STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
**BENEFICIAL USE FIELD REPORT**

**A. GENERAL INFORMATION**

Permit No: 95-9229
Exam Date: 5/16/2008

1. Current Owner: COEUR D ALENE SCHOOL DISTRICT #271
311 N 10TH ST
COEUR D ALENE ID 83814
(208)664-8241

2. Accompanied by: Bryan Martin
Phone No: (208) 669.8945
Address: 311 N 10TH ST, COEUR D ALENE ID 83814
Relationship to Permit Holder: Maintenance Director

3. **SOURCE** **TRIBUTARY**
GROUND WATER

**B. OVERLAP REVIEW**

1. Other water rights with the same place of use: 95-8279, 95-7800, 95-8581
2. Other water rights with the same point of diversion: NONE

**C. DIVERSION AND DELIVERY SYSTEM**

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

| | |
|---|---|
| GROUND WATER | NW1/4SW1/4 Sec. 22, Twp 51N, Rge 04W, B.M., KOOTENAI County |
| GROUND WATER | NW1/4SW1/4 Sec. 22, Twp 51N, Rge 04W, B.M., KOOTENAI County |
| GROUND WATER | NW1/4SW1/4 Sec. 22, Twp 51N, Rge 04W, B.M., KOOTENAI County (Injection) |

Method of Determination: Garmin GPS, USGS 7.5' Quadrangle 'Hayden'

2.

**PLACE OF USE:** COOLING

| Twp Rge Sec | NE | | | | NW | | | | SW | | | | SE | | | | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE | |
| 51N 04W 22 | | | | | | | | | | X | | | | | | | |

**PLACE OF USE:** HEATING

| Twp Rge Sec | NE | | | | NW | | | | SW | | | | SE | | | | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE | |
| 51N 04W 22 | | | | | | | | | | X | | | | | | | |

Method of Determination:

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

95-9229

4.

| Well or Diversion ID No.* | Motor Make | Hp | Motor Serial No. | Pump Make | Pump Serial No. or Discharge Size |
|---|---|---|---|---|---|
| DØØ33824 | Unknown | N/A | Unknown | Unknown | Injection Well |
| DØØ33825 | Unknown | 40 | " | " | |
| DØØ33826 | Unknown | 40 | " | " | |
| - | - | - | - | - | - |

*Code to correspond with No. on map and aerial photo DØØ33824 LAT 47° 45 Ø2.3N LONG 116° 49 36.9 W
DØØ33825 " 47° 45 Ø4.1 N " 116° 49 45.4W
DØØ33826 " 47° 45 Ø3.8N " 116° 49 45.5W

**D. FLOW MEASUREMENTS**

1.

| Measurement Equipment | Type | Make | Model No. | Serial No. | Size | Calib. Date |
|---|---|---|---|---|---|---|
| None | (See narrative) | | | | | |
| - | - | - | - | - | - | - |

2. Measurements:

**E. FLOW CALCULATIONS** _____Additional Computation Sheets Attached

Measured Method:

| PUMP EQUATIONS | WATER RIGHT | 95-9229 | D0033825 | | | |
|---|---|---|---|---|---|---|
| | | HP | H in feet | Efficiency as a decimal | Pumping lift in feet | System pressure in PSI |
| Q = | HP*8.8*Eff/H | 40 | 357.8231 | 0.8 | 300 | 25 |
| Q = | 0.788 cfs | | | | | |

| PUMP EQUATIONS | WATER RIGHT | 95-9229 | D0033826 | | | |
|---|---|---|---|---|---|---|
| | | HP | H in feet | Efficiency as a decimal | Pumping lift in feet | System pressure in PSI |
| Q = | HP*8.8*Eff/H | 40 | 352.8231 | 0.8 | 295 | 25 |
| Q = | 0.799 cfs | | | | | |

95-9229

**F. VOLUME CALCULATIONS**

1. Volume Calculations for Irrigation: Not Applicable

$V_{I.R.}$ = (Acres Irrigated) x (Irrigation Requirement) =

$V_{D.R.}$ = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 =

V = Smaller of $V_{I.R.}$ and $V_{D.R.}$ =

1. Diversion rate limited to 1.494 (1.5) CFS submitted for Proof of Beneficial use

2. Volume Calculations for Other Uses: 2. Diversion Volume calculated by:

Heating (1.5 CFS) x (200 days) x (18/24 hrs) or (75%) x 1.9835 = 447 AF

Cooling (1.5 CFS) x (165 days) x (18/24 hrs) or (75%) x 1.9835 = 369 AF

**G. NARRATIVE/REMARKS/COMMENTS**

The system has three wells. Two wells are located near the parking lot entrance to Atlas Elementary School. One of these wells is used for heating water and the other for cooling water. Water lines from each of these wells lead east for approximately 300 feet to reach the Heat Pump Room located on the South side of Atlas Elementary School. A water line to the injection well leads approximately 285 feet to the East to reach the injection well.

The system was operating during the Field Exam.

Theoretical calculations were required for this field exam because the configuration of piping in the Atlas Elementary School heat pump room does not allow adequate space to install a Fuji Portaflow meter. Measurement ports are present on some of the piping but no equipment was available to use the measurement ports.

The calculations indicate that the wells can deliver the permit Cubic Feet per Second (CFS) amount of 1.6 CFS. The Proof of Beneficial Use submitted by the permit holder indicates only 1.494 CFS (1.5 CFS) is used.

Have conditions of permit approval been met? ✓ Yes _____ No

**H. RECOMMENDATIONS**

**1. Recommended Amounts**

| BENEFICIAL USE | PERIOD OF USE | DIVERSION RATE | ANNUAL VOLUME |
|---|---|---|---|
| COOLING | 01/01 to 12/31 | 1.500 CFS | 369.00 AF |
| HEATING | 01/01 to 12/31 | 1.500 CFS | 447.00 AF |
| | Totals: | 1.500 CFS | 816.00 AF |

**2. Recommended Amendments**

___Change P.D. as reflected above ___Add P.D. as reflected above ___None

___Change P.U. as reflected above ___Add P.U. as reflected above ___Other

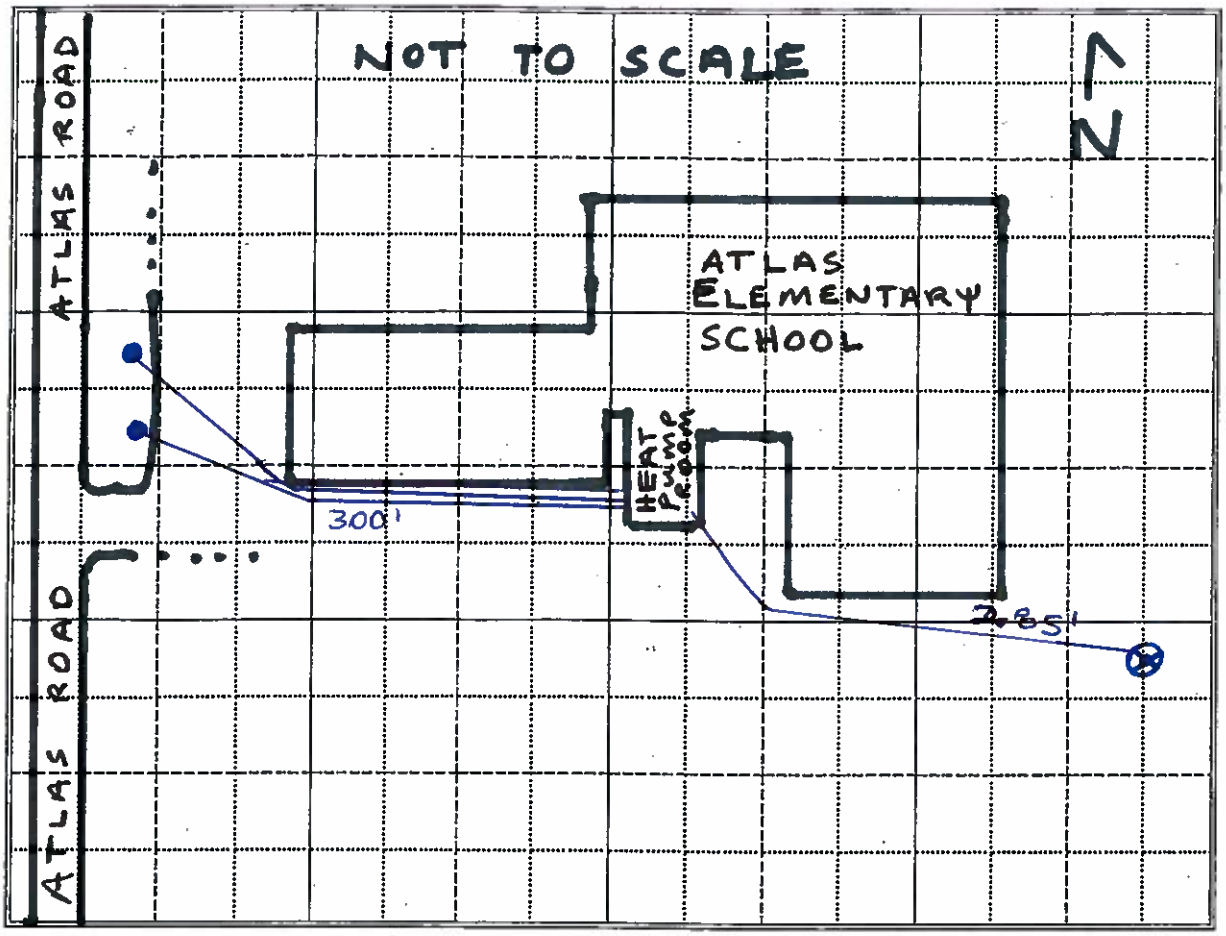
**I. AUTHENTICATION**

Field Examiner's Name Shawn M. Mafey Date 6/26/08

Reviewer _____ Date 7/1/8

95-9229

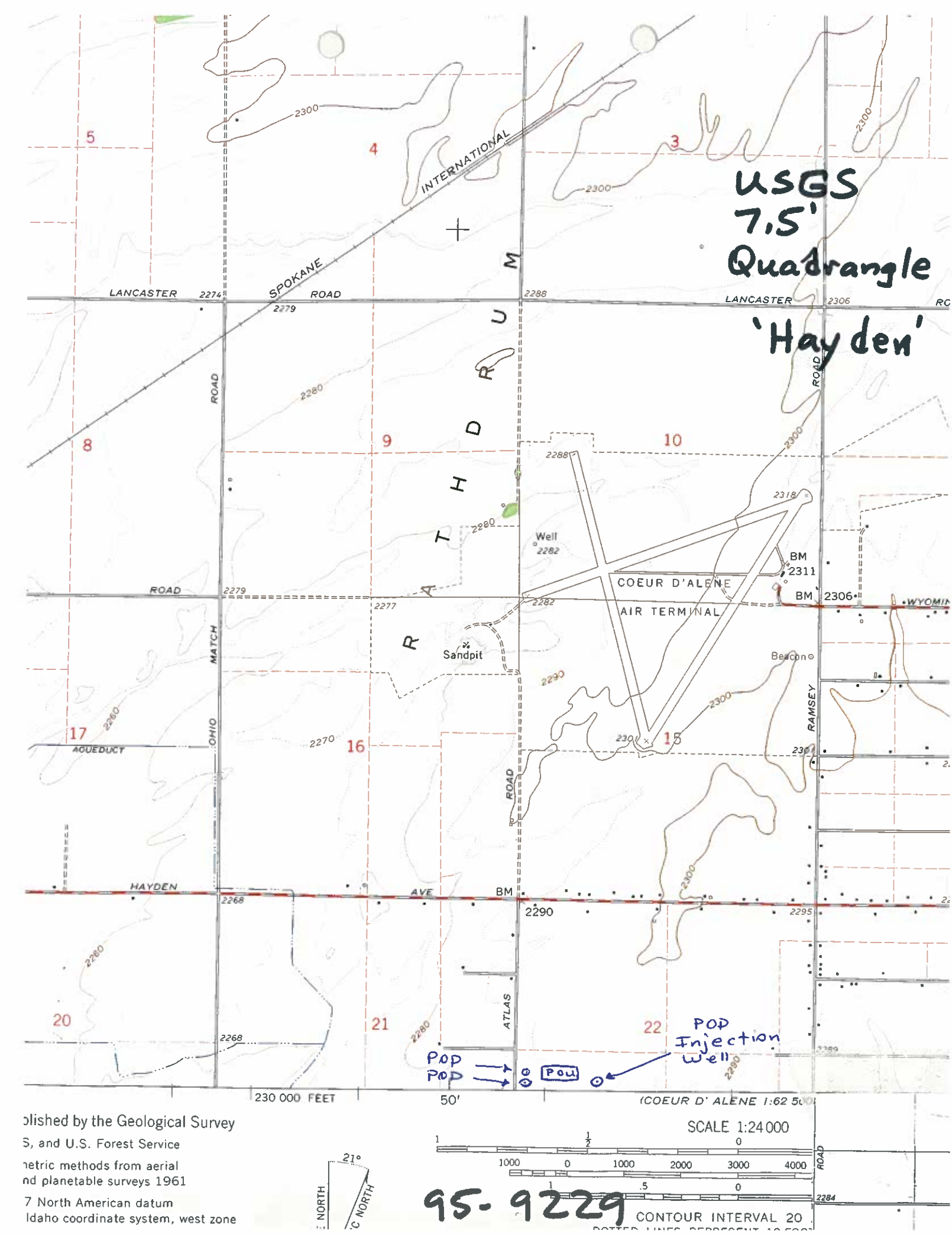
3. **Delivery System Diagram**: Indicate all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable.




⊗ Injection Well

● Hot & Cold Water Wells

95-9229




olished by the Geological Survey
S, and U.S. Forest Service
netric methods from aerial
nd planetable surveys 1961
7 North American datum
Idaho coordinate system, west zone

# 95-9229

95-9229

95-9229 Hot & Cold Wells & POU.JPG

95-9229 Hot & Cold Wells.JPG

95-9229 IDWR Tag D0033825.JPG

95-9229 IDWR Tag D0033826.JPG

95-9229 Atlas Heat Pump Exchanger.JPG

95-9229 Atlas Inection Well D0033824.JPG

95-9229 Atlas Inflow and line to Injection Well.JPG

95-9229 Atlas measurement ports.JPG

95-9229

95-9229 Hot and Cold Wells & POU.jpg

95-9229 Hot and Cold Wells.jpg

95-9229

95-9229 IDWR Tag D0033825.jpg

95-9229 IDWR Tag D003826.jpg

95-9229

95-9229 Atlas Injection Well D0033824.jpg

95-9229 Atlas Heat Pump Exchanger. jpg

95-9229

95-9229 Atlas Inflow and line to Injection well. jpg

95-9229 Atlas measurement ports.jpg

95-9229

Groundwater Consulting and Management Services

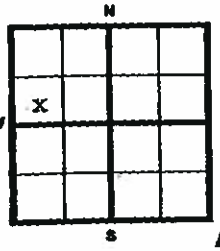
# WELL DRILLER'S REPORT

Twp 51N Rge 4W Sec 22
1/4 NW 1/4 SW 1/4
Lat: 47 : 45 : 2.3 Long: 116 : 49 : 36.9

**1. WELL TAG NO.** D0033824
Drilling Permit No: 816042
ther IDWR No.

**2. OWNER** Well Number: 787
Name Coeur d'Alene School Dist. #271
Address 331 N 10th St
City Coeur d'Alene State ID Zip 83814

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




Twp. 51 ☑ North or ☐ South
Rge. 04 ☐ East or ☑ West
Sec. 22 1/4 NW 1/4 SW 1/4
Gov't Lot County KOOTENAI
Lat: : : Long: : :
Address of Well Site Honeysuckle rd off Atl
City Hayden
(Give at least name of road + Distance to Road or Landmark)
Lt. Blk. Sub. Name

**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 Material | From | To | AMOUNT Sacks or Pounds | METHOD |
|---|---|---|---|---|
| BENTONITE | 0 | 20 | 550 lbs | Overbore |
| | | | | |
| | | | | |

Was drive shoe used? ☑ Y ☐ N Shoe Depth(s) 345
Was drive shoe seal tested? ☐ Y ☑ N How?

**8. CASING/LINER:**

| Diameter | From | To | Gauge | Material | Casing | Liner | Welded | Threaded |
|---|---|---|---|---|---|---|---|---|
| 10 | +3 | 345 | .325 | Steel | ☑ | ☐ | ☑ | ☐ |
| | | | | | | | | |
| | | | | | | | | |

Length of Headpipe 6 Length of Tailpipe

**9. PERFORATIONS/SCREENS**
☐ Perforations Method
☑ Screens Screen Type S.S. Telescoping

| From | To | Slot Size | Number | Diameter | Material | Casing | Liner |
|---|---|---|---|---|---|---|---|
| 345 | 385 | 80 | 40 | 10 | S.S. | ☐ | ☐ |
| | | | | | | | |
| | | | | | | | |

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

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

| Yield gal./min. | Drawdown | Pumping Level | Time |
|---|---|---|---|
| 150 | | | |
| | | | |
| | | | |

Water Temp. Cold Bottom Hole Temp Cold
Water Quality test or comments: Clear/Good
Depth first Water encountered 300

**12. LITHOLOGIC LOG:(Describe repairs or abandonment**

| Bore Diam | From | To | Remarks: Lithology, Water Quality, Temperature | Water Y | Water N |
|---|---|---|---|---|---|
| 12 | 0 | 32 | Clayish Soil w/Gravel | ☐ | ☑ |
| 12 | 32 | 118 | Sand & Gravel | ☐ | ☑ |
| 12 | 118 | 130 | Gravel & Cobble | ☐ | ☑ |
| 12 | 130 | 178 | Sand & Gravel | ☐ | ☑ |
| 12 | 178 | 189 | Cobble & Gravel | ☐ | ☑ |
| 12 | 189 | 215 | Sand & Gravel | ☐ | ☑ |
| 12 | 215 | 240 | Silty Sand Gray Fine | ☐ | ☑ |
| 12 | 240 | 342 | Sand Med Fine | ☑ | ☐ |
| 12 | 342 | 390 | Gravel & Sand | ☑ | ☐ |

RECEIVED
AUG 11 2004
IDWR/North

Completed Depth 385 (Measurable)
Date: Started 7/14/2004 Completed 7/23/2004

**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 WellService, Inc. Firm No. 448
Firm Official Date 07/27/04
and
Supervisor or Operator Date 07/26/04
Louie Hanner (Sign Once if Firm Official and Operator)

95-9229

T1N 4W 22

Form 238-7
7/98
Starships Consulting and Management Services

IDAHO DEPARTMENT OF WATER RESOURCES

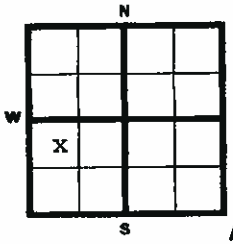
# WELL DRILLER'S REPORT

Office Use Only
Inspected by dhm
Twp 51N Rge 4W Sec 22
1/4 NW 1/4 SW 1/4
Lat 47 45 3.8 Long 116 49 45.5

**1. WELL TAG NO.** D0033826
Drilling Permit No: 815838
Other IDWR No. 95-9229

**2. OWNER** Well Number: 763
Name Coeur d'Alene School Dist. #271
Address 311 N 10th Street
City Coeur d'Alene State ID Zip 83814

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




Twp. 51 ☑ North or ☐ South
Rge. 04 ☐ East or ☑ West
Sec. 22 1/4 NW 1/4 SW 1/4
Gov't Lot ____ County KOOTENAI
Lat: : : Long: : :
Address of Well Site Honeysuckle Ave/Atla
Atlas Elementary #2 City Hayden
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name ____

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

**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 Material | From | To | AMOUNT Sacks or Pounds | METHOD |
|---|---|---|---|---|
| BENTONITE | 0 | 18 | 400 lbs | Overbore |
| | | | | |
| | | | | |

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 |
|---|---|---|---|---|---|---|---|---|
| 8 | +2 | 361 | .250 | Steel | ☑ | ☐ | ☑ | ☐ |
| | | | | | | | | |
| | | | | | | | | |

Length of Headpipe 7' Length of Tailpipe ____

**9. PERFORATIONS/SCREENS**
☐ Perforations Method ____
☑ Screens Screen Type Stanless Steel

| From | To | Slot Size | Number | Diameter | Material | Casing | Liner |
|---|---|---|---|---|---|---|---|
| 361 | 381 | 80 | 1 | 7 | S.S. | ☑ | ☐ |
| | | | | | | | |
| | | | | | | | |

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

5, N, 4W 22

95-9229

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

| Yield gal./min. | Drawdown | Pumping Level | Time |
|---|---|---|---|
| 200+ | | | 4 hr |
| | | | |
| | | | |

Water Temp. Cold Bottom Hole Temp Cold
Water Quality test or comments: Clear
Depth first Water encountered 300

**12. LITHOLOGIC LOG:(Describe repairs or abandonment)**

| Bore Diam | From | To | Remarks: Lithology, Water Quality, Temperature | Water Y | Water N |
|---|---|---|---|---|---|
| 10 | 0 | 2 | Top Soil | ☐ | ☑ |
| 10 | 2 | 36 | Sand, Gravel, & Cobble | ☐ | ☑ |
| 10 | 36 | 247 | Sand & Gravels | ☐ | ☑ |
| 10 | 247 | 279 | Sand, Gravel & Clay | ☐ | ☑ |
| 10 | 279 | 295 | Sand & Gravel | ☐ | ☑ |
| 10 | 295 | 311 | Sand & Gravel w/ water @ 300 | ☑ | ☐ |
| 10 | 311 | 338 | Course Sands & Pea Gravel | ☑ | ☐ |
| 10 | 338 | 381 | Sand & Gravels | ☑ | ☐ |

RECEIVED
JUL 01 2004
IDWR/North

Completed Depth 381 (Measurable)
Date: Started 6/1/2004 Completed 6/10/2004

**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 H20 WellService, Inc. Firm No. 448
Firm Official ____ Date 06/14/04
and
Supervisor or Operator ____ Date 06/14/04
Todd Morgan (Sign Once if Firm Offical and Operator)

Form 238-7
7/98
Starships Consulting and Management Services

IDAHO DEPARTMENT OF WATER RESOURCES

# WELL DRILLER'S REPORT

Office Use Only
Inspected by SM
Twp 51N Rge 4W Sec 22
1/4 NW 1/4 SW 1/4
Lat: 47 45 4.1 Long: 116 49 45.4

**1. WELL TAG NO.** D0033825
Drilling Permit No: 815383
Other IDWR No. 95-9229

**2. OWNER** **Well Number:** 759
Name Coeur d'Alene School Dist. #271
Address 311 N 10th Street
City Coeur d'Alene State ID Zip 83814

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

N / W / E / S

Twp. 51 ☑ North or ☐ South
Rge. 04 ☐ East or ☑ West
Sec. 22 1/4 NW 1/4 SW 1/4
Gov't Lot ____ County KOOTENAI
Lat: : : Long: : :
Address of Well Site Honeysuckle Ave off A
Atlas Elementary #1 City Hayden
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name ____

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

**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 Material | From | To | AMOUNT Sacks or Pounds | METHOD |
|---|---|---|---|---|
| BENTONITE | 0 | 20 | 800 lbs | Overbore |
| | | | | |
| | | | | |

Was drive shoe used? ☑ Y ☐ N Shoe Depth(s) 355
Was drive shoe seal tested? ☐ Y ☑ N How?

**8. CASING/LINER:**

| Diameter | From | To | Gauge | Material | Casing | Liner | Welded | Threaded |
|---|---|---|---|---|---|---|---|---|
| 8 | +2 | -360 | .250 | Steel | ☑ | ☐ | ☑ | ☐ |
| 7 | -350 | -370 | .250 | Steel | ☐ | ☑ | ☐ | ☐ |
| | | | | | | | | |

Length of Headpipe 8 Length of Tailpipe ____

**9. PERFORATIONS/SCREENS**
☐ Perforations Method ____
☑ Screens Screen Type Stainless Steel

| From | To | Slot Size | Number | Diameter | Material | Casing | Liner |
|---|---|---|---|---|---|---|---|
| | | | | | | ☐ | ☐ |
| 359 | 369 | 80 | 2 | 7 | S.S. | ☐ | ☑ |
| 369 | 379 | 70 | 2 | 8 | S.S. | ☐ | ☑ |

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

5N 4W 22 95-9229

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

| Yield gal./min. | Drawdown | Pumping Level | Time |
|---|---|---|---|
| 100+ | 100 | | |
| | | | |
| | | | |

Water Temp. Cold Bottom Hole Temp Cold
Water Quality test or comments: ____
Depth first Water encountered 300

**12. LITHOLOGIC LOG:(Describe repairs or abandonment)**

| Bore Diam | From | To | Remarks: Lithology, Water Quality, Temperature | Water Y | Water N |
|---|---|---|---|---|---|
| 10 | 0 | 3 | Top Soil | ☐ | ☑ |
| 10 | 3 | 20 | Gravels, Sand | ☐ | ☑ |
| 8 | 20 | 80 | Gravels, Sand | ☐ | ☑ |
| 8 | 80 | 130 | Sand Course, Gravels | ☐ | ☑ |
| 8 | 130 | 230 | Gravels, Sand | ☐ | ☑ |
| 8 | 230 | 285 | Sand, Gravels, Clay Tan | ☐ | ☑ |
| 8 | 285 | 380 | Gravels, Course Sand w h2o @ 300 | ☑ | ☐ |

RECEIVED
JUN 10 2004
IDWR/North

360

Completed Depth 379 (Measurable)
Date: Started 5/25/2004 Completed 5/28/2004

**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 H20 WellService, Inc. Firm No. 448
Firm Official Date 06/04/04
and
Supervisor or Operator Date 06/03/04
Jim McLeslie (Sign Once If Firm Official and Operator)
Todd Morgan