

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 98-7909

Exam Date: 7/30/2012

1. Current Owner: IDAHO DEPT OF FISH & GAME
2885 W KATHLEEN
COEUR D ALENE ID 83815
(208)769-1414
2. Accompanied by: Colleen Trese
Phone No: 208-267-5157
Address: SAME
Relationship to Permit Holder: REGIONAL HABITAT BIOLOGIST

3. SOURCE

BOUNDARY CREEK

TRIBUTARY

KOOTENAI RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 98-7848
2. Other water rights with the same point of diversion: 98-7103, 98-7848

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

BOUNDARY CREEK L4 NW1/4SW1/4 Sec. 11, Twp 65N, Rge 02W, B.M. BOUNDARY County

Method of Determination: MAP and AERIAL PHOTO

2.

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	
65N 02W 23				X									X				
65N 02W 24					X	X	X	X	X	X							
					L 3			L 4									

PLACE OF USE: WILDLIFE

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
65N 02W 23				X									X				
65N 02W 24					X	X	X	X	X	X							
					L 3			L 4									

DIVERSION TO STORAGE same as WILDLIFE

Method of Determination:

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4.

Well or Diversion
ID No.*

The Boundary Creek diversion system is a stream bed and screen design. The point of diversion is under the stream bed that allows water to flow to a wedge wire gate that controls diversion rate. This gate is lockable and protected by an iron grate. Water flows to a collection chamber that is off the stream approximately 50 yards. Water is routed from the chamber to a four foot stand up concrete pipe system that is gravity flow for 113 yards to the channel. The concrete stand up pipe has an opening that is four foot by two foot that will direct the water to channel.

D. FLOW MEASUREMENTS

1. Flow was measured by Idaho Fish and Game with a Rickly Hydro Flow meter at (5.0 cfs) as stated on the Statement of Completion for proof of beneficial use on January 30, 2008. The Idaho Department of Water Resources flow measurement confirms that the flow ability is 5.0cfs.

F. VOLUME CALCULATIONS

Volume Calculations for Storage Use: See Wetland Pond Data SC1 Water right INFO. Wildlife 5 cfs = 9.91 AF per day X 45 days per year = 446.0 AF per year. This is the water that will flood the wetlands and over flow.

G. NARRATIVE/REMARKS/COMMENTS: Used the same exam photos as water right 98-7848. Review of the condition authorizing the diversion of an annual volume totaling 2228.4 AF when combining water rights 98-7909 and 98-7848. The total was derived by adding wildlife storage (230.4 AF) of water right 98-7848 to Water Right 98-7909 of (1998 AF) to total of 2228.4 AF.

Pond size = 575.8 AF
 Loss by evaporation = 76.54 AF
 Loss by seepage = 554 AF
 Drawdown refill to
Rend act an drought = 575.8 AF
 Totals = 1782.14 AF
 - 230.4 AF Water Right 98-7848
 1552 AF + 446 AF wildlife = 1998 Af Water Permit 98-7909

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
WILDLIFE STORAGE	01/01 to 12/31		1,552.00 AF
DIVERSION TO STORAGE	01/01 to 12/31	5.000 CFS	
WILDLIFE	01/01 to 12/31	5.000 CFS	446.00 AF
<u>Totals:</u>		5.000 CFS	1,998.00 AF

2. Recommended Amendments

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

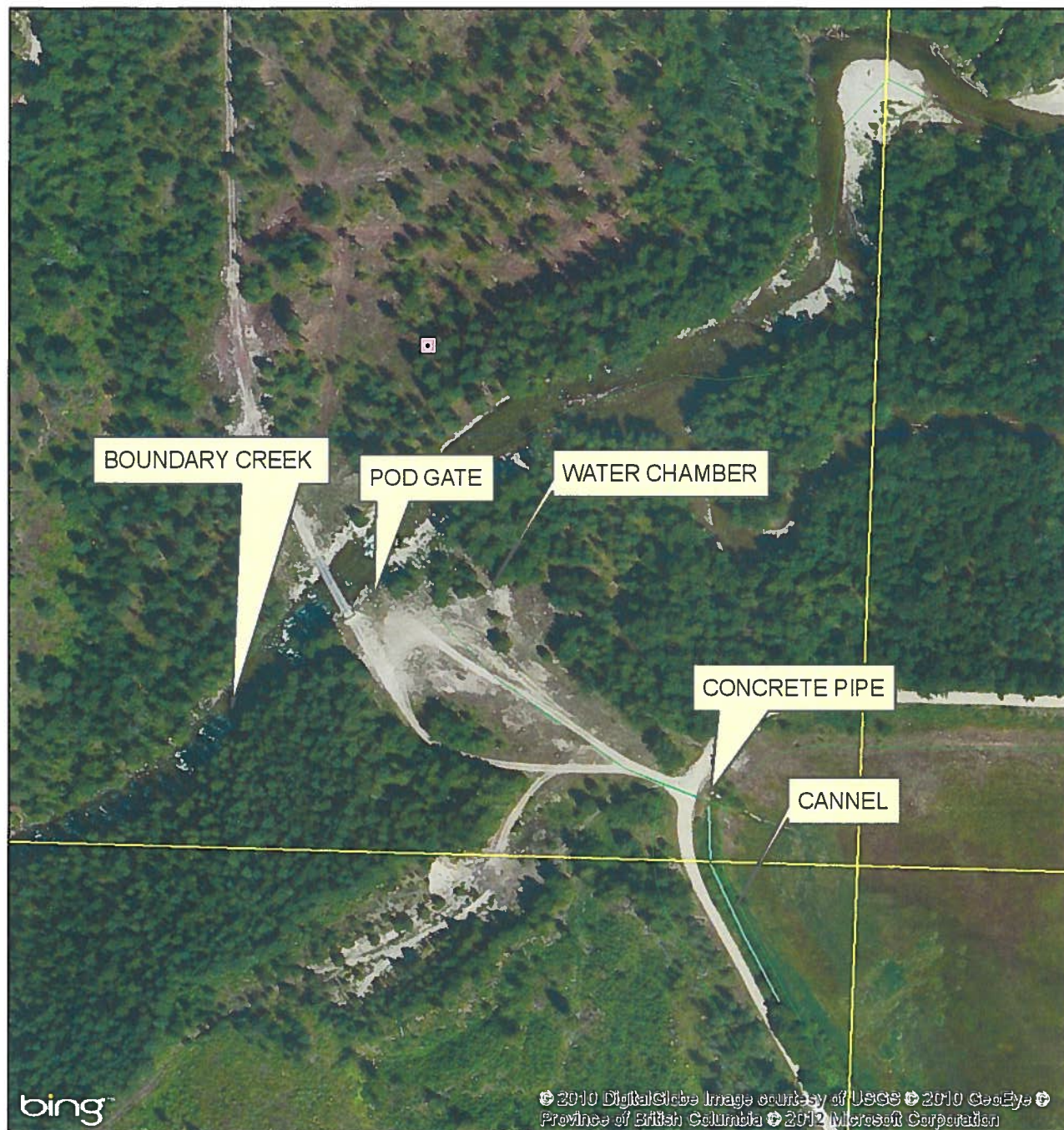
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name Eric [Signature] Date 12-27-2012

Reviewer Kevin L. [Signature] Date 12-27-2012

98-7909



1 inch = 235 feet



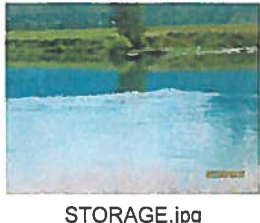
Legend

□ Water Right POD

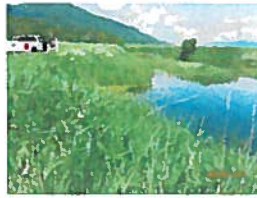
□ Taxlots



IMG_1186.jpg



STORAGE.jpg



WETLAND.jpg



STAND UP PIPE AT
CANNEL.jpg



POD GATE.jpg



POD.jpg







Davis, Eric

From: Trese, Colleen [colleen.trese@idfg.idaho.gov]
Sent: Monday, January 03, 2011 3:29 PM
To: Davis, Eric
Subject: RE: Pond
Attachments: 2006 WaterSurface - 154 ac blue, 110 ac teal.jpg

That worked. Yeah, looks good. So the seepage rate is 554 AF, not too different than what we had huh. Following your examples, the water right should be 1551.74 AF correct? I'll finish the application and drop it off on Friday.

I've attached the photo with the surveyed full-pool water line at 154.5 surface acres.

Total Evap (af)	365.06	af	
Total Precip (af)	288.52	af	
Total loss Evap-precip (af)	76.54	af	
Total loss by Seepage (af) (Eric's formula)	554	af	
Pond Size	575.8	af	
Loss by Evap	76.54	af	
Loss by Seepage	554	af	
Total volume for water right should be	1206.34	af	
minus Water Right 98-7848	230.4	af	
Total volume for New water right	975.94	af	
Total volume plus drawdown refill (575.8)	1551.74	af	

From: Davis, Eric [<mailto:Eric.Davis@idwr.idaho.gov>]
Sent: Mon 1/3/2011 2:54 PM
To: Trese, Colleen
Subject: RE: Pond

Try this one.

-----Original Message-----

From: Trese, Colleen [<mailto:colleen.trese@idfg.idaho.gov>]
Sent: Monday, January 03, 2011 2:47 PM
To: Davis, Eric
Subject: RE: Pond

Hmm, can't seem to open it. It shows as a .xlsx file but when I go to open it, it shows as a zip file and the files within are all .xml. Can you save it as just .xls and try that? I don't have Windows 2007 on my computer but I do have a file conversion program that usually allows to me open .xlsx files.

From: Davis, Eric [<mailto:Eric.Davis@idwr.idaho.gov>]
Sent: Mon 1/3/2011 2:41 PM
To: Trese, Colleen
Subject: RE: Pond

SC1 Water Rights Info

NRCS Soil Survey

Month	Precip (in)	SC1 Surface Area (acre)	Precip (ac-ft)
Jan	3.4	144.4	40.91
Feb	2.13	144.4	25.63
Mar	1.72	147.75	21.18
Apr	1.26	147.78	15.52
May	1.67	152.83	21.27
Jun	1.85	154.5	23.82
Jul	0.8	154.5	10.30
Aug	1	144.4	12.03
Sep	1.5	132.45	16.56
Oct	2.39	126.75	25.24
Nov	3.43	126.75	36.23
Dec	3.39	141	39.83

my method of calculation on SC1

Water Elevation - (ft)	SC1 Surface Area - (ac)	Additional Acres per ft elevation - (ac)	Depth of Additional Acres at Full Pool* (FP) - (ft)	Additional Acre-feet at Full Pool (FP) - (ac-ft)	Minus corners on Add Acres (add. ac./2)
1749.0	22.5	22.5	7	157.5	11.25
1750.0	47.3	24.8	6	148.8	12.4
1751.0	69.9	22.6	5	113.0	11.3
1752.0	99.6	29.7	4	118.8	14.85
1753.0	118.2	18.6	3	55.8	9.3
1754.0	141.0	22.8	2	45.6	11.4
1755.0*	154.5	13.5	1	13.5	6.75
Total Storage at FP				653.0	77.3

minus the corners 77.3

Final ac-ft 575.8

Surface area= 154.5 ac 6730020 sq ft

Avg Depth 3.72686084 ac-ft/total acre

seepage rate = 0.01 This is what Eric uses

Month	Evap (in)	SC1 Surface Area (acre)	Evap (ac-ft)
Jan	0.3	144.4	3.61
Feb	0.45	144.4	5.42
Mar	0.9	147.75	11.08
Apr	2.7	147.78	33.25
May	3.6	152.83	45.85
Jun	4.2	154.5	54.08
Jul	5.7	154.5	73.39
Aug	5.4	144.4	64.98
Sep	3.3	132.45	36.42
Oct	1.8	126.75	19.01
Nov	1.2	126.75	12.68
Dec	0.45	141	5.29

Total Evap (af) 365.06 af

Total Precip (af) 288.52 af

Total loss Evap-precip (af) 76.54 af

Total loss by Seepage (af) (Eric's formula) 554 af

Pond Size 575.8 af

Loss by Evap 76.54 af

Loss by Seepage 554 af

Total volume for water right should be 1206.34 af

minus Water Right 98-7848 230.4 af

Total volume for New water right 975.94 af

Total volume plus drawdown refill 1551.74 af

SUPPLEMENTAL ATTACHMENT

Question 11.

Water use as described in WATER RIGHT 98-7848 applies here. This additional water right will be used for the same purpose as WATER RIGHT 98-7848 but will allow for the replacement of water loss due to evaporation and seepage, and will allow for flexible water level manipulation throughout the year.

Water level management for the wetland cell typically involves mimicking the natural historical hydrograph; water is added in the spring, held high until summer, gradually lowered throughout the summer, and then refilled in the fall.

In addition, one or twice during every five years, wetland drawdowns will be conducted which require the wetland to be filled more than once within a year. During wetland drawdowns, the wetland is drained during the growing season to facilitate oxidation of bottom soils and wetland vegetation management. During years of wetland drawdown, additional water is needed to refill the wetland in the late fall. During these years an additional water use of up to 575.8 acre-feet will be utilized to refill the wetland in the fall.

POND

SURFACE AREA (SQFT)	6781232	POND SIZE	576.00 AF
AVERAGE DEPTH (FT)	3.70	CAPACITY	25090558.4 CUFT 187677377 G
FILL OR REFILL RATE (CFS)	0.5	USE 0 IF FILLED NATURAL CONVERT TO GPD	323136 GPD
TOTAL DOMESTIC RATE CANNOT EXCEED 0.04 CFS FOR PART B DOMESTIC* REFERENCE EXAMPLE:			
ESTIMATED NUMBER OF DAYS TO FILL BASED ON PROVIDED			
INPUTS			
EVAPORATION (IN/DAY)	0.1	IF UNKNOWN, USE REFER CONVERT TO GPD	422724 GPD
EVAPORATION (GPYper year)	154294368.5 473.5134833 AFY		
SEEPAGE RATE (FT/DAY)	0.01	SUGGESTED VALUES FOF CONVERT TO GPD	507236 GPD
SEEPAGE RATE (GPY per year)	180576070.7	0 = NATURALLY FILLED FROM GW, OR LINED	
SEEPAGE RATE (AF PER YEAR)	554.1693131 AF	0.5 = CLAY SOILS	
		1.5 = LOAMS	
		3.0 = GRAVELS	