

Beneficial Use Field Report for Permit 63-31354
By Terry M. Scanlan, P.E., P.G.
Certified Water Rights Examiner No. 05-129

A. GENERAL INFORMATION

1. Current Owner: Idaho State Building Authority
960 Broadway Avenue, Suite 500
Boise, ID 83706
(208)345-6057

2. Accompanied by: T.J. McDonough, Marcie Lake (Colliers International)
Phone No: 424-8224
Address: 475 South Capitol Blvd., Suite 300
Boise, ID 83702

Relationship to
Permit Holder: Building Operations and Maintenance

3. Source Tributary
Ground Water NA

B. OVERLAP REVIEW

1. Other water rights with the same place of use:
 - various municipal water rights
2. Other water rights with same point of diversion:
 - none

C. DIVERSION AND DELIVERY SYSTEM

1. Location of Points of Diversion

Ground Water NESE (Lot 2) Section 10, T3N, R2E, B.M. Ada County

Method of Determination: Field Exam, Arc View Map

2. Place of Use: Cooling

Twp	Rge	Sec	NE ¼				NW ¼				SW ¼				SE ¼				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
3N	2E	10													X Lot 2				

Total Acres: Ada County

Method of Determination: Field Exam, Arc View Map

3. Y Delivery system diagram attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

Y Map attached showing locations(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

Y Aerial photo attached (required for irrigation of 10+ acres).

Y Photo of diversion and system attached. (Figure 2)

4.

Well or Diversion I.D. No.	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No.
East Well	Franklin	7.5		Berkeley 6T-90	
East Well	Franklin	15		Berkeley 6T-155	
West Well	Franklin	75		Berkeley 8T-600	

D. FLOW MEASUREMENTS

1. Measurement Equipment

Type	Make	Model No.	Serial No.	Size	Calib. Date
Propeller Flowmeter	Water Specialties	ML-04	2004081506	6-inch	new 5/04
Propeller Flowmeter	Water Specialties	ML-04	2004081406	6-inch	new 5/04
Vortex Flowmeter	Fluidyne	Hydro-flo 2200			new 5/04
Vortex Flowmeter	Fluidyne	Hydro-flo 2200			new 5/04
Vortex Flowmeter	Fluidyne	Hydro-flo 2200			new 5/04

2. **Measurements:** During system start-up on 6/15/04 the North Injection well had a measured injection rate of 550 gpm and South Injection Well had a measured injection rate of 450 gpm for combined flow rate of 1,000 gpm (2.23 cfs) from the two production wells at 28 psi injection pressure. The production wells were not operating at full speed during this start up test, so actual system capacity .

E. FLOW CALCULATIONS

Pump Curves:

7.5-hp pump rated to produce 100 gpm at 40 psi discharge pressure

15-hp pump rated to produce 200 gpm at 40 psi discharge pressure

75-hp pump rated to produce 900 psi at 40 psi discharge pressure

Total pump capacity is 1,100 gpm (2.45 cfs) at 40 psi discharge pressure

F. VOLUME CALCULATIONS

1. Volume Calculation for Irrigation

None

2. Volume Calculations for Other Uses:

Cooling – Injection well totalizing flow meter readings 6/15/04 through 6/8/05 are provided below.

Totalizing Flow Meter	6/15/04	6/8/05	Total Volume
North Injection Well	307,000	43,282,000	42,975,000
South Injection Well	9,000	19,701,000	19,692,000
Total			62,667,000 gallons 192.3 acre feet

The building was partially occupied during 2004-05. Estimated first year of operation flow was 200 acre feet. Allowing for approximately 20% increase in cooling load at full occupancy or under warmer than 2004-05 conditions, a diversion volume of 250 acre feet annually is recommended.

The 2.23 cfs maximum measured discharge rate can theoretically deliver more than 1,600 acre feet annually.

G. NARRATIVE/REMARKS/COMMENTS

Permit 63-31354 authorizes diversion of 3.0 cfs from a groundwater source for cooling purposes. Two points of diversion (wells) are authorized in the NESE (lot 2) of Section 10, T3N, R2E. Authorized place of use is the NESE (lot 2) and SENE (lot 11) of Section 10, T3N, R2E. Season of use is January 1 to December 31.

Original permit holder was Civic Partners. Civic Partners assigned the permit to the University of Idaho Foundation, Inc. on January 3, 2003. The University of Idaho Foundation, Inc. assigned the permit to the Idaho State Building Authority on July 2003.

The permit was approved on August 15, 2002 and Proof of Beneficial Use was originally due on August 1, 2003. The permit holder requested an extension of time on July 29, 2003. The Department of Water Resources inadvertently sent a lapse notice on August 12, 2003. The Department issued a reinstatement order on September 15, 2003 to correct the erroneous lapse notice, and approved the extension of time with a proof of beneficial use due date of August 1, 2005.

Permit 63-31354 contemplated cooling use (air conditioning) at the Idaho Place complex located on the west side of Broadway Avenue, with buildings on the south and north sides of Front Street. Only one building, the Idaho Water Center, was ultimately constructed. The Idaho Water Center building is located on the north side of Front Street and the east side of Broadway Avenue. The building has 6 levels above ground and one basement level, with a total interior area served by the cooling system of approximately 230,000 square feet.

The cooling system consists of two production wells, two injection wells, pumps, piping, and heat exchange system. Rated diversion pumping and injection capacity for the system is approximately 1,100 gpm (2.45 cfs). The two production wells are located on the north side of the Idaho Water Center Building on lands owned by St. Lukes Regional Medical Center. The two injection wells are located on the south side of Front Street, on land owned by NORCO. Easements allow use and maintenance of wells, pumps, and pipelines. The facilities are described below.

- The West Production Well is 12-inch diameter and 292 feet deep. The well taps aquifer zones between 204 and 292 feet with 12-inch diameter stainless steel well

screens. The well is equipped with a variable-speed 75-hp submersible pump set on 168 feet of 6-inch pipe and rated to produce a maximum of 900 gpm at a discharge pressure of 40 psi. A Fluidyne Hydro-Flow 2200 vortex flow meter provides flow measurement. A 6-inch buried pipe extends from the well to the mechanical room in the basement of the Idaho Water Center.

- The East Production Well is 16-inch diameter and 149 feet deep. The well taps aquifer zones between 86 and 149 feet with 16-inch and 12-inch diameter stainless steel well screens. The well is equipped with a variable-speed 7.5-hp submersible pump set on 110 feet of 3-inch pipe and rated to produce a maximum of 100 gpm at a discharge pressure of 40 psi, and a variable-speed 15 hp submersible pump set on 110 feet of 4-inch pipe and rated to produce a maximum of 200 gpm at a discharge pressure of 40 psi. Both pumps discharge through pitless adapters. Two Fluidyne Hydro-Flow 2200 vortex flow meters are located in a vault adjacent to the well. Two buried pipes, 3-inch and 6-inch, extend from the well to the mechanical room in the basement of the Idaho Water Center.
- Cooling equipment includes a chiller condenser with a design flow rate of 650 gpm flow rate and a 24/7 heat exchanger with a design flow rate of 69 gpm, for a total design flow rate of 719 gpm (1.60 cfs). The equipment can be operated at higher than design flow rates. The chiller condenser utilizes cold groundwater to cool water in a closed loop system for air-conditioning purposes throughout the building. The 24/7 heat exchanger is used for cooling of electronic equipment on a year-round basis. The cooling equipment raises the water temperature of the produced groundwater from approximately 63 degrees F to a target temperature of 80 degrees F.
- The warmed groundwater is piped from the mechanical room through 8-inch pipe to injection wells on the west side of Broadway Avenue, midway between Myrtle Street and Front Street. The groundwater return pipe is 8-inch diameter. A separate 10-inch diameter pipe was installed for future supply of cold water to buildings on the south side of Front Street. The buildings on the south side of Front Street were not constructed.
- The North Injection Well is 10-inch diameter and 475 feet deep. The well taps aquifer zones between 243 and 475 feet with 6-inch diameter stainless steel well screens. The well is equipped with a 25-hp submersible pump (Berkeley 8T600) rated to produce a maximum of 750 gpm for flushing (maintenance) purposes. Maintenance flushing flows are discharged to a storm drain.
- The South Injection Well is 10-inch diameter and 190 feet deep. The well taps aquifer zones between 100 and 190 feet with 10-inch diameter stainless steel well screens. The well is equipped with a 15-hp submersible pump (Berkeley 7T450) rated to produce a maximum of 400 gpm for flushing (maintenance) purposes.
- Instantaneous and totalizing flow meters (6-inch Water Specialties, ML-04) are installed on the supply lines to each injection well. The meters are contained in a vault near the injection wells.

Field examinations of these facilities were conducted by Terry M. Scanlan, P.E., P.G during construction and operation in 2004 and 2005.

Summary

The field examination found a diversion capacity of 2.45 cfs, a design cooling system flow rate of 1.60 cfs, a maximum measured diversion rate of 2.23 cfs, and a measured diversion volume of 200 acre feet during the first year of operation. For licensing purposes, the 2.23 cfs maximum measured diversion rate is recommended.

A diversion volume of 250 acre feet annually is recommended for licensing to allow for annual variations in cooling degree days, and also for higher building cooling load at full occupancy. The recommended 250-acre foot volume is equal to a year-round average flow rate of 0.35 cfs, or a 3-month peak season average flow rate of 1.4 cfs.

The place of use should be licensed for the NESE (Lot 2) of Section 10 only. No cooling use has been established within the SESE (Lot 11) of Section 10.

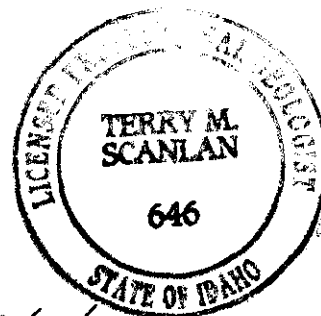
The water-bearing zone appropriated by this permit is approximately 85 feet to 292 feet, which is slightly shallower than the water bearing zone of 100 to 300 feet listed under permit condition No. 8. The permit holder has complied with all other conditions of the permit.

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
Cooling	01/01 to 12/31	2.23 cfs	250.0 acre feet
TOTALS:		2.23 cfs	250.0 acre feet

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above
☒ None ☐ Other

I. AUTHENTICATION

Field Examiner's Signature

Date

6/18/05

Reviewer's Signature

Date



Figure 1. View of production wells on north side of Water Center.



Figure 2. West Production Well. Idaho Water Center building on left.



Figure 3. Flow meters for West Production Well pumps in vault.

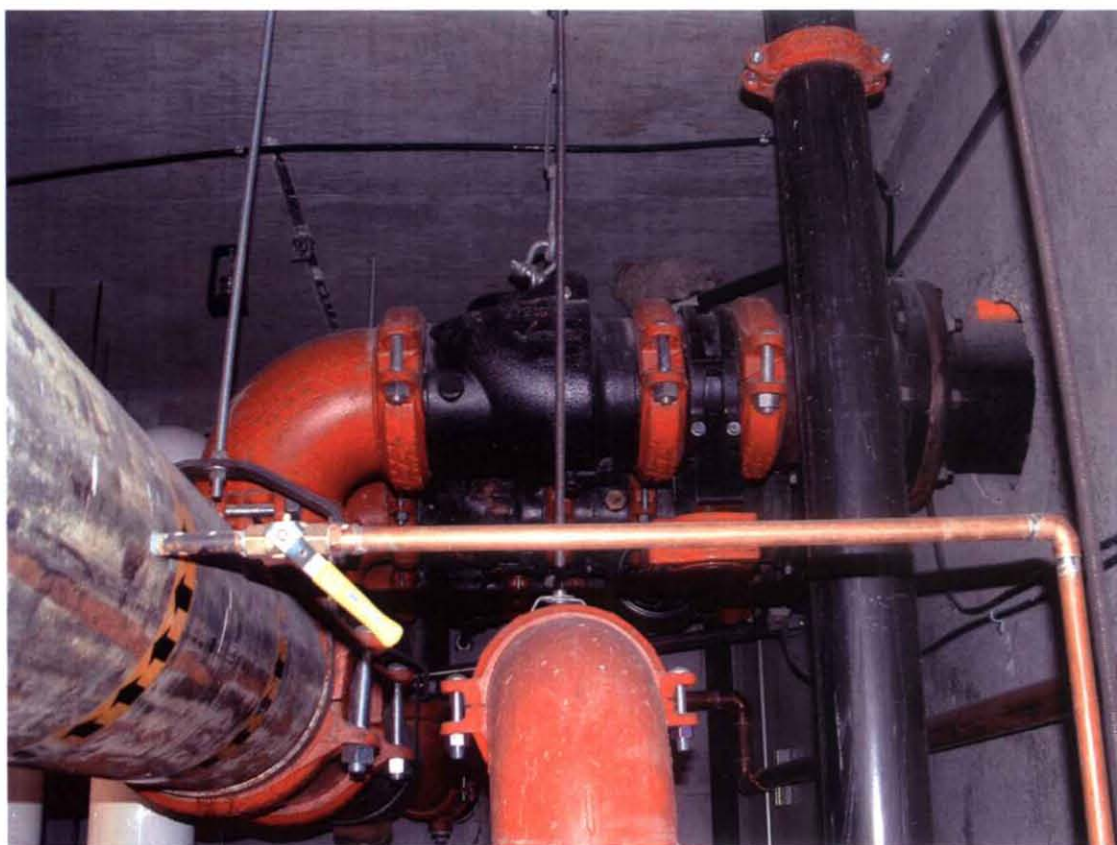


Figure 4. Piping from production wells entering mechanical room in the basement of the Idaho Water Center.

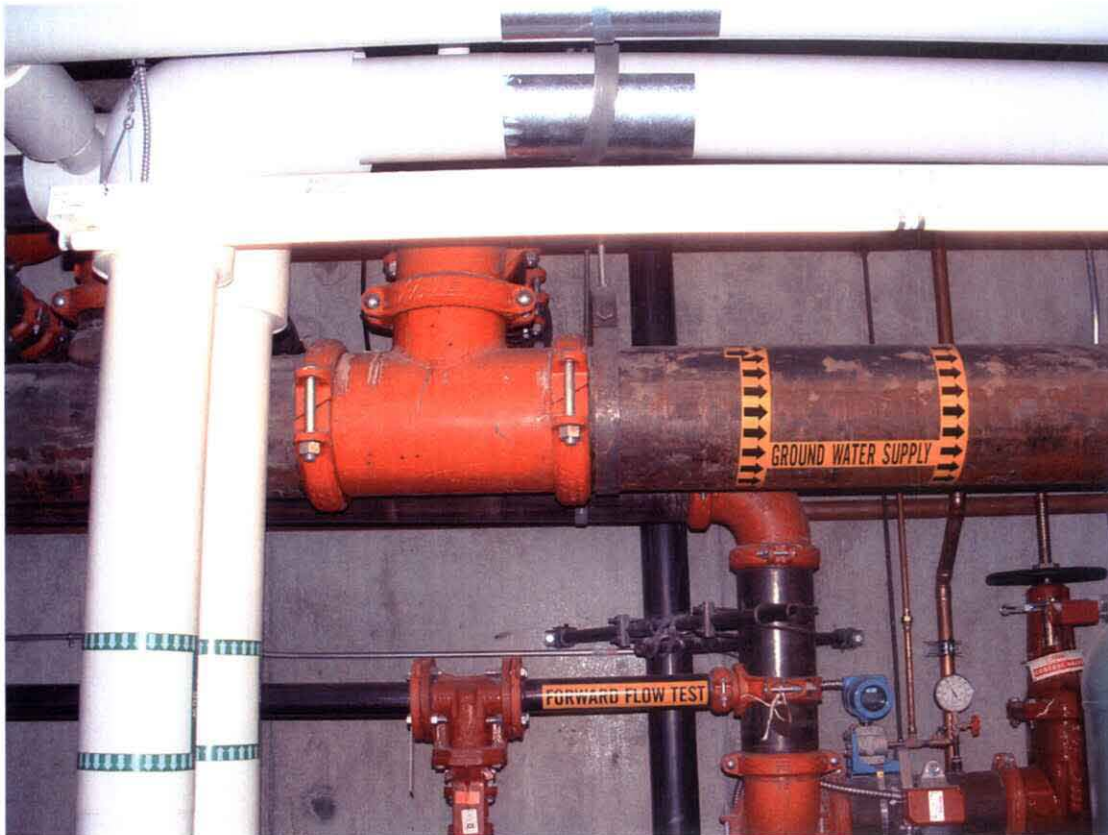


Figure 5. Combined flow from production wells in mechanical room.

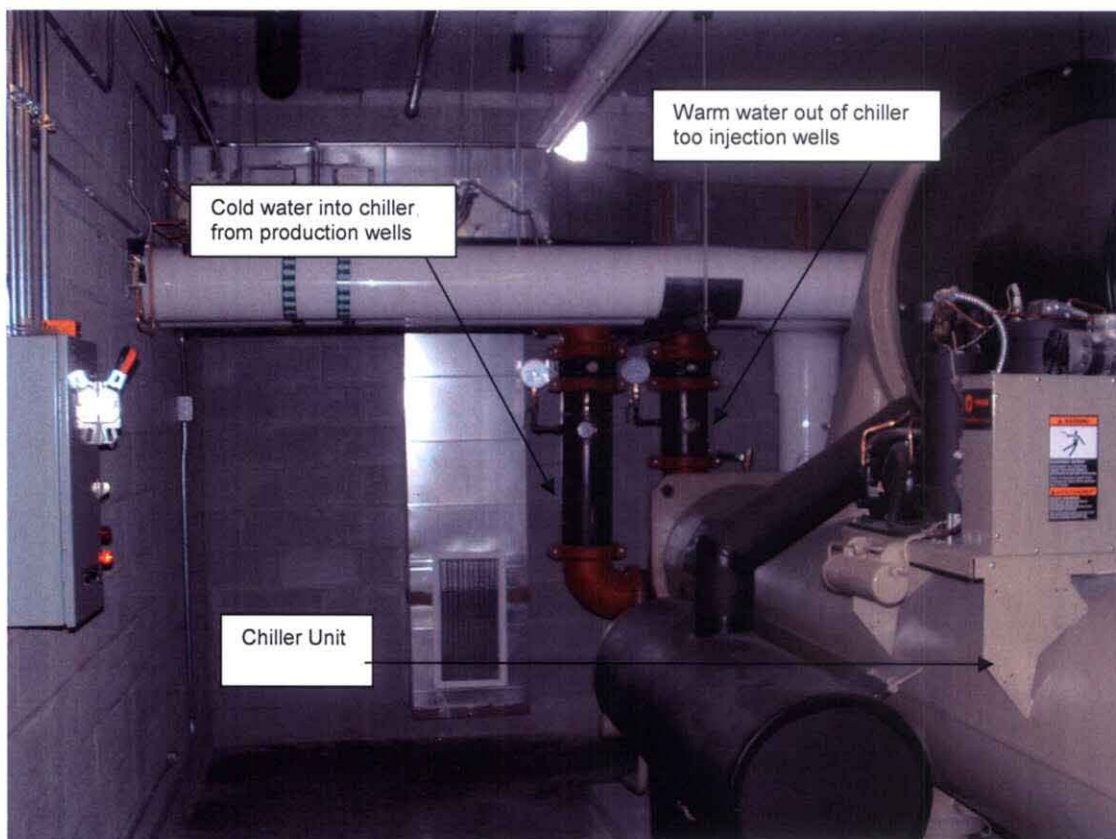


Figure 6. Chiller room in basement of Idaho Water Center.



Figure 7. Production well pump controls in basement of Idaho Water Center.

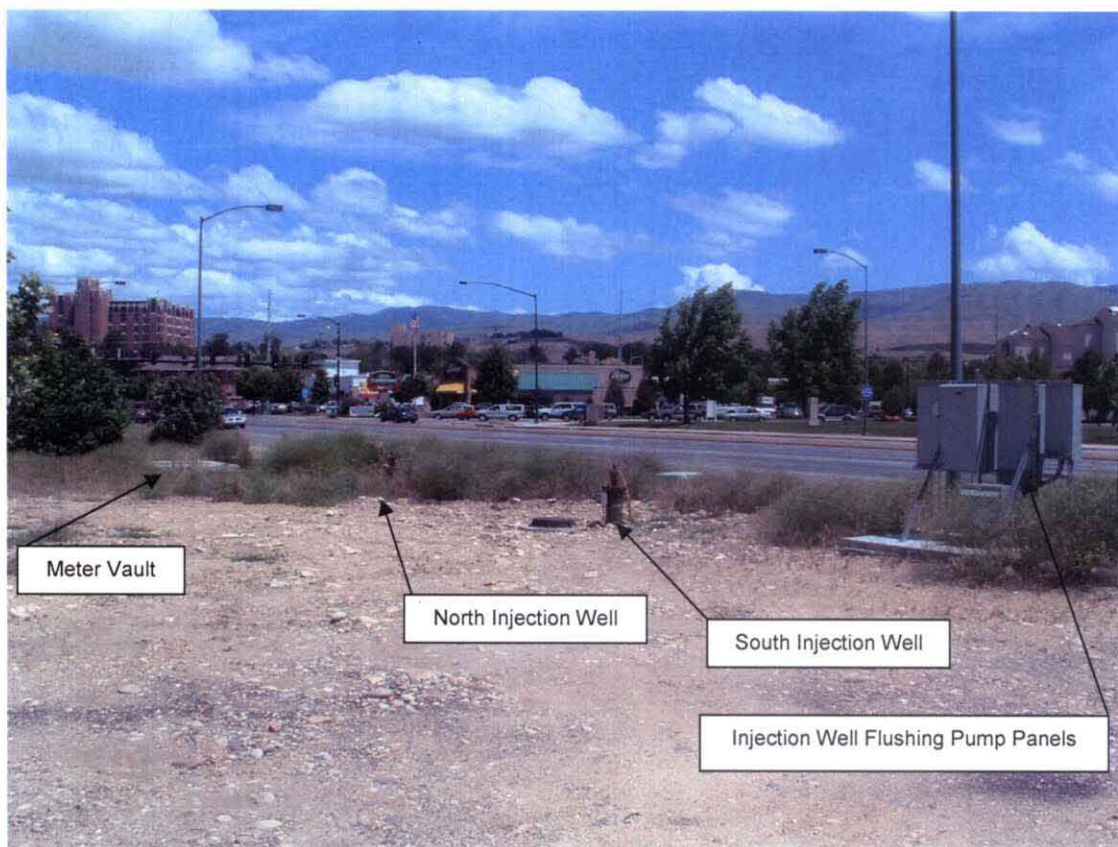


Figure 8. View of injection well area along Broadway Avenue.



Figure 9. South Injection Well. Air and vacuum valve on top of well. Air release vault in foreground.

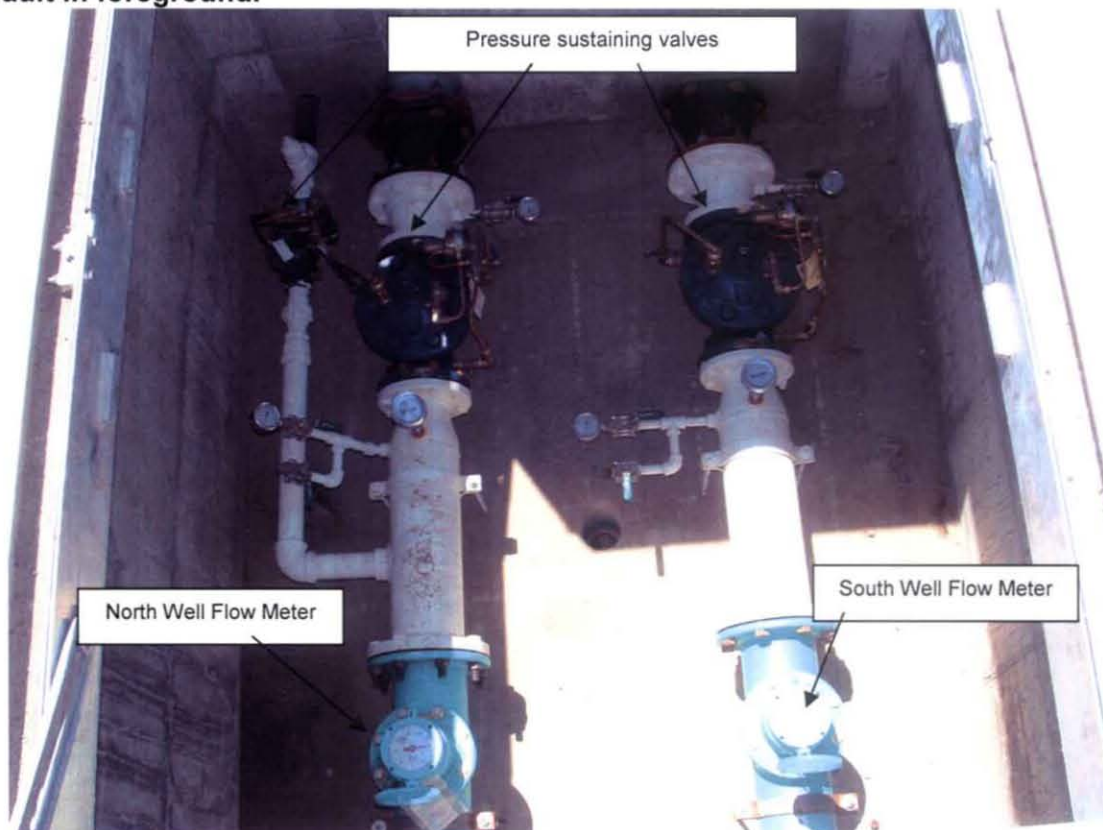
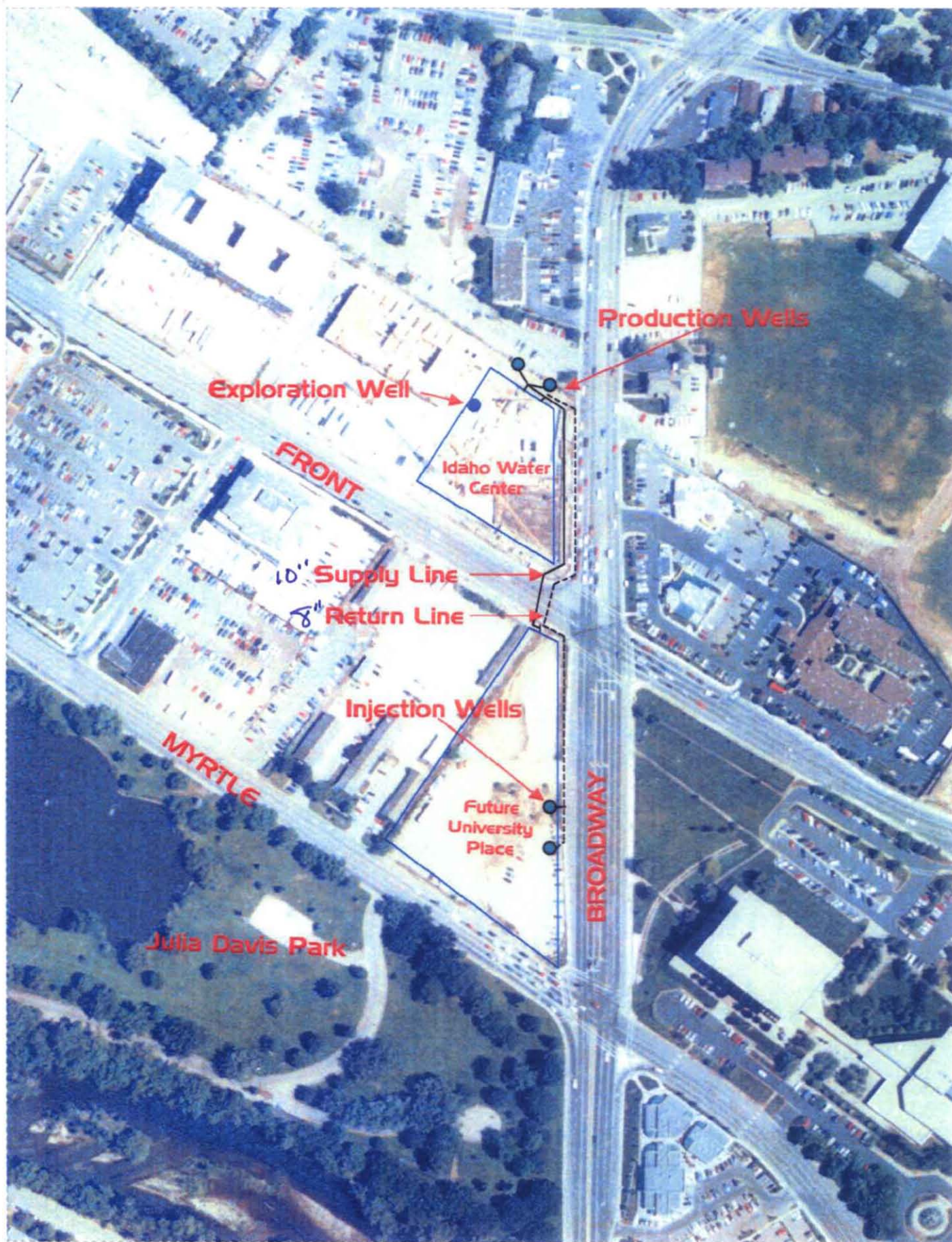


Figure 10. Injection well meter vault interior.



Figure 11. Injection well meter vault area.

**MAPS, AERIAL PHOTOS, WELL DRILLER'S
REPORTS, PUMP CURVES, AND SUPPORTING
DOCUMENTS FOR PERMIT 63-31354 BENEFICIAL
USE FIELD EXAM**



1"=250'±

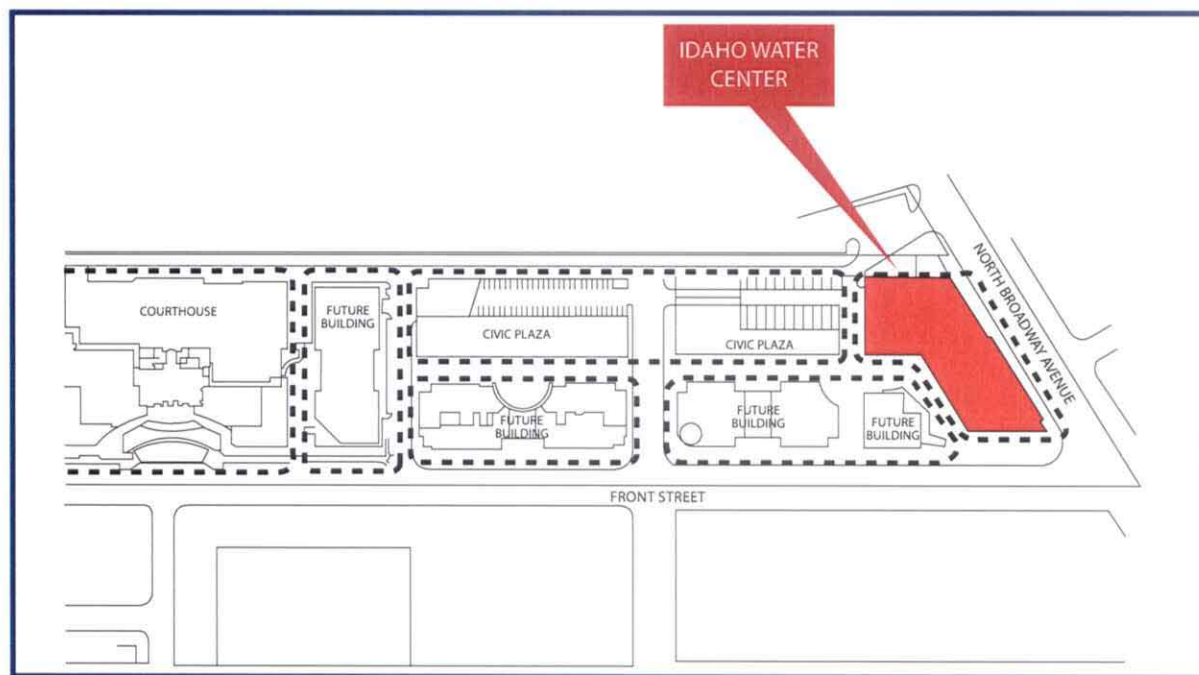
STATE-OF-THE-ART CLASS 'A' OFFICE/RETAIL SPACE

Boise Office
475 S. Capitol Blvd., #300
Boise, Idaho 83702
Tel. 208.345.9000

Sun Valley Office
200 W. Rivers St., #301
Ketchum, Idaho 83340
Tel. 208.726.1918

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The information contained herein has been obtained from reliable sources but is not guaranteed.

Idaho Water Center

322 East Front Street
Boise, Idaho

Available for Lease

STATE-OF-THE-ART CLASS 'A' OFFICE/RETAIL SPACE



For Office
Information, Contact:

JENNIFER FRATUSCO
208-472-2841

jennifer.fratusco@colliersidaho.net

GEORGE ILIFF
208-472-2858

george.iliff@colliersidaho.net

For Retail
Information, Contact:

BROOK BLAKESLEE
208-472-2835

brook.blakeslee@colliersidaho.net

MIKE CHRISTENSEN
208-472-2866

mike.christensen@colliersidaho.net

CHRIS PENLAND
208-472-2843

chris.penland@colliersidaho.net

PROPERTY PROFILE

- New six-story, 225,227 SF mixed-use facility, ready for tenant improvements
- Space Available:
 - Retail - 11,671 rentable SF
 - Office - 66,859 rentable SF
- At full capacity, the ground floor retail will serve approximately 800 occupants each day
- Great visibility with corner location
- Close proximity to the Ada County Courthouse
- Close to restaurants, retail, and services
- Adjacent to new apartment complex with approximately 300 units
- State-of-the-art "green" building
- 18" raised floors to provide below-floor air distribution on each level
- Energy-efficient glass and lighting
- Underground parking garage
- Contact agent for lease rates and further details

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COLLIERS PARAGON, LLC

Boise Office
475 S. Capitol Blvd., #300
Boise, Idaho 83702
Tel. 208.345.9000

Sun Valley Office
200 W. Rivers St., #301
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Idaho Water Center

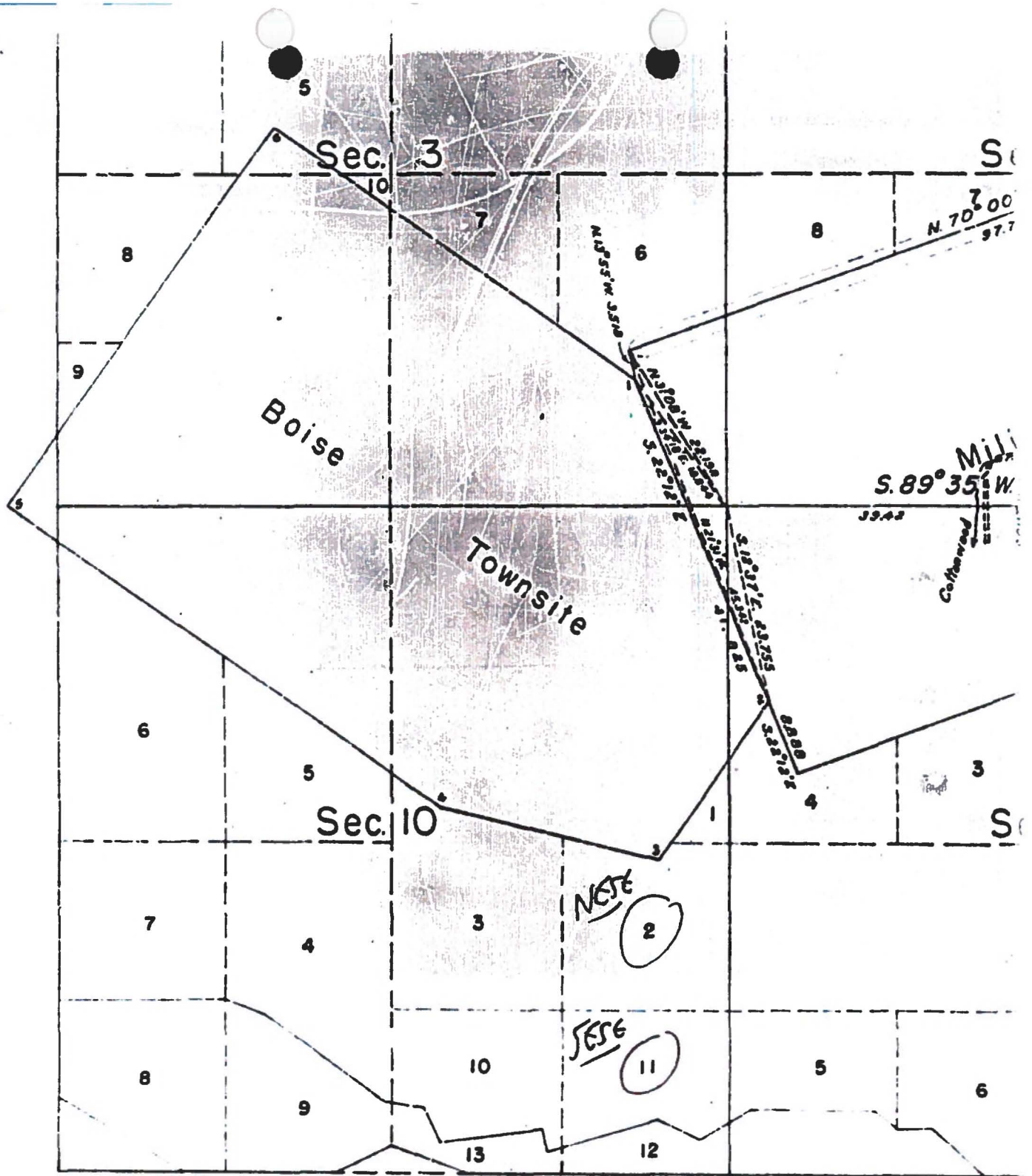
322 East Front Street
Boise, Idaho

PROPERTY HIGHLIGHTS

- The Idaho Water Center is the Northwest's most unique facility to house state, federal, and university research on river and water related issues. The facility will also house university instructional programs and services from multiple disciplines, and a mix of retail and private business tenants.
- Six-story, pre-cast concrete and glass office, classroom, and laboratory building located at the gateway to downtown Boise on 322 East Front Street.
- L-shape of the building reflects the angles at which Broadway Avenue intersects Front Street. Its southwest facade opens onto the brick-paved urban pedestrian plaza that stretches to the Ada County Courthouse.
- Building incorporates state-of-the-art environmental features:
 - Energy saving heating and cooling system relies on a geo-thermal utility loop, also used by the nearby courthouse, to obtain hot water from underground wells on Front Street. Other wells are used to condense and cool the water.
 - 18" raised floors provide below-floor air distribution on each level.
 - Computer-controlled lighting system
 - Energy-efficient glass and lighting
 - Underground parking garage

BUILDING OCCUPANTS

- **University of Idaho** houses graduate-level Engineering programs (civil and mechanical), Ecohydraulics Research Group, Tech Help, Idaho Water Resources Research Institute (IWRRI) classrooms and state-of-the-art laboratories in the building.
- **Idaho Department of Water Resources (IDWR)** is a state agency headed by a director appointed by the governor. IDWR promotes controlled development and wise management of Idaho's resources through three operating divisions: Water Management Division, Planning and Technical Services Division, and Energy Division. IDWR occupies two floors of the building.
- **USDA Forest Service, Rocky Mountain Research Station** conducts aquatic and biological research. Specialized labs (sediment, aquatic, biological, upland shrubs) along with instrument rooms and a herbarium are housed in the Idaho Water Center.



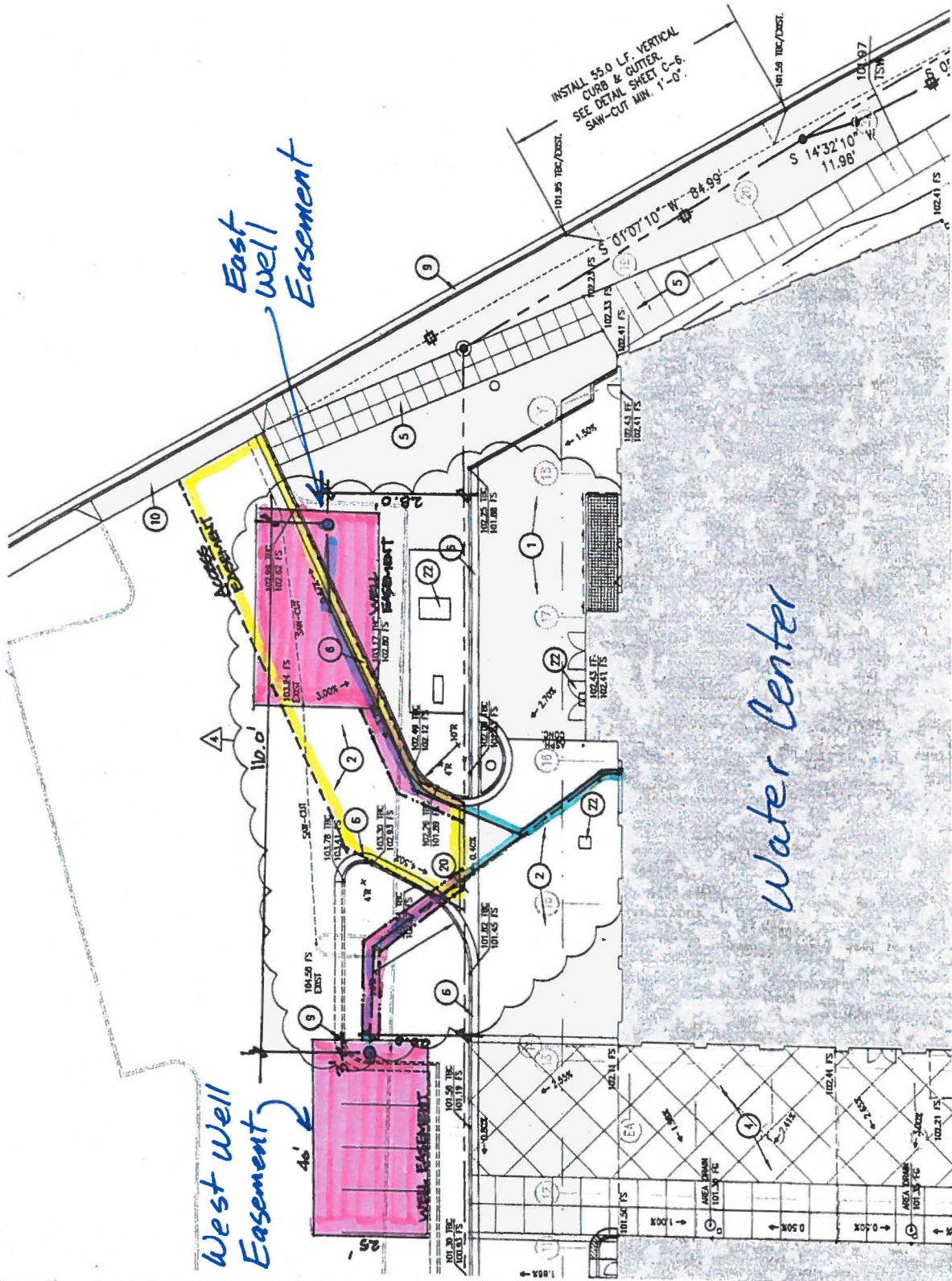
3N 2E 5, 10
1954 plat

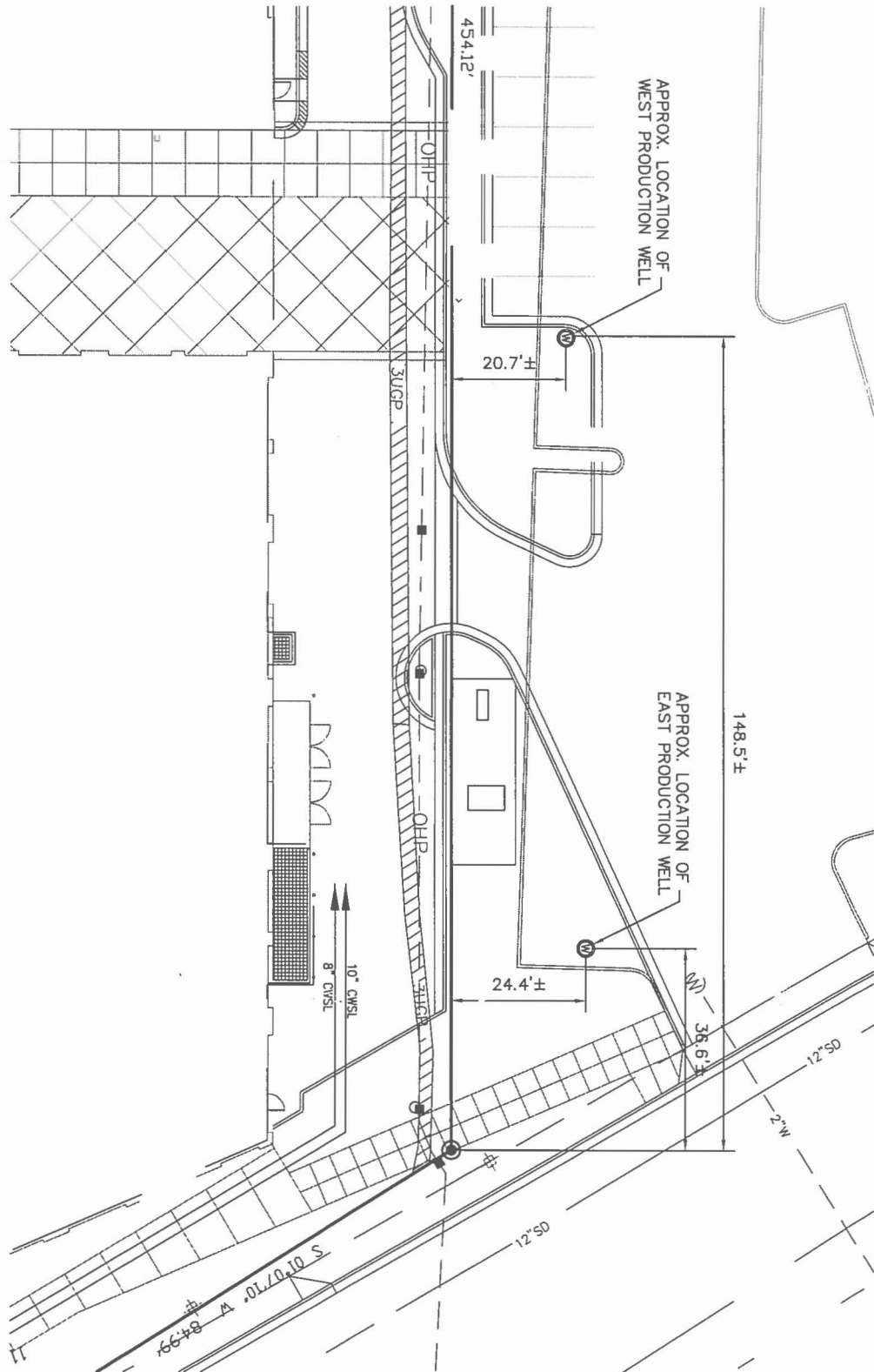
63-31354

MICROFILMED

SEP 23 2002

Area Tract No.





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MAY 21, 2004		
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1	MAKE CHANGES TO VALLT AND WELL NAMES	8/17/05

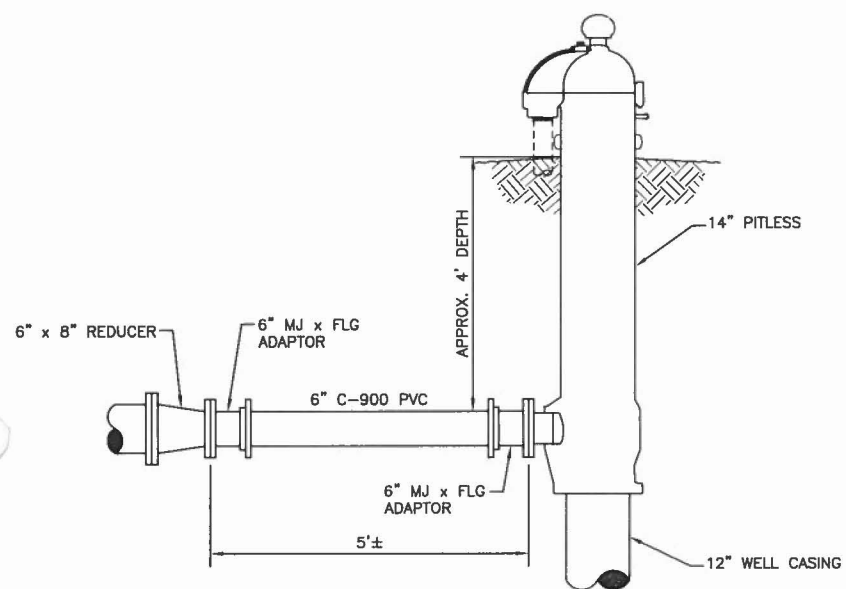
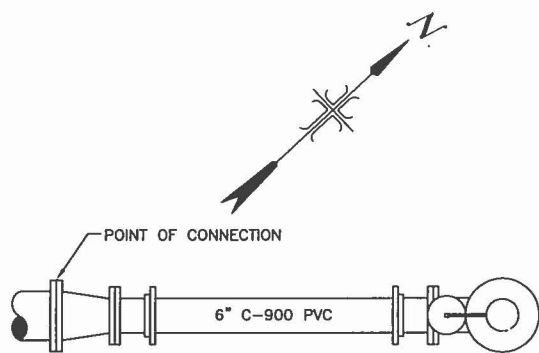
DRAWN BY:	S. CHANE
CHECKED BY:	R. STEVENS
SCALE:	1" = 20'
PLOT SCALE:	1 = 1

**AS-BUILT'S PRODUCTION WELLS #1 AND #2
IDAHO WATER CENTER @ CIVIC PLAZA
SITE PLAN**

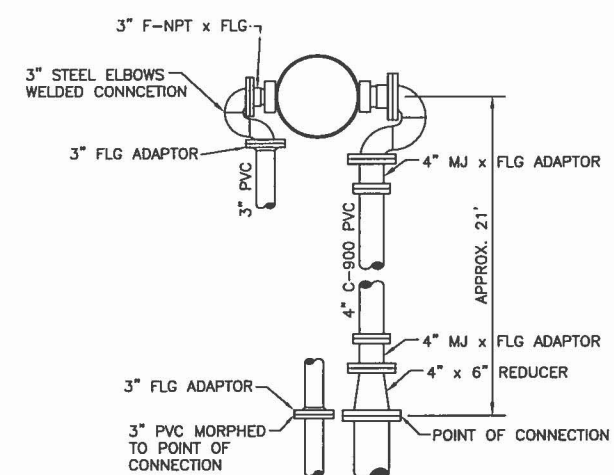
OWNER/DEVELOPER
CIVIC PARTNERS IDAHO, INC.
IDAHO WATER CENTER @ CIVIC PLAZA
250 EAST FRONT STREET
BOISE, IDAHO 83702

SPF Water Engineering, LLC
water resource consultants
600 West River Park Lane, Suite 100, Boise, Idaho 83708
Tel (208) 858-4140 Fax (208) 858-4188

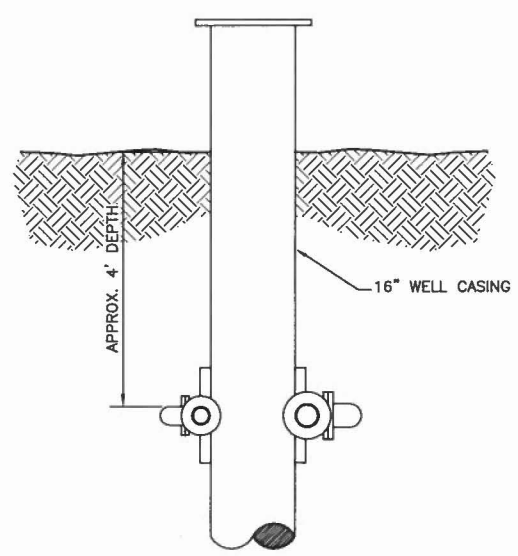
SHEET 4 OF 6



WEST PRODUCTION WELL
SCALE: 1/2" = 1'-0"

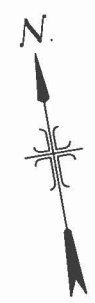


PLAN VIEW



SECTION VIEW

EAST PRODUCTION WELL
SCALE: 1/2" = 1'-0"



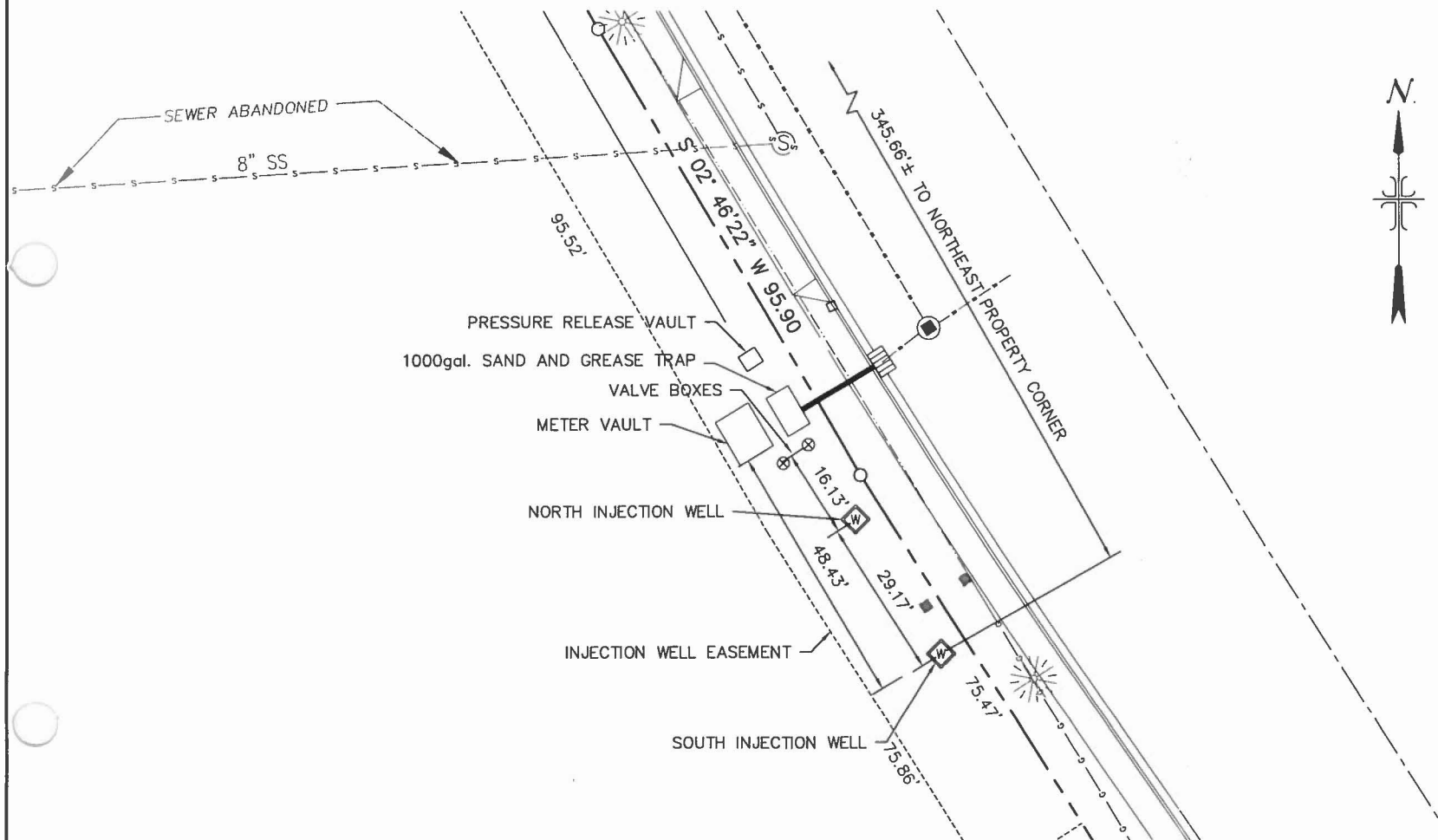
SPF Water Engineering, LLC
water resource consultants
600 South River Park Lane, Suite 100, Boise, Idaho 83706
Tel (208) 388-4148 Fax (208) 388-4149

**AS-BUILT INJECTION WELLS #1 AND #2
IDAHO WATER CENTER @ CHIC PLAZA
SECTION VIEWS**

OWNER/DEVELOPER
CHIC PARTNERS BANG, INC.
IDAHO WATER CENTER @ CHIC PLAZA
1000 CHIC PLAZA
BOISE, IDAHO 83702

DRAWN BY:	S. CRANE
CHECKED BY:	R. STEVENS
SCALE:	1/2" = 1'-0"
PLOT SCALE:	1 = 1'

DRAWING DIRECTORY C:\Lead Project\3\Rev. Shared\Projects\10001\Lead\101\BWT SITE.dwg MAY 21, 2004	REVISIONS	DATE
	NO. MADE CHANGES TO	BY
	1	8/17/03



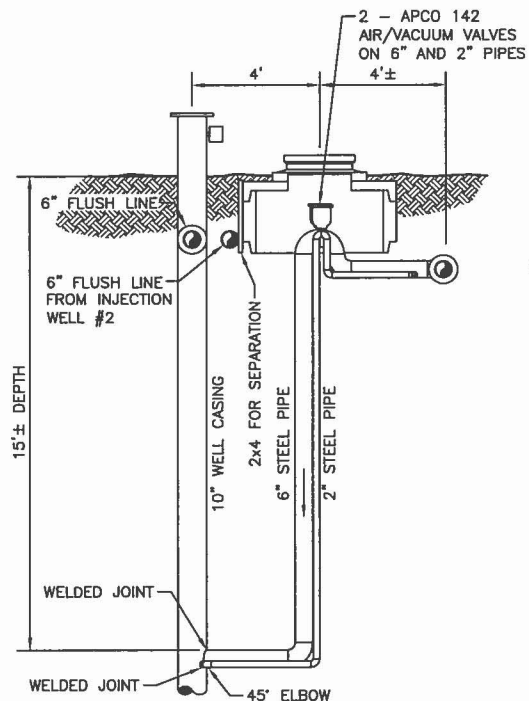
**AS-BUILT 18 INJECTION WELLS #1 AND #2
 IDAHO WATER CENTER @ CIVIC PLAZA
 SITE PLAN**

OWNER/DEVELOPER
 CIVIC PARTNERS BUILDING, INC.
 IDAHO WATER CENTER @ CIVIC PLAZA
 250 EAST FRONT STREET
 BOISE, IDAHO 83702

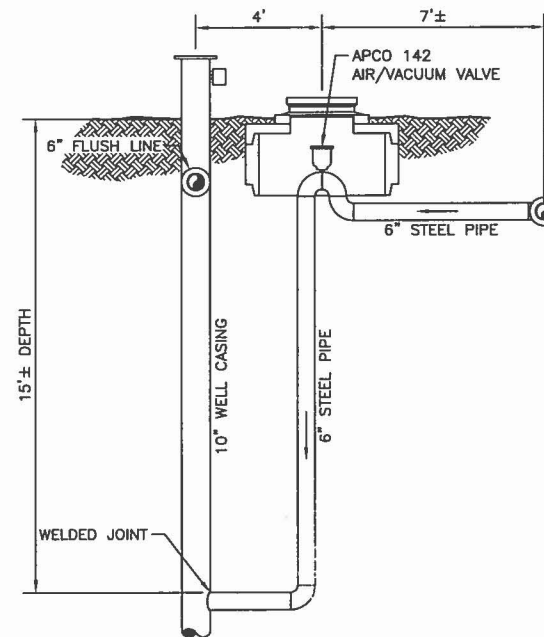
DRAWN BY: S. CRANE
 CHECKED BY: R. STEVENS
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 PLOT SCALE: 1" = 1'

DRAWING DIRECTORY
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 DATE: 7/1/2007

ITEM	REVISIONS	DATE
1	MADE CHANGES TO VAULT AND WELL HEADS	7/1/2007



A
2 SECTION VIEW NORTH INJECTION WELL
SCALE: 1/4" = 1'-0"



B
2 SECTION VIEW SOUTH INJECTION WELL
SCALE: 1/4" = 1'-0"

**AS-BUILT INJECTION WELLS #1 AND #2
IDAHO WATER CENTER @ CIVIC PLAZA
SECTION VIEWS**

OWNER/DEVELOPER
IDAHO WATER CENTER, INC.
IDAHO WATER CENTER @ CIVIC PLAZA
250 EAST FRONT STREET
BOISE, IDAHO 83725

DRAWN BY:	S. CRANE
CHECKED BY:	R. STEVENS
SCALE:	1/4" = 1'-0"
PLOT SCALE:	1 = 1

DRAWING DIRECTORY	
C:\Users\Project_1\Documents\Drawings\AS-BUILT\WELLS SITE DWG	
MAY 21, 2020	
REVISIONS	DATE
NO.	DESCRIPTION
1	MADE CHANGES TO VIEWS AND WELL NUMBERS

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Well ID No.	772450		
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat:	:	Long:	:

1. WELL TAG NO. D 019631
 DRILLING PERMIT NO. 77-2450
 Water Right or Injection Well No. 63-31354

2. OWNER:
 Name Idaho State Bldg Authority
 Address PO Box 955
 City Boise State ID Zip 83701

3. LOCATION OF WELL by legal description:
 You must provide address or Lot, Blk, Sub. or Directions to well.
 Twp. 3 North ☒ or South ☐
 Rge. 2 East ☒ or West ☐
 Sec. 10 1/4 NE 1/4 160 acres S/E
 Gov't Lot 10 County ADA
 Lat: : : Long: : :
 Address of Well Site Northwest corner of Front St
at Bldg City Boise
 Lt. East Production Well Blk. Sub. Name

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

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 Material	From	To	Weight / Volume	Seal Placement Method
#6-9 sand	70	155	6500#	poured
bentonite grout	0	70	30 sk	pumped

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
16"	1'6"	86'6"	375	steel	☒	☐	☒	☐
16"	101'6"	118'6"	375	steel	☒	☐	☒	☐

Length of Headpipe Length of Tailpipe
 Packer ☐ Y ☐ N Type

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method
 Screen Type & Method of Installation

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
86'6"	101'6"	40		16	stnls	☐	☒
118'6"	148'6"	40		12	stnls	☐	☒

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

21.9 ft. below ground Artesian pressure lb.
 Depth flow encountered ft. Describe access port or control devices:

12. WELL TESTS:

☒ Pump	☐ Bailer	☐ Air	☐ Flowing Artesian
Yield gal/min.	Drawdown	Pumping Level	Time
300	58'6"	80'6"	8 hr

Water Temp. Bottom hole temp.
 Water Quality test or comments:

Depth first Water Encounter

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water	Y	N
20	0	20	topsoil & gravel			X
	20	56	sand gravel & cemented			
			sand gravel		X	
	56	85	sandy clay		X	
	85	101	coarse reddish & cemented sand		X	
	101	118	silty blue clay			X
	118	147	reddish sand & cemented sand		X	
	147	155	blue clay			X

RECEIVED

MAY 06 2004

WATER RESOURCES
WESTERN REGION

Completed Depth 148'9" (Measurable)

Date: Started 4/6/04 Completed 4/27/04

14. DRILLER'S CERTIFICATION

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

Company Name Stevens & Sons Firm No. 153

Principal Driller Date 5/4/04

Driller or Operator II Date

Operator I Date

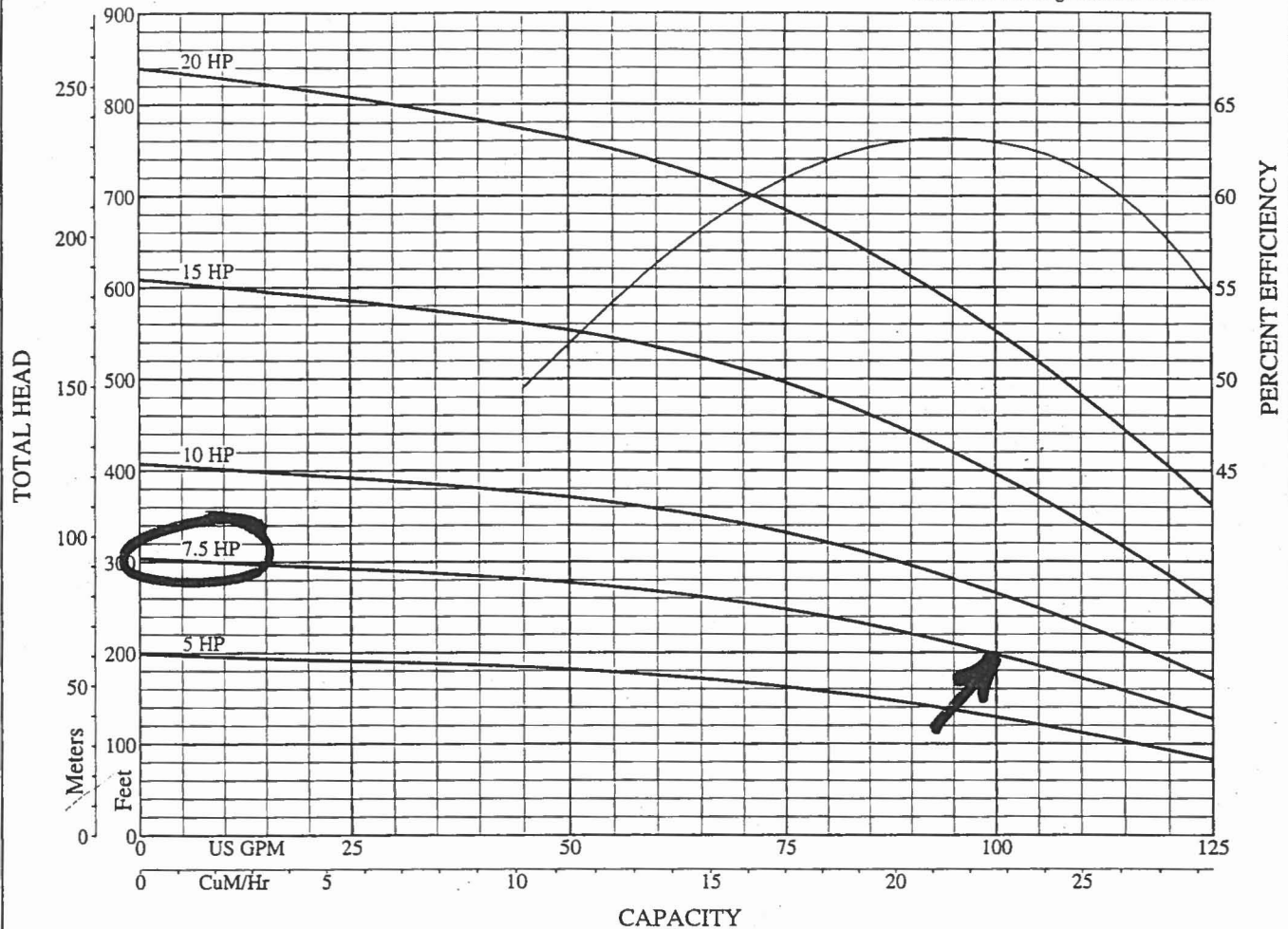
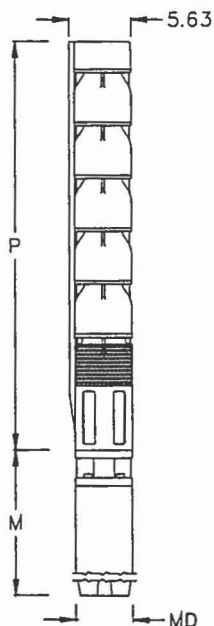
Principal Driller and Rig Operator Required
 Operator I must have signature of Driller/Operator II.

East Production Well Pump #1

Nominal RPM: 3450

Based on Fresh Water @ 68° F.

Maximum Working Pressure: 725 PSI

**OUTLINE DIMENSIONS / WEIGHTS**

HP	stages	Motor size	P length	M* length	MD* dia.	Mtr. wt.	Pump wt.
5	4	6"	29.73	25.44	5.38	105	79
7.5	6	6"	37.60	28.00	5.38	120	103
10	8	6"	45.48	30.56	5.38	135	127
15	12	6"	61.22	33.13	5.38	146	175
20	16	6"	76.97	30.56	5.38	135	222

Note: dimensions = inches; weight = U.S. lbs.

M* Maximum length (Franklin Electric Motor)

MD* Motor diameter (Franklin Electric Motor)

SPECIFICATIONS

Minimum Well I.D.	6.0 Inches
Minimum Submergence @ BEP (above inlet)	10.0 Feet
Capacity Range	45 - 125 GPM
Discharge	3" F NPT
See manufacturer's data for motor cooling requirements	

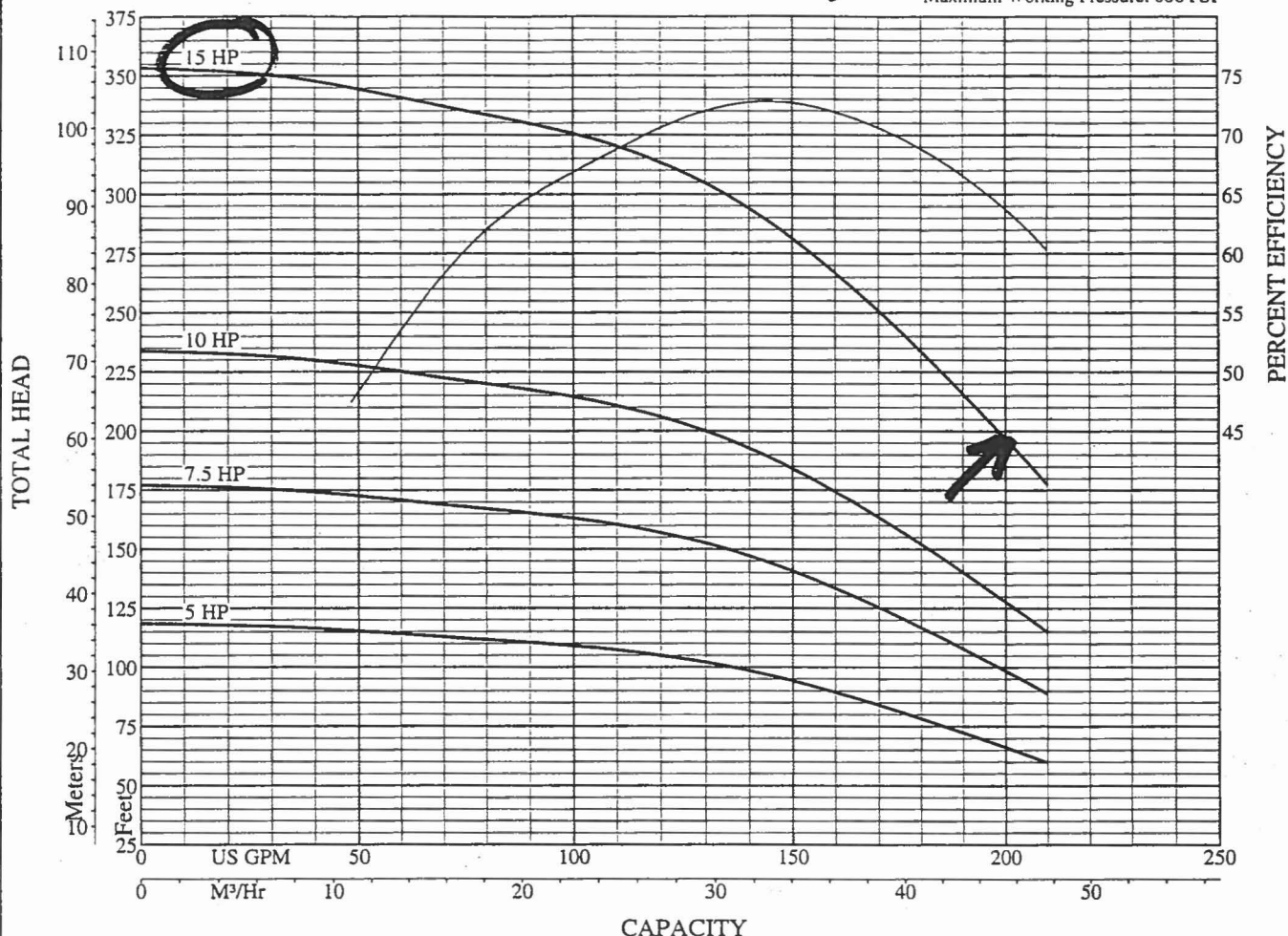
SUPERSEDES

All Previous

Date **04/15/96**Section **ST**Page **9.01**

East Production Well Pump #2

Nominal RPM: 3450
Based on Fresh Water @ 68° F.
Maximum Working Pressure: 606 PSI



OUTLINE DIMENSIONS / WEIGHTS

HP	stages	Motor size	P length	M* length	MD* dia.	Mtr. wt.	Pump wt.
5	2	4"	23.25	29.62	3.75	70	73
5	2	6"	23.25	25.44	5.38	105	73
7.5	3	4"	27.88	29.62	3.75	70	91
7.5	3	6"	27.88	28.00	5.38	120	91
10	4	6"	32.50	30.56	5.38	135	109
15	6	6"	41.75	33.13	5.38	146	145

Note: dimensions = inches; weight = U.S. lbs.

M* Maximum length (Franklin Electric Motor)

MD* Motor diameter (Franklin Electric Motor)

SPECIFICATIONS

Minimum Well I.D.	6.0 Inches
Minimum Submergence @ BEP (above inlet)	10.0 Feet
Capacity Range	48 - 210 GPM
Discharge	3" F NPT
See manufacturer's data for motor cooling requirements	

SUPERSEDES

Section ST
Dated 01/03/97
Page 12.01

Date 04/15/98

Section **ST**Page **12.01**

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

772452

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 1/4 1/4
Lat: : : Long: : :
☒ PUMP ☐ Bailer ☐ Air ☐ Flowing Artesian

1. WELL TAG NO. D 0019670
DRILLING PERMIT NO. 772452
Other IDWR No. 63-31354

2. OWNER: Civic Partners
Name 330 S 4th St #203
Address Boise ID 83702
City State Zip

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

(well #1)

N
W
E
S

Twp. 3 North ☒ or South ☐
Rge. 2 East ☒ or West ☐
Sec. 10 N/E 1/4 S/E 1/4
Gov't Lot _____ County Ada
Lat: : : Long: : :
Address of Well Site Northwest corner
Front St & Bdwy Boise City
(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name
West Production Well

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other cooling

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	AMOUNT	METHOD
Material	From To Sacks or Pounds	
bentonite grout	20 135 80 sks	pumped
bentonite chips	0 20 30 sks	poured
#6-9 sand	185 292 10,900#	poured

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
12	+2	204	375	steel	☒	☒	☒	☐
12	224	238	375	steel	☒	☒	☒	☐
12	253	276	375	steel	☒	☒	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations Method
Screens Screen Type 304 stnls

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
204	224	40		12	stnls	☒	☒
233	253	40		12	stnls	☒	☒
276	292	40		12	stnls	☒	☒

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

13 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

Yield gal./min.	Crawdown	Pumping Level	Time
900	106		6 hr

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

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

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
19	0	20	gravel topsoil		X
20	65		sand & gravel, cemented		
			sand & gravel	X	
65	70		sandy clay		X
70	90		coarse tan sand	X	
90	100		coarse red sand	X	
100	110		blue sand	X	
110	128		blue clay		X
128	160		red med to coarse sand	X	
160	175		blue clay		X
175	182		blue sand	X	
182	202		blue clay		X
202	223		med to coarse blue sand	X	
223	239		blue clay		X
239	252		blue med to coarse sand	X	
252	260		blue clay		X
260	275		blue clay & sand streaks	X	
275	295		blue sand	X	
295	303		blue clay		X

RECEIVED

FEB 20 2004

WATER RESOURCES
WESTERN REGION

Completed Depth 292 (Measurable)
Date: Started 12/10/03 Completed 1/18/04

13. DRILLER'S CERTIFICATION

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

Company Name Stevens & Sons Firm No. 153

Firm Official Ron Stevens Date 2/18/04

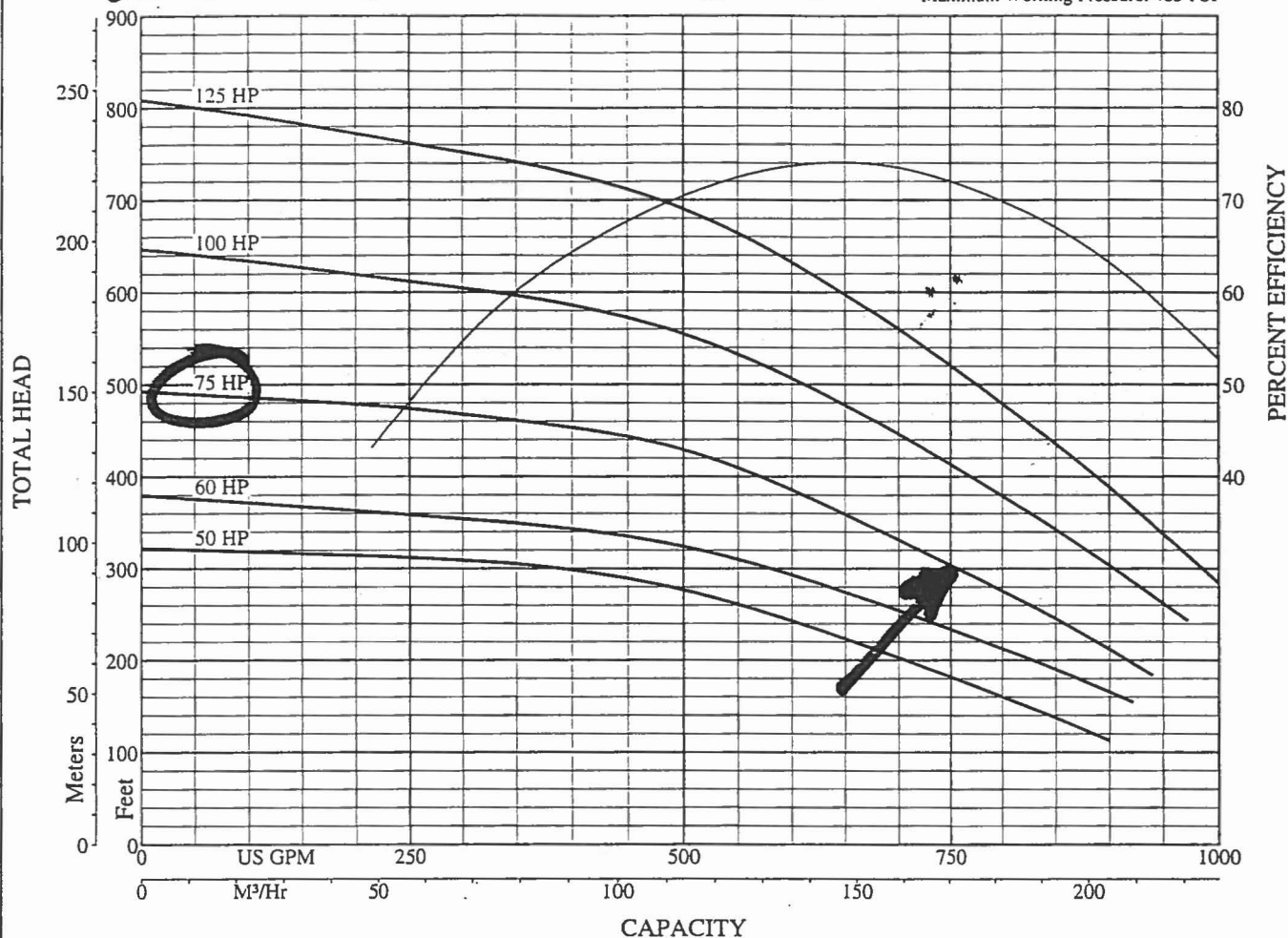
and Driller or Operator _____

West Production Well

Nominal RPM: 3450

Based on Fresh Water @ 68° F.

Maximum Working Pressure: 485 PSI



OUTLINE DIMENSIONS / WEIGHTS

HP	stages	Motor size	P length	M* length	MD* dia.	Mtr. wt.	Pump wt.
50	3	6"	45.03	55.30	5.44	304	188
60	3	6"	45.03	61.30	5.44	335	188
75	4	8"	53.00	54.90	7.50	433	234
100	5	8"	60.25	58.90	7.50	478	278
125	6	8"	67.50	68.80	7.70	709	321

Note: dimensions = inches; weight = U.S. lbs.

M* Maximum length (Franklin Electric Motor)

MD* Motor diameter (Franklin Electric Motor)

SPECIFICATIONS

Minimum Well I.D.	10.0 Inches
Minimum Submergence @ BEP (above inlet)	10.0 Feet
Capacity Range	155 - 1000 GPM
Discharge	6" F NPT

See manufacturer's data for motor cooling requirements

SUPERSEDES

All Previous

Date 04/15/98

Section ST

Page 25.05

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Inspected by _____			
Twp _____		Rge _____ Sec _____	
_____ 1/4 _____ 1/4 _____ 1/4			
Lat _____		Long _____	

1. WELL TAG NO. D 0030869
DRILLING PERMIT NO. 772874
Other IDWR No. 63-W-176

2. OWNER: IDAHO STATE BLDG AUTHORITY
Name _____
Address PO BOX 955
City Boise State ID Zip 83701

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

INJECTION WELL #1

Twp. <u>3</u>		North ☐ or South ☐	
Rge. <u>2</u>		East ☒ or West ☐	
Sec. <u>10</u>		1/4 <u>S/E</u> 1/4 <u>S/E</u>	
Gov't Lot <u>11</u>	County <u>Ada</u>	160 acres	
Lat: _____		Long: _____	
Address of Well Site <u>NW corner of</u>			
Myrtle & Bdwy _____ City <u>Boise</u>			

(Give at least name of road - Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE: North Injection Well

☐ 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			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
#6-9 sand	200	480	11000#		poured
bentonite chip	0	15	30 sk		poured
bentonite grout	15	220	80 sk		pumped

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
10"	+2	238	365	steel	☒	☐	☒	☐
6"	200	243	250	steel	☐	☒	☒	☐
6"	258	283	250	steel	☐	☒	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
☒ Screens Screen Type 304 stainless V wire

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
243	258	40		6"	stnls	☐	☒
283	288	40		6	"	☐	☒
302	332	40		6	"	☐	☒
343	393	40		6	"	☐	☒

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

15 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

☒ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
890	92	107	11 hrs

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
16	0	15	topsoil & gravel		X
	15	65	sand & gravel, cemented sand & gravel	X	
	65	78	sand cemented	X	
	78	85	sandy clay		X
	85	95	fine sand	X	
	95	125	Med to coarse tan sand	X	
	125	140	Med to coarse blue sand	X	
	140	160	blue clay		X
	160	187	blue coarse sand	X	
	187	210	blue clay		X
	210	230	blue sand & blue clay streaks	X	
	230	242	blue clay		X
10"	242	260	blue Med sans	X	
	260	273	tan Med sand	X	
	273	282	blue clay		X
	282	288	blue sand	X	
	288	302	blue clay		X
	302	332	blue sand	X	
	332	343	blue clay		X
	343	365	blue Med sand	X	
	365	385	cemented blue sand		X
	385	424	blue clay		X
	424	445	cemented blue sand		X
	445	475	blue sand w/ cemented streaks	X	
	475	505	blue clay		X
			Swedge packer 8" casing, 4'8" long		
			cement 220' to 238' 9 sk pumped		
			6" 288' to 302' .250 liner welded		
			6" 332' to 343' .250 liner welded		
			6" 363' to 450' .250 liner welded		

Completed _____ Depth 475' (Measurable)
Date: Started 1/10/04 Completed 2/25/04

13. DRILLER'S CERTIFICATION

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

Company Name Stevens & Sons Firm No. 153

Firm Official _____ Date 2/25/04

and _____ RECEIVED

Driller or Operator _____ Date _____
(Sign once if Firm Official or Operator)

FORWARD WHITE COPY TO WATER RESOURCES

WATER RESOURCES
WESTERN REGION

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Inspected by _____			
Twp _____	Rge _____	Sec _____	
_____ 1/4	_____ 1/4	_____ 1/4	
Lat: _____	_____	Long: _____	_____

1. WELL TAG NO: D 0030870
DRILLING PERMIT NO. 772875
Other IDWR No. 63-W-177

2. OWNER:
Name Idaho State Bldg Authority
Address PO Box 955
City Boise State ID Zip 83701

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

INJECTION WELL #2

N		E		S	

Twp. 3 North ☒ or South ☐
Rge. 2 East ☒ or West ☐
Sec. 10 1/4 S/E 1/4 S/E 1/4
Gov't Lot 11 County Ada
Lat: _____ Long: _____
Address of Well Site NW corner of
Muntle & Broadway City Boise
Give at least name of road - Distance to Road or Landmark

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

South Injection Well

☐ 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		AMOUNT		METHOD
Material	From	To	Sacks or Pounds	
bentonite grout	0	88	45 sh	poured
6-9 sand	88	192	9900#	

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
10 1/2"	+2	100	375	steel	☒	☐	☒	☐
10 1/2"	135'6"	164'6"	375	steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____

Screens _____ Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
100	135'6"	40		10 1/2"	stnls	☐	☒
164'6"	190	40		10 1/2"	stnls	☐	☒

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

16 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

☒ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
500	63'	89'	8 hrs

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

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

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y
16	0	15	topsoil & gravel	
	15	65	sand gravel & cemented sand	
			gravel	X
	65	78	cemented sand	X
	78	88	sandy clay	
	88	98	medium to coarse tan sand	X
	98	136	medium to coarse Blue sand	X
	136	165	blue clay	
	165	192	blue coarse sand	X
	192	195	blue clay	

Completed Depth 190' (Measurable)
Date: Started 3/15/04 Completed 4/2/04

13. DRILLER'S CERTIFICATION

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

Company Name Stevens & Sons Firm No. 153Firm Official _____ Date 4/2/04and
Driller or Operator _____
Sign once if Firm Official & Operator