

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-09371

Exam Date: 8/9/2016

1. Current Owner:
BIG SKY ESTATES OWNERS ASSN INC
PO BOX 2184
POST FALLS ID 83877-2184
2. Accompanied by: DAVID SHAHRABANI
Phone No: (805) 598.0383
Address: 6610 W BIG SKY DR, POST FALLS, ID 83877
Relationship to Permit Holder: President of Homeowners Association (Permit Holder)

3. **SOURCE:**
GROUNDWATER

TRIBUTARY:**B. OVERLAP REVIEW**

1. Other water rights with the same place of use: NONE
2. Other water rights with the same point-of-diversion: 95-2162

C. DIVERSION AND DELIVERY SYSTEM

A Hollowshaft 150 Horsepower (HP) well pump is used to draw water from the Rathdrum Prairie Aquifer to a fully enclosed concrete reservoir. 30 HP and 7.5 HP Unimont pumps are used to pull water from the reservoir into an eight inch diameter output water line to buried distribution lines. Distribution lines deliver water to a delivery stub for each irrigated lot. Lot owners connect their individual irrigation systems, of varying configuration, to the stub serving their lot.

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUNDWATER NW¼, SE¼ Sec.29, Twp 51N, Rge 04W, B.M. KOOTENAI County

Method of Determination: Map-'Coeur d'Alene' U.S. Geological Survey 7.5' Quadrangle (Topographic) 1981, ArcMap™ Geographic Information System (GIS) software, Garmin GPS Receiver

Point of Diversion (Pump House on top of concrete reservoir) GPS Coordinates -116 Degrees 51' 42.3. West Longitude, 47 Degrees 44' 08.5 North Latitude (10 satellites visible)

2.

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	
51N	04W	29			6.0		0.7	1.0	6.0	14.0									27.7

Total Acres: 27.7

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

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4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Not Applicable	Hollowshaft	150	1362862	Peerless Pump	SN: 208066 12 inch outlet pipe

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

D. FLOW MEASUREMENTS (None: See Theoretical Measurement below)

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements: (Theoretical) Pump assumed to be set 20 feet above 272 well depth & at 140 PSI 'Back Pressure' reported in 95-2162 Report Of Examiner (Field Exam).

PUMP EQUATIONS WATER RIGHT 95-09371						
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/ H	150	575.8095238	0.8	252	140
Q	1.837 CFS 824.4 GPM					

E. FLOW CALCULATIONSMeasured Method: (See field Exam narrative) *(See Pump Equations Water Right 95-09371)***F. VOLUME CALCULATIONS**

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (27.7 \text{ Acres}) \times (3.0 \text{ AF per Acre}) = 83.1 \text{ AF}$$

Additional Computation Sheets Attached

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (27.7 @ .55 \text{ cfs}) = (.55) \times (214) \times (1.9835) = 233.45 \text{ AF}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 83.1 \text{ AF}$$

2. Volume Calculations for Other Uses: No other uses on Permit.

G. NARRATIVE/REMARKS/COMMENTS

Exam field work completed 8/19/16 with Big Sky Homeowners Association President (David Shahrabani). Physical measurement of the enclosed reservoir's dimensions, & fill time between reservoir ladder steps was measured by IDWR on April 28, 2016, before reservoir fill at the start of the irrigation season.

The irrigation system uses the same well as Lisc. 95-2162. This well was originally used for irrigation before the place of use property was divided into residential lots of approximately 4.5 acres each. The current, enclosed, concrete reservoir and buried distribution lines to individual lots were built after the agricultural land was converted into residential lots. Information in 95-09371 Permit Application files refers to a 'Cranston Well'. The reason for this is unclear because the only well ever used for irrigation is the 95-2162 well.

Direct measurement of the diversion rate was not feasible during the Exam. The current reservoir configuration and interior layout of pipes and equipment in the north end of the reservoir, and in the pump house, prevent direct access to the well for accurate IDWR portable flowmeter measurements. There is

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no permanently attached flowmeter that directly measures well output to the reservoir. Review of the 95-2162 IDWR vault record, and the IDWR Field Exam on the Department Internet web site (see attached), indicates the well has a 26 inch casing, a 150 horsepower (HP) pump, and is 272 feet deep. This data was used for a theoretical calculation (see above).

The 1970 Cubic Feet Per Second (CFS) rate for the 95-2162 Report of Examiner (Field Exam) was 1.95 Cubic Feet Per Second (CFS). Physical measurement of reservoir dimensions was done at the reservoir on April 28, 2016 immediately before the reservoir was filled for the start of the irrigation season. Several inches of water were in the bottom of the reservoir below the bottom ladder rung before the start of reservoir fill. CFS during the fill was calculated as shown below:

Given: Reservoir surface dimensions: = 775.37 Sq. Ft
 1 Foot of water in reservoir = 775.37 Cubic Feet
 Gallons in 1 Foot of reservoir = 775.37 Cubic Feet x 7.4805 Gal per Cu. Ft = 5800.155 Gal

<u>1' APART LADDER STEPS</u>	<u>GAL INTO RESERVOIR</u>	<u>FILL TIME</u>	<u>GAL PER MIN</u>	<u>CFS</u>
BOTTOM STEP TO STEP 2	5800.155	7 minutes	828.59	1.85
STEP 2 TO STEP 3	5800.155	6.5 minutes	892.33	1.99
STEP 3 TO STEP 4	5800.155	6.5 minutes	892.33	1.99
STEP 4 TO LAST MEASURED STEP	5800.155	7 minutes	828.59	1.85
Average of four measurements				1.92

Irrigated acres were found to be less than shown on Permit 95-09371 and the 2009 Proof of Beneficial Use (83.3). Place Of Use (POU) irrigated acres (27.7) were determined using ArcMap™ and 2009 aerial imagery from IDWR and Google Maps™. 20 Individual lots in the POU vary from 4.5 acres to 4.8 acres according to Kootenai County information. Four lots were not irrigated in 2009. The areas that were visibly being irrigated in 2009 remain irrigated in current ArcMap™ imagery and were verified during 2017 IDWR visits to the POU.

The Krohne lot, with a barn near Meyer Road, was not irrigated in 2009. A home and irrigation is visible in on this lot in 2015 and 2017. Irrigated area has also increased on other lots in the POU since 2009.

Water Right 95-09371 was permitted at 1.67 CFS. This Right should be licensed at the same CFS ~~1.67 CFS~~ 1.55 CFS amount and 83.1 AF for 27.7 acres.

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>
IRRIGATION	03/15 to 11/15	1.67 CFS <u>1.55</u>	83.1 AF
	<u>Totals:</u>	1.67 CFS <u>1.55 CFS</u>	83.1 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 ☐ None

I. AUTHENTICATION

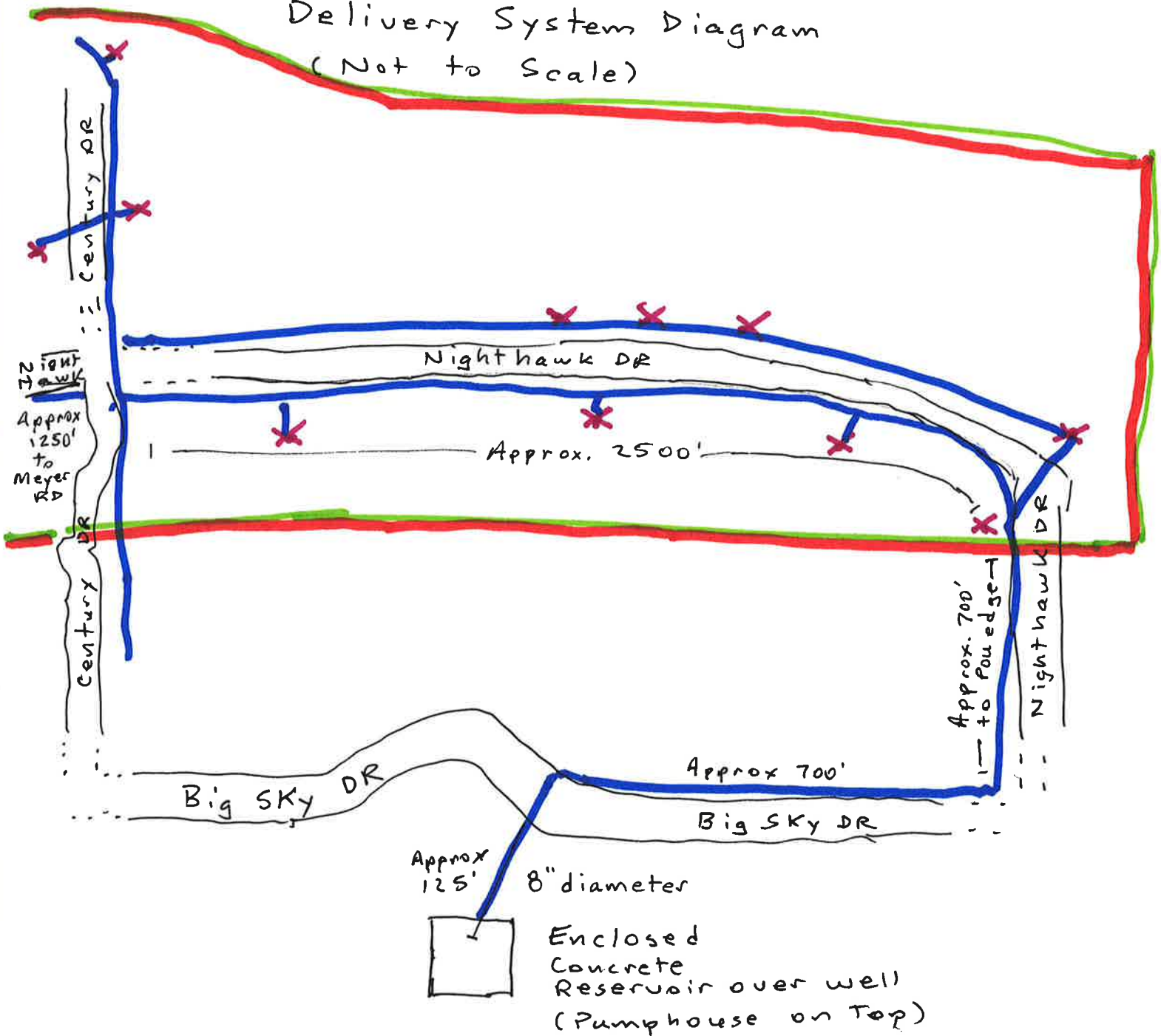
Field Examiner's Name Douglas M. May Date 07/11/2018

Reviewer Douglas Jones Date 9/11/18

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Delivery System Diagram
(Not to Scale)



(Components of 95-2162 water distribution system not shown)

— Place of Use

X Delivery Stub (2009 in use)

— ~~Dis~~ Distribution Water Line

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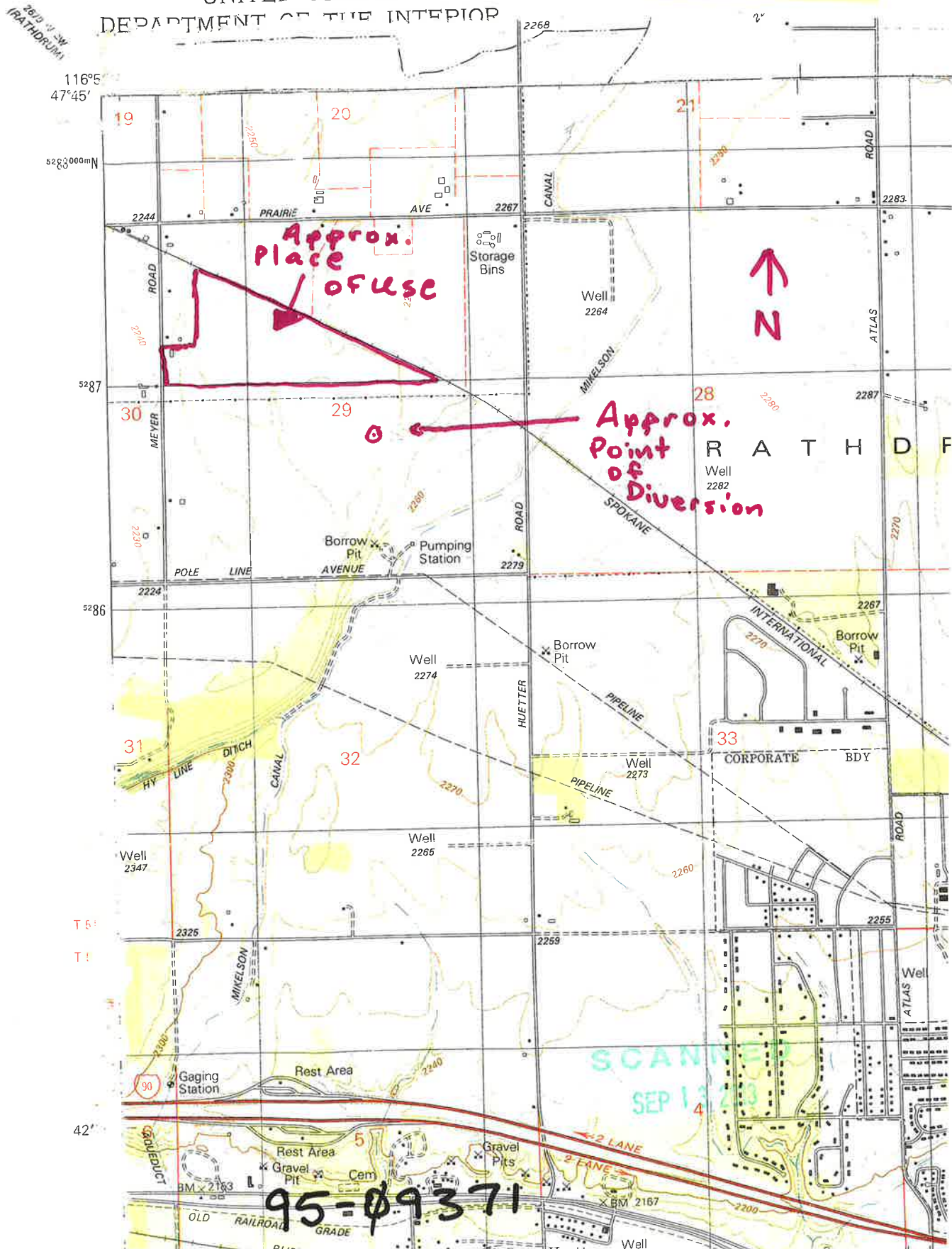
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USGS
7.5' Quadrangle
Coeur d'Alene
1981

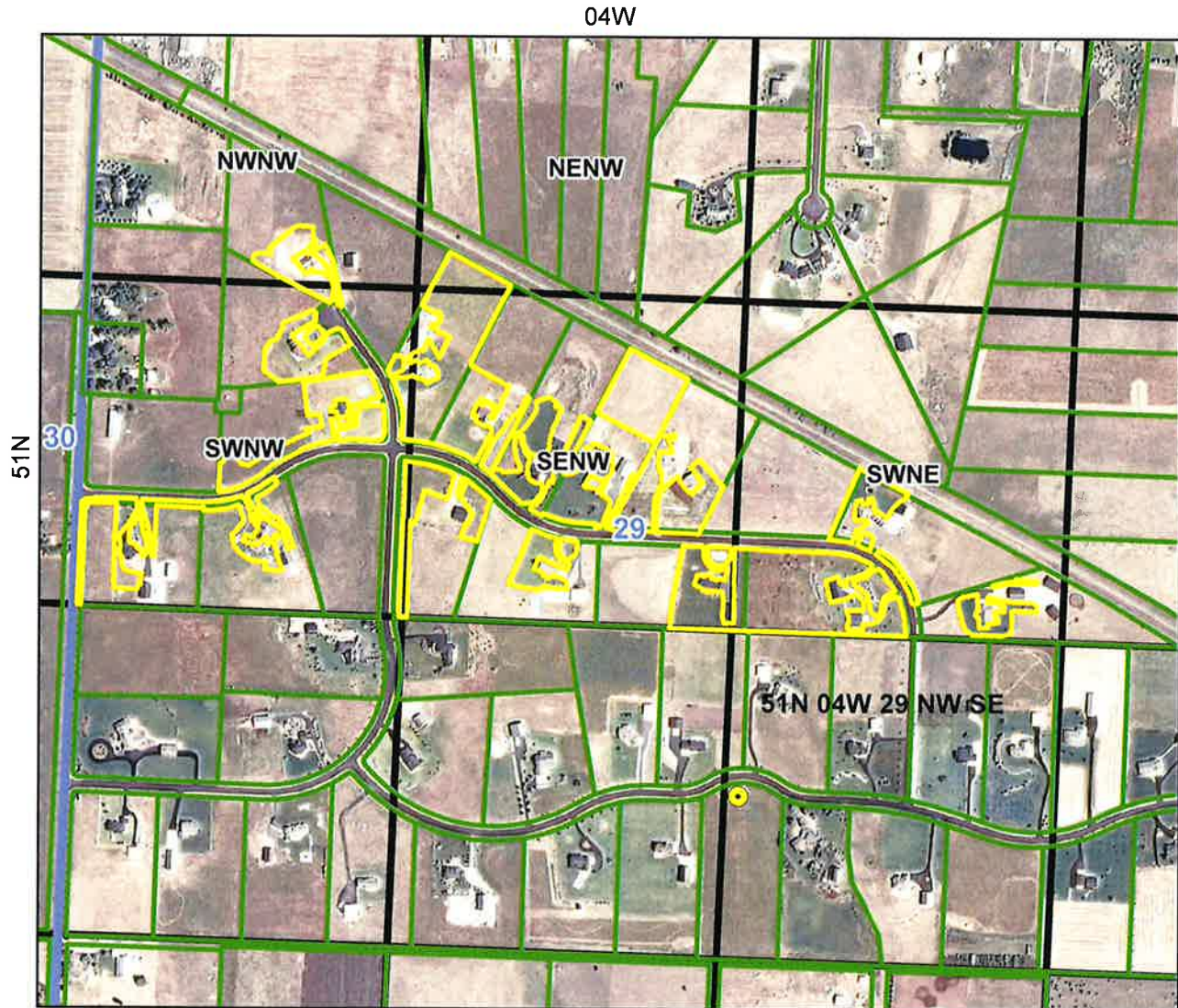
UNITED STATES
DEPARTMENT OF THE INTERIOR



State of Idaho
Department of Water Resources

Attachment to Water Right License
95-9371

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
- PLS Sections
- Taxlots

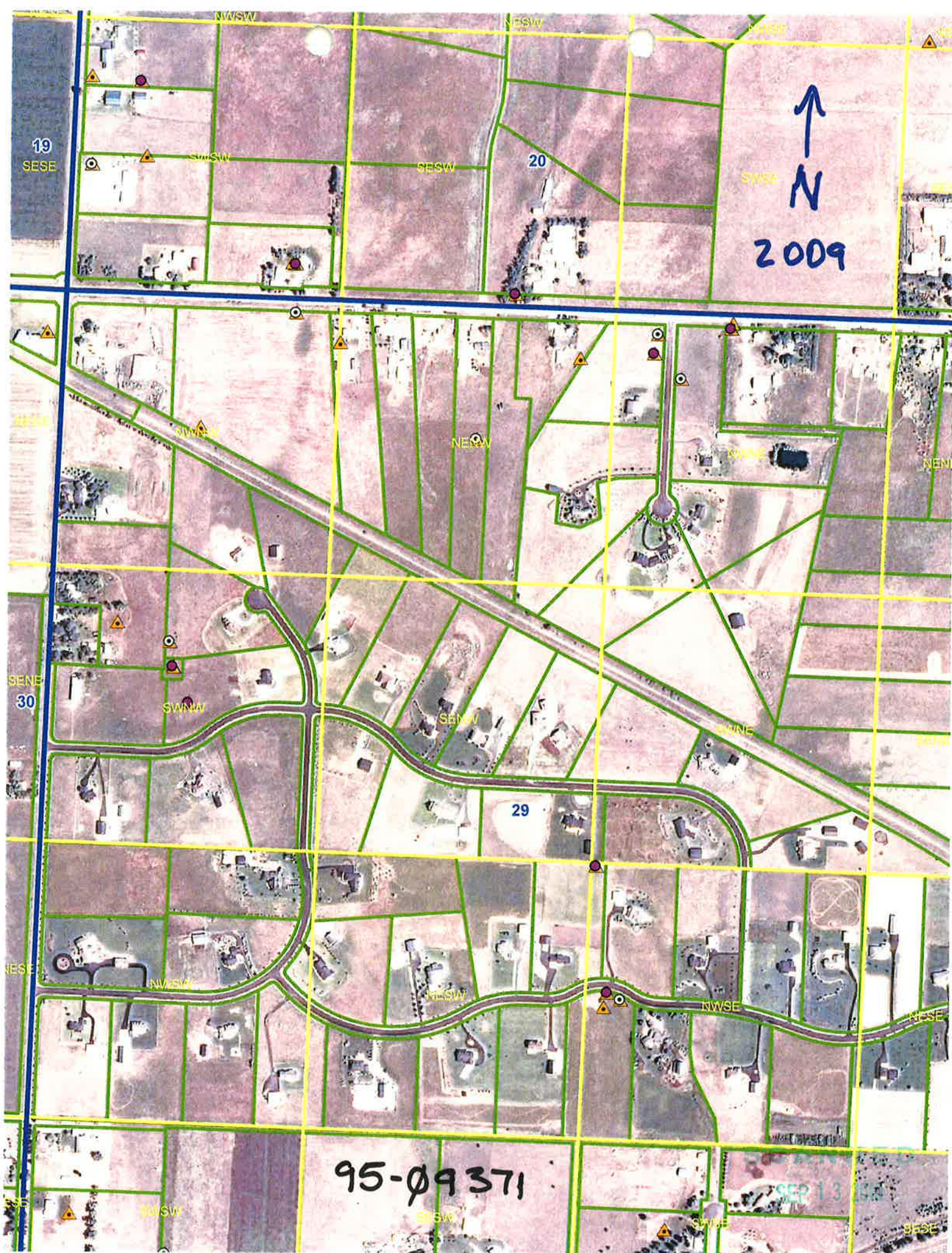
0 0.075 0.15 0.3 Miles

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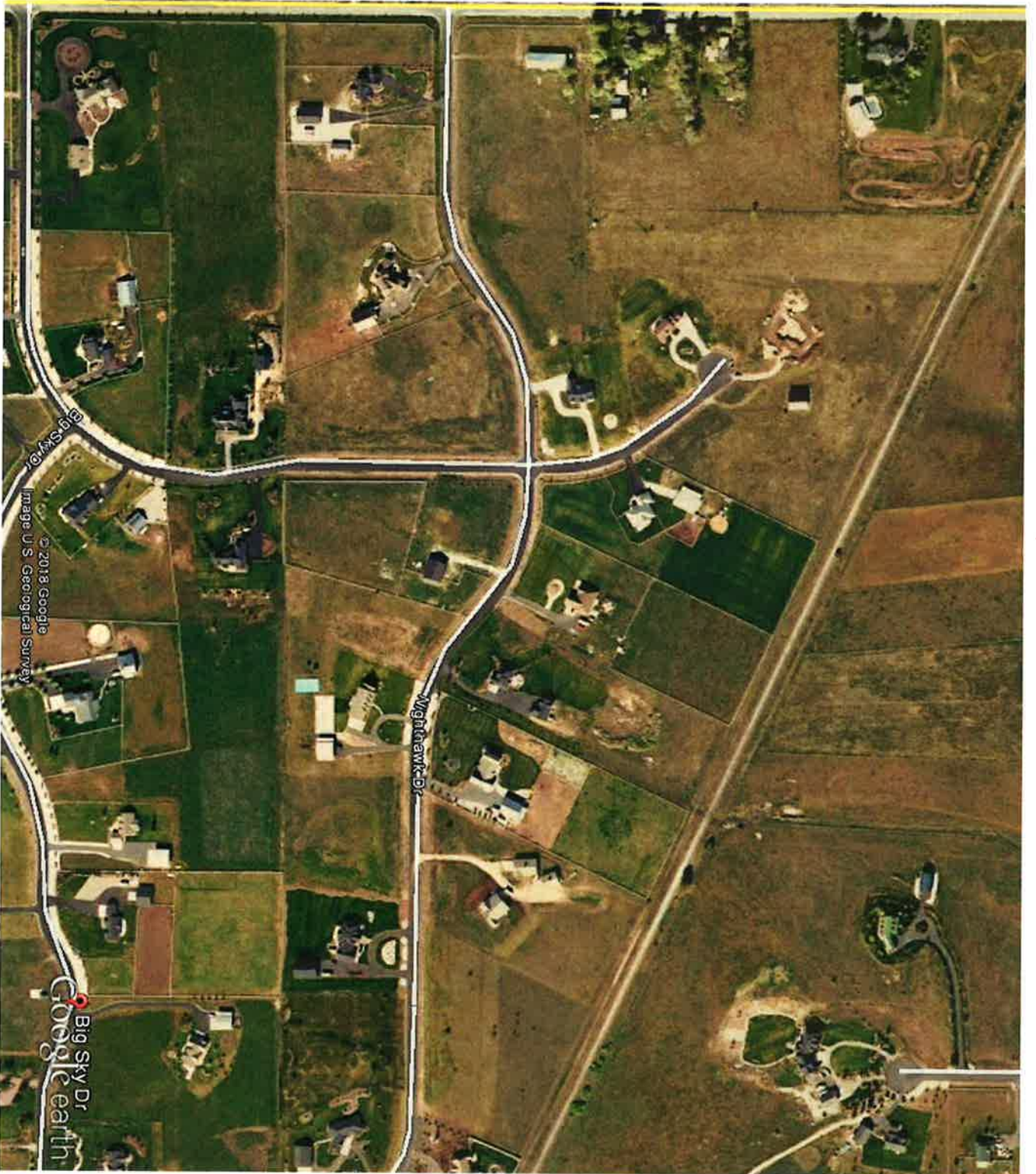


Tax parcel information provided by Kootenai County.

95-09371



5/29/18 09



Google earth

feet
meters

2000
600

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BIG SKY ESTATES RESERVOIR INTERIOR 04/28/2016



BIG SKY ESTATES RESERVOIR FILL FROM EMPTY MEASUREMENT
04/28/2016

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BIG SKY ESTATES 04/28/2016 PUMP



BIG SKY ESTATES SEP 28 2017 controls

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BIG SKY ESTATES BLD'G INTERIOR SEP 28 2017



BIG SKY ESTATES SEP 28 2017



BIG SKY ESTATES SEP 28 2017

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BIG SKY ESTATES SEP 28 2017



BIG SKY ESTATES SEP 28 2017



BIG SKY ESTATES SEP 28 2017

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BIG SKY ESTATES IRRIGATION PIPE ON ONE PARCEL



BIG SKY ESTATES RESERVOIR FILL FROM EMPTY MEASUREMENT

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BIG SKY ESTATES SEP 28 2017



BIG SKY ESTATES SEP 28 2017

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BIG SKY ESTATES SEP 28 2017



BIG SKY ESTATES SEP 28 2017



BIG SKY ESTATES SEP 28 2017

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BIG SKY ESTATES SEP 28 2017



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DEPARTMENT OF RECLAMATION
BOISE

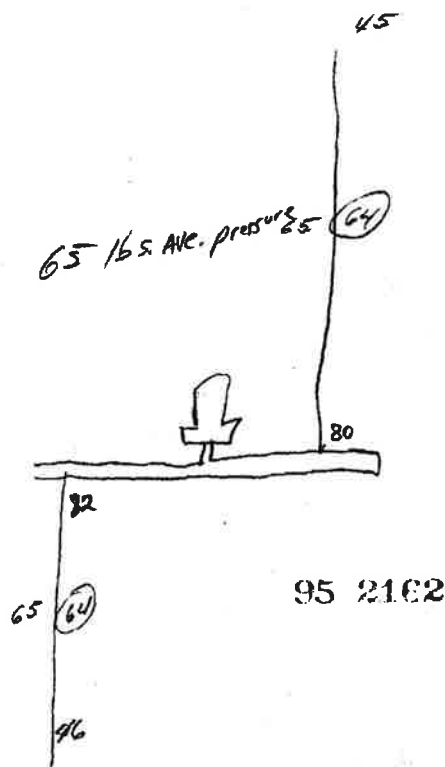
REPORT OF EXAMINER

PERMIT NO. G-32079/95-2162

REPORT ON PROOF OF Thomas A. Brickert

Hollowshaft Motor
150 H.P. Type RU Design B Code F
1800 RPM 60° 3 Ph.
Ser: 1362862

Peerless Pump
Ser: 208066
12" discharge
140 lbs back pressure
85 lbs line pressure.



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R A J

T. -

51

N

29

39 32 • 39 38.7

P.D. close as can
be determined
78.

Q measured 1.95 c.f.s

Q recommended 1.95 c.f.s

Volume 3.5 AF/acre x 155.7 = 545 A.F./season

Acreage =

Found 155.7 acres

recommended 155.7 acres

Subdv. 4

Amendments

☒ None

☐ P.D.

☐ Change of use

☐

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Scale: 2 Inches Equals 1 Mile. Draw Map In Ink.

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STATE OF IDAHO
DEPARTMENT OF RECLAMATION
BOISE, IDAHO
REPORT OF EXAMINER

Permit No. G-32079/95-2162

This proof is for 3.2 cfs In Water District No. _____

PROOF - Route 1, Box 222

1. Name of applicant Thomas A. Brickert, Coeur d'Alene, Idaho

2. Source of water supply: ground-water

3. Location of point of diversion: Is in the CENTER N $\frac{1}{2}$ S $\frac{1}{2}$ of Section 29

T. 51 N R. 4 W County of Kootenai

4. Describe works as they exist, giving dimensions and capacities of same: _____

PERMIT - (irrigation)

PROOF - 150 HP, casing 26", 272' deep, I have 120 sprinklers at 3 $\frac{1}{2}$ gpm

5. Water is used for: irrigation

6. State whether or not water has been turned into works of diversion: _____

7. List legal subdivisions of lands to be irrigated. If proof is for beneficial use, give exact number of acres under cultivation in each forty-acre tract. (Describe manner and place of use if other than irrigation):

PERMIT - 51 N - 4 W, Sec. 29 N $\frac{1}{2}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$ 160 acres

this water is used to irrigate 152 acres

(Submit map on attached plat, showing location and details of above description.)

8. What large stream would the water here appropriated finally reach? _____

Remarks: 2 lines of 64 heads & 128 nozzles 11/64"

65 1/65 A.C.

128 x 0.82 = 104.96 cfs ✓
448.8

This examination was made on the 20 day of Aug, 1970

(Signed) Tom Brickert Examiner.

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my
9-16-70

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Maxey, Shaun

From: Maxey, Shaun
Sent: Wednesday, March 23, 2016 9:22 AM
To: 'rewild@roadrunner.com'
Subject: RE: FW: Big Sky Estates --- Permit 95-09371 (Cranston well)

Mr. Wild:

I would like to meet with an Association representative to go to the Cranston well. I need to get GPS Coordinates and a few photos to determine what water right (if any) is applicable to this well.

This should take about 15 minutes and can be done before the reservoir fill and start of irrigation. Your operator need not be present.

I can meet with the Association rep. most any time.

Thanks,

Shaun Maxey

Shaun M. Maxey
Sr. Water Resource Agent
Idaho Department of Water Resources, Northern Region
7600 N Mineral DR Suite 100
Coeur d'Alene, ID 83815-7763
Phone (208) 762.2816 /2800
Fax (208) 762.2819
www.idwr.idaho.gov

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Maxey, Shaun

From: Maxey, Shaun
Sent: Friday, February 26, 2016 10:09 AM
To: 'rewild@roadrunner.com'
Subject: FW: Big Sky Estates --- Permit 95-09371

Mr. Wild:

Please contact me about scheduling a date to determine interior dimensions before the filling of your Permit 95-09371 reservoir and the start of irrigation. I also must know the date when the Association intends to fill the reservoir and resume Irrigation in order to schedule a date to finish the Field Exam.

Shaun Maxey

Shaun M. Maxey
Sr. Water Resource Agent
Idaho Department of Water Resources, Northern Region
7600 N Mineral DR Suite 100
Coeur d'Alene, ID 83815-7763
Phone (208) 762.2816 /2800
Fax (208) 762.2819
www.idwr.idaho.gov

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

From: rewild@roadrunner.com [<mailto:rewild@roadrunner.com>]
Sent: Thursday, September 17, 2015 2:27 PM
To: Maxey, Shaun; rewild@roadrunner.com
Cc: Nicole Montgomery; slrile2@gmail.com
Subject: RE: Big Sky Estates --- Permit 95-09371

Shaun

We had our Big Sky Board meeting last night...

As- built drawings... after a search through our stored documents, we could not find any drawings for the reservoir that you requested. It appears the only option to determine flow rate is to measure the inside dimensions of the reservoir when it is empty and then fill part or all of the reservoir with pump running while measuring the time. We plan to shut down irrigation system about October 12. On that day we could have the reservoir empty for you to measure and then test for flow rate that day. Empty means about a foot of water in the bottom. Another option might be to have the reservoir empty over the winter and you could measure at your convenience, then test for flow rate in spring start-up mid-May 2016.

The Cranston well.... The association is aware of a well building in the location shown on your map. We are not sure the well parcel of land is part of our Estates. While that well may have supplied drinking water around 2002, we are confident that it currently supplies no drinking water to any parcel in Big Sky Estates. We believe all drinking water consumed in Big Sky is supplied by Ross Point Water District that installed our domestic system after 2002. We have no operational connection or knowledge about the the well in question and can only assume your records regarding use or ownership of that well far exceeds any information we have.

I am eager to discuss these items with you. Please call me at 208 691 5230 at your convenience to discuss on phone or to set up a meeting to discuss. Thank you. I am sending

copy of all our email correspondence to Shane Riley, Pres. and Nicole Montgomery, Arch. Chair of Big Sky Estates.

Hope you are having a great day.....

Randy Wild, Vice Pres. Big Sky
rewild@roadrunner.com

----- rewild@roadrunner.com wrote:

> Shaun

> We have an Association meeting Wednesday night....

> I will be able to respond to your letter after that meeting...

> Thanks

> Hope you are having a great day.....

>

> Randy Wild

> rewild@roadrunner.com

>

> ----- "Maxey wrote:

> > Mr. Wild:

> >

> > I have reviewed information from Water Right License 95-2162, and the Worst pump chart you supplied, in an effort to determine the Cubic Feet per Second (CFS) flow capability of the irrigation well. There isn't enough information to perform a theoretical calculation on the CFS produced by the well.

> >

> > I believe you mentioned that you have a box of records for the Association. I need to have you see if there are 'As Built' records or diagrams showing the dimensions of the reservoir. I believe that we can complete the Field Exam, once the Association is ready to resume Irrigation, using this information.

> >

> > Please contact me to discuss this further and to review which lot has the drinking water well that is referred to in the highlighted paragraph of the attachment.

> >

> > Thanks,

> >

> > Shaun Maxey

> >

> > Shaun M. Maxey

> > Sr. Water Resource Agent

> > Idaho Department of Water Resources, Northern Region

> > 7600 N Mineral DR Suite 100

> > Coeur d'Alene, ID 83815-7763

> > Phone (208) 762.2816 /2800

> > Fax (208) 762.2819

> > www.idwr.idaho.gov

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SEP 13 2018

Maxey, Shaun

From: Maxey, Shaun
Sent: Monday, September 14, 2015 2:42 PM
To: 'rewild@roadrunner.com'
Subject: RE: Big Sky Estates --- Permit 95-09371
Attachments: deq-report-os-built-plans.pdf

Mr. Wild:

I have reviewed information from Water Right License 95-2162, and the Worst pump chart you supplied, in an effort to determine the Cubic Feet per Second (CFS) flow capability of the irrigation well. There isn't enough information to perform a theoretical calculation on the CFS produced by the well.

I believe you mentioned that you have a box of records for the Association. I need to have you see if there are 'As Built' records or diagrams showing the dimensions of the reservoir. I believe that we can complete the Field Exam, once the Association is ready to resume Irrigation, using this information.

Please contact me to discuss this further and to review which lot has the drinking water well that is referred to in the highlighted paragraph of the attachment.

Thanks,

Shaun Maxey

Shaun M. Maxey
Sr. Water Resource Agent
Idaho Department of Water Resources, Northern Region
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Coeur d'Alene, ID 83815-7763
Phone (208) 762.2816 /2800
Fax (208) 762.2819
www.idwr.idaho.gov

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

From: rewild@roadrunner.com [<mailto:rewild@roadrunner.com>]
Sent: Monday, August 31, 2015 9:39 AM
To: Maxey, Shaun
Cc: hfilkins@roadrunner.com; slrile2@gmail.com
Subject: Big Sky Estates --- Permit 95-09371

Shaun

Here is the chart for a 150 hp pump that RC Worst got from the manufacturer. The manufacturer has not yet located data on our exact pump, so this info is for a pump similar if not identical to ours. I hope this info is helpful to you.

Hope you are having a great day.....

Randy Wild Big Sky Estates
rewild@roadrunner.com

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