

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-11682

Exam Date: 5/15/2012

1. Current Owner: DERALD W LOWE
6373 ROBINSON RD
KUNA ID 83634
(208)466-1926
2. Accompanied by: Derald Lowe
Phone No: (208)880-5500 (cell)
Address: Same as above
Relationship to Permit Holder: Permit Holder

3. SOURCE TRIBUTARY
GROUND WATER N/A

B. OVERLAP REVIEW

1. Other water rights with the same place of use: Surface Water - Boise Kuna Irrigation District
2. Other water rights with the same point of diversion: None

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

GROUND WATER NW1/4SW1/4 Sec. 32, Twp 02N, Rge 01W, B.M.
CANYON County
Method of Determination: GPS Location N43.463006° W116.490726° Garmin model GPSmap 76 Datum NAD 83

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	
02N	01W	32									2.0	21.0	36.0	24.0			15.0	4.0	102.0

Total Acres: 102

Method of Determination: Bing (2011) Aerial Photography w/ field verification.

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	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Irrigation Well-	Goulds CentriPro				
No Metal Tag	Submersible	40	6M404 (Model #)	Goulds 7THC	8" Discharge Pipe

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

D. FLOW MEASUREMENTS**1. Measurement**

<u>Equipment</u>	<u>Type</u>	<u>Make/Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
No physical measurement @ exam	N/A	N/A	N/A	N/A	N/A

Supplemental well. System not operating @ exam. See Flow Calculations Section below for Theoretical HP Equation, Pump Curve, and other flow estimations.

2. Measurements: None taken @ exam. Diversion works not ideal (limited straight length of pipe), but polysonic measurement possible on system if/when operating.

E. FLOW CALCULATIONS

 X Additional Computation Sheets Attached

Measured Method: Theoretical HP Equation(s):

$$HP = 40$$

$$PSI = 40 \text{ (pressure est. Mr. Lowe said pivot operates @ 45 psi and pressure at gated pipe ~ 38-39 psi)}$$

$$Z = 153 \text{ ft (Pump set at 168 ft, est. pumping level 10-20 ft (15 ft) above pump set depth)}$$

$$Q = (8.8 \times 0.7 \times HP) / [Z + (2.31 \times PSI)] = (8.8 \times 0.7 \times 40) / [153 + (2.31 \times 40)] = \mathbf{1.00 \text{ cfs}}$$
 est. capacity of pumping system

Vs.

Assuming TDH value reported by Layne of Idaho, Inc. (pump co.) via fax received 5/15/2012 (attached):

$$TDH = 195 \text{ ft w/ all other parameters same}$$

$$Q = (8.8 \times 0.7 \times HP) / [TDH] = (8.8 \times 0.7 \times 40) / [195] = \mathbf{1.26 \text{ cfs}}$$
 est. capacity of pumping system

Measured Method: Pump Curve (attached- <http://completewatersystems.com/wp-content/uploads/2011/04/B5-1150HZ.pdf>):

$$TDH = 195 \text{ ft (per pump co.)} = 59 \text{ m} \rightarrow Q = 140 \text{ m}^3/\text{hr} = \mathbf{1.37 \text{ cfs}}$$
 est. pump capacity

Vs.

$$TDH = 245.4 \text{ ft (per HP Equation est. above } [153 + (2.31 \times 40)]) = 75 \text{ m} \rightarrow Q = 92 \text{ m}^3/\text{hr} = \mathbf{0.90 \text{ cfs}}$$
 est. pump capacity

Theoretical HP Equation(s) est. capacity of pumping system = **1.00 to 1.26 cfs**

Pump Curve est. pump capacity = **0.90 to 1.37 cfs**

Pump co. stated conditions of well/pump/system when pump installed (pump test): $Q = 625 \text{ gpm} = \mathbf{1.39 \text{ cfs}}$ @ TDH 195 ft

Owner estimate of flow from well = 60-75 inches = **1.20 cfs to 1.50 cfs**

Permitted Rate = **2.00 cfs** (2.00 cfs/ 139 permitted acres = 0.014 cfs/ac)

Beneficial Use Limit = 102 ac x 0.02 cfs/ac = **2.04 cfs**

Proof of Beneficial Use fee paid = \$125.00 = up to **2.00 cfs**

Recommend Pump Co. Stated Rate = 1.39 cfs

Highest rate allowable based on information gathered 1.39 cfs recommended, because this value is $\leq 75\%$ (68%) of beneficial use rate limit. Also, 1.39 cfs allows for roughly the same rate per acre (1.39 cfs/ 102 cfs = 0.014 cfs/ac), the owner proposed to develop under this right.

F. VOLUME CALCULATIONS**1. Volume Calculations for Irrigation:**

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 102 \text{ ac} \times 4.5 \text{ afa/ac} = 459.0 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 1.39 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 716.8 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 459.0 \text{ afa} < 716.8 \text{ afa} = \mathbf{\text{Recommend } 459.0 \text{ afa}}$$

2. Volume Calculations for Other Uses: N/A. No other uses permitted.**G. NARRATIVE/REMARKS/COMMENTS****SYSTEM DESCRIPTION:**

System consists of a 12" dia 185 ft deep well (ID Power meter # 36-494-063 – irrigation well only use of power on this

G. NARRATIVE/REMARKS/COMMENTS CONTINUED

meter) with an 8" discharge piped to an 8" mainline piped underground southeast to the big pivot and northwest across the canal to the smaller pivot. 8" gated pipe is connected to the mainline for irrigation of acreage not under either pivot.

IRRIGATION PRACTICES:

This well is used to supplement surface water irrigation within the POU. Same distribution system for both ground and surface water. Lowe irrigates with the big pivot and gated pipe in the gravity irrigated areas simultaneously. When the big pivot is off, Lowe operates the smaller pivot. The big and smaller pivots operate at approximately 45 psi discharging 44 inches and 33-36 inches of water, respectively. Lowe typically irrigates one week on, 3-4 days off, one week on, etc for the duration of the irrigation season. Crops grown include hay, wheat, corn, and/or sweet corn. Lowe stated when well running, discharges enough water to run the big pivot (0.88 cfs) and gravity irrigate the gated pipe acreage (~38 ac), he guessed flow from the well is roughly 60-75 inches (1.2 cfs to 1.5 cfs).

OVERLAP:

Surface water from Boise Kuna Irrigation District serves as primary source of water for irrigation of POU. There are no other overlapping rights associated with the POU or POD. Verified POD of right 63-11094 and 63-27548 are different wells within the same 40 acre-tract.

RECOMMENDED POU:

Permitted POU included up to 139 acres within the SW quarter of Section 32. Diversion works developed and subsequent supplemental use of ground water excludes portions of the NESW north of the canal and the NWSW northeast of the smaller pivot. However, ground water use occurs in portions of the SWSE and SESE of Section 32, not part of permitted POU. All together, a 102 acre POU is being recommended for licensing under this permit. The permitted number of acres will not increase should the POU be changed as proposed via a licensing amendment.

RECOMMENDED SEASON OF USE:

Permitted season of use from 3/15 to 11/15. Current standard season of use from 3/1 to 11/15. Nothing on file indicating use should be limited to anything other than the standard irrigation season of use for the area. Recommend change to current standard season of use for license.

COMPLIANCE WITH PERMIT CONDITIONS:

Permit conditioned owner shall install a measuring device and report diversions of water annually. WMIS data (WMIS No. 101238) indicates owner may have supplied power records from 1995 through 1997 confirming no diversion from the system, but there are no other records nor has the owner installed a measuring device on the well. Due to the change in administration of water rights in Bs 63, measuring devices and reporting are not currently necessary for supplemental irrigation wells in this area. Lowe completed a form requesting these conditions be waived/modified during licensing (attached). Recommend modifying these conditions to condition 01M stating a device shall be installed and reporting done if/when the Department requests it in the future. Use of ground water under this right is supplemental to surface water in accordance with conditions of the right. No new land was irrigated, no new well was drilled nor an existing well enlarged or deepened after this permit was issued. Permitted water bearing zone 170 to 220 ft. Per well log, water bearing zone 18 to 185 ft. Diversion outside Bs 63 Ground Water Restricted Area. Recommend amending water bearing zone condition to match well construction record. To the best of my knowledge, owner has complied with all other permit conditions.

Have conditions of permit approval been met? Yes X No – Modifications of measurement device, reporting, and WB Zone conditions as discussed above approvable per Supervisor. All other conditions met.

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	1.39 CFS	459.0 AF
<u>Totals:</u>		1.39 CFS	459.0 AF

2. Recommended Amendments

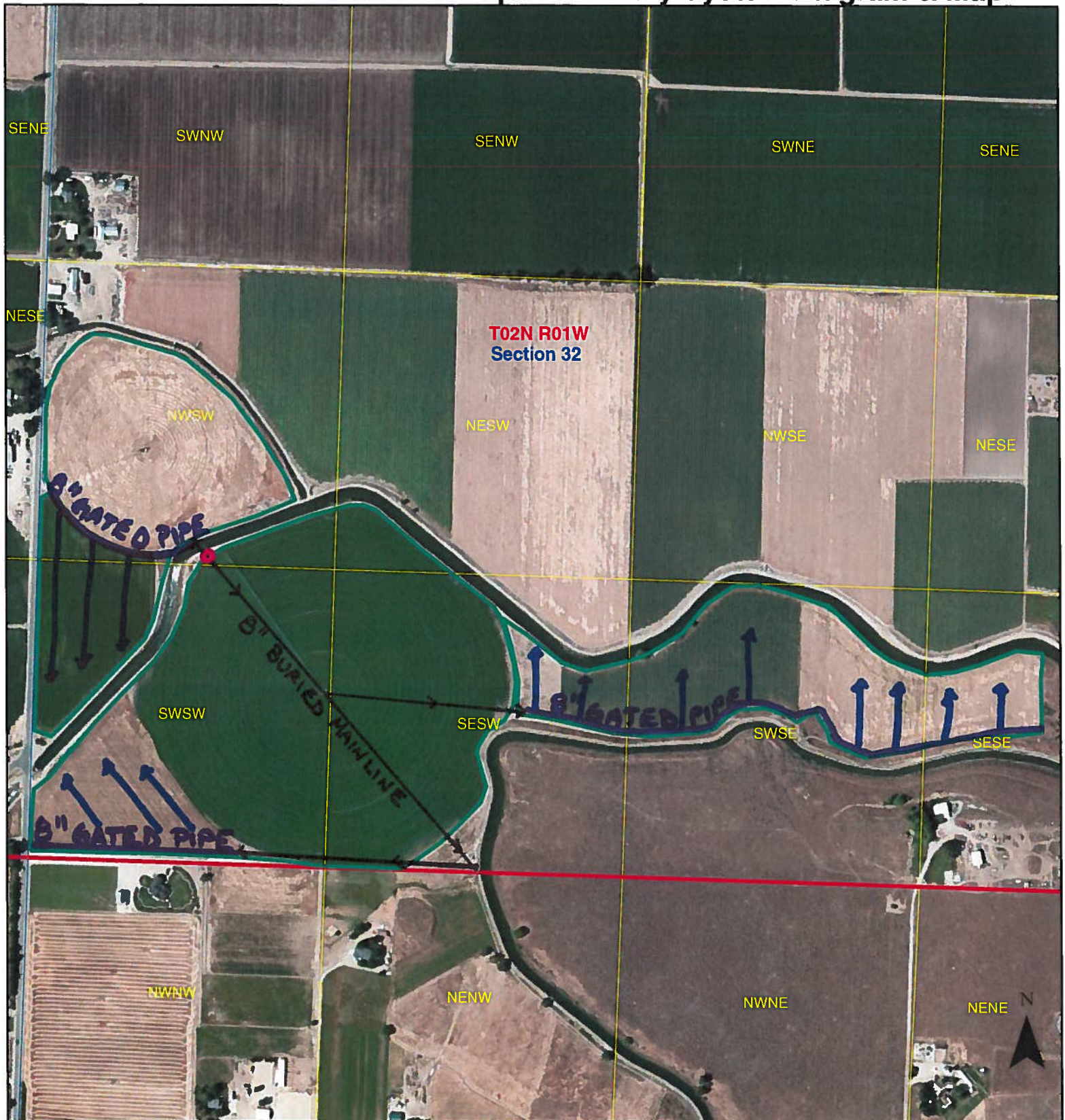
Change P.D. as reflected above Add P.D. as reflected above None
X Change P.U. as reflected above Add P.U. as reflected above Other

I. AUTHENTICATION

Field Examiner's Name Angela M. Quinn Date 6/21/2012
 Reviewer _____ Date _____

* can delete w/b zone condition per more recent S.O. guidance - "below star" - JR 7/26/12

63-11682 Beneficial Use Field Report Delivery System Diagram & Map



0 0.05 0.1 0.2 0.3 0.4 0.5 Miles

Bing (2011) Aerial Photo

Legend

- POD
- POU
- Township/Range
- Sections
- QQ

05/15/2012 15:10

2084665078

LAYNE

PAGE 01/01

to Angela M. Grimm

Layne of Idaho, Inc.

PO Box 1005

Nampa ID 83653

Phone: 208.466.7376

Fax: 208.466.5078

Email: cass@layneofidaho.com

facsimile transmittal

To: Darrel Lowe

Fax: 466-1926

From: Layne of Idaho

Date: 5/15/12

Re:

Pages: 1

Cc:

☒ Urgent

☒ For review

☐ Please comment

☐ Please reply

☐ Please recycle

This is the information I could find. Let me know if you need anything else.

^{600DS}
40hp Centripa Sub Motor 6M404, 460 V 30 (6")

3Stage, 7THC sub pump end w/ 6" discharge

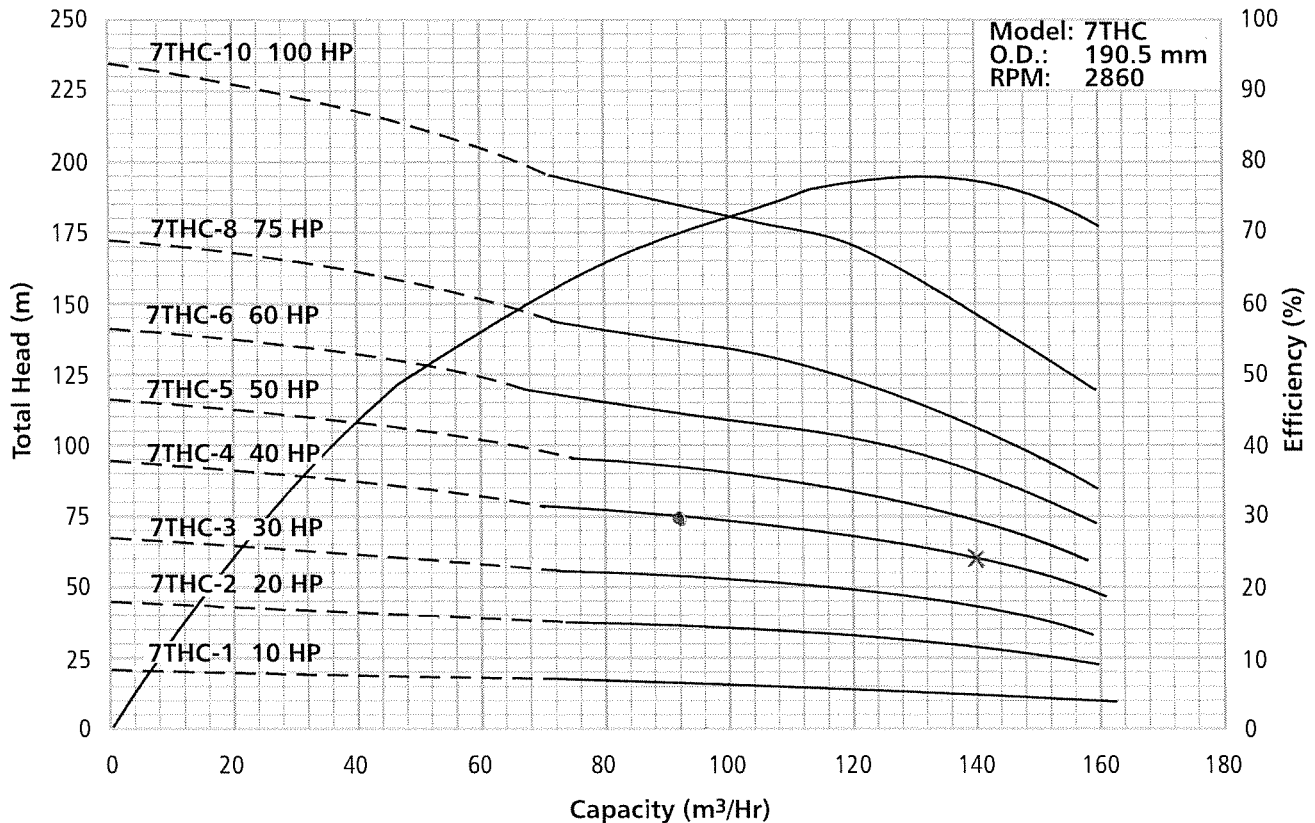
Conditions: 625 gpm @ 195 TDH

Set: 168" - 6" x 2.1"

Well Size: 15-1/4"

Thalyn

Model 7THC



X = CONDITIONS PER PUMP CO. → TDH = 195 FT ≈ 60 M → Q = 140 M³/HR = 1.37 CFS vs ● = CONDITIONS PER INFO HP EQ → TDH = 75m → Q = 92 M³/HR = 0.90 CFS

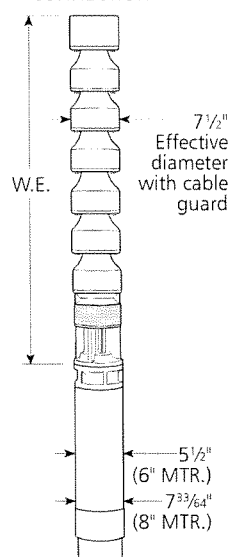
W. E. DIMENSIONS AND WEIGHTS

HP	Stages	W.E. Order Number	Length	Weight
10	1	M07THC010A66B	590	35
20	2	M07THC020A66B	770	50
30	3	M07THC030A66B	950	64
40	4	M07THC040A66B	1130	78
50	5	M07THC050A66B	1310	92
60	6	M07THC060A66B	1491	106
75	8	M07THC075A86B	1810	154
100	10	M07THC100A86B	2171	182

NOTES:

- Length dimensions in mm and weights in kg.
- Solid line is recommended operating range.
- For intermediate horsepower pumps consult factory.
- Please specify all options changes in W.E. order number.

6" NPT DISCHARGE CONNECTION



MATERIALS OF CONSTRUCTION

Part Name	Material
Shaft	ASTM A582 S41600
Coupling	ASTM A582 S41600
Suction Adapter	ASTM A536 Gr. 60-40-18
Suction Bearing	ASTM B584 C89835
Impeller	ASTM A744 CF8M
Taperlock	ASTM A108 Gr. 1018
Intermediate Bowl	ASTM A49 Cl. 30B
Intermediate Bowl Bearing	ASTM B584 C89835 (Std.)
Intermediate Bowl Bearing	Rubber (Optional)
Upthrust Collar	Polyethylene
Discharge Bowl	ASTM A48 Cl. 30B
Discharge Bowl Bearing	ASTM B584 C89835
Fasteners	SAE J429 Gr. 8
Cable Guard	ASTM A240 S30400
Suction Strainer	ASTM A240 S30400

4/2011

IDAHO DEPARTMENT OF WATER RESOURCES
FIELD EXAMINERS
WELL INSPECTION FORM

1. IDENTIFICATION # WC WELL ID # 302186 NO METAL TAG (Tag #, etc.)

OTHER APPLICABLE # 103-11682 (Water right #, etc.)

2. OWNER DERALD LOWE Phone (208) 466-1926

Address 6373 ROBINSON RD City KUNA

State ID Zip 83634 Email _____

3. WELL LOCATION (GPS required in Degrees Decimal Minutes – use PLS if GPS not available)

Lat. N 43.463006° Long. W 116.490726

Twp 2N Rge 1W Sec 32 ¼ NW ¼ SW

4. WELL CONSTRUCTION ☒ Well log attached ☐ Well log not found

Any obvious construction problems that may be a source for contamination or waste? ☐ Yes ☒ No

If yes, describe below &/or see attached (list any that apply): ☐ Photos ☐ Diagram ☐ Other

5. HYDROLOGIC INFORMATION

Static water if measured _____ ft. Water temperature if measured _____ °F

Flowing artesian ☐ Yes ☐ No Pressure if measured _____ psi

NOTES NEW PUMP INSTALLED 2006. SET @ 1168'. STATIC WL WELL LOG = 150'.

INSPECTED BY

Angela M. Quinn

DATE 5/15/2012

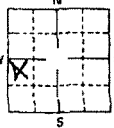
RECEIVED

MAR 2 1993

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCESUSE TYPEWRITER OR
BALLPOINT PEN

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.

1. WELL OWNER Name <u>Derald W Lowe</u> Address <u>2115 Robinson Rd Kuna 83634</u> Drilling Permit No. <u>63-92-W-0858</u> Water Right Permit No. <u>63-11682</u>	7. WATER LEVEL Static water level <u>150</u> feet below land surface Flowing? ☐ Yes ☒ No Artesian closed-in pressure _____ Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature <u>NA</u> °F. Quality <u>NA</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 ☐ Bailor ☒ 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><u>Last Circulation</u></td><td></td><td></td></tr><tr><td><u>NA</u></td><td></td><td></td></tr></tbody></table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>Last Circulation</u>			<u>NA</u>																																																															
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3. PROPOSED USE ☐ Domestic ☒ Irrigation ☐ Monitor ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection ☐ Other _____ (specify type)	9. LITHOLOGIC LOG <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>16</td><td>0</td><td>8</td><td>Soil</td><td></td><td></td></tr><tr><td>16</td><td>8</td><td>12</td><td>Broken lava</td><td></td><td></td></tr><tr><td>16</td><td>12</td><td>18</td><td>Solid lava</td><td></td><td></td></tr><tr><td>12</td><td>18</td><td>32</td><td>Solid lava</td><td></td><td></td></tr><tr><td>12</td><td>32</td><td>35</td><td>Broken lava</td><td></td><td></td></tr><tr><td>12</td><td>35</td><td>40</td><td>Broken lava + Big Crinoids</td><td></td><td></td></tr><tr><td>12</td><td>40</td><td>76</td><td>Last Circulation</td><td></td><td></td></tr><tr><td>12</td><td>76</td><td>82</td><td>Broken lava</td><td></td><td></td></tr><tr><td>12</td><td>82</td><td>185</td><td>Cinder</td><td></td><td></td></tr><tr><td>12</td><td>185</td><td>-</td><td>Gravel</td><td></td><td></td></tr></tbody></table>	Bore Diam.	Depth		Material	Water		From	To	Yes	No	16	0	8	Soil			16	8	12	Broken lava			16	12	18	Solid lava			12	18	32	Solid lava			12	32	35	Broken lava			12	35	40	Broken lava + Big Crinoids			12	40	76	Last Circulation			12	76	82	Broken lava			12	82	185	Cinder			12	185	-	Gravel		
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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 _____ <u>250</u> inches <u>12</u> inches + <u>2</u> feet <u>18</u> 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 _____ Type _____ Top Packer or Headpipe _____ Bottom of Tailpipe _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>18</u> Material used in seal: ☐ Cement grout ☒ Bentonite ☐ Puddling clay ☐ _____ Sealing procedure used: ☐ Slurry ☒ Overbore _____ depth ☐ Temp. surface casing ☒ Overbore _____ depth Method of joining casing: ☐ Threaded ☒ Cemented ☐ Solvent Weld ☐ Cemented between strings Describe access port <u>Port on Well Seal</u>	10. Work started <u>12/7/92</u> finished <u>12/14/92</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 _____ (give at least name of road) NW 1/4 SW 1/4 Sec. <u>32</u> T. <u>2</u> N or S ☐ R. <u>1</u> E or W ☒	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>Domestic Pump & Well</u> Firm No. <u>483</u> Address <u>12630 Orchard Nampa</u> Date _____ Signed by Drilling Supervisor <u>JD Johnson</u> and (Operator) <u>JD Johnson</u> (If different than the Drilling Supervisor)																																																																						

REQUEST TO WAIVE/MODIFY

CONDITION OF APPROVAL

Permit # 103-11682

I request the condition(s) of approval requiring (select 1 or more):

- ☒ measuring device
- ☐ lockable controlling works
- ☒ annual measuring/reporting, or power records alternative
- ☐ other – identify in space below

be waived or modified because:

I Never Installed a Measuring
Device. Reporting No Longer Required
In Area.

Derald W. Lowe
signature

May 15 2012
date

DERALD W. LOWE
print name

63-11682 Beneficial Use Field Report Photos



63-11682 Exam 5/15/2012: POD facing east. Green pipe is 8" mainline southeast to large pivot. Rust colored pipe is 8" mainline northwest cross/under canal to small pivot.



63-11682 Exam 5/15/2012: POU under large pivot. Photo taken next to POD facing southeast.