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Attorneys for Elaine R. Sorensen

BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATION FOR
TRANSFER NO. 84270 IN THE NAME OF
ELAINE R. SORENSEN

**APPLICANT'S WITNESS
AND EXHIBIT LIST**

Applicant Elaine R. Sorensen ("Sorensen"), by and through her attorneys of record, Holden, Kidwell, Hahn & Crapo, P.L.L.C., pursuant to Hearing Officer Cefalo's *Notice of Hearing and Scheduling Order* dated November 2, 2020, hereby submits *Applicant's Witness and Exhibit List* summarizing the witnesses that may testify at the hearing and the exhibits that may be offered as evidence by the Applicant at the hearing scheduled for the above-entitled matter on February 17-18, 2021.

WITNESSES

The following witnesses may be called by Sorensen to testify at the hearing:

1. Adam Sorensen
2. Elaine Sorensen
3. Thomas R. Wood, Ph.D. (expert witness)

4. Any of the protestants
5. Any of the protestants' witnesses

EXHIBITS

The following exhibits may be introduced at the hearing:

1. Order Granting Motion for Summary Judgment, In Part in the Matter of Application for Transfer No. 83745 in the Name of Sunset Farm & Ranch, LLC
2. Illustrative GIS map (prepared by Sorensen's counsel, Luke Marchant)
3. Illustrative GIS map (prepared by Sorensen's counsel, Luke Marchant)
4. Illustrative GIS map (prepared by Sorensen's counsel, Luke Marchant)
5. Illustrative GIS map (prepared by Sorensen's counsel, Luke Marchant)
6. Expert report prepared by Thomas R. Wood, Ph.D., Clearwater Geosciences, LLP

Sorensen also hereby provides notice that its counsel may use ArcMap, a GIS mapping program, and Google Earth for illustrative purposes to aid Sorensen's description of various features that are relevant to the issues to be addressed at the hearing. The illustrative maps described above were prepared using ArcMap.

Sorensen reserves the right to submit additional exhibits, such as those necessary for rebuttal of any witnesses or exhibits, and to use any official documents that are included within IDWR's files for the water rights identified at the hearing on this matter.

DATED this 3rd day of February 2021.



Luke H. Marchant, Esq.
HOLDEN, KIDWELL, HAHN & CRAPO, P.L.L.C.

CERTIFICATE OF SERVICE

I hereby certify that on this 3rd day of February, 2021, I served a true and correct copy of the following described pleading or document on the attorneys and/or individuals listed below by the method(s) indicated.

DOCUMENT SERVED: **APPLICANT'S WITNESS AND EXHIBIT LIST**

ORIGINAL TO: James Cefalo
 Hearing Officer
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Luke H. Marchant, Esq.
HOLDEN, KIDWELL, HAHN & CRAPO, P.L.L.C.

EXHIBIT 1

**BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE STATE OF IDAHO**

IN THE MATTER OF APPLICATION FOR)	ORDER GRANTING
TRANSFER NO. 83745 IN THE NAME OF)	MOTION FOR SUMMARY
<u>SUNSET FARM & RANCH LLC</u>)	JUDGMENT, IN PART

PROCEDURAL HISTORY

On November 6, 2019, Sunset Farm & Ranch LLC ("Sunset") filed Application for Transfer 83745 with the Idaho Department of Water Resources ("Department"), proposing to make changes to eleven water rights. The application was protested by Young Harvey Walker ("Walker"), Larry Quist ("Quist") and Karon Huggins ("Huggins"). Sunset filed an amended Application for Transfer 83745 ("Application 83745") on July 15, 2020. In response to the amended application, Huggins filed a revised protest on August 17, 2020.

On November 25, 2020, Sunset filed a *Motion for Summary Judgment and Memorandum in Support* ("Sunset Motion") pursuant to Rule 260 of the Department's Rules of Procedure (IDAPA 37.01.01). Sunset asks the Hearing Officer to adopt an approval condition subordinating Sunset's Big Lost River water rights to rights held by Quist and Huggins and to dismiss the remainder of the protests filed by Quist and Huggins. *Sunset Motion* at 17-18.

On December 9, 2020, Huggins filed an *Objection to Motion for Summary Judgment and Memorandum in Support* ("Huggins Response"). Also on December 9, 2020 Quist filed *Larry Quist's Opposition to Sunset Farm & Ranch LLC's Motion for Summary Judgment* ("Quist Response").

STANDARD OF REVIEW

The Department's Rules of Procedure (IDAPA 37.01.01) do not explicitly authorize the filing of motions for summary judgment. The rules do, however, authorize the filing of pre-hearing motions, which would naturally include motions for summary judgment. *See* IDAPA 37.01.01.260 and 37.01.01.565. Although the Idaho Rules of Civil Procedure generally do not apply to contested cases before the Department (*see* IDAPA 37.01.01.052), the Department relies on standards set forth in Rule 56 of the Idaho Rules of Civil Procedure and the associated case law as a guide for addressing motions for summary judgment. A motion for summary judgment may be granted if a hearing officer determines there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. *See* I.R.C.P. 56.

SUMMARY OF WATER RIGHTS

1. The following water rights are included in Application 83745:

Right No.	Priority	Source	Rate (cfs)	Volume (af)	Acre Limit	Total Acres
34-187A	5/10/1897	Big Lost River	1.74		84	84
34-195D	6/1/1888	Big Lost River	0.33		16.5	84
34-196C	9/1/1896	Big Lost River	0.13		6.5	84
34-2480B	9/11/1966	Ground Water	2.00	252		84
34-2491G	5/8/1944	Big Lost River	1.16			84
34-4002	7/8/1954	Waste Water		5.0		286
34-2277	10/3/1946	Ground Water	2.00		110	286
34-14770	6/1/1898	Big Lost River	1.55		77.6	358
34-14771	5/8/1944	Big Lost River	3.83		174.6	358
34-14772	8/18/1974	Ground Water	6.86			358
34-14773	10/2/1885	Big Lost River	1.49		74.7	358

2. Water rights 34-4002, 34-2277, 34-14770, 34-14771, 34-14772 and 34-14773, in combination, are limited to the irrigation of 358 acres.

3. Water rights 34-187A, 34-195D, 34-196C, 34-2480B and 34-2491G, in combination, are limited to the irrigation of 84 acres.

4. Application 83745 proposes to combine water rights 34-187A, 34-195D, 34-196C, 34-2480B, 34-2491G, 34-4002, 34-2277, 34-14770, 34-14771, 34-14772 and 34-14773 to irrigate 442 acres within a 612-acre permissible place of use. The proposed permissible place of use is located on Sunset property.

5. Water rights 34-187A, 34-195D, 34-196C, 34-2491G, 34-14770, 34-14771, and 34-14773 currently authorize one point of diversion: the Arco Canal ("Arco Diversion") located on the Big Lost River in the NWNWNW of Section 26, T04N, R26E. Application 83745 proposes to add a second point of diversion to the Big Lost River water rights: a pump station ("Sunset River Pump") in the NWNESW of Section 17, T03N, R27E.

6. The Sunset River Pump is an existing pump station on the Big Lost River and is located approximately seven miles downstream of the Arco Diversion.

7. The following water rights include authorized points of diversion from the Big Lost River between the Arco Diversion and the Sunset River Pump: 34-244A, 34-244C, 34-418B, 34-518, 34-607B, 34-13725, 34-14315 and 34-14317.

8. The following water rights include an authorized point of diversion from the Big Lost River at the Sunset River Pump: 34-7149 and 34-7225.

9. The following water rights include authorized points of diversion from the Big Lost River downstream of the Sunset River Pump: 34-7061A, 34-7061B, 34-12420, 34-13725, 34-13727 and 34-13729.

10. Quist is the current owner of record for water rights 34-7149, 34-7181, 34-10680, 34-12421 and 34-13414. The authorized irrigation place of use for these water rights includes property now owned by Sunset. The 612-acre permissible place of use proposed by Sunset overlaps the existing place of use for water rights 34-7149, 34-7181, 34-10680, 34-12421 and 34-13414.

ANALYSIS

Sunset asks the hearing officer to adopt an approval condition subordinating Sunset's Big Lost River rights to rights with authorized points of diversion between the Arco Diversion and the Sunset River Pump. Sunset argues that, if the subordination condition is adopted, Sunset will prevail on all of the issues of protest identified by Huggins and Quist. The various issues of protest raised by Huggins and Quist will be addressed separately in this order. For each issue of protest, the hearing officer must determine if there are genuine issues of material fact, if there are facts that should be construed in favor of Huggins or Quist, and whether Sunset is entitled to judgment as a matter of law.

Huggins Protest Issue 1 - Injury

The original protest filed by Huggins included the following statement of protest:

During a river split, the lower end receives rising water that can be used to irrigate. These senior water right transfers, would result in water not being available to the existing [junior] priority date water right holders. The transfer of these water rights priority dates need to be subordinate to the existing water rights in the lower end that are available during a river split where the lower end can currently irrigate during rising water.

Huggins protest is difficult to understand, but expresses a concern that the proposed change will injure junior water rights at the lower end of the Big Lost River (downstream of the Arco Diversion). Sunset's Big Lost River Rights (34-187A, 34-195D, 34-196C, 34-2491G, 34-14770, 34-14771 and 34-14773) currently authorize only one point of diversion from the Big Lost River: the Arco Diversion. Application 83745 proposes to divert the rights from a second point of diversion (the Sunset River Pump) located approximately seven miles downstream of the Arco Diversion. Application 83745; *Sunset Motion* at 4-6.

Sunset's Big Lost River rights are senior to many of the Big Lost River water rights downstream of the Arco Diversion. Therefore, if Sunset were to move its point of diversion to a downstream location, there is a potential that the change could injure junior water rights. If the transfer is approved, Sunset has agreed to subordinate its diversion from the Sunset River Pump to "all water rights with authorized points of diversion between the Arco Diversion and the [Sunset River Pump]." *Sunset Motion* at 5.

The subordination language proposed by Sunset is not sufficient to protect all downstream Big Lost River rights from injury. There are Big Lost River water rights with authorized points of diversion downstream of the Sunset River Pump. These water rights have historically had access to water passing the Arco Diversion or gains to the river downstream of the Arco Diversion. One way to fully protect downstream rights would be for Sunset to subordinate its diversion at the Sunset River Pump to all water rights downstream of the Arco Diversion, even those water rights with points of diversion downstream of the Sunset River Pump.¹ The *Sunset Motion* doesn't refer to the water rights with authorized points of diversion on the Big Lost River downstream of the Sunset River Pump. It is not clear from the pleadings or from the *Sunset Motion* whether Sunset is willing to subordinate its diversion at the pump station to all Big Lost River water rights downstream of the Arco Diversion. In the absence of a subordination to all water rights with authorized points of diversion on the Big Lost River downstream of the Arco Diversion, there continue to be genuine issues of material fact related to injury to Big Lost River water rights. Therefore, summary judgment on this question is not appropriate.

Huggins Protest Issue 2 – Enlargement / Constitutional Claims / Takings

The revised protest filed by Huggins quotes Article XV, Section 3 of the Idaho Constitution, which states:

The right to divert and appropriate the unappropriated waters of any natural stream to beneficial uses, shall never be denied, except that the state may regulate and limit the use thereof for power purposes. Priority of appropriation shall give the better right as between those using the water; but when the waters of any natural stream are not sufficient for the service of all those desiring the use of the same, those using the water for domestic purposes shall (subject to such limitations as may be prescribed by law) have the preference over those claiming for any other purpose; and those using the water for agricultural purposes shall have preference over those using the same for manufacturing purposes. And in any organized mining district those using the water for mining purposes or milling purposes connected with mining, shall have preference over those using the same for manufacturing or agricultural purposes. But the usage by such subsequent appropriators shall be subject to such provisions of law regulating the taking of private property for public and private use, as referred to in section 14 of article I of this Constitution.

Huggins' revised protest summarizes the "priority for water rights" as "1) Domestic; 2) Mining, 3) Agriculture and 4) Manufacturing." Huggins Revised Protest at 1. Huggins then raises the following arguments related to Article XV, Section 3:

We cannot tell from a map where the place of use is for these water rights because the IDWR maps associated with this application on the IDWR site have not been

¹ A possible subordination condition could state: "The diversion of water under this right from the point of diversion located in the NWNESW, Sec. 17, T03N, R27E, shall be junior and subordinate to all water rights with existing, authorized points of diversion from the Big Lost River downstream of the Arco Diversion (located in the NWNWNW, Sec. 26, T04N, R26E).

downloading for the past couple of days, but his application may be resulting in an expansion of cropland on a water basin (Basin 34) that is already over appropriated (thus no water in the river or natural waterways to allow the number 1 State of Idaho priority, domestic wells, recharge water for their domestic home wells/water rights).

Emptying out the natural water ways and river at the lower end of the river is a "taking" from all of us from just above Arco on down (domestic wells) to the benefit of very specific individuals for crops (priority 3) at the expense of our domestic wells (priority 1) and property deeds. It is obvious that many individuals consider any water in natural water ways downstream from the West side and East side of the (manmade) river as an opportunity to use that water for their own crops by removing it from those waterways and transporting it through lined canals and piping systems. Additionally, emptying a river or natural stream is "a taking" of private property rights for those individuals who bought "river front property" on a flowing river or natural waterway before the State Adjudication process was completed who now have river or stream property with no water in those natural waterways, and those people need to be compensated for their losses that have occurred through these allowed past practices.

Huggins first argues that the proposed changes will result in an expansion of irrigated acres in Basin 34. Idaho Code § 42-222 requires the Department to evaluate whether a proposed change will result in an enlargement of the original rights. In conjunction with evaluating injury and enlargement, the Department must determine whether any portion of the water rights proposed to be changed have been lost or forfeited through non-use. The Sunset Motion did not include any information related to the historical use under the water rights included in Application 83745. Thus, there are genuine issues of material fact related to the historical use under Sunset's water rights. Without the development of the evidentiary record, it is unclear how the proposed irrigation compares to the historical irrigation occurring under Sunset's rights since the time partial decrees were issued for the Sunset rights in the Snake River Basin Adjudication ("SRBA"). Therefore, summary judgment is not appropriate for the enlargement concern raised by Huggins.

The question of enlargement is only one component of the Huggins revised protest. Huggins also suggests that the preference structure set forth in Article XV, Section 3 of the Idaho Constitution creates a type of super priority for certain water uses, which would make domestic uses superior to all other beneficial uses, regardless of priority dates. The Idaho Supreme Court has rejected this idea and has explained that the preference structure set forth in Article XV, Section 3 only applies to proposals to condemn water rights. See *Montpelier Milling Co. v. City of Montpelier*, 19 Idaho 212, 113 P. 741 (Idaho 1911). There is no evidence that Huggins proposes to condemn Sunset's irrigation water rights. Nor is there evidence that Sunset is seeking to condemn Huggins' irrigation or domestic water rights. Therefore, the beneficial use preferences set forth in Article XV, Section 3 of the Idaho Constitution are not relevant to this contested case.

Other parts of the Huggins revised protest are difficult to decipher. There are multiple allegations of takings, but it is unclear who has initiated the takings or what property has been taken. Huggins seems to allege that the SRBA constituted a taking of property rights. She also suggests

that any diversion of water from a natural watercourse constitutes a taking of the property rights for riverfront property owners. Ultimately, these questions of takings are beyond the scope of this contested case. Huggins also seems to argue that the processing of water rights transfers under Idaho Code § 42-222 constitutes a violation of the Idaho Constitution and the U.S. Constitution.

The hearing officer does not have the authority to grant summary judgment for any of these constitutional or takings questions. It is clear from the *Sunset Motion*, however, that Sunset is not asserting that it should prevail on these constitutional or takings challenges. Rather, Sunset is simply seeking a clear statement of the scope of this contested case. The hearing officer should adopt conclusions of law identifying any arguments raised by Huggins that are beyond the scope of this contested case. Doing so will help the parties focus their time and resources on issues that can lawfully be addressed by the hearing officer in this administrative proceeding.

Huggins Protest Issue 3 - Rights Delivered Through Arco Canal

In her revised protest, Huggins raises a concern about Sunset diverting its Big Lost River rights through the Arco Canal:

The revised application seems to allow the applicant to either take the rights from the river or to deliver them through the Arco Canal. By allowing these rights through the Arco Canal, it seems the applicants are using the Arco Canal delivery system to circumvent our original protest to their original application by taking water through the Arco Canal when the lower end of the river is dry (which seems to be the case throughout each summer/fall and even until spring melt now.) Additionally, by pulling those rights from the river at an upstream location from the natural waterways, it furtherer exacerbates the problem of domestic wells going dry downstream from the proposed point of diversion from the river.

Huggins argues that Sunset diverting its Big Lost River water rights through the Arco Canal will cause injury to local domestic wells. Huggins' protest proposes that Sunset should be required to divert its water rights only at the Sunset River Pump. Huggins argues that the Sunset's Big Lost River rights should no longer be diverted through the Arco Canal. Huggins Revised Protest at 2 ("Resolution . . . Disallow these transfers to be delivered through the Arco Canal."). This argument is a direct contradiction to Huggins' original argument, that the proposed change (adding the Sunset River Pump to Sunset's Big Lost River rights) should be denied because the change would injure downstream junior water rights.

Sunset's Big Lost River Rights (34-187A, 34-195D, 34-196C, 34-2491G, 34-14770, 34-14771 and 34-14773) currently authorize one point of diversion from the Big Lost River: the Arco Diversion. Therefore, if Application 83745 were denied, the water rights would continue to be diverted from the Big Lost River at the Arco Diversion. Application 83745 proposes to divert the water rights from the Sunset River Pump during times of the irrigation season when water is available at the pump.

Pursuant to Idaho Code § 42-222, the Department must evaluate whether the proposed change will cause injury. Diverting Sunset's Big Lost River water rights at the Arco Diversion is

not a change. Such use is already authorized by Sunset's water rights. The "change" proposed in Application 83745, among other things, is to divert Sunset's Big Lost River water rights at the Sunset River Pump during certain times of the year. According to Huggins, diversion from the pump station is preferred because of the positive impacts to local domestic wells. By Huggins own admission, Sunset choosing to divert its Big Lost River rights at the Sunset River Pump will benefit local domestic wells. Therefore, Sunset is entitled to judgment as a matter of law on this issue. The hearing officer concludes that adding the Sunset River Pump as an authorized point of diversion to water rights 34-187A, 34-195D, 34-196C, 34-2491G, 34-14770, 34-14771, and 34-14773 will not injure local domestic wells.

Quist Protest Issue 1 - Injury

The protest filed by Quist states a concern that the changes proposed in Application 83745 will injure his water rights. Quist is the owner of record for water rights with authorized points of diversion from the Big Lost River located downstream of the Arco Diversion. As noted above, there are genuine issues of material fact related to the impact of the proposed changes on water rights with points of diversion on the Big Lost River downstream of the Arco Diversion. Quist owns other water rights in Basin 34, including ground water rights that are diverted from one of the proposed ground water points of diversion described in Application 83745. The *Sunset Motion* does not address injury concerns related to any of the other water rights held by Quist. There are genuine issues of material fact related to injury to Quist's water rights. Therefore, summary judgment on the question of injury is not appropriate.

Quist Protest Issue 2 - Diminished Water Right Value

During the pre-hearing conference, Quist raised a concern that the changes proposed in Application 83745 will diminish the monetary value of his water rights. Sunset argues that the question of diminishment of water right value is outside of the scope of this contested case. Therefore, the question presented to the hearing officer through the *Sunset Motion* is whether diminishment of monetary value of water rights falls within any of the review criteria set forth in Idaho Code § 42-222.

Idaho Code § 42-222(1) sets forth the criteria the Department uses to evaluate transfer applications and states, in pertinent part:

The director of the department of water resources shall examine all the evidence and available information and shall approve the change in whole, or in part, or upon conditions, provided no other water rights are injured thereby, the change does not constitute an enlargement in use of the original right, the change is consistent with the conservation of water resources within the state of Idaho and is in the local public interest as defined in section 42-202B, Idaho Code, the change will not adversely affect the local economy of the watershed or local area within which the source of water for the proposed use originates, in the case where the place of use is outside of the watershed or local area where the source of water originates, and the new use is a beneficial use, which in the case of a municipal provider shall be

satisfied if the water right is necessary to serve reasonably anticipated future needs as provided in this chapter.

To better understand the scope of the injury review criterion, it is helpful to refer to the definition of injury used by the Department when evaluating applications for new water rights. Rule 45.01.a of the Department's Water Appropriation Rules (IDAPA 37.03.08) states in pertinent part:

A proposed use will be determined to reduce the quantity of water under an existing water right (i.e., injure another water right) if:

- i. The amount of water available under an existing water right will be reduced below the amount recorded by permit, license, decree or valid claim or the historical amount beneficially used by the water right holder under such recorded rights, whichever is less.
- ii. The holder of an existing water right will be forced to an unreasonable effort or expense to divert his existing water right. . . . ; or
- iii. The quality of the water available to the holder of an existing water right is made unusable for the purposes of the existing user's right, and the water cannot be restored to usable quality without unreasonable effort or expense.

The value of a water right is closely tied to the beneficial use authorized by the right, the quantity and quality of water available to fill the right, and the infrastructure needed to divert water. As noted in Rule 45.01, a water right is injured if a proposed use reduces the water supply for the existing right, makes it unreasonably expensive to divert water under the right, or reduces the quality of the available water supply. All of these factors could diminish the value of the affected, existing water rights. Diminishment of water right value, by itself, does not constitute injury to the water right. Rather, the diminishment of water right value is a likely consequence of the injury to the water right.

As noted above, summary judgement is not appropriate for the question of injury to Quist's water rights because there are genuine issues of material fact related to injury to Quist's water rights. Although diminishment of water right value, in isolation, does not constitute injury under Idaho Code § 42-222, because there continue to be issues of fact related to injury of Quist's water rights, evidence related to the monetary value of Quist's right may still be relevant. Without further development of the evidentiary record, it is unclear whether evidence of the value of Quist's rights is admissible. Therefore, the hearing officer is not willing to exclude evidence related to the monetary value of Quist's water rights at this time.

CONCLUSIONS OF LAW

Based on the elements of the relevant water rights, the issues of protest raised by Huggins and Quist in their respective pleadings, and the arguments set forth in the *Sunset Motion*, *Huggins Response* and *Quist Response*, the hearing officer adopts the following conclusions of law:

1. This contested case is not an eminent domain proceeding or an action to condemn water rights. Therefore, the preference structure set forth in Article XV, Section 3 of the Idaho Constitution does not apply to this contested case.

2. This contested case is not the proper forum to raise allegations that the SRBA, Idaho Code § 42-222, or the rules governing administration of water rights in Water District 34 are unconstitutional.

3. Arguments related to constitutional takings arising from the processing of claims in the SRBA, the evaluation of transfer applications under Idaho Code § 42-222, or the administration of water rights in Water District 34 are beyond the scope of this contested case and will not be addressed by the hearing officer.

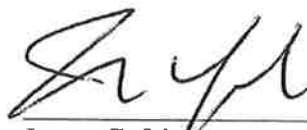
4. Sunset's proposal to add the Sunset River Pump to its Big Lost River water rights will not injure domestic ground water rights in the Arco area.

Summary judgment is not appropriate for the other issues raised in the *Sunset Motion*. There are genuine issues of material fact related to questions of forfeiture, injury and enlargement. The parties should be given an opportunity to develop the administrative record on these issues in an administrative hearing.

ORDER

IT IS HEREBY ORDERED that the Sunset Motion is GRANTED, in part. This is an Interlocutory Order issued pursuant to Rule 710 (IDAPA 37.01.01).

Dated this 14th day of December 2020.



James Cefalo
Hearing Officer

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 14th day of December 2020, true and correct copies of the documents described below were served by placing a copy of the same with the United States Postal Service, postage prepaid and properly addressed, to the following:

Document Served: Order Granting Motion for Summary Judgment, In Part

Sunset Farm & Ranch LLC
PO Box 827
Arco, ID 83213

Robert Harris
Holden Kidwell Hahn & Crapo
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Young Harvey Walker
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Arco, ID 83213

Aaron M Worthen
Parsons Behle & Latimer
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Idaho Falls, ID 83402

Larry Quist
2210 N 2900 W
Arco, ID 83213

Karon Huggins
c/o Matea McCray
3470 Cobblestone Lane
Idaho Falls, ID 83404



James Cefalo

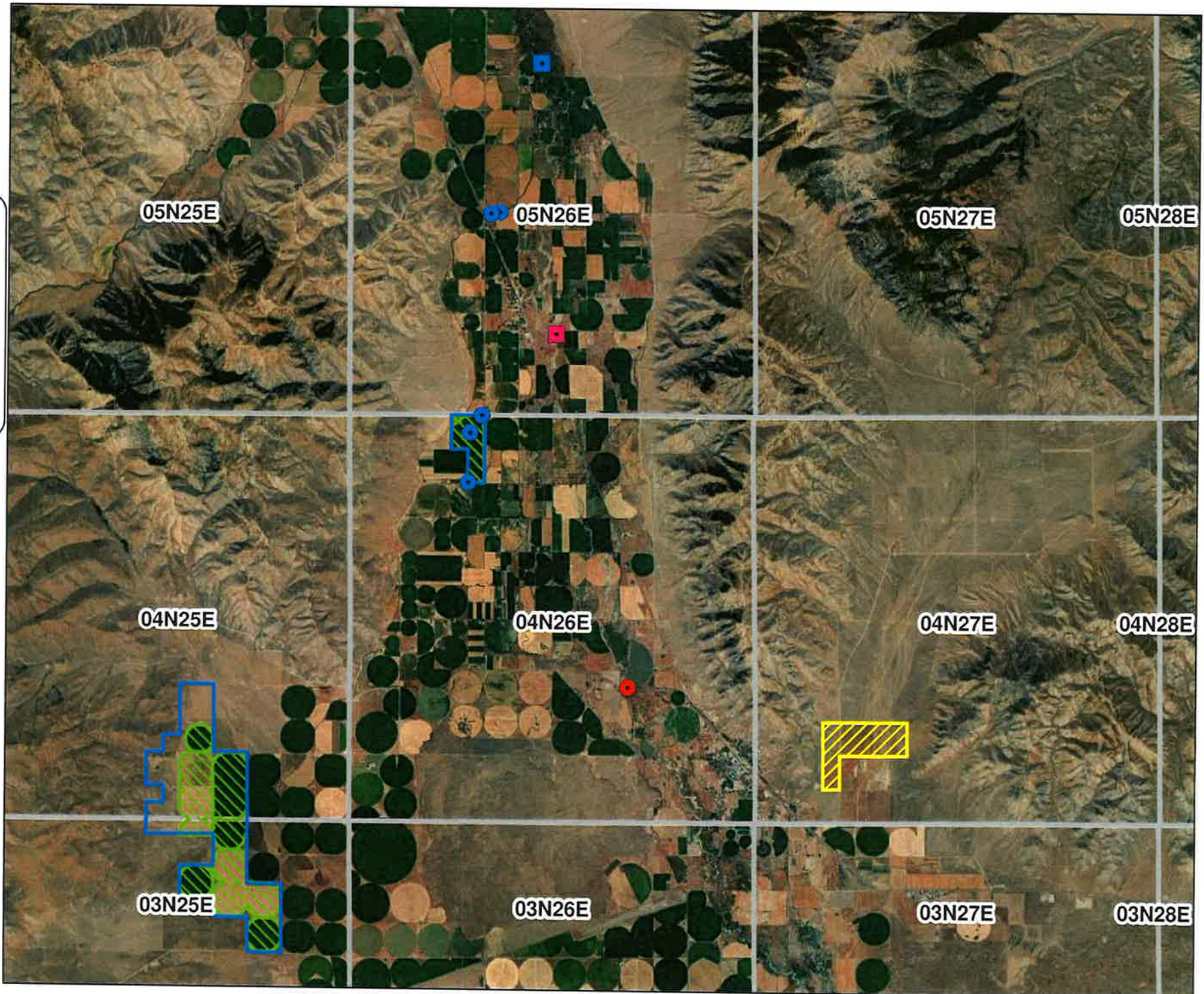
EXHIBIT 2

SORENSEN APPLICATION FOR TRANSFER



Legend

- Proposed PODs_GW
- Moore Divers on
- 34-7110
Current POD
- 34-7052
Current POD
- Permissible POU
- Proposed POJ
- 34-7052 &
34-7110
Current POU
- TR Lines



ESRI Basemap



Prepared by:
Luke H. Marchant
07/21/2020

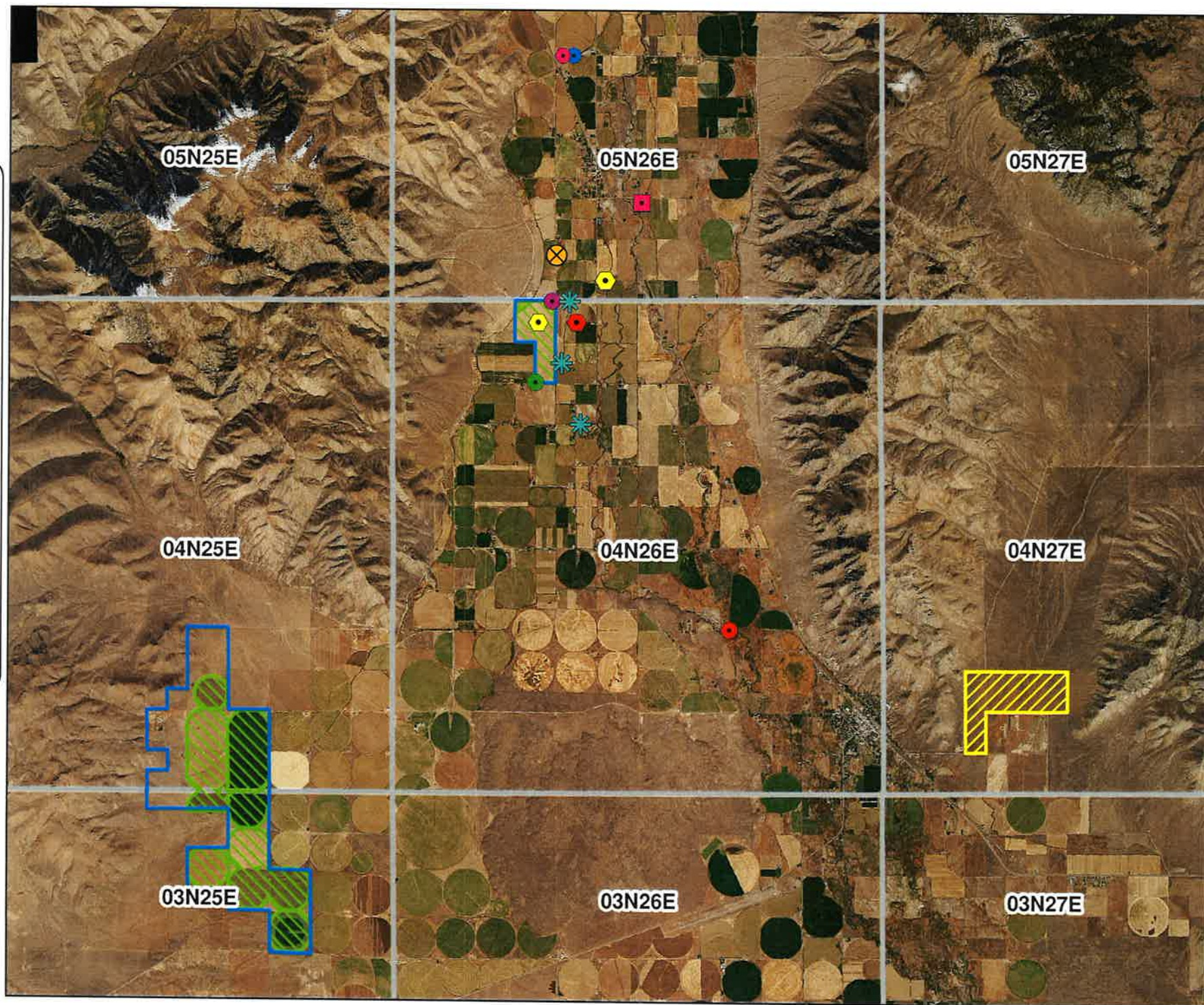
EXHIBIT 3

SORENSEN APPLICATION FOR TRANSFER



Legend

- Archer Well
- Browne Well
- VanEps Well
- Joel Andersen PODs
- New North Well
34-2424B
- Middle Well
34-2428 &
34-12416 POD
- South Well
34-7035B
- Moss Well
34-2332, 34-7079,
& 34-13841
- PU Well
34-2332 &
34-7079
- 34-7052
Current POD
- Moore Diversion
- 34-7110
Current POD
- Permissible POU
- Proposed POU
- 34-7052 &
34-7110
Current POU
- TR Lines



2019 NAIP Photo



Prepared by:
Luke H. Marchant
01/05/2021

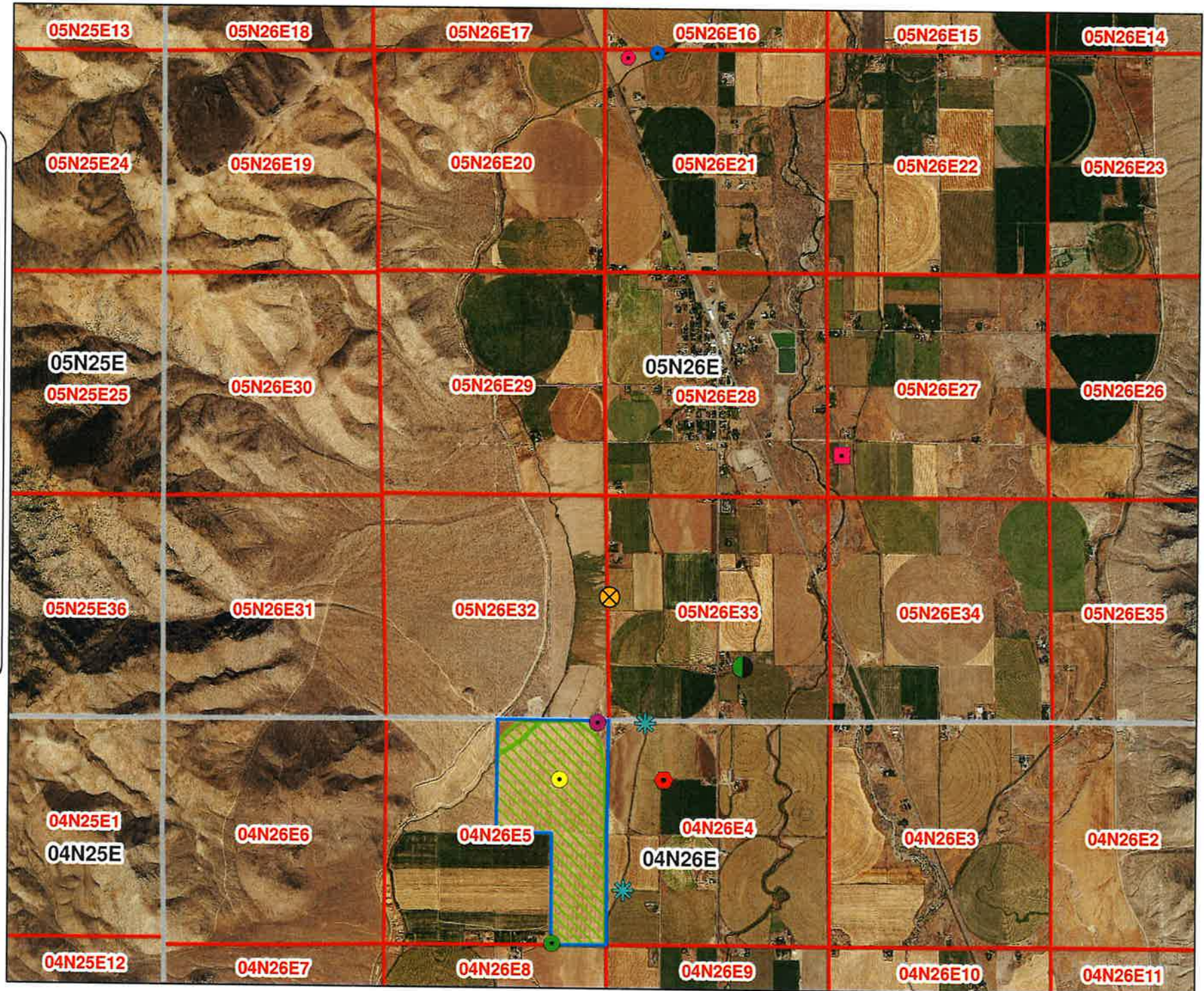
EXHIBIT 4

SORENSEN APPLICATION FOR TRANSFER



Legend

- Archer Well
- Browne Well
- VanEps Well
- Joel Andersen PODs
- New North Well
34-2424B
- Middle Well
34-2428 &
34-12416 POD
- South Well
34-7035B
- Moss Well
34-2332, 34-7079,
& 34-13841
- PU Well
34-2332 &
34-7079
- 34-7052
Current POD
- Moore Diversion
- 34-7110
Current POD
- Permissible POU
- Proposed POU
- 34-7052 &
34-7110
Current POU
- TR Lines
- Section Lines



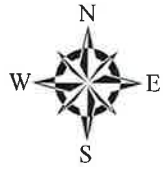
2019 NAIP Photo



Prepared by:
Luke H. Marchant
02/03/2021

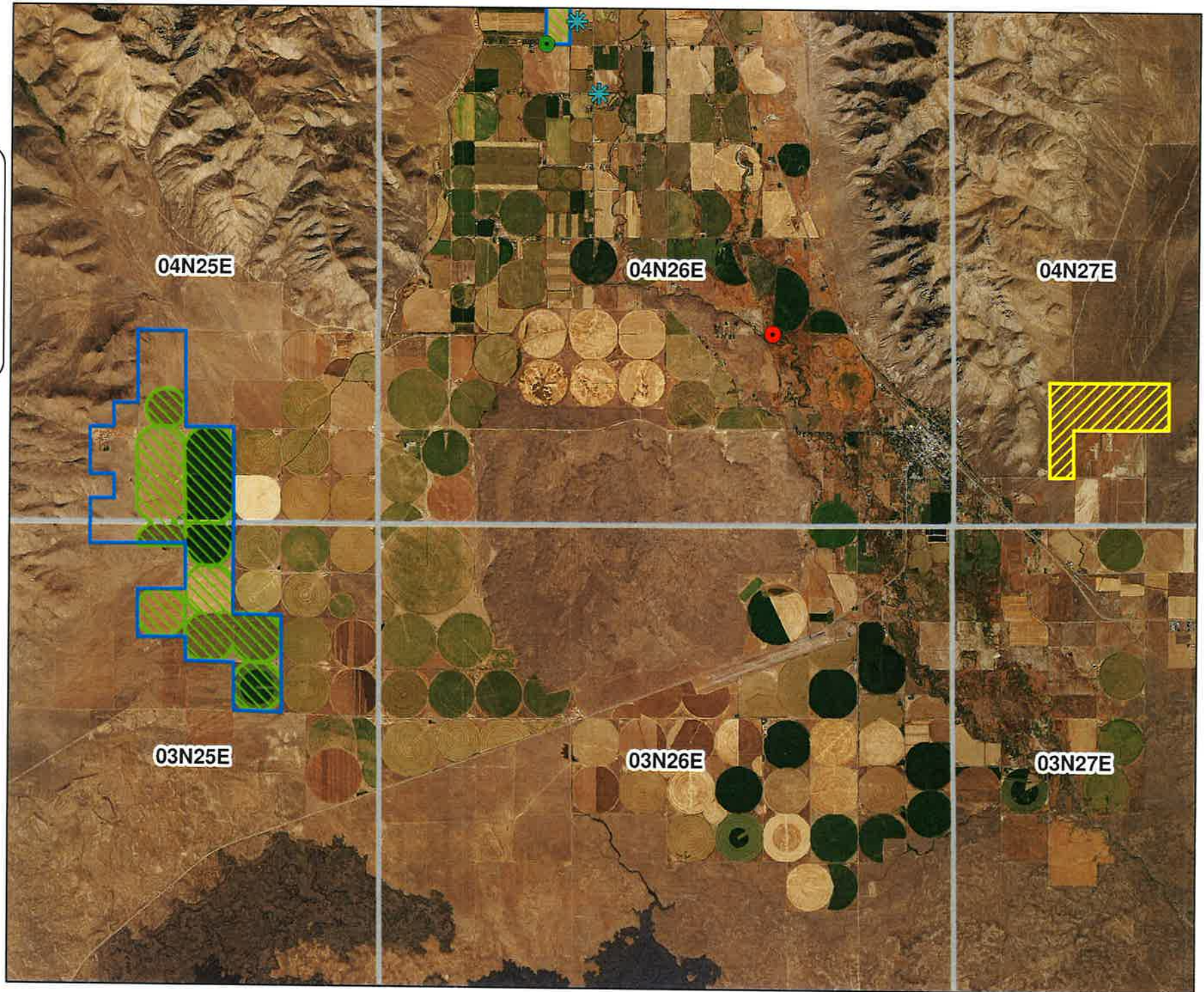
EXHIBIT 5

SORENSEN APPLICATION FOR TRANSFER



Legend

- Joel Andersen PODs
- South Well
34-7035B
- 34-7110
Current POD
- Permissible POU
- Proposed POU
34-7052 &
34-7110
Current POU
-
- TR Lines



2019 NAIP Photo



Prepared by:
Luke H. Marchant
02/03/2021

EXHIBIT 6



**Groundwater Impact Assessment
Regarding Application for Transfer
84270-Elaine R. Sorensen
Moore, Idaho**

January 2021

Prepared by

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Introduction

Elaine R. Sorensen filed Application for Transfer 84270 (Application) with the Department of Water Resources. This Application will change the place of use and points of diversion for Water Right Nos. 34-7052 and 34-7110 and combine those two water rights with Water Right Nos. 34-170, 34-4964, 34-556, 34-692D, 34-10319, 34-2332, 34-24248, 34-2429, 34-70358, 34-7079, 34-12416, and 34-13841 to create a 2,598-acre permissible place of use within which 1,837 acres will be authorized for irrigation. The Application will also update ownership of Water Right No 34-10319. Details of the transfer can be found on file with the Idaho Department of Water Resources (IDWR).

There are two parts to the transfer. The first part will make changes that were authorized through the Water Supply Bank lease/rental contracts permanent. The second part will “stack” all the water rights and create a 2,598-acre place of use within which 1,837 acres will be authorized for irrigation. Additionally, the Application will allow the Applicant to divert any of the ground water rights from any of the five wells included in the Application. Part 1A.2 of the Application states:

The Applicant does not anticipate diverting any more water from any of the wells than has been done since 2012; the Applicant only wants the ability to use any of the wells to divert the water rights in the event that a well goes down during the irrigation season.

This report will focus primarily on the second part of the Application regarding “stacking” water rights because the protests are mostly focused on this issue.

Figure 1 shows the locations of wells pertinent to this application. The purpose of this report is to describe the regional and local hydrogeology and present an impact assessment of the proposed Sorensen Transfer.

SORENSEN APPLICATION FOR TRANSFER

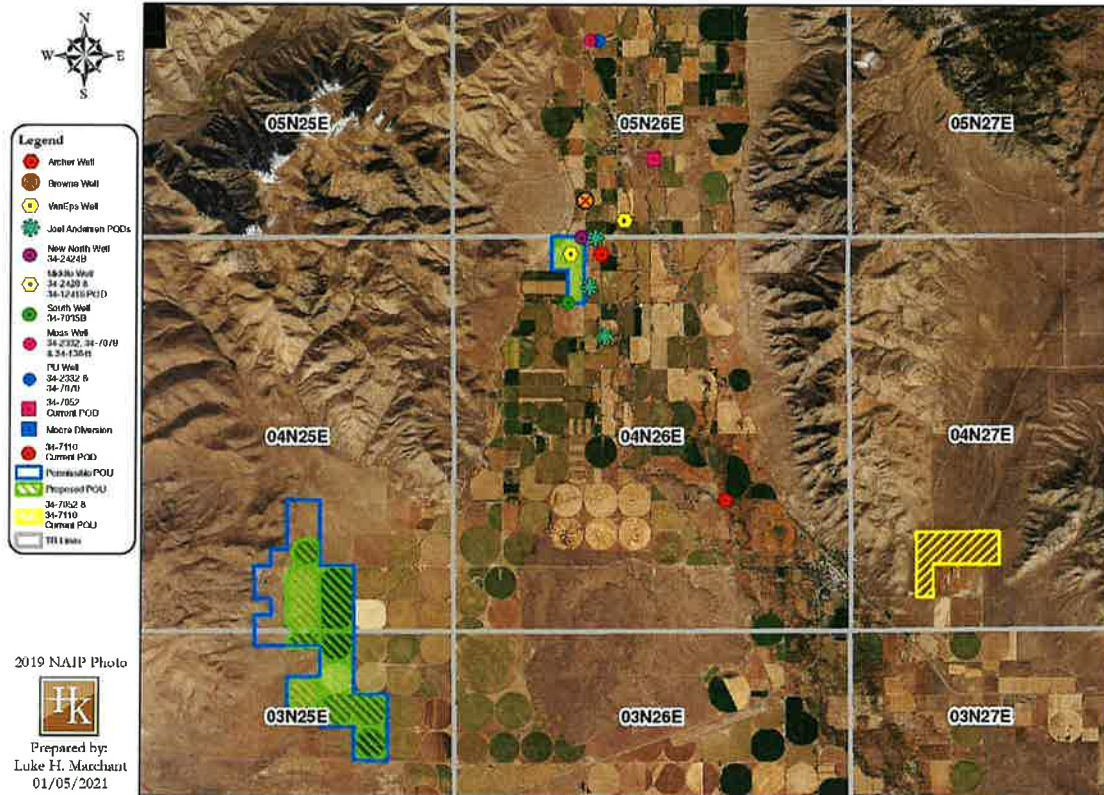


Figure 1 Map showing locations of wells of interest in the study.

1. Physical Setting

1.1. Geology

The Big Lost River Valley was produced by Basin and Range faulting, which began about 17 million years ago. The valley was formed between the surrounding mountain ranges as a block of the earth's crust was down dropped forming a half-graben. The major fault in the Big Lost River Valley is a normal fault that runs along the northeast side of the valley (Skipp, et al., 2009). This active fault is called the Lost River Fault Zone, which last moved in 1983 during the Borah Peak earthquake.

The mountains are largely composed of Mesoproterozoic Belt Supergroup overlain by Paleozoic strata, mainly carbonates. Challis volcanic rocks cover portions of the older strata in the Lost River Range and valley floor and are in turn overlain by Oligocene and Miocene tuffs, conglomerates and lake beds. Basalt of the Snake River Group is present in the subsurface near the mouth of the Big Lost River Basin. During the ice ages, glacial and stream deposits filled the valley. The floor of the valley is covered with loam and gravelly loam soils.



1.2. Regional Hydrogeology

The unconsolidated alluvial deposits filling the valley transmit large amounts of water, yielding large amounts of water to wells. These unconsolidated alluvial deposits are the best aquifer material in the Big Lost River Basin. The older rocks of the surrounding mountains and deeper cemented alluvium only transmit small quantities of water to wells making them less suitable for irrigation purposes. Well driller's logs show that the alluvial deposits are variable but nearly all wells contain layers of clean water bearing sands and gravels.

The Big Lost River flows through the valley and enters the Eastern Snake River Plain where it flows to its terminus in a series of playa lakes. The ground water in the aquifer flows through the valley and discharges to Eastern Snake River Plain aquifer directly (Said, et al., 2003).

Crosthwaite et al., 1970, described the strong relationship between river flow in the Big Lost River. Seasonal and climatic cycles have a pronounced effect on flow in the river and water levels in the aquifer. Wide fluctuations of ground water levels are the norm in the Big Lost River Valley.

2. Wells and Local Hydrogeology

2.1. Irrigation Wells

Numerous wells exist in the Big Lost River Valley. Most wells have drillers logs but some wells do not. Selected wells near this application for transfer site are listed in Table 1. The wells range in depth from 160 ft to 290 ft with an average depth of 203 ft and the average depth to water recorded on the drillers logs is 47 ft. The values in Table 1 are consistent with 14 wells considered by the USGS in a pumping test immediately west of the transfer area. The USGS authors state: *"Most wells in the Well Orchard are 200 to 250 feet deep and are cased from land surface to the bottom of the hole. The casing is perforated from 50 to 60 ft below land surface to the bottom of the hole (Bassick and Jones, 1992)."* The authors mention that the range in the depth to water in 1991 was greater than the average in Table 1. This is most likely because the Well Orchard is at a higher elevation than the Sorenson area and the flow in the Big Lost River was below normal from 1988 to 1994.

Table 1. Summary properties of selected wells near the Sorenson Transfer.

Well Name	Name on Well Log	Const. Date	Total Depth	Csg. Dia.	Perforations	GPM	Static	Drawdown
North Anderson Well	Beal and Burns	2/2/1961	185	16	30-185		24	
Archer Well	Paulus	1961	160	16	55-160		42	
Van Eps	Bleak	7/11/1977	160	16	50-150	2600	37	24
North Sorenson	Sorenson	6/17/2020	204	18	80-195		51	
Middle Sorenson	M. Sorenson	5/21/2011	220	20	60-210		71	
South Sorenson	M. Sorenson	1/18/2001	290	18	150-210, 230-280		55	
Average			203	Average			47	



2.2. Aquifer Levels and Surface Water Flow

The United States Geological Survey (USGS) measures flow in the Big Lost River and the USGS and the Idaho Department of Water Resources maintain hydrographs for several wells in the Big Lost River Basin. The North Anderson Well (Figure 1) or 04N 26E 04BBA1 has a water level record from 1967 to 2020. Water flow measurements are made regularly by the Big Lost Irrigation District during the irrigation season. The relationship between flow in the Big Lost River and the canals and ground water levels near the proposed transfer is demonstrated by comparing the flow of the Big Lost River near Mackay, flow in the Moore Canal and the depth to water level measurements in the North Anderson Well. The data used for this comparison can be found on the USGS and IDWR websites (USGS, 2021 a & b) and on file with the Big Lost Irrigation District.

Figure 2 shows the hydrographs for the Big Lost River at Mackay, the total flow in the Moore Canal (before shrink), the total of both surface flows in CFS on the left-hand axis. The average of the total flow at the entrance gate of the Moore canal is 99.65 cfs for the past 3 years. The right-hand axis shows the depth to water measured in the North Anderson Well. The time period is plotted from 2014 to 2019 because the data obtained from the Big Lost River Irrigation District is only in an easily usable format through 2014 (prior records are handwritten). There exists a strong correlation between flow in the Big Lost River and the canal and depth to water in the North Anderson Well. This is consistent with many other investigations of the Big Lost River Aquifer (e.g. Crosthwaite et al., 1970, Johnson, et al., 1991).

Calculations of impact from ground water pumping must consider leakance from the Big Lost River and the adjacent canal.

2.3. Groundwater Flow

Ground Water flows generally southward in the Basin toward the Snake River Plain (Bassick and Jones, 1992, Owsley, 2014). In March of 1991, the USGS created a water-level contour map based on measurements of first encountered water. The elevation and local aquifer gradient changes in response to seepage from the Big Lost River and canals, but overall, the flow of water is to the south along the axis of the basin.

2.4. Aquifer Tests

Crosthwaite, et al., 1970, considered the aquifer to be mostly under unconfined conditions. The authors state that “*ground water occurs mostly under water-table conditions (unconfined) in the main valley, but locally artesian conditions exist (confined). Because of the variability of the alluvial deposits, weak artesian pressures may be present in other parts of the basin, but they have not yet been observed.*”



Flow in Moore Ditch, Flow in Big Lost River Below Mackay, Total of Both and Water Levels in the North Anderson Well

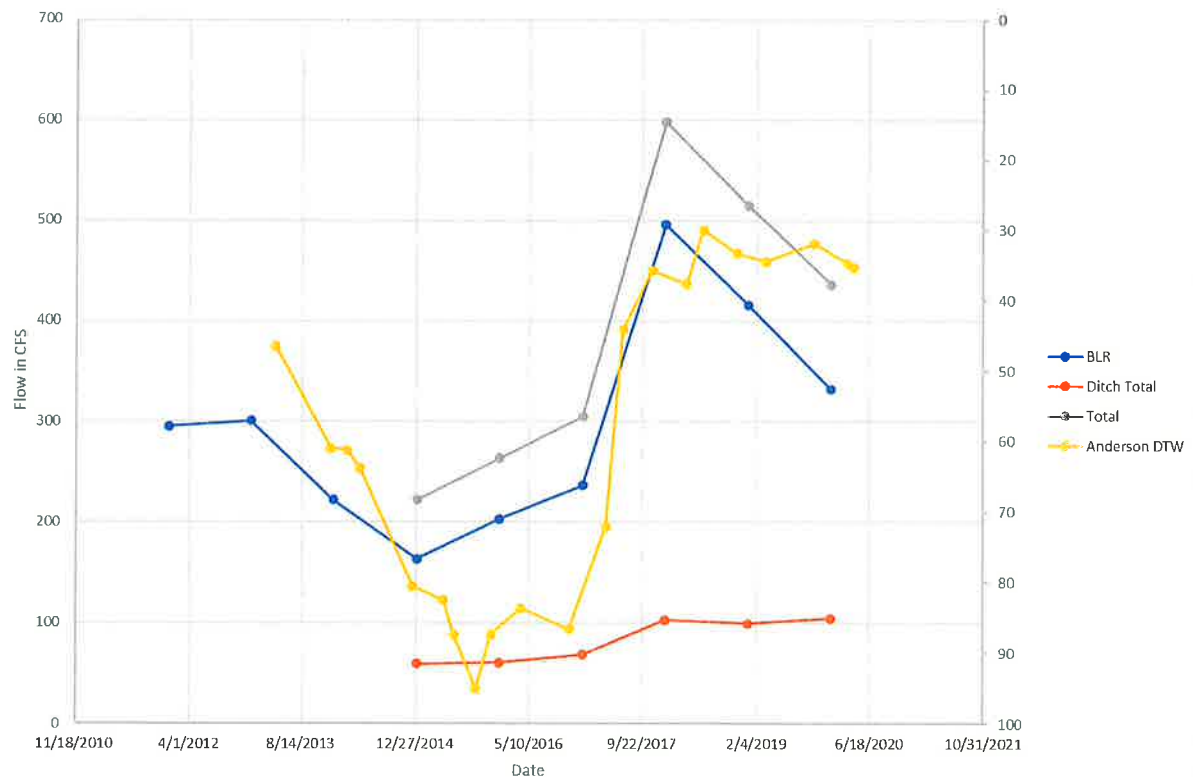


Figure 2. Flow in CFS (left axis) for flow in the Big Lost River near Mackay, the total flow in the Moore Canal, the total of both surface streams and the depth to water (right axis) measured in the North Anderson Well.

A portion of the Sorensen Property (Figure 2) encompasses an area known locally as the “Well Orchard”. This is an area known to have high aquifer transmissivity. The United States Geologic Service in conjunction with the Idaho Department of Water Resources conducted an aquifer pumping test in the Well Orchard April 3 to 5, 1991 (Bassick and Jones, 1992). The Middle Sorensen Well was one of nine observation wells for the pumping test (Figures 3).

Discharge from the pumped well was about 2,400 gpm at the start of the test to about 2,300 gpm after 25 hours of pumping. Drawdown in the pumped well was approximately 5 ft and drawdown at an observation at a radial distance of 475 ft southeast of the pumped wells was less than 2 ft. The authors found:

“using the Theis (confined) type-curve analysis indicated that aquifer transmissivity ranged from 61,000 to 330,000 ft²/day values of 130,000 to 200,000 ft²/day were most probable. Storage coefficients range from 0.0001 to 0.02; the value of about 0.001 was most probable.



Figure 3. Map of wells (black dots) used Well Orchard Pumping Test and selected wells (colored pins) of interest near the transfer site. The black rectangle is the outline of the USGS defined domain of the Well Orchard.

Transmissivity in the Middle Sorensen Well was found to be 190,000 ft²/day and the storage coefficient 0.02 using the Theis type-curve analysis. The Jacob method could be applied to only two test wells assuming 0.01 as maximum value for u . In these wells, the authors saw a change in the slope of the drawdown curve and attributed it to the cone of depression intercepting a barrier boundary. They believed the barrier to be relatively impermeable consolidated sedimentary or crystalline bedrock. If the barrier boundary is the mountain front then it is unusual that the change in slope was not observed in more observation wells, particularly those near the mountain front.

A second pumping test near this area is the July 2011 test of the Crater Farms Well, which is located 7,000 ft northeast of the Sorensen North Well. The Craters Farm well



was pumped at an average rate of 5,117 gpm for four days. The Parkinson Well located 222 ft to the south was the observation well. Wood (2011a) calculated the most probable transmissivity to be 350,000 ft²/day with a storativity of 0.12.

A third pumping test was conducted in the Nate Carpenter Well in April of 2011, which is 11,000 ft north of the North Sorensen Well. The well was pumped at 1,500 gpm for a period of 3 days. The best match to the late time data was 840,000 ft²/day. Since this was a single well test, the aquifer storativity could not be accurately determined. Wood (2011b) mentioned that water levels in the aquifer were rising throughout the test and barometric conditions were unstable making data analysis difficult. Wood also observed a change in the slope of the drawdown curve at an elapsed time of 1,000 minutes, indicating that the drawdown cone encountered a barrier boundary. He interpreted the barrier boundary to be the mountain front about 500 ft west of the Carpenter well.

Table 2 is a summary of the aquifer test data discussed above. The maximum values measured in the Well Orchard Test are consistent with the Crater Farms test. The Carpenter transmissivity value is higher, but this may be because during the pumping test aquifer water levels were rising causing a flattening of the cone of depression. Because the Well Orchard test is closest to the Sorensen Property, we believe that the most representative range of transmissivity for this area is 130,000 to 200,000 ft²/day with a storage coefficient of 0.001. We consider these values to be conservative for estimating pumping impacts because there is evidence for much higher values in the area.

Table 2. Summary of local aquifer test parameters.

Well Test	Transmissivity (ft²/day)	Storativity	Flow Rate (GPM)	Duration (days)	Comments
Well Orchard	61,000 to 330,000	0.0001 to 0.02	2,400 – 2,300	1	Most likely 130,000 to 200,000 ft²/day and 0.001
Crater Farms	350,000	0.12	5,117	4	
Carpenter	840,000	-	1,500	3	Rising aquifer levels

3. Conceptual Aquifer Model

The Big Lost River Aquifer is long and narrow being constrained by the older, much less permeable rocks that form the surrounding mountains. The flow is to the south and discharges to the Snake River Plain Aquifer (Said et al., 2003). The Big Lost River Basin is so prolific that in many cases water from the aquifer cannot be used adjacent to wells. Much water is pumped from wells to canals where it flows to other areas for use. Seepage of water from the canals in transit to its place of use is high (called shrink), often more than 50%. Leakance from canals and the Big Lost River are extreme and the water appears to reach the aquifer level rapidly. The base of the aquifer can be quite deep, but



with depth the permeability of the sediments is reduced because of cementing and compaction. A reasonable estimate for the base of the aquifer is 250 ft below land surface based on the depth of irrigation wells in the basin. This conceptual model is consistent with other studies (Szczepanowski, 1982, Johnson et. al., 1991, Mundorff et al., 1964, Said et al., 1993, and Whitehead, 1992).

4. Groundwater Model

4.1. Setup and Descriptions

The U.S. EPA's Wellhead Analytic Element Model – WhAEM (EPA, 2018) was used for assessing the potential impacts of the proposed transfer application, originally developed for well capture zone delineation and analysis purpose. WhAEM has geohydrological modeling capabilities that allow a realistic analysis of drawdowns of steady pumping wells, including the influence of aquifer heterogeneities, hydrological boundaries, such as rivers, recharge, and no-flow contacts.

Figure 4 shows the model domain area in this study. The western and eastern model domain (shown as black lines) are no flow boundaries between the valley fill sediments with high hydraulic conductivity and the adjacent mountains composed of Mesoproterozoic and Paleozoic strata with low hydraulic conductivity. The northern and southern boundaries (highlighted with green) are treated as far-field head boundaries, with specified head values derived from the groundwater head contours map. The modeled surface streams are shown with blue lines.

Because typical irrigation wells in the valley are completed at depths of ~200-300 ft below the ground surface, the most productive portion of the Big Lost River Aquifer is considered to be 250 ft thick. In the model, the bottom of the aquifer is set at an elevation of 5,195 ft, which gives a 250 ft thickness of the aquifer near the North Anderson well.

The water table varies significantly, largely depending on the long-term and seasonal climate cycles. Using the North Anderson Well as a reference, the depth to the water table below land surface ranges from ~20 ft during the wettest years to ~100 ft during the worse drought years. To robustly assess the potential impact of the Sorensen's wells upon the nearby wells, two aquifer water table depth scenarios (using North Anderson Well as the reference point) were considered in our modeling study, (1) the groundwater table depth of 55 ft, representing the average groundwater level during the past two decades, and (2) the groundwater table depth of 100 ft, representing the worst drought years. Figure 5 shows the modeled water table contour maps for these two scenarios. The modeled water table maps are consistent with previous water table maps of the basin, for instance, those of Bassick and Jones, and 1992, Owsley, 2014.

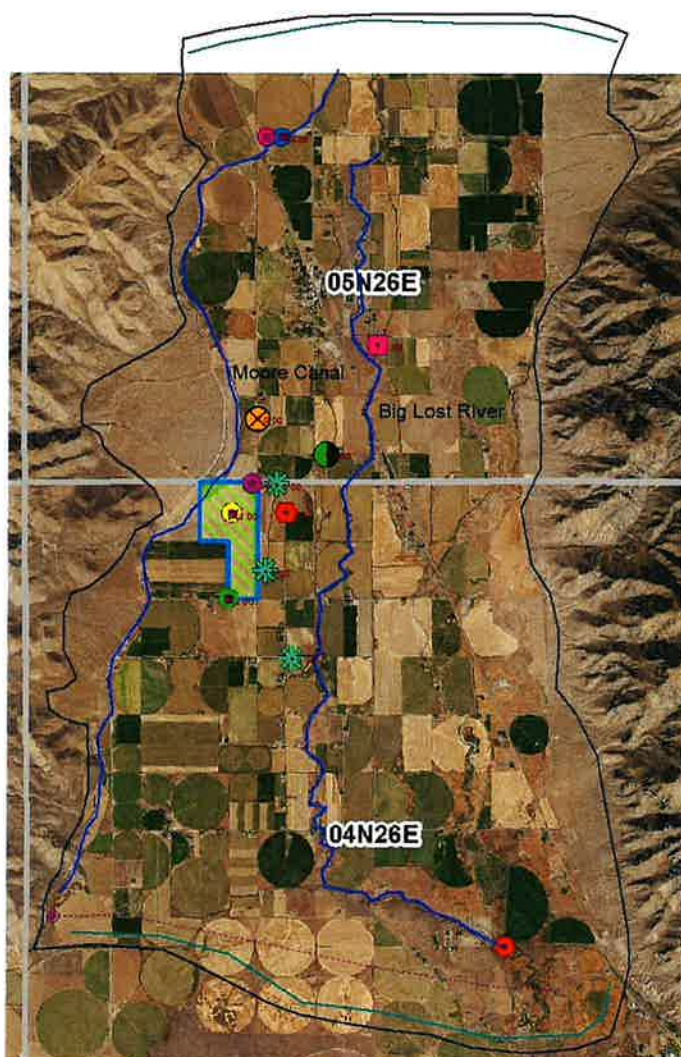


Figure 4. Model domain boundaries shown with black line, blue lines are surface channels, green lines are far field head boundaries and wells are shown with colored icons (the key is in Figure 1).

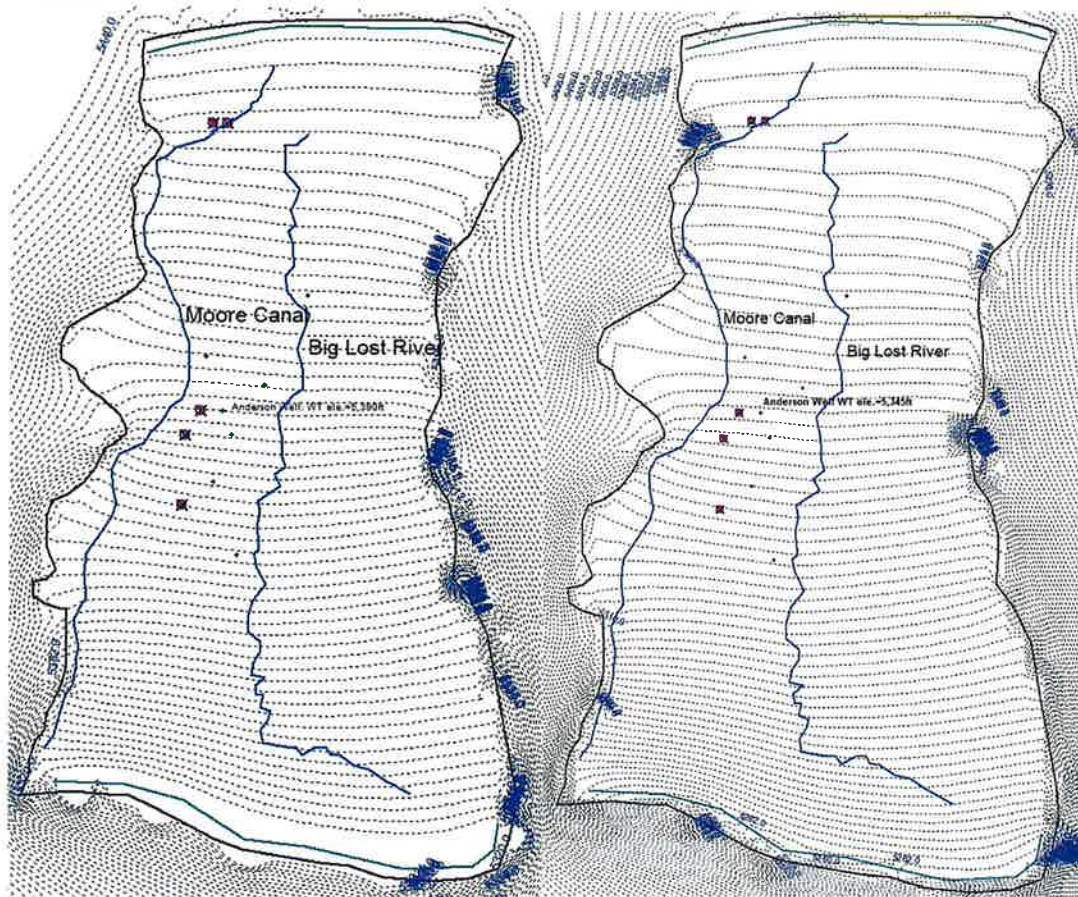


Figure 5. (Left) modeled groundwater head contour map for the average water table depth of 55 ft scenario and (Right) modeled groundwater head contour map for extreme drought years with water table depth of 100 ft.

Two important surface water features, Big Lost River and Moore Canal, were incorporated into the simulations as linear sources, representing the recharge to the aquifer due to leakage. As discussed before, the annual average of the flow rate at the entrance gate of Moore canal is 99.65 cfs. It is also believed more than half of the water in the canal is lost via the leakage along the canal into the ground (i.e. shrink). In our analysis, we used a conservative value of 20% of flow rate as leakage (shrink) into the underlying aquifer from the canal. It is also believed there is a strong hydraulic connection between the Big Lost River and the underlying aquifer. The leakage from the Big Lost River is an important recharge source to the underlying aquifer in the valley. We used an average of 40.6 cfs of daily leakage along the 8-mile-long reach of the Big Lost River from Moore to Arco, based on the 2019 water year (the period of record for the flow station on the Big Lost River below Moore began on 3/25/2019).

In general, the aquifer in Big Lost River Valley has a high transmissivity. Pumping test data analysis reveals that the most likely aquifer transmissivities are in the range of ~130,000 – 200,000 ft²/day. Given the average water table depth below ground surface near the Anderson Well is 55 ft and the bottom of the aquifer is approximately 250 ft



below the ground surface, the corresponding hydraulic conductivity values are thus most likely in the range of ~667 – 1,026 ft/day. We used these values in our model for sensitivity analysis, i.e. because there is variation in hydraulic conductivity the sensitivity analysis helps us understand the parameters the groundwater system is most sensitive to.

The actual pumping rates in wells are limited by several factors, such as the limits of water right assigned, the well capacity as limited by the well diameter, the well efficiency, the dynamic head and the pump. Table 3 lists the maximum pumping rates and the typical operating rates for each of the Sorensen's wells. If all the Sorensen Wells were pumping at their maximum rate, then the 20.8 cfs water right would be exceeded. Therefore, none of our pumping scenarios exceed a total pumping rate of 20.8 cfs. We also set the pumps to operate their typical rates for 24 hours per day for the entire irrigation season. Continuous pumping for the entire irrigation season overestimates the impact to the aquifer because the pumps will be shut down for periods of cutting and harvesting of crops. Due to the high water and drought scenarios, we employed the typical operating rates (under drought scenarios the capacity of the wells will decrease, probably below the typical operating rate. We consider our scenarios to overestimate impacts to the aquifer because of the 24 hour per day pumping and maintaining the typical operating pump discharges under the drought scenario when we know the discharge rate will decrease due to the increase in head. The rates for the wells are shown in the shaded column in Table 3.

Table 3. The pumping rates for Sorensen's wells used in the model sensitivity analysis.

Well Name	Max for each well (cfs)	Range (cfs)	Typical operating rates (cfs)
North Well	2.27		2.27
Middle Well	7.2	6 to 7.2	6.5
South	5	4.5 to 5.4	5
Moss	7		7
PU	6.2		0
Total	27.67		20.77

As listed in Table 4, a total of four simulation scenarios were evaluated, two corresponding to the average water table depth of 55 ft and two corresponding to the drought water table depth of 100 ft. Notice that the 4th simulation represents the worst-case scenario in which the water table is at the lowest elevation and the aquifer hydraulic conductivity takes the lower bound value.



Simulations	Depth of Water Table Below Ground Surface Near Anderson Well (ft)	Hydraulic Conductivity (K) (ft/day)
Scenario 1	55	1,026
Scenario 2	55	667
Scenario 3	100	1,026
Scenario 4	100	667

This topographic map illustrates the terrain around the Moore Canal. The map features several key elements:

- Moore Canal:** A prominent blue line running vertically through the center of the map.
- Big Lost River:** A winding blue line located to the right of the Moore Canal.
- Elevation Contours:** Dotted lines representing various elevation levels, with labels such as 5300.0, 5310.0, 5320.0, 5330.0, 5340.0, 5350.0, 5360.0, 5370.0, 5380.0, 5390.0, 5400.0, 5410.0, 5420.0, 5430.0, 5440.0, 5450.0, 5460.0, 5470.0, 5480.0, 5490.0, 5500.0, 5510.0, 5520.0, 5530.0, 5540.0, 5550.0, 5560.0, 5570.0, 5580.0, 5590.0, 5600.0, 5610.0, 5620.0, 5630.0, 5640.0, 5650.0, 5660.0, 5670.0, 5680.0, 5690.0, 5700.0, 5710.0, 5720.0, 5730.0, 5740.0, 5750.0, 5760.0, 5770.0, 5780.0, 5790.0, 5800.0, 5810.0, 5820.0, 5830.0, 5840.0, 5850.0, 5860.0, 5870.0, 5880.0, 5890.0, 5900.0, 5910.0, 5920.0, 5930.0, 5940.0, 5950.0, 5960.0, 5970.0, 5980.0, 5990.0, 6000.0, 6010.0, 6020.0, 6030.0, 6040.0, 6050.0, 6060.0, 6070.0, 6080.0, 6090.0, 6100.0, 6110.0, 6120.0, 6130.0, 6140.0, 6150.0, 6160.0, 6170.0, 6180.0, 6190.0, 6200.0, 6210.0, 6220.0, 6230.0, 6240.0, 6250.0, 6260.0, 6270.0, 6280.0, 6290.0, 6300.0, 6310.0, 6320.0, 6330.0, 6340.0, 6350.0, 6360.0, 6370.0, 6380.0, 6390.0, 6400.0, 6410.0, 6420.0, 6430.0, 6440.0, 6450.0, 6460.0, 6470.0, 6480.0, 6490.0, 6500.0, 6510.0, 6520.0, 6530.0, 6540.0, 6550.0, 6560.0, 6570.0, 6580.0, 6590.0, 6600.0, 6610.0, 6620.0, 6630.0, 6640.0, 6650.0, 6660.0, 6670.0, 6680.0, 6690.0, 6700.0, 6710.0, 6720.0, 6730.0, 6740.0, 6750.0, 6760.0, 6770.0, 6780.0, 6790.0, 6800.0, 6810.0, 6820.0, 6830.0, 6840.0, 6850.0, 6860.0, 6870.0, 6880.0, 6890.0, 6900.0, 6910.0, 6920.0, 6930.0, 6940.0, 6950.0, 6960.0, 6970.0, 6980.0, 6990.0, 7000.0, 7010.0, 7020.0, 7030.0, 7040.0, 7050.0, 7060.0, 7070.0, 7080.0, 7090.0, 7100.0, 7110.0, 7120.0, 7130.0, 7140.0, 7150.0, 7160.0, 7170.0, 7180.0, 7190.0, 7200.0, 7210.0, 7220.0, 7230.0, 7240.0, 7250.0, 7260.0, 7270.0, 7280.0, 7290.0, 7300.0, 7310.0, 7320.0, 7330.0, 7340.0, 7350.0, 7360.0, 7370.0, 7380.0, 7390.0, 7400.0, 7410.0, 7420.0, 7430.0, 7440.0, 7450.0, 7460.0, 7470.0, 7480.0, 7490.0, 7500.0, 7510.0, 7520.0, 7530.0, 7540.0, 7550.0, 7560.0, 7570.0, 7580.0, 7590.0, 7600.0, 7610.0, 7620.0, 7630.0, 7640.0, 7650.0, 7660.0, 7670.0, 7680.0, 7690.0, 7700.0, 7710.0, 7720.0, 7730.0, 7740.0, 7750.0, 7760.0, 7770.0, 7780.0, 7790.0, 7800.0, 7810.0, 7820.0, 7830.0, 7840.0, 7850.0, 7860.0, 7870.0, 7880.0, 7890.0, 7900.0, 7910.0, 7920.0, 7930.0, 7940.0, 7950.0, 7960.0, 7970.0, 7980.0, 7990.0, 8000.0, 8010.0, 8020.0, 8030.0, 8040.0, 8050.0, 8060.0, 8070.0, 8080.0, 8090.0, 8100.0, 8110.0, 8120.0, 8130.0, 8140.0, 8150.0, 8160.0, 8170.0, 8180.0, 8190.0, 8200.0, 8210.0, 8220.0, 8230.0, 8240.0, 8250.0, 8260.0, 8270.0, 8280.0, 8290.0, 8300.0, 8310.0, 8320.0, 8330.0, 8340.0, 8350.0, 8360.0, 8370.0, 8380.0, 8390.0, 8400.0, 8410.0, 8420.0, 8430.0, 8440.0, 8450.0, 8460.0, 8470.0, 8480.0, 8490.0, 8500.0, 8510.0, 8520.0, 8530.0, 8540.0, 8550.0, 8560.0, 8570.0, 8580.0, 8590.0, 8600.0, 8610.0, 8620.0, 8630.0, 8640.0, 8650.0, 8660.0, 8670.0, 8680.0, 8690.0, 8700.0, 8710.0, 8720.0, 8730.0, 8740.0, 8750.0, 8760.0, 8770.0, 8780.0, 8790.0, 8800.0, 8810.0, 8820.0, 8830.0, 8840.0, 8850.0, 8860.0, 8870.0, 8880.0, 8890.0, 8900.0, 8910.0, 8920.0, 8930.0, 8940.0, 8950.0, 8960.0, 8970.0, 8980.0, 8990.0, 9000.0, 9010.0, 9020.0, 9030.0, 9040.0, 9050.0, 9060.0, 9070.0, 9080.0, 9090.0, 9100.0, 9110.0, 9120.0, 9130.0, 9140.0, 9150.0, 9160.0, 9170.0, 9180.0, 9190.0, 9200.0, 9210.0, 9220.0, 9230.0, 9240.0, 9250.0, 9260.0, 9270.0, 9280.0, 9290.0, 9300.0, 9310.0, 9320.0, 9330.0, 9340.0, 9350.0, 9360.0, 9370.0, 9380.0, 9390.0, 9400.0, 9410.0, 9420.0, 9430.0, 9440.0, 9450.0, 9460.0, 9470.0, 9480.0, 9490.0, 9500.0, 9510.0, 9520.0, 9530.0, 9540.0, 9550.0, 9560.0, 9570.0, 9580.0, 9590.0, 9600.0, 9610.0, 9620.0, 9630.0, 9640.0, 9650.0, 9660.0, 9670.0, 9680.0, 9690.0, 9700.0, 9710.0, 9720.0, 9730.0, 9740.0, 9750.0, 9760.0, 9770.0, 9780.0, 9790.0, 9800.0, 9810.0, 9820.0, 9830.0, 9840.0, 9850.0, 9860.0, 9870.0, 9880.0, 9890.0, 9900.0, 9910.0, 9920.0, 9930.0, 9940.0, 9950.0, 9960.0, 9970.0, 9980.0, 9990.0, 10000.0, 10010.0, 10020.0, 10030.0, 10040.0, 10050.0, 10060.0, 10070.0, 10080.0, 10090.0, 10100.0, 10110.0, 10120.0, 10130.0, 10140.0, 10150.0, 10160.0, 10170.0, 10180.0, 10190.0, 10200.0, 10210.0, 102

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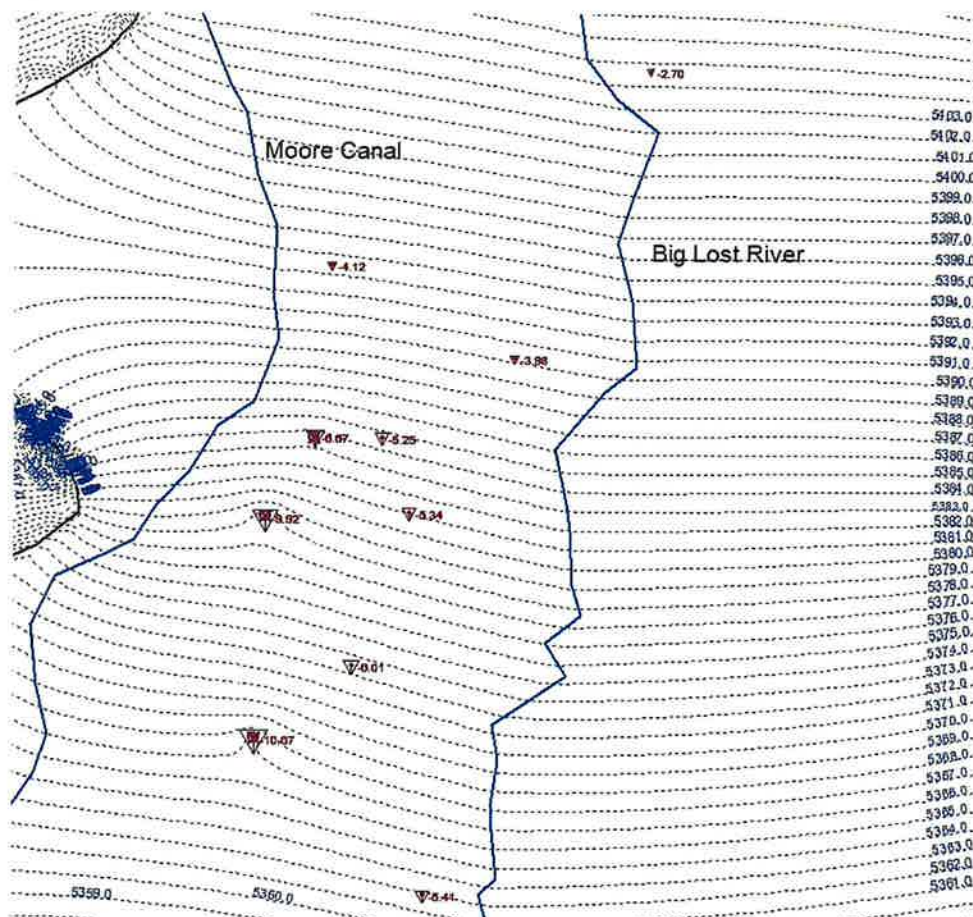


Figure 7. Simulated head contour map and drawdowns for Simulation Scenario 2 – water table depth at 55 ft and hydraulic conductivity of 667 ft/day.

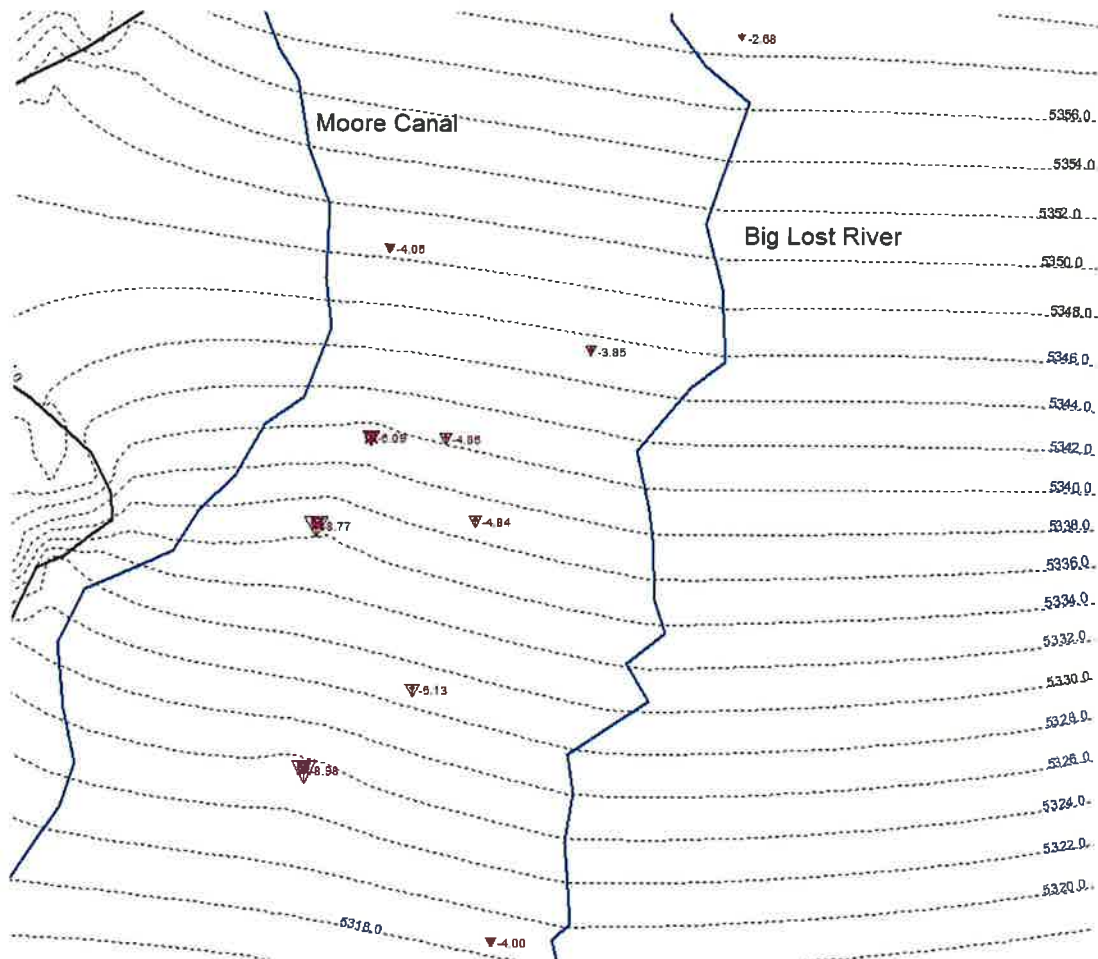


Figure 8. Simulated head contour map and drawdowns for Simulation Scenario 3 – water table depth at 100 ft and hydraulic conductivity of 1,026 ft/day.

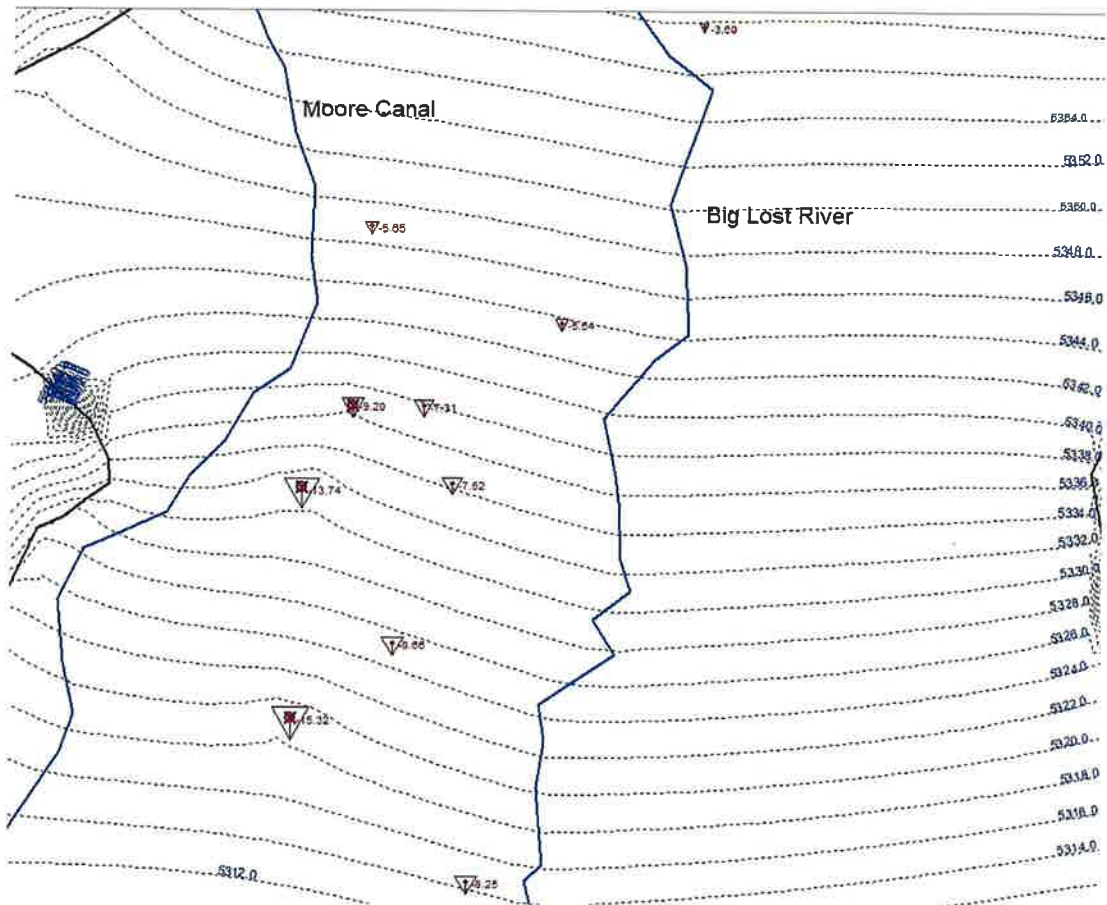


Figure 9. Simulated head contour map and drawdowns for Simulation Scenario 3 – water table depth at 100 ft and hydraulic conductivity of 667 ft/day.

Table 5 lists the drawdowns in Sorensen's pumping wells and the induced drawdowns of nearby wells for the simulation scenarios.

For average years (Scenarios 1 & 2), the maximum drawdowns in Sorensen's wells range from 6.5 to 10.7 ft. The maximum induced drawdowns for the nearby Anderson's wells range from 3.8 to 6.0 ft. During the drought years (Scenarios 3 & 4), the maximum drawdowns in Sorensen's wells range from 9 to 15.3 ft, the maximum induced drawdowns within the nearby Anderson's wells range from 5.1 to 8.7 ft.

Notice that in the worst-case scenario of drought years (Scenario 4), the maximum induced drawdown in the nearby Anderson's wells is at 8.7 ft. This predicted induced drawdown is significantly less than the value predicted in Warner's report (Warner and Naylor, 2018), largely due to a number of facts: (1) our model is more realistic in representing the ranges of aquifer hydraulic conductivities (or transmissivities in equivalence); (2) our model incorporates more realistic hydrogeological features such as recharge from Big Lost River and Moore Canal and (3) existence of a natural hydraulic



gradient that drives a large quantity of groundwater flow through the valley aquifer from the north portion of Big Lost River Valley toward Snake River Plain.

Table 5. Detailed list of simulated drawdowns with Sorensen's pumping wells and induced drawdowns in nearby wells, including Anderson's wells. Note that the simulated induced drawdowns in nearby wells for the worst-case scenario of drought year are highlighted.

Well Names	Simuated drawdowns (ft) in wells for Scenario 1 : water depth = 55 ft; K=1026 ft/day	Simuated drawdowns (ft) in wells for Scenario 2 : water depth = 55 ft; K=667 ft/day	Simuated drawdowns (ft) in wells for Scenario 3 : water depth = 100 ft; K=1026 ft/day	Simuated drawdowns (ft) in wells for Scenario 4 : water depth = 100 ft; K=667 ft/day
North Anderson	-3.6	-5.2	-4.9	-7.3
Archer Well	-3.6	-5.3	-4.8	-7.5
Middle Anderson	-3.8	-6.0	-5.1	-8.7
South Anderson	-2.9	-5.4	-4.0	-8.2
VanEps Well	-2.8	-4.0	-3.8	-5.5
Browne Well	-3.0	-4.1	-4.0	-5.6
34-7052	-2.0	-2.7	-2.7	-3.6
North Sorensen	-4.5	-6.7	-6.1	-9.2
Middle Sorensen	-6.5	-9.9	-8.8	-13.7
South Sorensen	-6.5	-10.7	-9.0	-15.3
Moss Well	-2.4	-4.5	-3.0	-5.3
PU Well	-1.7	-3.3	-2.1	-3.9

5. Summary

Elaine R. Sorensen filed Application for Transfer 84270 with the Department of Water Resources. The most contested portion of this Application is the ability to “stack” water rights and allow the Applicant to divert any of the ground water rights from any of the five wells included in the Application. Wells in this area are 200 to 250 feet deep and perforated from 50 to 60 ft below land surface to the bottom of the hole. Water levels in the aquifer vary on an annual cycle and longer climatic cycles, primarily driven by recharge from leakage from the Big Lost River and canals. Leakage or “shrink” from the canals and river often exceed 50%. Excellent aquifer parameters are available for this area due to a 1991 pumping test (Bassick and Jones, 1992) conducted by the USGS and IDWR.

An analytic element type ground water model was built to simulate impacts on nearby wells. The model extends east and west to the mountain fronts where the gravel and sand of the Big Lost River Aquifer contacts much lower permeability strata and to the north and south sufficiently so that the model boundaries do not affect the impact assessment. Leakage from the Big Lost River and the Moore Canal are considered. The model defines the active portion of the aquifer to be at 250 ft below land surface near the North Anderson Well. The Sorensen Wells are considered pumping under four different scenarios: aquifer parameters at the high and low end of the probable range; and aquifer water levels at an average level and a much lower drought level.



We consider this modeling effort to be conservative, that is, it will likely over predict impacts from pumping of the Sorensen Wells for the following reasons:

1. The base of the aquifer is considered impermeable when the aquifer permeability is thought to decrease gradually with depth due to cementation and compaction. The lower aquifer below 250 ft will probably contribute some water to wells.
2. The mountain fronts are considered to unrealistically low permeability and it is likely that the mountain strata probably contribute more water to wells than modeled.
3. We employ a 24 hour per day pumping rate for the duration for the entire irrigation season. This is unrealistic because the pumps are shut off for planting, cutting and harvesting. The actual pumping will be less than modeled.
4. We maintain the typical operating pumping rate even under the drought scenario. In this scenario, the actual discharge will decrease due to the increase in lifting head for the pump.
5. Our calculations consider drawdown from static, that is, our impacts are new impacts. The drawdowns we list are not in addition to the impacts from Sorensen pumping, which the neighbors have been living with for decades. Obviously, the Sorensen wells have had an impact on the aquifer for many years of operation. We have not taken this into account because these impacts are not readily known. Again, we have taken the conservative approach to consider drawdown as though it was a new impact.

Even with the conservative factors built into our modeling we found that the decline in water levels from pumping under the most adverse scenario to be within a range that is reasonable. For instance, under the worst-case scenario, using the lowest aquifer transmissivity and the lowest drought water level on record, we find that the maximum drawdown for an Anderson well is only 8.7 ft. For the reasons stated above, we believe that the actual drawdown will be less. Furthermore, these Anderson Wells have been dealing with an impact from Sorensen pumping for many years.

Our calculations are based on a concept of the Big Lost River Aquifer that is accepted by the scientific community. Our modeling effort utilized a highly tested EPA code to simulate the range in parameters present in the conceptual model. To bracket, or overestimate impacts we purposely did not take credit for several characteristics of the aquifer conceptual model that would have reduced the modeled drawdown in nearby wells. We considered several scenarios, including the worst possible case. Under the drought case using the low end of the aquifer transmissivity the impacts to neighboring wells is acceptable. We conclude that the Application will not have an adverse impact on neighboring ground water users.



6. References

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ATTACHMENT 1

Well Logs



Clearwater Geosciences, LLP
Ground Water Development and Exploration

RECEIVED
NOV 17 1966

Richard E. Beal
J. Burns

REPORT OF WELL DRILLER
State of Idaho

Department of Reclamation

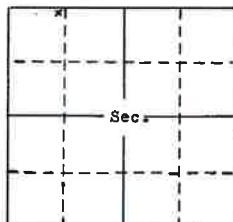
State law requires that this report shall be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

17040218
WELL OWNER: Harold Honey
Name Idaho
Address Idaho
Owner's Permit No. 25-1
NATURE OF WORK (check): Replacement well ☐
New well ☒ Deepened ☐ Abandoned ☐
Water is to be used for: irrigation
METHOD OF CONSTRUCTION: Rotary ☐ Cable ☒
Dug ☐ Other ☐ (explain) Welded
CASING SCHEDULE: Threaded ☐ Welded ☒
16" Diam. from 0 ft. to 185 ft.
"Diam. from 0 ft. to 185 ft.
"Diam. from 0 ft. to 185 ft.
"Diam. from 0 ft. to 185 ft.
Thickness of casing: 3/12 Material:
Steel ☒ concrete ☐ wood ☐ other ☐

(explain)
PERFORATED? Yes ☒ No ☐ Type of
perforator used: touch
Size of perforations: 3/8" by 3"
630 perforations from 30 ft. to 185 ft.
perforations from 30 ft. to 185 ft.
perforations from 30 ft. to 185 ft.
perforations from 30 ft. to 185 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 30 ft. to 185 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 Butte
NW 1/4 NW 1/4 Sec. 4 T. 4 N/S R. 26 E/W

Use other side for additional remarks

Size of drilled hole: 16" Total
depth of well: 185 Standing water
level below ground: 24 Temp. _____
Fahr. _____ Test delivery: _____ gpm
or cfs Pump? ☐ Bail ☐
Size of pump and motor used to make test: _____
Length of time of test: Hrs. _____ Min. _____
Drawdown: _____ ft. Artesian pressure: ft. _____
above land surface Give flow _____ cfs
or gpm. Shutoff pressure: _____
Controlled by: Valve ☐ Cap ☐ Plug ☐
No control ☐ Does well leak around casing?
Yes ☐ No ☐
DEPTH MATERIAL 30149 WATER
FROM TO YES OR NO
FEET FEET
0 29 clay & gravel Yes
29 104 sand & gravel Yes
104 185 gravel, clay & sand Yes

Work started: Jan. 1961
Work finished: Feb. 3, 1961
Well Driller's Statement: This well was
drilled under my supervision and this report
is true to the best of my knowledge.
Name: Bill G. Fendley
Address: 285 Pioneer Blvd., Loh
Signed by: _____
License No. _____ Date: 11.6.66

2948

Figure A-1. North Anderson Well Log.



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Well Log Form 1
3M

RECEIVED

APR 21 1965

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

17040218

Permit No. E-30238 Well No. _____ County Butte

035033

Owner Ed A. Paulus

Locate well in section

Address Spokane, Idaho

Driller Bill Findlay

Address 285 W. Carson, Blk 4, Ada

Well location 44 1/4 NW 1/4 Sec 4, T. 4 N. R. 26 E

Size of drilled hole 16"

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

Total depth of well 160

Give depth to standing water from the ground 42' Water temp. _____ °Fahr.

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

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 _____ 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 irrigation Weight of casing per lined foot 52 lbs

Thickness of casing 5/16 Casing material steel

(STEEL, CONCRETE, WOOD, ETC.)

Diameter, length and location of casing 16" od 160'
(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.
16" od	0	160	160	650 perforations - size 3/8x3

Number and size of perforations 650 located 55 feet to 160 feet from ground

Date of commencement of well _____ Date of completion of well 1961

SE NW S. 4 4N 2E

2949

Figure A-2. Archer Well Log.

[illegible]

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

Well Driller's Helper

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Ground Water Development and Exploration

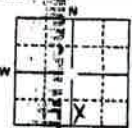
USE TYPEWRITER OR
BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

RECEIVED
SEP 27 1977

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>DAVE BLEAK</u> Address <u>MOORE, IDAHO 83255</u> Owner's Permit No. <u>34 7064</u>		7. WATER LEVEL Department of Water Resources Eastern District No. <u>3</u> Static water level <u>37</u> feet below land surface Flowing? ☐ Yes ☒ No G.P.M. flow _____ Temperature _____ ° F. Quality <u>good</u> 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. <u>2600</u> Draw Down <u>34'</u> Hours Pumped <u>6 HRS.</u>																																																
3. PROPOSED USE ☐ Domestic ☒ Irrigation ☐ Test ☐ Other (specify type) ☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection		9. LITHOLOGIC LOG 042744																																																
4. METHOD DRILLED ☒ Cable ☐ Rotary ☐ Dug ☐ Other		<table border="1"><thead><tr><th rowspan="2">Hole Diam.</th><th colspan="2">Depth</th><th rowspan="2">Material</th><th rowspan="2">Water Yes No</th></tr><tr><th>From</th><th>To</th></tr></thead><tbody><tr><td>16"</td><td>0</td><td>6</td><td>SOIL</td><td></td></tr><tr><td></td><td>6</td><td>30</td><td>GRAVEL</td><td></td></tr><tr><td></td><td>30</td><td>37</td><td>HAED PAN</td><td></td></tr><tr><td></td><td>37</td><td>36</td><td>CLAY + GRAVEL</td><td></td></tr><tr><td></td><td>36</td><td>40</td><td>SAND + GRAVEL</td><td></td></tr><tr><td></td><td>40</td><td>128</td><td>SAND + GRAVEL</td><td></td></tr><tr><td></td><td>128</td><td>136</td><td>CLAY</td><td></td></tr><tr><td></td><td>136</td><td>160</td><td>SAND + GRAVEL</td><td></td></tr></tbody></table>		Hole Diam.	Depth		Material	Water Yes No	From	To	16"	0	6	SOIL			6	30	GRAVEL			30	37	HAED PAN			37	36	CLAY + GRAVEL			36	40	SAND + GRAVEL			40	128	SAND + GRAVEL			128	136	CLAY			136	160	SAND + GRAVEL	
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	128	136	CLAY																																															
	136	160	SAND + GRAVEL																																															
5. WELL CONSTRUCTION Diameter of hole <u>16</u> inches Total depth <u>160</u> feet Casing schedule: ☒ Steel ☐ Concrete Thickness <u>250</u> inches Diameter <u>16</u> inches From <u>1</u> feet To <u>160</u> 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 <u>3/8</u> inches by <u>6</u> inches Number <u>2400</u> perforations From <u>50</u> feet To <u>150</u> 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 <u>20</u> Material used in seal ☐ Cement grout ☐ Pudding clay ☒ Well cuttings Sealing procedure used ☐ Sherry pit ☐ Temporary surface casing ☐ Overbore to seal depth																																																		
6. LOCATION OF WELL Sketch map location must agree with written location. <u>52</u>  Subdivision Name _____ Lot No. _____ Block No. _____ County <u>BUTTE</u> <u>SW 55 1/4 Sec. 33 T. 5 N. R. 26 E.</u>		10. Work started <u>June 28/77</u> finished <u>July 11/77</u>																																																
		11. DRILLER'S CERTIFICATION Firm Name <u>Guthrie Well Drilling</u> Firm No. <u>226</u> Address <u>P.O. Box 319 APCO, Idaho 83218</u> Date <u>7/24/77</u> Signed by (Firm Official) <u>H. T. Guthrie</u> and <u>H. T. Guthrie</u> (Operator) <u>3663</u>																																																

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE COPY TO THE DEPARTMENT

Figure A-3. Van Eps Well Log.



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0081664

Drilling Permit No. 894112

Water right or injection well # 34-2424B

2. OWNER: Sorensen

Name Sorensen

Address 3871 W 2500 N

City Moore State ID Zip 83255-8722

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 26 East ☒ or West ☐

Sec. 5 1/4 NE 1/4 NE 1/4

Gov't Lot County Butte

Lat. 43 42.5863 (Deg. and Decimal minutes)

Long. 113 22.5968 (Deg. and Decimal minutes)

Address of Well Site Corner of 3000 n 3400 w

city Moore

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
Cement	0	78	5 yds	pressure tremie

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner	Threaded	Welded
20	+8"	78	.250	steel	☒	☐	☒

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

9. PERFORATIONS/SCREENS:

Perforations ☒ Y ☐ N Method knife

Manufactured screen ☐ Y ☒ N Type

Method of Installation

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
80'	195'	3/16	64	18	steel	.250

Length of Headpipe Length of Tailpipe

Packer ☐ Y ☒ N Type

10. FILTER PACK:

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

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) 51' Static water level (ft) 51'

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

Describe access port

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Ball	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
24	0	2	soil	Y N
24	2	10	soil and gravel	n
24	10	55'	sand gravel	n
24	55	78	clay sand and gravel	y
20	78	148	gravel and sand	y
20	148	204	Basalt rock maybe Riolite (not much water in the rock)	y

Completed Depth (Measurable): 204

Date Started: 5-25-2020

Date Completed: 6-15-2020

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 Vollmer Well Drilling

Co. No. 383

*Principal Driller Date 6-17-2020

*Driller Date 6-17-2020

*Operator II Date 6-17-2020

Operator I Date 6-17-2020

* Signature of Principal Driller and rig operator are required.

Figure A-4. North Well Log.



238-7
DMD

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

34

1. WELL TAG NO. D D0058844

Drilling Permit No. _____

Water right or injection well # 34-2428, 34-7247, 34-12416

2. OWNER: Mitchell Sorensen

Name Mitchell Sorensen

Address 3871 West 2500 North

City Moore State ID Zip 83255

3. WELL LOCATION:

Twp. 04 North ☒ or South ☐ Rge. 26 East ☒ or West ☐

Sec. 05 NW 1/4 SE 1/4 NE 1/4

Gov't Lot _____ County Butte

Lat. _____ (Deg. and Decimal minutes)

Long. _____ (Deg. and Decimal minutes)

Address of Well Site _____

(Name of Well Owner (if not a Division or State or Landmark)) City Moore

Lot. _____ Blk. _____ Sub. Name _____

4. USE:

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

☐ Other _____

5. TYPE OF WORK:

☐ New well ☒ Replacement well ☐ Modify existing well

☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☐ Air Rotary ☐ Mud Rotary ☒ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method/procedure
Bentonite	0	60	14850 lbs	overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner	Threaded	Welded
20"	+2	115.9	250	Steel	☒	☐	☒
					☐	☐	☐
					☐	☐	☐
					☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 115' 9"

9. PERFORATIONS/SCREENS:

Perforations ☒ Y ☐ N Method knife

Manufactured screen ☐ Y ☒ N Type _____

Method of installation _____

From (ft)	To (ft)	Stl size	Number	Diameter (nominal)	Material	Gauge or Schedule
60	210	1x1	7200	20"	Steel	.250

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☒ N Type _____

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 _____

[illegible]

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JUN 08 2011

Department of Water Resources
Eastern Region

Figure A-5. Middle Well Log.



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 239-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. WELL TAG NO. D D 0014422
DRILLING PERMIT NO. 766230 766236
Other IDWR No. 34-07035

2. OWNER: T-5657
Name MITCHELL SOLEHSEN
Address 3871 W 2500 N
City MOORE State ID Zip 83258

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

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 of	Remarks	
BENTONITE	0' 30'	30 TALK	OVER ROSE	

Was drive shoe used? ☒ N Shoe Depth(s) 290'
Was drive shoe seal tested? ☐ Y ☒ N How? PRESSURE

8. CASING/LINER:

Diameter	From To	Gauge	Material	Casing	Linear	Welded	Threaded
18"	+3'	290' 250'	STEEL	☒	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations		Method				
Screens	Screen Type					
From To	Slot Size	Number	Diameter	Material	Casing	Linear
150' 210'	3"	1080	3/8"	STEEL	☒	☐
230' 280'	2"	820	3/8"	STEEL	☒	☐

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

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

Well	gpm	Drawdown	Pumping Level	Time

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

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

Bore Dis.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
20"	0	20	DIRT + GRAVEL		
18"	20	60	DIRT + GRAVEL		
	60	75	BROWN CLAY		
	75	85	SAND + GRAVEL		
	85	105	BROWN CLAY + GRAVEL		
	105	130	HAND PACK SAND/STONE GRAVEL		
	130	140	SAND BROWN		
	140	160	GRAVEL DIRT		
	160	210	GRAVEL DIRT		
	210	230	BROWN CLAY		
	230	245	CEMENTED GRAVEL		
	245	255	BROWN CLAY		
	255	280	CEMENTED GRAVEL		
	280	285	CEMENTED GRAVEL		
	285	290	BROWN CLAY		

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JAN 25 2001
Department of Water Resources
Eastern Region
RECEIVED
JAN 29 2001
Department of Water Resources

Completed Depth 290' (Measurable)
Date: Started OCT 16/00 Completed 01/18/01

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

Company Name HOLLMAN DRILLING Firm No. 383
Firm Official [Signature] Date 01/21/01
and [Signature]
Driller or Operator [Signature] Date 01/21/01
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure A-6. South Sorenson Well Log.

Cefalo, James

From: Luke Marchant <lmarchant@holdenlegal.com>
Sent: Monday, February 15, 2021 1:15 PM
To: Cefalo, James
Cc: Jim Speck (jim@speckandaanestad.com)
Subject: Sorensen Application for Transfer No. 84270 - Revised Modeling
Attachments: Transfer Attachment pages_ESPA Model_2021.02.15.pdf

James,

As you requested, and as part of our Stipulation with several of the Protestants, we are submitting revised modeling for the Sorensen Application for Transfer. These model results can replace everything that was previously submitted with the Application. The modeling that we previously submitted showed what would happen if all the Potter Water Right (No. 34-7052) was pumped from either the three wells in 04N26E Sec. 5, or the two wells in 05N26E Sec. 21. We have reached a stipulation with Joel Andersen, Cindy Archer, Jerry Browne, and Lenard Van Eps wherein Sorensens have agreed to volume limits on the three wells in Section 5 that are equivalent to the amount of water that is currently authorized to be pumped from those three wells. Because no additional water (above what is currently authorized) can be pumped from the three Section 5 wells upon approval of Transfer No. 84270, there is no need to model the transfer of any water to those wells. The revised modeling that we are submitting shows the impacts of the entirety of all the groundwater rights being pumped from the two wells in Section 21 (the PU Well and the Moss Well).

If you have any questions, do not hesitate to contact me.



Luke H. Marchant

Holden, Kidwell, Hahn & Crapo, P.L.L.C.
1000 Riverwalk Drive, Suite 200
P.O. Box 50130
Idaho Falls, Idaho 83405
Phone: (208) 523-0620
Fax: (208) 523-9518
Email: lmarchant@holdenlegal.com

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ATTACHMENT 5.1
Water Modeling – Data Entry
All Water to North Wells

ENHANCED GROUND-WATER RIGHTS TRANSFER

UNIVERSITY OF IDAHO - IDAHO WATER RESOURCES RESEARCH INSTITUTE

IDAHO DEPARTMENT OF AGRICULTURE

Cells this color are
set up for user entries

ENTER STARTING DATE FOR
SIMULATION. THEN PUSH
"UPDATE DATES" BUTTON

TRANSFER NO:

YEAR

1961

TRANSFER NAME:

SEASON

SPRING

Sorensen

ENTER CELL LOCATIONS:

	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	23	25	26	27
COLUMN	112	112	110	109

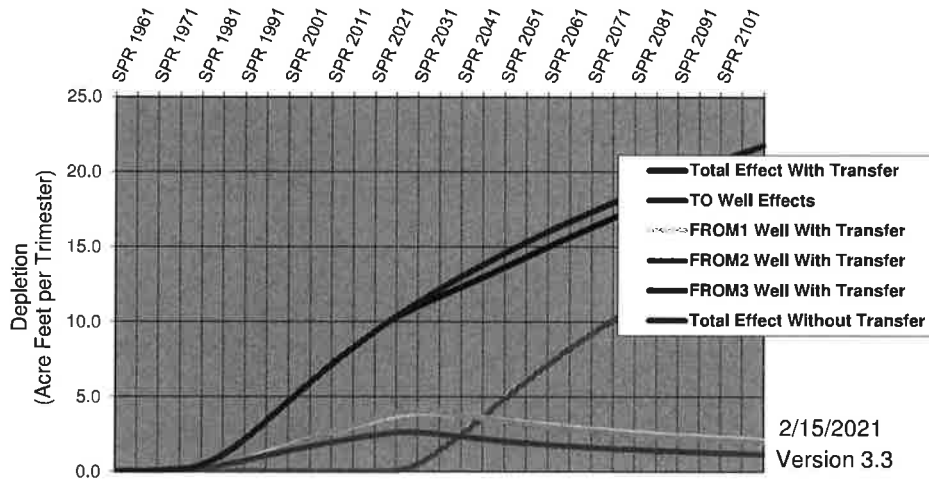
TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL		FROM2 WELL		FROM3 WELL	
		With Transfer AF/TRIMESTER	Without Transfer AF/TRIMESTER	With Transfer AF/TRIMESTER	Without Transfer AF/TRIMESTER	With Transfer AF/TRIMESTER	Without Transfer AF/TRIMESTER
SPR 1961	0	0	0	124	124	0	0
SUM 1961	0	0	0	124	124	0	0
WIN 1961	0	0	0	124	124	0	0
SPR 1962	0	0	0	124	124	0	0
SUM 1962	0	0	0	124	124	0	0
WIN 1962	0	0	0	124	124	0	0
SPR 1963	0	0	0	124	124	0	0
SUM 1963	0	0	0	124	124	0	0
WIN 1963	0	0	0	124	124	0	0
SPR 1964	0	0	0	124	124	0	0
SUM 1964	0	0	0	124	124	0	0
WIN 1964	0	0	0	124	124	0	0
SPR 1965	0	0	0	124	124	0	0
SUM 1965	0	0	0	124	124	0	0
WIN 1965	0	0	0	124	124	0	0
SPR 1966	0	0	0	124	124	0	0
SUM 1966	0	0	0	124	124	0	0
WIN 1966	0	0	0	124	124	0	0
SPR 1967	0	0	0	124	124	0	0
SUM 1967	0	0	0	124	124	0	0
WIN 1967	0	0	0	124	124	0	0
SPR 1968	0	0	0	124	124	0	0
SUM 1968	0	0	0	124	124	0	0
WIN 1968	0	0	0	124	124	0	0
SPR 1969	0	0	0	124	124	0	0
SUM 1969	0	0	0	124	124	0	0
WIN 1969	0	0	0	124	124	0	0
SPR 1970	0	0	0	124	124	0	0
SUM 1970	0	0	0	124	124	0	0
WIN 1970	0	0	0	124	124	0	0
SPR 1971	0	0	0	124	124	0	0
SUM 1971	0	0	0	124	124	0	0
WIN 1971	0	0	0	124	124	0	0
SPR 1972	0	0	0	124	124	0	0
SUM 1972	0	0	0	124	124	0	0
WIN 1972	0	0	0	124	124	0	0
SPR 1973	0	0	0	124	124	431	431
SUM 1973	0	0	0	124	124	431	431
WIN 1973	0	732	732	124	124	431	431

SPR 1974	0	732	732	124	124	431	431
SUM 1974	0	732	732	124	124	431	431
WIN 1974	0	732	732	124	124	431	431
SPR 1975	0	732	732	124	124	431	431
SUM 1975	0	732	732	124	124	431	431
WIN 1975	0	732	732	124	124	431	431
SPR 1976	0	732	732	124	124	431	431
SUM 1976	0	732	732	124	124	431	431
WIN 1976	0	732	732	124	124	431	431
SPR 1977	0	732	732	124	124	431	431
SUM 1977	0	732	732	124	124	431	431
WIN 1977	0	732	732	124	124	431	431
SPR 1978	0	732	732	124	124	431	431
SUM 1978	0	732	732	124	124	431	431
WIN 1978	0	732	732	124	124	431	431
SPR 1979	0	732	732	349	349	431	431
SUM 1979	0	732	732	349	349	431	431
WIN 1979	0	732	732	349	349	431	431
SPR 1980	0	732	732	349	349	431	431
SUM 1980	0	732	732	349	349	431	431
WIN 1980	0	732	732	349	349	431	431
SPR 1981	0	732	732	349	349	431	431
SUM 1981	0	732	732	349	349	431	431
WIN 1981	0	732	732	349	349	431	431
SPR 1982	0	732	732	775	775	431	431
SUM 1982	0	732	732	775	775	431	431
WIN 1982	0	732	732	775	775	431	431
SPR 1983	0	732	732	775	775	431	431
SUM 1983	0	732	732	775	775	431	431
WIN 1983	0	732	732	775	775	431	431
SPR 1984	0	732	732	775	775	431	431
SUM 1984	0	732	732	775	775	431	431
WIN 1984	0	732	732	775	775	431	431
SPR 1985	0	732	732	775	775	431	431
SUM 1985	0	732	732	775	775	431	431
WIN 1985	0	732	732	775	775	431	431
SPR 1986	0	732	732	775	775	431	431
SUM 1986	0	732	732	775	775	431	431
WIN 1986	0	732	732	775	775	431	431
SPR 1987	0	732	732	775	775	431	431
SUM 1987	0	732	732	775	775	431	431
WIN 1987	0	732	732	775	775	431	431
SPR 1988	0	732	732	775	775	431	431
SUM 1988	0	732	732	775	775	431	431
WIN 1988	0	732	732	775	775	431	431
SPR 1989	0	732	732	775	775	431	431
SUM 1989	0	732	732	775	775	431	431
WIN 1989	0	732	732	775	775	431	431
SPR 1990	0	732	732	775	775	431	431
SUM 1990	0	732	732	775	775	431	431
WIN 1990	0	732	732	775	775	431	431
SPR 1991	0	732	732	775	775	431	431
SUM 1991	0	732	732	775	775	431	431
WIN 1991	0	732	732	775	775	431	431
SPR 1992	0	732	732	775	775	431	431
SUM 1992	0	732	732	775	775	431	431
WIN 1992	0	732	732	775	775	431	431
SPR 1993	0	732	732	775	775	431	431
SUM 1993	0	732	732	775	775	431	431
WIN 1993	0	732	732	775	775	431	431
SPR 1994	0	732	732	775	775	431	431
SUM 1994	0	732	732	775	775	431	431
WIN 1994	0	732	732	775	775	431	431
SPR 1995	0	732	732	775	775	431	431
SUM 1995	0	732	732	775	775	431	431
WIN 1995	0	732	732	775	775	431	431
SPR 1996	0	732	732	775	775	431	431
SUM 1996	0	732	732	775	775	431	431
WIN 1996	0	732	732	775	775	431	431
SPR 1997	0	732	732	775	775	431	431
SUM 1997	0	732	732	775	775	431	431

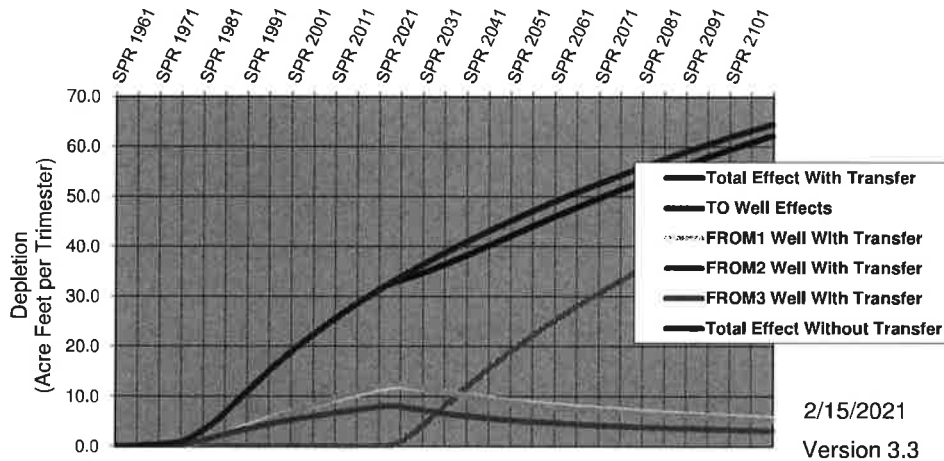
WIN 1997	0	732	732	775	775	431	431
SPR 1998	0	732	732	775	775	431	431
SUM 1998	0	732	732	775	775	431	431
WIN 1998	0	732	732	775	775	431	431
SPR 1999	0	732	732	775	775	431	431
SUM 1999	0	732	732	775	775	431	431
WIN 1999	0	732	732	775	775	431	431
SPR 2000	0	732	732	775	775	431	431
SUM 2000	0	732	732	775	775	431	431
WIN 2000	0	732	732	775	775	431	431
SPR 2001	0	732	732	775	775	431	431
SUM 2001	0	732	732	775	775	431	431
WIN 2001	0	732	732	775	775	431	431
SPR 2002	0	732	732	775	775	431	431
SUM 2002	0	732	732	775	775	431	431
WIN 2002	0	732	732	775	775	431	431
SPR 2003	0	732	732	775	775	431	431
SUM 2003	0	732	732	775	775	431	431
WIN 2003	0	732	732	775	775	431	431
SPR 2004	0	732	732	775	775	431	431
SUM 2004	0	732	732	775	775	431	431
WIN 2004	0	732	732	775	775	431	431
SPR 2005	0	732	732	775	775	431	431
SUM 2005	0	732	732	775	775	431	431
WIN 2005	0	732	732	775	775	431	431
SPR 2006	0	732	732	775	775	431	431
SUM 2006	0	732	732	775	775	431	431
WIN 2006	0	732	732	775	775	431	431
SPR 2007	0	732	732	775	775	431	431
SUM 2007	0	732	732	775	775	431	431
WIN 2007	0	732	732	775	775	431	431
SPR 2008	0	732	732	775	775	431	431
SUM 2008	0	732	732	775	775	431	431
WIN 2008	0	732	732	775	775	431	431
SPR 2009	0	732	732	775	775	431	431
SUM 2009	0	732	732	775	775	431	431
WIN 2009	0	732	732	775	775	431	431
SPR 2010	0	732	732	775	775	431	431
SUM 2010	0	732	732	775	775	431	431
WIN 2010	0	732	732	775	775	431	431
SPR 2011	0	732	732	775	775	431	431
SUM 2011	0	732	732	775	775	431	431
WIN 2011	0	732	732	775	775	431	431
SPR 2012	0	732	732	775	775	431	431
SUM 2012	0	732	732	775	775	431	431
WIN 2012	0	732	732	775	775	431	431
SPR 2013	0	732	732	775	775	431	431
SUM 2013	0	732	732	775	775	431	431
WIN 2013	0	732	732	775	775	431	431
SPR 2014	0	732	732	775	775	431	431
SUM 2014	0	732	732	775	775	431	431
WIN 2014	0	732	732	775	775	431	431
SPR 2015	0	732	732	775	775	431	431
SUM 2015	0	732	732	775	775	431	431
WIN 2015	0	732	732	775	775	431	431
SPR 2016	0	732	732	775	775	431	431
SUM 2016	0	732	732	775	775	431	431
WIN 2016	0	732	732	775	775	431	431
SPR 2017	0	732	732	775	775	431	431
SUM 2017	0	732	732	775	775	431	431
WIN 2017	0	732	732	775	775	431	431
SPR 2018	0	732	732	775	775	431	431
SUM 2018	0	732	732	775	775	431	431
WIN 2018	0	732	732	775	775	431	431
SPR 2019	0	732	732	775	775	431	431
SUM 2019	0	732	732	775	775	431	431
WIN 2019	0	732	732	775	775	431	431
SPR 2020	0	732	732	775	775	431	431
SUM 2020	0	732	732	775	775	431	431
WIN 2020	0	732	732	775	775	431	431
SPR 2021	1,938	0	732	0	775	0	431
SUM 2021	1,938	0	732	0	775	0	431

ATTACHMENT 5.2
Water Modeling – Graphs
above Milner
All Water to North Wells

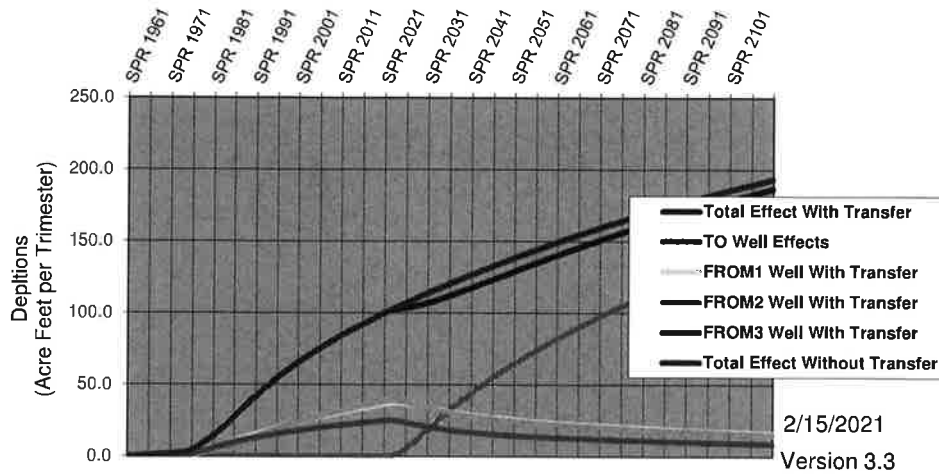
Hydrologic Response--Ashton to Rexburg
Customer Name: Sorensen **Transfer No:**



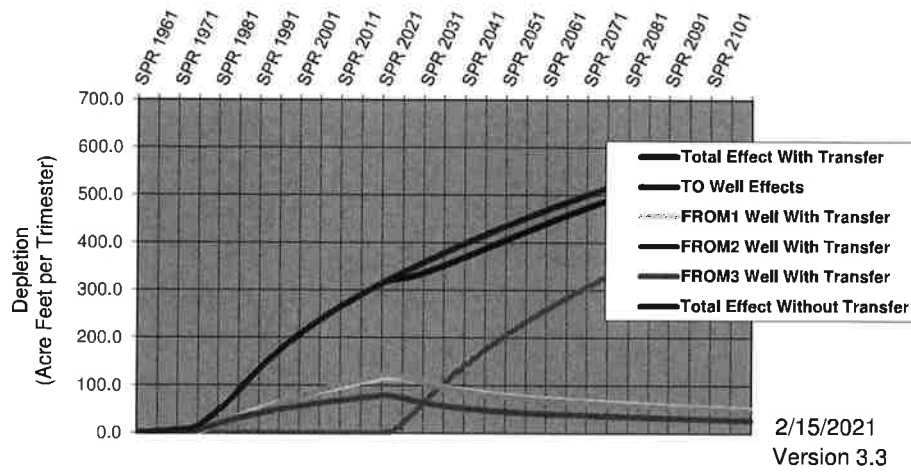
Hydrologic Response--Heise to Shelley
Customer Name: Sorensen **Transfer No:**



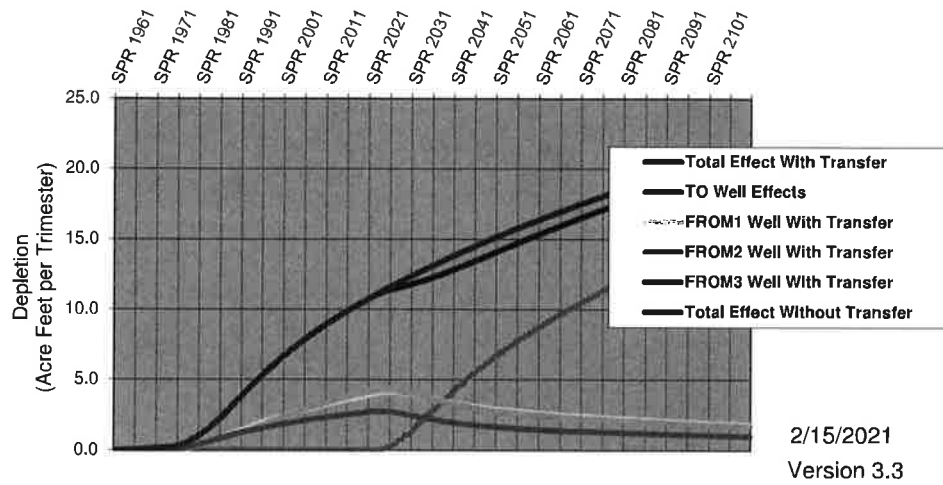
Hydrologic Response--Shelley to Near Blackfoot
Customer Name: Sorensen Transfer No:



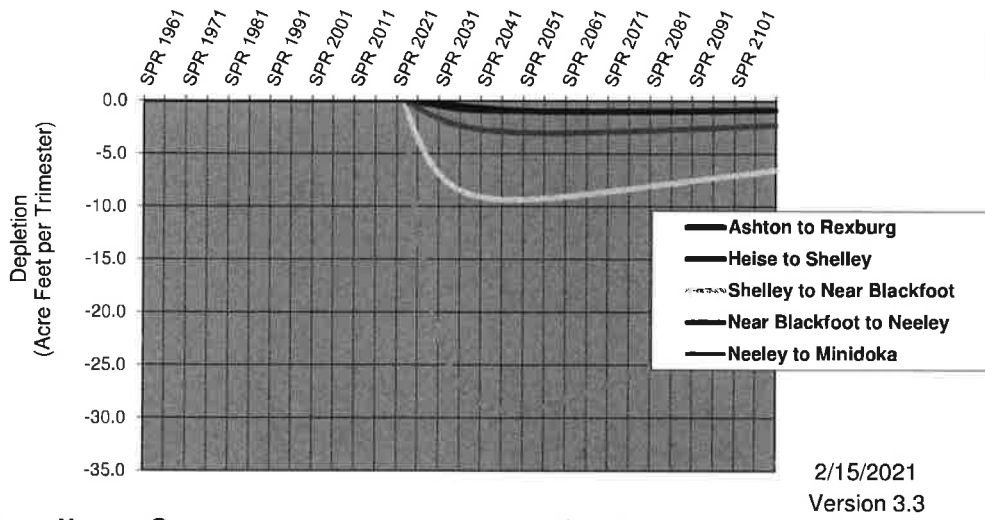
Hydrologic Response-- Near Blackfoot to Neeley
Customer Name: Sorensen Transfer No:



Hydrologic Response-- Neeley to Minidoka
Customer Name: Sorensen Transfer No:



Net Transfer Effect Above Milner
(Total Effect With Transfer - Total Effect Without Transfer)



Customer Name: Sorensen

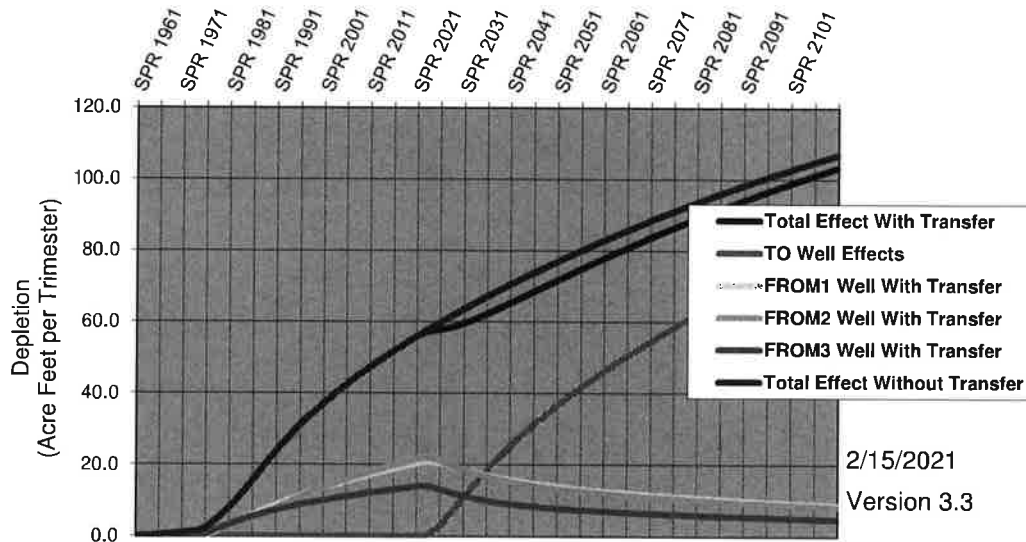
Transfer No:

ATTACHMENT 5.3
Water Modeling – Graphs
below Milner
All Water to North Wells

Hydrologic Response--Devil's Washbowl to Buhl

Customer Name: Sorensen

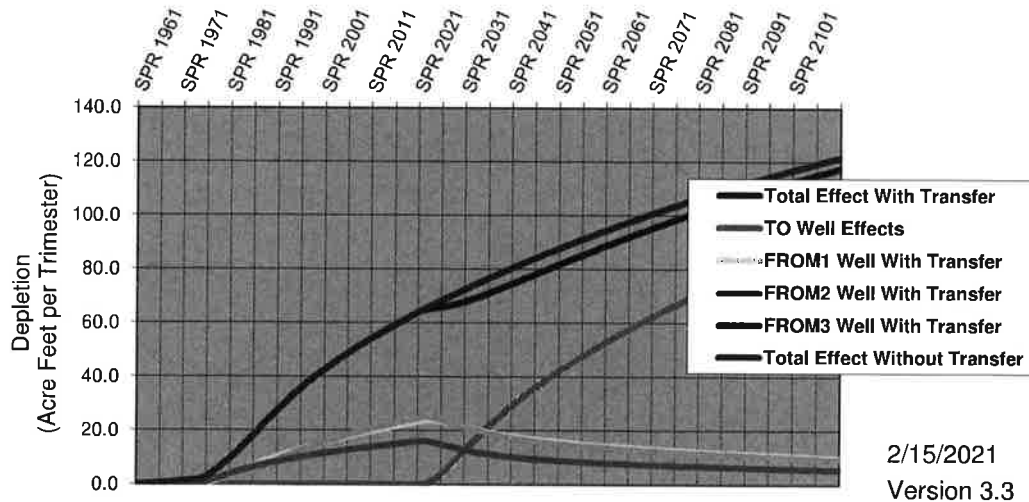
Transfer No:



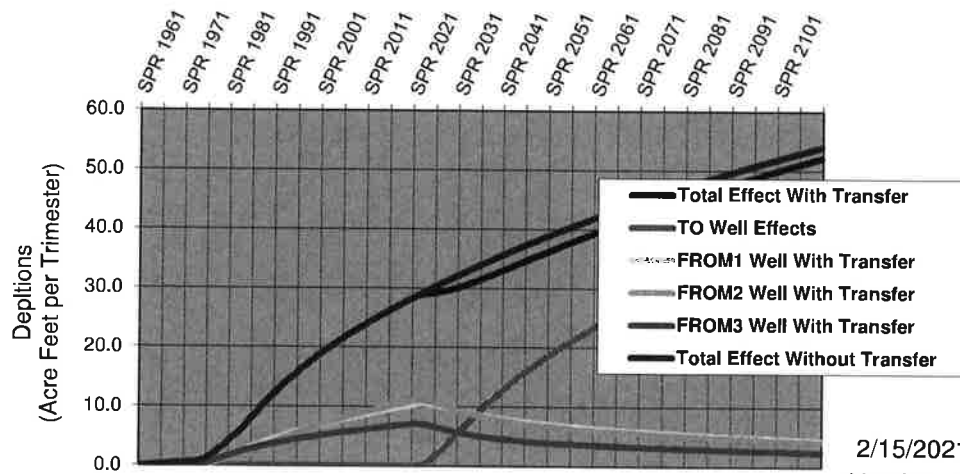
Hydrologic Response--Buhl to Thousand Springs

Customer Name: Sorensen

Transfer No:

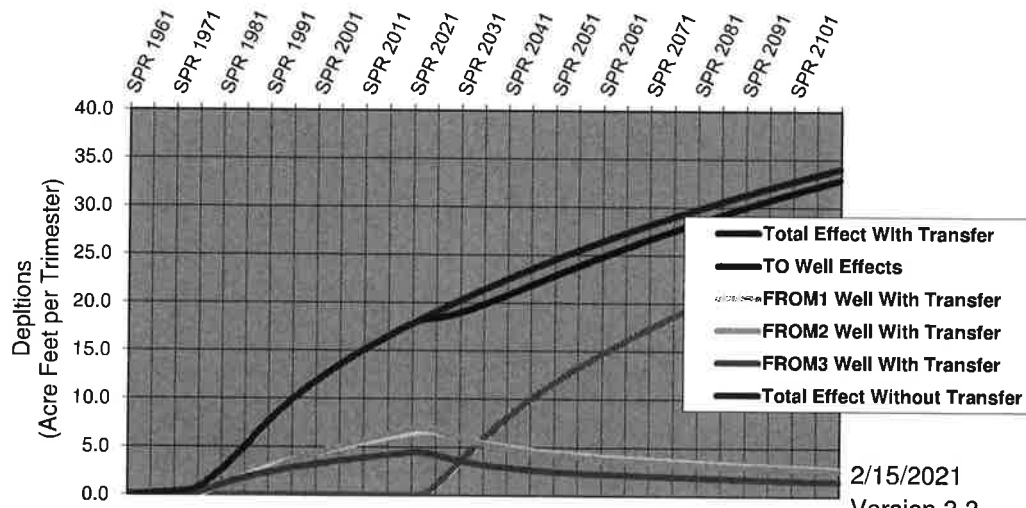


Hydrologic Response--Thousand Springs
Customer Name: Sorensen Transfer No:



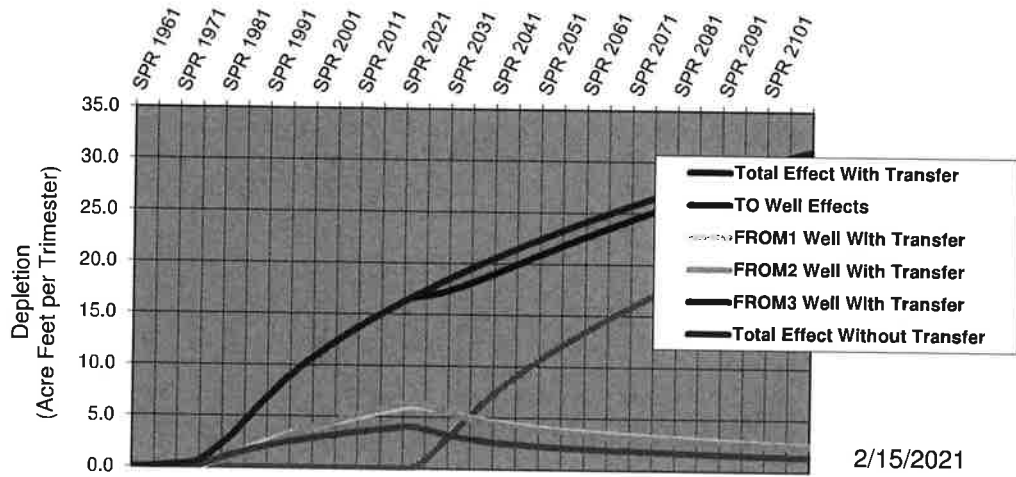
2/15/2021
 Version 3.3

Hydrologic Response--Thousand Springs to Malad
Customer Name: Sorensen Transfer No:

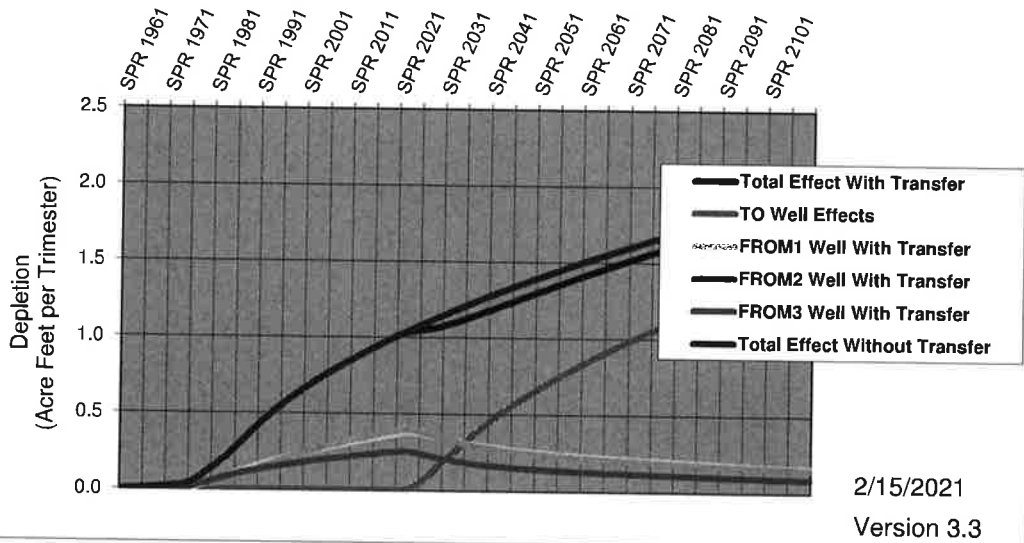


2/15/2021
 Version 3.3

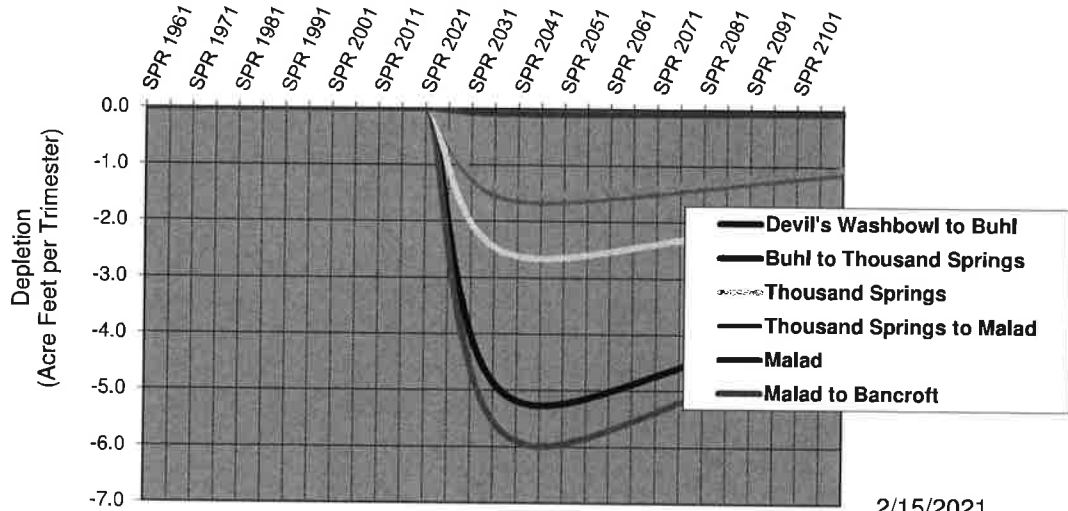
Hydrologic Response-- Malad
Customer Name: Sorensen Transfer No:



Hydrologic Response-- Malad to Bancroft
Customer Name: Sorensen Transfer No:



Net Transfer Effect Below Milner **(Total Effect With Transfer - Total Effect Without Transfer)**



2/15/2021
Version 3.3

Customer Name: Sorensen

Transfer No:

ATTACHMENT 5.4
Water Modeling – Mitigation
Analysis
All Water to North Wells

WR No.	Div. Rate (CFS)	Con. Vol. (AFA)	No. of Irr. Acres	Priority Date	POD Location	Dedicated Vol. AFA/ AFT	Model Node
Transfer: Proposed Steady State Impacts following Transfer							
Transfer 1: Worst Case Transient State Impacts following Transfer							

	Ashton to Rexburg	Heise to Shelley	Shelley to Nr Bickft	Nr Bickft To Neeley	Neeley to Minidoka	Dev. Wbl. To Buhl	Buhl to Kspr	Kspr	Kspr to Malad	Malad	Malad to Bancroft
Pre-SS	21.7	64.5	193.2	605.3	21.3	106.8	121.6	54.0	34.0	31.1	1.9
Post-SS	20.9	62.2	186.6	584.7	20.6	103.2	117.5	52.1	32.9	30.1	1.9
Pre-TS	21.7	64.5	193.2	605.3	21.3	106.8	121.6	54.0	34.0	31.1	1.9
Post-TS	20.9	62.2	186.6	584.7	20.6	103.2	117.5	52.1	32.9	30.1	1.9

Steady State Analysis	Mitigation Check 1 - >10% of Historical:	-3.9%	-3.6%	-3.4%	-3.4%	-3.5%	-3.4%	-3.4%	-3.4%	-3.4%	-3.4%	-3.4%
	Mitigation Check 2: > 2 AF/T:	-0.8	-2.3	-6.6	-20.5	-0.7	-3.6	-4.1	-1.8	-1.1	-1.1	-0.1
	Mitigation Check 3 - >10% of Total:	1.7%	5.1%	15.4%	48.2%	1.7%	8.5%	9.7%	4.3%	2.7%	2.5%	0.2%
	Mitigation Required?:	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
	Mitigation Vol. Req'd (ac-ft):	-0.8	-2.3	-6.6	-20.5	-0.7	-3.6	-4.1	-1.8	-1.1	-1.1	-0.1
Transient State Analysis	Mitigation Check 1 - >10% of Historical:	-3.9%	-3.6%	-3.4%	-3.4%	-3.5%	-3.4%	-3.4%	-3.4%	-3.4%	-3.4%	-3.4%
	Mitigation Check 2: > 2.01 AF/T:	-0.8	-2.3	-6.6	-20.5	-0.7	-3.6	-4.1	-1.8	-1.1	-1.1	-0.1
	Mitigation Required?:	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
	Mitigation Vol. Req'd (ac-ft):	-0.8	-2.3	-6.6	-20.5	-0.7	-3.6	-4.1	-1.8	-1.1	-1.1	-0.1

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Email: lmarchant@holdenlegal.com

Attorneys for Applicants

BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATION FOR
TRANSFER NO. 84270 IN THE NAME OF
ELAINE R. SORENSEN

**STIPULATION FOR WITHDRAWAL
OF PROTEST**

THIS STIPULATION FOR WITHDRAWAL OF PROTEST (this "Stipulation") is made and entered into to be effective as of the latest signature date set forth below, by and between the following parties:

1. **Elaine R. Sorensen** (hereinafter, "Sorensen");
2. **Joel Andersen** (hereinafter, "Andersen");
3. **Cindy Archer** (hereinafter, "Archer");
4. **Jerry Browne** (hereinafter, "Browne");
5. **Lenard Van Eps** (hereinafter, "Van Eps");

Sorensen, Andersen, Archer, Browne, and Van Eps may hereinafter be collectively referred to as the "Parties" or individually a "Party."

RECITALS:

- A. Sorensen filed Application for Transfer No. 84270 (hereinafter simply "84270" or ("The Transfer") on July 21, 2020.
- B. The Transfer proposes to change the place of use and points of diversion for Water Right Nos. 34-7052 and 34-7110 and combine those two water rights with Water Right Nos. 34-170, 34-496A, 34-556, 34-692D, 34,10319, 34-2332, 34-2424B, 34-2428, 34-7035B, 34-7079, 34-12416, and 34-13841 to create a 2,598-acre permissible place of use within which



1,837 acres will be authorized for irrigation. The Application will also update ownership of Water Right No. 34-10319.

- C. Andersen, Archer, Browne, and Van Eps protested 84270.
- D. Instead of participating in administrative hearings contesting 84270 as provided for under Idaho law, the Parties have elected to enter this Stipulation to resolve the protests that have been filed.

AGREEMENTS:

1. **Withdrawal of Protests.** Subject to the provisions of this Stipulation, Andersen, Archer, Browne, and Van Eps hereby withdraw their protests to 84270.
2. **Conditions To be Included in Approval of Water Right Transfer.** The Department shall include the following conditions on Water Right Nos. 34-2332, 34-2424B, 34-2428, 34-7035B, 34-7079, 34-7052, 34-12416, and 34-13841, or conditions substantially in the same form, in the final order approving 84270:
 - a. "Diversion and use of water from the well located in NENE, Lt. 1, Sec. 05, 04N, 26E (known as the "North Well") under the following water rights shall be limited to the diversion of 2.27 cfs and 371 acre-feet/annum: 34-2332, 34-2424B, 34-2428, 34-7035B, 34-7079, 34-7052, 34-12416, and 34-13841."
 - b. "Diversion and use of water from the well located in NWSENE, Sec. 05, 04N, 26E (known as the "Middle Well") under the following water rights shall be limited to the diversion of 1,953 acre-feet/annum: 34-2332, 34-2424B, 34-2428, 34-7035B, 34-7079, 34-7052, 34-12416, and 34-13841."
 - c. "Diversion and use of water from the well located in SESE, Sec. 05, 04N, 26E (known as the "South Well") under the following water rights shall be limited to the diversion of 1,293.3 acre-feet/annum: 34-2332, 34-2424B, 34-2428, 34-7035B, 34-7079, 34-7052, 34-12416, and 34-13841."
 - d. Water Right Nos. 34-2332, 34-2424B, 34-2428, 34-7035B, 34-7079, 34-7052, 34-12416, and 34-13841 shall be limited to the irrigation of 1690.5 acres within the 2,598-acre permissible place of use.
 - e. The right holder shall maintain a measuring device, data logger, and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversions located in the NENE, Lt. 1, Sec. 05, 04N, 26E (known as the "North Well"), NWSENE, Sec. 05, 04N, 26E (known as the "Middle Well"), and the SESE, Sec. 05, 04N, 26E (known as the "South Well").

3. **ESPA Modeling.** Sorensen shall provide ESPA modeling as required by IDWR for Water Right Nos. 34-2332, 34-2424B, 34-2428, 34-7035B, 34-7079, 34-7052, 34-12416, and 34-13841 and the applicable points of diversion, including the limitations described in paragraphs 2.a, 2.b, and 2.c above, that satisfies IDWR requirements for such modeling.
4. **Resolution of Protests.** This Stipulation is intended to resolve the protest filed by Andersen, Archer, Browne, and Van Eps. Resolution of this protest is conditioned upon the Department including the conditions set forth herein. If such conditions are not included, then either Party may terminate this Stipulation by written notice to the other Party within ten (10) days after the final order approving 84270. The Parties reserve the right to challenge any decision from the Department that does not include the conditions set forth in this Stipulation.
5. **Reservation of Rights.** The Parties agree and acknowledge that this Stipulation only resolves Andersen, Archer, Browne, and Van Eps' protest to 84270. The Parties shall not use this Stipulation in any other administrative or judicial proceedings for any purpose, other than an action to enforce its terms as provided in paragraph 9 below.
6. **Reliance Upon Statements/Integration and Merger.** The Parties specifically acknowledge that they have executed this Stipulation without relying upon any statements or representations written or oral, as to any statement of law or fact made by any other person or attorney. The Parties to this Stipulation have read and understand the Stipulation, and warrant and represent that this Stipulation is executed voluntarily and without duress or undue influence on the part of or on behalf of any party. This agreement represents the sole entire and integrated Stipulation by and between the Parties hereto, and supersedes any and all prior understandings or agreements whether written or oral except as specifically provided herein.
7. **Successors and Assigns.** This Stipulation shall be binding upon and shall inure to the benefit of each Party's officers, directors, shareholders, heirs, successors and assigns, and shall be specifically enforceable.
8. **Waiver and Modification.** No provision of this Stipulation may be waived, modified, or amended except by written agreement executed by all the Parties hereto.
9. **Enforcement and Interpretation.** This Stipulation is a valid and binding obligation of the parties, and their successors or assigns. It shall be admissible and enforceable according to its terms, and venue in any subsequent action shall rest within the State of Idaho. This Stipulation is subject to interpretation in accordance with the laws of the State of Idaho.
10. **Counterparts.** This Stipulation may be executed in counterparts, each of which is deemed an original but all of which constitute one and the same instrument. The signature pages may be detached from each counterpart and combined into one instrument.

Elaine R. Sorensen
Elaine R. Sorensen
Date: 2/16/2021

Joel Andersen
Joel Andersen
Date: 2-14-21

Cindy Archer
Cindy Archer
Date: 2-14-21

Jerry Browne
Jerry Browne
Date: 2-14-21

Lenard Van Eps
Lenard Van Eps
Date: 2-14-21