Appendix A

Driller’s Reports
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.

1. WELL OWNER
Name: Torbo Ford Industries
Address: 1234 Industrial Rd.
Owner's Permit No.: 95-77-N-165

2. NATURE OF WORK
☐ New well  ☐ Deepened  ☐ Replacement
☐ Abandoned (describe method of abandoning)

3. PROPOSED USE
☐ Municipal  ☐ Industrial  ☐ Stock  ☐ Waste Disposal or Injection

4. METHOD DRILLED
☐ Cable  ☐ Rotory  ☐ Dug  ☐ Other

5. WELL CONSTRUCTION
Diameter of hole: 12 inches  Total depth: 548 feet
Casing schedule:  ☐ Steel  ☐ Concrete
Thickness From ☐ 12 inches  3 feet  ☐ 3 feet
To

Was casing drive shoe used?  ☐ Yes  ☐ No
Was a packer or seal used?  ☐ Yes  ☐ No
Perforated?  ☐ Yes  ☐ No
How perforated?  ☐ Factory  ☐ Knife  ☐ Torch
Size of perforation:  inches by inches

Well screen installed?  ☐ Yes  ☐ No
Manufacturer's name: Johnson
Type: Screen Steel  Model No.: 301
Diameter: 12 inches  Slot size: 380,718/320,718
Diameter: 7 inches  Set from 380,718 to 380,718
Gravel packed?  ☐ Yes  ☐ No  Size of gravel
Placed from _______ feet to _______ feet

Surface seal depth:  ☐ Material used in seal  ☐ Cement grout
☐ Fudding clay  ☐ Well cuttings
Sealing procedure used:  ☐ Sturty pit  ☐ Temporary surface casing
☐ Overburden to seal depth

6. LOCATION OF WELL
Sketch map location must agree with written location.

7. WATER LEVEL
Static water level: 36 feet below land surface
Flowing?  ☐ Yes  ☐ No  G.F.P. flow
Temperature:  ° F. Quality:
Artisan closed-in pressure:  p.s.i.
Controlled by  ☐ Valve  ☐ Cap  ☐ Plug

8. WELL TEST DATA
☐ Pump  ☐ Bailor  ☐ Other
Discharge G.F.M. Draw Down Hours Pumped

9. LITHOLOGIC LOG


11. DRILLER'S CERTIFICATION
Firm Name: Johnson Drilling  Firm No.: 105
Address: 1234 Industrial Rd.
Signed by (Firm Official)  ☐  ☐  (Operator)  ☐

USE ADDITIONAL SHEETS IF NECESSARY  FORWARD THE WHITE COPY TO THE DEPARTMENT
State law requires that this report shall be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

**WELL OWNER:**
- **Name:** ATWELL
- **Address:** ATWELL, IDAHO
- **Owner's Permit No.:** 64-45-N2
- **Nature of Work (check):** Replacement well 
- **New well** Deepened Abandoned 
- **Water in to be used for:** Municipal
- **Method of Construction:** Rotary Cable X Dug Other (explain)

**CASING SCHEDULE:** Threaded X Welded
- **Diam. from ft. to ft.**
- **Diam. from ft. to ft.**
- **Diam. from ft. to ft.**
- **Thickness of casing:** 3.36 Material: Steel X concrete □ wood □ other □

**PEEROFATED?** Yes □ No X Type of perforator used:
- **Size of perforations:** " by " perforations from ft. to ft.
- **perforations from ft. to ft.**
- **perforations from ft. to ft.**
- **WAS SCREEN INSTALLED?** Yes □ No □

**Manufacturer's name:** JOHNSON
**Type SPINLESS Model No.:** TELESCAPE
**Diam. Slot size Set from ft. to ft.**
**Diam. Slot size Set from ft. to ft.**

**CONSTRUCTION:** Well gravel packed? Yes □ No X Type of gravel placed from ft. to ft. Surface seal provided? Yes □ No X To what depth? ft. Material used in seal: CEMENT
**Surface casing used?** Yes □ No X
**Cemented in place?** Yes □ No □

**LOCATION OF WELL:** County (no town)
- **SE 1/4 SW 1/4 Sec. 9 T. S. 20 R. 3 E.0

**Use other side for additional remarks**
1. WELL OWNER
   Name: KEN RICEK
   Address: PO BOX 1261 HAYDEN LAKE ID 83835
   Drilling Permit No.: 96-92-W-278
   Water Right Permit No.: _

2. NATURE OF WORK
   [ ] New well  [ ] Deepened  [ ] Replacement
   [ ] Well diameter increased  [ ] Modification
   [ ] Abandoned (describe abandonment or modification procedures
       such as liners, screen, materials, plug depths, etc. in lithologic
       log, section 9.)

3. PROPOSED USE
   [ ] Domestic  [ ] Irrigation  [ ] Monitor
   [ ] Industrial  [ ] Stock  [ ] Waste Disposal or Injection
   [ ] Other  (specify type)

4. METHOD DRILLED
   [ ] Rotary  [ ] Air  [ ] Auger  [ ] Reverse rotary
   [ ] Cable  [ ] Mud  [ ] Other
   (backhoes, hydraulic, etc.)

5. WELL CONSTRUCTION
   Casing schedule: [ ] Steel  [ ] Concrete  [ ] Other
   Diameter: __300 inches 8 inches + 1 foot 208 feet
   Diameter: __300 inches 8 inches + 1 inch 447 feet
   Diameter: __300 inches 8 inches + 1 feet 447 feet
   Diameter: __300 inches 8 inches + 1 foot 3 447 feet
   Diameter: __300 inches 8 inches + 1 foot 3 447 feet
   Diameter: __300 inches 8 inches + 1 foot 3 447 feet
   Diameter: __300 inches 8 inches + 1 foot 3 447 feet
   Diameter: __300 inches 8 inches + 1 foot 3 447 feet
   Diameter: __300 inches 8 inches + 1 foot 3 447 feet
   Was casing drove shoe used?  [ ] Yes  [ ] No
   Was a packer or seal used?  [ ] Yes  [ ] No
   Perforated?  [ ] Yes  [ ] No
   How perforated?  [ ] Factory  [ ] Hole  [ ] Torch  [ ] Gun
   Size of perforation?  1 inch by 1/4 inch
   How well screen installed?  [ ] Yes  [ ] No
   Manufacturer: _
   Manufacturer Type: _
   Top Packer or Headpipe: _
   Bottom of Tailpipe: _
   Diameter: _ feet 9 feet 447 feet
   Diameter: _ feet 9 feet 447 feet
   Surface seal depth: _ feet 4 feet 447 feet
   Material used in seal: [ ] Cement grout
   Bentonite  [ ] Pudding clay
   Sealing procedure used: [ ] Sturdy pit
   [ ] Sept. surface casing  [ ] Overbore to seal depth
   Method of joining casing: [ ] Threaded  [ ] Welded
   Solvent Weld  [ ] Cemented between strata
   Describe access port: _

6. LOCATION OF WELL
   Sketch map location must agree with written location.
   Subdivision Name:
   Lot No. _  Block No. _
   County: KOOTENAI
   Address of Well Site: _

7. WATER LEVEL
   Static water level: _ feet below land surface.
   Flowing?  [ ] Yes  [ ] No
   G.P.M. Flow: _
   Artesian closed-in pressure: _ psi.
   Controlled by: [ ] Valve  [ ] Cap  [ ] Plug
   Temperature: _° Quality: _
   Describe artesian or temperature zones below:

8. WELL TEST DATA
   [ ] Pump  [ ] Baller  [ ] Air  [ ] Other
   Discharge G.P.M.  _ Pumping Level  _ Hours Pumped  _

9. LITHOLOGIC LOG
   [ ] I 4 5 8 2
   Permit States
   Section 33
   Lot 30
   State 29

10. Work started: 12-03-92 finished: 12-07-92

11. DRILLER'S CERTIFICATION
   We certify that all minimum well construction standards were
   complied with at the time the rig was removed.
   Firm Name: H2O WELL SERVICE  Firm No. 448
   Address: 382 W HAYDEN AVE  Date: 12-07-92
   Signed by Drilling Supervisor: _
   and (Operator) _

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT
REPORT OF WELL DRILLER
State of Idaho

State law requires that this report shall be filed with the State Engineer within 30 days after completion or abandonment of the well.

WELL OWNER:
Name: IDAHO WATER CO.
Address: COEUR D'ALENE, IDAHO
95-60-N. 3-1
Owner's Permit No.: 297126

NATURE OF WORK (check): Replacement well
New well
Deepened
Abandoned

Water is to be used for: Municipal

METHOD OF CONSTRUCTION: Rotary
Cable
Dug
Other
(explain)

CASING SCHEDULE: Threaded
Welded
1/2" Diam. from 175 ft. to 206 ft.
1/2" Diam. from 226 ft. to 250 ft.
1/2" Diam. from 250 ft. to ft.
Thickness of casing: 0.075
Material: Steel
(No other)
Concrete
Wood

PERFORATED? Yes
No
(No perforator used)

Size of perforations: " by "
perforations from ft. to ft.
WAS SCREEN INSTALLED? Yes
No

Manufacturer's name
JOHNSON
Type of drill pipe
Model No.
Pipe size
Diam. 11/2" Slot size 60 Set from 200 ft. to 220 ft.
Diam. 11/2" Slot size 200 ft. to 240 ft.
CONSTRUCTION: Well gravel packed? Yes
No
size of gravel
Gravel placed from 25 ft. to 216 ft. Surface seal provided? Yes
No
To what depth? ft.
Material used in seal:
Cement 17° to 17°

Did any strata contain unusable water? Yes
No
Type of water:
Depth of strata to ft. Method of sealing strata off:

Surface casing used? Yes
No
Cemented in place? Yes
No

Locate well in section

LOCATION OF WELL: County: Kootenai
Sec.: 11 T. 50 N. R. 4 E.

Use other side for additional remarks

Work started: FEB 15 1964
Work finished: MARCH 19 1964
Well Driller's Statement: This well was drilled under my supervision and this report is true to the best of my knowledge.
Name: Holman Drilling Corp.
Address: 3410 9TH Spokane WA
Signed by: Holman F. Holman, 1964
License No. 109
Date: MARCH 26 1964
RECEIVED
Form 2367
3-95

NORTH IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT
Use Typewriter or Ballpoint Pen

NORTHEAST IDAHO

1. DRILLER'S PERMIT NO. 95-96 N 71
Other ID No. 75-04-33

2. OWNER:
Name: CITY OF COEUR D'ALENE
Address: 710 MULLIN AVE
City: COEUR D'ALENE State: ID Zip: 83814

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

4. USE:
☐ Domestic ☑ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK:
☐ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☐ Air Rotary ☑ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES:

8. CASING/LINER:

9. PERFORATIONS/SCREENS:
☐ Perforations Method:
☒ Screens Screen Type: TELESCOPE X-HEAVY

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
191 ft below ground Artesian pressure: 1 lb.

11. WELL TESTS:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

13. DRILLER'S CERTIFICATION
We certify that all minimum well construction standards were complied with at the time the rig was removed.

[Signatures and dates]
IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER’S REPORT

1. WELL TAG NO.: D0033267 NOV 25 2003
Drilling Permit No: 7997 Y 36
Other IDWR No: IDWR/North

2. OWNER
Name: CITY OF CDA / JUB ENGINEERS #3 678
Address: 7825 MEADOWLARK WAY
City: COEUR D’ALENE State: ID Zip: 83815

3. LOCATION OF WELL by legal description:
Twp. 51N ✓ North or ☐ South
Rge. 4W ☐ East or ✓ West
Sec. 28 ☐ 1/4 NE 1/4 NE 28
Gov’t Lot: ☐ 1/2
County: KOOTENAI
Lat.: ☐ Long.: ☒
Address of Well Site: ATLAS & PRAIRIE
City: CDA

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ✓ Other TEST

5. TYPE OF WORK:
☐ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD:
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES
SEAL/FILTER PACK

<table>
<thead>
<tr>
<th>Material</th>
<th>From</th>
<th>To</th>
<th>Amount</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRY GRANULE</td>
<td>0</td>
<td>20</td>
<td>14 BAGS</td>
<td>BORED</td>
</tr>
</tbody>
</table>

Was drive shoe used? ☑ Y ☐ N Shoe Depth(s) 450’
Was drive shoe seal tested? ☑ Y ☐ N How?

8. CASING/LINER:

<table>
<thead>
<tr>
<th>Diameter</th>
<th>From</th>
<th>To</th>
<th>Gauge</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>6”</td>
<td>12</td>
<td>450</td>
<td>250</td>
<td>STEEL ☑</td>
</tr>
</tbody>
</table>

Length of Headpipe Length of Tailpipe

9. PERFORATIONS/SCREENS
☐ Perforations Method ☐ PERFORATOR
☐ Screens Screen Type

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Shot Size</th>
<th>Number</th>
<th>Diameter</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>420 440</td>
<td>1/2 X 1/4</td>
<td>480</td>
<td>6</td>
<td>STEEL ☑</td>
<td></td>
</tr>
</tbody>
</table>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

Depth below ground 300 ft. Artesian pressure unknown lb.
Depth flow encountered 440 ft. Describe access port or control devices: 81N 4W 28

11. WELL TESTS:

<table>
<thead>
<tr>
<th>Yield gal./min</th>
<th>Drawdown</th>
<th>Pumping Level</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>80+</td>
<td>.450</td>
<td>1 HR</td>
<td></td>
</tr>
</tbody>
</table>

Water Temp. COLD Bottom Hole Temp. COLD
Water Quality test or comments: GOOD
Depth first Water encountered 420

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

<table>
<thead>
<tr>
<th>Bore</th>
<th>From</th>
<th>To</th>
<th>Remark: Lithology, Water Quality, Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>0</td>
<td>13</td>
<td>Top Soil w/ Gravel</td>
</tr>
<tr>
<td>8</td>
<td>13</td>
<td>61</td>
<td>Sand &amp; 3/8 minus Gravel</td>
</tr>
<tr>
<td>8</td>
<td>61</td>
<td>215</td>
<td>Gravel &amp; Sand w/ Soil seams</td>
</tr>
<tr>
<td>8</td>
<td>215</td>
<td>300</td>
<td>Sand &amp; Gravel</td>
</tr>
<tr>
<td>8</td>
<td>300</td>
<td>450</td>
<td>Gravel &amp; Sand with Water</td>
</tr>
</tbody>
</table>

Completed Depth 450 (Measurable)
Date: Started 10/21/03 Completed 10/23/03

13. DRILLER’S CERTIFICATION
I/we certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name: H2O Well Services Inc. Firm No.: 448
Firm Official: [Signature] Date: 10/23/03
Supervisor or Operator: [Signature] Date: 10/23/03

(Louie Hanner)
1. DRILLING PERMIT NO.: 95-0257-000
Other DWR No.: 95-07829.1

2. OWNER:
Name: HAYDEN PINES WATER CO
Address: PO BOX 922
City: HAYDEN
State: ID Zip: 83835

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

4. PROPOSED USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK:
☐ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD:
☐ Mud Rotary ☐ Air Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES

<table>
<thead>
<tr>
<th>SEALANT/FILTER</th>
<th>SEALANT/FILTRATION</th>
<th>AMOUNT</th>
<th>METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEMENT</td>
<td>0</td>
<td>90</td>
<td>300,000</td>
</tr>
</tbody>
</table>

8. CASING/LINER:

9. PERFORATIONS/SCREENS

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Slot Size</th>
<th>Number</th>
<th>Diameter</th>
<th>Material</th>
<th>Casing</th>
<th>Liner</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>145</td>
<td>1/16</td>
<td>160</td>
<td>12</td>
<td>STEEL</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
50 ft. below ground
Artesian pressure: 12 lb.
Depth flow encountered: 12 ft. Describe access port or control device:

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

<table>
<thead>
<tr>
<th>Yield gal/min</th>
<th>Drawdown</th>
<th>Pumping Level</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td></td>
<td></td>
<td>4 HRS</td>
</tr>
</tbody>
</table>

Water Temp: COLD
Bottom hole temp: LITTLE CLOUDY

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

<table>
<thead>
<tr>
<th>Bore</th>
<th>From</th>
<th>To</th>
<th>Remarks: Lithology, Water Quality &amp; Temperature</th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>0</td>
<td>1</td>
<td>Tuchsholten Brown Sand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td>10</td>
<td>Large Cobble w/ Clay Tan Sand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>10</td>
<td>14</td>
<td>Gravel w/Cobble Brown Sand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>18</td>
<td>Large Cobble w/ Gravel Tan Sand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>18</td>
<td>20</td>
<td>Boulder Gravel, Hard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>20</td>
<td>40</td>
<td>Large Gravel w/Cobble Tan Sand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>40</td>
<td>68</td>
<td>Gravel/Cobble Gravel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>68</td>
<td>107</td>
<td>Gravel/Brook Tan Gravel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>107</td>
<td>172</td>
<td>Gravel/Brook Tan Gravel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>172</td>
<td>145</td>
<td>Rock Gravel/Brook Tan Gravel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>145</td>
<td>147</td>
<td>Gravel/Brook Tan Gravel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. DRILLER'S CERTIFICATION
We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name: K2O WELL SERVICE, INC.
Firm No.: 44S

Firm Official: [Signature]
Date: 12/14/94

Supervisor or Operator: [Signature]
Date: 12/14/94

44S
REPORT OF WELL DRILLER
State of Idaho

State law requires that this report shall be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

WELL OWNER:
Name: IDAHO IRRIGATION INC.
Address: RURAL IDAHO 52663

Owner's Permit No.: 52661

NATURE OF WORK (check): Replacement well □ Deepened □ Abandoned □

Water is to be used for: IRRIGATION

METHOD OF CONSTRUCTION: Rotary □ Cable X Dug □ Other □

CASING SCHEDULE: Threaded — Welded X

Diam. from ft. to ft.

Diam. from ft. to ft.

Diam. from ft. to ft.

Thickness of casing: 3/4 in. Material: Steel □ concrete □ wood □ other □

PERFORATED? Yes □ No □ Type of perforator used: X

Size of perforations: " by "

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

WAS SCREEN INSTALLED? Yes X No □

Manufacturer's name: JOHNSON

Type of screen: JACO Model No.: JACO JAYD

Diameter: 2" Slot size: 100 ft. to 506 ft.

Diameter: 2" Slot size: 100 ft. to 506 ft.

CONSTRUCTION: Well gravel packed? Yes □ No □ size of gravel: Gravel placed from ft. to ft. Surface seal provided? Yes □ No □ To what depth? 70 ft. Material used in seal: cement

Did any strata contain unusable water? Yes □ No □ Type of water: Depth of strata: ft. Method of sealing: cemented in place

Surface casing used? Yes □ No □ Locate well in section

Cemented in place? Yes □ No □

Location of well: County: KOOTENAIE

5E 4 1/2W 3 Sec. 3 T.51 N R. 4 E W

Use other side for additional remarks

License No.: 4-11-1

Signed by: Holman Drilling Corp.

Address: 3410 E 9TH Spokane 614

Date: May 31, 1966

Work started: Jan. 19 - 66

Work finished: Feb. 14 - 66

Well Driller's statement: This well was drilled under my supervision and this report is true to the best of my knowledge

Name: Holman Drilling Corp.

Address: 3410 E 9TH Spokane 614

Signed by: Holman Drilling Corp.

License No.: 4-11-1

Date: May 31, 1966

Work started: Jan. 19 - 66

Work finished: Feb. 14 - 66

Well Driller's statement: This well was drilled under my supervision and this report is true to the best of my knowledge

Name: Holman Drilling Corp.

Address: 3410 E 9TH Spokane 614

Signed by: Holman Drilling Corp.

License No.: 4-11-1

Date: May 31, 1966
**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:** Spirit Bend Water Association
- **Address:** 2615 W. Sharp, Spokane, WA 99201
- **Owner's Permit No.:** 96-79-N-173

### 2. NATURE OF WORK

- New well
- Deepened
- Replacement
- Abandoned (describe method of abandoning)

### 3. PROPOSED USE

- Domestic
- Irrigation
- Test
- Municipal
- Industrial
- Stock
- Waste Disposal or Injection
- Other

### 4. METHOD DRILLED

- Rotary
- Air
- Hydraulic
- Reverse rotary
- Cable
- Dug
- Other

### 5. WELL CONSTRUCTION

#### Casing schedule:

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Diameter</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 inches</td>
<td>10 inches</td>
<td>0 feet</td>
<td>291 feet</td>
</tr>
<tr>
<td>inches</td>
<td>inches</td>
<td>feet</td>
<td>feet</td>
</tr>
<tr>
<td>9 inches</td>
<td>0 feet</td>
<td>673 feet</td>
<td></td>
</tr>
</tbody>
</table>

- Was casing drive shoe used? Yes
- Was a packer or seal used? Yes
- Perforated? Yes
- How perforated? Factory Knife Torch
- Size of perforation (inches by inches)
- Number of perforations (feet by feet)
- Feet of perforations (feet)
- Well screen installed? Yes

- Manufacturer's name: Johnson
- Type: Stainless steel
- Model No.
- Diameter: 6 inches
- Slot size:
  - 652 feet to 662 feet

- Diameter: 8 inches
- Slot size:
  - 662 feet to 673 feet
- Gravel packed? Yes
- Size of gravel: 6 inches

- Placed from feet to feet
- Surface seal depth: Material used in seal: Cement grout
- Pudding clay
- Well cuttings

- Sealing procedure used: Slurry pit Temp. surface casing
- Method of joining casing: Threaded Welded Solvent Weld
- Cemented between strata

- **Location of Well**
  - Sketch map location must agree with written location.
  - Subdivision Name
  - Lot No.
  - Block No.
- **County:** Kootenai
- **SM % NV:** 21
- **Sec.:** T. 53
- **R:** 4
- **W:** 5

### 6. LOCATION OF WELL

[Diagram of location]

### 7. WATER LEVEL

- Static water level:
- Feet below land surface:
- Flowing: Yes
- G.P.M. flow:
- Artesian charged in pressure:
- Controlled by:
  - Valve
  - Cap
  - Plug
- Temperature:
- Quality:

### 8. WELL TEST DATA

- **Discharge:**
  - G.P.M.:
  - Pumps:
  - Bailer:
  - Air
  - Other
- **Pumping Level:**
- **Hours Pumped:** 50

### 9. LITHOLOGIC LOG

<table>
<thead>
<tr>
<th>Hole Dim.</th>
<th>Depth</th>
<th>Material</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10°</td>
<td>0</td>
<td>24</td>
<td>Boulders</td>
</tr>
<tr>
<td>24</td>
<td>116</td>
<td>Sand with some rocks</td>
<td></td>
</tr>
<tr>
<td>116</td>
<td>291</td>
<td>1½&quot; minus gravel with layers of cobbles</td>
<td></td>
</tr>
<tr>
<td>291</td>
<td>673</td>
<td>1½&quot; minus gravel with layers of cobbles</td>
<td></td>
</tr>
</tbody>
</table>

### 10. Work started: 2/5/79

### 11. DRILLERS CERTIFICATION

I/we certify that all minimum well construction standards were complied with at the time the rig was removed.

- **Firm Name:** Bartholomew Drilling
- **Firm No.:** 52
- **Address:** Nine Mile Falls, WA 99026
- **Date:** 6/1/79
- **Signed by:** (Firm Official)
- **Operator:**

USE ADDITIONAL SHEETS IF NECESSARY – FORWARD THE WHITE COPY TO THE DEPARTMENT
State of Idaho  
Department of Water Administration  

WELL DRILLER'S REPORT  

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

1. WELL OWNER  
Name: East Greenacres Irrigation Dist.  
Address: RT 1, Box 116, Post Falls, ID 83854  
Owner's Permit No.: 95-705 (Agri Per.)

2. NATURE OF WORK  
□ New well  □ Deepened  □ Replacement  
□ Abandoned (describe method of abandoning):

3. PROPOSED USE  
□ Domestic  □ Irrigation  □ Test  
□ Municipal  □ Industrial  □ Stock

4. METHOD DRILLED  
□ Cable  □ Rotory  □ Dug  □ Other

5. WELL CONSTRUCTION  
Diameter of hole: 20 inches  
Total depth: 230 feet

Casing schedule:  
□ Steel  □ Concrete

Thickness: 13.75 inches  
Diameter: 20 inches  
Depth: 0 to 20 feet

Was a packer or seal used?  □ Yes  □ No
Perforated?  □ Yes  □ No
How perforated? □ Factory  □ Knife  □ Torch
Size of perforation: _____ inches by _____ inches

Number of perforations:  
□ From 0 to 20 feet  
□ From 20 to 40 feet  
□ From 40 to 60 feet  
□ From 60 to 80 feet  
□ From 80 to 100 feet  
□ From 100 to 120 feet  
□ From 120 to 140 feet  
□ From 140 to 160 feet  
□ From 160 to 180 feet  
□ From 180 to 200 feet  
□ From 200 to 220 feet  
□ From 220 to 240 feet  
□ From 240 to 260 feet  
□ From 260 to 280 feet  
□ From 280 to 300 feet

Well screen installed:  □ Yes  □ No
Manufacturer's name: G. F. Johnson

Type of Screen Used:  
□ Telescopic  □ Model No. 17132-ACT
Diameter: 1½ inches  
Slot size: 1½ inches

Diameter of Screen: 200 feet to 240 feet

Gravel packed?  □ Yes  □ No  
Size of gravel:  
Placed from:  
Surface seal:  □ Yes  □ No  
To what depth: 20 feet
Material used in seal:  □ Cement grout  □ Puddling clay

6. LOCATION OF WELL  
Sketch map location must agree with written location.

7. WATER LEVEL  
Static water level: 160 feet below land surface
Flowing?  □ Yes  □ No
G.P.M. flow:
Temperature: 74° F.  
Quality: Good
Artesian closed-in pressure: 5 psi
Controlled by: □ Valve  □ Cap  □ Plug

8. WELL TEST DATA  
□ Pump  □ Bailer  □ Other
Discharge G.P.M.:  
Draw Down:  
Hours Pumped:  

9. LITHOLOGIC LOG  
<table>
<thead>
<tr>
<th>Hole Diam.</th>
<th>Depth From</th>
<th>Material</th>
<th>Water Log</th>
</tr>
</thead>
<tbody>
<tr>
<td>20&quot; 0 20</td>
<td>GRAVEL 3&quot; MUNS</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>20&quot; 20 20</td>
<td>HILLIER</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>20&quot; 20 30</td>
<td>GRAVEL 3&quot; MUNS</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>20&quot; 20 14</td>
<td>GRAVEL 3&quot; MUNS</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>20&quot; 14 16</td>
<td>GRAVEL 3&quot; MUNS</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>20&quot; 16 16</td>
<td>GRAVEL 3&quot; MUNS X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20&quot; 16 20</td>
<td>GRAVEL 3&quot; MUNS X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20&quot; 20 20</td>
<td>GRAVEL 3&quot; MUNS X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. Work started: May 24, 1971  
        Finished: June 20, 1971

11. DRILLER'S CERTIFICATION  
This well was drilled under my supervision and this report is true to the best of my knowledge.

Holman Drilling Corp.  
Driller's or Firm's Name: G. F. Johnson
Address:  

Holman Drilling Corp.

Signed By:  
Address:  

Date: July 9, 1971

USE ADDITIONAL SHEETS IF NECESSARY  
FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT
53: 2W-5adl (formerly 53/2W-5H1; Farragut Naval Training Center well 3). SE\(\frac{1}{4}\) sec. 5; 2,150' feet south and 680' feet west of NE\(\frac{3}{4}\) cor. sec. 5, Idaho Department of Fish and Game (formerly owned by U. S. Navy). Domestic and fire-protection well, drilled by A. A. Durand and Son in 1942; depth, about 361.6' feet; about 361 feet of 20-inch and 16-inch steel casing, perforated from 265 to 355' feet; open end; 125-HP electric motor and turbine pump, pump capacity, about 750 gpm. Drawdown, about 1 to 2 feet after pumping for several hours. Situated on outwash or till plain. Log, from drillers' original record, obtained by Geological Survey, October 18, 1948.

<table>
<thead>
<tr>
<th>Description of material</th>
<th>Thickness (feet)</th>
<th>Depth (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravel, coarse, heavy, with granite boulders</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>Gravel, coarse to fine, with interbedded yellow clay</td>
<td>19</td>
<td>62</td>
</tr>
<tr>
<td>Gravel, coarse, heavy</td>
<td>43</td>
<td>105</td>
</tr>
<tr>
<td>Sand and gravel, fine</td>
<td>33</td>
<td>138</td>
</tr>
<tr>
<td>Boulders, granite</td>
<td>4</td>
<td>142</td>
</tr>
<tr>
<td>Sand and gravel, fine; some clay</td>
<td>15</td>
<td>157</td>
</tr>
<tr>
<td>Gravel and fine sand, cemented</td>
<td>25</td>
<td>182</td>
</tr>
<tr>
<td>Gravel, coarse, heavy</td>
<td>9</td>
<td>191</td>
</tr>
<tr>
<td>Gravel, pure, coarse, heavy</td>
<td>14</td>
<td>205</td>
</tr>
<tr>
<td>Sand, hardpan; also gravel, coarse</td>
<td>8</td>
<td>213</td>
</tr>
<tr>
<td>Gravel and fine sand</td>
<td>10</td>
<td>223</td>
</tr>
<tr>
<td>Sand and gravel, cemented</td>
<td>6</td>
<td>229</td>
</tr>
<tr>
<td>Gravel and fine sand</td>
<td>14</td>
<td>243</td>
</tr>
<tr>
<td>Gravel and fine sand, cemented</td>
<td>11</td>
<td>254</td>
</tr>
<tr>
<td>Gravel, coarse, and fine sand</td>
<td>49</td>
<td>303</td>
</tr>
<tr>
<td>Gravel, coarse to fine</td>
<td>8</td>
<td>311</td>
</tr>
<tr>
<td>Gravel and sand, coarse</td>
<td>50.6</td>
<td>361.6</td>
</tr>
</tbody>
</table>

20-inch galvanized casing from surface to 6 feet; 16-inch heavy duty oil-well casing from surface to 335' feet; 6-foot 7-inch steel drive shoe at bottom. Casing perforated from 265 to 355'. Well developed by pumping and surging for 32 hours. Test-pump yield was 800 gpm.

Principal aquifer, gravel (till or moraine). Water levels influenced strongly by stage of nearby Lake Pend Oreille. Measuring point: top of inner 16-inch casing; altitude, 2,290.4' feet; 0.4' foot above land-surface datum. Reference mark, chiselled cross in top of concrete pump base at northwest corner; altitude, 2,290.8' feet above mean sea-level and 0.2' foot above land-surface datum. Depth to water and altitude of water surface: Apr. 6, 1350, 242.9 (2,047.1).
State law requires that this report shall be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

WELL OWNER:
Name: State of Idaho
Address: Farragut State Park, No. 2

Owner's Permit No.: 2-68-N-9

NATURE OF WORK (check): Replacement well

New well ☐ Deepened ☐ Abandoned ☐

Water is to be used for: Domestic ☐ Other ☐

METHOD OF CONSTRUCTION: Rotary ☐ Cable ☐ Dug ☐

CASING SCHEDULE: Threaded ☐ Welded ☐

- 20" Diam. from 1 ft. to 50 ft.
- 16" Diam. from 1 ft. to 35 ft.
- 12" Diam. from 1 ft. to 35 ft.
- 12" Diam. from 1 ft. to 35 ft.

Thickness of casing: 3/8 [explain] Material: Steel ☐ concrete ☐ wood ☐ other ☐

PERFORATED? Yes ☐ No ☐ Type of perforator used: Mills ☐

Size of perforations: 3/8" by 1/2" 400 perforations from 35 ft. to 210 ft.

perforations from 35 ft. to 210 ft.
perforations from 35 ft. to 210 ft.
perforations from 35 ft. to 210 ft.

#55 SCREEN INSTALLED? Yes ☐ No ☐

Manufacturer's name [explain]

Type of material [explain]

MATERIAL:

From TO Yes or No

Depth of water

FT

VECT. FT.

- 0 3 cement foundation
- 15 dry gravel
- 21 dry gravel, small boulders
- 20 gravel & boulders
- 50 water bearing gravel
- 50 gravel & boulders
- 30 gravel & boulders
- 60 gravel & boulders
- 90 broken gravel
- 110 sand & silt size gravel
- 110 gravel & sand
- 30 gravel & sand
- 220 gravel & sand
- 250 gravel & sand
- 250 gravel & sand
- 270 gravel
- 300 large angular gravel
- 300 large boulders
- 310 large boulders
- 510 large boulders
- 530 gravel
- 530 gravel
- 530 gravel

CONSTRUCTION: Well gravel packed? Yes ☐ No ☐

Gravel placed from 35 ft. to 210 ft. Surface seal provided? Yes ☐ No ☐ To what depth?

60 ft. Material used in seal: cement

Did any strata contain usable water? Yes ☐ No ☐

Type of water: [explain]

Depth of strata: [explain]

Method of sealing strata off:

Surface casing used? Yes ☐ No ☐

Cemented in place? Yes ☐ No ☐

Locate well in section

LOCATION OF WELL: County [explain]

Sec. No. Sec. No. Sec. No.

SF 4 Sec. 4 Sec. 4 Sec. 4

N 1S 2 N 1S 2 N 1S 2

R 2 W R 2 W R 2 W

Work started: Feb. 12, 1969
Work finished: March 24, 1969

Well Driller's Statement: This well was drilled under my supervision and this report is true to the best of my knowledge.

Name: [signature] Russell Carpenter

Address: [signature] License No. 65 Date: June 12, 1969

USGS
IDAHOT STATE OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 60540618
   Drilling Permit No. 42672
   Water right or injection well # 95-924

2. OWNER: NORTH KOOTENAI WATER DIST.
   Name: 
   Address: PO BOX 2270
   City: Hayden
   State: ID
   Zip: 53739

3. WELL LOCATION:
   Twp. 51 North or South
   Range 49 East or West
   Sec. 23
   Govt Lot 0
   County: Kootenai
   Lat. 47° 54' 19"
   Long. 116° 49' 5"
   Address of Well Site: HONEY SICKLE AVE

4. USE: [ ] Domestic [x] Municipal [ ] Monitor [ ] Irrigation [ ] Thermal [ ] Injection [ ] Other

5. TYPE OF WORK:
   [ ] New well [x] Replacement well [ ] Modify existing well [ ] Abandonment [ ] Other

6. DRAIN METHOD:
   [x] Air Rotary [ ] Mud Rotary [ ] Cable [ ] Other

7. SEALING PROCEDURES:
   [ ] Grout [ ] 0 [ ] 1.50 CM Tieback

8. CASING-IN:
   Diameter (inches) From (ft) To (ft) Group or Schedule Material CASing Liner Threaded Welded
   20 42 290 0.75 STEEL

   Was drive shoe used? [x] Y [ ] N
   Shoe Depth(s):

9. PERFORATIONS/Screens:
   Perforations [x] Y [ ] N Method
   Manufactured screen [x] Y [ ] N Type [ ] WIRE WRAP
   Method of Installation TELESCOPE - PULL BACK

10. FILTER PACK:
    Filter Material From (ft) To (ft) Quantity (lbs or ft) Placement method

11. FLOWING ARTESIAN:
    Flowing Artesian? [x] Y [ ] N Artesian Pressure (PSIG)
    Describe control device

12. STATIC WATER LEVEL AND WELL TESTS:
    Depth first water encountered (ft) 254
    Static water level (ft) 271
    Water temp. (F) 
    Bottom hole temp. (F) 
    Describe access port

   Well test: [ ] None
   Drawdown (feet) Discharge or yield (gallons)
   Test duration (weeks) Test method:
   Pump [ ] Bailer [ ] Air [ ] Flowing artesian

   Water quality test or comments:

13. LITHOLOGIC LOG AND/OR REPAIRS OR ABANDONMENT:
    Bore Dia. (in.) From (ft) To (ft) Remarks, lithology or description of repairs or abandonment, water temp.
    Water
    Y N
    24 0 3 BRN SUB SOIL
    24 3 29 CARBONATE CAVES
    24 85 95 CARBONATE CAVES
    25 45 100 SANDY GRAVEL CAVES
    30 60 94 SANDY GRAVEL CAVES
    30 96 125 CARBONATE CAVES
    125 150 LOOSE SAND GRAVEL CAVES
    160 167 TIGHT ROLLING BOWL
    169 190 LOOSE HOLES
    195 207 BROWN SAND GRAVEL CAVES
    215 245 SANDY GRAVEL CAVES
    240 290 RESTORED
    290 325 SANDY GRAVEL CAVES
    325 340 BROWN SAND GRAVEL
    340 365 COARSE SAND GRAVEL
    365 372 COARSE SAND
    372 379 RECLAIMED

   RECEIVED
   DEC 09 2009

   IDWR/NORTH
   Completed Depth (measurable): 379.5
   Date Started: 7-7-08 Date Completed: 9-10-08

14. DRILLER'S CERTIFICATION:
   We certify that all minimum well construction standards were complied with at the time the rig was removed.

   Company Name: Robert Leach
   Co. No. 610

   *Principal Driller: Robert Leach
   Date: 1-18-09
   *Driller: Wade Weylan
   Date: 1-18-09
   *Operator: 
   Date: 
   Operator: 

   * Signature of Principal Driller and rig operator are required
   RECEIVED
   DEC 04 2009
WELL OWNER:
Name: Hauser Lake Water Assoc. Inc.
Address: Hauser Lake, Idaho
Owner's Permit No.: 6-33077
Nature of water (source): Municipal
New well [X] Reused [ ] Abandoned [ ]
Water to be used for: Municipal
Method of construction: Rented Oil Date [X]
Dig: [ ] Other: [ ]

Casing Schedule: Threaded [X] Welded [ ]
12' Diam. from 12' to 191' Ft.
12' Diam. from 29' to 66' Ft.
12' Diam. from 66' to 191' Ft.
Thickness of casing: 0.030 Material: Steel [X] Concrete [ ] Wood [ ] Other [ ]

Perforated: Yes [X] No [ ] Type of perforator used:

Size of perforations: W ft. X ft.
perforations from 12' to 66' Ft.
perforations from 66' to 191' Ft.

Water Screen installed: Yes [X] No [ ]
Manufacturer's name: Johnson
Type: Stainless Steel Model No.: 1/2" Standard
Diam. 12 Slot size 1/8" Set from 188' to 198'

Construction: Well gravel packed: Yes [X] No [ ]
Size, size of gravel: Gravel placed from 12' to 66' ft. Surface seal provided: Yes [X] No [ ] To what depth? 3.5 ft. Material used in seal: Surface-10P
Cement 1009-3575 Concrete 1155-2855
Did any strata contain unusable water? Yes [X] No [ ]
Type of water: [ ]
Depth of strata: ft. Method of sealing strata off:

Surface casing used: Yes [X] No [ ]
Cemented in place: Yes [X] No [ ]
Locate well in order:

June 12 1967
June 30 1967

Holman Drilling Corp.
2410 Ninth St., Spokane, Wash.
July 34, 1967.
WELL DRILLER'S REPORT

1. WELL OWNER

Name: Crazy Blade Eagle
Address: Hayden Idaho
Owner's Permit No.: 95-91-N-182

2. NATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other: (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Casing schedule: ☐ Steel ☐ Concrete ☐ Other

Thickness
---------------

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>inches</td>
<td>feet</td>
</tr>
<tr>
<td>inches</td>
<td>inches</td>
</tr>
<tr>
<td>inches</td>
<td>inches</td>
</tr>
<tr>
<td>inches</td>
<td>inches</td>
</tr>
</tbody>
</table>

Was casing drive shoe used? ☐ Yes ☐ No
Was a packer or seal used? ☐ Yes ☐ No
Perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation: inches

Number of perforations: From | To
| inches | inches |
| inches | inches |
| inches | inches |

Well screen installed? ☐ Yes ☐ No
Manufacturer's name: 

Type: 
Model No.: 

Diameter: Slot size: Set from: Slot size: Set from:

Gravel packed? ☐ Yes ☐ No
Size of gravel: 

Placed from: feet to: feet

Surface seal depth: 20 feet
Sealing procedure used: Shurley pit

Method of joining casing: Threaded Welded

Describe access point: 

6. LOCATION OF WELL

Sketch map location must agree with written location.

7. WATER LEVEL

Static water level: 260 feet below land surface.
Flowing? ☐ Yes ☐ No
G.P.M. flow: 
Artesian closed-in pressure: p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature: DF ☐ Quality:

8. WELL TEST DATA

Discharge G.P.M.: 
Pumping Level: 
Hours Pumped: 

9. LITHOLOGIC LOG

Bore Diam. From Depth Material Water

10. Work started: 1-7-92 finished: 1-12-92

11. DRILLERS CERTIFICATION

We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name: Hayden Dezima
Address: Hayden Idaho
Lot No.: 192
Block No.: 18

Signed by (Firm Official): Hayden Dezima
Date: 1-13-92

(Operator): 

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT
11. WELL TESTS

<table>
<thead>
<tr>
<th>Yield gal/min.</th>
<th>Drawdown</th>
<th>Pump Level</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>20+</td>
<td>100%</td>
<td>456</td>
<td>2 hrs.</td>
</tr>
</tbody>
</table>

- Water Temp.: cold
- Bottom hole temp.: cold
- Water Quality test or comments: (below) Depth first Water Encountered: 435
- clear, cold, no smell

12. LITHOLOGIC LOG (Describe repairs or abandonment)

<table>
<thead>
<tr>
<th>Bore Diam</th>
<th>From</th>
<th>To</th>
<th>Lithology, Water Quality and Temperature</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>0</td>
<td>1</td>
<td>Sand &amp; gravel &amp; cobbles</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>18</td>
<td>180</td>
<td>Sand &amp; gravel - 3/4 minus</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>180</td>
<td>180</td>
<td>Sand &amp; gravel - 1/2 minus</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>180</td>
<td>190</td>
<td>Sand &amp; gravel - 1/2 minus</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>190</td>
<td>285</td>
<td>Sand &amp; gravel - 3/4 minus</td>
<td></td>
</tr>
</tbody>
</table>

8. CASING/LINER

- Length Headpipe: __________
- Length Tailpipe: __________

9. PERFORATIONS/SCREENS

- Perforations? Method: air perforator
- Screens? Screen Type: __________

10. STATIC WATER LEVEL or ARTESIAN PRESSURE

- 406 ft. below ground
- Artesian pressure: __________
- Depth flow encountered: 406 ft.
- Describe access part or control devices: steel cap welded

- 53N 3W 12
1. WELL OWNER

Name: Rathkets Industries
Address: Hayden Lake, Idaho.
Owner's Permit No.: 95-72-N-78

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test
☐ Municipal ☒ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 3,982 feet
Casing schedule: ☒ Steel ☐ Concrete

6. WELL TEST DATA

Pump ☐ Bailer ☒ Other
Discharge G.P.M. 40 Draw Down 0 Hours Pumped 3 hrs

7. WATER LEVEL

Static water level 398 feet below land surface
Flowing? ☒ Yes ☐ No G.P.M. flow
Temperature 100 F. Quality
Artesian closed-in pressure p.s.i.
Controlled by ☐ Valve ☐ Cap ☐ Plug

8. LITHOLOGIC LOG

| Depth | Material          | Water
|-------|-------------------|-------|
| 0     | SANDY GRAVEL      | 2
| 10    | SANDY GRAVEL      | 3
| 20    | SANDY GRAVEL      | 3
| 30    | SANDY GRAVEL      | 3
| 40    | SANDY GRAVEL      | 3
| 50    | SANDY GRAVEL      | 3
| 60    | SANDY GRAVEL      | 3
| 70    | SANDY GRAVEL      | 3
| 80    | SANDY GRAVEL      | 3
| 90    | SANDY GRAVEL      | 3
| 100   | SANDY GRAVEL      | 3
| 110   | SANDY GRAVEL      | 3
| 120   | SANDY GRAVEL      | 3
| 130   | SANDY GRAVEL      | 3

9. LOCATION OF WELL

Sketch map location must agree with written location.

10. WORK DATES

Work started: 6/12/72 Finished: 8/14/73

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Driller's Signature: [Signature]
Driller's or Firm Name: [Name]
Address: [Address]
Date: [Date]

USE ADDITIONAL SHEETS IF NECESSARY  FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT
Form 238-7
3/95
Stamps Consulting
Use Typewriter or Ballpoint Pen

1. DRILLING PERMIT No 95-03-45-T-109
   Other IDWR No: 95-03-45

2. OWNER
   Name: WEINGART, DON
   Address: 715 DUNDEE
   City: POST FALLS
   State: ID
   Zip: 83854
   Well Number: 448

3. LOCATION OF WELL by legal description
   sketch map location must agree with written location
   Twp. 51 North or South
   Rge. 05 East or West
   Sec. 23 1/4 1/4 SE 1/4
   Govt Lot: County: KOOTENAI
   Lat: Long: Address of Well Site: GREENSFERRY/PRA
   City: POST FALLS

   (Give at least name of road + Distance to Road or Landmark)
   Lt. Bk. Sub. Name: MEADOWLAN

4. USE:
   ☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
   ☐ Thermal ☐ injection ☐ Other ☐ SUBDIVISION

5. TYPE OF WORK
   ☐ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD
   ☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES
   SEAL/FILTER PACK AMOUNT METHOD
   ☐ BENTONITE 0 20 7 SACK CRUMBLIES

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s) 303
Was drive shoe seal tested? ☐ Y ☐ N How?

8. CASING/LINER:
   Diameter: From To
   +2 303 .250 STEEL

Length of Headpipe __________ Length of Tailpipe _______ 299'

9. PERFORATIONS/SCREENS
   ☐ Perforations Method: AIR PERFORATOR
   ☐ Screens Screen Type
   From To Start Stop Diameter Material Casing Liner Welded Threaded
   250 250 1/16X2 260 8 STEEL

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
     225 ft. below ground Artesian pressure _______ lb.
     Depth flow encountered _______ ft. Describe access port or
     control devices: SE 23 SIN 5W

11. WELL TESTS:
   ☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian
   Yield gal./min. Drawdown Pumping Level Time
   100+ 2 5 HR

   Water Temp. Bottom Hole Temp
   Water Quality test or comments
   Depth first Water encountered 260

12. LITHOLOGIC LOG:
    (Describe repairs or abandonment)
    ☐ Topsoil Brown Soft
    ☐ Clay 64 Cobled Large Gravels
    ☐ Gravel Sands 1/2 Clays
    ☐ Gravel Fine Sands
    ☐ Gravel 1/4 to 1/2 minis
    ☐ Gravel 1/2 to 3/4 minis
    ☐ Gravel 3/4" minus
    ☐ Gravel 1/4" minus
    ☐ Gravel 1/2" minus
    ☐ Gravel 1/4" minus
    ☐ Gravel 1/4" minus
    ☐ Gravel 1/2" minus
    ☐ Gravel 3/4" minus

13. DRILLER'S CERTIFICATION
    I/We certify that all minimum well construction standards
    were complied with at the time the log was removed.
    Firm Name: H2O WellService, Inc. Firm No. 448
    Firm Official: Date 7-19-96
    Supervisor or Operator: Date 9-3-96

   (Sign below if Firm Official and Operator)
51N 5W-32cd2. NE\(\frac{1}{4}\)SW\(\frac{1}{4}\) sec. 32; 4,660 feet south and 3,350 feet west of NE cor. sec. 32. McGuire Water Corporation. Public water supply well (supplies 42 families), drilled by A. L. Washburn; depth, about 158 feet; \(\frac{3}{4}\)-HP electric motor and turbine pump. Situated on outwash valley plain. Measuring point: top of pump base; altitude, 2,118.2 feet; 7.0 feet below land-surface datum. Reference mark: chiselled cross in top of concrete curbing east of well; altitude: 2,125.5 feet; 0.3 foot above land-surface datum. Depth to water and altitude of water surface: June 1947, about 118 (about 2,007).

1. DRILLING PERMIT NO. 96-96-N-0286-000

2. OWNER
   Name: REMINGTON / ROCKY MNT LAND 676
   Address: PO BOX 2028
   City: CDA  State: ID  Zip: 83816-202

3. LOCATION OF WELL by legal description
   Twp. 53 N  Rge. 03 W  Sec. 18 N1/4  S1/4
   Gov't Lot 3  County: KOOTENAI
   Address of Well Site: SHAMROCK RANCH
   City: ATHOL

4. USE:
   Domestic  Municipal  Monitor  Irrigation  Injection
   Other  Subdivision

5. TYPE OF WORK
   New Well  Modify  Abandonment
   Other

6. DRILL METHOD
   Air Rotary  Cable  Mud Rotary  Other

7. SEALING PROCEDURES
   SEALE/FILTER PACK
   MATERIAL  FROM  TO  SACKS OR POUNDS  METHOD
   BENTONITE  0  100  15 SACKS  SLURRY / DRY
   \(\text{Was drive shoe used?} \quad \checkmark \quad \checkmark \quad \text{Shoe Depth(s)} \quad 540\)
   \(\text{Was shoe seal tested?} \quad \checkmark \quad \checkmark \quad \text{How?}\)

8. CASING/LINER:
   DIAMETER FROM TO GAUGE MATERIAL  Casing  Livar  Welded  Threaded
   8 42 540 .250 STEEL

9. PERFORATIONS/SCREENS
   SCREENS
   Material  Number  Diameter  Casing  Liner
   Screen Type: JOHNSON 15° 80 SL 0 8 SCREEN

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
    Depth encountered: 53 N 3 W 18 ft.

11. WELL TESTS:

<table>
<thead>
<tr>
<th>Water Temp.</th>
<th>Bottom Hole Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Quality Test or comments:</td>
<td></td>
</tr>
<tr>
<td>Depth first Water encountered</td>
<td></td>
</tr>
</tbody>
</table>

12. LITHOLOGIC LOG (Describe repairs or abandonment)

<table>
<thead>
<tr>
<th>Layer</th>
<th>From</th>
<th>To</th>
<th>Remarks / Lithology, Water Quality, Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>0</td>
<td>2</td>
<td>TOPSOIL</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>5</td>
<td>Gravel Course Sand</td>
</tr>
<tr>
<td>12</td>
<td>5</td>
<td>9</td>
<td>BOULDER</td>
</tr>
<tr>
<td>12</td>
<td>9</td>
<td>10</td>
<td>Gravels</td>
</tr>
<tr>
<td>12</td>
<td>10</td>
<td>12</td>
<td>Gravels Sand Course</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>20</td>
<td>3/4 Gravels</td>
</tr>
<tr>
<td>12</td>
<td>20</td>
<td>230</td>
<td>Large Gravels</td>
</tr>
<tr>
<td>12</td>
<td>230</td>
<td>320</td>
<td>Gravel With Sand</td>
</tr>
<tr>
<td>12</td>
<td>320</td>
<td>480</td>
<td>Gravels Upper</td>
</tr>
<tr>
<td>12</td>
<td>480</td>
<td>540</td>
<td>Gravels</td>
</tr>
<tr>
<td>12</td>
<td>540</td>
<td>544</td>
<td>Gravels</td>
</tr>
<tr>
<td>12</td>
<td>544</td>
<td>600</td>
<td>2 1/2&quot; K-Packer</td>
</tr>
</tbody>
</table>

13. DRILLER'S CERTIFICATION
   I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

   Firm Name: H2O Well Service, Inc.
   Firm No: 448
   Firm Official: Jim Leslie
   Date: 3/31/98
   Supervisor or Operator: Jim Leslie
   (Sign once if firm official and operator)
   Date: 3/31/98
**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**

<table>
<thead>
<tr>
<th>Name</th>
<th>City of Post Falls ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>400 Spokane St 83854</td>
</tr>
<tr>
<td>Owner's Permit No.</td>
<td>95-08862</td>
</tr>
</tbody>
</table>

---

**2. NATURE OF WORK**

- [X] New well  
- [ ] Deepened  
- [ ] Replacement  
- [ ] Abandoned (describe method of abandoning)

---

**3. PROPOSED USE**

- [ ] Domestic  
- [ ] Irrigation  
- [ ] Test  
- [ ] Municipal  
- [ ] Industrial  
- [ ] Stock  
- [ ] Waste Disposal or Injection  
- [ ] Other: (specify type)

---

**4. METHOD DRILLED**

- [X] Rotary  
- [ ] Air  
- [ ] Hydraulic  
- [ ] Reverse rotary  
- [X] Cable  
- [ ] Dug  
- [ ] Other: 

---

**5. WELL CONSTRUCTION**

- Casing schedule: [X] Steel  
- [ ] Concrete  
- [ ] Other

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Diameter</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.75 inches</td>
<td>12&quot;</td>
<td>305 feet</td>
<td>355 feet</td>
</tr>
<tr>
<td>3.75 inches</td>
<td>16&quot;</td>
<td>355 feet</td>
<td>415 feet</td>
</tr>
<tr>
<td>3.75 inches</td>
<td>20&quot;</td>
<td>415 feet</td>
<td>500 feet</td>
</tr>
</tbody>
</table>

- Was casing drive shoe used? [X] Yes  
- [ ] No

- Was a packer or seal used? [X] Yes  
- [ ] No

- Perforated? [X] Yes  
- [ ] No

- How perforated?  
- [ ] Factory  
- [ ] Knife  
- [ ] Torch

- Size of perforation: inches by inches

<table>
<thead>
<tr>
<th>Number</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Well screen installed? [X] Yes  
- [ ] No

- Manufacturer's name: HALLIBURTON

- Type: STAINLESS STEEL  
- Model: TELPOCKET

- Diameter 1/2, Slot size 1/8, Set from 30.5 feet to 26.5 feet

- Diameter 1/2, Slot size 1/8, Set from 26.5 feet to 25.5 feet

- Gravel packed? [X] Yes  
- [ ] No

- Size of gravel

- Placed from feet to feet

- Surface seal depth: 2.0 feet  
- Material used in seal:  
- Cement grout

- Sealing procedure used:  
- Shrink fit  
- Tempered, surface casing

- Overbore to seal depth

- Method of joining casing:  
- Threaded  
- Welded  
- Solvent Weld

- Cemented between strata

- Describe access port:  
- Pipe with threaded cap

---

**6. LOCATION OF WELL**

<table>
<thead>
<tr>
<th>W</th>
<th>N</th>
<th>E</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Subdivision Name

- Lot No.  
- Block No.

- County: Kootenai

- N.W. 1/4 E. 1/4 Sec. 2 T. S00 R. 5 E60

---

**7. WATER LEVEL**

- Static water level 198 feet below land surface.

- Flowing? [X] Yes  
- [ ] No

- G.P.M. flow:  
- [ ] Yes

- Artesian closed-in pressure: p.s.i.

- Controlled by:  
- [ ] Valve  
- [ ] Cap  
- [ ] Plug

- Temperature 45°F  
- Quality: Good

---

**8. WELL TEST DATA**

<table>
<thead>
<tr>
<th>Discharge G.P.M.</th>
<th>Pumping Level</th>
<th>Hours Pumped</th>
</tr>
</thead>
<tbody>
<tr>
<td>1700</td>
<td>199.8&quot;</td>
<td>2</td>
</tr>
<tr>
<td>2500</td>
<td>205.7&quot;</td>
<td>2</td>
</tr>
<tr>
<td>3000</td>
<td>209.1&quot;</td>
<td>2</td>
</tr>
</tbody>
</table>

---

**9. LITHOLOGIC LOG**

<table>
<thead>
<tr>
<th>Hole</th>
<th>Depth From</th>
<th>To</th>
<th>Material</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>2.0 2.25</td>
<td>2.35</td>
<td>GRAVEL 5&quot; MINUS</td>
<td>X</td>
</tr>
<tr>
<td>1A</td>
<td>2.25 2.5</td>
<td>2.55</td>
<td>GRAVEL 3&quot; MINUS</td>
<td>X</td>
</tr>
<tr>
<td>1B</td>
<td>2.3 2.54</td>
<td>2.54</td>
<td>GRAVEL + SAND</td>
<td>X</td>
</tr>
<tr>
<td>1A</td>
<td>2.35 2.6</td>
<td>2.65</td>
<td>GRAVEL 3.5&quot; MINUS</td>
<td>X</td>
</tr>
<tr>
<td>1A</td>
<td>2.55 2.85</td>
<td>2.85</td>
<td>GRAVEL 2&quot; MINUS</td>
<td>X</td>
</tr>
<tr>
<td>1B</td>
<td>2.58 3.0</td>
<td>3.0</td>
<td>GRAVEL + SAND</td>
<td>X</td>
</tr>
<tr>
<td>1A</td>
<td>2.65 3.25</td>
<td>3.25</td>
<td>GRAVEL 2&quot; MINUS</td>
<td>X</td>
</tr>
</tbody>
</table>

---

**10. Work started: Nov 15-95  finished: Feb 13-96**

---

**11. DRILLERS CERTIFICATION**

I/We certify that all minimum well construction standards were compiled with at the time the rig was removed.

- Firm Name: Holman Drilling Co.  
- Address:  
- Date: March 12-96

- Signed by (Firm Official):  
- (Operator):
IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D0056901
   Drilling Permit No: 848523
   Other IDWTR No.

2. OWNER
   Name: CITY OF POST FALLS
   Address: 408 N. SPOKANE ST.
   City POST FALLS State ID Zip 83854

3. LOCATION OF WELL by legal description
   sketch map location must agree with written location

4. USE:
   □ Domestic □ Municipal □ Monitor □ Irrigation
   □ Thermal □ Injection □ Other

5. TYPE OF WORK
   check all that apply (Replacement, etc.)
   ✔ New Well □ Modify □ Abandonment □ Other

6. DRILL METHOD
   □ Air Rotary □ Cable □ Mud Rotary □ Other

7. SEALING PROCEDURES
   SEAL/FILTER PACK
   METHOD
   Material From To
   3/4 HOLE PLUG 0 28 6,950 LBS POURED
   CEMENT GROUT 28 75 144 sacks PRESSURE GRIT

   Was drive shoe used? □ Y □ N □ Shoe Depth(s)
   Was drive shoe seal tested? □ Y □ N □ How?

8. CASING/LINER:
   Diameter From To Gauge Material Casing Liner Welded Threaded
   20 +2 250 .375 STEEL

   Length of Headpipe 10 Length of Tailpipe 5

9. PERFORATIONS/SCREENS
   □ Perforations □ Method
   ✔ Screens Screen Type Telescoping
   From To Slot Size Number Diameter Material Casing Liner
   250 290 120 4 20 SS

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
    150 ft. below ground Artesian pressure lb.
    Depth flow encountered 150 ft. Describe access port or
    control devices:

11. WELL TESTS:
    ☑ Pump ◐ Baller ✔ Air ◐ Flowing Artesian
    Yield gal./min. Drawdown Pumping Level Time
    3000 160 9 HRS

    Water Temp: COLD Bottom Hole Temp: COLD
    Water Quality test or comments: GOOD
    ________________________________________________________________________
    ________________________________________________________________________

12. LITHOLOGIC LOG (Describe repairs or abandonment)

<table>
<thead>
<tr>
<th>Bar</th>
<th>From</th>
<th>To</th>
<th>Remarks/Lithology, Water Quality, Temperatures</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>0</td>
<td>2</td>
<td>Top Soil</td>
</tr>
<tr>
<td>24</td>
<td>2</td>
<td>41</td>
<td>Gravels w/ Soils</td>
</tr>
<tr>
<td>24</td>
<td>41</td>
<td>67</td>
<td>Gravel w/ Cobbles</td>
</tr>
<tr>
<td>24</td>
<td>67</td>
<td>140</td>
<td>Sand, Gravel &amp; Cobbles</td>
</tr>
<tr>
<td>24</td>
<td>140</td>
<td>150</td>
<td>Gravels w/ Boulders</td>
</tr>
<tr>
<td>20</td>
<td>150</td>
<td>170</td>
<td>Gravels w/ Boulders</td>
</tr>
<tr>
<td>20</td>
<td>170</td>
<td>210</td>
<td>Sand &amp; Gravels</td>
</tr>
<tr>
<td>20</td>
<td>210</td>
<td>231</td>
<td>Gravels &amp; Boulders</td>
</tr>
<tr>
<td>20</td>
<td>231</td>
<td>270</td>
<td>Sand, Gravel &amp; Cobbles</td>
</tr>
<tr>
<td>20</td>
<td>270</td>
<td>295</td>
<td>Gravels w/ Boulders</td>
</tr>
</tbody>
</table>

Completed Depth 294.5 (Measurable)
Date: Started 8/1/2007 Completed 10/17/2007

13. DRILLER'S CERTIFICATION
We certify that all minimum well construction standards were
complied with at the time the rig was removed.

Firm Name: H2O WellServices, Inc. Firm No. 448
Firm Official ____________________ Date __/__/_07
and
Supervisor or Operator ____________________ Date 10/18/2007

LOUIE HANNER
(Sign Date of Firm Official and Operator)
\[50W_{1}5\text{-10a1. NW}_{1}NE_{2}^{2}\text{ sec. 10. Village of Post Falls (tenant: Wellin greenhouse). Industrial well, dug about 1912; depth: about 35 feet; about 35 feet of 36-inch brick casing; open bottom; electrically driven pump. Situated on river bank. Water reported soft. Altitude of water surface probably about the same as that of surface of nearby Spokane River. Measuring point: land surface at well site. Depth to water: Summer 1947: about 17.}\]

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL OWNER

Name: Stephanie Austin, Wayne Jerome
Address: 9850 N. Ramsey Road
Owner's Permit No.: 95-84-N-67

2. NATURE OF WORK

☐ New well  ☐ Deepened  ☐ Replacement
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☒ Domestic  ☐ Irrigation  ☐ Test  ☐ Municipal
☐ Industrial  ☐ Stock  ☐ Waste Disposal or Injection
☐ Other  (specify type)

4. METHOD DRILLED

☒ Rotary  ☐ Air  ☐ Hydraulic  ☐ Reverse rotary
☐ Cable  ☐ Dug  ☐ Other

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel  ☐ Concrete  ☐ Other

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Diameter</th>
<th>From To</th>
<th>Feet</th>
<th>Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>inches</td>
<td>inches</td>
<td>inches</td>
<td>inches</td>
<td>inches</td>
</tr>
</tbody>
</table>

Was casing drive shoe used? ☐ Yes  ☐ No
Was a packer or seal used? ☒ Yes  ☐ No
Perforated by: ☒ Factory  ☐ Knaps  ☐ Torch

Size of perforation in inches: ☒ Inch  ☐ Inch

Number of perforations from to feet: 200 feet

Well screen installed? ☐ Yes  ☒ No

Manufacturer's name:

Type: ☒ Steel  ☐ Concrete  ☐ Other
Diameter: 6 inches
Slot size: Set from 200 feet to 500 feet

Gravel packed: ☐ Yes  ☐ No  ☐ Size of gravel

Surface seal depth: 20 feet

Gravel packed: ☐ Yes  ☐ No  ☐ Size of gravel

Method of joining casing: ☒ Threaded  ☐ Welded  ☐ Solvent

Describe access port:

6. LOCATION OF WELL

Sketch map location must agree with written location.

Subdivision Name: 
Lot No.: 
Block No.: 

County: Kootenai County

7. WATER LEVEL

Static water level 300 feet below land surface.

Flowing? ☐ Yes  ☐ No  ☐ G.P.M. flow

Artesian closed-in pressure: p.s.i.

Controlled by: ☐ Valve  ☐ Cap  ☐ Plug

Temperature: 90°F  ☒ quality

Describe artesian or temperature zones below:

8. WELL TEST DATA

☐ Pump  ☐ Bailer  ☐ Air  ☐ Other

Discharge G.P.M.: Pumping Level: Hours Pumped:

80 + 390

9. LITHOLOGIC LOG

<table>
<thead>
<tr>
<th>Bore Diam.</th>
<th>From To</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diam. From To feet</td>
<td>Material</td>
<td></td>
</tr>
<tr>
<td>10 cm</td>
<td>Brone dirt</td>
<td></td>
</tr>
<tr>
<td>5 cm</td>
<td>Tar @ 70°F</td>
<td></td>
</tr>
<tr>
<td>8 cm</td>
<td>Clean sand + gravel</td>
<td></td>
</tr>
<tr>
<td>8 cm</td>
<td>Sand + gravel</td>
<td></td>
</tr>
</tbody>
</table>

10. Work started: 4/12/84 finished: 4/16/84

11. DRILLERS CERTIFICATION

I/we certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name: Austin Dripping Field: 414
Address: Placid Dr.  Date: 4/12/84

Signed by (Firm Official) and (Operator)
State of Idaho  
Department of Water Administration  

WELL DRILLER'S REPORT  

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

1. WELL OWNER

Name: W. H. North  
Address: 833 8th Ave  
Owner's Permit No. 95-78-N-127

2. NATURE OF WORK

☐ New well  ☐ Deepened  ☐ Replacement  
☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic  ☐ Irrigation  ☐ Test  ☐ Other (specify type)  
☐ Municipal  ☐ Industrial  ☐ Stock  ☐ Waste Disposal or Injection

4. METHOD DRILLED

☐ Cable  ☐ Rotory  ☐ Dug  ☐ Other

5. WELL CONSTRUCTION

Diameter of hole: 16 inches  
Total depth: 265 feet
Casing schedule:  Steel  
Concrete

Thickness: Diameter  
From To
10 inches  
10 inches  
12 inches  
10 inches
15 inches  
14 inches  
18 inches
20 inches  
22 inches  
30 inches

Was a packer or seal used?  ☑ Yes  ☐ No
Perforated?  ☑ Yes  ☐ No

How perforated?  ☐ Factory  ☐ Knife  ☐ Torch

Size of perforation  inches by inches
Number From To

perforations feet feet
perforations feet feet
perforations feet feet

Well screen installed?  ☑ Yes  ☐ No
Manufacturer's name:  
Model No.:  

Type:  
Diameter of screen size: Set from feet to feet
Diameter of screen size: Set from feet to feet

Gravel packed?  ☑ Yes  ☐ No  Size of gravel:
Placed from feet to feet

Surface seal depth:  
Material used in seal  ☐ Cement grout
☐ Puddling clay  ☐ Well cuttings
Sealing procedure used:  ☐ Shrink fit  ☐ Temporary surface coating
☐ Overburden to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.

7. WATER LEVEL

Static water level: 218 feet below land surface
Flowing?  ☑ Yes  ☐ No  G.P.M. flow: 
Temperature:  
F. Quality:
Artesian closed-in pressure:  p.s.i.
Controlled by:  ☑ Valve  ☐ Cap  ☐ Plug

8. WELL TEST DATA

Discharge G.P.M.: Draw Down: Hours Pumped:

9. LITHOLOGIC LOG

<table>
<thead>
<tr>
<th>Hole Dia.</th>
<th>Depth From</th>
<th>Material</th>
<th>Water</th>
<th>Yes No</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>20</td>
<td>Sand 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>30</td>
<td>Sand 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>40</td>
<td>Sand 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. RECORDED

RECEIVED  
AUG 16 1978  
Department of Water Resources

11. DRILLERS CERTIFICATION

Firm Name: W. H. North  
Address: 833 8th Ave

Signed by: (Firm Official)  
Operator: W. H. North

USE ADDITIONAL SHEETS IF NECESSARY  
FORWARD THE WHITE COPY TO THE DEPARTMENT
WELL DRILLER'S REPORT

1. WELL OWNER
   Name: Ross Point Water Assn.
   Address: 8th St.
   Owner's Permit No.: 45-73-N-89

2. NATURE OF WORK
   ☑ New well  ☐ Deepened  ☐ Replacement
   ☐ Abandoned (describe method of abandonment)

3. PROPOSED USE
   ☑ Domestic  ☐ Irrigation  ☐ Test
   ☐ Municipal  ☐ Industrial  ☐ Stock

4. METHOD DRILLED
   ☑ Cable  ☐ Rotary  ☐ Dug  ☐ Other

5. WELL CONSTRUCTION
   Diameter of hole: 10 inches
   Total depth: 375 feet
   Casing schedule: ☑ Steel  ☐ Concrete
   Thickness: 8 inches
   Diameter: 8 inches
   From: 775 feet
   To: 775 feet
   Was a packer or seal used? ☑ Yes  ☐ No
   Perforated? ☑ Yes  ☐ No
   How perforated? ☑ Factory  ☐ Knife  ☐ Torch
   Size of perforation: 1 inch by 1 inch
   Number of perforations: From: 1 to 1
   To: 1
   Well screen installed? ☑ Yes  ☐ No
   Manufacturer's name: Ruger
   Type: Stainless Steel  Model No.: 300
   Diameter: 8 inches  Slot size: 0.05 Foo
   Set from: 6 feet to 37 feet
   Gravel packed? ☑ Yes  ☐ No
   Size of gravel: 0.05 Foo
   Placed from: 6 feet to 37 feet
   Surface seal? ☑ Yes  ☐ No
   To what depth: 37 feet
   Material used in seal: ☑ Cement grout  ☐ Puddling clay

6. LOCATION OF WELL
   Sketch map location must agree with written location.

7. WATER LEVEL
   Static water level: 375 feet below land surface
   Flowing? ☑ Yes  ☐ No
   G.P.M. flow: 100 G.P.M.
   Temperature: 70°F
   Quality: n/a
   Artisan closed in pressure: p.s.i.
   Controlled by: ☐ Valve  ☐ Cap  ☐ Plug

8. WELL TEST DATA
   ☑ Pump  ☐ Bailer  ☐ Other
   Discharge G.P.M.: 100
   Draw Down: 5 feet
   Hours Pumped: 10

9. LITHOLOGIC LOG


11. DRILLER'S CERTIFICATION
   This well was drilled under my supervision and this report is true to the best of my knowledge.

   [Signature]

   [Date]

   USE ADDITIONAL SHEETS IF NECESSARY  FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT
RECEIVED
IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT
Use Typewriter or Ballpoint Pen

1. DRILLING PERMIT
   NO. 96-95-N-70
   Other IDWR No. 96-08834

2. OWNER:
   Name: City of Spirit Lake, ID
   Address: P.O.Box 309
   City: Spirit Lake    State: ID    Zip: 83869

3. LOCATION OF WELL by legal description:
   Sketch map location: must agree with written location.

4. USE:
   ☐ Domestic    ☑ Municipal    ☐ Monitor    ☐ Irrigation
   ☐ Thermal    ☐ Injection    ☐ Other

5. TYPE OF WORK: check all that apply
   ☑ New Well    ☐ Modify    ☐ Abandonment    ☐ Other: Replacement etc.

6. DRILL METHOD:
   ☑ Air Rotary    ☐ Cable    ☑ Mud Rotary    ☐ Other:

7. SEALING PROCEDURES
   SEAL/FILTER PACK
   Material: bentonite
   From: 0
   To: 20
   Amount: 20
   METHOD: overbore

8. CASING/LINER:
   Diameter: 10
   From: +11
   To: 597
   Steel: X
   Length of Headpipe: 111
   Length of Tailpipe: 5

9. PERFORATIONS/SCREENS:
   ☐ Perforations
   ☐ Screened
   XX Screens
   Screen Type: Johnson (Stainless)
   Size: 8 pipe size

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
    547 ft below ground
    Artesian pressure: lb.
    Depth flow encountered: ft.
    Describe access port or control devices: cap

11. WELL TESTS:
    Yield gal./hr.
    Description:
    Pumping Level:
    Time:
    No test

12. LITHOLOGIC LOG:
    (Describe repairs or abandonment)
    Remarks:
    Depth first Water Encountered

13. DRILLER'S CERTIFICATION:
    We certify that all minimum well construction standards were complied with at the time the rig was removed.

   Firm Name: Bronson Water Wells    Firm No: 360
   Firm Official: D. Bronson    Date: 10/5/95
   Supervisor or Operator: C. Bronson    Date: 10/5/95
# WELL DRILLER'S REPORT

**State of the Department of Water Administration**

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

**FEB 24 1975**

---

## 1. WELL OWNER

**Name:** Twin Lakes Estates  
**Address:** 81423 CDA, Idaho  
**Owner's Permit No.:** 95- 17496

## 2. NATURE OF WORK

- [ ] New well  
- [ ] Deepened  
- [ ] Replacement  
- [ ] Abandoned (describe method of abandoning):

## 3. PROPOSED USE

- [ ] Domestic  
- [ ] Irrigation  
- [ ] Test  
- [ ] Other (specify type):

## 4. METHOD DRILLED

- [ ] Cable  
- [ ] Rotary  
- [ ] Dug  
- [ ] Other

## 5. WELL CONSTRUCTION

- **Diameter of hole:** 8 inches  
- **Total depth:** 350 feet  
- **Casing schedule:** Steel  
- **Concrete:

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
</tr>
<tr>
<td>inches</td>
<td>inches</td>
</tr>
</tbody>
</table>

- **Was a packer or seal used?**  
- **Perforated?**

## 6. LOCATION OF WELL

Sketch map location must agree with written location.

## 7. WATER LEVEL

- **Static water level:** 23.5 feet below land surface  
- **Flowing:**  Yes  
- **Temperature:** 55°F  
- **Quality:**  
- **Aerated:**  
- **Closed:**

## 8. WELL TEST DATA

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Draw Down</th>
<th>Hours Pumped</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.55</td>
<td>none</td>
<td>250 m</td>
</tr>
</tbody>
</table>

## 9. LITHOLOGIC LOG

<table>
<thead>
<tr>
<th>Hole Dia.</th>
<th>From</th>
<th>To</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot;</td>
<td>1&quot;</td>
<td>Gravel</td>
<td></td>
</tr>
<tr>
<td>8&quot;/7&quot;</td>
<td>1&quot;</td>
<td>Boulder, Blasted</td>
<td></td>
</tr>
<tr>
<td>5½&quot;/10&quot;</td>
<td>1&quot;</td>
<td>Gravel</td>
<td></td>
</tr>
<tr>
<td>10½&quot;/15½&quot;</td>
<td>1&quot;</td>
<td>Gravel</td>
<td></td>
</tr>
</tbody>
</table>

**Number of perforations:**

- **From:** 3.21 feet  
- **To:** 3.49 feet

---

## 10. Work started 12-20-74 finished 2-19-75

---

## 11. DRILLER'S CERTIFICATION

**Firm Name:** Carson Development  
**Address:**  
**Firm No.:**  
**Signed by (Firm Official):** John A. Carson  
**Date:** 2-19-75

---

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

1. WELL OWNER 96-95-M-52-000

Name: U.S. FOREST SERVICE

Address: 207 IRONWOOD DRIVE

Owner's Permit No.: 95-02134

2. NATURE OF WORK

□ New well □ Replacement □ Abandoned (describe method of abandoning)

3. PROPOSED USE

□ Domestic □ Irrigation □ Test □ Municipal

□ Industrial □ Stock □ Waste Disposal or Injection

□ Other (specify type)

4. METHOD DRILLED

□ Rotary □ Air □ Hydraulic □ Reverse rotary

□ Cable □ Dug □ Other

5. WELL CONSTRUCTION

Casing schedule: □ Steel □ Concrete □ Other

Thickness: 3 7/8 inches 20 inches 6 5/8 inches

Diameter: From 2 feet To 27 7/8 feet

Was casing drive shoe used? □ Yes □ No

Was a packer or seal used? □ Yes □ No □ "A" packer

Perforated? □ Factory □ Knife □ Torch

Size of perforation □ inches □ inches

Number of perforations: From To

□ feet □ feet □ feet

Well screen installed? □ Yes □ No

Manufacturer's name: JOHNSON

Type: STAINLESS Steel: Model No.: 18 GAGE

Diameter: 3 7/8 inches

Slot size: Set from feet to feet

Gravel packed? □ Yes □ No □ Size of gravel

Placed from feet to feet

Gravel to set depth not given (material used in well: □ Cement grout □ Puddling clay □ Well cuttings

Sealing procedure used: □ Starry pit □ Temp. surface casing □ Overbar to set depth

Method of joining casing: □ Threaded □ Welded □ Solvent

□ Cemented between strata

Describe access port: To be installed by owner.

6. LOCATION OF WELL

Sketch map location must agree with written location.

Subdivision Name

Lot No. □ Block No.

County: Kootenai

7. WATER LEVEL

Static water level: 253 feet below land surface.

Flooding: □ Yes □ No

G.P.M. flow

Artesian closed in pressure

Controller by: □ Valve □ Cap □ Plug

Temperature 54 OF. Quality: Good

8. WELL TEST DATA

□ Pump □ Baller □ Air □ Other

Discharge G.P.M.: 2500 2379 2540

Pumping Level: 2 2 2

Heads Pumped: 1 1 1

9. LITHOLOGIC LOG

10. Work started: Feb 19-95 finished: May 31-95

11. DRILLERS CERTIFICATION

I certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name: HAMLIN DRILLING Corp

Address: 340 7th Ave Date: July 1-95

Signed by (Firm Official): Arnold E. Hamlin

(Operator): Arnold E. Hamlin

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

Water Quality Sampling Procedures

&

Duplicate Results and Analysis
1.0 Ground Water Sampling Activities

1.1 Ground Water Sample Collection (inorganic, organic, radionuclides,& stable isotopes)

Three ground water sampling events were conducted in June 2012, September 2012 and January/February 2013. Ground water samples will be obtained using the existing pump and piping. All samples were collected in appropriate sample containers provided by the analytical laboratory or obtained from a laboratory supply vendor. The sample containers for each well were labeled well/surface water name, date, preservative, and collector and placed into a new zip-lock bag prior to the sampling event.

The water samples were obtained from an existing water sampling port prior to any treatment. New pair of nitrile gloves were worn for the sampling of each location. The time was recorded on the label for each container after a sample was obtained then immediately placed back into the zip-lock bag and placed into a cooler with blue ice. The cooler was then transferred to the analytical laboratory with a Chain of Custody record. Depending on the required analysis, some samples were hand delivered to the analytical laboratory within 24-hours and others were shipped. All water samples that were shipped to an analytical laboratory were completed using an overnight delivery schedule.

Water samples obtained for $^{15}$N and $^{18}$O sampling were temporarily stored in a secure sample freezer located at the DEQ’s Coeur d’Alene Regional Office. Sufficient head space was left in the $^{15}$N and $^{18}$O containers to allow the sample to be frozen at a temperature of approximately -10ºCelsius. After all the samples were obtained, they were packed into a cooler with blue ice and shipped overnight to the analytical laboratory.

Water samples obtained for $^2$H and $^{18}$O sampling were also temporarily stored in a secure sample refrigerator located at the DEQ’s Coeur d’Alene Regional Office. The $^2$H and $^{18}$O containers were kept refrigerated at a temperature of approximately 4ºCelsius. After all the samples were obtained, they were packed into a cooler with blue ice and shipped overnight to the analytical laboratory.

1.2 Field Measurements

Field measurements include water quality parameters of pH, temperature, and conductivity measured in the discharge water during the sampling event. The water quality parameters were measured using a YSI Model 63 handheld digital meter. A two or three point calibration was performed with the YSI Model 63 handheld digital meter before each day of sampling using standard buffer solutions.

The purpose of the obtaining the water quality parameters was to 1) ensure that the well has been properly purged and does not represent stagnant water in the well casing or within or near the screen section and 2) provide water quality parameters
that are associated with the analytical results. Water quality stabilization criteria include:

1. Conductivity +/- 5%;
2. Temperature +/- 5%
3. pH +/- 0.1 unit

Dissolved oxygen was measured in the discharge water during the sampling event using a YSI Model 51B. The YSI Model 51B was calibrated at each site before each sample was obtained using elevation and oxygen content in ambient air. A new sensor membrane was installed prior to each of the three sampling events.

20. Surface Water Sampling Activities
   2.1 Surface Water Sample Collection
   The surface water bodies were sampled at locations accessed from shore. Surface water samples were obtained as grab samples from shore using the containers supplied by the analytical laboratory.

   2.2 Field Measurements
   Field measurements include water quality parameters of pH, temperature, and conductivity measured at the same location that the surface water sample was obtained. The water quality parameters were measured using a YSI Model 63 handheld digital meter. A two or three point calibration was performed with the YSI Model 63 handheld digital meter before each day of sampling using standard buffer solutions.

3.0 Precipitation Sampling Activities
   3.1 Precipitation Sampling Site Selection
   The precipitation samplers were constructed of 4-inch diameter PVC pipes with end caps glued to bottom and open at the top. A plastic funnel was placed into the top opening with a diameter slightly large then the PVC tube to direct precipitation into the sampler. The funnel was covered with 1-inch steel netting that was clamped onto the outside of the PVC tube. The steel netting secured the funnel in place and prevented large windblown objects from entering and blocking the throat of the funnel. A 0.5- to 1.0 centimeter thick layer of mineral oil was placed into the PVC tube to prevent evaporation and allow periodic visits to collect the water samples for analysis.

   3.2 Sample Collection
   A 60-cc syringe was used to draw up a sample of water from below the oil layer in the container. Two paper coffee filters were placed into the top of the sample container. Oil was wiped off the outside of the syringe, then the precipitation sample was gently ejected through the filters into the sample container. The filters absorb any residual oil in the water sample and allow an oil free sample for analysis. The filtering process is fast enough that no fractionation occurs.
4.0 CFCs and SF$_6$ Sampling Activities

Ground water samples were obtained for CFCs and SF$_6$ using the existing pump and piping after sufficient purging. The CFCs were sampled using a ½-inch diameter copper tube attached to the sample tap using brass fittings. The water from the sample tap would flow through the copper tubing into a 125 ml boston-round clear glass sample container, which was in turn placed into a 4-liter glass beaker. The beaker was allowed to overflow for approximately five-minutes. The copper tube was removed from the beaker and a threaded aluminum lined cap was used to seal the sample container prior to removal from the 4-liter glass beaker filled with water. The cap was secured with electrical tape and the container was then inverted and placed into a cooler with blue ice.

Ground water samples were obtained for SF$_6$ analysis using the same copper tubing and brass fitting described above. The copper tubing was placed into a 1-liter, amber, boston round bottles. The sample container was allowed to overflow for approximately five-minutes. The copper tube was removed and a threaded polyseal cone lined cap was used to seal the sample container. The cap was then secured with electrical tape and the container was then inverted and placed into a cooler with blue ice.

Water samples obtained for CFCs and SF$_6$ sampling were temporarily stored inverted in a secure sample refrigerator located at the DEQ's Coeur d'Alene Regional Office. The CFCs and SF$_6$ containers were kept refrigerated at a temperature of approximately 4ºCelsius. After all the samples were obtained, they were packed into a cooler with blue ice in an inverted position and shipped overnight to the analytical laboratory.

5.0 Dissolved N$_2$ and Ar Gas Sampling Activities

Ground water samples were obtained for dissolved N$_2$ and Ar gas using the existing pump and piping and after sufficient purging. The dissolved N$_2$ and Ar were sampled using a ½-inch diameter copper tube attached to the sample tap using brass fittings. The water from the sample tap would flow through the copper tubing into a 150 ml boston-round clear glass sample container, which was in turn placed into a 4-liter glass beaker. The beaker was allowed to overflow for approximately five-minutes. The copper tube was removed from the beaker and the sample container is sealed with a rubber stopper. A syringe needle is then placed through the stopper into the container while still submerged to remove any potential air. The syringe needle was then removed. The sample container was then inverted and placed into a cooler with blue ice.

Water samples obtained for dissolved N$_2$ and Ar gas sampling were temporarily stored inverted in a secure sample refrigerator located at the DEQ’s Coeur d’Alene Regional Office. The dissolved N$_2$ and Ar gas containers were kept refrigerated at a temperature of approximately 4ºCelsius. After all the samples were obtained, they were packed into a cooler with blue ice in an inverted position and shipped overnight to the analytical laboratory.
6.0 Duplicate Results and Analysis

Field duplicates were obtained during each sampling event as part of the quality assurance/quality control procedures. The duplicates were submitted to the analytical laboratories as blind duplicates with no indication as to the sample location or time of sampling. The relative percent difference were calculated for each sample and duplicate and can be seen in Tables B1 to B3. If either the sample or duplicate had analytical results below the detection limit no comparison was made. All the VOC and SOC analytical results were below detection limits and no analysis was completed for these analytes. All results were less than the 20 percent difference acceptable limit with the exception of the MDLA analytical results for the September 2012 sampling event. The analytical results for potassium, chloride, sulfate and arsenic exceeded the limit.
Table B1 Analytical Results and Duplicate Analysis
June 2012

<table>
<thead>
<tr>
<th>Constituent (mg/l)</th>
<th>Analytical Results</th>
<th>Blind Duplicate Results</th>
<th>Relative Percent Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PF#6</td>
<td>ATH#2</td>
<td>PF#6</td>
</tr>
<tr>
<td><strong>Inorganics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium</td>
<td>23.20</td>
<td>34.80</td>
<td>22.80</td>
</tr>
<tr>
<td>Sodium</td>
<td>2.67</td>
<td>3.47</td>
<td>2.64</td>
</tr>
<tr>
<td>Magnesium</td>
<td>6.75</td>
<td>15.10</td>
<td>6.66</td>
</tr>
<tr>
<td>Potassium</td>
<td>1.71</td>
<td>1.91</td>
<td>1.69</td>
</tr>
<tr>
<td>Chloride</td>
<td>3.82</td>
<td>3.62</td>
<td>3.69</td>
</tr>
<tr>
<td>Sulfate</td>
<td>5.19</td>
<td>15.50</td>
<td>4.97</td>
</tr>
<tr>
<td>Bicarbonate</td>
<td>77.90</td>
<td>133.00</td>
<td>77.80</td>
</tr>
<tr>
<td>Bromide</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Nitrate-Nitrogen</td>
<td>0.64</td>
<td>1.31</td>
<td>0.61</td>
</tr>
<tr>
<td>Arsenic</td>
<td>&lt;0.0030</td>
<td>&lt;0.0030</td>
<td>&lt;0.0030</td>
</tr>
<tr>
<td>Uranium</td>
<td>&lt;0.0010</td>
<td>0.00291</td>
<td>&lt;0.0010</td>
</tr>
<tr>
<td>Ra 226 &amp; 228⁵</td>
<td>&lt;1.6</td>
<td>5.70</td>
<td>&lt;1.4</td>
</tr>
<tr>
<td><strong>Organics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOC</td>
<td>&lt;1.00</td>
<td>&lt;1.00</td>
<td>&lt;1.00</td>
</tr>
<tr>
<td>VOC</td>
<td>&lt;0.005</td>
<td>&lt;0.005</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>SOC</td>
<td>&lt;0.005</td>
<td>&lt;0.005</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td><strong>Stable Isotopes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>¹⁵N (Nitrate)³</td>
<td>4.63</td>
<td>6.43</td>
<td>5.09</td>
</tr>
<tr>
<td>¹⁸O (Nitrate)³</td>
<td>-7.07</td>
<td>-6.87</td>
<td>-6.37</td>
</tr>
<tr>
<td>²H (H₂O)⁴</td>
<td>-110.19</td>
<td>-121.47</td>
<td>-110.49</td>
</tr>
<tr>
<td>¹⁸O (H₂O)⁴</td>
<td>-14.60</td>
<td>-15.77</td>
<td>-14.60</td>
</tr>
</tbody>
</table>

¹Relative Percent Difference = [(S-D)/(0.5(S+D))] x 100
   S = Sample concentration
   D = Duplicate concentration
   Acceptable Relative Percent Difference is less than 20%
²Concentration in pCi/L
³Concentration in δ(‰)
⁴Concentration in δ
Table B2 Analytical Results and Duplicate Analysis
September 2012

<table>
<thead>
<tr>
<th>Constituent (mg/l)</th>
<th>Analytical Results</th>
<th>Blind Duplicate Results</th>
<th>Relative Percent Difference $^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HLWA#1</td>
<td>MDLA</td>
<td>HLWA#1</td>
</tr>
<tr>
<td>Inorganics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium</td>
<td>56.60</td>
<td>32.40</td>
<td>57.80</td>
</tr>
<tr>
<td>Sodium</td>
<td>4.58</td>
<td>3.24</td>
<td>4.65</td>
</tr>
<tr>
<td>Magnesium</td>
<td>9.56</td>
<td>15.40</td>
<td>9.76</td>
</tr>
<tr>
<td>Potassium</td>
<td>2.21</td>
<td>1.85</td>
<td>2.27</td>
</tr>
<tr>
<td>Chloride</td>
<td>5.24</td>
<td>1.68</td>
<td>5.56</td>
</tr>
<tr>
<td>Sulfate</td>
<td>5.10</td>
<td>15.90</td>
<td>5.13</td>
</tr>
<tr>
<td>Bicarbonate</td>
<td>190.00</td>
<td>143.00</td>
<td>188.00</td>
</tr>
<tr>
<td>Bromide</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Arsenic</td>
<td>0.0013</td>
<td>0.0037</td>
<td>&lt;0.0030</td>
</tr>
<tr>
<td>Organics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOC</td>
<td>&lt;1.00</td>
<td>&lt;1.00</td>
<td>&lt;1.00</td>
</tr>
<tr>
<td>Stable Isotopes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$^2$H (H$_2$O)$^2$</td>
<td>-109.15</td>
<td>-114.30</td>
<td>-108.11</td>
</tr>
<tr>
<td>$^{18}$O (H$_2$O)$^2$</td>
<td>-13.99</td>
<td>-14.91</td>
<td>-13.87</td>
</tr>
</tbody>
</table>

$^1$Relative Percent Difference $=\left|\frac{\text{S}-\text{D}}{0.5(\text{S}+\text{D})}\right|\times 100$

$\text{S} = \text{Sample concentration}$
$\text{D} = \text{Duplicate concentration}$

Acceptable Relative Percent Difference is less than 20%

$^2$ Concentration in δ
## Table B3 Analytical Results and Duplicate Analysis

January 2013

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Analytical Results (mg/l)</th>
<th>Blind Duplicate Results</th>
<th>Relative Percent Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RATHG</td>
<td>ATH2</td>
<td>OHMA</td>
</tr>
<tr>
<td><strong>Inorganics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium</td>
<td>28.40</td>
<td>34.60</td>
<td>75.20</td>
</tr>
<tr>
<td>Sodium</td>
<td>4.29</td>
<td>3.77</td>
<td>4.99</td>
</tr>
<tr>
<td>Magnesium</td>
<td>7.48</td>
<td>15.40</td>
<td>13.70</td>
</tr>
<tr>
<td>Potassium</td>
<td>1.61</td>
<td>2.02</td>
<td>4.11</td>
</tr>
<tr>
<td>Chloride</td>
<td>5.98</td>
<td>5.68</td>
<td>18.50</td>
</tr>
<tr>
<td>Sulfate</td>
<td>5.10</td>
<td>15.60</td>
<td>7.59</td>
</tr>
<tr>
<td>Bicarbonate</td>
<td>95.80</td>
<td>135.00</td>
<td>235.00</td>
</tr>
<tr>
<td>Bromide</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Arsenic</td>
<td>0.0014</td>
<td>0.0025</td>
<td>&lt;0.0030</td>
</tr>
<tr>
<td><strong>Organics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOC</td>
<td>&lt;1.00</td>
<td>&lt;1.00</td>
<td>1.09</td>
</tr>
<tr>
<td><strong>Stable Isotopes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$^2$H (H₂O)²</td>
<td>-106.03</td>
<td>-117.98</td>
<td>-109.58</td>
</tr>
<tr>
<td>$^{18}$O (H₂O)²</td>
<td>-14.07</td>
<td>-15.82</td>
<td>-15.12</td>
</tr>
</tbody>
</table>

1 Relative Percent Difference = $\left| \frac{S-D}{0.5(S+D)} \right| \times 100$

   S = Sample concentration

   D = Duplicate concentration

   Acceptable Relative Percent Difference is less than 20%

2 Concentration in δ
Appendix C

Stiff Diagrams
ATH2, 6/12/2012

ATH2, 6/19/2012

ATH2, 9/25/2012

ATH2, 1/29/2013

ATH2, 9/27/2012

ATH2, 2/4/2013
CLAW, 6/12/2012

CLAW, 9/25/2012

CLAW, 1/29/2013

DIBE, 6/18/2012

DIBE, 9/27/2012

DIBE, 2/5/2013

Na  
Ca  
Mg  
Cl  
HCO3  
SO4

4 3 2 1 1 2 3 4 (meq/l)

4 3 2 1 1 2 3 4 (meq/l)

4 3 2 1 1 2 3 4 (meq/l)
RATH G, 6/11/2012

Na
Ca
Mg

Cl
HCO3
SO4

4 3 2 1 1 2 3 4 (meq/l)

RATH G, 10/2/2012

Na
Ca
Mg

Cl
HCO3
SO4

4 3 2 1 1 2 3 4 (meq/l)

RATH G, 1/28/2013

Na
Ca
Mg

Cl
HCO3
SO4

4 3 2 1 1 2 3 4 (meq/l)

RPSY, 6/11/2012

Na
Ca
Mg

Cl
HCO3
SO4

4 3 2 1 1 2 3 4 (meq/l)