

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 67-14518

Exam Date: 8/26/2010

1. Current Owner: SNAKE RIVER HERITAGE CENTER
PO BOX 307
WEISER ID 83672
(208)549-0174

2. Accompanied by: Lynn Isaacson
Relationship to Permit Holder: President

3. **SOURCE**

GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: **NONE**--there is city water that the center uses for indoor uses but no other water is used for irrigation.
2. Other water rights with the same point of diversion: **NONE**

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NW¼NE¼ Sec. 30, Twp 11N, Rge 05W, B.M. WASHINGTON County

Method of Determination: GPS, site visit

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	
11N	05W	30		0.8															0.8

Total Acres: 0.8

Method of Determination: Site visit and 2009 NAIP

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.*	Motor Make	Hp	Pump Make
D0039105	Submersed (not known)	2	Grundfos

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment

Pressure gauge

2. Measurements: I attached a pressure gauge to the standpipe located at the well. When the system is running 1 zone, the pressure was measured at 60 psi.

E. FLOW CALCULATIONS ☐ Additional Computation Sheets Attached

Measured Method: I attached the Nelson Turf spreadsheet for the 6000 pro series sprinklers as this is the type the center is using. They sprinklers are #6 and according to the spreadsheets puts the discharge of 2.3 gpm per 50 psi.

2.3 gpm x 9 nozzles per zone = 20.7 gpm capacity at one time. OR 0.05 cfs

Check the capacity of the well by HP equation: hp(2) pumping level (60') pressure (60 psi)

$$Q = \frac{8.8 \times 0.7 \times 2}{60' + (2.31 \times 60)} = \frac{12.32}{198.6} \text{ or } 0.06 \text{ cfs}$$

* Rate limited by permit - 0.03 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.8 \text{ acres} \times 4.5 = 3.6 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.03 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 15.5 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 3.6 \text{ afa}$$

G. NARRATIVE/REMARKS/COMMENTS

There is one well on this system that is directly connected to the sprinkler system. There is no pressure tank. There are 9 zones with 8-9 sprinklers per zone. 1 zone is run at a time for 40 minutes each day. The system consists of 1 1/4" discharge from well to buried 1" buried PVC lines to the Nelson 6000, #6 Pro Series nozzles.

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	03/01 to 11/15	0.030 CFS	3.6 AF
<u>Totals:</u>		0.030 CFS	3.6 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: CPadilla Date: 9/2/10

Reviewer:

Date:



Picture of the museum
Facing NW direction



Facing NE direction

Picture of well + standpipe

Location where pressure gauge
measurement taken



Place of use - Lawn
Facing South direction
Looking at Paddock Dr.

All photos were taken 8/26/2010



From Paddock Dr.
Facing North



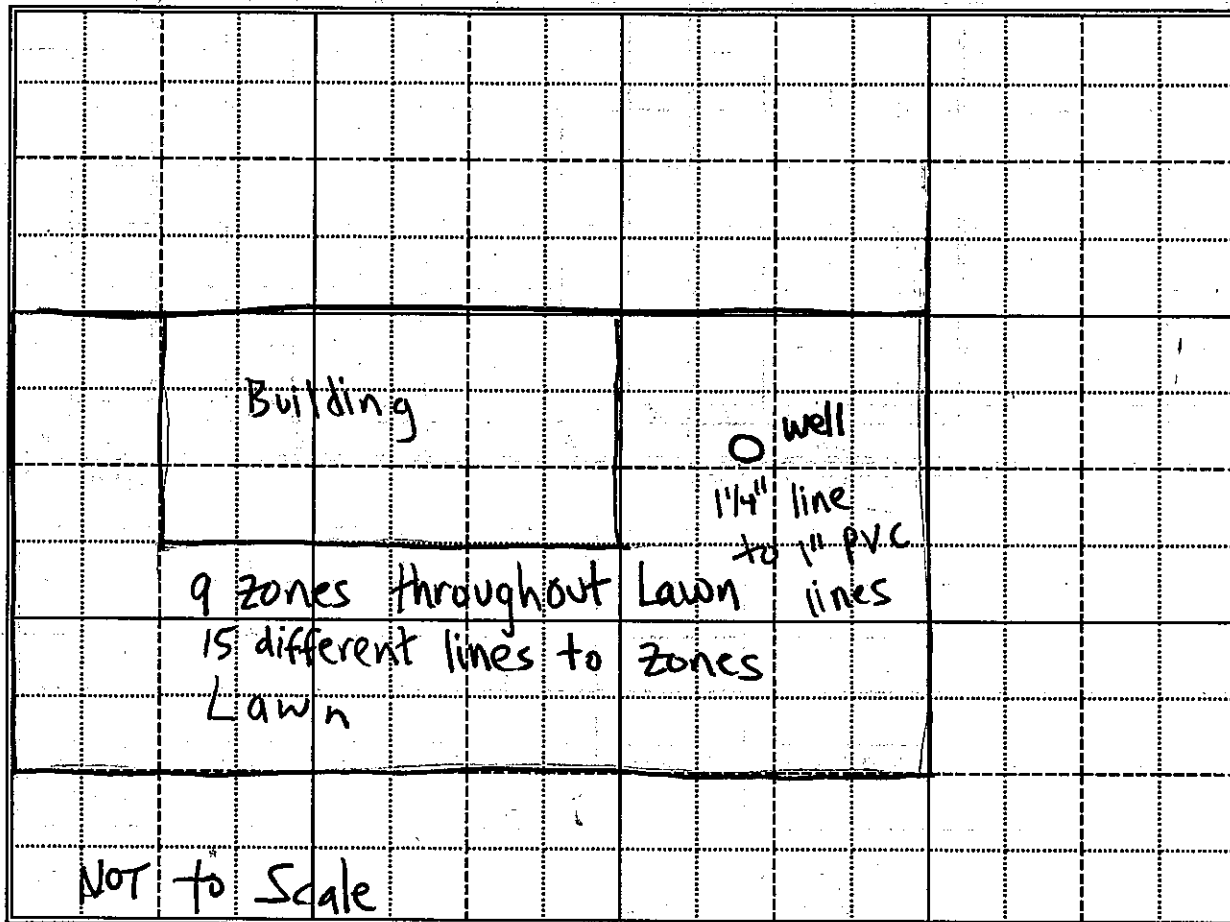
Facing NW
well

The patch of grass around the well is a zone. This zone was running while obtaining pressure gauge reading.



Facing SW
Place of use

Delivery System Diagram: Indicate all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable.



Field Exam Map for 67-14518



NEILSON TURF

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5500 PRO SERIES Nozzle Color: White 13° trajectory

Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate	Nozzle Number	Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate
PSI	FT	FT	GPM	IN/HR		BAR kPa	m	m	l/min	mm/hr
20	18	14	0.5	0.37	51	1.4	138	5.5	1.9	0.11
35	20	15	0.7	0.52		2.5	242	8.2	3.0	0.16
50	21	16	0.8	0.64		3.5	345	8.4	4.6	0.18
50	20	15	0.8	0.64		1.4	138	6.1	4.6	0.18
35	24	18	1.2	0.80	52	2.5	242	7.3	5.5	0.27
50	25	19	1.3	0.90		3.5	345	7.6	5.7	0.30
20	22	17	1.1	0.84		1.4	138	6.7	5.0	0.25
35	27	20	1.6	1.04	53	2.5	242	8.2	6.2	0.36
50	28	21	1.8	1.20		3.5	345	8.5	6.4	0.41
20	23	17	1.5	0.96		1.4	138	7.0	5.3	0.31
35	31	23	2.2	1.56	54	2.5	242	9.5	8.3	0.50
50	32	24	2.5	1.80		3.5	345	9.8	8.5	0.57

2.5
6PM

6500 PRO SERIES Nozzle Color: Blue 25° trajectory

Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate	Nozzle Number	Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate
PSI	FT	FT	GPM	IN/HR		BAR kPa	m	m	l/min	mm/hr
45	44	33	2.3	0.29	61	3.1	310	13.4	10.1	0.64
60	46	35	3.3	0.42		4.1	414	14.0	10.5	0.75
75	48	36	3.8	0.51		5.2	517	14.0	10.5	0.86
45	48	36	5.2	0.69	62	3.1	310	14.6	11.0	0.92
60	52	39	6.1	0.81		4.1	414	15.9	11.9	1.05
75	54	41	7.0	0.94		5.2	517	16.5	12.4	1.13
45	51	38	7.4	0.92		3.1	310	15.6	11.7	0.88
60	54	41	8.8	1.05	63	4.1	414	16.5	12.4	1.05
75	55	41	10.1	1.20		5.2	517	16.8	12.6	1.29
45	57	39	9.7	0.83		3.1	310	15.9	11.9	0.88
60	57	43	11.6	0.88	64	4.1	414	17.4	13.0	1.05
75	60	45	13.2	1.04		5.2	517	18.3	13.7	1.21

6503/6513 PRO HIGH SPEED

Nozzle Color: Blue 25° trajectory

Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate	Nozzle Number	Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate
PSI	FT	FT	GPM	IN/HR		BAR kPa	m	m	l/min	mm/hr
45	43	32	2.8	0.29	61	3.1	310	13.1	9.8	0.64
60	43	32	3.3	0.34		4.1	414	13.1	9.8	0.75
75	44	33	3.8	0.40		5.2	517	14.3	10.7	0.86
45	44	33	5.2	0.50	62	3.1	310	13.4	10.1	0.92
60	46	35	6.1	0.58		4.1	414	14.0	10.5	1.05
75	47	35	7.0	0.67		5.2	517	14.3	10.7	1.13
45	48	36	8.8	0.79	63	4.1	414	15.2	11.4	1.20
60	50	38	10.1	0.90		5.2	517	15.2	11.4	1.29
75	50	38	10.1	0.90		5.2	517	15.2	11.4	1.29
45	46	35	9.7	0.83	64	3.1	310	14.0	10.5	0.88
60	49	37	11.6	0.93		4.1	414	14.9	11.2	1.05
75	51	38	13.2	1.13		5.2	517	15.5	11.7	1.21

6000 PRO SERIES Nozzle Color: Blue 25° trajectory

Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate	Nozzle Number	Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate
PSI	FT	FT	GPM	IN/HR		BAR kPa	m	m	l/min	mm/hr
20	30	23	1.0	0.21	4	1.4	138	9.2	6.9	0.23
35	31	23	1.4	0.28		2.5	242	9.5	7.1	0.32
50	34	26	1.7	0.35	5	3.5	345	10.4	7.8	0.40
50	30	23	1.2	0.26		1.4	138	10.1	7.5	0.27
35	33	25	1.6	0.33	5	2.5	242	11.3	8.5	0.36
50	35	27	1.9	0.38		3.5	345	11.6	8.7	0.43
20	32	24	1.4	0.26	6	1.4	138	9.8	7.3	0.26
35	34	26	1.9	0.32		2.5	242	11.6	8.7	0.32
50	36	28	2.3	0.35	7	3.5	345	12.2	9.2	0.40
20	33	25	1.4	0.26		1.4	138	11.6	8.7	0.26
35	34	26	1.6	0.33	7	2.5	242	12.2	9.2	0.32
50	36	28	1.9	0.38		3.5	345	12.5	9.4	0.40
20	34	26	1.4	0.26	8	1.4	138	11.6	8.7	0.26
35	35	27	1.7	0.35		2.5	242	12.2	9.2	0.32
50	37	29	2.0	0.40	8	3.5	345	12.8	9.6	0.43
20	35	27	1.4	0.26		1.4	138	12.2	9.2	0.26
35	36	28	1.6	0.33	8	2.5	242	12.8	9.6	0.32
50	38	30	1.9	0.38		3.5	345	13.1	9.8	0.43
20	36	28	1.4	0.26	9	1.4	138	12.8	9.6	0.26
35	37	29	1.6	0.33		2.5	242	13.1	9.8	0.32
50	39	31	2.0	0.40	9	3.5	345	13.4	10.1	0.43
20	37	29	1.4	0.26		1.4	138	13.1	9.8	0.26
35	38	30	1.6	0.33	9	2.5	242	13.4	10.1	0.32
50	40	31	1.9	0.38		3.5	345	13.7	10.4	0.43
20	38	30	1.4	0.26	10	1.4	138	13.4	10.1	0.26
35	39	31	1.6	0.33		2.5	242	13.7	10.4	0.32
50	41	32	2.0	0.40	10	3.5	345	14.0	10.4	0.43
20	39	31	1.4	0.26		1.4	138	14.0	10.4	0.26
35	40	32	1.6	0.33	10	2.5	242	14.3	10.7	0.32
50	42	33	1.9	0.38		3.5	345	14.6	11.0	0.43
20	40	32	1.4	0.26	11	1.4	138	14.6	11.0	0.26
35	41	33	1.6	0.33		2.5	242	14.9	11.3	0.32
50	43	34	2.0	0.40	11	3.5	345	15.2	11.6	0.43
20	41	33	1.4	0.26		1.4	138	15.2	11.6	0.26
35	42	34	1.6	0.33	11	2.5	242	15.5	11.9	0.32
50	44	35	1.9	0.38		3.5	345	15.8	12.2	0.43

6095 LOW ANGLE Nozzle Color: Green 13° trajectory (optional for 6000 series only)

Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate	Nozzle Number	Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate
PSI	FT	FT	GPM	IN/HR		BAR kPa	m	m	l/min	mm/hr
20	26	20	0.9	0.26	4	1.4	138	7.9	5.9	0.20
35	26	20	1.3	0.33		2.5	242	10.1	7.5	0.26
50	26	20	1.5	0.35	4	3.5	345	10.4	7.8	0.34
20	26	20	1.1	0.31	5	1.4	138	7.9	5.9	0.20
35	26	20	1.4	0.35		2.5	242	10.1	7.5	0.26
50	26	20	1.7	0.42	5	3.5	345	10.7	8.0	0.32
20	26	20	1.4	0.35		1.4	138	7.9	5.9	0.20
35	26	20	1.9	0.42	6	2.5	242	10.1	7.5	0.26
50	26	20	2.2	0.50		3.5	345	11.0	8.2	0.32
20	26	20	1.4	0.35	6	1.4	138	7.9	5.9	0.20
35	26	20	1.9	0.42		2.5	242	10.1	7.5	0.26
50	26	20	2.2	0.50	7	3.5	345	11.0	8.2	0.32
20	26	20	1.4	0.35		1.4	138	7.9	5.9	0.20
35	26	20	1.9	0.42	7	2.5	242	10.1	7.5	0.26
50	26	20	2.2	0.50		3.5	345	11.0	8.2	0.32
20	26	20	1.4	0.35	8	1.4	138	7.9	5.9	0.20
35	26	20	1.9	0.42		2.5	242	10.1	7.5	0.26
50	26	20	2.2	0.50	8	3.5	345	11.0	8.2	0.32
20	26	20	1.4	0.35		1.4	138	7.9	5.9	0.20
35	26	20	1.9	0.42	9	2.5	242	10.1	7.5	0.26
50	26	20	2.2	0.50		3.5	345	11.0	8.2	0.32
20	26	20	1.4	0.35	9	1.4	138	7.9	5.9	0.20
35	26	20	1.9	0.42		2.5	242	10.1	7.5	0.26
50	26	20	2.2	0.50	10	3.5	345	11.0	8.2	0.32
20	26	20	1.4	0.35		1.4	138	7.9	5.9	0.20
35	26	20	1.9	0.42	10	2.5	242	10.1	7.5	0.26
50	26	20	2.2	0.50		3.5	345	11.0	8.2	0.32
20	26	20	1.4	0.35	10	1.4	138	7.9	5.9	0.20
35	26	20	1.9	0.42		2.5	242	10.1	7.5	0.26
50	26	20	2.2	0.50	10	3.5	345	11.0	8.2	0.32

Precipitation rates for square and triangular spacing calculated at 50% of diameter for half-circle operation. Assumes zero wind for precipitation and radius. Adjust for local conditions.

L.R. Nelson Corporation
One Spinkler Lane
Peoria, Illinois 61615 U.S.A.
Tel (309) 690-2200
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