

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-11645

Exam Date: 8/15/2012

1. Current Owner: THOMAS NEEDHAM
And/Or
SHARON NEEDHAM
19001 PRIDE LN
CALDWELL ID 83605
(208)459-9669

2. Accompanied by: Thomas Needham

3. **SOURCE**

GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NONE (no sw shares & no irrigation district)
2. Other water rights with the same point of diversion: NONE

C. DIVERSION AND DELIVERY SYSTEM

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

GROUND WATER SE1/4SW1/4 Sec. 26, Twp 04N, Rge 04W, B.M. CANYON County

Method of Determination: GPS point (43.647839, -116.785702)

2.

PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
04N 04W 26												8.0					8.0

Total Acres: 8

Method of Determination: Confirmed with permit holder and aerial imagery

3. ☒ Delivery System Diagram Attached (required).
☐ Map 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.

<u>Well or Diversion</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
A0017542	Unknown	10 hp			

D. FLOW MEASUREMENTS

1.

Measurement

<u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
Polysonic	Flow meter	Tyme Flyte				March 26, 2012

2. Measurements: I measured the flow from the well while it was open discharging. I will use sprinkler specs to see how much water is being applied when under pressure. Typically the permit holder can run the two-three handlines at once. Also, I asked the permit holder what pressure he runs his system at and he said 40-50 psi.

E. FLOW CALCULATIONS

___x___ Additional Computation Sheets Attached

Measured Method:

1). The polysonic measurement was 0.37 cfs over ten minutes

2). Rainbirds are model 25D with 9/64 nozzles. The field with wheel lines has 16 sprinklers. Nozzle discharge for this case ranges from 3.74 - 4.18 gpm. 16 sprinklers at an average pressure = 63.4 gpm or 0.14 cfs is applied to the field.

The two-three handlines run at a reduced pressure of 35-40 psi since they are further down the line. There are 8 sprinklers per handline with a maximum of 24 sprinklers running at once. 24 sprinklers at an average pressure of 35-40 psi = 86.8 gpm or 0.19 cfs

3). Theoretical calculation based on well driller's report and stated pressure and open discharge to confirm capacity:

Open discharge: $0.7 \times 10 \times 8.8 / 179 + (2.31 \times 0) = 0.34 \text{ cfs}$

Average stated pressure: $0.7 \times 10 \times 8.8 / 179 + (2.31 \times 45) = 61.6/283 = 0.22 \text{ cfs}$

Conclusion: The capacity of the well is 0.37 cfs but when connected to the irrigation system the amount of water that has been applied to the fields is ~0.14 to 0.19 cfs. The permitted diversion rate of 0.16 cfs has been confirmed and this license will be issued with a rate of 0.16 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 8 \times 4.5 = 36 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.16 \times 260 \times 1.9835 = 83 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 36 \text{ afa}$$

2. Volume Calculations for Other Uses: NA

G. NARRATIVE/REMARKS/COMMENTS**PD**

The irrigation well was originally drilled in 3/1992 for both domestic and irrigation purposes. Two pumps were installed in the well for each use. The domestic water was always full of sediment and the pump eventually failed. A new well was drilled in 5/1993 for domestic purposes only. I have tagged both wells

and discussed the options for getting both the domestic and irrigation water covered by a water right at the field exam. The permit holder was not happy about spending the money for an amendment. I sent some correspondence to summarize his options and the permit holder never responded. Therefore, this right will be licensed for irrigation purposes only.

The irrigation well is tagged as A0017542 and the domestic well (which is inside the shop) was tagged as A0017543 (gps pt 43.648091, -116.785877). I have included both well driller's report for informational purposes.

POU

The most northern field of 3.2 acres belongs to the neighbors. The permit holder has an agreement with the neighbor to raise hay on the parcel. I asked the permit holder what will come of the water right that will become appurtenant to the neighbors parcel and he didn't have an answer. I believe that the agreement is verbal.

The irrigation of the home's lawn is provided by the domestic well.

The development period of this permit is 2008-2010. I was not able to find '08 or '10 imagery so I had to rely on '11 and '12 imagery for calculating the irrigated acres. Note that the '09 imagery shows that no irrigation was occurring on the northern field. I will base the license on '11 imagery.

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	0.160 CFS	36.0 AF
<u>Totals:</u>		0.160 CFS	36.0 AFA

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

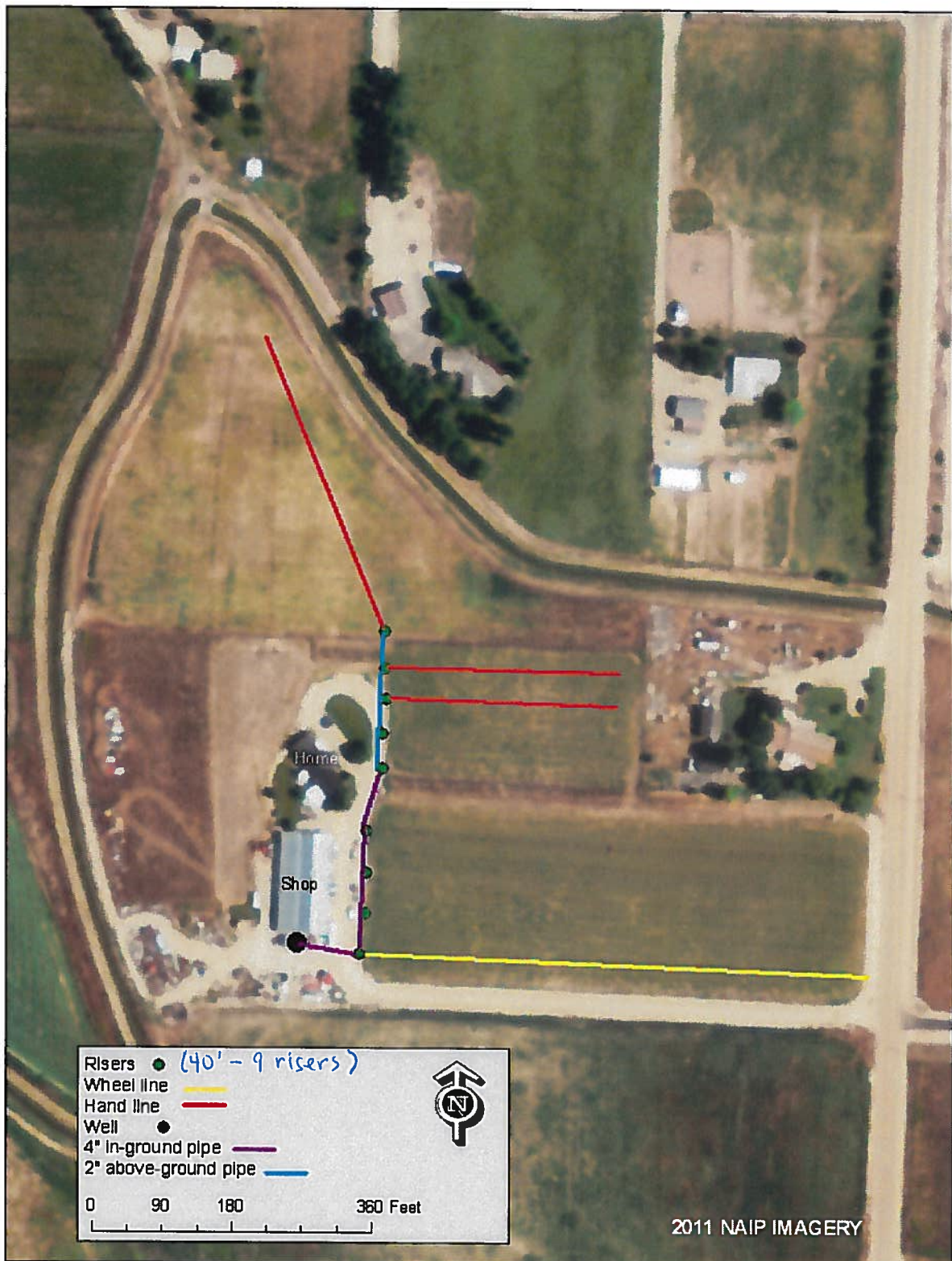
Field Examiner's Name Cheri Palmer Date 10-5-12

Reviewer _____ Date _____

Attachments

- #1 - polysonic tape
- #2 - overlap analysis
- #3 - well driller's report
- #4 - sprinkler discharge

SYSTEM DIAGRAM







Irrigation well



Domestic well



The picture is
facing sw

Risers where
the water is delivery
from well to the
wheel line



Photo facing
northerly

2" - above ground
line to the
hand line



Photo facing
easterly at the
place of use



DA-9/26 Rainbirds
Sprinkler



Photo looking southerly
at 2" above ground pipes for
the handlines.

← Home + lawn



Photo facing northerly
toward the place of use.
The field is the parcel
that the permit holders
irrigation is authorized
by the neighbors.

08-15 15:1900 *H
+003.10 % AI2

0109.2 INSEC
101.68 % TS

15:33+ 1.649E 2GPM 00R
+00000 *10 G 00R
-00000 *10 G 00R

①

15:35+ 1.681E 2GPM 00R
+00015 *10 G 00R
-00000 *10 G 00R

②

15:36+ 1.660E 2GPM 00R
+00049 *10 G 00R
-00000 *10 G 00R

③

15:37+ 1.650E 2GPM 00R
+00065 *10 G 00R
-00000 *10 G 00R

④

15:38+ 1.653E 2GPM 00R
+00082 *10 G 00R
-00000 *10 G 00R

⑤

15:39+ 1.641E 2GPM 00R
+00099 *10 G 00R
-00000 *10 G 00R

⑥

15:40+ 1.637E 2GPM 00R
+00115 *10 G 00R
-00000 *10 G 00R

⑦

15:41+ 1.640E 2GPM 00R
+00132 *10 G 00R
-00000 *10 G 00R

⑧

15:42+ 1.664E 2GPM 00R
+00148 *10 G 00R
-00000 *10 G 00R

⑨

15:43+ 1.664E 2GPM 00R
+00165 *10 G 00R
-00000 *10 G 00R

⑩

15:44+ 1.646E 2GPM 00R
+00182 *10 G 00R
-00000 *10 G 00R

15:45+ 1.639E 2GPM 00R
+00198 *10 G 00R
-00000 *10 G 00R

165 gpm
or 0.37cfs

Thickness
0.08
pipe diameter
3.05
spacing 1.472

08-15 15:1900 *H
+003.10 % AI2

0109.2 INSEC
101.68 % TS

15:33+ 1.649E 2GPM 00R
+00000 *10 G 00R
-00000 *10 G 00R

①

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15:44+ 1.646E 2GPM 00R
+00182 *10 G 00R
-00000 *10 G 00R

15:45+ 1.639E 2GPM 00R
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-00000 *10 G 00R

165 gpm
or 0.37cfs

Attachment #1
63-11645

Type	WR #	Owner	Source	TRS	SESW	Significant Overlap? Y/N
Permit	63 11645	THOMAS NEEDHAM, SHARON NEEDHAM,	GROUND WATER	04N04W2E	8	
Right	63 23907	LESLIE THOMPSON, RUSSELL THOMPSON,	GROUND WATER	04N04W2E X		N-Domestic only
Right	63 20785	ROGER D ST GEORGE, JEANNE E ST GEORGE,	GROUND WATER	04N04W2E X		N-Domestic only
Right	63 29979	RHONDA S FLAMING, DOUGLAS L FLAMING,	GROUND WATER	04N04W2E X		N-Domestic only

Conclusion: There are no overlapping water rights for the PD or POU

Attachment #2
63-11645

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

[illegible]

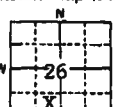
USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

Attachment #3

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources
within 30 days after the completion or abandonment of the well.USE TYPEWRITER OR
BALLPOINT PEN

1. WELL OWNER Name <u>Tom & Sharon Needham</u> Address <u>22079 Kent Ranch Rd. Caldwell, ID</u> Drilling Permit No. <u>63-93-W-0363</u> Water Right Permit No. _____	7. WATER LEVEL Static water level <u>80</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ °F. Quality <u>Iron. 2/Grains 8</u> Describe artesian or temperature zones below.																																																																																																																																																																																																				
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Well diameter increase ☐ Modification ☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)	8. WELL TEST DATA ☐ Pump ☐ Baller ☒ Air ☐ Other _____ <table border="1"><thead><tr><th>Discharge G.P.M.</th><th>Pumping Level</th><th>Hours Pumped</th></tr></thead><tbody><tr><td>100</td><td></td><td>1</td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></tbody></table>	Discharge G.P.M.	Pumping Level	Hours Pumped	100		1																																																																																																																																																																																														
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3. PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Monitor ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection ☐ Other _____ (specify type)	9. LITHOLOGIC LOG <u>082765</u> <table border="1"><thead><tr><th rowspan="2">Bore Diam.</th><th colspan="2">Depth</th><th rowspan="2">Material</th><th colspan="2">Water</th></tr><tr><th>From</th><th>To</th><th>Yes</th><th>No</th></tr></thead><tbody><tr><td>6"</td><td>1</td><td>4</td><td>Top Soil</td><td></td><td></td></tr><tr><td>"</td><td>4</td><td>20</td><td>Gravel & Sand</td><td></td><td></td></tr><tr><td>"</td><td>20</td><td>45</td><td>Clay</td><td></td><td></td></tr><tr><td>"</td><td>45</td><td>55</td><td>Soft Tan Clay</td><td></td><td></td></tr><tr><td>"</td><td>55</td><td>65</td><td>Tan Clay some sand</td><td></td><td></td></tr><tr><td>"</td><td>65</td><td>77</td><td>Sandy Tan Clay</td><td></td><td></td></tr><tr><td>"</td><td>77</td><td>82</td><td>Hard Clay</td><td></td><td></td></tr><tr><td>"</td><td>82</td><td>87</td><td>Short Clay & Sand Strata</td><td></td><td></td></tr><tr><td>"</td><td>87</td><td>93</td><td>Soft Clay</td><td></td><td></td></tr><tr><td>"</td><td>93</td><td>95</td><td>Hard Clay</td><td></td><td></td></tr><tr><td>"</td><td>95</td><td>126</td><td>Soft Clay</td><td></td><td></td></tr><tr><td>"</td><td>126</td><td>135</td><td>Sandy Clay/Hard Clay Layer</td><td></td><td></td></tr><tr><td>"</td><td>135</td><td>138</td><td>Clay some coarse sand</td><td></td><td>X</td></tr><tr><td>"</td><td>138</td><td>156</td><td>Sand</td><td></td><td>X</td></tr><tr><td>"</td><td>156</td><td>163</td><td>Tan Clay</td><td></td><td></td></tr><tr><td>"</td><td>163</td><td>165</td><td>Blue Sand</td><td></td><td></td></tr><tr><td>"</td><td>165</td><td>185</td><td>Blue Clay</td><td></td><td></td></tr><tr><td>"</td><td>185</td><td>192</td><td>Blue Sand</td><td></td><td></td></tr><tr><td>"</td><td>192</td><td>193</td><td>Blue Clay</td><td></td><td></td></tr><tr><td>"</td><td>193</td><td>245</td><td>Blue Sand</td><td></td><td>X</td></tr><tr><td>"</td><td>245</td><td>250</td><td>Hard Blue Clay</td><td></td><td></td></tr><tr><td>"</td><td>250</td><td>252</td><td>Blue Sand</td><td></td><td>X</td></tr><tr><td>"</td><td>252</td><td>258</td><td>Fractured Clay</td><td></td><td>X</td></tr><tr><td>"</td><td>258</td><td>265</td><td>Blue Sticky Clay</td><td></td><td></td></tr><tr><td>"</td><td>265</td><td>273</td><td>Sand 50 GPM</td><td></td><td>X</td></tr><tr><td>"</td><td>273</td><td>274</td><td>Clay Blue</td><td></td><td></td></tr><tr><td>"</td><td>274</td><td>278</td><td>Sand very fine</td><td></td><td>X</td></tr><tr><td>"</td><td>278</td><td>290</td><td>Clay</td><td></td><td></td></tr><tr><td>"</td><td>290</td><td>292</td><td>Sand</td><td></td><td>X</td></tr><tr><td>"</td><td>292</td><td>294</td><td>Clay</td><td></td><td></td></tr><tr><td>"</td><td>294</td><td>304</td><td>Sand & Clay Layers good</td><td></td><td>X</td></tr></tbody></table>	Bore Diam.	Depth		Material	Water		From	To	Yes	No	6"	1	4	Top Soil			"	4	20	Gravel & Sand			"	20	45	Clay			"	45	55	Soft Tan Clay			"	55	65	Tan Clay some sand			"	65	77	Sandy Tan Clay			"	77	82	Hard Clay			"	82	87	Short Clay & Sand Strata			"	87	93	Soft Clay			"	93	95	Hard Clay			"	95	126	Soft Clay			"	126	135	Sandy Clay/Hard Clay Layer			"	135	138	Clay some coarse sand		X	"	138	156	Sand		X	"	156	163	Tan Clay			"	163	165	Blue Sand			"	165	185	Blue Clay			"	185	192	Blue Sand			"	192	193	Blue Clay			"	193	245	Blue Sand		X	"	245	250	Hard Blue Clay			"	250	252	Blue Sand		X	"	252	258	Fractured Clay		X	"	258	265	Blue Sticky Clay			"	265	273	Sand 50 GPM		X	"	273	274	Clay Blue			"	274	278	Sand very fine		X	"	278	290	Clay			"	290	292	Sand		X	"	292	294	Clay			"	294	304	Sand & Clay Layers good		X
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4. METHOD DRILLED ☒ Rotary ☒ Air ☐ Auger ☐ Reverse rotary ☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)																																																																																																																																																																																																					
5. WELL CONSTRUCTION Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____ Thickness _____ Diameter _____ From _____ To _____ _____ 250 Inches 6 Inches + 2 feet 278 feet _____ Inches _____ Inches _____ feet _____ feet _____ Inches _____ Inches _____ feet _____ feet Was casing drive shoe used? ☒ Yes ☐ No Was a packer or seal used? ☒ Yes ☐ No Perforated? ☐ Yes ☒ No How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun Size of perforation? _____ inches by _____ inches Number _____ From _____ To _____ _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet Well screen installed? ☒ Yes ☐ No Manufacturer <u>Roscoe Moss</u> Type <u>Louvered</u> Top Packer or Headpipe <u>294 274-294</u> Bottom of Tailpipe <u>304</u> Diameter <u>2"</u> Slot size <u>020</u> Set from <u>294</u> feet to <u>304</u> feet Diameter <u>4"</u> Slot size <u>020</u> Set from <u>294</u> feet to <u>304</u> feet Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>20</u> Material used in seal: ☐ Cement grout ☒ Bentonite ☐ Pudding clay ☐ _____ Sealing procedure used: ☒ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata Describe access port <u>Top of Well</u>																																																																																																																																																																																																					
6. LOCATION OF WELL Sketch map location must agree with written location.  Subdivision Name _____ Lot No. _____ Block No. _____ County <u>Canyon</u> Address of Well Site <u>22079 Kent Ranch Rd.</u> <u>Caldwell</u> (give at least name of road) T. <u>4N</u> N ☒ or S ☐ SE ☐ SW ☐ Sec. <u>26</u> , R. <u>4</u> E ☐ or W ☒	10. Department of Water Resources Western Regional Office <u>5/5/93</u> finished <u>5/11/93</u> Work started _____																																																																																																																																																																																																				
11. DRILLER'S CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Adamson Pump & Drilling</u> Firm No. <u>457</u> Address <u>Nampa, ID</u> Date <u>5/12/93</u> Signed by Drilling Supervisor <u>Steve Adamson</u> and <u>Steve Adamson</u> (Operator) (if different than the Drilling Supervisor)																																																																																																																																																																																																					

USE ADDITIONAL SHEETS IF NECESSARY -- FORWARD THE WHITE COPY TO THE DEPARTMENT

SPRINKLER SYSTEM DISCHARGE

NOZZLE DISCHARGE - GALLONS PER MINUTE							
psi	3/32	1/8	9/64	5/32	11/64	3/16	13/64
20	1.17	2.09	2.65	3.26	3.92	4.69	5.51
25	1.31	2.34	2.96	3.64	4.38	5.25	6.16
30	1.44	2.56	3.26	4.01	4.83	5.75	6.80
35	1.55	2.77	3.50	4.31	5.18	6.21	7.30
40	1.66	2.96	3.74	4.61	5.54	6.64	7.80
45	1.76	3.13	3.99	4.91	5.91	7.03	8.30
50	1.85	3.30	4.18	5.15	6.19	7.41	8.71
55	1.94	3.46	4.37	5.39	6.48	7.77	9.12
60	2.03	3.62	4.50	5.65	6.80	8.12	9.56
65	2.11	3.77	4.76	5.87	7.06	8.45	9.92
70	2.19	3.91	4.96	6.10	7.34	8.78	10.32
75	2.27	4.05	5.12	6.30	7.58	9.08	10.66
80	2.35	4.18	5.29	6.52	7.84	9.39	11.02
85	2.42	4.31	5.45	6.71	8.07	9.67	11.35
90	2.49	4.43	5.61	6.91	8.31	9.95	11.69
95	2.56	4.56	5.76	7.09	8.53	10.20	11.99
100	2.63	4.67	5.91	7.29	8.76	10.50	12.32

AVERAGE APPLICATION RATE - INCHES PER HOUR

Spacing in Feet	Discharge From Each Sprinkler						
	2 gpm	3 gpm	4 gpm	5 gpm	6 gpm	7 gpm	8 gpm
20x20	0.48	0.72	0.96	1.20	1.44	1.70	1.95
20x30	0.32	0.48	0.64	0.80	0.96	1.12	1.28
20x40	0.24	0.36	0.48	0.60	0.72	0.84	0.96
30x30	0.21	0.32	0.43	0.54	0.64	0.75	0.88
30x40	0.16	0.24	0.32	0.40	0.48	0.56	0.64
30x50	0.13	0.19	0.25	0.32	0.38	0.45	0.51
40x40	0.12	0.18	0.24	0.30	0.36	0.42	0.48
40x50	0.1	0.14	0.19	0.24	0.29	0.34	0.38
40x60		0.12	0.12	0.20	0.24	0.28	0.32