

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

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FEB 11 2010
DEPARTMENT OF
WATER RESOURCES

A. GENERAL INFORMATION

Permit No. 63-11772

1. Owner: MILLER LAND CO INC Phone No.: (208) 495-2444

Current Address: PO BOX 59 MELBA, ID 83641

2. Accompanied by: STEPHEN J. MILLER EXAM DATE: October 20, 2009

Address: same Phone No. same

Relationship to Permit Holder: President, Miller Land Company, Inc

3. Source: GROUND WATER tributary to

B. OVERLAP REVIEW

1. Other water rights with the same place of use: Boise-Kuna Irrigation District; 63-22157 (Domestic & Stockwater)

2. Other water rights with the same point of diversion: 63-3584

C. DIVERSION AND DELIVERY SYSTEM

1. Point(s) of Diversion:

Ident No.	Gov't Lot	¼	¼	¼	Sec.	Twp.	Rge.	County	Method of Determination/Remarks
1			SE	NE	21	1N	2W	Canyon	GPS (43.408685N 116.575314W, WGS84)

2. Place(s) of Use: Indicate Method of Determination Aerial Imagery (2006 NAIP), GPS

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
1N	2W	22										39.3	37						76.3
		27					10.3	38.9											49.2

Total 125.5

See
Attached
Figures

X Photo of Diversion and System Attached

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
1	US Electric	100	C9983-00-12-6-74	Verti-Line	Serial No. = D17084

D. FLOW MEASUREMENTS

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
None						

2. **Measurements:** Recommended flow rate is based on licensing exam for 63-3584 (981 gpm, 2.19 cfs), and calculation of diversion capacity through the four-inch discharge pipe. Capacity estimates are sufficient to recommend the 2.19 cfs permitted diversion rate.

E. NARRATIVE/REMARKS/COMMENTS

An existing well used to supply decreed right 63-3584 also supplies supplemental ground water for irrigation of 125.5 acres. Water diverted from the well discharges through a four-inch diameter aluminum mainline into the Hat Butte Lateral. Three turnouts from the Hat Butte Lateral supply water to concrete ditches running north/south along the west lengths of the irrigated fields.

Combined use recommendations:

Rights 63-11772 and 63-3584 together should be limited to a total diversion rate of 2.19 cfs and a total annual diversion volume of 1068.6 acre feet.

Have conditions of permit approval been met? X yes ___ no

F. FLOW CALCULATIONS

 X Additional Computation Sheets Attached

Measured Method:

Diversion capacity estimated; see attached computation sheet.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 125.5 \text{ acres} \times 4.5 \text{ afa} = 564.8$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 2.19 \text{ cfs} \times 246 \text{ days} \times 1.9835 = 1,068.6$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 564.8$$

2. Volume Calculations for Other Uses: none

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Irrigation	3/15	11/15	2.19 cfs	564.8 afa

2. Recommended Amendments

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

I. AUTHENTICATION

Field Examiner's Name SCOTT N. KING, P.E. Date February 10, 2010

Field Examiner's Signature *Scott N. King*

Reviewer _____ Date _____



ATTACHMENT A
PERMIT RECORD

State of Idaho
Department of Water Resources

Permit To Appropriate Water

NO. 63-11772

Proposed Priority: April 15, 1992 Maximum Diversion Rate: 2.19 CFS
This is to certify, that MILLER LAND CO INC
C/O JOHN MILLER
BOX 2124C HWY 45
MELBA ID 83647

has applied for a permit to appropriate water from: GROUNDWATER
and a permit is APPROVED for development of water as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>
IRRIGATION	03/15 to 11/15	2.19 CFS

LOCATION OF POINT(S) OF DIVERSION: SENE , Sec. 21, Township 01N, Range 02W
CANYON County

PLACE OF USE: IRRIGATION

<u>TWN</u>	<u>RGE</u>	<u>SEC</u>	<u>ACRES</u>	<u>ACRES</u>	<u>ACRES</u>	<u>TOTAL</u>
01N	02W	22	NWSW 40	SWSW 38		78
		27	NENW 37	NWNW 39		76

Total number of acres irrigated: 154

CONDITIONS/REMARKS:

1. This permit to appropriate water expires at the end of the 1992 irrigation season. The Director retains jurisdiction to reinstate the permit if drought conditions justify resumption of groundwater use.
2. A well drilled pursuant to this permit must be located at least 500 feet from any existing well. Well spacing closer than 500 feet must be approved by the Department of Water Resources.
3. This right to divert groundwater is void if the surface water right appurtenant to the place of use is sold, transferred, leased or used on any other place of use without the approval of the Department.
4. The permit holder shall use the full allotment of his surface water right, to the extent it is available, in conjunction with groundwater diverted pursuant to this permit.
5. The permit holder must employ reasonably efficient methods of water application to conserve the water of the State of Idaho.
6. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code.
7. Construction of the well must comply with Idaho well construction standards.
8. This right is subject to all prior rights.

RECORDED

AUG 09 1994

State of Idaho
Department of Water Resources

Permit To Appropriate Water

NO. 63-11772

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code.
Witness the seal and signature of the Director, affixed at Boise, this

10th day of June, 1992

R. Keith Higginson
for R. Keith Higginson, Director

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AUG 6 9 1994

ATTACHMENT B
WELL DRILLER'S REPORT

RECEIVED
JUN 7 1967

Department of Reclamation

WELL LOG AND REPORT TO THE
STATE RECLAMATION ENGINEER OF IDAHO

SUBMIT WITHIN 30 DAYS AFTER COMPLETION OF WELL: SEE IDAHO STATUTES 42-238

Permit No. 33481 Well No. _____ County Canyon
Owner John Miller
Address Melba, Idaho
Driller Elmer D. Johnston
Address Oreana, Idaho
Well location E 1/2 E 1/2 Sec. 21, T. 1 N/2, R. 2 W
Size of drilled hole 16 in.

Locate well in section

NW 1/4	NE 1/4
Sec. _____	
SW 1/4	SE 1/4

Total depth of well 365 ft.

Give depth to standing water from the ground 151 Water temp. est 65 °Fahr.

Test delivery was 1566 g.p.m. or _____ c.f.s. Drawdown was 44 feet. Pump? X Bail? _____

Size of pump and motor used to make test 200 hp. Deisal 10" column 14" bowls

Length of time of test 3 hours _____ minutes.

If flowing well, give flow _____ c.f.s. or _____ g.p.m. and of shut off pressure _____

If flowing well, described control works _____

(TYPE AND SIZE OF VALVE, ETC.)

Water will be used for Irrigation Weight of casing per lineal foot _____

Thickness of casing 1/4" Casing material steel
(STEEL, CONCRETE, WOOD, ETC.)

Diameter, length and location of casing _____

(CASING 12" IN DIAMETER OR LESS, GIVE INSIDE DIAMETER;
CASING OVER 12" IN DIAMETER, GIVE OUTSIDE DIAMETER)

CASING RECORD

Diam. Casing	From Feet	To Feet	Length	Remarks—seals, grouting, etc.
16"	0	44	44	Cemented at top

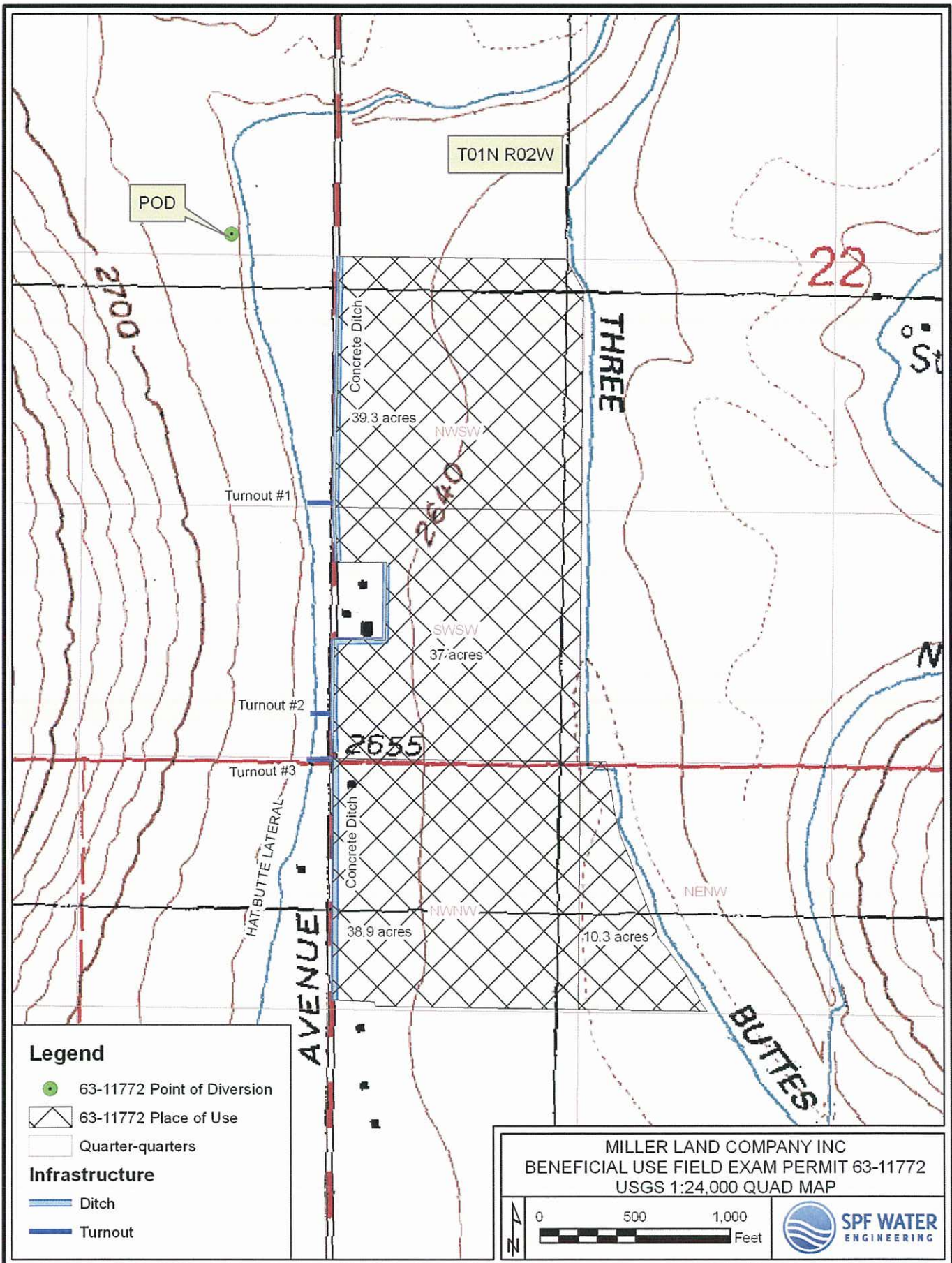
Number and size of perforations none located _____ feet to _____ feet from ground

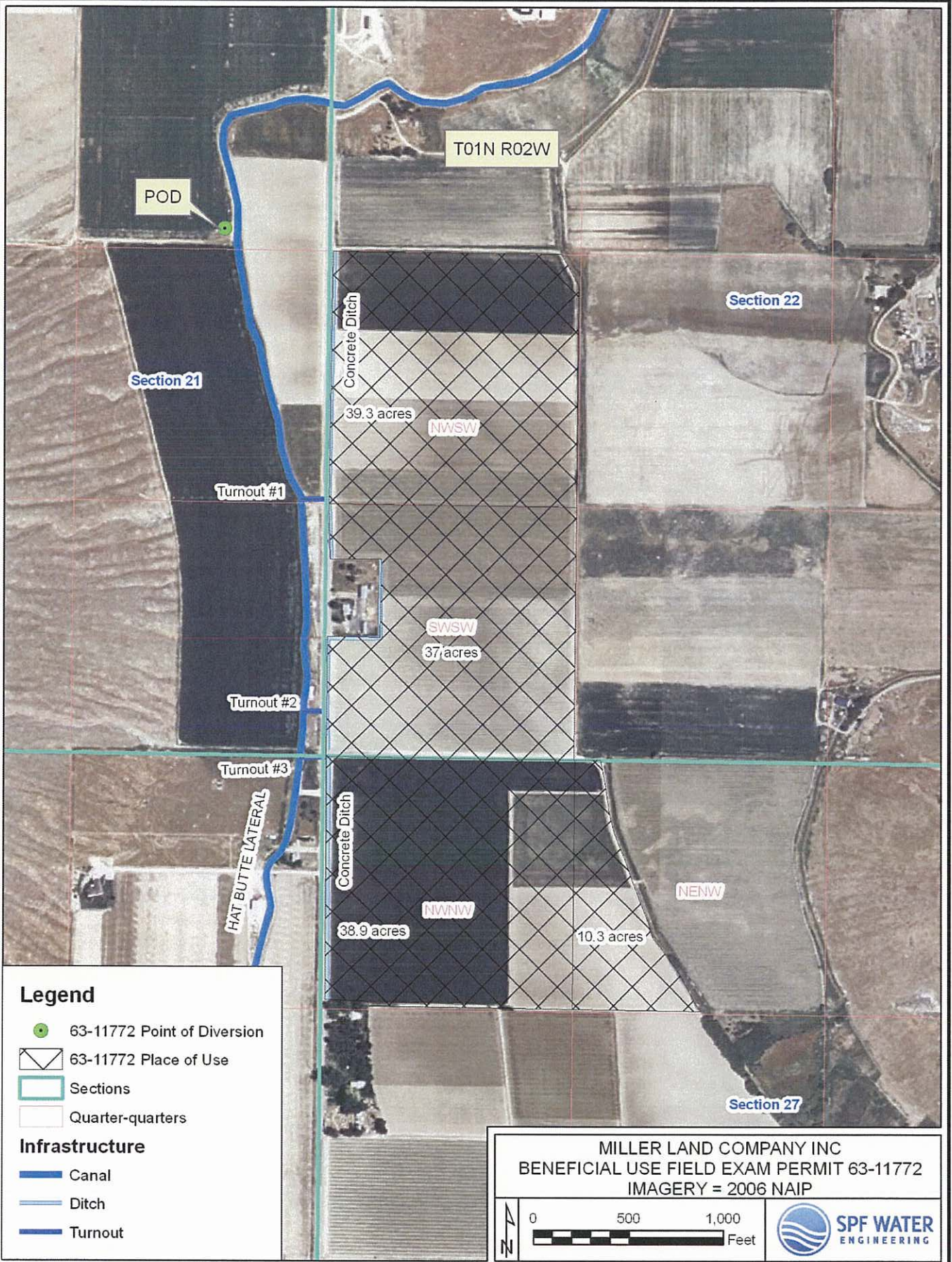
Date of commencement of well April 16, 1967 Date of completion of well May 24, 1967

633481

ATTACHMENT C

**USGS QUADRANGLE MAP
AND
2006 AERIAL PHOTO
OF
POINT OF DIVERSION AND PLACE OF USE**





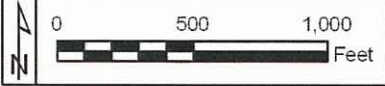
Legend

- 63-11772 Point of Diversion
- ▧ 63-11772 Place of Use
- ▭ Sections
- ▭ Quarter-quarters

Infrastructure

- Canal
- Ditch
- Turnout

MILLER LAND COMPANY INC
BENEFICIAL USE FIELD EXAM PERMIT 63-11772
IMAGERY = 2006 NAIP

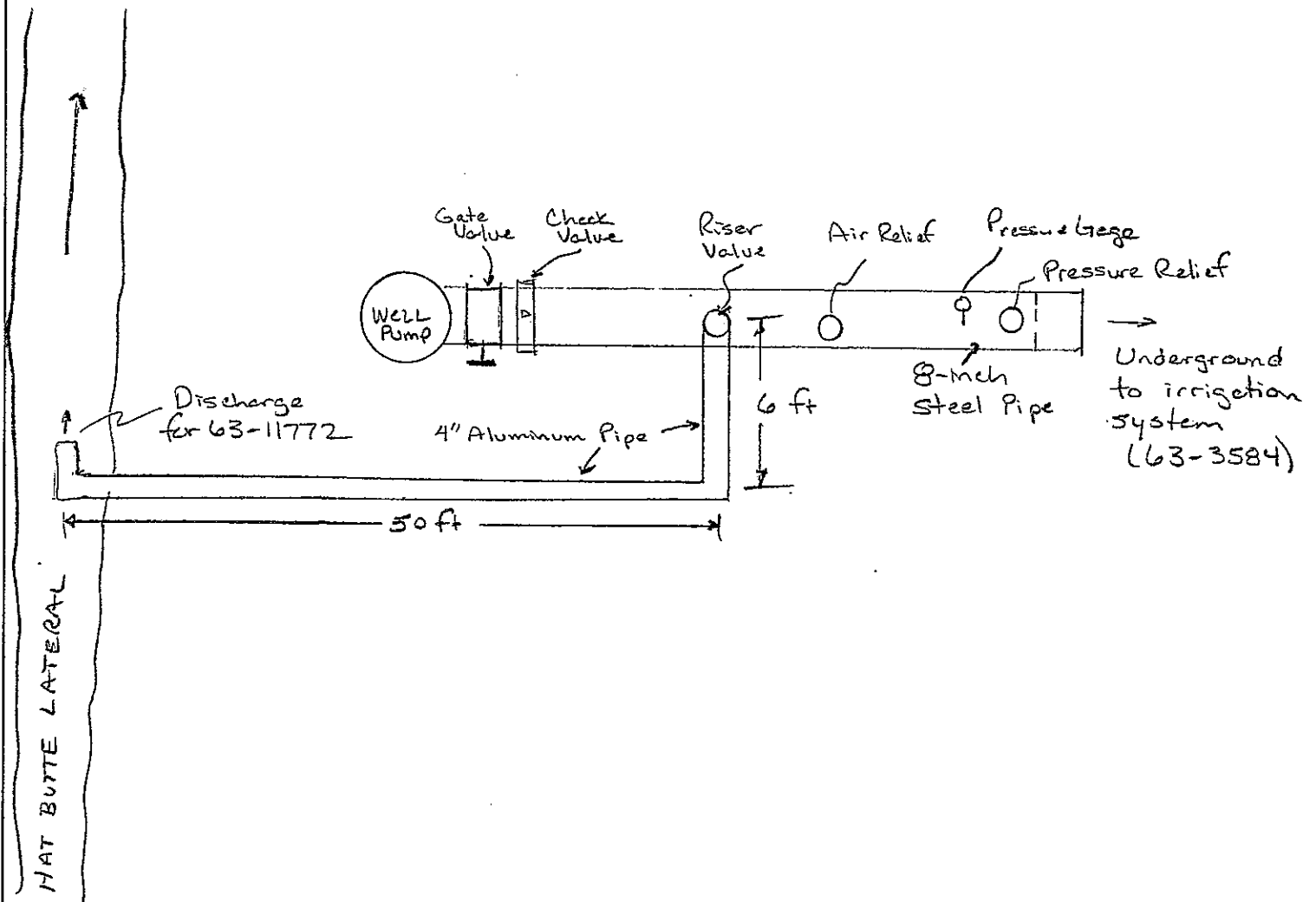




ATTACHMENT D
SYSTEM DIAGRAM



By S. King Date 10/20/09 Client Miller Land Company Sheet 1 of 1
Chkd By _____ Description 63-11772 Diversion Diagram Job No _____



ATTACHMENT E

FLOW CAPACITY CALCULATIONS

Flow Estimate for Miller Land Co Permit 63-11772

Approach: Calculate the mainline pressure required to divert the full 2.19 cfs permitted discharge rate through the four-inch pipeline into the Hat Butte Lateral.

PIPE LOSSES

Length (L)	106 ft, equivalent
Discharge (Q)	981 gpm
C	130 HW coefficient, aluminum pipe
Diameter (D)	4 inches
Discharge	2.19 cfs
Pipe Area	0.087 ft ²
Velocity (v)	25.0 fps
Head loss	54.8 ft, Hazen-Williams

$$\text{head loss (ft)} = 10.44 \times (L) \times [(Q^{1.85}) / C^{1.85} \times D^{4.8655}] \text{ (Lindeburg, 1992)}$$

EXIT LOSSES

K	1 exit coefficient
Head loss	9.7 ft, Exit loss equation

$$\text{exit loss} = K \times (v^2/2g), \text{ where } K=1$$

TOTAL LOSSES

Pipe	54.8 ft
Exit	9.7 ft
Total	64.5 ft
=	27.9 psi

EQUIVALENT PIPE LENGTHS

Length (ft)	
Angle Valve	38 equivalent
Elbows (2)	12 equivalent
Pipe	56 actual
Total	106

Conclusion

Approximately 28 psi is required to pump 981 gpm (2.19 cfs) through the four-inch discharge pipe into the canal. The system owner states the normal operating pressure at the pump is near 90 psi, which is consistent with observations reported in the Field Report for 63-3584 (5.82 gpm per 9/64" nozzle requires a pressure of approximately 95 psi at the nozzle). The stated operating pressure of 90 psi far exceeds the 28 psi required to divert the permitted quantity, and therefore the estimated system capacity is sufficient to divert the permitted 2.19 cfs.



ATTACHMENT F
PHOTOGRAPHS



Photo 1: Well pump located in shelter. Diversion into Hat Butte Canal for this permit is accomplished by connecting the four-inch aluminum mainline lying on the ground to the riser valve.



Photo 2: Aluminum pipe discharges into Hat Butte Lateral about 40-feet east of well pump.



Photo 3: Upper "Turnout #1" from Hat Butte Lateral with well pump in far right background.



Photo 4: Middle "Turnout #2" from Hat Butte Lateral



Photo 5: Lower "Turnout #3" from Hat Butte Lateral.



Photo 6: Northwest corner of irrigated place of use facing south. Field to left (east) is irrigated



Photo 7: Northwest corner of irrigated place of use facing east.



Photo 8: Southwest corner of irrigated place of use facing east.



Photo 9: Southwest corner of irrigated place of use facing north.