

State of Idaho
Department of Water Resources
Water Right License
WATER RIGHT NO. 63-12601

PRIORITY: August 24, 2000

Maximum Diversion Rate: 0.20 CFS

Maximum Diversion Volume: 20.0 AF

It is hereby certified that:

W & H LTD LIABILITY CO PO BOX 7943 BOISE ID 83707

has complied with the terms and conditions of the permit, issued pursuant to Application for Permit dated August 24, 2000, and has submitted Proof of Beneficial Use on January 12, 2006. An examination confirms water is diverted from:

SOURCE:
UNNAMED DRAIN

TRIBUTARY:
BOISE RIVER

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>
WILDLIFE STORAGE	01/01 to 12/31		20.0 AF
DIVERSION TO STORAGE	01/01 to 12/31	0.20 CFS	

LOCATION OF POINT(S) OF DIVERSION:UNNAMED DRAIN L3 (NE $\frac{1}{4}$ NW $\frac{1}{4}$) Sec. 27, Twp 05N, Rge 05W, B.M. CANYON County**PLACE OF USE:** WILDLIFE STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	05W	21	X																
05N	05W	21	X L 2																
05N	05W	22						X	X										
05N	05W	22							X L 4										

CONDITIONS OF APPROVAL

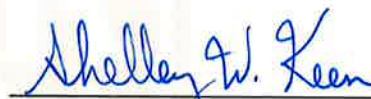
- The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion.
- Use of water under this right may be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 63.
- Rights 63-2611A, 63-2611B, 63-12601, 63-32910, 63-33503, 63-33354, and 63-33361 when combined shall not exceed a total diversion rate of 10.21 cfs.

State of Idaho
Department of Water Resources
Water Right License
WATER RIGHT NO. 63-12601

4. Rights 63-12601 and 63-32910 authorize the storage of an annual total of 65 acre-feet, comprised of 50 acre-feet to be used for the initial filling or carryover storage of the ponds and field flooding and 15 acre-feet for the replacement of losses due to seepage and evaporation.
5. 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.
6. This right does not grant any right-of-way or easement across the land of another.
7. The waste water diverted under this right is subject to the right of the original appropriator, in good faith and in compliance with state laws governing changes in use and/or expansion of water rights, to cease wasting water, to change the place of use or manner of wasting it, or to recapture it.

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 30th day of June, 2018.



SHELLEY W. KEEN
Water Allocation Bureau Chief



State of Idaho

DEPARTMENT OF WATER RESOURCES

322 E FRONT ST STE 648 PO BOX 83720 • BOISE, ID 83720-0098

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

C.L. "Butch" Otter
Governor

Gary Spackman
Director

July 03, 2018

W & H LTD LIABILITY CO
PO BOX 7943
BOISE ID 83707

RE: License No. 63-12601

Issuance of License

Dear Water Right Holder(s):

The Department of Water Resources ("Department") has issued the enclosed Water Right License confirming that a water right has been established in accordance with your permit. Please be sure to thoroughly review all the conditions of approval listed on your license. The conditions may include ongoing requirements, such as maintenance of a measuring device or implementation of mitigation, as well as information about how your water use may be administered, such as regulation by a watermaster in a water district. Also enclosed is a copy of the approved application for amendment.

The license is a PRELIMINARY ORDER issued by the Department pursuant to Rule 730 of the Department's Rules of Procedure (IDAPA 37.01.01.730). It can and will become a final order without further action by the Department unless a party petitions for reconsideration, files exceptions, or requests a hearing as described in the enclosed information sheet.

Also, 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. Water right forms are available from any office of the Department or on the Department's website at idwr.idaho.gov

If you have any questions concerning the enclosed information, please contact me at (208) 287-4951.

Sincerely,

Pamela S. Skaggs
Water Rights Supervisor

Enclosure(s)

CERTIFICATE OF SERVICE

I hereby certify that on July 05, 2018, I served a true and correct copy of Water Right License No. 63-12601 by U.S. Mail, postage prepaid, to the following:

W & H LTD LIABILITY CO (Current Owner)
PO BOX 7943
BOISE ID 83707

WATER DISTRICT #63
REX BARRIE (Watermaster)
PO BOX 767
STAR ID 83669-0767

SPF WATER ENGINEERING LLC
C/O TERRY SCANLAN
300 E MALLARD DR STE 350
BOISE ID 83706-6660



Darla Block
Technical Records Specialist I

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. 63-12601

RECEIVED

JUN 20 2018

DEPARTMENT OF
WATER RESOURCES

PRIORITY: August 24, 2000

Maximum Diversion Rate: 0.20 CFS

Comes now

W & H LTD LIABILITY CO PO BOX 7943 BOISE ID 83707

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. 63-12601, and requests that the permit be changed as follows:

SOURCE:
UNNAMED DRAIN

TRIBUTARY:
BOISE RIVER

BENEFICIAL USE

WILDLIFE STORAGE
DIVERSION TO STORAGE

PERIOD OF USE

01/01 to 12/31
01/01 to 12/31

DIVERSION RATE

0.20 CFS

**ANNUAL
DIVERSION
VOLUME**
20.0 AF

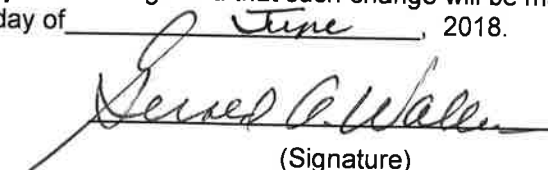
LOCATION OF POINT(S) OF DIVERSION:

UNNAMED DRAIN L3 (NE¼NW¼) Sec. 27, Twp 05N, Rge 05W, B.M. CANYON County

PLACE OF USE: WILDLIFE STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	05W	21	X																
05N	05W	21	X L 2																
05N	05W	22						X	X										
05N	05W	22							X L 4										

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 18th day of June, 2018.


(Signature)

State of Idaho
Department of Water Resources
APPLICATION FOR AMENDMENT
(For Licensing Purposes)
WATER RIGHT NO. 63-12601

FOR DEPARTMENT USE ONLY

Preliminary check by _____ Fee = \$100.00 Received by AV # C105919 Date 6/20/18

ACTION OF THE DEPARTMENT OF WATER RESOURCES

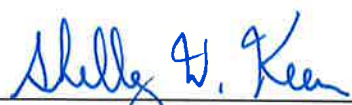
The Idaho Department of Water Resources hereby approves the above Application for Amendment for Permit No. 63-12601 with the following:

CONDITIONS OF APPROVAL

1. The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion.
2. Use of water under this right may be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 63.
3. Rights 63-2611A, 63-2611B, 63-12601, 63-32910, 63-33503, 63-33354, and 63-33361 when combined shall not exceed a total diversion rate of 10.21 cfs.
4. Rights 63-12601 and 63-32910 authorize the storage of an annual total of 65 acre-feet, comprised of 50 acre-feet to be used for the initial filling or carryover storage of the ponds and field flooding and 15 acre-feet for the replacement of losses due to seepage and evaporation.
5. 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.
6. This right does not grant any right-of-way or easement across the land of another.
7. The waste water diverted under this right is subject to the right of the original appropriator, in good faith and in compliance with state laws governing changes in use and/or expansion of water rights, to cease wasting water, to change the place of use or manner of wasting it, or to recapture it.

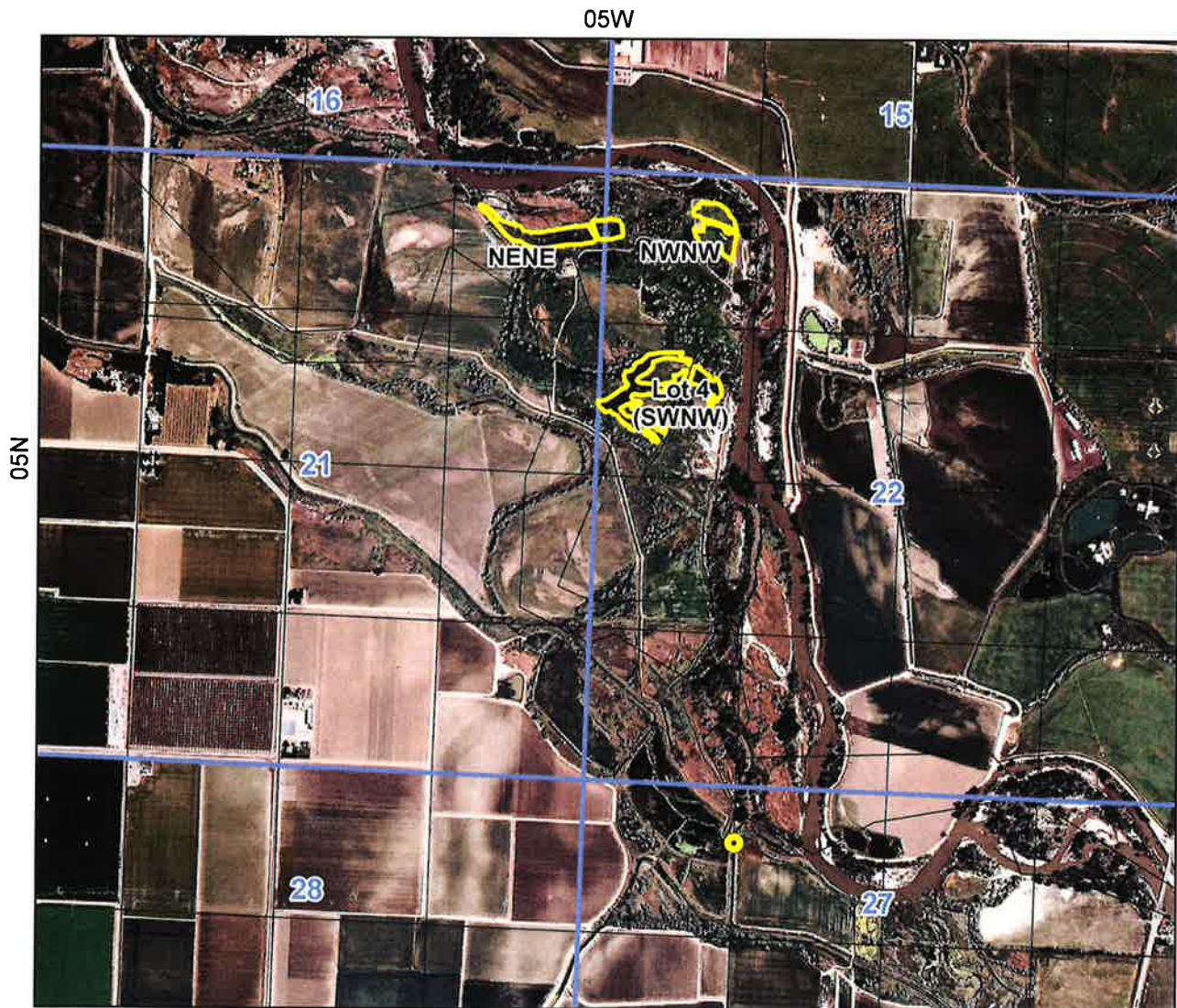
This amendment is issued pursuant to the provisions of Section 42-211, Idaho Code.

Signed this 30th day of June, 2018.


SHELLEY W. KEEN
Water Allocation Bureau Chief

State of Idaho
Department of Water Resources
Attachment for Application to Amend a Permit
63-12601

This map depicts the WILDLIFE STORAGE 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 0.175 0.35 0.7 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

June 13, 2018

W & H LTD LIABILITY CO
PO BOX 7943
BOISE ID 83707

RE: Water Right Permit No. 63-12601

Dear Permit Holder:

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.

On September 27, 2011, the Department received a field report from Certified Water Right Examiner Terry Scanlan of SPF Water Engineering, LLC. The processing of this field report was held until overlapping water right claims in the Snake River Basin Adjudication (SRBA) were decreed. The SRBA claims have been decreed, and we have reviewed this field report for the licensing of Permit 63-12601.

The field report submitted by Mr. Scanlan states the legal description for the place of use developed was different the place of use permitted. The permit shows a place of use in Government Lot 8 (NENE) in Section 21 and the NWNW and Government Lot 4 (SWNW) of Section 22 in Township 5 North, Range 5 West. The field report describes the place of use as being in the Government Lot 2 (NENE) and the NENE in Section 21 and the NWNW, SWSW, and Government Lot 4 (SWNW) of Section 22 in Township 5 North, Range 5 West.

If the legal description on the permit does not match the legal description developed, then an amendment of the permit is required prior to licensing the permit. Therefore, an amendment is required to change the place of use on the permit before we can move forward with licensing the water right permit 63-12601.

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 June 27, 2018.

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

Sincerely,

A handwritten signature in dark 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 maps

cc Terry Scanlan SPF Water Engineers (sent by email)

MEMORANDUM

TO: File 63-12601

FROM: Daniel Nelson – Staff Hydrologist

DATE: May 30, 2018

SUBJECT: Licensing Review of Water Right 63-12601

The field examination for this permit was performed by Terry Scanlan of SPF Water Engineering. The field report was submitted in September of 2011, but was held until the overlapping water rights were decreed in the Snake River Basin Adjudication (SRBA). The permit holder filed late claims for water right 63-32910, which is a direct overlapping water right. Water right 63-32910 was decreed in July of 2013.

History:

The Department received the application for this permit in August of 2000. In December of 2007, the Department received a copy of a SRBA late claim numbered 63-32910, which claimed a 1970 priority date for wildlife and wildlife storage. The court decreed water right 63-32910 in July of 2013. The wildlife storage use for 63-32910 was for field flooding equaling 45 acres with an average water depth of 1 foot. The place of use described in 63-32910 included the area where the ponds for this permit were developed. Other than some high spots that couldn't have been flooded, the area associated with this permit was definitely included in the 45 acres described in water right 63-32910. However, 63-32910 did not provide any refill water, so 63-32910 only allows a single one time fill.

The affidavit submitted with the claim for water right 63-32910 states that there was an existing pond that was filled and overflowed to flood surrounding fields within the place of use for 63-32910. The pond also appears to have been used to supply stockwater and as an irrigation regulation pond for the other rights associated with this farm. This pond had a surface area of 0.5 acres, and should not be included in water rights 63-32910 or this permit.

There are two stockwater rights (63-33354 and 63-33361), and four irrigation rights (63-2611A, 63-2611B, and 63-33503) that are also diverted from the same drain. This property is also within the place of use of the Hass Ditch Company that diverts water from the Boise River. The existing pond is covered by the stockwater use, and the irrigation rights during the irrigation season. The ponds associated with this permit were developed on lands that do not appear to have been irrigated in the 1987 aerial photo, but appear to have been low lying areas that collected wastewater or maybe some shallow groundwater when the Boise River was high.

Another permit (63-32458) for wildlife storage has been approved on this property, but proof of beneficial use has not been submitted for 63-32458.

Point of Diversion:

The water right examiner placed the point of diversion on the line between Government Lot 4 (NW $\frac{1}{4}$ NW $\frac{1}{4}$) and Government Lot 3 (NE $\frac{1}{4}$ NW $\frac{1}{4}$) of Section 27 in Township 5 North, Range 5 West. The existing water rights appear to be all over the place with water rights with Boise River as source and rights with variously named drains sharing the same point of diversion. The 2011 aerial photography confirms the point of diversion is in Government Lot 3 (NE $\frac{1}{4}$ NW $\frac{1}{4}$) of Section 27 in Township 5 North, Range 5 West. An amendment will be needed to correct the point of diversion. The permit holder may also want to file a water right transfer to ensure all of their unnamed drain and Boise River water rights describe the correct point of diversion. Please see the Point of Diversion Location Maps attached to this memo.

Water Source:

The permit was permitted as wastewater, but it is clear that the source described in the application for permit is a drain. The water right is for year round use, and wastewater would generally only be available during the irrigation season. The source will be changed to unnamed drain instead of wastewater, since the source has been claimed as an unnamed drain, Meadows Drain, and Baldrige Drain in the existing decrees. This can be done, since it is only a clarification of the source, and not a changing of the source. The drain is not named on any of the existing mapping information, so it should be described as an unnamed drain. This unnamed drain appears to have been constructed to dump excess water out of the Ross East End Drain into the Boise River. The Ross East End Drain runs from east to west approximately 700 feet south of the permits point of diversion on the unnamed drain which runs from the Ross East End Drain north 900 feet where it turns east for approximately 500 feet to the Boise River.

Place of Use

The place of use falls in an old oxbow of the Boise River. The channel of the Boise River has changed over the years, and Government Lots really no longer reflect current conditions. However, we are required to follow the existing Government Lot information, which reflects the old channel. An amendment will be needed to correct the legal descriptions of the place of use. Please see the Place of Use map attached to this memo.

Storage Volume Recommendation:

Mr. Scanlan in his field report treated the area associated with water right 63-32910 and this permit as separate storage components. As stated above, the ponds under this permit were developed within the place of use the existing water right. This is the main reason licensing this permit was held up was to ensure we knew what the court would determine the place of use and extent of the water use was under 63-32910 before moving forward with the licensing of this permit. Please see Craig Saxton's November 21, 2011 memo that speaks to this issue.

I have attached to this memo an analysis of the storage use for this permit. Approximately 5 af of additional storage capacity was developed under this permit above the amount authorized by water right 63-32910. The additional storage capacity is due to the deepening of the year round ponds. Water right 63-32910 is for field flooding, so there was no seepage or evaporation losses calculated by this right. The ponds developed under this permit remain relatively full throughout the entire year. In the pond analysis, I determined that the 10 acres of ponds authorized by this permit would have approximately 25.5 af of seepage and 26.3 af of evaporation losses each year. Therefore, it would take more than the 20 af authorized by this permit to maintain the pond levels for the ponds. I am recommending that this permit be licensed for 20 af of wildlife storage, with a condition that limits water rights 63-32910 and this permit to 45 acres of pond surface area, 50 af of storage, and 15 af for evaporation and seepage.

Diversion Rate:

The water right examiner measured a flow rate of 7.00 cfs (0.6 feet of head above weir) flowing through the weir box at the time of the field examination. Per the pictures in the file suggest that the weir was submerged and that the 7.00 cfs calculation is probably inaccurate. At a diversion rate of 7.00 cfs the weir is no long reliable, so it is unlikely that any flow rate higher than 7.00 cfs could be accurately measured over the existing weir. The photos also suggests that at 7.00 cfs the water level in the drain are very similar to the water level in the weir box, which would prevent anymore flow through the weir box without removing the weir blade. It may be in the best interest of the permit holder to install a broad crested weir/flume further down the channel, which would allow more water to be diverted through the headgate. The measurement at 2.00 cfs appears to be a reasonable measurement, so the point of diversion has the capacity to divert the 0.20 cfs authorized by this permit.

The existing water rights allow up to 10.21 cfs, which would require an additional 0.175 feet (2 inches) of head going over the weir blade (3.33×4.5 weir width $\times 0.775^{1.5}$ Height of water over weir = 10.22 cfs). With the submergence of the weir at 7.00 cfs, it is not reasonable to suggest the weir could accurately measure 10.21 cfs. Without further measurements showing the system can divert more than the 10.21 cfs already decreed for this water right, I am recommending that this permit be licensed at 0.20 cfs with a combined limitation that limits the total diversion through the headgate to 10.21 cfs already decreed for this system.

Conditions:

All of the conditions will need to be replaced by current water right conditions. Condition X35 will also needed to limit the combined diversion rate through the headgate to 10.21 cfs. Condition 259 will be needed to limit the total storage capacity and provide for seepage and evaporation when this permit and water right 63-32910 are combined. Condition 220 will be needed to ensure the total surface area of ponds when water right 63-32910 and this permit are combined do not exceed 45 acres.

Permit 63-12601 – Point of Diversion Location

The green point of diversion below is the point of diversion described by the water right examiner as the point of diversion for the Upper Haas Ditch. It should be noted that the water right examiner's map actually shows the point of diversion directly on the 40 acre tract line. The green point of diversion is also described in water rights 63-33503 and 63-33354 and permit 63-33508. The red point of diversion below is the point described in permit 63-32458 and water rights 63-172B and 63-202B from the Boise River and water rights 63-2611A, 63-2611B, and 63-32910 from variously named drains. The 2011 aerial photo clearly shows the point of diversion as the blue point shown below. The actual point of diversion is really all over the place, but the 2011 aerial photo shows a clear point of diversion location. I am going to move water rights 63-2611A, 63-2611B, and 63-32910 to the location shown by the blue dot below.



The yellow lines show the different quarter-quarter lines and government lots. The green shows the borders of the ponds. As you can see the old Boise River channel flowed through the middle of this project. The new Boise River Channel can be seen at the top of the aerial photo.



PERMIT 63-12601 – STORAGE ANALYSIS

Permit 63-12601 is a storage water right for year round storage. There are other rights already on the property. Water right 63-32910 is a decreed water right that allows 45 acre to be flooded to a depth of 1 foot for a total of 45 af.

There is also an old pond on the property that was used for irrigation and stockwater under water rights 63-172B, 63-202B, 63-2611A, and 63-33354. The old pond was incorporated into the new ponds created by 63-12601, so its volume must be removed. I determined that the old pond had an 0.5 acre surface area and per the field report, the pond is between 1 to 3 feet deep for an average depth of 1.5 feet. The old pond volume would be limited to 0.8 af ($0.5 \text{ ac} \times 1.5 \text{ feet} = 0.75 \text{ af}$ rounded to 0.8 af).

In order to determine the size of the year round ponds, I used the 2006 aerial photos. The year 2006 was the year that proof of beneficial use was filed on 63-12601. Using these photos, I determined that the surface area of the ponds is approximately 11.4 af. If you remove the old pond, the surface area of the new ponds is 10.9 acres. The water right examiner stated that the surface area of the new ponds is 10 acres, so I will go with that number, since the water right examiner was in the field, and the numbers can be attributed to rounding errors.

The new ponds developed under this permit are within the borders of water right 63-32910. Therefore, the volume needs to be adjusted to ensure there is no enlargement. The way I calculated this was as follows:

$45 \text{ acres} \times 1 \text{ ft depth} = 45 \text{ af.}$

$10 \text{ acres} \times (1.5 \text{ average depth} - 1 \text{ ft existing depth per 63-32910}) = 5 \text{ af of new storage developed.}$

$\text{Total pond capacity} = 45 \text{ af} + 5 \text{ af} = 50 \text{ af.}$

Since the new ponds are year round ponds, we need to include a seepage and evaporation rates for these ponds. The attached pond spreadsheet shows a seepage rate of 25.5 af per year and an evaporation rate of 26.3 af per year for the 10 acres of year round ponds.

The permit allows up to 20 af of storage, which is not an adequate amount of water to maintain the water level in the ponds year round. In reviewing various years aerial photos, it is evident that the ponds cannot be maintained with this permit year round. A new permit has been filed that may be able to cover some of the evaporation and seepage losses.

I am recommending that this permit be licensed for a total of 20 af. A condition will need to be added that limits the surface area of the pond to 45 acres, a capacity to 50 af, with an additional 15 af allowed for seepage and evaporation.

Total Storage Calculations

FILE NUMBER	57-7581
REVIEWER	Dan Nelson
DATE	7/1/2015

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input
Calculated value
Formula Explanations

Surface Area (AC.)	10	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	0.5	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	5	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	25.5	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	26.3	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	56.8	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

Evaporation Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the annual evaporation losses from a pond.

FILE NUMBER	63-12601
REVIEWER	Dan Nelson
DATE	5/9/2018

User Input
Calculated value
Formula Explanations

The acronyms used on the Kimberly Research Center website are defined below:

P = Precipitation
ET= Evapotranspiration
P _d = Precipitation deficit
P _d =ET-P

USING THIS SPREADSHEET

Use the link below to access the Kimberly Research Center website. This website provides the Precipitation Deficit for a station most representative of the pond under examination. The Precipitation Deficit is the total amount of free water surface evaporation minus the precipitation for a given area, which gives the total amount of evaporative losses incurred by the pond. There are several weather sites that are used throughout the state. IDWR staff can find the nearest site using Arc Map. The shape file containing the sites can be found at <X:/Spatial/Climate/ETIdahostations.shp>.

Instructions:

1. Use the link below to navigate to ET Idaho 2012.
2. Select the station which is most representative to your pond location.
3. Click Submit Query.
4. Under "Land Covers with Evapotranspiration Estimates," select "Open Water - Shallow Systems (ponds, streams)" or "Open Water - small stock ponds" depending on the pond size.
5. Click the link to "Precipitation Deficit."
6. Reference and copy (ctrl + C) the first subheading "Mean" values.
7. Click the "Paste Values from ET Idaho" button. The table will automatically enter a zero (0) for any negative precipitation deficit values.

Found at: <http://data.kimberly.uidaho.edu/ETIdaho/>

Precipitation Deficit

Station: Twin Falls 2 NNE (NWS -- 109294)

Month	mm/day ¹	Days per month	mm/Month
Jan	-0.36	31	0.00
Feb	0.53	28	14.84
March	1.60	31	49.60
April	2.47	30	74.10
May	3.23	31	100.13
June	4.09	30	122.70
July	5.03	31	155.93
August	4.46	31	138.26
September	3.15	30	94.50
October	1.41	31	43.71
November	0.23	30	6.90
December	-0.47	31	0.00

PLEASE NOTE: The seasonal average for precipitation deficit should not be used for calculations because precipitation often exceeds evaporation during wetter months of the year. If the pond is kept full, excess precipitation during wetter months does not serve to refill the pond during drier months.

For example, see Sandpoint KSPT (NWS -- 108137), the annual precipitation deficit is -106 mm. However, April through September have positive precipitation deficit values. To properly estimate the annual volume of water necessary to refill a pond due to evaporation losses, the table will automatically enter a zero (0) for each month that the precipitation value is reported as a negative value.

As described above, precipitation offsets evaporation in winter months, so the net effect is that wintertime precipitation deficit is usually zero.

Total mm/year = 800.67

$$[(800.67) \div (\text{convert to feet})] \times (\text{Surface area of pond, in acres}) = \text{Evaporation Loss in Acre Feet}$$

$$(800.67 \div 304.8) \times 10.00 = 26.3 \text{ AFA}$$

Seepage Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total annual seepage losses from a pond.

FILE NUMBER	57-7581
REVIEWER	Dan Nelson
DATE	7/1/2015

User Input
Calculated value
Formula Explanations

INPUTS

Pond Surface Area (AC.)	10	AC.
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Pond Surface Area (SQ. FT.)	435600	SQ. FT.
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I used the following method to obtain my Soil Classification Information:	NRCS Web Soil Survey	
My Soil Classification is	SC	
Suggested Seepage Rate (FT./DAY)	0.0070	FT./DAY

Formula: (Surface Area X Seepage Rate) X 7.48 = Gallons Per Day Loss
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Convert to GPD	22808	GPD
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Total Seepage Loss (AFA)	25.5	AFA
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Though sand and gravel seepage rates may actually be higher, the maximum allowable rate is 0.2 ft/day, pursuant to Administrative Memo "Seepage Loss Standards for Ponds and Reservoirs."

Suggested Seepage Rates for Different Soil Types:
GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) = 0.2 ft per day
OL and ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.02 ft per day
SC (clayey sands, sand clay mixtures) = 0.007 ft per day
CL (Low to medium plasticity clays) = 0.003 ft per day
MH, OH, PT and CH (high plasticity clays) = 0.0003 ft per day
LINED PONDS (liners can be chemical, fabric, or bentonite) = 0 ft per day
Ponds Intercepting Groundwater (excavated ponds filled by ground water) = 0 ft per day

PLEASE NOTE: The initial basis for the Suggested Seepage Rates in the table above is found on Page 16 of Seepage from Fish Ponds, Bulletin 599, August 1989 Alabama Agricultural experiment Station, Auburn University, Auburn University Alabama. If you don't know the soil type, please refer to the map provided at the NRCS Web Soil Survey (Tab #1), an ArcMap Soil Classification Map (Tab #1.1), or published NRCS Soil Survey (Tab #1.2). Use "0" if the pond fill relies on the water table.