



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

September 10, 2013

KOLAR SKOVIK LLC
467 BOSWELL RD
PLUMMER ID 83851

RE: License No. 92-10233

Issuance of License

Dear Water Right Holder(s):

The Department of Water Resources 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 the conditions of approval and remarks listed on your license. Also enclosed is a copy of the approved application for amendment.

The license 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 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 208-287-4916.

Sincerely,

Craig L. Saxton
Water Rights Supervisor

Enclosure(s)

CERTIFICATE OF SERVICE

I hereby certify that on September 10, 2013, I mailed a true and correct copy, postage prepaid, of the foregoing PRELIMINARY ORDER (Approved License) to the person(s) listed below:

RE: WATER RIGHT NO.

92-10233

**KOLAR SKOVIK LLC
467 BOSWELL RD
PLUMMER ID 83851**



**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
Water Right License

WATER RIGHT NO. 92-10233

Priority: May 05, 2011

Maximum Diversion Rate: 0.12 CFS
Maximum Diversion Volume: 9.1 AF

It is hereby certified that KOLAR SKOVIK LLC
467 BOSWELL RD
PLUMMER ID 83851 has complied with the terms and conditions of the
permit, issued pursuant to Application for Permit dated May 05, 2011; and has submitted Proof of
Beneficial Use on July 16, 2012. An examination confirms water is diverted from:

SOURCE

GROUND WATER
ST MARIES RIVER

Tributary: ST MARIES RIVER
ST JOE 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>
DOMESTIC	01/01 to 12/31	0.06 CFS	0.6 AF
IRRIGATION	04/01 to 10/31	0.08 CFS	7.5 AF
FIRE PROTECTION STORAGE	01/01 to 12/31		1.0 AF

LOCATION OF POINT(S) OF DIVERSION:

ST MARIES RIVER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County
ST MARIES RIVER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County
GROUND WATER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County
GROUND WATER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County
GROUND WATER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County
GROUND WATER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County

PLACE OF USE: DOMESTIC AND FIRE PROTECTION STORAGE

Twp Rge Sec	NE				NW				SW				SE				
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
44N 01W 8						X											

PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
44N 01W 8						2.5											2.5

Total Acres: 2.5

State of Idaho
Department of Water Resources
Water Right License

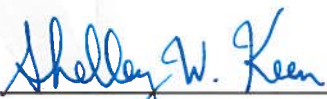
WATER RIGHT NO. 92-10233

CONDITIONS OF APPROVAL

1. This right when combined with all other rights shall provide no more than 0.03 cfs per acre nor more than 3.0 afa per acre at the field headgate for irrigation of the place of use.
2. The approach velocity at the points of diversion from the St. Maries River shall not exceed 0.5 feet per second.
3. A fish screen of 1/4 inch or smaller mesh shall be installed and maintained at the points of diversion from the St. Maries River.
4. Water shall not be diverted under this right when flows in the St. Maries River are below minimum flow amounts as defined by Right 92-7200.
5. Domestic use is for a private campground. Irrigation of lawn, garden and landscaping associated with the home is authorized under the irrigation component of this right.
6. The four ponds established by the storage of water under this right shall not exceed a total capacity of 0.6 acre-feet and 0.4 acre feet for evaporation and a total surface area of 0.02 acres.
7. Water shall not be diverted from fire protection storage except to fight or repel an existing fire.

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 10th day of September, 2013.


for GARY SPACKMAN
Director

State of Idaho
Department of Water Resources
Attachment To Water Right License
92-10233

This map depicts the DOMESTIC 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.

01W



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

0 0.0225 0.045 0.09 Miles



State of Idaho
Department of Water Resources
Attachment To Water Right License
92-10233

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.

01W



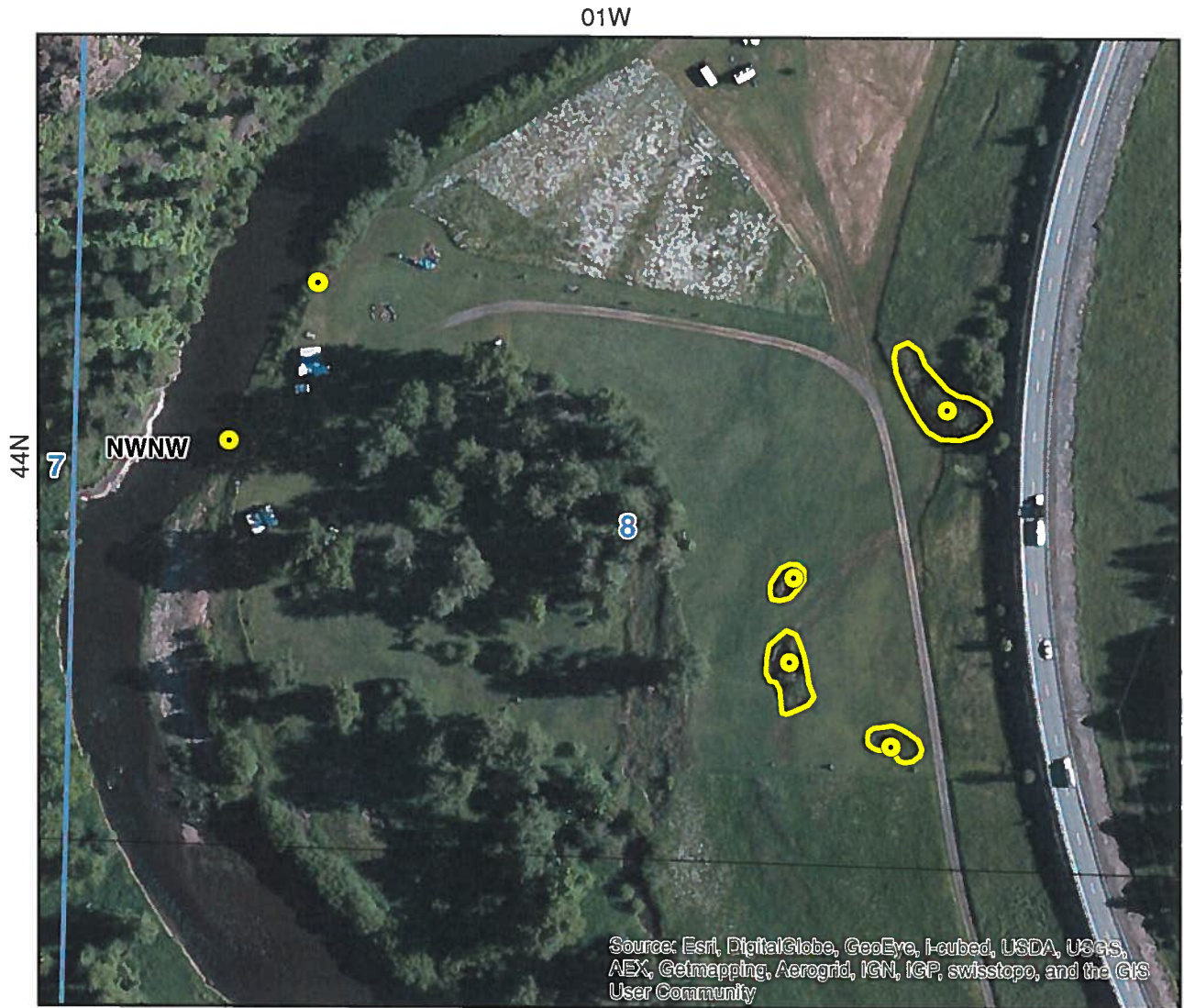
- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.02 0.04 0.08 Miles



State of Idaho
Department of Water Resources
Attachment To Water Right License
92-10233

This map depicts the FIRE PROTECTION 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
-  Quarter Quarters

0 0.02 0.04 0.08 Miles



State of Idaho
Department of Water Resources
APPLICATION FOR AMENDMENT

(For Licensing Purposes)

WATER RIGHT NO. 92-10233

RECEIVED

AUG 23 2013

DEPARTMENT OF
WATER RESOURCES

Date of Priority: May 05, 2011

Maximum Diversion Rate: 0.12 CFS
Maximum Diversion Volume: 9.1 AF

Comes now KOLAR SKOVIK LLC

467 BOSWELL RD

PLUMMER ID 83851

and represents to the Director of 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. 92-10233, and requests that the permit be changed as follows:

Source: GROUND WATER
ST MARIES RIVER

Tributary: ST MARIES RIVER
ST JOE RIVER

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>	<u>ANNUAL VOLUME</u>
DOMESTIC	01/01 to 12/31	0.06 CFS	0.6 AF
IRRIGATION	04/01 to 10/31	0.08 CFS	7.5 AF
FIRE PROTECTION STORAGE	01/01 to 12/31		1.0 AF

LOCATION OF POINT(S) OF DIVERSION:

ST MARIES RIVER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County
ST MARIES RIVER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County
GROUND WATER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County
GROUND WATER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County
GROUND WATER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County
GROUND WATER	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH County

PLACE OF USE: DOMESTIC

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
44N 01W 8						X											

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	
44N 01W 8						2.5											2.5

Total Acres: 2.5

State of Idaho
Department of Water Resources
APPLICATION FOR AMENDMENT
(For Licensing Purposes)
WATER RIGHT NO. 92-10233

PLACE OF USE: FIRE PROTECTION STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
44N 01W 8	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
						X											

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 8-20-13 day of August, 20013

20th

John A. Kolar
(Signature)

State of Idaho
Department of Water Resources
APPLICATION FOR AMENDMENT
(For Licensing Purposes)
WATER RIGHT NO. 92-10233

FOR DEPARTMENT USE ONLY

Preliminary check by DAN Fee = \$100.00 Received by HD # C097588 Date 8-7-13
Per OAN 9-10-2013

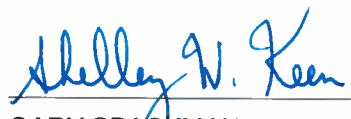
ACTION OF THE DEPARTMENT OF WATER RESOURCES

I, GARY SPACKMAN, of the Department of Water Resources hereby approve the
above Application for Amendment for Permit No. 92-10233 with the following:

CONDITIONS OF APPROVAL

1. This right when combined with all other rights shall provide no more than 0.03 cfs per acre nor more than 3.0 afa per acre at the field headgate for irrigation of the place of use.
2. The approach velocity at the points of diversion from the St. Maries River shall not exceed 0.5 feet per second.
3. A fish screen of 1/4 inch or smaller mesh shall be installed and maintained at the points of diversion from the St. Maries River.
4. Water shall not be diverted under this right when flows in the St. Maries River are below minimum flow amounts as defined by Right 92-7200.
5. Domestic use is for a private campground. Irrigation of lawn, garden and landscaping associated with the home is authorized under the irrigation component of this right.
6. The four ponds established by the storage of water under this right shall not exceed a total capacity of 0.6 acre-feet and 0.4 acre feet for evaporation and a total surface area of 0.02 acres.
7. Water shall not be diverted from fire protection storage except to fight or repel an existing fire.

Witness my hand this 10th day of September, 2013.


for GARY SPACKMAN
Director



State of Idaho

DEPARTMENT OF WATER RESOURCES

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GARY SPACKMAN
Director

C.L. "BUTCH" OTTER
Governor

08/12/2013

KOLAR SKOVIK LLC
ATTN JOHN KOLAR
467 BOSWELL RD
PLUMMER ID 83851

RE: Water Right Permit No. 92-10233

Dear Permit Holder(s):

The Department of Water Resources 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 who verified 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.

In the previous amendment, you informed me that I neglected to add the point of diversion on the St. Maries River where you place your irrigation pump. I have adjusted the water right and amendment to include this point of diversion.

The enclosed Application for Amendment form depicts the elements of the water right as they will appear on the license when it is issued. Please review the amendment form carefully. If you concur with the information presented, please sign the form. By signing this form, you withdraw the previous amendment form and the fee submitted with the first amendment will be put towards this second amendment. Please return the signed amendment within 14 days.

If you have any questions, please call me at <phone>.

Sincerely,

Daniel A. Nelson
Staff Hydrologist

Enclosure(s)

RECEIVED

AUG 07 2013

DEPARTMENT OF
WATER RESOURCES

08/05/2013

Dear Daniel A. Nelson

The three smaller ponds at bottom of site map are of no practicable use to us as they dry up by July. Our wish is to have only two diversion points on St. Maries river as illustrated on inclosed map. We hope this will be possible as we do not intend on using any of the ponds as a diversion point. Instead the points of diversion we would like are marked on map.

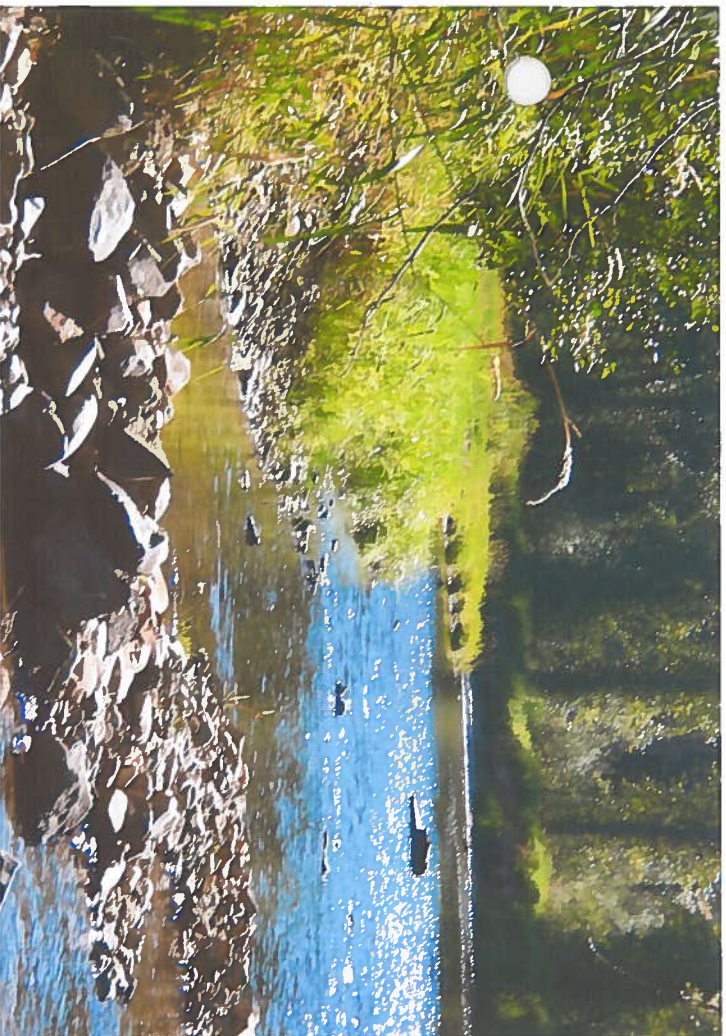
Sincerely,

John Kolar

Kolar Skoviak LLC Agent



Upper point of Diversion on
St. Marys River is 58 yds.
up stream from lower point
of Diversion.





State of Idaho
Department of Water Resources
APPLICATION FOR AMENDMENT

(For Licensing Purposes)

WATER RIGHT NO. 92-10233

RECEIVED

AUG 07 2013

DEPARTMENT OF
WATER RESOURCES

Date of Priority: May 05, 2011
CFS

Maximum Diversion Rate: 0.12

Maximum Diversion Volume: 9.1 AF

Comes now KOLAR SKOVIK LLC
467 BOSWELL RD
PLUMMER ID 83851

and represents to the Director of 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. 92-10233, and requests that the permit be changed as follows:

Source: GROUND WATER
ST MARIES RIVER

Tributary: ST MARIES RIVER
ST JOE RIVER

<u>BENEFICIAL USE</u> <u>VOLUME</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>	<u>ANNUAL</u>
DOMESTIC	01/01 to 12/31	0.06 CFS	0.6 AF
IRRIGATION	04/01 to 10/31	0.08 CFS	7.5 AF
FIRE PROTECTION STORAGE	01/01 to 12/31	1.0 AF	

LOCATION OF POINT(S) OF DIVERSION:

ST MARIES RIVER County	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH
GROUND WATER County	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH
GROUND WATER County	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH
GROUND WATER County	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH
GROUND WATER County	NW1/4NW1/4	Sec. 8,	Twp 44N,	Rge 01W, B.M.	BENEWAH

PLACE OF USE: DOMESTIC AND FIRE PROTECTION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE			
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE
			<u>Totals</u>															
44N	01W	8					X											

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE			
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE
			<u>Totals</u>															
44N	01W	8					2.5											

State of Idaho
Department of Water Resources
APPLICATION FOR AMENDMENT
(For Licensing Purposes)
WATER RIGHT NO. 92-10233

FOR DEPARTMENT USE ONLY

Preliminary check by _____ Fee = 100.00 Received by HP # 1097588 Date 8-7-13

ACTION OF THE DEPARTMENT OF WATER RESOURCES

I, GARY SPACKMAN, of the Department of Water Resources hereby approve the
above Application for Amendment for Permit No. 92-10233 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 3.0 afa per acre at the field headgate for irrigation of the place of use.
2. A fish screen of 1/4 inch or smaller mesh shall be installed and maintained at the point of
diversion.
3. The approach velocity at the point of diversion shall not exceed 0.5 feet per second.
4. Water shall not be diverted under this right when flows in the St. Maries River are below
minimum
flow amounts as defined by Right 92-7200.
5. Domestic use is for a private campground. Irrigation of lawn, garden and landscaping
associated
with the home is authorized under the irrigation component of this right.

Witness my hand this _____ day of _____, 2013.

GARY SPACKMAN
Director

2.5

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 5th day of August, 20013

John H. Kolan
(Signature)

State of Idaho
Department of Water Resources
Attachment To Water Right Amendment
92-10233

This map depicts the DOMESTIC 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.

01W



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

0 0.0225 0.045 0.09 Miles

preferred points of Diversion
are illustrated on map and have
been used. Two points on ST MARIES
River.

Thanks
John H. Kolar
Kolar Skoviak LLC Agent



Idaho Department of Water Resources Receipt

Receipt ID: C097588

Payment Amount \$100.00 Date Received 8/7/2013 11:30 AM Region STATE

Payment Type Check Check Number 4110

Payer KOLAR, JOHN H & KATHY

Comments APPLICATION FOR AMENDMENT WR# 92-10233

Fee Details

Amount	Description	PCA	Fund	Fund Detail	Subsidiary	Object
\$100.00	AMENDMENTS	56105	0229	21		1155


Signature Line (Department Representative)

Nelson, Dan

From: Nelson, Dan
Sent: Friday, August 02, 2013 7:40 AM
To: 'jkkolar@live.com'
Subject: RE: LICENSING AMENDMENT
Attachments: LICENSING AMENDMENT.RTF

Hello John,

I just discovered that you sent the gas powered pump information into our office with the change of name documentation. Unfortunately, this information didn't get to me before I wrote up the amendment I just sent to you. After finding this information, we can increase the rate of diversion for the irrigation portion of this permit to 0.08 cfs and the maximum diversion rate to 0.12 cfs.

I have attached a replacement licensing amendment to this email. Please replace the amendment form I sent you earlier with this amendment.

I am sorry about the mistake.

Daniel A. Nelson
Staff Hydrologist
Idaho Department of Water Resources
Telephone # (208) 287-4856
Fax (208) 287-6700 (C/O Dan Nelson)



State of Idaho

DEPARTMENT OF WATER RESOURCES

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GARY SPACKMAN
Director

C.L. "BUTCH" OTTER
Governor

08/01/2013

KOLAR SKOVIAC LLC
467 BOSWELL RD
PLUMMER ID 83851

RE: Water Right Permit No. 92-10233

Dear Permit Holder(s):

The Department of Water Resources 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 who verified 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.

Based on the examiner's report, the following elements were developed differently than described on your permit:

☒ **Point(s) of Diversion**

☐ **Place(s) of Use**

☐ **Other**

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

If you have any questions, please call me at <phone>.

Sincerely,

Daniel A. Nelson
Staff Hydrologist
Idaho Department of Water Resources
Telephone # (208) 287-4856
Fax (208) 287-6700 (C/O Dan Nelson)

Enclosure(s)

Exam Date: 5/20/2013

[illegible]

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
44N	01W	8	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	2.5

Total Acres: 2.5

PLACE OF USE: FIRE PROTECTION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
44N	01W	8	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	X

Method of Determination: Visual Inspection and GIS

3. YES Delivery System Diagram Attached (required). Indicate all major components and distances between Components. Indicate weir size/pipe as applicable.

YES Aerial Photo Attached (required for irrigation of 10+ acres).YES Photo of Diversion and System Attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
River Pump Electric	Sears	1	C48K2eC11	Sears	390.262450
Gas Pump	Honda	5.5	QCAFT2939094	Star	09112896

Code to correspond with No. on map and aerial photo*D. FLOW MEASUREMENTS**

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: System was not operating at the time of the exam. A theoretical calculation was used to determine the flow rate.

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method:

Electric Pump = 0.06 cfs

Gas Pump = 0.31 cfs

TOTAL Calculated Rate 0.36 cfs

Maximum allowed = 0.06 cfs Domestic + (2.5 acres X 0.03 cfs/ac = 0.08 cfs) = 0.14 cfs

Permit allowed = 0.06 cfs Domestic + 0.12 cfs irrigation = 0.12 cfs max.

I am recommending that the license be limited to 0.12 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.5 \text{ acres} \times 3.0 \text{ af/ac} = 7.5 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.08 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 34 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 7.5 \text{ af}$$

2. Volume Calculations for Other Uses:

Domestic = 0.6 af (per licensing memo #4 – See Narrative)

Storage = 1 af (see attached pond sheets)

Pond #1 = 0.4 af pond capacity + 0.2 af evaporation = 0.2 af total storage requirement

Pond #2 = 0.04 af pond capacity + 0.03 af evaporation = 0.03 af total storage requirement

Pond #3 = 0.12 af pond capacity + 0.2 af evaporation = 0.08 af total storage requirement

Pond #4 = 0.06 af pond capacity + 0.06 af evaporation = 0.05 af total storage requirement

Combined Pond Capacity - 0.62 af + Combined evaporation - 0.36 = 0.98 af total storage required (rounded to 1.0 af)

TOTAL COMBINED VOLUME

Domestic – 0.6 + Storage – 1.0 = 9.1 af

Irrigation - 7.5 +

G. NARRATIVE/REMARKS/COMMENTS

This permit has three (3) uses. The uses are domestic use for a private campground, irrigation use for 2.5 acres, and a fire protection storage use for 4 ponds. The domestic and irrigation uses a single point of diversion that is pumped directly from the river through an electric 1 Hp portable pump or a 5.5 Hp gas powered pump. The gas powered pump is generally used for irrigation and the electric pump is used for the domestic uses. The electric pump generally supplies the non-drinking water to an average of 4 camping sites washing and restroom uses, but there can be up to 60 campers on site during special occasions. Both pumps are generally not used at the same time. During a couple of weeks a year, this property is used for family reunions that can have up to 20 campsites, but the diversion rate doesn't vary during these times. This is done by using garden hoses connected directly to the pump to irrigate the grounds. The irrigation is fairly minimal, but the owner's keep the small camping area green to avoid fires and other issues. The ponds use shallow ground water tributary to the Saint Maries River, so they are all located in the middle of each pond.

There are four (4) ponds for this permit located in the NWNW S8 T44N R1W. These ponds are filled by shallow ground water and/or floodwater from the Saint Maries River. Ponds 2, 3, and 4 generally dry up mid-way through the year, and pond 1 generally stays full year round. The depth of Ponds 2, 3, and 4 average 2 feet deep and pond 1 averages 4 feet deep. These ponds are totally dependent on the water level in the Saint Maries River. When the river starts to drop, so does the water level in these ponds. It is obvious that the shallow ground water supplying these ponds is hydraulically connected to the Saint Maries River, since the pond levels match the river levels. An old river channel runs through this property, and the old channel exhibits the same properties as the ponds by collecting shallow ground water during the high flows and drying up as the water levels in the river decline.

The volume for the domestic use for this permit was difficult to establish. The owners weren't sure how many days and how many campers actually used this camping area. During a family reunion camping week, there could be as many as 20 to 60 campers on this property. During other times, there may only be 4 people camping on the weekends only. During hunting season they could be up to 10 people camping for a week or two. The owner estimated about 40 days at an estimated 4 people per day average, or 160 camper days, but if they had 60 campers for a week, that would be 420 camper days. This seems extremely low. Licensing memo #4 recommends a standard diversion volume for Forest Service and BLM campgrounds at 0.6 af. This camping spot is used much like the standard Forest Service and BLM campground, so I am recommending 0.6 af.

There are no overlapping water rights. The conditions on the permit were carried over to the license. The minimum streamflow condition had been changed, but the permit used the older condition. The minimum streamflow water right does not describe a specific gauging station to determine the point at which water must be monitored, so the wording on the permit was carried forward to the license. The pumps use a common suction hose, which has a 1/8 inch screen at the intake, so the fish and game screening requirements have been met.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
DOMESTIC	01/01 to 12/31	0.060 CFS	0.60 AF
IRRIGATION	04/01 to 10/31	0.080 CFS	7.50 AF
FIRE PROTECTION STORAGE	01/01 to 12/31		1.00 AF
<u>Totals:</u>		0.120 CFS	9.10 AF

2. Recommended Amendments

☒ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION Daniel A. Nelson – Staff Hydrologist

Field Examiner's Name _____ Date _____

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Attachment To Field Exam
92-10233

This map depicts the DOMESTIC 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.

01W



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

0 0.0225 0.045 0.09 Miles



State of Idaho
Department of Water Resources
Attachment To Field Exam
92-10233

This map depicts the FIRE PROTECTION 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.

01W



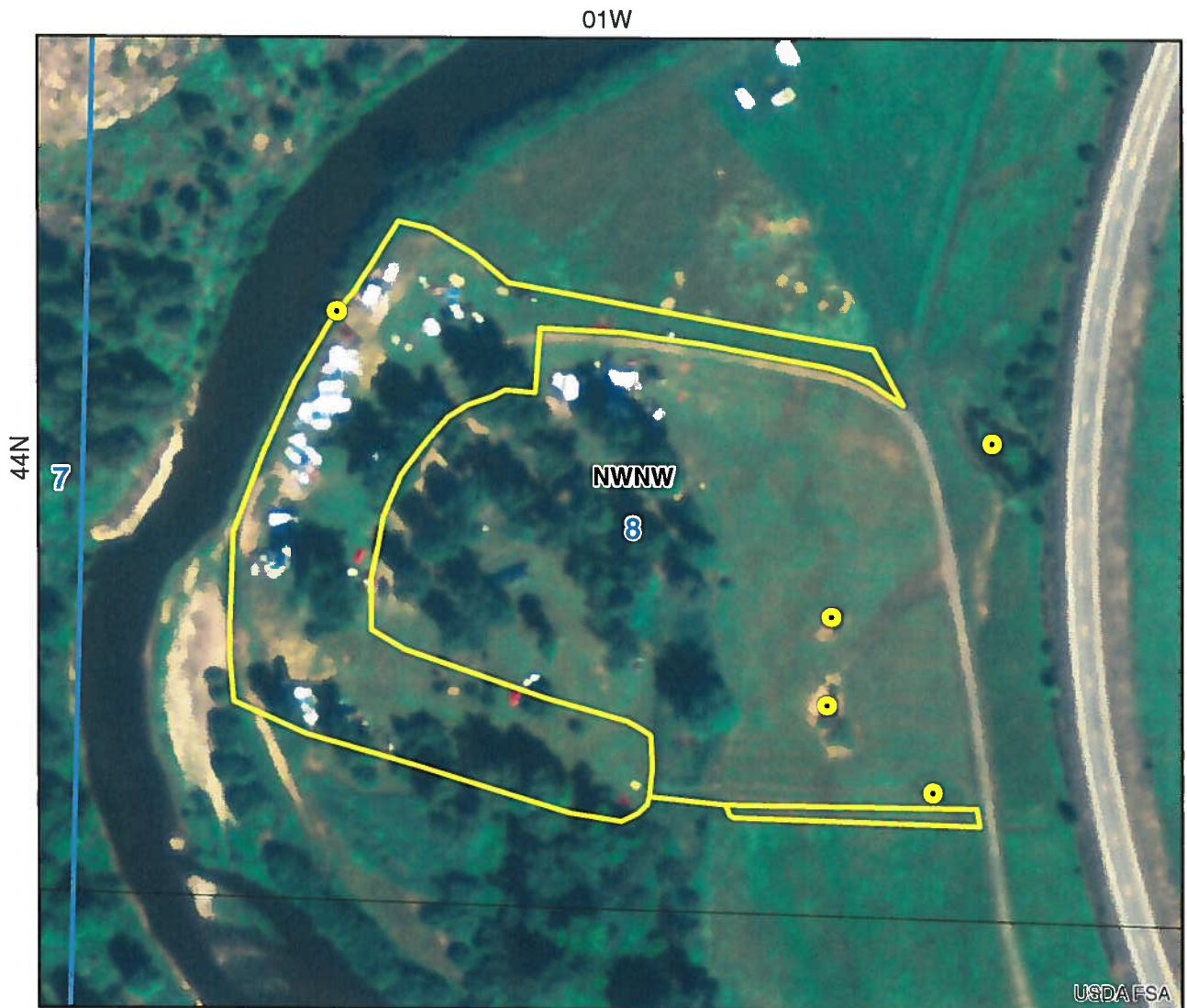
- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.0175 0.035 0.07 Miles



State of Idaho
Department of Water Resources
Attachment To Field Exam
92-10233

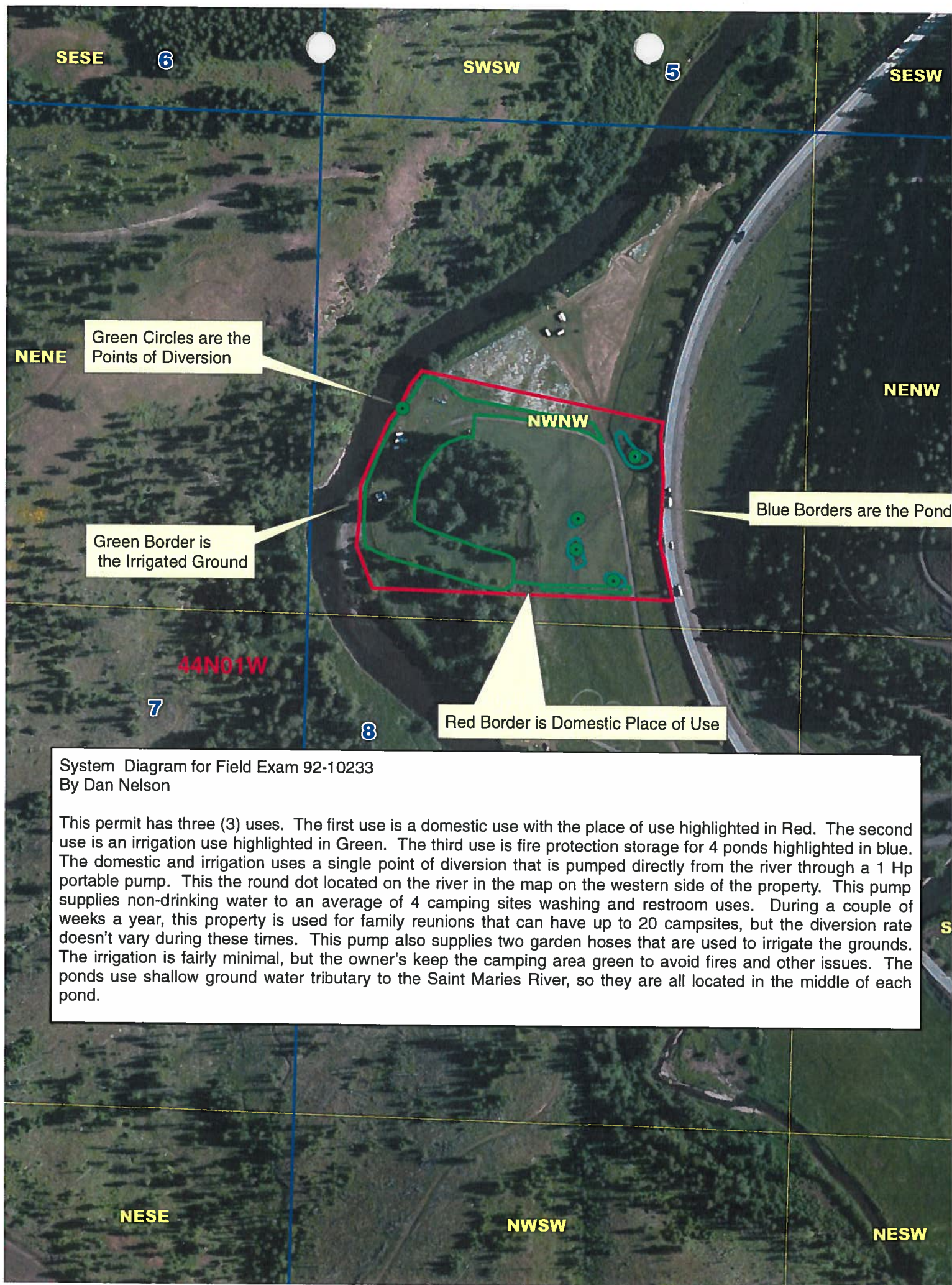
This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



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

0 0.02 0.04 0.08 Miles

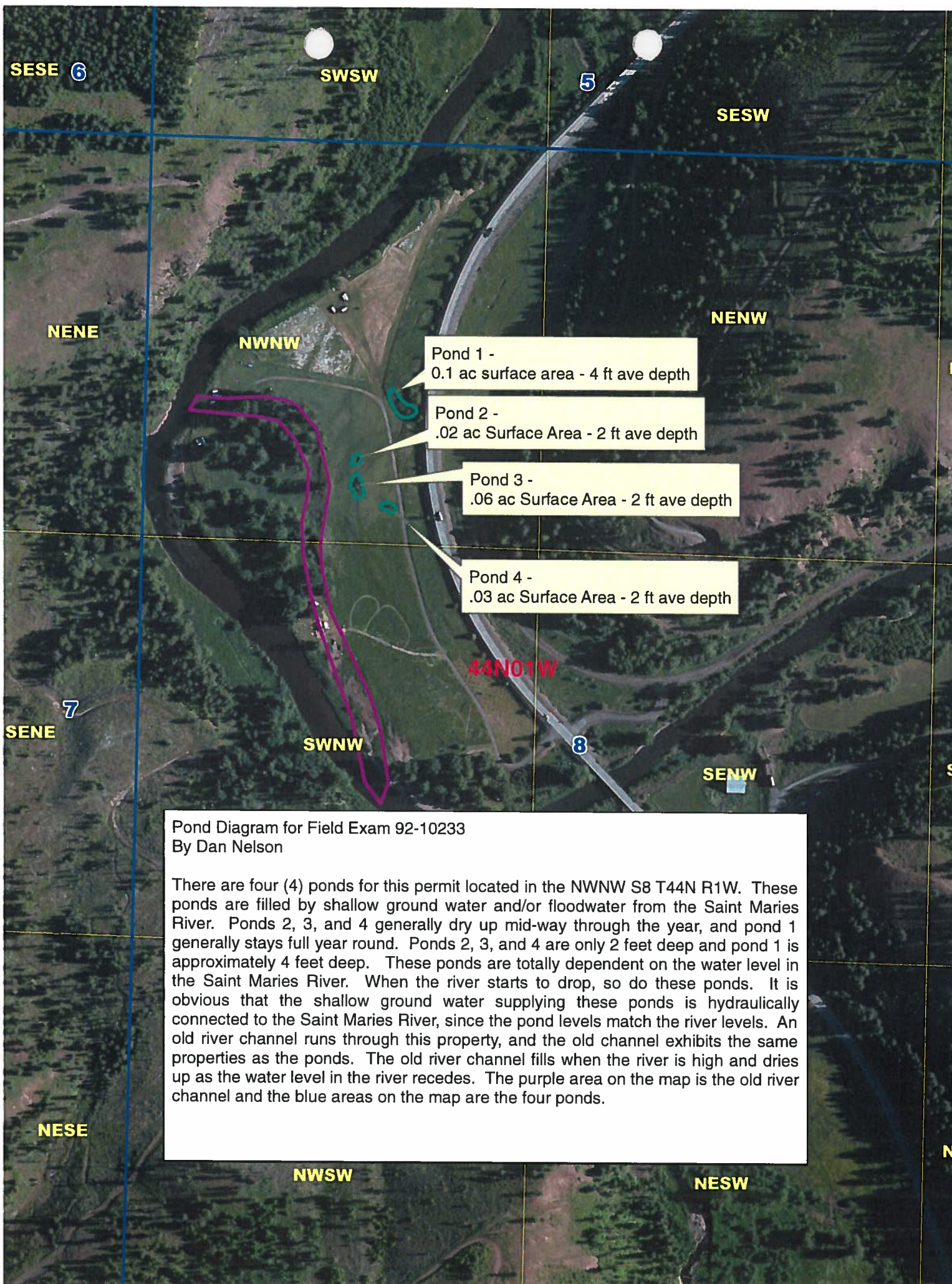




System Diagram for Field Exam 92-10233

By Dan Nelson

This permit has three (3) uses. The first use is a domestic use with the place of use highlighted in Red. The second use is an irrigation use highlighted in Green. The third use is fire protection storage for 4 ponds highlighted in blue. The domestic and irrigation uses a single point of diversion that is pumped directly from the river through a 1 Hp portable pump. This the round dot located on the river in the map on the western side of the property. This pump supplies non-drinking water to an average of 4 camping sites washing and restroom uses. During a couple of weeks a year, this property is used for family reunions that can have up to 20 campsites, but the diversion rate doesn't vary during these times. This pump also supplies two garden hoses that are used to irrigate the grounds. The irrigation is fairly minimal, but the owner's keep the camping area green to avoid fires and other issues. The ponds use shallow ground water tributary to the Saint Maries River, so they are all located in the middle of each pond.



Pond Diagram for Field Exam 92-10233
By Dan Nelson

There are four (4) ponds for this permit located in the NWNW S8 T44N R1W. These ponds are filled by shallow ground water and/or floodwater from the Saint Maries River. Ponds 2, 3, and 4 generally dry up mid-way through the year, and pond 1 generally stays full year round. Ponds 2, 3, and 4 are only 2 feet deep and pond 1 is approximately 4 feet deep. These ponds are totally dependent on the water level in the Saint Maries River. When the river starts to drop, so do these ponds. It is obvious that the shallow ground water supplying these ponds is hydraulically connected to the Saint Maries River, since the pond levels match the river levels. An old river channel runs through this property, and the old channel exhibits the same properties as the ponds. The old river channel fills when the river is high and dries up as the water level in the river recedes. The purple area on the map is the old river channel and the blue areas on the map are the four ponds.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

6

Water Right No.: 92-10233
 Examiner: Dan Nelson
 Date of Field Exam: 7/31/2013

	Option 1	OPTION 2	OPTION 3	
P/D No.:				
PUMP HORSEPOWER	1	1	1	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	5	5	5	
DISCHARGE PRESSURE	40	45	50	
FRICTION	0	0	0	
RATE OF FLOW (cfs)	0.06	0.06	0.05	AVE
(gpm)	28.4	25.4	22.9	0.06 25.6

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.

Examiners Notes:

The pump was not operating at the time of the exam. The lift was measured and pressure was estimated to be between 40 and 50 psi, which is the standard pressure for sprinkler systems and domestic systems.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

6

Water Right No.: 92-10233
 Examiner: Dan Nelson
 Date of Field Exam: 7/31/2013

P/D No.:	Option 1	OPTION 2	OPTION 3	
PUMP HORSEPOWER	5.5	5.5	5.5	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	5	5	5	
DISCHARGE PRESSURE	40	45	50	
FRICTION	0	0	0	
RATE OF FLOW (cfs)	0.35	0.31	0.28	AVE
(gpm)	156.1	139.6	126.2	140.6

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.

Examiners Notes:

The pump was not operating at the time of the exam. The lift was measured and pressure was estimated to be between 40 and 50 psi, which is the standard pressure for sprinkler systems and domestic systems. This pump is a Honda GX160, that is rated for 8,120 gph or 135 gpm or 0.30 cfs.

Gas Pump

12. SPECIFICATIONS

GX120

DIMENSIONS AND WEIGHT	GX120
Description code	GC01
Length x Width x Height	300 x 345 x 320 mm (11.8 x 13.6 x 12.6 in)
Dry weight	12.0 kg (26.5 lb)
Engine type	4-stroke, overhead valve, single cylinder
Displacement [Bore x Stroke]	118 cc (7.3 cu in) [60 x 42 mm (2.4 in x 1.7 in)]
Max. output	4.0 HP/3,600 rpm
Max. torque	0.75 kg (5.4 ft-lb)/2,500 rpm
Fuel consumption	230 g/PS h
Cooling system	Forced air
Ignition system	Transistorized magneto
PTO shaft rotation	Counterclockwise

GX160

DIMENSIONS AND WEIGHT	GX160
Description code	GC02
Length x Width x Height	305 x 365 x 335 mm (12.0 x 14.4 x 13.2 in)
Dry weight	14.0 kg (30.9 lb)
Engine type	4-stroke, overhead valve, single cylinder
Displacement [Bore x Stroke]	163 cc (9.9 cu in) [68 x 45 mm (2.7 in x 1.8 in)]
Max. output	5.5 HP/3,600 rpm
Max. torque	1.1 kg (8.0 ft-lb)/2,500 rpm
Fuel consumption	230 g/PS h
Cooling system	Forced air
Ignition system	Transistorized magneto
PTO shaft rotation	Counterclockwise

NOTE: Specifications may vary according to the types, and are subject to change without notice.

Specifications

portable pump

106470 - 2" High Pressure	
Engine	Honda GX160
Suction & Discharge Size	2" NPT
Maximum Flow	8,120 GPH
Maximum Suction Head	23 FT
Maximum Total Head	214 FT
Maximum Pressure	94 PSI
Passable Solid Size	Clear Water Only
Mechanical Seal	Silicon Carbide
Overall Dimensions (L x W x H)	20" x 16" x 16"
Dry Weight	60 lbs

106470 - 2" High Pressure	
Engine	Honda GX160
Suction & Discharge Size	2" NPT
Maximum Flow	8,120 GPH
Maximum Suction Head	23 FT
Maximum Total Head	214 FT
Maximum Pressure	94 PSI
Passable Solid Size	Clear Water Only
Mechanical Seal	Silicon Carbide
Overall Dimensions (L x W x H)	20" x 16" x 16"
Dry Weight	60 lbs

The manufacturer reserves the right to make improvements in design and/or changes in specifications at any time without incurring any obligation to install them on units previously sold.

Any Questions, Comments, Problems or Parts Orders
Call NorthStar Product Support 1-800-270-0810

SCANNED

MAY 31 2013

TOTAL STORAGE

FILE NUMBER	92-10233 - Pond 4
REVIEWER	Dan Nelson
DATE	7/31/2013

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

Surface Area (in Acres)	0.03	"Surface Area" is automatically carried over from the "Seepage Loss Sheet"
Average Pond Depth (in feet)	2	"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 suggest multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that
Pond Capacity (in acre feet)	0.06	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

Volume Needed Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (in acre feet)	0	The "Volume Needed 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). PLEASE 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 (in acre feet)	0.0	The "Estimated Seepage Loss" is automatically carried over from the Seepage Loss Sheet
Estimated Evaporation Loss (in acre feet)	0.0	The "Estimated Evaporation Loss" is automatically carried over from the Evaporation Loss Sheet
Total Volume Required (in acre feet)	0.109	"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.

Flow Rate into Pond (in cfs)	1.00	The "Flow Rate" into the Pond depicts the actual flow either measured or estimated into the pond.
Highest Daily Evaporation Rate From Evaporation Tab. (in mm/day)	4.24	This number is automatically selected by picking the highest recorded number in the "Precipitation Deficit Table".
Maximum Required Daily Maintenance Volume (in acre feet per day)	0.00	"Maximum Required Daily Maintenance Volume" is the maximum volume of water needed on any given day during the year, and is calculated by adding the highest daily evaporation loss to the average daily seepage loss in acre feet. The average daily seepage loss is calculated by dividing the "Estimated Seepage Loss" by 365 days. This is acceptable, since the seepage rate shouldn't vary throughout the season unless the pond completely freezes over during the winter months. The highest daily evaporation loss is calculated by dividing the Highest Daily Evaporation Rate by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet requirement.
Minimum Maintenance Flow (in cfs)	0.00	The "Minimum Maintenance Flow" is the minimum amount of flow required to maintain the level of the pond. This number is determine by dividing the "Maximum Required Daily Maintenance Volume" by 1.9835. This flow can be used to determine if the flow rate into the pond is adequate to maintain the pond level.
Days Required to Fill the Pond	0	The "Days Required to Fill the Pond" is calculated by dividing the "Pond Capacity" by the "Flow Rate" minus "Minimum Maintenance Flow" multiplied by 1.9835. This section will assist you in determining if the flow rate being diverted to the pond is adequate to fill the pond while maintaining the pond level. The length of time to fill the pond will help determine if the flow rate is adequate for the size of pond being proposed. This number should be between 1 and 365 days for a project to be successful.
Days Required to Fill the Pond at 13,000 gallons per day	2	The "Days Required to Fill the Pond at 13,000 gallons per day" is calculated converting the "Pond Capacity" and the "Maximum Daily Maintenance Volume" to gallons. The "Pond Capacity" is then divided by 13,000 gallons minus the "Maximum Daily Maintenance Volume" in gallons to determine the number of days to fill pond. This number should be between 1 and 365 if this pond is to described as a domestic use.

User Input
Calculated value
Formula Explanations

Evaporation Loss Calculation

FILE NUMBER	92-10233 - Pond
REVIEWER	Dan Nelson
DATE	7/31/2013

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

The acronyms used on the Kimberly Research Center website are defined below:
P = Precipitation
ET= Evapotranspiration
P _d = Precipitation deficit
P _d =ET-P

User Input
Calculated value
Formula Explanations

USING THIS SPREADSHEET

To ascertain the evaporation from a pond, you will need to go to the Kimberley Research Center website. The link is found below. This web site provides the Precipitation Deficit for the area where the pond is located. The Precipitation Deficit is the total amount of free pan 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, and the entire state is pretty much covered. 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.

Found at: <http://www.kimberly.uidaho.edu/ETIdaho/online.php>

Precipitation Deficit

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

Month	mm/day ¹	Days per month	mm/Month
Jan	0.00	31	0.00
Feb	0.00	28	0.00
March	0.00	31	0.00
April	1.04	30	31.20
May	1.77	31	54.87
June	2.71	30	81.30
July	4.24	31	131.44
August	3.95	31	122.45
September	2.40	30	72.00
October	0.27	31	8.37
November	0.00	30	0.00
December	0.00	31	0.00

PLEASE NOTE: We cannot use the season average, because there are several areas in Northern Idaho with a negative Precipitation Deficit. Therefore, we must enter each monthly deficit, and enter in a zero (0) for each negative month. The reason for this is that precipitation can only offset evaporation to the extent of the evaporation.

Please enter the daily average Precipitation Deficit as shown in the example below.

Although it has sometimes been useful to consider wintertime evaporation to be zero, Allen and Robison (2007, p. 169) noted, "Evaporation during nongrowing (wintertime) periods varies widely . . ."

¹Negative monthly mean values should be entered in the above table as "0".

Total mm/year = **501.63**

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

(**501.63**) $\div$ (**304.8**) $\times$ (**0.03**) = (**0.0 AFA**)

Surface Area of Pond is automatically Carried over from the Seepage Loss Sheet.

SEEPAGE CALCULATIONS

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

FILE NUMBER	92-10233 - Pond 4
REVIEWER	Dan Nelson
DATE	7/31/2013

User Input
Calculated value
Formula Explanations

INPUTS

SQ. FT. Calculator
Pond Surface area in acres
0.03

POND SURFACE AREA (SQ. FT.)	1307
-----------------------------	------

SUGGESTED SEEPAGE RATE (FT/DAY)	0.0000
---------------------------------	--------

Use the table below to find the "SUGGESTED SEEPAGE RATES".

FORMULA:
(Surface Area X Seepage Rate) / 7.48 = Gallons Per Day loss

CONVERT TO GPD	0	GPD
----------------	---	-----

TOTAL SEEPAGE LOSS (AFA)	0.0	AFA
--------------------------	-----	-----

SUGGESTED SEEPAGE RATES FOR DIFFERENT SOIL TYPES:
GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) = 0.20 ft per day
OL and ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.016 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 with shallow 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 X:\Spatial\Soils\USCS\PondSoils.lyr. Use "0" if the ponds intersect the water table.

TOTAL STORAGE

FILE NUMBER	92-10233 - Pond 1
REVIEWER	Dan Nelson
DATE	7/31/2013

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

Surface Area (in Acres)	0.1	"Surface Area" is automatically carried over from the "Seepage Loss Sheet"
Average Pond Depth (in feet)	4	"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
Pond Capacity (in acre feet)	0.4	you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above.

Volume Needed Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (in acre feet)	0	The "Volume Needed Above Initial Fill" is the acre-feet of water required to meet <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). PLEASE 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 (in acre feet)	0.0	The "Estimated Seepage Loss" is automatically carried over from the Seepage Loss Sheet
Estimated Evaporation Loss (in acre feet)	0.2	The "Estimated Evaporation Loss" is automatically carried over from the Evaporation Loss Sheet
Total Volume Required (in acre feet)	0.6	"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.

Flow Rate Into Pond (in cfs)	1.00	The "Flow Rate" into the Pond depicts the actual flow either measured or estimated into the pond.
Highest Daily Evaporation Rate From Evaporation Tab. (in mm/day)	4.24	This number is automatically selected by picking the highest recorded number in the "Precipitation Deficit Table".
Maximum Required Daily Maintenance Volume (in acre feet per day)	0.00	"Maximum Required Daily Maintenance Volume" is the maximum volume of water needed on any given day during the year, and is calculated by adding the highest daily evaporation loss to the average daily seepage loss in acre feet. The average daily seepage loss is calculated by dividing the "Estimated Seepage Loss" by 365 days. This is acceptable, since the seepage rate shouldn't vary throughout the season unless the pond completely freezes over during the winter months. The highest daily evaporation loss is calculated by dividing the Highest Daily Evaporation Rate by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet requirement.
Minimum Maintenance Flow (in cfs)	0.00	The "Minimum Maintenance Flow" is the minimum amount of flow required to maintain the level of the pond. This number is determined by dividing the "Maximum Required Daily Maintenance Volume" by 1.9835. This flow can be used to determine if the flow rate into the pond is adequate to maintain the pond level.
Days Required to Fill the Pond	0	The "Days Required to Fill the Pond" is calculated by dividing the "Pond Capacity" by the "Flow Rate" minus "Minimum Maintenance Flow" multiplied by 1.9835. This section will assist you in determining if the flow rate being diverted to the pond is adequate to fill the pond while maintaining the pond level. The length of time to fill the pond will help determine if the flow rate is adequate for the size of pond being proposed. This number should be between 1 and 365 days for a project to be successful.
Days Required to Fill the Pond at 13,000 gallons per day	10	The "Days Required to Fill the Pond at 13,000 gallons per day" is calculated converting the "Pond Capacity" and the "Maximum Daily Maintenance Volume" to gallons. The "Pond Capacity" is then divided by 13,000 gallons minus the "Maximum Daily Maintenance Volume" in gallons to determine the number of days to fill pond. This number should be between 1 and 365 if this pond is to be described as a domestic use.

User Input
Calculated value
Formula Explanations

Evaporation Loss Calculation

FILE NUMBER	92-10233 - Pond
REVIEWER	Dan Nelson
DATE	7/31/2013

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

The acronyms used on the Kimberly Research Center website are defined below:
P = Precipitation
ET= Evapotranspiration
P _d = Precipitation deficit
P _d = ET-P

User Input
Calculated value
Formula Explanations

USING THIS SPREADSHEET

To ascertain the evaporation from a pond, you will need to go to the Kimberley Research Center website. The link is found below. This web site provides the Precipitation Deficit for the area where the pond is located. The Precipitation Deficit is the total amount of free pan 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, and the entire state is pretty much covered. 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.

Found at: <http://www.kimberly.uidaho.edu/ETIdaho/online.php>

Precipitation Deficit

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

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Jan	0.00	31	0.00
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March	0.00	31	0.00
April	1.04	30	31.20
May	1.77	31	54.87
June	2.71	30	81.30
July	4.24	31	131.44
August	3.95	31	122.45
September	2.40	30	72.00
October	0.27	31	8.37
November	0.00	30	0.00
December	0.00	31	0.00

PLEASE NOTE: We cannot use the season average, because there are several areas in Northern Idaho with a negative Precipitation Deficit. Therefore, we must enter each monthly deficit, and enter in a zero (0) for each negative month. The reason for this is that precipitation can only offset evaporation to the extent of the evaporation.

Please enter the daily average Precipitation Deficit as shown in the example below.

Although it has sometimes been useful to consider wintertime evaporation to be zero, Allen and Robison (2007, p. 169) noted, "Evaporation during nongrowing (wintertime) periods varies widely . . ."

¹Negative monthly mean values should be entered in the above table as "0".

Total mm/year = 501.63

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

(501.63 ÷ 304.8) X 0.10 = 0.2 AFA

Surface Area of Pond is automatically Carried over from the Seepage Loss Sheet.

SEEPAGE CALCULATIONS

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

FILE NUMBER	92-10233 - Pond 1
REVIEWER	Dan Nelson
DATE	7/31/2013

User Input
Calculated value
Formula Explanations

INPUTS

SQ. FT. Calculator
Pond Surface area in acres
0.1

POND SURFACE AREA (SQ. FT.)	4356
-----------------------------	------

SUGGESTED SEEPAGE RATE (FT/DAY)	0.0000
---------------------------------	--------

Use the table below to find the "SUGGESTED SEEPAGE RATES".

FORMULA:
(Surface Area X Seepage Rate) / 7.48 = Gallons Per Day loss

CONVERT TO GPD	0	GPD
----------------	---	-----

TOTAL SEEPAGE LOSS (AFA)	0.0	AFA
--------------------------	-----	-----

SUGGESTED SEEPAGE RATES FOR DIFFERENT SOIL TYPES:
GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) = 0.20 ft per day
OL and ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.016 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 with shallow 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 X:\Spatial\Soils\USCS\PondSoils.lyr. Use "0" if the ponds intersect the water table.

TOTAL STORAGE

FILE NUMBER	92-10233 - Pond 2
REVIEWER	Dan Nelson
DATE	7/31/2013

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

Surface Area (in Acres)	0.02	"Surface Area" is automatically carried over from the "Seepage Loss Sheet"
Average Pond Depth (in feet)	2	"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 suggest multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that
Pond Capacity (in acre feet)	0.04	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

Volume Needed Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (in acre feet)	0	The "Volume Needed 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). PLEASE 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 (in acre feet)	0.0	The "Estimated Seepage Loss" is automatically carried over from the Seepage Loss Sheet
Estimated Evaporation Loss (in acre feet)	0.0	The "Estimated Evaporation Loss" is automatically carried over from the Evaporation Loss Sheet
Total Volume Required (in acre feet)	0.073	"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.

Flow Rate Into Pond (in cfs)	1.00	The "Flow Rate" into the Pond depicts the actual flow either measured or estimated into the pond.
Highest Daily Evaporation Rate From Evaporation Tab. (in mm/day)	4.24	This number is automatically selected by picking the highest recorded number in the "Precipitation Deficit Table".
Maximum Required Daily Maintenance Volume (in acre feet per day)	0.00	"Maximum Required Daily Maintenance Volume" is the maximum volume of water needed on any given day during the year, and is calculated by adding the highest daily evaporation loss to the average daily seepage loss in acre feet. The average daily seepage loss is calculated by dividing the "Estimated Seepage Loss" by 365 days. This is acceptable, since the seepage rate shouldn't vary throughout the season unless the pond completely freezes over during the winter months. The highest daily evaporation loss is calculated by dividing the Highest Daily Evaporation Rate by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet requirement.
Minimum Maintenance Flow (in cfs)	0.00	The "Minimum Maintenance Flow" is the minimum amount of flow required to maintain the level of the pond. This number is determine by dividing the "Maximum Required Daily Maintenance Volume" by 1.9835. This flow can be used to determine if the flow rate into the pond is adequate to maintain the pond level.
Days Required to Fill the Pond	0	The "Days Required to Fill the Pond" is calculated by dividing the "Pond Capacity" by the "Flow Rate" minus "Minimum Maintenance Flow" multiplied by 1.9835. This section will assist you in determining if the flow rate being diverted to the pond is adequate to fill the pond while maintaining the pond level. The length of time to fill the pond will help determine if the flow rate is adequate for the size of pond being proposed. This number should be between 1 and 365 days for a project to be successful.
Days Required to Fill the Pond at 13,000 gallons per day	1	The "Days Required to Fill the Pond at 13,000 gallons per day" is calculated converting the "Pond Capacity" and the "Maximum Daily Maintenance Volume" to gallons. The "Pond Capacity" is then divided by 13,000 gallons minus the "Maximum Daily Maintenance Volume" in gallons to determine the number of days to fill pond. This number should be between 1 and 365 if this pond is to described as a domestic use.

User Input
Calculated value
Formula Explanations

Evaporation Loss Calculation

FILE NUMBER	92-10233 - Pond
REVIEWER	Dan Nelson
DATE	7/31/2013

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

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

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

User Input
Calculated value
Formula Explanations

USING THIS SPREADSHEET

To ascertain the evaporation from a pond, you will need to go to the Kimberley Research Center website. The link is found below. This web site provides the Precipitation Deficit for the area where the pond is located. The Precipitation Deficit is the total amount of free pan 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, and the entire state is pretty much covered. 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.

Found at: <http://www.kimberly.uidaho.edu/ETIdaho/online.php>

Precipitation Deficit

Station: Twin Falls 2 NNE (NWS - 109294)

Month	mm/day ¹	Days per month	mm/Month
Jan	0.00	31	0.00
Feb	0.00	28	0.00
March	0.00	31	0.00
April	1.04	30	31.20
May	1.77	31	54.87
June	2.71	30	81.30
July	4.24	31	131.44
August	3.95	31	122.45
September	2.40	30	72.00
October	0.27	31	8.37
November	0.00	30	0.00
December	0.00	31	0.00

PLEASE NOTE: We cannot use the season average, because there are several areas in Northern Idaho with a negative Precipitation Deficit. Therefore, we must enter each monthly deficit, and enter in a zero (0) for each negative month. The reason for this is that precipitation can only offset evaporation to the extent of the evaporation.

Please enter the daily average Precipitation Deficit as shown in the example below.

Although it has sometimes been useful to consider wintertime evaporation to be zero, Allen and Robison (2007, p. 169) noted, "Evaporation during nongrowing (wintertime) periods varies widely"

¹Negative monthly mean values should be entered in the above table as "0".

Total mm/year = **501.63**

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

(**501.63** $\div$ **304.8**) $\times$ **0.02** = **0.0 AFA**

Surface Area of Pond is automatically Carried over from the Seepage Loss Sheet.

SEEPAGE CALCULATIONS

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

FILE NUMBER	92-10233 - Pond 2
REVIEWER	Dan Nelson
DATE	7/31/2013

User Input
Calculated value
Formula Explanations

INPUTS

SQ. FT. Calculator
Pond Surface area in acres
0.02

POND SURFACE AREA (SQ. FT.)	871
-----------------------------	-----

SUGGESTED SEEPAGE RATE (FT/DAY)	0.0000
---------------------------------	--------

Use the table below to find the "SUGGESTED SEEPAGE RATES".

FORMULA:
(Surface Area X Seepage Rate) / 7.48 = Gallons Per Day loss

CONVERT TO GPD	0	GPD
----------------	---	-----

TOTAL SEEPAGE LOSS (AFA)	0.0	AFA
--------------------------	-----	-----

SUGGESTED SEEPAGE RATES FOR DIFFERENT SOIL TYPES:
GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) = 0.20 ft per day
OL and ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.016 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 with shallow 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 X:\Spatial\Soils\USCS\PondSoils.lyr. Use "0" if the ponds intersect the water table.

TOTAL STORAGE

FILE NUMBER	92-10233 - Pond 3
REVIEWER	Dan Nelson
DATE	7/31/2013

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

Surface Area (in Acres)	0.06	"Surface Area" is automatically carried over from the "Seepage Loss Sheet"
Average Pond Depth (in feet)	2	"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 suggest multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that
Pond Capacity (in acre feet)	0.12	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

Volume Needed Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (in acre feet)	0	The "Volume Needed 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). PLEASE NOTE: You must have a <u>"From Storage"</u> component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (in acre feet)	0.0	The "Estimated Seepage Loss" is automatically carried over from the Seepage Loss Sheet
Estimated Evaporation Loss (in acre feet)	0.1	The "Estimated Evaporation Loss" is automatically carried over from the Evaporation Loss Sheet
Total Volume Required (in acre feet)	0.219	"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.

Flow Rate Into Pond (in cfs)	1.00	The "Flow Rate" into the Pond depicts the actual flow either measured or estimated into the pond.
Highest Daily Evaporation Rate From Evaporation Tab. (in mm/day)	4.24	This number is automatically selected by picking the highest recorded number in the "Precipitation Deficit Table".
Maximum Required Daily Maintenance Volume (in acre feet per day)	0.00	"Maximum Required Daily Maintenance Volume" is the maximum volume of water needed on any given day during the year, and is calculated by adding the highest daily evaporation loss to the average daily seepage loss in acre feet. The average daily seepage loss is calculated by dividing the "Estimated Seepage Loss" by 365 days. This is acceptable, since the seepage rate shouldn't vary throughout the season unless the pond completely freezes over during the winter months. The highest daily evaporation loss is calculated by dividing the Highest Daily Evaporation Rate by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet requirement.
Minimum Maintenance Flow (in cfs)	0.00	The "Minimum Maintenance Flow" is the minimum amount of flow required to maintain the level of the pond. This number is determine by dividing the "Maximum Required Daily Maintenance Volume" by 1.9835. This flow can be used to determine if the flow rate into the pond is adequate to maintain the pond level.
Days Required to Fill the Pond	0	The "Days Required to Fill the Pond" is calculated by dividing the "Pond Capacity" by the "Flow Rate" minus "Minimum Maintenance Flow" multiplied by 1.9835. This section will assist you in determining if the flow rate being diverted to the pond is adequate to fill the pond while maintaining the pond level. The length of time to fill the pond will help determine if the flow rate is adequate for the size of pond being proposed. This number should be between 1 and 365 days for a project to be successful.
Days Required to Fill the Pond at 13,000 gallons per day	3	The "Days Required to Fill the Pond at 13,000 gallons per day" is calculated converting the "Pond Capacity" and the "Maximum Daily Maintenance Volume" to gallons. The "Pond Capacity" is then divided by 13,000 gallons minus the "Maximum Daily Maintenance Volume" in gallons to determine the number of days to fill pond. This number should be between 1 and 365 if this pond is to described as a domestic use.

User Input
Calculated value
Formula Explanations

Evaporation Loss Calculation

FILE NUMBER	92-10233 - Pond
REVIEWER	Dan Nelson
DATE	7/31/2013

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

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

P = Precipitation

ET= Evapotranspiration

P_d = Precipitation deficit

P_d =ET-P

User Input

Calculated value

Formula Explanations

USING THIS SPREADSHEET

To ascertain the evaporation from a pond, you will need to go to the Kimberley Research Center website. The link is found below. This web site provides the Precipitation Deficit for the area where the pond is located. The Precipitation Deficit is the total amount of free pan 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, and the entire state is pretty much covered. 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.

Found at: <http://www.kimberly.uidaho.edu/ETIdaho/online.php>

Precipitation Deficit

Station: Twin Falls 2 NNE (NWS - 109294)

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Jan	0.00	31	0.00
Feb	0.00	28	0.00
March	0.00	31	0.00
April	1.04	30	31.20
May	1.77	31	54.87
June	2.71	30	81.30
July	4.24	31	131.44
August	3.95	31	122.45
September	2.40	30	72.00
October	0.27	31	8.37
November	0.00	30	0.00
December	0.00	31	0.00

PLEASE NOTE: We cannot use the season average, because there are several areas in Northern Idaho with a negative Precipitation Deficit. Therefore, we must enter each monthly deficit, and enter in a zero (0) for each negative month. The reason for this is that precipitation can only offset evaporation to the extent of the evaporation.

Please enter the daily average Precipitation Deficit as shown in the example below.

Although it has sometimes been useful to consider wintertime evaporation to be zero, Allen and Robison (2007, p. 169) noted, "Evaporation during nongrowing (wintertime) periods varies widely"

¹Negative monthly mean values should be entered in the above table as "0".

Total mm/year = 501.63

[(mm/yr) ÷ (convert to feet)] X (Surface area of pond, in acres) = Evaporation Loss in Acre Feet

(501.63 ÷ 304.8) X 0.06 = 0.1 AFA

Surface Area of Pond is automatically Carried over from the Seepage Loss Sheet.

SEEPAGE CALCULATIONS

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

FILE NUMBER	92-10233 - Pond 3
REVIEWER	Dan Nelson
DATE	7/31/2013

User Input
Calculated value
Formula Explanations

INPUTS

SQ. FT. Calculator
Pond Surface area in acres
0.06

POND SURFACE AREA (SQ. FT.)	2614
-----------------------------	------

SUGGESTED SEEPAGE RATE (FT/DAY)	0.0000
---------------------------------	--------

Use the table below to find the "SUGGESTED SEEPAGE RATES".

FORMULA: (Surface Area X Seepage Rate) / 7.48 = Gallons Per Day loss

CONVERT TO GPD	0	GPD
----------------	---	-----

TOTAL SEEPAGE LOSS (AFA)	0.0	AFA
--------------------------	-----	-----

SUGGESTED SEEPAGE RATES FOR DIFFERENT SOIL TYPES:
GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) = 0.20 ft per day
OL and ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.016 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 with shallow 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 X:\Spatial\Soils\USCS\PondSoils.lyr. Use "0" if the ponds intersect the water table.

ET_{Idaho} 2012 -- Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for improving this site to robison@kimberly.uidaho.edu Copyright 2012, University of Idaho.

Saint Maries (NWS -- 108062)

Statistics based on thirty year normal spans 1973 to 2010 years

For a different land cover or crop click on the above link.

You can highlight this table and copy via the clipboard to a Microsoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data.

Open water - small stock ponds														
Precipitation Deficit (Click here for a graph)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Non Growing Season ^b
Mean ^j	mm/day												mm	
Monthly ^c	-3.02	-1.71	-0.58	1.04	1.77	2.71	4.24	3.95	2.40	0.27	-3.15	-3.32	143	0
15-Day Moving Average ^d	-3.04	-1.97	-0.54	1.05	1.78	2.55	4.17	3.89	2.36	0.49	-3.08	-3.32		
7-Day Moving Average ^e	-3.01	-1.77	-0.55	1.06	1.78	2.64	4.22	3.90	2.39	0.37	-3.18	-3.36		
3-Day Moving Average ^f	-3.01	-1.69	-0.58	1.04	1.78	2.69	4.24	3.95	2.41	0.30	-3.18	-3.33		
Standard Deviation ^k	mm/day												mm	
Monthly ^c	2.27	1.51	1.46	1.12	1.54	1.11	1.84	1.76	1.24	1.97	1.70	2.44	183	0
15-Day Moving Average ^d	2.31	2.08	1.56	1.53	1.87	1.69	1.73	1.79	1.52	1.70	2.20	2.14		
7-Day Moving Average ^e	3.03	3.06	2.14	2.27	2.60	2.49	2.01	2.50	2.15	2.40	3.12	3.12		
3-Day Moving Average ^f	4.19	4.21	3.07	3.14	3.63	3.47	2.58	3.17	3.01	3.22	4.41	4.34		
20% Exceedance ^l	mm/day												mm	
Monthly ^c	-1.89	-0.71	0.34	1.94	2.70	3.62	4.99	5.00	3.45	1.51	-1.70	-1.99	263	0
15-Day Moving Average ^d	0.08	0.25	1.48	3.09	4.73	4.96	5.83	5.66	4.45	2.48	0.00	0.00		
7-Day Moving Average ^e	0.46	1.32	2.58	4.29	5.64	6.02	6.32	6.36	4.99	2.92	0.82	0.21		
3-Day Moving Average ^f	0.77	1.76	3.42	4.99	6.42	6.68	6.93	6.89	5.51	3.47	1.16	0.41		

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 5/20/2013

FILE NUMBER 92-10233



The first photo above shows the location where the owners place the pumps for this permit. The second photo above shows the electric pump. This pump is generally used to supply water for the domestic or camping uses. The third photo shows the screen on the intake line. This screen meets the standards in the permit.

The photos below show the numbers and the pump make of the electrical pump.





92-10233

These are photos
of the gas powered
Dump Received
From The owner

Don Nelson

8-1-2013

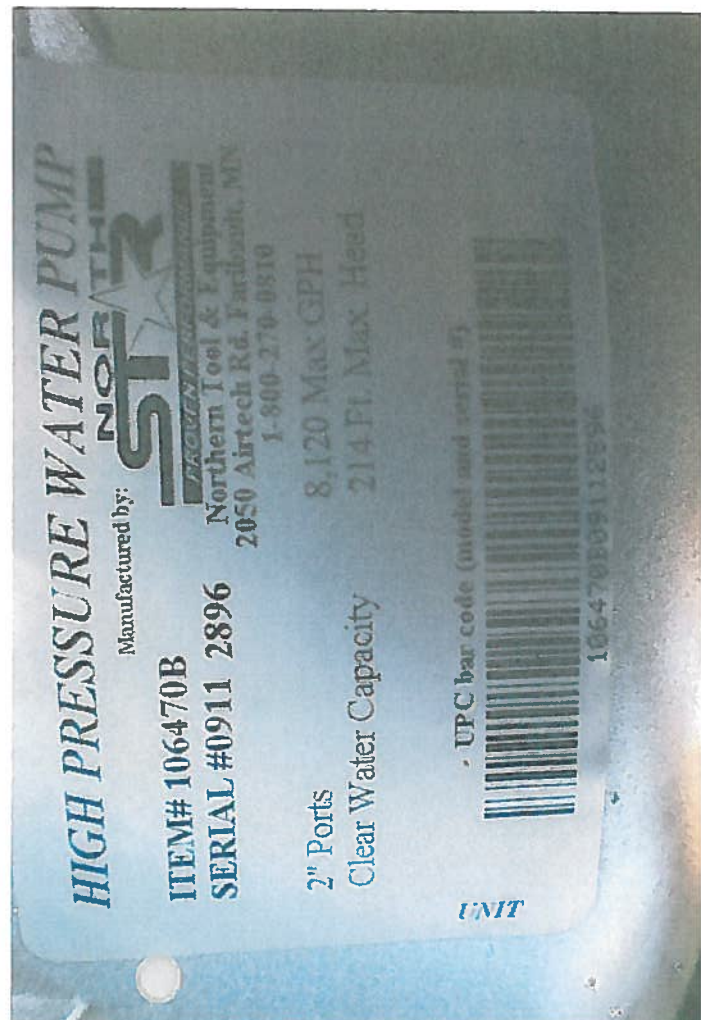




92-10233

These photos are
of the gas powered
pump ~~received~~ received
from the owner.

Don Nelson
8-1-2013



PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 5/20/2013

FILE NUMBER 92-10233



POND 1



POND 2



POND 3



POND 4

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 5/20/2013

FILE NUMBER 92-10233



The photo above shows the place of use from the southeast corner of the property south of pond 4.



This photo shows the place of use next to the river. This is the main camping area.



This photo shows the old riverbed. The old channel curves through the trees shown in the middle of the place of use on the maps.