

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPLICATION FOR PERMIT
To appropriate the public waters of the State of Idaho

Ident. No. 98-7913

1. Name of applicant(s) Kootenai Tribe of Idaho Phone 208-267-3620
Name connector (check one): ☐ and ☐ or ☐ and/or

Mailing address: P.O. Box 1269 City Bonnars Ferry
State Idaho Zip 83805 Email: ireland@kootenai.org

2. Source of water supply 1.Kootenai R., 2.Moyie R., 3. ground which is a tributary of 1.Columbia, 2. Kootenai, 3. NA

3. Location of point(s) of diversion:

Twp	Rge	Sec	Govt Lot	¼	¼	¼	County	Source	Local name or tag #
62N	2E	22	2		NW	NE	Boundary	Kootenai River	
62N	2E	15			NW	SE	Boundary	Moyie River	
62N	2E	15			~~NW~~	SE	Boundary	Groundwater	
					SW				

4. Water will be used for the following purposes:

Amount 3.85 cfs for fish propagation purposes from 1/1 to 12/31 (both dates inclusive)
(cfs or acre-feet per year)

Amount 0.06 cfs for domestic purposes from 1/1 to 12/31 (both dates inclusive)
(cfs or acre-feet per year)

Amount 0.09 cfs for irrigation purposes from 5/1 to 10/31 (both dates inclusive)
(cfs or acre-feet per year)

Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per year)

5. Total quantity to be appropriated is (a) 4.00 cubic feet per second (cfs) and/or (b) _____ acre-feet per year (af).

6. Proposed diverting works:

a. Describe type and size of devices used to divert water from the source. Two surface water intakes are described in Attachment A.

b. Height of storage dam NA feet; active reservoir capacity _____ acre-feet; total reservoir capacity _____ acre-feet. If the reservoir will be filled more than once each year, describe the refill plan in item 11.
For dams 10 feet or more in height OR reservoirs with a total storage capacity of 50 acre-feet or more, submit a separate Application for Construction or Enlargement of a New or Existing Dam. Application required? ☐ Yes ☒ No

c. Proposed well diameter is 8 inches; proposed depth of well is 95-100 feet.

d. Is ground water with a temperature of greater than 85°F being sought? ☐ Yes ☒ No

e. If well is already drilled, when? April-May 2010; drilling firm Minden Water Wells;
Well was drilled for (well owner) Kootenai Tribe of Idaho; Drilling Permit No. See Attachment A

7. Description of proposed uses (if irrigation only, go to item 8):

a. Hydropower; show total feet of head and proposed capacity in kW. NA

b. Stockwatering; list number and kind of livestock. NA

c. Municipal; show name of municipality or the applicant's qualifications as a municipal provider. NA

d. Domestic; show number of households 2 homes and domestic facilities within the hatchery

e. Other; describe fully. Aquaculture and landscaping irrigation. See Attachment A.

8. Description of place of use:

- If water is for irrigation, indicate acreage in each subdivision in the tabulation below.
- If water is used for other purposes, place a symbol of the use (example: D for Domestic) in the corresponding place of use below. See instructions for standard symbols.

TWP	RGE	SEC	NE				NW				SW				SE				TOTALS
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
62N	2E	15														H	H		
62N	2E	15														D	D		
62N	2E	15														#	#3		3

Total number of acres to be irrigated: 3.0

- Describe any other water rights used for the same purposes as described above. Include water delivered by a municipality, canal company, or irrigation district. If this application is for domestic purposes, do you intend to use this water, water from another source, or both, to irrigate your lawn, garden, and/or landscaping? An existing well supplies a residence and campground. An existing diversion from the Moyie River supplies a recreational pond at Twin Rivers. Each of these uses will continue and will be unchanged by the proposed hatchery. See Attachment A for more information.
- Who owns the property at the point of diversion? Kootenai Tribe of Idaho
 - Who owns the land to be irrigated or place of use? Kootenai Tribe of Idaho
 - If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing: _____
- Describe your proposal in narrative form, and provide additional explanation for any of the items above. Attach additional pages if necessary. See Attachment A and Figure 1.

- Time required for completion of works and application of water to proposed beneficial use is 5 years (minimum 1 year).
- MAP OF PROPOSED PROJECT REQUIRED** - Attach an 8½" x 11" map clearly identifying the proposed point of diversion, place of use, section #, township & range. A photocopy of a USGS 7.5 minute topographic quadrangle map is preferred.

The information contained in this application is true to the best of my knowledge. I understand that any willful misrepresentations made in this application may result in rejection of the application or cancellation of an approval.

Susan Ireland
Signature of Applicant

Susan Ireland, Fish Wildlife Director, Kootenai Tribe
Print Name (and title, if applicable)

Signature of Applicant

Print Name (and title, if applicable)

For Department Use:

Received by db Date 8/31/11 Time _____ Preliminary check by [Signature]
Fee \$ 370.00 Received by db Receipt No. NO 28006 Date 8/31/11

Attachment A to Application for Permit for the Kootenai River Native Fish Conservation Aquaculture Program at Twin Rivers

(2) Source of Water

Two surface water sources and three wells are proposed to supply the new sturgeon and burbot hatchery at the confluence of the Kootenai and Moyie rivers. The Kootenai River would provide the primary supply in conjunction with periodic withdrawals from the Moyie River. High turbidity levels in the Kootenai River would trigger withdrawals into the hatchery from the Moyie River. Certain life stages of sturgeon and burbot require cool pathogen-free water and during these periods, ground water would be pumped from three wells. Water from all sources would be directed to centralized distribution locations called headboxes.

(6) Proposed Diverting Works

a. Devices to Divert Water

(i) The Kootenai River intake will be a submersible or mixed flow pump (type to be determined during final design) positioned approximately 50 feet into the main channel where it will be submerged deeply enough to avoid potential conflicts with boats. It will be anchored in place with rock anchors or mini-piles (method to be confirmed during final design). This H-shaped pump is expected to extend approximately 5 feet horizontally and 1.5 feet vertically. Water will be conveyed to the hatchery sediment settling pond via a 1,600-foot-long 12-inch-diameter buried pipeline. The initial 300 feet of pipeline is likely to be ductile iron from the intake to the shore-based pump, and the remaining 1,300 feet to the settling pond likely will be PVC. Pump sizing will be confirmed during final design, but is expected to range from 25 to 50 horsepower.

(ii) The Moyie River intake also will be a submersible or mixed flow pump (type to be determined during final design) positioned approximately 20 feet into the Moyie channel where, at low water, it will be submerged at a depth of approximately two feet. The intake pump will be secured with rock anchors or potentially mini-piles. It will be approximately the same size as the Kootenai intake (5 feet horizontal by 1.5 feet vertical). Water will be conveyed to the hatchery settling pond via a 900-foot-long buried pipeline. The initial 150 feet from the intake to the pump will likely be ductile iron and the final 750 feet to the settling pond likely will be PVC. Pump sizing will be confirmed during final design, but is expected to range from 25 to 50 horsepower.

Both intake structures will be fitted with dual cylindrical tee screens with air-burst backwash designed to reduce debris accumulation. All surface flows will be directed through an approximately 1.5 acre-foot sediment pond and then through a filtration system to extract settleable solids and particulates.

c. and e. Well Diameter and Well Data

Three wells were drilled at the Twin Rivers site in April and May 2010 by Minden Water Wells. Table 1 provides information about each well.

Table 1. Twin Rivers Well Data

Well Number	Permit Number	Date Drilled	Diameter	Depth	Capacity
✓ 1	D0058062	April 2010	8 inches	98 feet	84 gpm
✓ 2	D0058099	April 2010	8 inches	100 feet	200 gpm
3	D0058065	May 2010	8 inches	95 feet	200 gpm

(7) Description of Proposed Use

d. Domestic

A small portion of the capacity of the three wells identified in Table 1 will be used for domestic supply. This use will include two new houses and the hatchery restrooms, kitchen and laboratory. This quantity is expected to be approximately 27 gpm and use will occur year round. A piping system will direct all groundwater through a treatment system and then to a headbox from where it will be gravity-fed to the point of use.

e. Fish Propagation

The water supplied to the Twin Rivers Hatchery from the Kootenai and Moyie rivers and new groundwater wells will be used for the culture of Kootenai sturgeon, burbot and rainbow trout (the latter will be a food supply for the sturgeon and burbot). A combination of the three water sources is proposed for different aquaculture activities. The hatchery will operate year round, with maximum surface and groundwater fish propagation requirements estimated as shown in Table 2. Diversion amounts in the first year of operation (expected to be 2013) will be less than in the second year when the hatchery is fully operational. At full operation (expected by 2014), average maximum withdrawal from the Kootenai and Moyie rivers will be 3.29 cubic feet per second (cfs) when sturgeon, burbot and live feed production is occurring.

Incoming surface water will be pumped to a settling pond to remove the silt and very fine sand. It then will be routed through drum filters, sand filters, and UV disinfection. After these steps, the water will either be passed through a gas stabilization column or heated/ chilled before it is routed to the hatchery headbox (this is a collection device within the hatchery from which water is then gravity-fed to the point of use).

Relatively small amounts of groundwater will be used in the hatchery to provide a pathogen-free supply for incubation, make-up water for the live feed program, and seasonally to moderate the temperature of river water. When fully operational (expected by 2014), groundwater demand will range seasonally, peaking at 250 gpm (0.56 cfs) in June and July. Groundwater will not require the same filtration, although it will all be treated to ensure its safety for human consumption. During certain times of the year, it may be heated or chilled. It then will be passed through a gas stabilization column into the groundwater headbox which elevates it to circulate through the hatchery.

Both surface and groundwater will supply sturgeon, burbot and rainbow trout rearing trays and tanks inside the hatchery building. Exterior rearing facilities will consist of four sturgeon spawning channels, each 20 feet by 50 feet by 3 feet deep, and six earthen burbot rearing ponds 40 feet by 40 feet by 3 feet deep. When all ponds are fully in use, the combined pond capacity would total 40,800 cubic feet, or 0.9 acre-feet.

Water budgeted for fish production ranges from about 1.45 cfs during winter (December and January) up to 3.85 cfs in May. Water demand projections are based on using single pass flows for all programs and life stages. Surface and groundwater demand will gradually increase during the first year of operation as production is initiated.

All fish propagation supplies will be non-consumptive. After passing through hatchery facilities, all flow will be routed to a dual cell concrete effluent pond. Supernatant (the clear liquid separated from the solids) will be released from the pond through an approximately 16-diameter buried pipe terminating approximately 40 feet in the Kootenai River channel.

Approximately 27 gpm of groundwater used in two houses and in the hatchery kitchen, restrooms and laboratories will be consumptive. This water will be directed to septic systems on site. In addition, approximately 3 acres may be irrigated to sustain landscaping around two new homes and the hatchery, requiring a consumptive use of up to 40 gpm in the summer and early fall.

The total volume requested in this application is shown in Table 2.

Table 2. Surface and Groundwater Required for All Uses at Twin Rivers Hatchery

Use	Surface Water(cfs)	Groundwater (cfs)	Total (cfs)
Fish Propagation	3.29	0.56	3.85
Domestic	0	0.06	0.06
Irrigation		0.09	0.09
Total	3.29	0.71	4.00

(9) Other Water Rights.

Two existing water rights supply the Twin Rivers Resort.

- Water Right License Number 98-07670
This groundwater right is for 0.13 cfs for domestic and commercial uses. The domestic portion is a year round use (0.04 cfs) at two homes and the 48-site commercial campground use (0.09 cfs) is seasonal from April through December.
- Water Right License Number 98-07671
This year round surface water right allows the withdrawal of up to 0.2 cfs from the Moyie River to supply the recreational pond at Twin Rivers Resort.

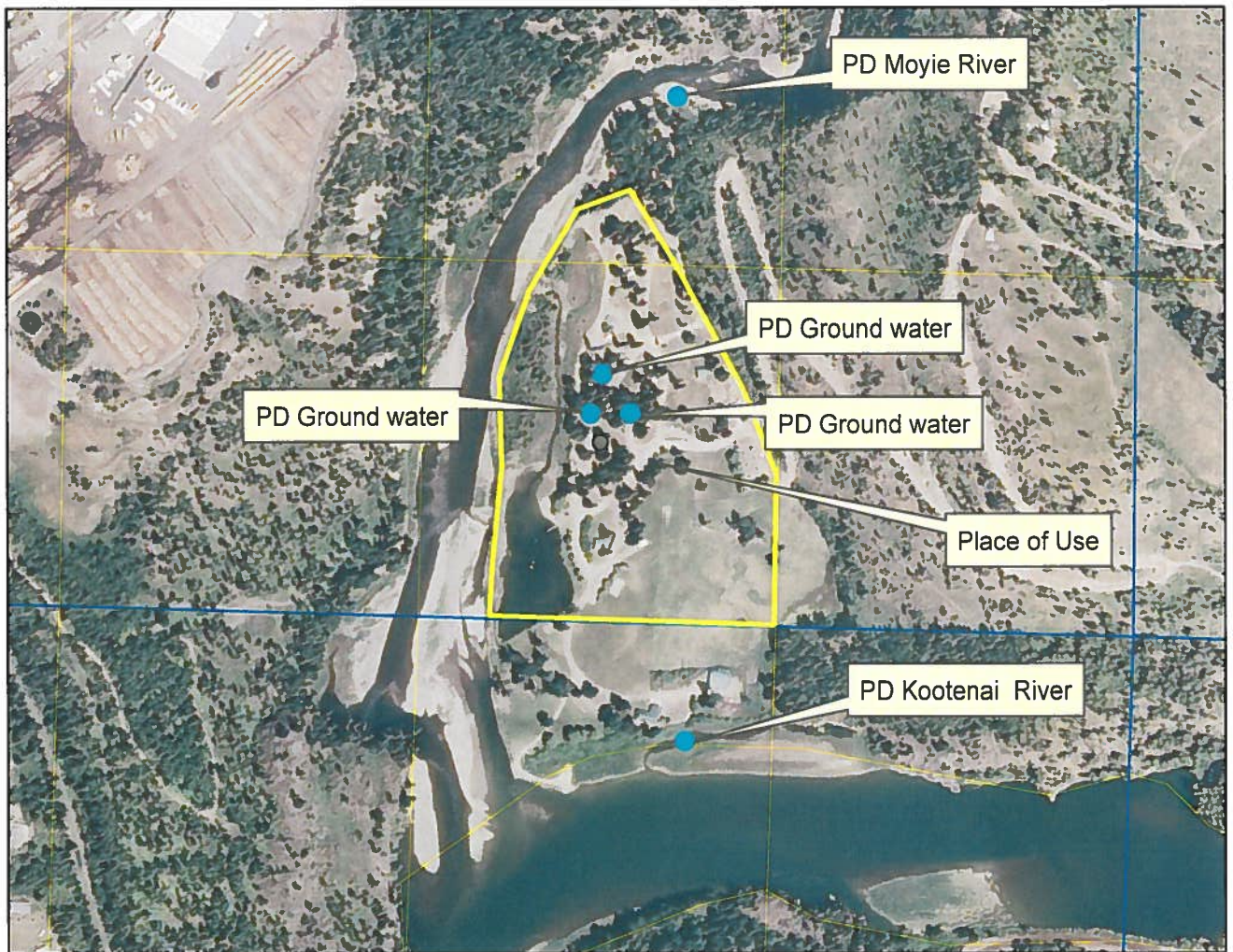
These rights and the uses they support will be unaffected by the proposed Twin Rivers Hatchery.

(11) Additional Information

The Kootenai Tribe of Idaho is proposing this new hatchery on Tribal-owned land to address the current physical space limitations at its existing hatchery where it has successfully produced Kootenai River white sturgeon since 1989. Kootenai sturgeon and burbot were keystone species in the Kootenai River that have been in precipitous decline for many years due to river modifications and dam operations. Both species are of significant cultural value to the Tribe and the Twin Rivers site offers high quality ground and surface water that is needed to rear both species. This location also would help extend river reaches where sturgeon imprint and ultimately return to reproduce. The Twin Rivers Hatchery will make a very important contribution to the restoration of these species and will complement the Tribe's Kootenai River habitat restoration program, Phase 1 of which will be implemented in late 2011.

These and other ecosystem-based natural resource activities are being undertaken with the cooperation and input of the Idaho Department of Fish and Game and other state and federal agencies. The Tribe's Master Plan for the proposed program at Twin Rivers has been reviewed and approved by the Northwest Power and Conservation Council and the Independent Scientific Review Panel. Design is being advanced by the Tribe's engineering team and an Environmental Assessment is being prepared by the Bonneville Power Administration.

98-7913



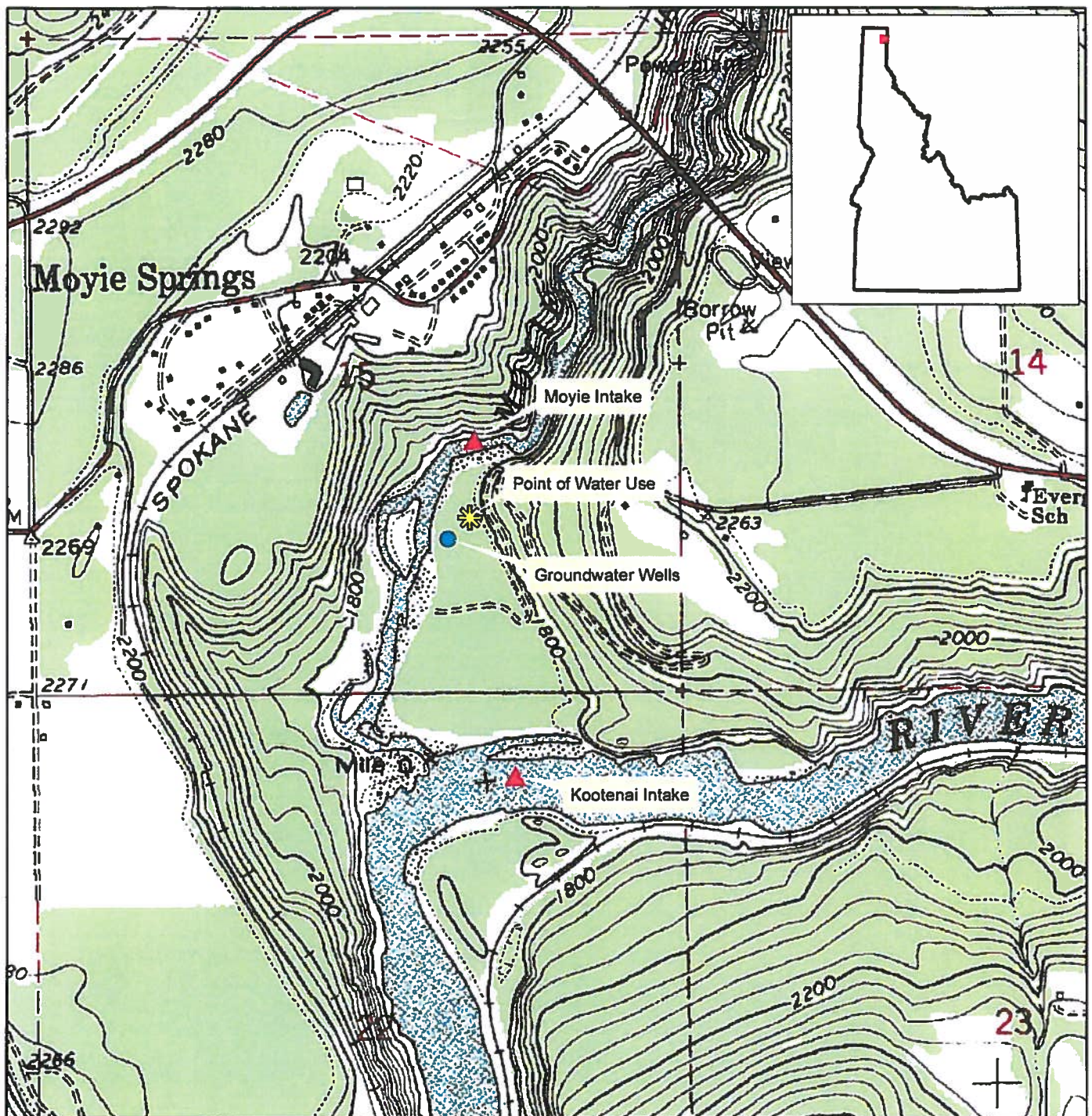


**Figure 1. Proposed Surface Water Intake Locations
Kootenai River Hatchery**

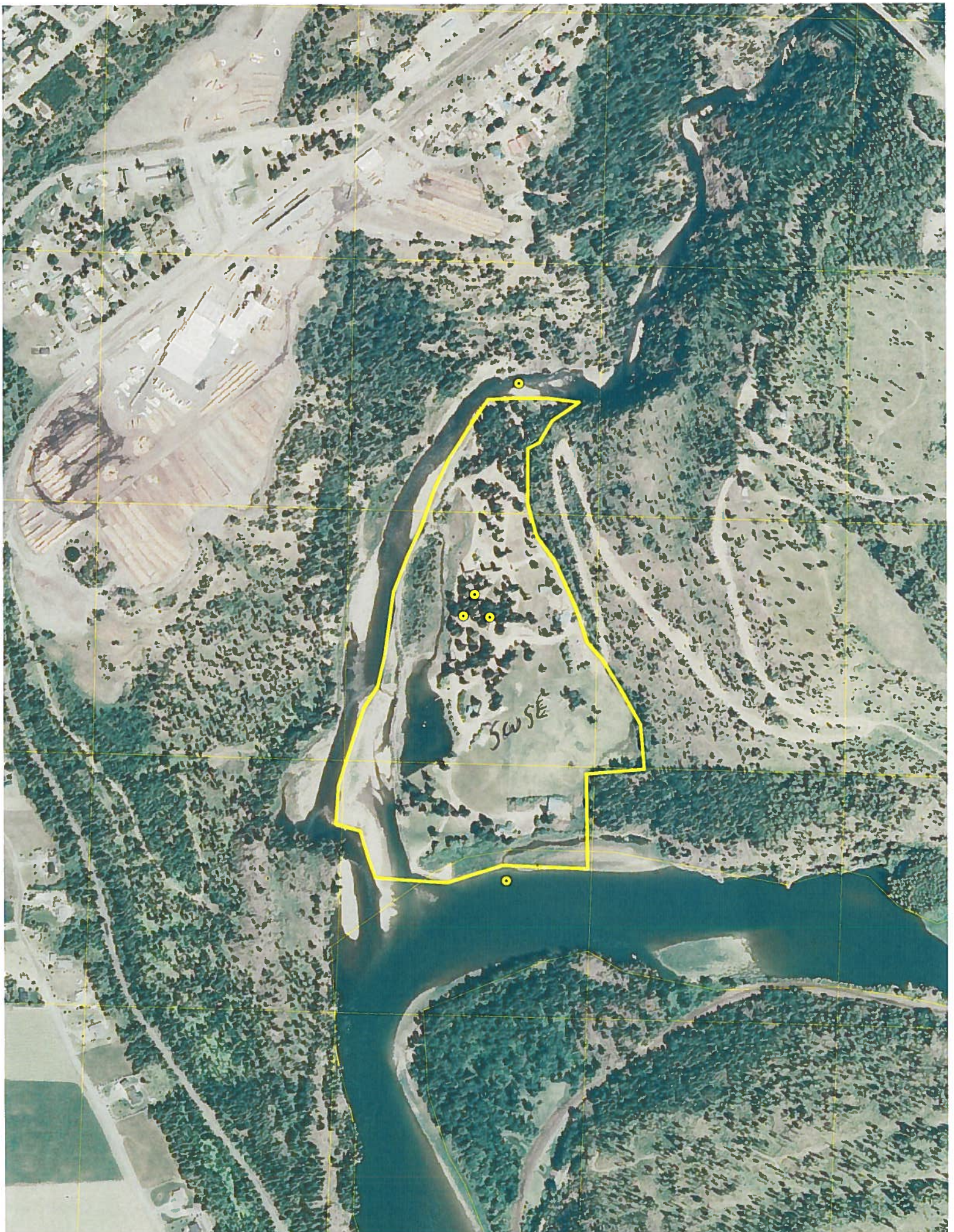
-  Point of Water Use
-  Surface Water Intake Sites
-  Groundwater Intake Sites

USGS Quad: Moyie Springs
T62N R2E Boise Meridian
Sections 15 and 22

1 inch = 1,167 feet

0 310 620 1,240 1,860 2,480 Feet

Meridian
Environmental, Inc.



IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

1. WELL TAG NO. D 0058065

DRILLING PERMIT NO. _____

Other IDWR No. _____

2. OWNER:

Name **Kootenai Tribe of Idaho**

Address **P.O. Box 1269**

City **Bonniers Ferry** State **ID** Zip **83805**

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

North ☒ or South ☐
East ☒ or West ☐
Twp. **62** Rge. **2** Sec. **15**
Gov't Lot _____
Lat _____
Address of Well Site **Resort Rd.**
City **Moyie Springs**

(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk _____ Sub. Name _____

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other **Fish Hatchery**

5. TYPE OF WORK: check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES:

Seal/Filter Pack		AMOUNT		METHOD
Material	From	To	Sacks or ounds	
bentonite	0	15	1500	temp cased
bentonite	15	38	500	pumped

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) **69**

Was drive shoe seal tested? ☒ Y ☐ N How? **Air**

8. CASING/LINER:

Diameter	From	To	Guage	Material	Casing	Liner	Welded	Threaded
8	+2	69	.250	steel	☒	☐	☐	☐

Length of Headpipe **2'**

Length of Tailpipe **2'**

9. PERFORATIONS/SCREENS:

☐ Perforations Method _____
☒ Screens Screen Type **stainless steel**

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
70	80	.100		7.5	stn ls.	☒	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

16 ft below ground Artesian pressure **N/A** lb.
Depth flow encountered **35** ft. Describe access port or control
devices **watertight well cap**

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

11. WELL TESTS:

Yield gal./min.	Drawdown	Pumping Level	Time
500+	80	80	5 hrs
225	20	60	24 hrs

Water Temp. **cold**

Bottom hole temp. **cold**

Water Quality test or comments: _____

Depth first Water Encounter **35**

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks Lithology, Water Quality & Temperature	Water	Y	N
12	0	35	boulders, sand, gravel			
12	35		boulders, sand, gravel			
		38	water		X	
8	38		boulders, sand, gravel,			
		98	water		X	

RECEIVED
JUN 07 2010
IDWR/North

Completed Depth **82**

(Measurable)

Date: Started **4/28/2010**

Completed **4/29/2010**

13. DRILLER'S CERTIFICATION:

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

Company Name **MINDEN WATER WELLS, INC.** Firm No. **320**

Firm Official *Edward A. Mendenhall* Date **5/3/2010**

and Driller or Operator *William C. Smith* Date **5/3/2010**

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. WELL TAG NO. D 0058062

DRILLING PERMIT NO. _____

Other IDWR No. _____

2. OWNER:

Name Kootenai Tribe of Idaho

Address P.O. Box 1269

City Bonnerr's Ferry State ID Zip 83805

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N
W E S
Twp. 62 North ☒ or South ☐
Rge. 2 East ☒ or West ☐
Sec. 15 SW 1/4 SW 1/4 SE 1/4
Gov't Lot _____ County Boundary
Lat: _____ Long: _____

Address of Well Site Twin Rivers Resort

City Moyie Springs

(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Fish Hatchery

5. TYPE OF WORK: check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES:

Seal/Filter Pack			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
Bentonite	0	18	1500 lbs		temp case
Bentonite	18	38	500 lbs		pumped

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 77 ft.

Was drive shoe seal tested? ☒ Y ☐ N How? Air

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8	+2	72	.250	steel	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 2 ft.

Length of Tailpipe 0

9. PERFORATIONS/SCREENS:

☐ Perforations

Method

☒ Screens

Screen Type Stainless

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
70	75	.80		7.5	stnls.	☐	☐
75	85	.60		7.5	stnls.	☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

15 ft. below ground Artesian pressure N/A lb.

Depth flow encountered 35 ft. Describe access port or control

devices: Water Tight Well Cap

11. WELL TESTS:

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
220	95	95	4 hrs

Water Temp. Cold Bottom hole temp. cold

Water Quality test or comments: _____

Depth first Water Encounter 35

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dis.	From	To	Remarks: Lithology, Water Quality & Temperature	Water	Y	N
12	0	35	gravel, boulders, sand			
12	35	38	gravel, boulders		X	
8	38		gravel, boulders, sand,			
		97	water		X	

RECEIVED

JUN 07 2010

IDWR/North

Completed Depth 85 (Measurable)

Date: Started 4/23/2010 Completed 4/29/2010

13. DRILLER'S CERTIFICATION:

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

Company Name MINDEN WATER WELLS, INC. Firm No. 320

Firm Official _____ Date 6/3/2010

and

Driller or Operator _____ Date 6/3/2010