

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 13-7512

Exam Date: 7/31/2013

1. Current Owner: CITY OF DAYTON
PO BOX 12
DAYTON ID 83232-0012
(208)747-3219
2. Accompanied by: Aaron Beutler, Dayton City Councilmember
Phone No: (208) 852-6668

3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 13-7106 (ground water), 13-4269 (springs)
2. Other water rights with the same point of diversion: 13-7106 (shares well in the NESE of Sec 15)

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER	NE1/4SE1/4	Sec. 15, Twp 15S,	Rge 38E, B.M.	FRANKLIN County	(Well #1 – city park)
GROUND WATER	SE1/4SE1/4	Sec. 15, Twp 15S,	Rge 38E, B.M.	FRANKLIN County	(Well #2 – concrete vault)

Method of Determination: GPS and aerial photography

2. Place of Use: Municipal Service Area for City of Dayton
3. ☒ Map Attached Showing Location of point(s) of diversion and place of use.
☒ Aerial Photo Attached.
☒ Photo of Diversion and System Attached

4. Description of Diversion System

Well #1: IDWR Tag # E0007233
40 hp GE Motor; Ser # 60068778; 230 volts
Johnston Pump, Ser. # 272201
1975 well log shows: Depth of well = 131 feet
Water level = 70 feet below land surface (1975), 25 feet below surface (1991)
Pump set at 80 feet originally, currently at 120 feet
Pump draws air during drought years.

Well #2: At time of development, 125 hp pump; 100 ft pumping level

D. FLOW MEASUREMENTS

Measurement conducted using a Fuji Protalflow C, Ser. # 00F4099T, calibrated March 2013.

FLOW MEASUREMENTS (continued)

Well #1 measured at two locations: inside pump house and on field pipe used to irrigate park.

Gage in pump house shows delivery pressure = 75 psi.

Flow meter inside pump house reported diversion rate of 275 gpm.

Highest instantaneous reading = 367 gpm (well started surging at this rate)

Well #2 was not measured because well was damaged after it was developed.

Diversion rate will be calculated using theoretical calculation and data from development period.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Assuming 125 hp pump, 100 ft pumping level, 70 % efficiency and delivery pressure of 75 psi,

Well # 2 could likely have produced 2.82 cfs (1267.5 gpm)

Well # 1 currently produces 0.82 cfs (367 gpm)

Total combined capacity of system (at time of development) = 3.64 cfs (1634.5 gpm)

Right 13-7106 authorizes the diversion of 0.39 cfs. 3.25 cfs capacity available for right 13-7512.

F. VOLUME CALCULATIONS

Permit included limit of 13,000 gpd per home. No annual volume limit for municipal uses.

G. NARRATIVE/REMARKS/COMMENTS

Two ground water wells supply water to the Dayton City municipal system. Original well was licensed in 1981 (right 13-7106) for 0.39 cfs. The city also diverts water from springs tributary to Five Mile Creek (statutory claim 13-4269, 1.00 cfs). Two storage tanks (350,000 gal and 150,000 gal) sit on the hillside above the city. Wells can pump up to storage tanks for gravity pressure delivery or can pump directly into delivery system.

Well #1: Located in a pump house at the city park. This is the authorized POD for right 13-7106. A larger motor was placed on the pump in the original well after the field exam for right 13-7106 was completed. Current motor = 40 hp. Bowls are currently set at 120 feet deep. Water can be open discharged through a field pipe onto the lawn at the city park. Well was measured at the line going directly into the city system (pressure = 75 psi) and at the open discharge line. The highest instantaneous reading was on the field pipe at 367 gpm. The well began surging at that discharge rate. Aaron Beutler, representative for the city, said the well usually produces about 350 gpm. The well begins drawing air at higher pumping rates. Assuming a 40 hp pump, 75 psi delivery pressure, 70% efficiency, and 120 foot pumping level, the theoretical discharge is 375 gpm.

Well #2: Located in a concrete vault 750 feet to the southwest of the city park. Well #2 was constructed in 1994. 14" casing, static water level = 68 feet. Original pump test shows a diversion of 776 gpm. By 1997, the screen in the bottom of the well had torn and the well began to fill with sand and pea gravel. 1997 letter states that the well produced over 1000 gpm before it was damaged. Original pump/motor was 125 hp, pumping level = 100 ft. Assuming a delivery pressure of 75 psi, theoretical diversion rate = 1267.5 gpm (2.82 cfs).

The theoretical capacity of the city system during the development period was 1634.5 gpm (3.64 cfs). It is impossible to know the actual capacity of the system before the well was damaged. Right 13-7106 authorizes the diversion of 0.39 cfs, leaving 3.25 cfs of the theoretical capacity of the system which can be covered in this license. Permit 13-7512 only authorized a diversion rate of 3.00 cfs. License will be issued for to 3.00 cfs. Issuing the license for 3.00 cfs is consistent with the Oct 19, 2009 Administrators Memo 18 relating to licensing municipal rights.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
MUNICIPAL	1/01 to 12/31	3.000 CFS	
<u>Totals:</u>		3.000 CFS	

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 James Cefalo Date 9/10/2013
Reviewer _____ Date _____

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 13-7512

Reviewer:

Date of Review:

P/D No.:

Senario 1

PUMP HORSEPOWER

125

BOOSTER HORSEPOWER

0

PUMPING LEVEL

100

DISCHARGE PRESSURE

75

RATE OF FLOW (cfs)

2.82

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions:

%70 efficiency.

No Friction

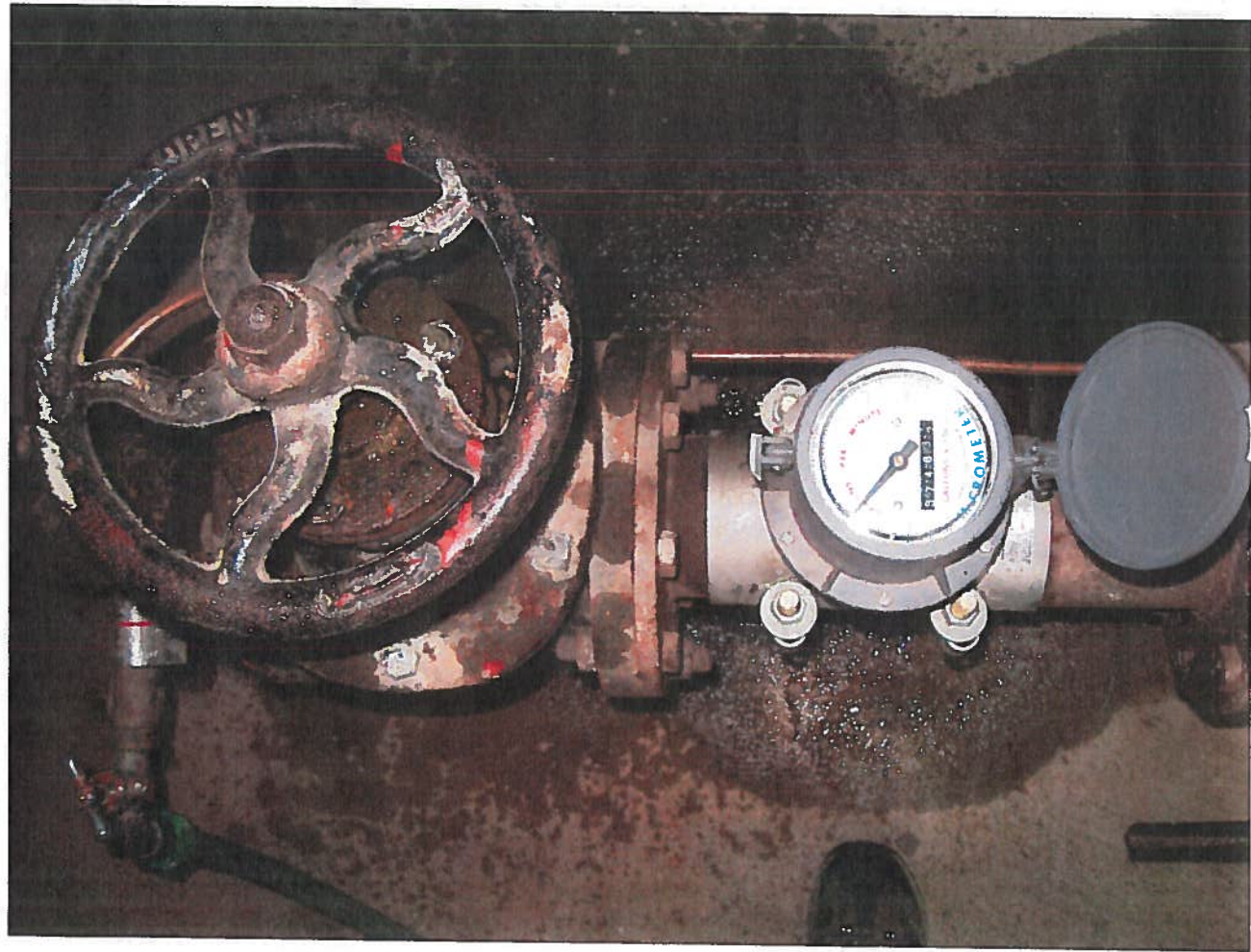
Examiners Notes:



Well #1 40 hp pump



Line running from pump house to park lawn.



Flow meter on well #1



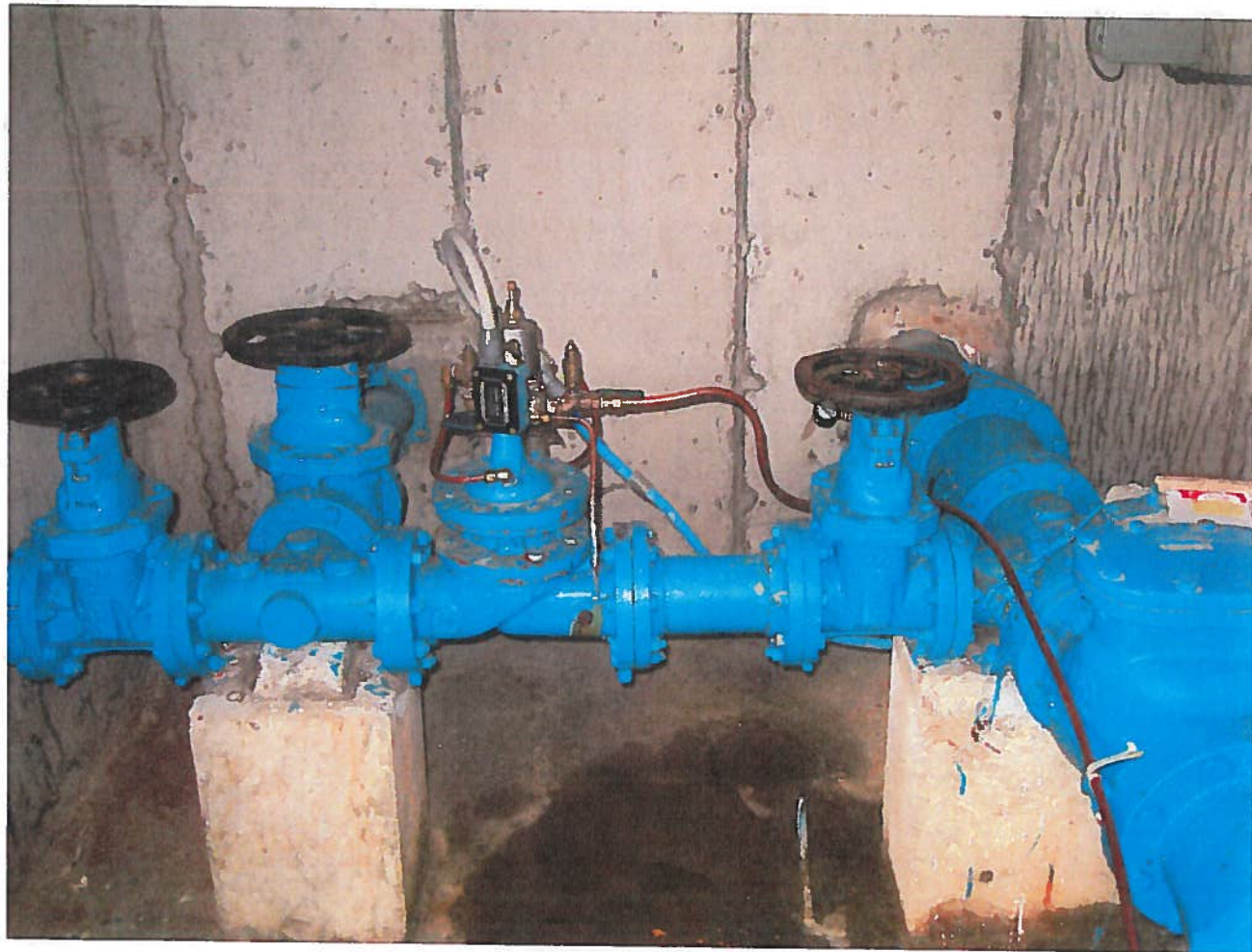
Well #2 Concrete vault



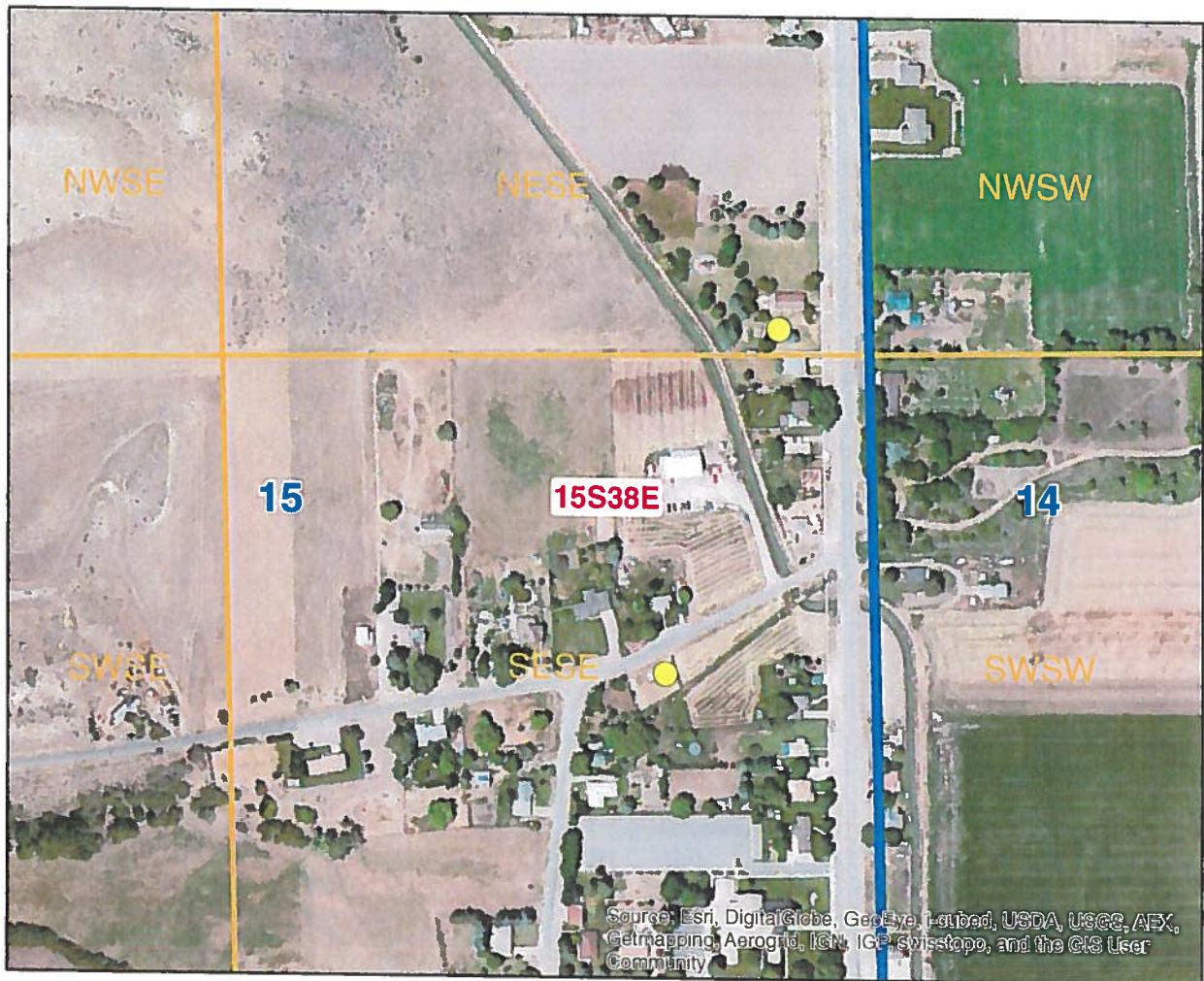
Flood irrigation on park lawn



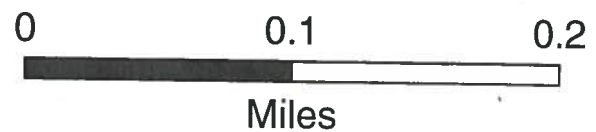
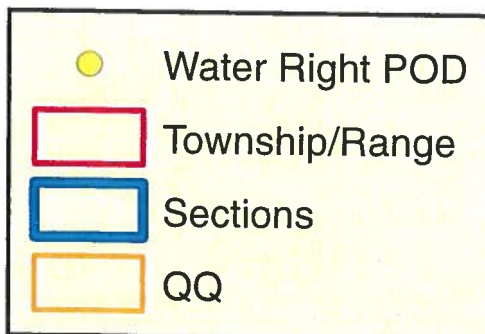
Flow meter on Well #2



Water Right License 13-7512

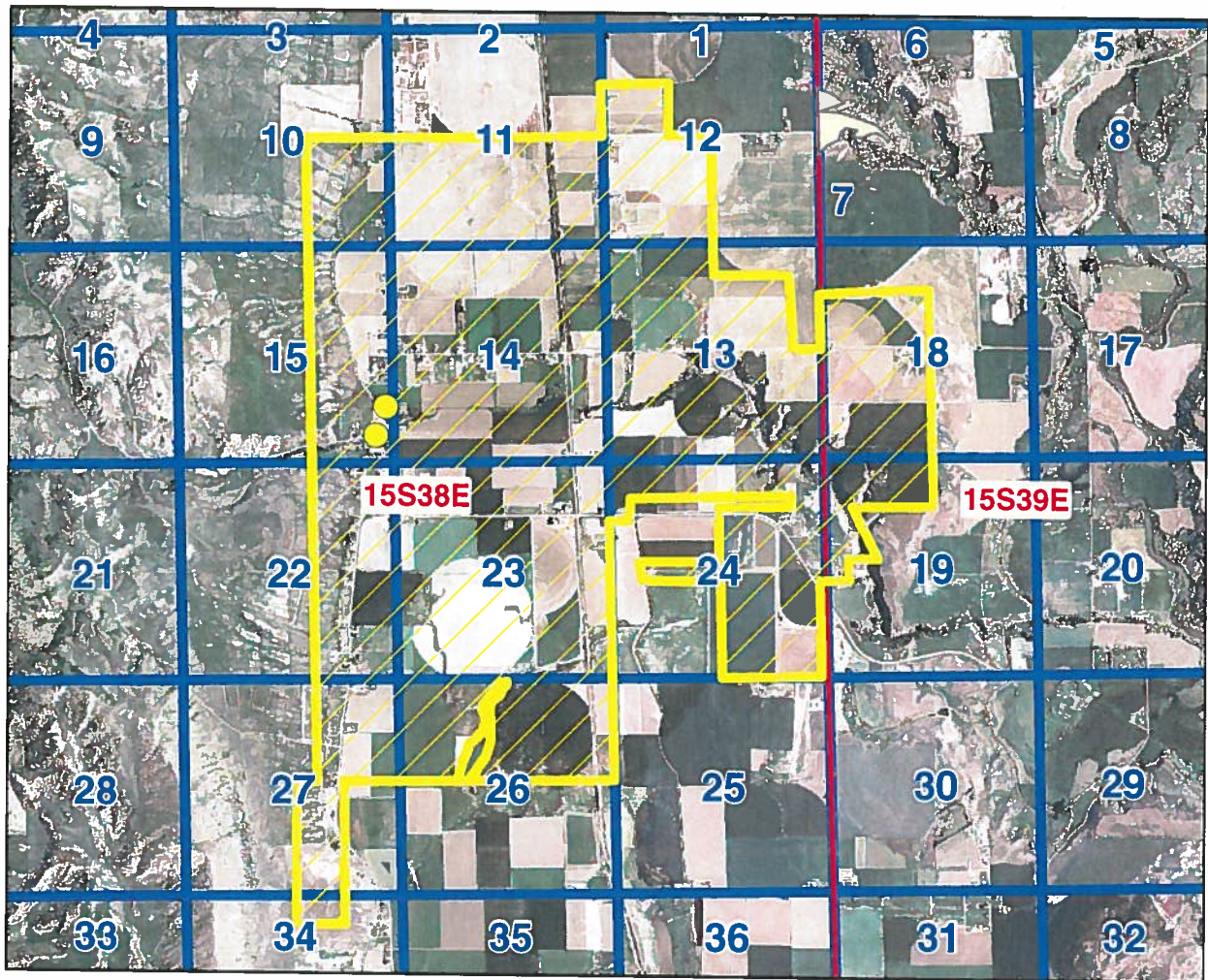


2010 Aerial Photography

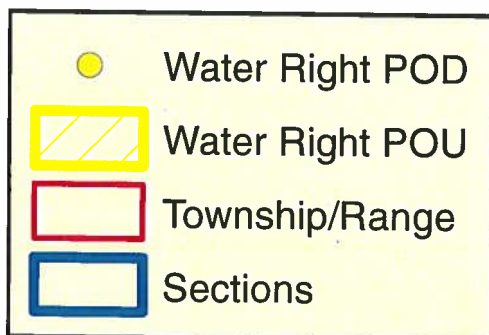


Water Right License 13-7512

City of Dayton Municipal Service Area



2009 Aerial Photography



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.

9A

1. WELL OWNER

Name Dayton City Test Well #1
Address Dayton, Idaho
Drilling Permit No. 13-94-E-009
Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☒ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. In lithologic log, section 9.)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☒ Other TEST (specify type)

4. METHOD DRILLED

☒ Rotary ☐ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____
(backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☐ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☐ Yes ☐ No

Was a packer or seal used? ☐ Yes ☐ No

Perforated? ☐ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun

Size of perforation? _____ inches by _____ inches
Number From To

_____ perforations _____ feet _____ feet

_____ perforations _____ feet _____ feet

_____ perforations _____ feet _____ feet

Well screen installed? ☐ Yes ☐ No

Manufacturer _____ Type _____

Top Packer or Headpipe _____

Bottom of Tailpipe _____

Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____

Placed from _____ feet to _____ feet

Surface seal depth _____ Material used in seal: ☐ Cement grout

☐ Bentonite ☐ Puddling clay ☐ _____

Sealing procedure used: ☐ Slurry pit

☐ Temp. surface casing ☐ Overbore to seal depth

Method of joining casing: ☐ Threaded ☐ Welded

☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.

Subdivision Name _____

Lot No. _____ Block No. _____

County Franklin

Address of Well Site _____

(give at least name of road)

T. 15 N ☐ or S ☒

R. 38 W ☒ or E ☐

SW 1/4 SE 1/4 Sec. 15, R. 38

7. WATER LEVEL

Static water level 80' feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below:

8. WELL TEST DATA

☐ Pump ☐ Bailor ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
75	700'	1 Hour

9. LITHOLOGIC LOG

Bore Diam.	Depth From	To	Material	Water Yes	No
8"	0	7	Clay & Gravel		X
	7	15	Dry Clay		X
	15	20	Gravel		X
	20	30	Dry Clay		X
	30	35	Brown Sticky Clay		X
	35	47	Clay & Gravel		X
	47	70	Brown Clay		X
	70	95	Brown Clay Like Sandstone		X
	95	600	Gray Sandstone		X
	600	700	Gray Shale	X	

Well was Abandoned with
Bentonite Hole Plug

RECEIVED

MAR 31 2004

Department of Water Resources
Eastern Region

10.

Work started 8/9/94 finished 8/22/94

11. DRILLER'S CERTIFICATION

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

Firm Name Cushman Drilling Firm No. #94
1405 South Broadway
Address Blackfoot, Idaho Date 9/15/94

Signed by Drilling Supervisor Bob Cushman

and

(Operator) Shirley Hester
(If different than the Drilling Supervisor)

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

[illegible]

SEP 28 1994

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCESUSE TYPEWRITER OR
BALLPOINT PENDepartment of Water Resources
Eastern District Office

WELL DRILLER'S REPORT

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 City of Dayton Test Well #2
Address Dayton, Idaho
Drilling Permit No. 13-94-E-009-802
Water Right Permit No. 13-7512

7. WATER LEVEL

Static water level 75' feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 53 °F. Quality Good
Describe artesian or temperature zones below.

2. NATURE OF WORK

- ☒
- New well
- ☐
- Deepened
- ☐
- Replacement
-
- ☐
- Well diameter increase
- ☐
- Modification
-
- ☒
- Abandoned (describe abandonment or modification procedures
-
- such as liners, screen, materials, plug depths, etc. in lithologic
-
- log, section 9.)

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
200	300'	1 Hour

3. PROPOSED USE

- ☐
- Domestic
- ☐
- Irrigation
- ☐
- Monitor
-
- ☐
- Industrial
- ☐
- Stock
- ☐
- Waste Disposal or Injection
-
- ☒
- Other
- TEST
- (specify type)

9. LITHOLOGIC LOG

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
6"	0	15	Brown Clay		X
	15	70	Clay & Gravel		X
	70	95	Blue Clay		X
	95	100	Pea Gravel	X	
	100	125	Blue Clay		X
	125	130	Gravel	X	
	130	158	Tan Clay		X
	158	161	Sand & Gravel	X	
	161	180	Soft Wet Sandy Clay		X
	180	265	Tan Clay		X
	265	270	Gravel	X	
	270	305	Cement Gravel-Some Shale	X	

4. METHOD DRILLED

- ☒
- Rotary
- ☐
- Air
- ☐
- Auger
- ☐
- Reverse rotary
-
- ☐
- Cable
- ☐
- Mud
- ☐
- Other _____
-
- (backhoe, hydraulic, etc.)

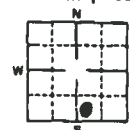
5. WELL CONSTRUCTION

Casing schedule: ☐ Steel ☐ Concrete ☐ Other _____
Thickness Diameter From To
_____ inches _____ inches + _____ feet _____ feet
_____ inches _____ inches _____ feet _____ feet
_____ inches _____ inches _____ feet _____ feet
Was casing drive shoe used? ☐ Yes ☐ No
Was a packer or seal used? ☐ Yes ☐ No
Perforated? ☐ Yes ☐ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches
Number From To
_____ perforations _____ feet _____ feet
_____ perforations _____ feet _____ feet
_____ perforations _____ feet _____ feet
Well screen installed? ☐ Yes ☐ No
Manufacturer _____ Type _____
Top Packer or Headpipe _____
Bottom of Tailpipe _____
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from _____ feet to _____ feetSurface seal depth _____ Material used in seal: ☐ Cement grout
☐ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☐ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County FranklinAddress of Well Site _____
(give at least name of road)SW ¼ SE ¼ Sec. 15 T. 15 N ☐ or S ☒
R. 38 E ☒ or W ☐

10.

Work started 8/26/94 finished 9/1/94

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were
complied with at the time the rig was removed.Firm Name Cushman Drilling Firm No. #94

1405 South Broadway

Address Blackfoot, Idaho Date 9/15/94Signed by Drilling Supervisor Bob Cushman

and

(Operator) Monte Stepler
(If different than the Drilling Supervisor)

RECEIVED

SEP 23 1994

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCESUSE TYPEWRITER OR
BALLPOINT PEN

Department of Water Resources

WELL DRILLER'S REPORT

Eastern District Office 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 City of Dayton Test Well #2
Address Dayton, Idaho
Drilling Permit No. 13-94-E-009-302
Water Right Permit No. 13-7512

2. NATURE OF WORK

- ☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☒ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

- ☐ Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☒ Other TEST (specify type)

4. METHOD DRILLED

- ☒ Rotary ☐ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other
(backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☐ Steel ☐ Concrete ☐ Other _____
Thickness Diameter From To
_____ Inches _____ Inches + _____ feet _____ feet
_____ Inches _____ Inches _____ feet _____ feet
_____ Inches _____ Inches _____ feet _____ feet

Was casing drive shoe used? ☐ Yes ☐ No
Was a packer or seal used? ☐ Yes ☐ No
Perforated? ☐ Yes ☐ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ Inches by _____ Inches
Number From To
_____ perforations _____ feet _____ feet
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_____ perforations _____ feet _____ feet

Well screen installed? ☐ Yes ☐ No
Manufacturer _____ Type _____
Top Packer or Headpipe _____
Bottom of Tailpipe _____

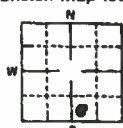
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth _____ Material used in seal: ☐ Cement grout
☐ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☐ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Franklin

Address of Well Site _____
(give at least name of road)
SW 1/4 SE 1/4 Sec. 15 T. 15 N ☐ or S ☒
R. 38 E ☒ or W ☐

7. WATER LEVEL

Static water level 75' feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 53 °F. Quality Good
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
200	300'	1 Hour

9. LITHOLOGIC LOG

Bore Diam.	Depth		Material	Water	
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	70	95	Blue Clay		X
	95	100	Pea Gravel	X	
	100	125	Blue Clay		X
	125	130	Gravel	X	
	130	158	Tan Clay		X
	158	161	Sand & Gravel	X	
	161	180	Soft Wet Sandy Clay		X
	180	265	Tan Clay		X
	265	270	Gravel	X	
	270	305	Cement Gravel-Some Shale	X	

For original See 13-94-E-0009-802

Well was Abandoned with
Bentonite Hole Plug

RECEIVED

SEP 28 1994

Department of Water Resources

10.

Work started 8/26/94 finished 9/1/94

11. DRILLER'S CERTIFICATION

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

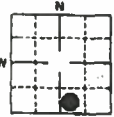
Firm Name Cushman Drilling Firm No. #94
1405 South Broadway
Address Blackfoot, Idaho Date 9/15/94

Signed by Drilling Supervisor Bob Cushman
and
(Operator) Monte Healey
(If different than the Drilling Supervisor)

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

USE TYPEWRITER OR
BALLPOINT PEN

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

1. WELL OWNER Name <u>City of Dayton</u> Address <u>Dayton, Idaho</u> Drilling Permit No. <u>13-94-E-0010-000</u> Water Right Permit No. <u>13-07512</u> <i>See also test wells 13-94-E-0009-801</i>	7. WATER LEVEL Static water level <u>68'</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ °F. Quality _____ Describe artesian or temperature zone below.																																																																																																										
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Well diameter increase ☐ Modification ☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)	8. WELL TEST DATA ☐ Pump ☐ Baller ☐ Air ☐ Other _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped																																																																																																							
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3. PROPOSED USE ☐ Domestic ☐ Irrigation ☐ Monitor ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection ☒ Other <u>Municipal</u> (specify type)	9. LITHOLOGIC LOG 081452 <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Bore Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th colspan="2">Water</th> </tr> <tr> <th>From</th> <th>To</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr><td>20"</td><td>0</td><td>15</td><td>Clay</td><td></td><td>X</td></tr> <tr><td>14"</td><td>15</td><td>64</td><td>Gravel</td><td></td><td>X</td></tr> <tr><td></td><td>64</td><td>123</td><td>Gray Clay & Gravel</td><td>X</td><td></td></tr> <tr><td></td><td>123</td><td>125</td><td>Tan Clay</td><td></td><td>X</td></tr> <tr><td></td><td>125</td><td>130</td><td>Gravel</td><td></td><td>X</td></tr> <tr><td></td><td>130</td><td>168</td><td>Tan Clay</td><td></td><td>X</td></tr> <tr><td></td><td>168</td><td>172</td><td>Gravel & Little Clay</td><td>X</td><td></td></tr> <tr><td></td><td>172</td><td>273</td><td>Hard Clay</td><td></td><td>X</td></tr> <tr><td></td><td>273</td><td>297</td><td>Sticky Clay</td><td></td><td>X</td></tr> <tr><td></td><td>297</td><td>305</td><td>Gravel & Little Clay</td><td>X</td><td></td></tr> <tr><td></td><td>305</td><td>308</td><td>Clay</td><td></td><td>X</td></tr> <tr><td></td><td>308</td><td>320</td><td>Gravel & Clay</td><td></td><td>X</td></tr> <tr><td></td><td>320</td><td>334</td><td>Sticky Clay</td><td></td><td>X</td></tr> <tr><td></td><td>334</td><td>342</td><td>Hard Clay</td><td></td><td>X</td></tr> <tr><td></td><td>342</td><td>350</td><td>Clay & Gravel</td><td></td><td>X</td></tr> <tr><td></td><td>350</td><td>370</td><td>Clay</td><td>X</td><td></td></tr> </tbody> </table>	Bore Diam.	Depth		Material	Water		From	To	Yes	No	20"	0	15	Clay		X	14"	15	64	Gravel		X		64	123	Gray Clay & Gravel	X			123	125	Tan Clay		X		125	130	Gravel		X		130	168	Tan Clay		X		168	172	Gravel & Little Clay	X			172	273	Hard Clay		X		273	297	Sticky Clay		X		297	305	Gravel & Little Clay	X			305	308	Clay		X		308	320	Gravel & Clay		X		320	334	Sticky Clay		X		334	342	Hard Clay		X		342	350	Clay & Gravel		X		350	370	Clay	X	
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4. METHOD DRILLED ☐ Rotary ☐ Air ☐ Auger ☐ Reverse rotary ☒ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)	10. Work started <u>9/8/94</u> finished <u>10/5/94</u>																																																																																																										
5. WELL CONSTRUCTION Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>.375</u> inches</td> <td><u>14</u> inches</td> <td><u>1</u> feet</td> <td><u>350</u> feet</td> </tr> <tr> <td>_____ inches</td> <td>_____ inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ inches</td> <td>_____ inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> </tbody> </table> Was casing drive shoe used? ☒ Yes ☐ No Was a packer or seal used? ☐ Yes ☒ No Perforated? ☒ Yes ☐ No How perforated? ☐ Factory ☒ Knife ☐ Torch ☐ Gun Size of perforation? _____ inches by _____ inches <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Number</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>496</u></td> <td><u>168</u> feet</td> <td><u>172</u> feet</td> </tr> <tr> <td><u>64</u></td> <td><u>297</u> feet</td> <td><u>305</u> feet</td> </tr> <tr> <td><u>48</u></td> <td><u>342</u> feet</td> <td><u>348</u> feet</td> </tr> </tbody> </table> Well screen installed? ☐ Yes ☐ No Manufacturer _____ Type _____ Top Packer or Headpipe _____ Bottom of Tailpipe _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>20'</u> Material used in seal: ☒ Cement grout ☐ Bentonite ☐ Pudding clay Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata Describe access port <u>Well Cap</u>	Thickness	Diameter	From	To	<u>.375</u> inches	<u>14</u> inches	<u>1</u> feet	<u>350</u> feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	Number	From	To	<u>496</u>	<u>168</u> feet	<u>172</u> feet	<u>64</u>	<u>297</u> feet	<u>305</u> feet	<u>48</u>	<u>342</u> feet	<u>348</u> feet	11. DRILLER'S CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Cushman Drilling</u> Firm No. <u>#94</u> Address <u>1405 South Broadway</u> Date <u>10/8/94</u> Signed by Drilling Supervisor <u>Bob Cushman</u> and <u>Rylee Bailey</u> (Operator) <u>(If different than the Drilling Supervisor)</u>																																																																														
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6. LOCATION OF WELL Sketch map location must agree with written location.  Subdivision Name _____ Lot No. _____ Block No. _____ County <u>Franklin</u> Address of Well Site _____ (give at least name of road) SW 1/4 SE 1/4 Sec. <u>15</u>, R. <u>38</u>, E. ☒ or W ☐	USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT																																																																																																										

PARTIAL PAYMENT ESTIMATE

PARTIAL PAYMENT ESTIMATE

4 Final

PAGE

OF

OWNER:

City of Dayton

CONTRACTOR:

Associated Brigham Contractors
Inc.

PERIOD OF ESTIMATE

FROM 1-15-95 TO 10-10-95

CONTRACT CHANGE ORDER SUMMARY

ESTIMATE

No.	FmHA Approval Date	Amount			
		Additions	Deductions		
1	09-13-94		5,100.00	1. Original Contract	308,730.00
2	09-13-94	11,199.00		2. Change Orders	26,345.10
3	11-14-94	30,794.00		3. Revised Contract (1 + 2)	335,075.10
4	09-26-95	6,687.00		4. Work Completed *	335,075.10
5	10-10-95		17,234.90	5. Stored Materials *	-0-
TOTALS		48,680.00	22,334.90	6. Subtotal (4 + 5)	335,075.10
NET CHANGE		26,345.10		7. Retainage *	-0-
				8. Previous Payments	271,454.89
				9. Amount Due (6-7-8)	63,620.21
				* Detailed breakdown attached	

CONTRACT TIME

Original (days)

revised

remaining

On Schedule

☐ Yes
☐ No

Starting Date

August 1, 1994

Projected Completion

October 10, 1995

CONTRACTOR'S CERTIFICATION:

The undersigned Contractor certifies that to the best of their knowledge, information and belief the work covered by this payment estimate has been completed in accordance with the contract documents, that all amounts have been paid by the contractor for work for which previous payment estimates were issued and payments received from the owner, and that current payment shown herein is now due.

Contractor Associated Brigham Contractors, Inc.

By

Date October 10, 1995

ARCHITECT OR ENGINEER'S CERTIFICATION:

The undersigned certifies that the work has been carefully inspected and to the best of their knowledge and belief, the quantities shown in this estimate are correct and the work has been performed in accordance with the contract documents.

Architect or Engineer Forsgren Associates

By

Date

Oct 10 1995

APPROVED BY OWNER:

Owner

City of Dayton

By

Date

25 Oct 95

ACCEPTED BY FmHA:

The review and acceptance of this estimate by FmHA does not attest to the correctness of the quantities shown or that the work has been performed in accordance with the contract documents.

By

Date

LUMP SUM BREAKDOWN		SCHEDULED		WORK COMPLETED		%	MATERIALS STORED AT END OF THIS PAYMENT PERIOD			
ITEM	DESCRIPTION	VALUE	THIS PERIOD	TO DATE	COMPLETE		DESCRIPTION	QUANTITY	UNIT	AMOUNT
1	Mobilization	\$8,000.00	\$400.00	\$8,000.00	100.00%					
3	Well Sampling & Water Quality Test	\$424.00	\$424.00	\$424.00	100.00%					
9	125 Hp Submersible Pump & Motor	\$21,000.00	(\$3,510.00)	\$17,490.00	100.00%					
11	Pitless Adapter	\$7,632.00	\$0.00	\$7,632.00	100.00%					
12	Pump Controls	\$12,100.00	\$14,238.00	\$21,498.00	100.00%					
13	Pump Meter & Valve Vault	\$12,040.00	\$19,806.00	\$31,846.00	100.00%					
14	Site Work	\$14,000.00	\$5,180.00	\$14,000.00	100.00%					
15	300,000 Gal. Conc. Storage Reservoir	\$118,690.00	\$0.00	\$118,690.00	100.00%					
16	Pump & Reservoir Yard Piping	\$20,278.00	\$0.00	\$20,278.00	100.00%					
	C.O. #4 Revise New Well		\$13,794.50	\$13,794.50	100.00%	WORK COMPLETED			\$0.00	
						STORED MATERIALS			\$0.00	
						OTHER			\$0.00	
	TOTALS	\$214,164.00	\$50,332.50	\$253,652.50		TOTAL			\$0.00	

$$\begin{array}{r} 253 \ 652.50 \\ 24 \ 164.00 \\ \hline 239 \ 488.50 \end{array}$$

Unit Breakdown

UNIT BREAKDOWN		CONTRACT		THIS PERIOD		TOTAL TO DATE		% COMPLETE
ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	AMOUNT	QUANTITY	
2	6" Test Well Drilling	1	\$19,600.00	\$19,600.00			1	100.00%
4	14" Well Drilling	500	\$78.00	\$39,000.00			370	100.00%
5	14" Well Casing	500	\$33.00	\$16,500.00			350	100.00%
6	Well Development	8	\$159.00	\$1,272.00			10	100.00%
7	Well Flow Test	8	\$742.00	\$5,936.00				0.00%
8	Knife Perforations	60	\$31.80	\$1,908.00			77	100.00%
10	8" Column	450	\$23.00	\$10,350.00	200	\$4,600.00	200	0.00%
EXTRA	6" Test Well #2	300	\$37.33	\$11,199.00			300	100.00%
C.O. #4	Rig Time Clean Out	10.5	\$150.00	\$1,575.00	150	\$1,575.00	150	100.00%
TOTALS				\$107,340.00		\$6,175.00		
						\$81,422.60		

107,340.00
81,422.60
25,917.40

PumpTech Company, Inc.

P.O. Box 51259, Idaho Falls, ID 83405

Phone (208) 529-6868 / Fax (208) 529-4332

"YOUR TOTAL PUMP SUPPLIER"

Name: _____ City of Dayton, Idaho _____ Date: 10/13/94

WELL TEST DATA

Well Depth Before Test 370' Well Depth After Test _____

Casing Size and Length 14" 350' Liner Size and Length _____

Discharge Pipe Size 8" Orifice Size 6"

Time	Pump RPM	Tube Reading	GPM	P.L.	S.W.L.	Condition of Water
08:25	Warm up				70'	
08:30	Start up					Lots of small gravel
08:45	Back Flush					Lots of small gravel
08:55		19"	690	95'		But clearing
09:05		18"	672	98'		Small rocks - clay
09:15		17"		99'		
09:30		17"		99'		Small rocks - clay
09:35	▲	24"	776			More rocks
09:50		24"	776	100'	Clay colored, very little sand, some small rock	
10:10		23 1/2	768	100+		Clearing
10:25		23	760	101'		Clearing
10:40		23 1/2	768	100'		Clearing
10:45	Back flush and back to same as before					
10:50		24 1/2	776	96+	more small rock - sand - clay	
11:40		23 1/2	776	98+		Clearing
11:45	Back flush - Return to same					
11:50		24	776	98'	Small rock - sand gravel - clay	
12:05		23	760	98'		Clearing
12:15		23	760	98'		Clearing - clay colored
	Back flush					
12:17		24	776	96'	More rock, some sand, clay	

Time	Pump RPM	Tube Reading	GPM	P.L.	S.W.L.	Condition of Water
1:45 pm	Increase speed			235'		Clearing good
2:00 pm	Backflush, backflush					Clear
2:10 pm	Shut down to let well recover					
2:30 pm	Water level up to 100' back on line			225'		
2:40 pm	Some sand but clearing			Pumping level @ 225'		
2:45 pm	Increase speed, little more sand			265'		
2:50 pm	Increase speed, clearing			290'		
2:55 pm	Increase speed, clearing, broke suction			295' +		
	Backoff to get water back			290'		
3:00 pm	Clearing w/some sand, shut down for fuel					
4:30 pm	On line, some sand but clearing			290'		
4:45 pm	Clearing, surging a little					
5:00 pm	Backflush, wait for well to recover					
5:10 pm	On line, little sand, some color			290'		
5:15 pm	Clearing, shut down for well to recover					
5:25 pm	On line, some sand but clearing			295'		
5:35 pm	Clearing, shut down for well to recover					
5:45 pm	On line, water back to 100', some sand			295'		
5:55 pm	Clearing, increase speed, increase speed					
6:00 pm	Increase speed, clearing, not very much sand, backflush, backflush, some sand			295'		
6:10 pm	Surging again, little sand					
6:15 pm	Surging, clearing, surging, clear					
6:25 pm	Some sand, not much but some, surging					
6:30 pm	Shut down					

Andrew

WELL DRILLING SERVICES, INC.

"The Water Professionals"

August 19, 1997

City of Dayton
P.O. Box 12
Dayton, Idaho 83232

Attn: Mayor Tarrell Shepherd

Dear Sir:

As per your request, we are providing the following information regarding the attempt to air develop your existing well. This information represents our procedures and theoretical conclusions.

- 06 03 97 Mobilized to site. Removed Pump. Pump setting was in fill material when removed. Upon inspection, the pump appeared completely worn out.
- 06 05 97 The jetting tool and airline were installed to 62 feet. The perforations were jetted at 62-68 ft. This area showed significant sand and silt, however, no major amount of water was removed from this depth. We continued to develop 97-100ft, 106 to 109 ft, 112 to 120 ft, and 163 to 166ft. The well was pumping 150GPM in these areas. Well water carried significant sand and silt. We assume this was coming from deeper in the well.
- 06 06 97 The jetting tools were lowered to 288 ft. We hit fill material in the hole
And causing the tools to be plugged. The tool was pulled and cleaned and
06 07 97 re-entered into the hole. The fill was blown out and removed to a depth of 332ft. We were unable to go deeper with the tools to clean out the hole. The material was a combination of fine and course sand with pea gravel. The jetting tool was then pulled back to 310 ft. We jetted and surged the perforations there. By the end of the shift, the well pumped clean at 200GPM.
- 06 09 97 Upon starting development, it was observed that the well had heaved back
And to 322ft. The crew attempted to clean it back out, however, the fill material
06 10 97 continued heaving back. The decision was made to develop out what we could above that point.

At 292 ft, the water continued to pump silty sandy water, and production decreased to 100GPM. The tools were removed and the crew demobilized to Idaho Falls.

Conclusions and Assumptions:

1. It is likely the top perforations remained locked off, and are not making any contribution to the well.
2. It is our assumption there is a breach or tear in the casing around 320 ft. This area continued to leave and produce sand and pea gravel.
3. The current condition of the well suggests the majority of the water is coming from below the 320ft area. It is unlikely that it will clear up for two (2) reasons:
 - a. It is our assumption there is a breach or tear in the casing at this depth as it is unlikely that the size and amount of material we removed could come from properly located and sized perforations..
 - b. The lack of contribution of water by perforations in the upper section have put all the pressure on production in the lower portion of the well. This well did produce in excess of 1,000GPM prior to being locked off.
4. An effort could be made to cement the lower portion of the well in attempts to eliminate the heaving sand, and produce whatever water that is coming from the upper perforations. However, it is our opinion that the majority of the production is coming from an area below 320 ft, and cementing would probably eliminate most production.

I hope this answers any questions you may have. Please do not hesitate to call me if you require additional information.

Sincerely,

ANDREW WELL DRILLING SERVICES, INC.



Craig S. DeYoung
President

CC: Forsgren & Associates