

State of Idaho
Department of Water Resources
Water Right License
WATER RIGHT NO. 63-33298

PRIORITY: December 10, 2009

Maximum Diversion Rate: 2.44 CFS
Maximum Diversion Volume: 549.0 AF

It is hereby certified that:

FRISBY LAND HOLDINGS LLC 6325 SE 8TH AVE CALDWELL ID 83607

has complied with the terms and conditions of the permit, issued pursuant to Application for Permit dated November 16, 2009, and has submitted Proof of Beneficial Use on November 08, 2017. An examination confirms water is diverted from:

SOURCE:
GROUND WATER

and a water right has been established as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL DIVERSION VOLUME</u>
IRRIGATION	03/01 to 11/15	2.44 CFS	549.0 AF

LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SW¼NW¼ Sec. 20, Twp 06N, Rge 03W, B.M. PAYETTE County
GROUND WATER SW¼SW¼ Sec. 17, Twp 06N, Rge 03W, B.M. PAYETTE County

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
06N	03W	17									32.0	31.0	29.0	30.0					122.0

Total Acres: 122

CONDITIONS OF APPROVAL

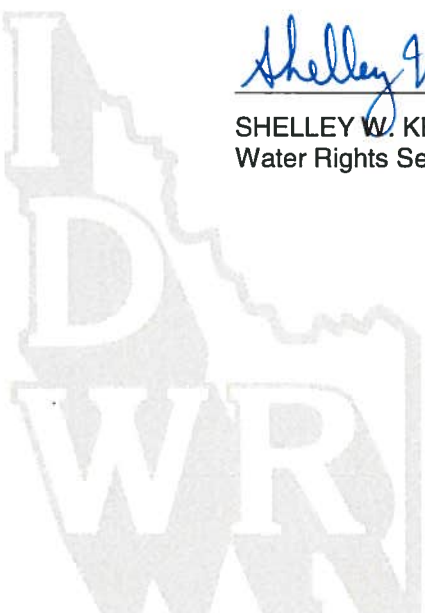
1. This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.5 afa per acre at the field headgate for irrigation of the place of use.
2. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.
3. When ordered by the Director, the right holder shall provide mitigation acceptable to the Director to offset depletion of lower Snake River flows needed for migrating anadromous fish. The amount of water required for mitigation, which is to be released into the Snake River or a tributary for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this right. Any order of the Director issued in accordance with this paragraph shall be in conformance with applicable rules allowing the right holder due process as the need for mitigation and the amount of mitigation are determined.

State of Idaho
Department of Water Resources
Water Right License
WATER RIGHT NO. 63-33298

4. The following rights are diverted through point of diversion described above in the SWNW quarter of Section 20 in Township 6 North, Range 3 West: 63-10785, 63-31505, 63-31178, 63-33298, and 63-34261.

This license is issued pursuant to the provisions of Section 42-219, Idaho Code. The water right confirmed by this license is subject to all prior water rights and shall be used in accordance with Idaho law and applicable rules of the Department of Water Resources.

Signed this 3rd day of January, 2018.



Shelley W. Keen

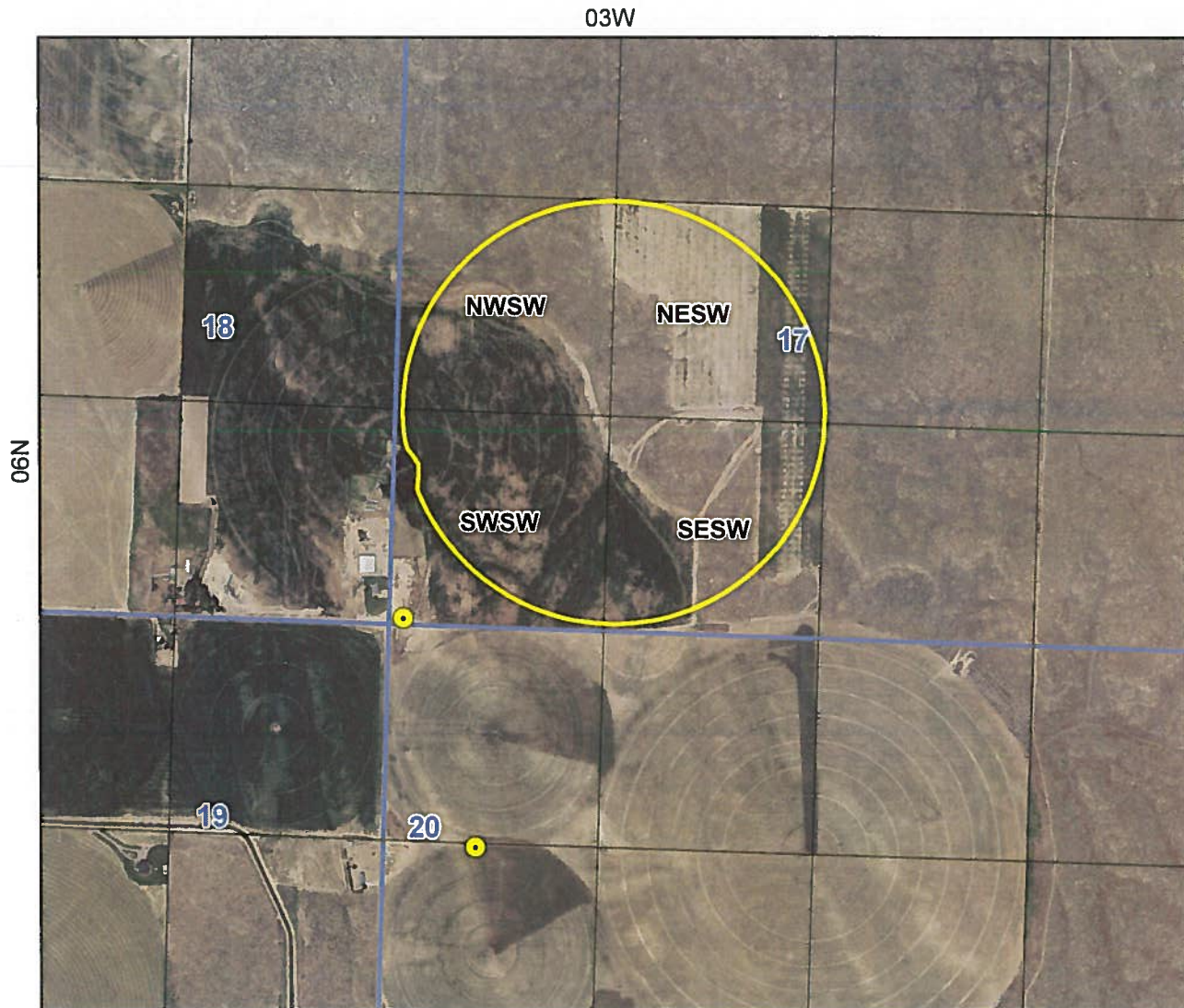
SHELLEY W. KEEN
Water Rights Section Manager

State of Idaho
Department of Water Resources

Attachment to Water Right License

63-33298

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections

0 0.125 0.25 0.5 Miles





State of Idaho

DEPARTMENT OF WATER RESOURCES

322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098

Phone: (208) 287-4800 • Fax: (208) 287-6700 • Web Site: www.idwr.idaho.gov

GARY SPACKMAN
Director

C.L. "BUTCH" OTTER
Governor

January 4, 2018

FRISBY LAND HOLDINGS LLC
6325 SE 8TH AVE
CALDWELL ID 83607

RE: License Nos. 63-33298 & 63-34261

Issuance of Licenses

Dear Water Right Holder(s):

The Department of Water Resources has issued the enclosed Water Right Licenses confirming that water rights have been established in accordance with your permits. Please be sure to thoroughly review the conditions of approval and remarks listed on your licenses. Also enclosed is a copy of the approved application for amendment.

The licenses are PRELIMINARY ORDERS issued by the Department pursuant to section 67-5243, Idaho Code. They can and will become final orders without further action by the Department unless a party petitions for reconsideration or files an exception and/or brief within fourteen (14) days of the service date as described in the enclosed information sheet.

Please note that water right owners are required to report any change of water right ownership and/or mailing address to the Department within 120 days of the change. Failure to report these changes could result in a \$100 late filing fee. Contact any office of the Department or visit the Department's homepage on the Internet to obtain the proper forms and instructions.

If you have any questions, please contact me at 208-287-4951.

Sincerely,

A handwritten signature in blue ink that reads "Pamela Skaggs".

Pamela Skaggs, Water Rights Supervisor
Water Right Permits Section

Enclosure(s)

c: SPF WATER ENGINEERING LLC

CERTIFICATE OF SERVICE

I hereby certify that on January 5, 2018 I mailed true and correct copies, postage prepaid, of the foregoing PRELIMINARY ORDERS (Approved Licenses) to the person(s) listed below:

RE: WATER RIGHT NOS.

63-33298 & 63-34261

**FRISBY LAND HOLDINGS LLC
6325 SE 8TH AVE
CALDWELL ID 83607**

**SPF WATER ENGINEERING LLC
300 E MALLARD DR STE 350
BOISE ID 83706**



Darla Block

Technical Records Specialist

EXPLANATORY INFORMATION TO ACCOMPANY A PRELIMINARY ORDER

(To be used in connection with actions when a hearing was not held)

(Required by Rule of Procedure 730.02)

The accompanying order or approved document is a "Preliminary Order" issued by the department pursuant to section 67-5243, Idaho Code. It can and will become a final order without further action of the Department of Water Resources ("department") unless a party petitions for reconsideration, files an exception and brief, or requests a hearing as further described below:

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the department within fourteen (14) days of the service date of this order. **Note: the petition must be received by the department within this fourteen (14) day period.** The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3) Idaho Code.

EXCEPTIONS AND BRIEFS

Within fourteen (14) days after: (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding with the Director. Otherwise, this preliminary order will become a final order of the agency.

REQUEST FOR HEARING

Unless a right to a hearing before the Department or the Water Resource Board is otherwise provided by statute, any person aggrieved by any final decision, determination, order or action of the Director of the Department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Director and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

ORAL ARGUMENT

If the Director grants a petition to review the preliminary order, the Director shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Director will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with IDAPA Rules 37.01.01302 and 37.01.01303 (Rules of Procedure 302 and 303).

FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Director may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

Unless a different date is stated in a final order, the order is effective fourteen (14) days after its service date if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:

- (a) The petition for reconsideration is disposed of; or
- (b) The petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.

State of Idaho
Department of Water Resources
APPLICATION FOR AMENDMENT
(For Licensing Purposes)
WATER RIGHT NO. 63-33298

RECEIVED

JAN 02 2018

DEPARTMENT OF
WATER RESOURCES

PRIORITY: December 10, 2009

Maximum Diversion Rate: 2.44 CFS
Maximum Diversion Volume: 549.0 AF

Comes now

FRISBY LAND HOLDINGS LLC 6325 SE 8TH AVE CALDWELL ID 83607

and represents to the Idaho Department of Water Resources that he is the owner and holder of Permit to Appropriate the Public Waters of the State of Idaho No. 63-33298, and requests that the permit be changed as follows:

SOURCE:
GROUND WATER

BENEFICIAL USE
IRRIGATION

PERIOD OF USE
03/01 to 11/15

DIVERSION RATE
2.44 CFS

ANNUAL DIVERSION VOLUME
549.0 AF

LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SW¼NW¼ Sec. 20, Twp 06N, Rge 03W, B.M. PAYETTE County
GROUND WATER SW¼SW¼ Sec. 17, Twp 06N, Rge 03W, B.M. PAYETTE County

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
06N	03W	17									32.0	31.0	29.0	30.0					122.0

Total Acres: 122

Permit holder asserts that no one will be injured by such change and that such change will be made at permit holder's own risk. Signed this 22 day of December, 2017.


(Signature)

State of Idaho
Department of Water Resources
APPLICATION FOR AMENDMENT
(For Licensing Purposes)
WATER RIGHT NO. 63-33298

FOR DEPARTMENT USE ONLY

Preliminary check by TR Fee = 100.00 Received by TR # C104488 Date 1/2/2018

ACTION OF THE DEPARTMENT OF WATER RESOURCES

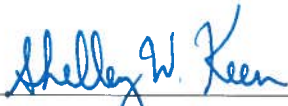
The Idaho Department of Water Resources hereby approves the above Application for Amendment for Permit No. 63-33298 with the following:

CONDITIONS OF APPROVAL

1. This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.5 afa per acre at the field headgate for irrigation of the place of use.
2. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.
3. When ordered by the Director, the right holder shall provide mitigation acceptable to the Director to offset depletion of lower Snake River flows needed for migrating anadromous fish. The amount of water required for mitigation, which is to be released into the Snake River or a tributary for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this right. Any order of the Director issued in accordance with this paragraph shall be in conformance with applicable rules allowing the right holder due process as the need for mitigation and the amount of mitigation are determined.
4. The following rights are diverted through point of diversion described above in the SWNW quarter of Section 20 in Township 6 North, Range 3 West: 63-10785, 63-31505, 63-31178, 63-33298, and 63-34261.

This amendment is issued pursuant to the provisions of Section 42-211, Idaho Code.

Signed this 3rd day of January, 2018.



SHELLEY W. KEEN
Water Rights Section Manager

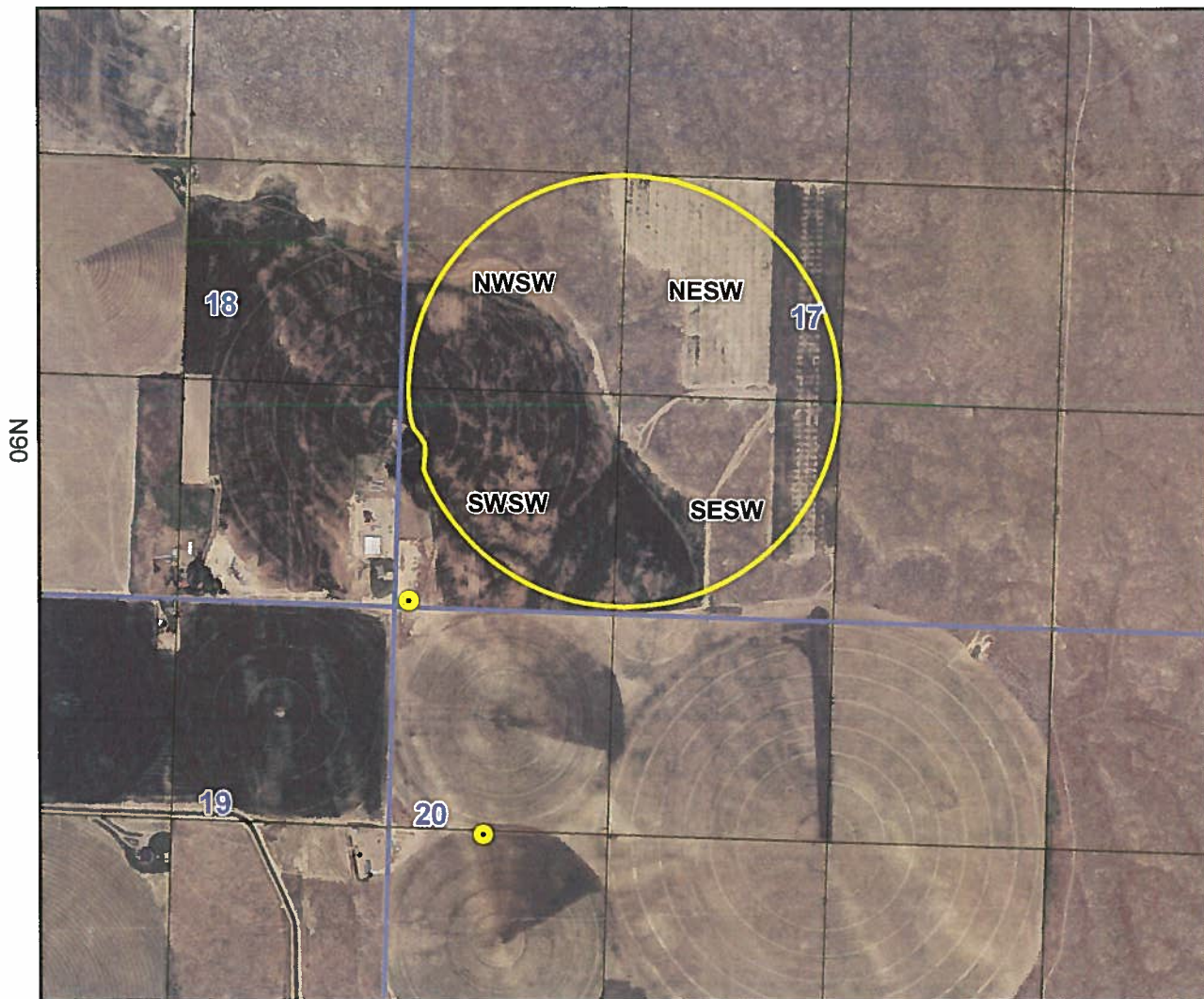
State of Idaho
Department of Water Resources

Attachment for Application to Amend a Permit

63-33298

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

03W



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections

0 0.125 0.25 0.5 Miles





State of Idaho

DEPARTMENT OF WATER RESOURCES

322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098

Phone: (208) 287-4800 • Fax: (208) 287-6700 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

December 18, 2017

FRISBY LAND HOLDINGS LLC
6325 SE 8TH AVE
CALDWELL ID 83607

RE: Water Right Permit No. 63-33298

Dear Permit Holder(s):

The Idaho Department of Water Resources (Department) is reviewing the permit referenced above prior to issuing a water right license. By issuing a license, the Department confirms the extent of development that has been established in compliance with the terms of the permit.

The examiner you hired to verify your water use reported that certain elements of the permit have been developed differently than described on your permit. Changes that do not increase the authorized use of water under the permit can be requested and approved in accordance with Section 42-211, Idaho Code. Before a license can be issued, your permit must be amended to depict your water use as it was actually developed.

The application for permit you submitted and the permit approved by the Department allowed the development of the 122 acres of irrigation in the SW quarter of Section 17 from a single well in the SWSW quarter of Section 17 in Township 6 North, Range 3 West. The field examiner stated that a second well located in the SWNW quarter of Section 20 in Township 6 North Range 3 West was also used in this system.

The use of 2 points of diversion/wells cannot be covered in the license issued for this permit without the permit first being amended to include the second well and the correct place of use. Fortunately, the amendment can add the second point of diversion. This prevents you from dealing with various compliance issues that might arise in the future.

The permit will still be limited to the diversion rate and diversion volume originally developed by the permit and described the field report. According to the field report, the original well provided adequate water for both water right permits 63-33298 and 63-34261. The well in Section 20 appears to be a backup water source, and doesn't supply an additional rate of diversion or volume.

The enclosed Application for Amendment form depicts the elements of the water right as they will appear on the license when issued. Please review the amendment form carefully. If you concur with the information presented, please sign and return the form with the \$100.00 filing fee within 14 days or by March 24, 2017.

If you have any questions, please don't hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel A. Nelson", with a long horizontal flourish extending to the right.

Daniel A. Nelson

Analyst 3

Water Right Section

Idaho Department of Water Resources

Telephone # (208) 287-4856

Email – dan.nelson@idwr.idaho.gov

Enclosure(s): Application for Amendment with map

Cc – Scott King, SPF Water Engineering.

MEMORANDUM

TO: Water Right File 63-33298 and 63-34261

FROM: Daniel Nelson – Analyst 3

DATE: December 7, 2017

SUBJECT: Licensing Review of Water Right 63-33298 and 63-34261

This field exams for these rights were performed by Certified Field Examiner Scott King of SPF Water Engineering.

Mr. King recommended that permit 63-33298 be licensed as a primary water right for 2.44 cfs and 549 af for the irrigation of 122 acres. Mr. King suggested that an amendment was needed to correct the acres in each 40 acre tract, but an amendment shouldn't be needed for this adjustment. Mr. King also stated that an amendment would be needed to add a point of diversion that would allow the use of a second well in the SWNW quarter of Section 20, Township 6 North, Range 3 West. An amendment would be needed to add the second point of diversion to this permit.

Mr. King recommended that permit 63-34261 be licensed as a supplemental water right for the 68 acres currently being supplied water from Black Canyon Irrigation District and an additional 21 acres of primary irrigation for a total of 89 acres with a diversion rate of 1.78 cfs and volume of 400.5 af. Mr. King suggested that an amendment was needed to correct the acres in each 40 acre tract, but an amendment shouldn't be needed for this adjustment.

Diversion Rate:

Mr. King was unable to measure the well in SWNW quarter of Section 20, Township 6 North, Range 3 West. Mr. King didn't think it was necessary to measure the well in Section 20, because the new well developed by these permits in SWSW quarter of Section 17, Township 6 North, Range 3 West, supplied the full diversion rate required to fulfill the maximum allowable diversion rate for these two permits. The well in Section 20 is going to be used as a backup well and doesn't supply any additional diversion rate to these two permits. The Section 20 well had a theoretical calculation done on that well that supplied the water needed for the existing three water rights that are using that well for their point of diversion. Whereas the Section 20 well doesn't add any rate or volume to these two permits, the diversion rate calculated from that well should be sufficient for the licensing of these permits.

I did have a question concerning the diversion rate measured by Mr. King, but he supplied suitable information that would allow the measurement done to be used in the licensing of these permits. Please see the email and telephone conversation memo dated December 5 and 6, 2017.

Conditions:

The majority of the conditions will be removed, changed, or altered per Department standards. Conditions 6 (065) and 7 (104) will be removed from permit 63-33298, since this right is primary water right. Condition F06 will be added to both rights to show the rights diverted from the well in Section 20. No combined limits are needed, since all of the water rights from these two wells are additive. Since no volume is included on a water right license for supplemental irrigation, the following condition will be added to water right 63-34261:

The 21 acre portion of the place of use described above that is not authorized to be irrigated with Black Canyon Irrigation water shall be limited to an annual volume of 94.5 af.

Permits 63-33298 and 63-34261

The top photo shows the 2017 Google earth aerial photos and the bottom photo shows the 2015 imagery available to the Department. The google earth photo shows that 210 acres were irrigated in 2017.



The following is the Sentinel Satellite image of the property.



MEMORANDUM

TO: Water Right Permit File 63-33298 and 63-34261

FROM: Daniel A. Nelson

DATE: December 6, 2017

SUBJECT: Telephone Conversation with Scott King.

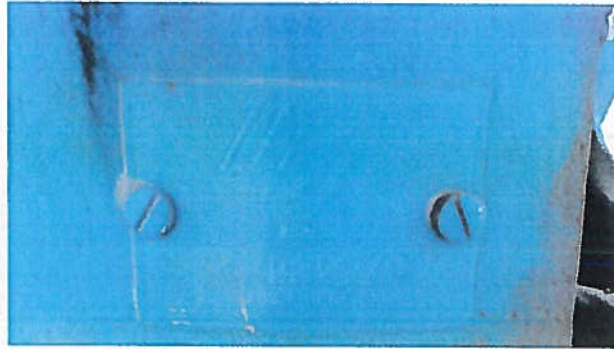
On December 5, 2017, I spoke to Scott King today concerning the measurement he took for the well associated with permits 63-33298 and 63-34261. I could not get the theoretical calculation to match the measurement that Scott King took. Scott sent me some pictures that he didn't include in the field report for these two permits. I have attached these pictures to this memo.

The pictures show the well name plate had been sanded off and new numbers were stamped into the name plate of the well. This a common practice on rebuilt well pumps, but there are times that these numbers are not necessarily accurate. Another of the pictures shows the pressure gauge at 30 psi. I asked Scott if the system was running fully at this pressure, and he told me that these are newly designed low pressure pivots. The low pressure is needed, because they have to use plastic pipe for the mainline instead of steel. Apparently, the steel corrodes too much to be cost efficient, so they went with this new plastic pipe and the low pressure pivots for this system.

Scott and I worked through a couple of scenarios concerning this type of system, and I was able to get a flow rate with a reasonable drawdown level. It looks like the well was actually wound to operate at the lower end of the service factor or approximately 210 hp ($200 \text{ hp} \times 1.15 \text{ Service factor} = 230 \text{ Hp}$). In my calculations, I used the 30 psi shown on the gauge, 236 feet drawdown which matches the drawdown found in the records for Well #1.

On December 6, 2017, I relooked at the information supplied by Mr. King, and I still couldn't see how the system could run two pivots at one time with a pressure of 30 psi. I sent an email to Mr. King to see if I could find some additional information to ease my concerns, and he responded with additional information on the pivot. I am still a bit skeptical, but I can't argue with the information Mr. King supplied. Therefore, the measurement made by Mr. King will be used in the licensing of the permit.

The following pictures were attached to an email sent by Scott King of SPF Water Engineers on December 5, 2017, for permits 63-33298 and 63-34261.



Nelson, Dan

From: Scott King <SKing@spfwater.com>
Sent: Wednesday, December 06, 2017 1:10 PM
To: Nelson, Dan
Subject: RE: 63-33298 & 63-34261

You're welcome.
Thank you for being thorough.

Scott

From: Nelson, Dan [mailto:Dan.Nelson@idwr.idaho.gov]
Sent: Wednesday, December 6, 2017 1:08 PM
To: Scott King <SKing@spfwater.com>
Subject: RE: 63-33298 & 63-34261

Scott,

Thank you for the information. I will put this in the file. I am sorry about the confusion on my part, but I need to ensure I can explain a system that doesn't fall within the normal system design.

Dan Nelson

From: Scott King [mailto:SKing@spfwater.com]
Sent: Wednesday, December 06, 2017 11:02 AM
To: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Subject: RE: 63-33298 & 63-34261

Hi Dan,

I shared this message with Russel and just spoke with him.

They did a significant amount of land leveling with this project, cutting an estimated 25 to 30 feet from the high-elevation areas. I just checked with Google Earth and its elevation model is not updated; it still shows high elevations of 2600 feet.

The pivot systems are equipped with 15 psi regulators per Nelson specs. When the uppermost pivot is up at the high point, it shows 22 psi at the end of the pivot. The pivots are equipped with pressure sensors and the operators are using [Field Net](#) to monitor operation. When the end gun booster kicks on, pressure at the ends drop by 5 psi, leaving adequate pressure to operate the 10 psi regulators. The operator has worked hard to optimize efficiency and operate a low pressure system here to meet Idaho Power's incentive program.

There are no boosters except for end guns.

The other well pump was not running when the flow measurement was made.

It may be possible that the pressure gage I was observing was reading low. I didn't look at the VFD panel to see what the indicated pressure was there.

They are not running the LESA/LEPA or Dragonline systems described below.

I hope this helps.

Scott

Scott N. King, P.E. | Supervising Engineer

SPF Water Engineering, LLC

300 E Mallard Drive, Suite 350 | Boise, ID 83706

phone 208.383.4140 | fax 208.383.4156

email sking@spfwater.com | web www.spfwater.com

The information contained in this e-mail is intended only for the individual or entity to whom it is addressed. Its contents (including any attachments) may contain confidential and/or privileged information. If you are not an intended recipient you must not use, disclose, disseminate, copy or print its contents. If you receive this e-mail in error, please notify the sender by reply e-mail and delete and destroy the message.

Thank you,
Scott

From: Nelson, Dan [<mailto:Dan.Nelson@idwr.idaho.gov>]
Sent: Wednesday, December 6, 2017 8:46 AM
To: Scott King <SKing@spfwater.com>
Subject: RE: 63-33298 & 63-34261

Hello Scott,

I am still struggling with the pressure out of the pump. When I looked at the photos that you sent, I noticed that the area being irrigated is very hilly. I overlaid the contour lines on the maps, and I found that the elevation at the center of the full circle and the small pivot in the northeast was 20 to 40 feet higher in elevation than the well location. This would reduce the pressure of the mainline at these pivots sites by 9 to 17 psi. That would leave approximately 21 to 13 psi to operate the pivot.

I contacted Agri-lines, and asked if a pivot could be operated at a pressure of 30 psi or less. They told me the following:

There are methods of reducing pressure but having said that, soil types and slope will dictate what will be successful. PMDI and LESA are two methods we have used. PMDI (Our product is Dragonline) is a system with drip tubing on a 22"-30" spacing. LESA (Low Elevation Spray Application) is popular in the Idaho Falls area. In this system, spray heads are dropped to 18" or so above the soil surface. PMDI is better suited to slopes that is LESA. PMDI/Dragonline has pressure compensation built into the tubing.

I checked out both of those systems, and compared them with the pivots in the photos, and they don't match. You told me that the south well wasn't in use at the time of the measurement, so that eliminates the use of this well to pressurize the system. Therefore, either the system wasn't being operated under normal operating conditions, or there are boosters in the field that boost the water pressure to properly operate the system. You told me that the pivots were operating normally, so that eliminates the possibility that the system wasn't operating under normal conditions.

This only thing that I can think of is that boosters were being used somewhere along the mainline in the field to pressurize the water system. None of your pictures show an inline booster, and the picture of the pivot center doesn't show a booster there either, so I don't know what is going on at this point. At this point, I still can't see how this pump system could operate the pivots at a pressure of 30 psi at the well site. Is there anything you can give me that would help me convince others that the measurement was taken during normal operating conditions?

I know this is a hassle, but at this point, I can't send this measurement up the line without something that explains how the system operates at this low of pressure.

Thank you.

Dan nelson

From: Scott King [<mailto:SKing@spfwater.com>]
Sent: Tuesday, December 05, 2017 3:35 PM
To: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Subject: 63-33298 & 63-34261

Dan,

Maybe these will help.

Nelson, Dan

From: Fred Butler <FredB@agri-lines.com>
Sent: Wednesday, December 06, 2017 8:02 AM
To: Nelson, Dan
Subject: RE: Low Pressure Systems

Good morning-

There are methods of reducing pressure but having said that, soil types and slope will dictate what will be successful. PMDI and LESA are two methods we have used. PMDI (Our product is Dragonline) is a system with drip tubing on a 22"-30" spacing. LESA (Low Elevation Spray Application) is popular in the Idaho Falls area. In this system, spray heads are dropped to 18" or so above the soil surface. PMDI is better suited to slopes that is LESA. PMDI/Dragonline has pressure compensation built into the tubing.

Let me know if you need any further info.

Thanks-Fred

Fred Butler
Sales Manager
(208)880-5903
www.agri-lines.com



ZIMMATICTM
BY LINDSAY

From: Dan Nelson [<mailto:dan.nelson@idwr.idaho.gov>]
Sent: Wednesday, December 6, 2017 7:45 AM
To: Fred Butler
Subject: Low Pressure Systems

Your Name: Dan Nelson

Your Email: dan.nelson@idwr.idaho.gov

Subject: Low Pressure Systems

Message: Ladies and Gentlemen,

I am doing some research on pivots, and I have been told that you have installed a couple of system with low

pressure systems. From what I have heard, you can supply water to two 40 acre pivots, and a small corner pivot with a system pressure at the well head of 30 psi. My research into the system shows that there is an increase in elevation of between 0 and 40 feet. If my calculations are correct, this would leave very little pressure available to the pivot without the assistance of a booster pump. My question to you is there a pivot system available that can operate with less than 20 to 30 psi in the line supplying the pivot?

Thank you for your time. I would appreciate any information that you could give me.

Respectfully,

Dan Nelson
Analyst 3,
Idaho Department of Water Resources