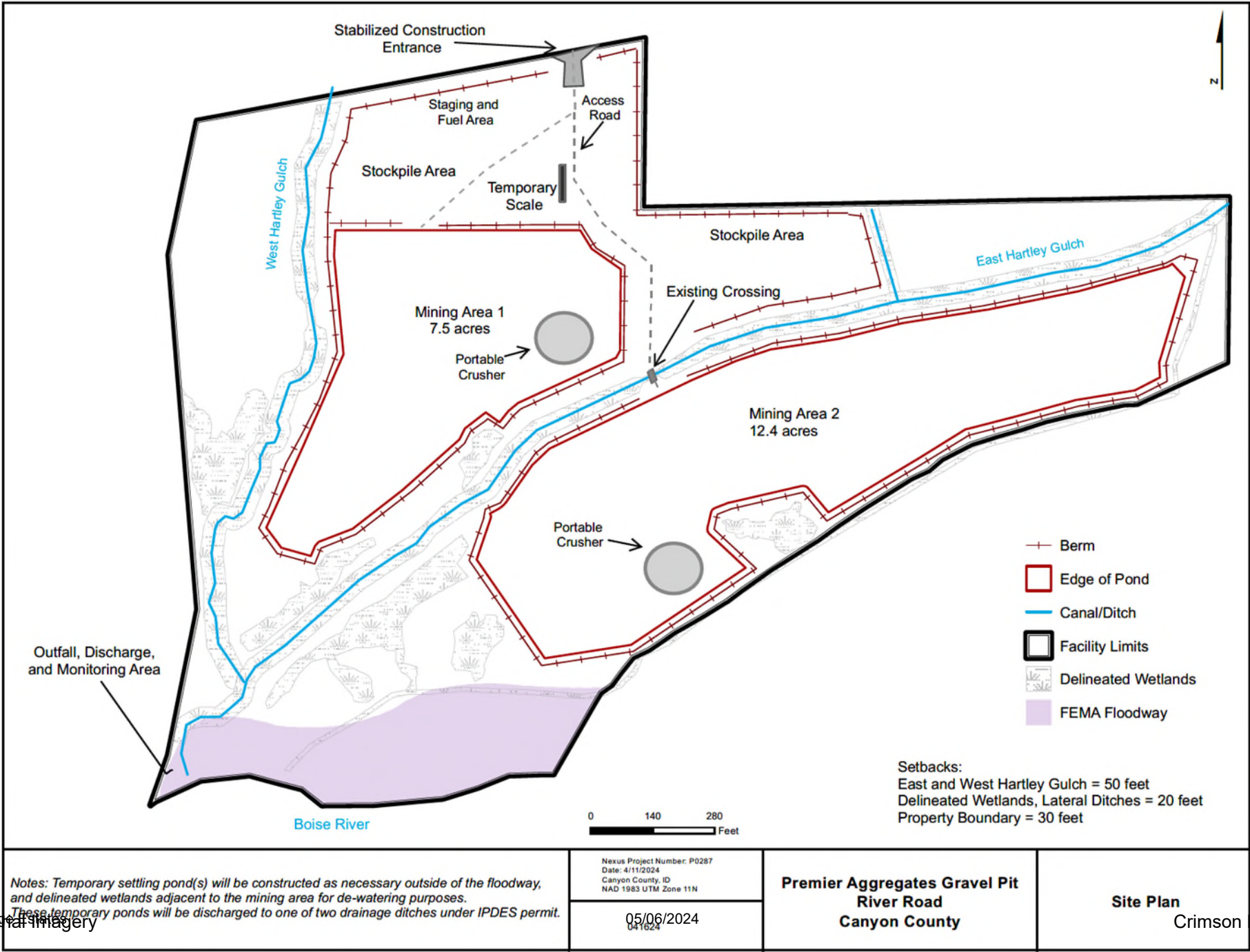


Vicinity Map





Site Plan



Geotechnical Services / Soil Testing & Inspection Services

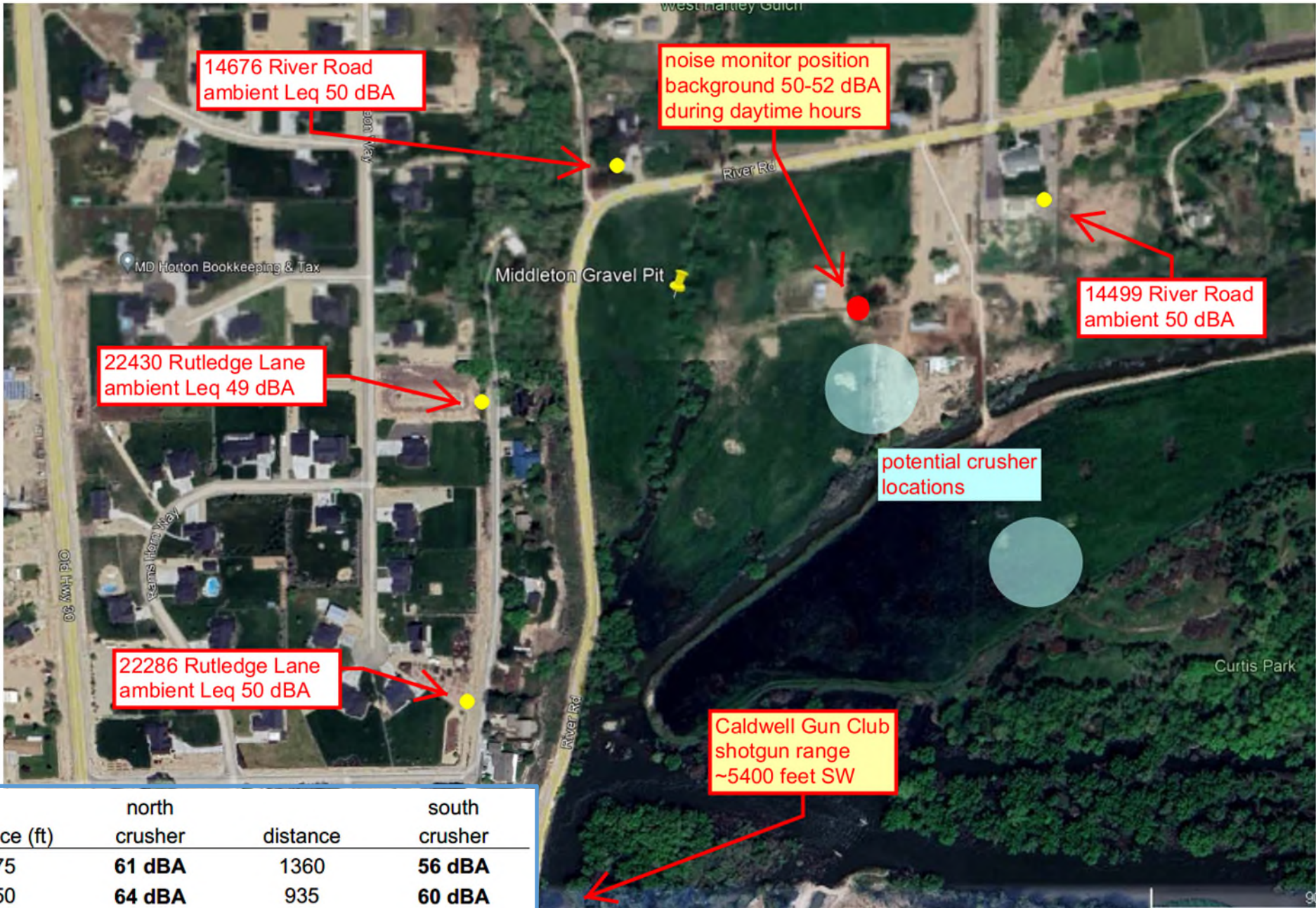
Google Earth & Handheld GPS



Haul Route



Sound Levels



address	distance (ft)	north crusher	distance	south crusher
14676 River Road	775	61 dBA	1360	56 dBA
14499 River Road*	550	64 dBA	935	60 dBA
22430 Rutledge Lane	790	61 dBA	1230	57 dBA

Crimson Bridge Estates

Piston Aerial Imagery

05/06/2024

Reclamation



Reclamation



2003



2020

Reclamation

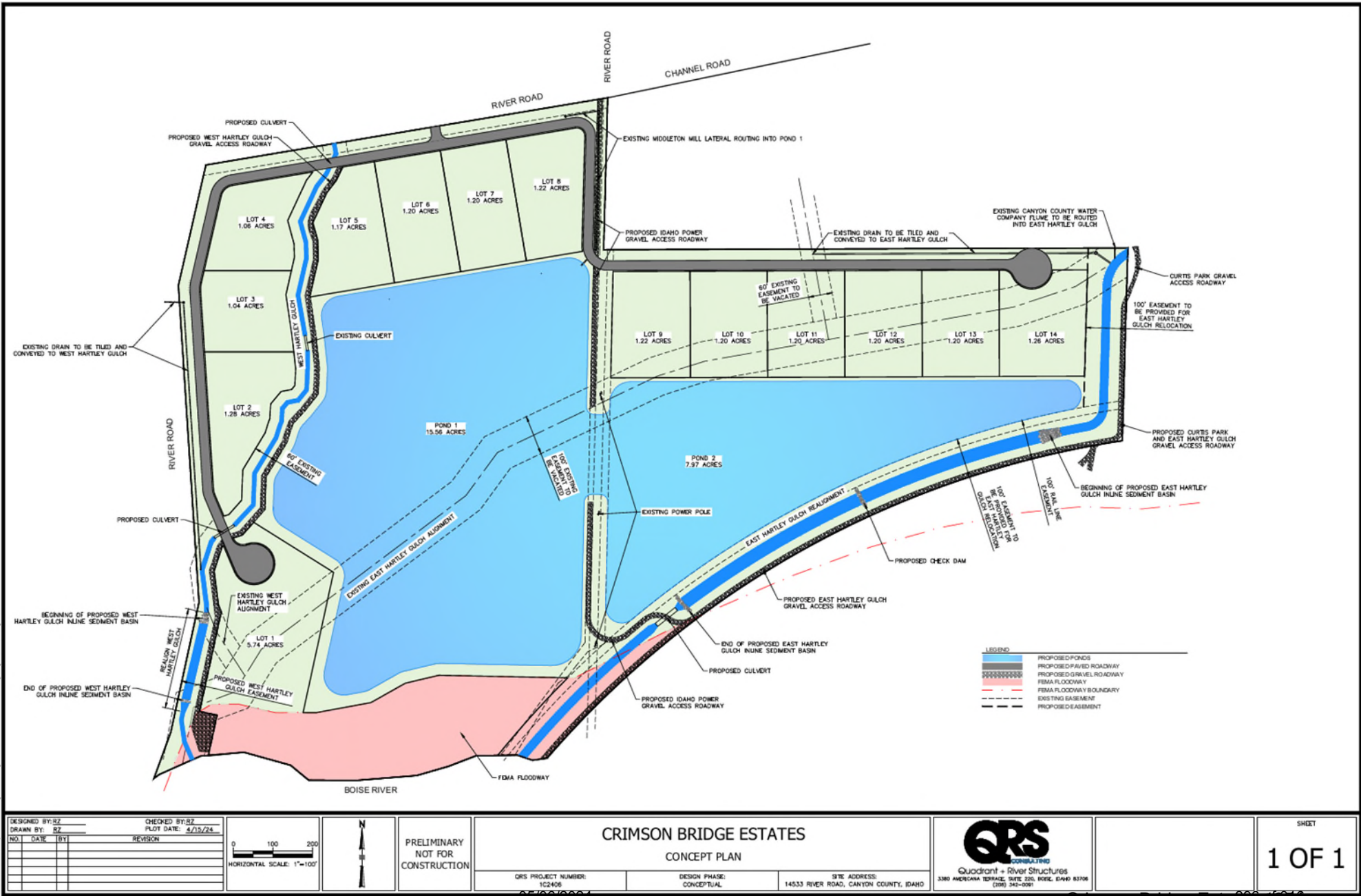


2006



2022

Future Development



Late Exhibits

1. Revised CUP Site plan
2. Subdivision Conceptual Plan
3. Mullins Acoustics – Noise Study
4. Rocky Mountain Environmental – Water Technical Memorandum
5. SITE Consultants, LLC – Geotechnical Analysis
6. City of Caldwell comments

Michelle Barron

From: Resource Development <RDTeam@premierllc.net>
Sent: Monday, April 29, 2024 5:34 PM
Subject: [External] CU2023-004 Ag Equity Supplemental Information
Attachments: Letter to Neighbors (CU2023-0004)_18327566_4.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Greetings,

Please see the attached letter for supplemental information relating to CU2023-004.

Thank You,
Premier Aggregates



April 29, 2024

Dear Neighbor:

As you know, we are in the process of applying for a Conditional Use Permit (CUP) with Canyon County for a 2.5 year mineral extraction use. At an April 18, 2024 public meeting, the Canyon County Planning and Zoning Commission voted to continue the hearing on the CUP to a date uncertain. Subsequently, we have been notified by Canyon County planning staff the continued hearing has been set for **June 20, 2024**. Canyon County planning staff further indicated the deadline for additional written comments is **May 2, 2024**.

You are receiving this letter via email based on either: (1) providing prior written comment via email to Canyon County on the CUP; or (2) providing your email address at one of the two prior neighborhood meetings. Since holding our second neighborhood meeting in February of 2024, we have engaged with multiple consultants and experts to prepare studies and analyze the proposed use to address comments and questions from the community. These studies took some time, but have all been provided to Canyon County in anticipation of the next hearing and can be reviewed and downloaded here:

<https://www.canyoncounty.id.gov/land-hearings/> - First click on the "Planning and Zoning Commission" file, then scroll down to CU2023-0004 listed on June 20, 2024.

These additional reports and studies include, but are not limited to: (i) a sound study from Mullins Acoustics; (ii) a technical memorandum from Rocky Mountain Environmental Associates, Inc. regarding area groundwater; (iii) a geotechnical report from Site Consulting LLC; (iv) a wetland delineation report from Nexus Environmental Consultants; and (v) a biological survey from Nexus Environmental Consultants. There is also a conceptual plan for the anticipated future residential development that will utilize the reclaimed ponds and some additional agency comments.

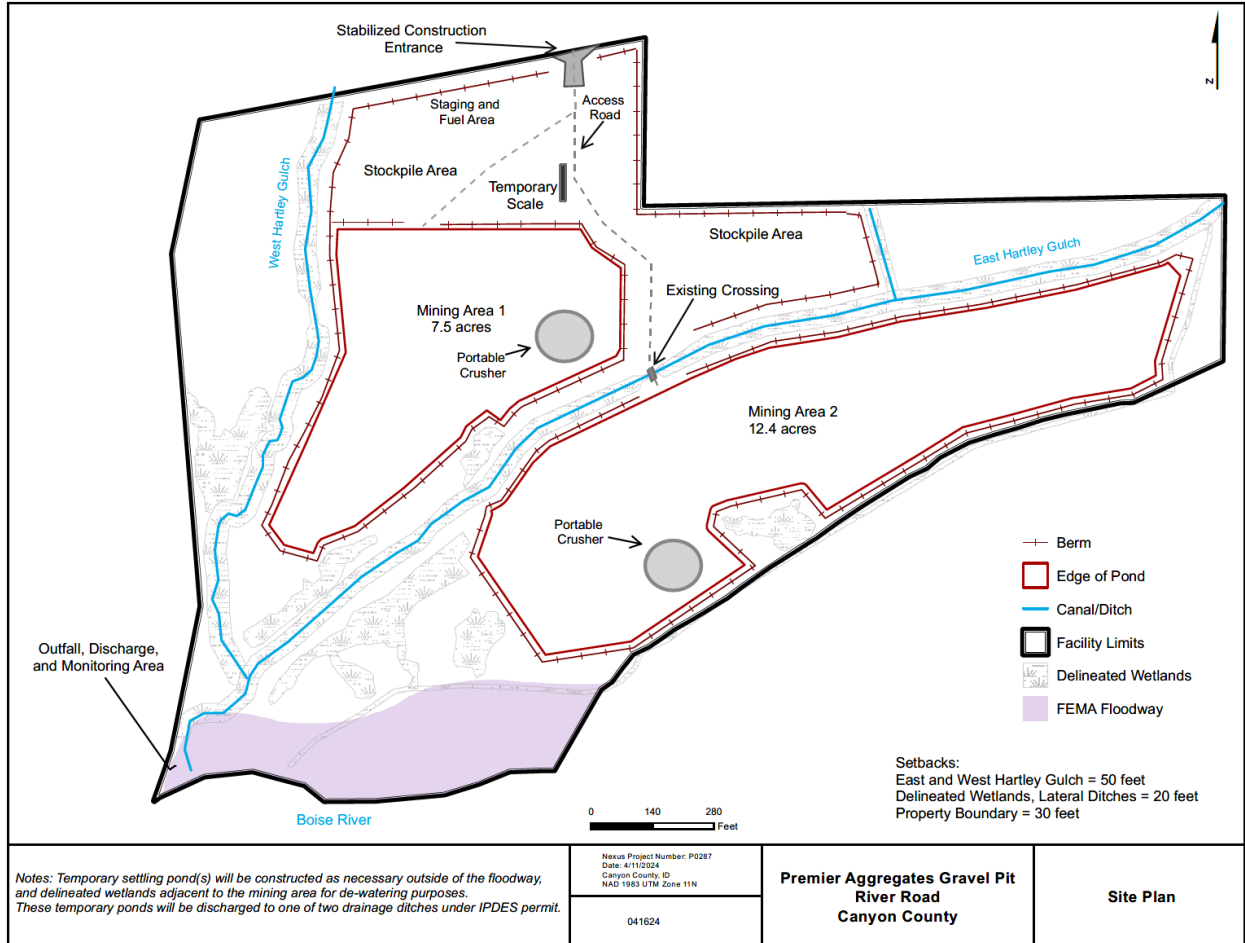
Also available is an updated site plan for the project, which was prepared to incorporate the recommendations and data collected by the abovementioned studies. For convenience, we are also attaching the current site plan. If you have any problems accessing these studies, please contact me directly at RDTeam@premierllc.net and we will get you a copy.

We want to apologize for the need to continue the April 18 hearing and assure you we have been working diligently to revise our plan in order to best address feedback from the community and our consultants. We appreciate any questions you may have and welcome an opportunity to visit further regarding this project. Please reach out with any additional comments or questions.

Sincerely,

Premier Aggregates

CC: Michelle Barron michelle.barron@canyoncounty.id.gov
Carl Anderson carl.anderson@canyoncounty.id.gov
David Stephens david.precisionx@gmail.com



Michelle Barron

From: Jeffrey W. Bower <jeffbower@givenspursley.com>
Sent: Wednesday, May 1, 2024 4:57 PM
To: Michelle Barron
Cc: Jon Brennan Ag Equity; Jim Herberd Ag Holding; Carl Anderson; 'Derek Kraft'; David Stephens; Michelle Tucker; Kristen McNeill
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]
Attachments: NE-CRIM_TOPO with Contours.pdf; 24.04.15 Concept Plan - Crimson.pdf

Thank you, Michelle.

Based on the below, we sent out a short email to the folks that received our April 29, 2024 letter regarding the extended comment deadline. We reiterated our commitment to working with interested parties to discuss the project and plans.

Attached are documents that we request you include in the file for our application. First is a topo map. Second, is the development concept plan for Phase 2 of the project.

We do not have any other materials that we intend to provide from the applicant at this time. We will continue to work to try and get comments from applicable agencies, namely ITD.

Please let us know if you have any questions on the materials provided or would like to discuss.

Thanks,
 Jeff

Jeff Bower
 GIVENS PURSLEY LLP
 601 W Bannock St, Boise, ID 83702
 208-388-1260
jeffbower@givenspursley.com

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Wednesday, May 1, 2024 10:35 AM
To: Jeffrey W. Bower <jeffbower@givenspursley.com>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

EXTERNAL

Jeff,

After speaking with you yesterday, I told you I would verify the June 10th deadline date for materials.

June 10, 2024 will be the deadline for public or agency comment and any additional materials from the applicant, including any PowerPoint or presentation materials. When our office provides notice for the upcoming hearing, we are going to add information for the public to look at the updated documentation on the website.

Let me know if you have questions.

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Jeffrey W. Bower <jeffbower@givenspursley.com>
Sent: Tuesday, April 30, 2024 2:34 PM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

Michelle: We are all struggling to keep up with the changing procedures and processes throughout this application. We were accused of failing to be transparent with the public at our last meeting. We prepared yesterday's letter to help address that issue. We literally copied your email below from April 19, which I have highlighted for your reference.

Your email below also contains inconsistencies. First it says the applicant has a May 2nd deadline and then it goes on to say "June 10, 2024 is also the materials deadline for applicant". Can you please clarify?

With respect to your question, I do not know if you have all additional information from all of the parties involved. From the applicant's perspective the bulk of the additional information is in. The final element we are working on is a topo map as requested by the Commission at the April hearing. We will have this in to you by the May 2nd deadline. As it relates to other parties involved, they may still be planning to file comments or other materials.

We will send out an update to our letter notifying the public they have until June 10th to comment. Before we do, can you please confirm that is correct?

Thank you,
Jeff

Jeff Bower
GIVENS PURSLEY LLP
601 W Bannock St, Boise, ID 83702
208-388-1260

jeffbower@givenspursley.com

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Tuesday, April 30, 2024 2:12 PM
To: Jeffrey W. Bower <jeffbower@givenspursley.com>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

EXTERNAL

Good Morning Jeff,

I received the letter that Premier sent out to the neighbors. There is a little bit of incorrect information on the letter. The May 2nd deadline was for the applicant to get any additional information to me so that I can get it all out on the website for the re-noticing period. The deadline for comments from the public will be June 10, 2024. Our hearing procedures were recently updated and the deadline for the public comment has been changed for this hearing. June 10, 2024 is also the materials deadline for applicant. That means, I will need your presentation on that date as well.

Do I have all of the additional information from all of the parties involved? They seem to still be trickling in. Again, that cut off date will be May 2nd for additional materials from the applicant. That will allow time to put all of the materials on the website and allow the public to make comment on the new evidence.

Let me know if you have any questions.

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Jeffrey W. Bower <jeffbower@givenspursley.com>
Sent: Wednesday, April 24, 2024 10:37 AM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

Hi Michelle: Thanks again for the update below. We want to be proactive in getting the additional information out to those that came to the continued hearing. Could you send us the sign in sheets so that we can also let interested parties know how to find the information and about the deadline for providing comments?

Thanks,
Jeff

Jeff Bower
GIVENS PURSLEY LLP
601 W Bannock St, Boise, ID 83702
208-388-1260
jeffbower@givenspursley.com

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Friday, April 19, 2024 5:23 PM
To: Jeffrey W. Bower <jeffbower@givenspursley.com>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC

EXTERNAL

Jeff and team,

I have posted the additional information that you have provided to me out on the website. We are going to schedule the next hearing for June 20, 2024. **The deadline for any additional comments will be May 2, 2024.** If you have anything else to turn in, it will need to be by that date. Do you have other items that are pending? I would need to know right away, so that we can back the hearing up some for noticing purposes.

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Jeffrey W. Bower <jeffbower@givenspursley.com>
Sent: Thursday, April 18, 2024 2:21 PM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>; Kristen McNeill

<kristenmcneill@givenspursley.com>

Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC

Thanks, Michelle. If the matter is continued will the comment period be re-opened? We would hope it would be both for staff and the commission, but also for the public.

Thank you,
Jeff

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>

Sent: Thursday, April 18, 2024 2:17 PM

To: Jeffrey W. Bower <jeffbower@givenspursley.com>

Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>; Kristen McNeill <kristenmcneill@givenspursley.com>

Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

EXTERNAL

Jeff,

I have been able to download all of the files. That being said, these were submitted after the deadline for comments, so you would need to speak to them at the public hearing and request that the hearing body enter them in as late exhibits. It is a lot of information to digest. I don't even have the time to look over them, so please make sure to mention them in your presentation tonight.

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Jeffrey W. Bower <jeffbower@givenspursley.com>

Sent: Thursday, April 18, 2024 9:44 AM

To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>

Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>; Kristen McNeill <kristenmcneill@givenspursley.com>

Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

Hi Michelle:

As mentioned below, please find attached a technical memorandum from Patrick Naylor, P.E., P.G. with Rocky Mountain Environmental concluding that the dewatering the ponds during excavation will not impact area wells that are served from a hydraulically disconnected aquifer. I am also attaching the SITE Consulting's geotech report referenced in Rocky Mountain Environmental's memo.

Due to the file sizes, can you please confirm receipt? Did the link I sent you yesterday work?

Thanks,
Jeff

Jeff Bower
GIVENS PURSLEY LLP
601 W Bannock St, Boise, ID 83702
208-388-1260
jeffbower@givenspursley.com

From: Jeffrey W. Bower
Sent: Wednesday, April 17, 2024 2:46 PM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

Hi Michelle:

We are aware the record is closed for tomorrow's meeting but wanted to provide you with some of the additional materials based on our expectation that this matter will have a second meeting/hearing to address staff and agency comments we received in the staff report last week. I am including a link (<https://file.ac/wmMQEUvyfSg/>) to the following:

1. **Revised comment letter from Caldwell.** We have worked with Caldwell on this and are in full agreement with the requested conditions in the City's letter.
2. **Revised project site plan.** The site plan has been revised to include additional details and mitigation to account for agency comments and to address the findings in the attached wetland delineation and sound study. The site plan has been revised to avoid all wetland areas identified in the delineation. We have also provided additional berming and specific crushing locations on the site plan to comply with the recommended mitigation in the sound study.
3. **Wetland Delineation Report.** Identifies onsite wetland areas. These will all be avoided based on the site plan.
4. **Noise study.** Concludes that with the recommended mitigation, noise levels generated by the proposal meet the EPA's noise standards.

We also are expecting a ground water study to be finalized today that will send over. The water study drafts we have reviewed indicate the dewatering of the ponds during excavation will not impact any of the surrounding wells.

Can you please confirm receipt of the 4 documents?

Thank you,
Jeff

Jeff Bower
GIVENS PURSLEY LLP

601 W Bannock St, Boise, ID 83702
208-388-1260
jeffbower@givenspursley.com

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Tuesday, April 9, 2024 3:17 PM
To: Jeffrey W. Bower <jeffbower@givenspursley.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

EXTERNAL

Hello All,

Just wanted to let you know that the Staff Report is out on the Canyon County page. My recommendation is to take testimony and table the hearing to a date certain so that the studies that you have had done, that were not ready by the deadline, can be looked at by the Commission and by the public with a new comment period being extended. I do recommend bringing the studies and additional information to the public hearing. I would also recommend reading it into the record as much as is feasible. Of course, I am not the decision makers, so it would be up to them if they wish to table the hearing or not.

The Staff Report can be found at <https://www.canyoncounty.id.gov/land-hearings/> Then, scroll down to P & Z and find the tab for Ag Equity case on April 18th.

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Jeffrey W. Bower <jeffbower@givenspursley.com>
Sent: Monday, April 8, 2024 1:34 PM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

Hi Michelle: That is correct. Thanks for checking. Feel free to give me a call any time if you have further questions or want to discuss.

Thanks,
Jeff

Jeff Bower
GIVENS PURSLEY LLP
601 W Bannock St, Boise, ID 83702
208-388-1260
jeffbower@givenspursley.com

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Monday, April 8, 2024 1:31 PM
To: Jeffrey W. Bower <jeffbower@givenspursley.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

EXTERNAL

Jeff,

In this supplemental narrative, it states that business operation hours are proposed from 7 am to 5 pm, does that mean hauling?

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Jeffrey W. Bower <jeffbower@givenspursley.com>
Sent: Thursday, March 28, 2024 4:58 PM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>; Michelle Tucker <michelle.tucker@nexus-env.com>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

Hi Michelle: Please see attached.

Thank you,
Jeff

Jeff Bower
GIVENS PURSLEY LLP
601 W Bannock St, Boise, ID 83702
208-388-1260
jeffbower@givenspursley.com

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Thursday, March 28, 2024 12:46 PM
To: Jeffrey W. Bower <jeffbower@givenspursley.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: Jon Brennan Ag Equity <AgEquityLLC@gmail.com>; Jim Herberd Ag Holding <herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; 'Derek Kraft' <dkraft@premierllc.net>; David Stephens <david.precisionx@gmail.com>
Subject: FW: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

EXTERNAL

Good Afternoon Everyone!

Just a reminder that today is the deadline day for additional information. I would really love to have the answers to the questions that I had posed. They are very important to help determine if the criteria can be met for a Conditional Use Permit. If someone could please respond to these today, I would appreciate it.

Thank you,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Michelle Barron
Sent: Friday, March 15, 2024 3:48 PM
To: 'Jeffrey W. Bower' <jeffbower@givenspursley.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: 'agequityllc@gmail.com' <agequityllc@gmail.com>; 'Herbertj25@yahoo.com' <Herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; Derek Kraft <dkraft@premierllc.net>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

Jeff,

Thanks for letting me know. If you team could please get me the answers to the questions that I had previously posed by me along with the new neighborhood meeting. I have the Neighborhood Meeting info and sign in sheet that was sent to me, but still need those answers to help make the findings for the criteria for a Conditional Use Permit. I will need this information no later than the 28th of March.

Thanks for working with me to change the date.

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Jeffrey W. Bower <jeffbower@givenspursley.com>
Sent: Friday, March 15, 2024 2:14 PM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: 'agequityllc@gmail.com' <agequityllc@gmail.com>; 'Herbertj25@yahoo.com' <Herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; Derek Kraft <dkraft@premierllc.net>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

Hi Michelle:

I just spoke with Carl in your office and he asked that we respond to confirm that April 18th works for the applicant, which it does.

Thank you,
Jeff

Jeff Bower
GIVENS PURSLEY LLP
601 W Bannock St, Boise, ID 83702
208-388-1260
jeffbower@givenspursley.com

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Monday, March 11, 2024 5:02 PM
To: Jeffrey W. Bower <jeffbower@givenspursley.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: 'agequityllc@gmail.com' <agequityllc@gmail.com>; 'Herbertj25@yahoo.com' <Herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; Derek Kraft <dkraft@premierllc.net>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

EXTERNAL

Jeff,

I am going to need to postpone the hearing in front of the Planning and Zoning Commission for Case CU2023-0004. I have been out of the office with a family emergency for the last 2 weeks. I was unable to perform a site visit and complete the Staff Report in time for posting. Please accept my apologies. I have rescheduled

the hearing for April 18, 2024. That is the earliest possible date that is available. We will re-notice to make sure everyone knows that it has been rescheduled.

I have still not received the answers to the bullet list of questions that are below. I need to have that information by April 3rd so that I can add it to the file. At this point, I do not have the evidence needed to meet the required criteria. I heard from Michelle Tucker of Nexus Environmental that she has been in contact with the 2 irrigation districts and the Drain District. Any information regarding approvals or agreements with those entities would be helpful as well.

Thank you in advance,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Jeffrey W. Bower <jeffbower@givenspursley.com>
Sent: Wednesday, February 21, 2024 2:48 PM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: 'agequityllc@gmail.com' <agequityllc@gmail.com>; 'Herbertj25@yahoo.com' <Herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; Derek Kraft <dkraft@premierllc.net>
Subject: RE: [External] CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

Hi Michelle:

The neighborhood meeting was completed.

Attached is the final notice and the sign in sheet.

We will provide the info requested below shortly.

Thanks,
Jeff

Jeff Bower
GIVENS PURSLEY LLP
601 W Bannock St, Boise, ID 83702
208-388-1260
jeffbower@givenspursley.com

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>
Sent: Wednesday, February 21, 2024 2:33 PM

To: Jeffrey W. Bower <jeffbower@givenspursley.com>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: 'agequityllc@gmail.com' <agequityllc@gmail.com>; 'Herbertj25@yahoo.com' <Herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; Derek Kraft <dkraft@premierllc.net>
Subject: RE: [External] RE: CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

EXTERNAL

Good afternoon,

Just checking on this to make sure that the new neighborhood meeting has been completed. I will need that documentation soon. Our deadline for comments on this application is March 2nd. I would like to have that information for the file. Also checking on answers to the bullet points below that I had sent on January 18, 2024.

Thanks,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605
Direct Line: 208-455-6033
DSD Office Phone: 208-454-7458
Email: Michelle.Barron@canyoncounty.id.gov
Website: www.canyoncounty.id.gov

From: Jeffrey W. Bower <jeffbower@givenspursley.com>
Sent: Thursday, January 25, 2024 12:37 PM
To: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>; Kristen McNeill <kristenmcneill@givenspursley.com>
Cc: 'agequityllc@gmail.com' <agequityllc@gmail.com>; 'Herbertj25@yahoo.com' <Herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>; Derek Kraft <dkraft@premierllc.net>
Subject: [External] RE: CU2023-0004 Ag Equity Holdings LLC [GP-DMS.016623.0003.FID1052498]

Hi Michelle:

We are planning to address your first bullet point below by holding a second neighborhood meeting. Because this a second meeting, the County's form notice is not perfectly on point. Could you please review and approve the attached notice we have prepared from the form, but with modifications recognizing the application has already been filed? We are hoping to send this out tomorrow and hold the second neighborhood meeting on Monday the 5th or Tuesday the 6th.

We will also need an updated mailing list.

Thank you,
Jeff

Jeff Bower
GIVENS PURSLEY LLP
601 W Bannock St, Boise, ID 83702
208-388-1260

From: Michelle Barron <Michelle.Barron@canyoncounty.id.gov>

Sent: Thursday, January 18, 2024 3:50 PM

To: Jeffrey W. Bower <jeffbower@givenspursley.com>; Kristen McNeill <kristenmcneill@givenspursley.com>

Cc: 'agequityllc@gmail.com' <agequityllc@gmail.com>; 'Herbertj25@yahoo.com' <Herbertj25@yahoo.com>; Carl Anderson <Carl.Anderson@canyoncounty.id.gov>

Subject: CU2023-0004 Ag Equity Holdings LLC

EXTERNAL

Good Afternoon,

As I was working through my Staff Report and FCOs, I have noticed that there is some missing information that I would need to make findings for this case.

- There is an issue with the notice for the required neighborhood meeting. In the meeting details, under property description it states "The applicant is proposing to dig 2 ponds for future development, approximately 12 to 15 lots." The project summary states: "2 proposed ponds to fill areas for future lots (approximately 12-15), excess material will be hauled/removed from the site." Those descriptions do not translate to the actual purpose of the application, which is a long-term mineral extraction. A new neighborhood meeting will need to be held with the actual purpose for the conditional use permit application.
- The site plan/letter of intent will need to be updated to show how long/how often crushing will occur and the location of the crusher. Will the crusher be watered to mitigate dust?
- Will there be blasting?
- Is the home on R34667011 going to be removed? Is the building on R34668 going to be removed?
- What kind of noise mitigation would be put in place for the neighboring property for the scale? It appears to be placed very near a residence.
- Will the berms be landscaped so as not to create a zoning violation for weeds/debris?
- Explanation of the discharge area and settling pond that is very near the floodway. (see letter from Development Services Floodplain Manager Stephanie Hailey)
- Do you have a crossing agreement from the Middleton Mill Ditch Co?

We need to postpone the scheduled hearing for February 1, 2024. At the very least, the neighborhood meeting needs to be corrected. The other items will make the application more complete and will provide evidence to support findings.

Thank you,

Michelle Barron
Principal Planner
Canyon County Development Services Department
111 N. 11th Ave., #310, Caldwell, ID 83605

Direct Line: 208-455-6033

DSD Office Phone: 208-454-7458

Email: Michelle.Barron@canyoncounty.id.gov

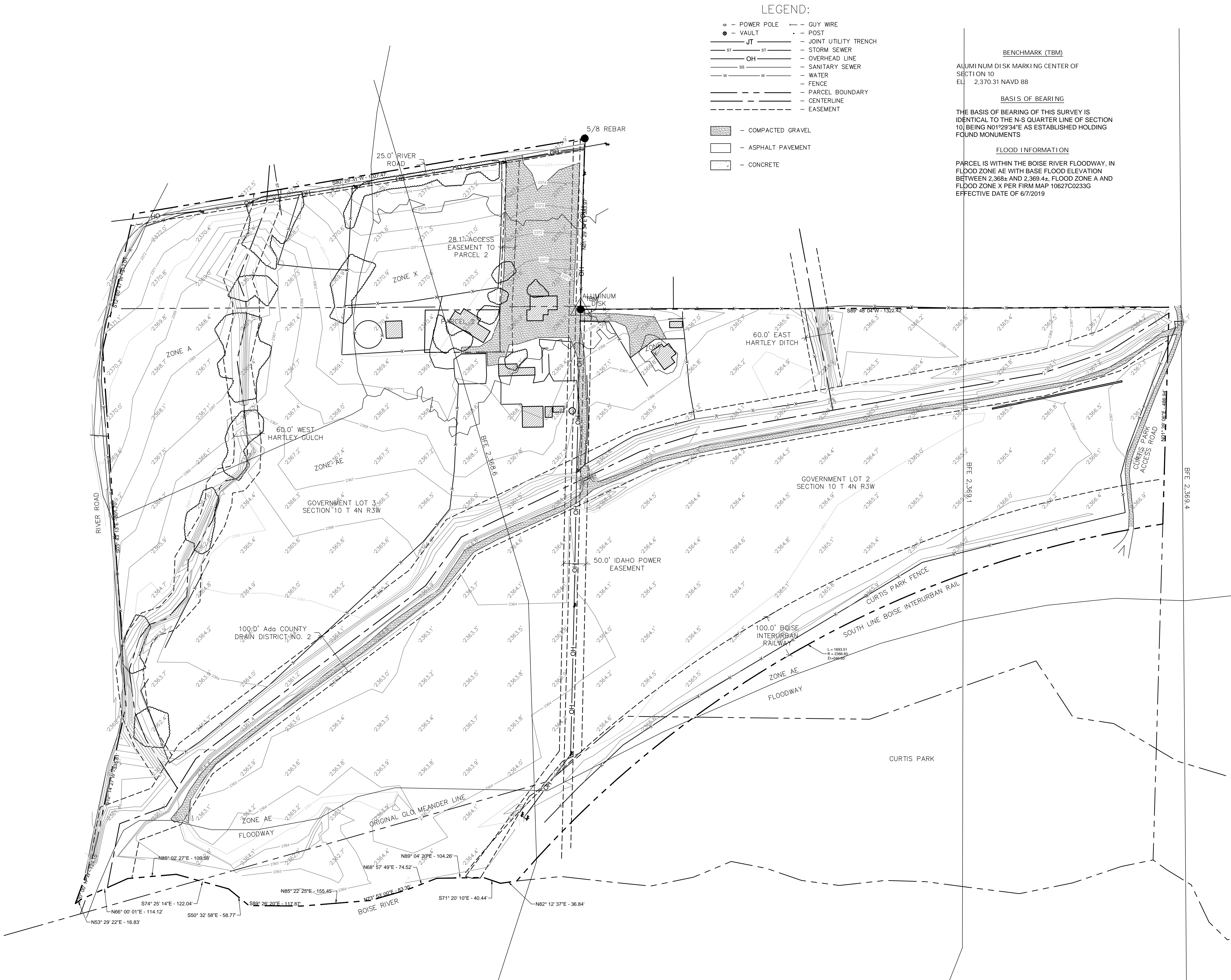
Website: www.canyoncounty.id.gov

Office Hours:

Monday, Tuesday, Thursday and Friday 8am – 5pm

Wednesday 1pm – 5pm

****We will not be closed during lunch hour ****



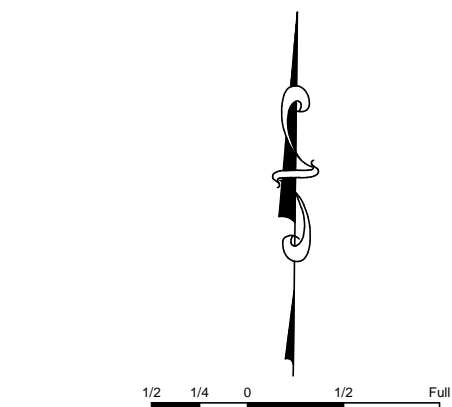
- LEGEND:
- POWER POLE
 - VAULT
 - JOINT UTILITY TRENCH
 - STORM SEWER
 - OVERHEAD LINE
 - SANITARY SEWER
 - WATER
 - FENCE
 - PARCEL BOUNDARY
 - CENTERLINE
 - EASEMENT

- COMPACTED GRAVEL
- ASPHALT PAVEMENT
- CONCRETE

BENCHMARK (TBM)
ALUMINUM DISK MARKING CENTER OF SECTION 10
EL. 2,370.31 NAVD 88

BASIS OF BEARING
THE BASIS OF BEARING OF THIS SURVEY IS IDENTICAL TO THE N-S QUARTER LINE OF SECTION 10, BEING N01°29'34"E AS ESTABLISHED HOLDING FOUND MONUMENTS

FLOOD INFORMATION
PARCEL IS WITHIN THE BOISE RIVER FLOODWAY, IN FLOOD ZONE AE WITH BASE FLOOD ELEVATION BETWEEN 2,368± AND 2,369.4±. FLOOD ZONE A AND FLOOD ZONE X PER FIRM MAP 10627C0233G EFFECTIVE DATE OF 6/7/2019



Graphic Scale:
Attention is Drawn to the Fact That Drawing Scales May be Altered During Reproduction Processes. Scales Shown Hereon are Based on a Full Scale Sheet Size of 24" x 36".
Scale: 1" = 100'

CRIMSON BRIDGE ESTATES
14533 RIVER ROAD
MIDDLETON, IDAHO

DRAWN BY: AMC
CHECKED BY: AMC

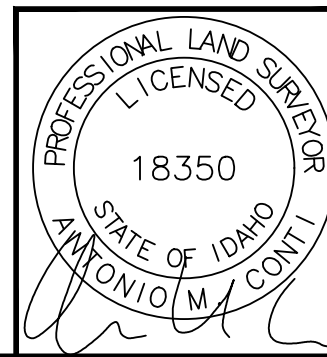
DATE: 08/12/2022

REVISIONS	
#	DATE
Δ	--/--/----
#	--/--/----
#	--/--/----

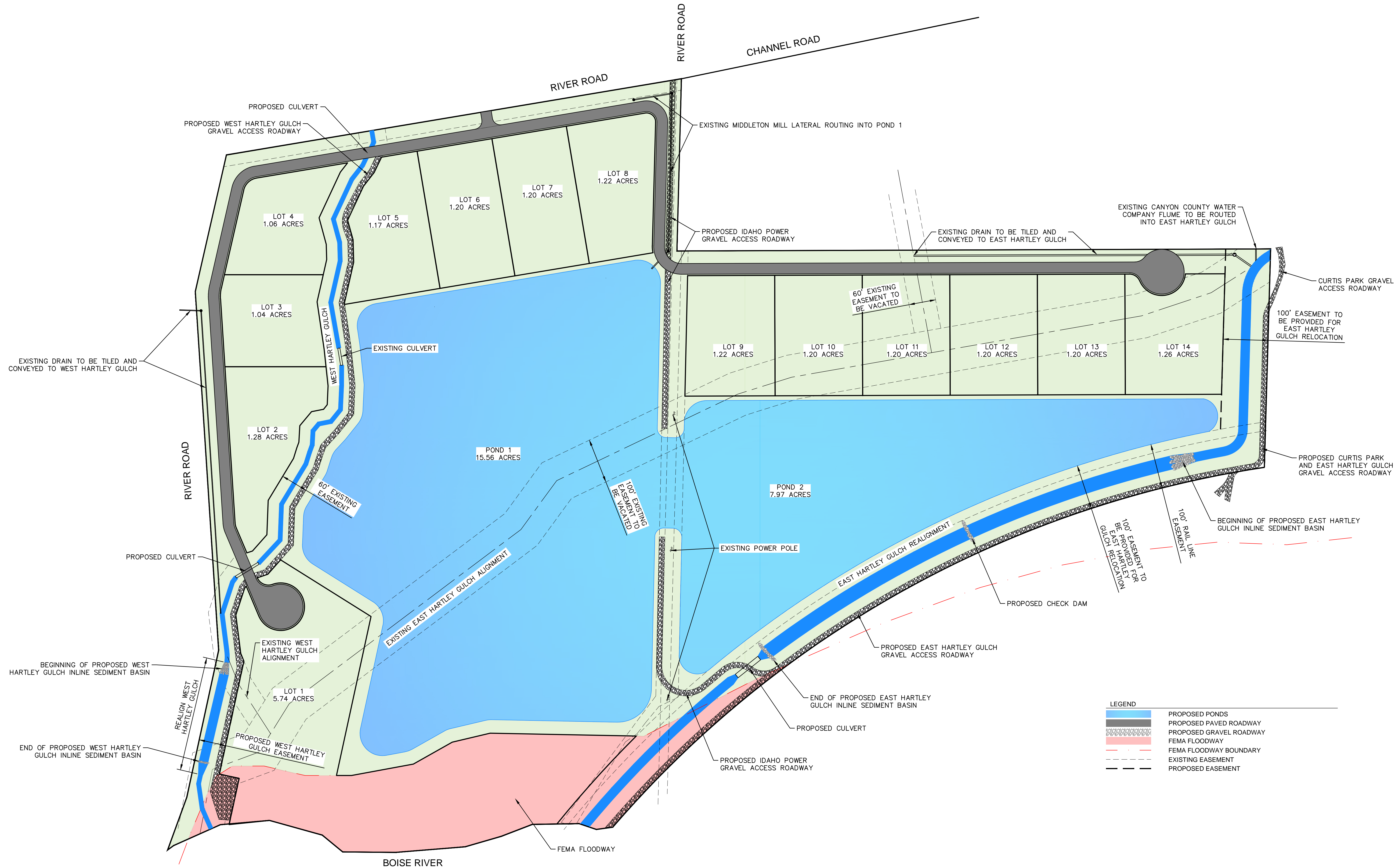
Project No.
R22165

PRELIMINARY
SURVEY

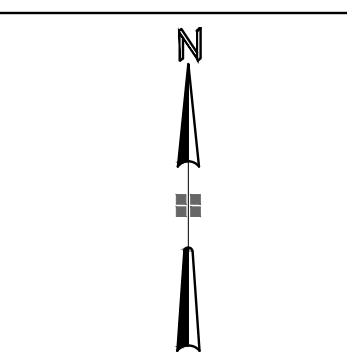
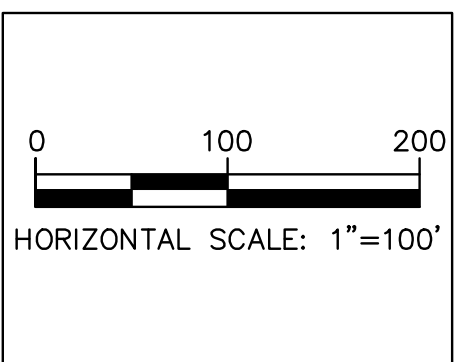
C1.0



USER: RICARDO ZAVALA, LOCATION: C:\1 PROJECTS\102406 CRIMSON BRIDGE ESTATES\DWG\CONCEPT PLAN\CRIMSON BRIDGE CONCEPT - OPTION 1.DWG



DESIGNED BY: RZ			CHECKED BY: RZ		
DRAWN BY: RZ			PLOT DATE: 4/15/24		
NO.	DATE	BY	REVISION		



PRELIMINARY
NOT FOR
CONSTRUCTION

CRIMSON BRIDGE ESTATES CONCEPT PLAN

QRS PROJECT NUMBER:
1C2406

DESIGN PHASE:
CONCEPTUAL

SITE ADDRESS:
14533 RIVER ROAD, CANYON COUNTY, IDAHO



Quadrant + River Structures
3380 AMERICANA TERRACE, SUITE 220, BOISE, IDAHO 83706
(208) 342-0091

SHEET

1 OF 1