

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No. 63-12461

1. Owner: City of Boise Public Works Department Phone No.: 208-384-3901

Current Address: PO Box 500, Boise, ID 83701-0500

2. Accompanied by: _____ EXAM DATE: April 5, 2010

Address: _____ Phone No. _____

Relationship to Permit Holder: _____

3. Source: Ground Water tributary to _____

B. OVERLAP REVIEW

- Other water rights with the same place of use: None
- Other water rights with the same point of diversion: 63-3013, 63-3014, 63-7047, 63-7055A, 63-8435, 63-7005B, 63-7042B, 63-7053, 63-7055C, 63-7055D, 63-7064A, 63-7064B, 63-7078B, 63-7755B, 63-8130B, 63-9243, 63-9359 & 63-12470

C. DIVERSION AND DELIVERY SYSTEM

- Point(s) of Diversion: See Attachment B

Ident No.	Gov't Lot	¼	¼	¼	Sec.	Twp.	Rge.	County	Method of Determination/Remarks
								Ada	Exam, 2009 Photo

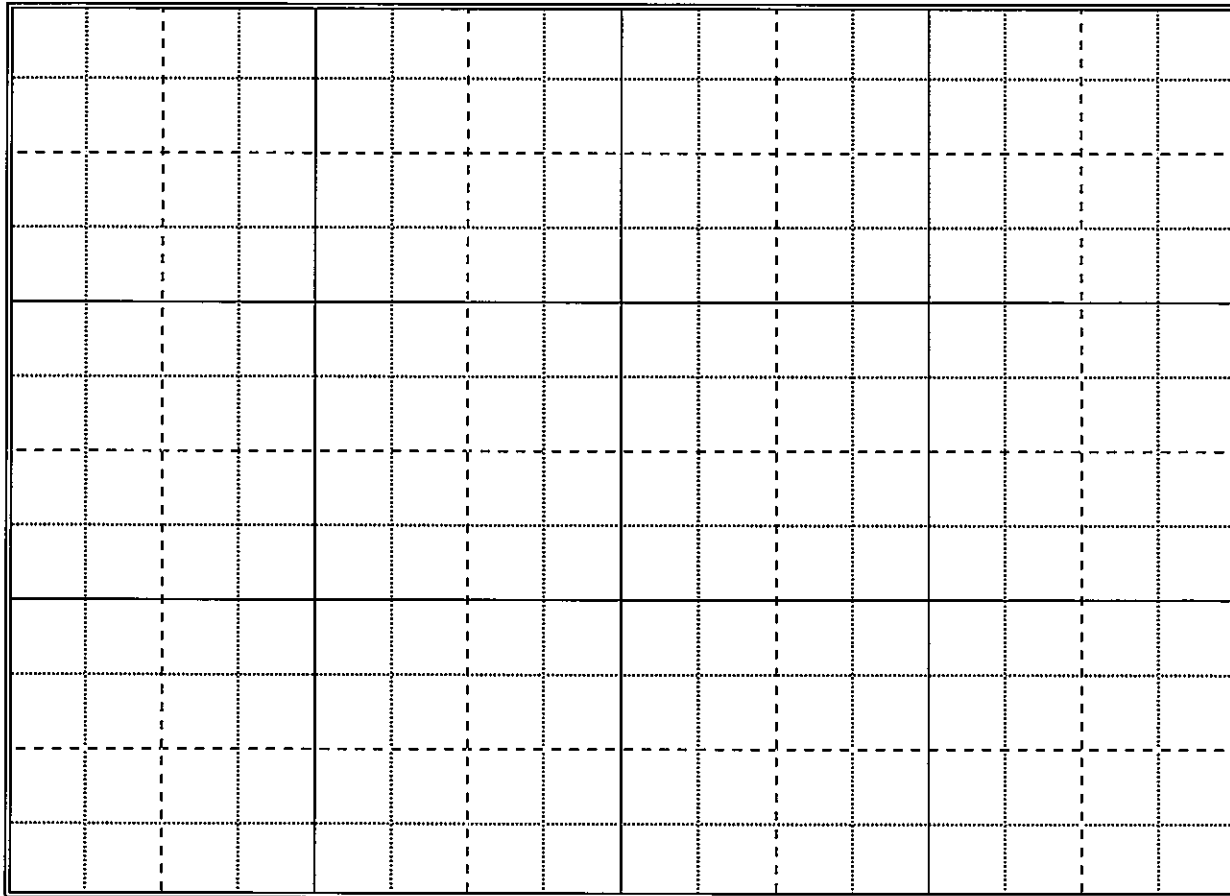
- Place(s) of Use:

Indicate Method of Determination Exam, 2009 Photo

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
1N	1E	27					32	32	36	40	8	2							150
		35													39	40			79

Total 229

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe id as applicable. See Attachment D



Scale: 1" = _____

☒ Copy of USGS Quadrangle Attached Showing location(s) of point(s) of diversion and place(s) of use (required).

☒ Aerial Photo Attached (required for irrigation of 10+ acres)

☒ 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
Well 11	US Motor	500	H08-7846-M	Floway	5-Stage 15DKH, #0475995
Well 12	US Motor	400	P057353230-0005R0003	Goulds	6-Stage 14RHMC

*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
Well 11 Flow Meter	Vortex	EMCO – Fluidyne	Hydro-Flow 2200		12-inch	12/9/04
Well 12 Flowmeter	Magnetic	Sea-metrics	AG2000-1000-GPM-GT	08090870	12-inch	

2. **Measurements:** Start-up testing was witnessed by Terry Scanlan on December 1, 2004. The well produced a measured flow of 3,000 gpm at 45 psi discharge pressure, 334-foot pumping water level, 60 hz, and 1770 rpm.

E. NARRATIVE/REMARKS/COMMENTS

Two wells (Wells 11 and Well 12) were constructed to provide water for permits 63-12461 and 63-12470. The wells are authorized for use within a twelve-well integrated irrigation system that serves the Farm. Diversion capacities for ten (Wells 1 through 10) of the twelve wells have been determined and decreed. The twelve wells provide irrigation within a 3,776-acre PPU.

- Well 11 is equipped with a 500-hp vertical turbine pump with a variable frequency drive that produces 6.68 cfs (3,000 gpm). The well supplies groundwater for irrigation of 229 acres developed under permit 63-12461 at the City of Boise Twenty-Mile South Farm (the Farm). The well is 20-inch diameter with a drilled depth of 612 feet and a completed depth of 560 feet. The vertical turbine pump is set at a depth of 400 feet with 12-inch column pipe. The licensing recommendations for the flow rate and volume developed and beneficially used under permit 63-12461 are within the diversion capacity limits of Well 11 as indicated by the well tests and associated pump curves included in Attachment C of this exam. Excess capacity from Well 11 provides a portion of the diversion capacity under permit 63-12470.
- Well 12 produces 5.57 cfs (2,500 gpm) which can be diverted under permit 63-12470. Well 12 capacity is documented in the field exam for permit 63-12470.

To allow development of permits 63-12461 and 63-12470, water right 2-2268B was purchased for mitigation and remains un-diverted in the Snake River. As conditioned, both permits, when combined, will not exceed irrigation of 595 acres, 9.8 cfs and 2317.6 afa at the field headgate. This is equivalent to 0.0165 cfs/acre and 3.895 afa/acre.

Water-bearing zone permitted was 300 to 600 feet. Developed water bearing zone is approximately 300 to 560 feet.

Attachment A is a copy of the permit, proof of beneficial use and decree 2-2268B (mitigation).

Attachment B is a copy of the points of diversion.

Attachment C is the well driller's report, well test and pump performance curve.

Attachment D is a topographical map and aerial photo.

Attachment E are photos of the place of use and Well 11.

Have conditions of permit approval been met? ☒ yes ☐ no

F. FLOW CALCULATIONSY Additional Computation Sheets Attached

Measured Method:

Pump Curve & Well Test (Attachment C)

Well 11

Per Pump Test 12/1/04: 3000 gpm (6.68 cfs) at 45 psi

Pump Curve: 3000 gpm (6.68 cfs) at 500 feet TDH

Static Water Level = 283.3', Pumping Water Level = 354.5' @ 3323 gpm, Drawdown at 3323 gpm = 71.2'

Specific Capacity = 46.7 gpm/ft (3323 gpm / 71.2' DD), Pumping water level at 3000 gpm = 283.3' + (3000/46.7') = 347'

Friction loss (400 feet of 12-inch column, discharge head, miscellaneous valves and fittings) = 30'

Discharge pressure = 500 - 347 - 30 = 123' = 53 psi

Well 12

Per 63-12470 exam 2500 gpm (5.57 cfs) at 45 psi

Recommend 229 acres x 0.02 cfs per acre = 4.58 cfs

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 229 \times 4.5 \text{ afa} = 1,030.5 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 4.58 \times 260 \times 1.9835 = 2,362 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 1,030.5 \text{ afa}$$

2. Volume Calculations for Other Uses:

n/a

H. RECOMMENDATIONS**1. Recommended Amounts**

Beneficial Use	Period of Use		Rate of Diversion	Annual Volume
	From	To	Q (cfs)	V (afa)
Irrigation	3/1	11/15	4.58 cfs	1,030.5 afa

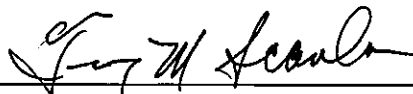
Limit to 9.80 cfs and 2317.6 afa in combination with 63-12470

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 (PPU)

I. AUTHENTICATIONField Examiner's Name Terry M. Scanlan, P.E., Certified Water Right Examiner 11-129 Date 7/16/10

Field Examiner's Signature



Reviewer _____ Date _____

