

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 63-139061. Owner Church of the Nazarene - Intermountain DistrictPhone No. (208) 467-3714Current address PO Box 1159, Nampa, ID 836532. Examiner's name Allen BradburyEXAM DATE 8/16/20183. Accompanied by Ron Manley

Email _____

Address Box 1269, Cascade, ID 83611

Relationship to permit holder _____

Phone No. (208) 382-62004. Source Groundwater

tributary to _____

B. OVERLAP REVIEW1. Other water rights with the same place of use NONE2. Other water rights with the same source and point of diversion None**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
	5		NE	NW	06	13N	04E	Valley	GPS & PLSS mapping

2. Place(s) of Use:

Method of determination aerial imagery and observation from site visit

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
13N	04E	06					1			2.5									3.5

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☐ see attached.

Scale: 1" = _____

- ☐ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (**required**)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ Photo of diversion and system attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0025212	unknown	unk	unknown	unknown	

*Code to correspond with no. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. **Measurements:** _____

A measurement was not taken due to the lack of an adequate length of pipe prior to the filtration system.

E. NARRATIVE/REMARKS/COMMENTS

The field exam was completed by Aaron Skinner and Allen Bradbury on August 16, 2018 accompanied by Ron Manley, Camp Manager of the Trinity Pines Camp and Conference Center.

The point of diversion is an 8" well with metal tag no. D0025212. The well is located at N 44° 29.657' by W 116° 02.072' in Gov't Lot 5 NENW of Sec. 06, T13N, R04E, B.M. The manager did not have any information concerning the submersible well pump, motor, or set depth within the well casing. The well drillers report indicates an 8-inch welded steel casing down to 89 feet. A 2-inch galvanized pipe day lighted into a Lakos separator and filtration system, model number IL-0200-B. There were two pressure gages on the system near the well. The first pressure gage was set near a pressure switch on the input line to the filtration system, this gage read zero and didn't appear to work. The second gage was located after the filtration system and pegged out at 100 psi and did not appear to operate correctly. A RainBird ESP-Modular Controller manages the 11 valve sprinkler system with each zone ranging from 12 to 24 sprinkler heads for a total of 168 sprinklers or an average of 15 heads per zone. Sprinkler heads were Nelson Turf Signature Pro 6000's with #9 blue nozzles. The manager reported that he ran the system every day of the week for 1 hour per zone per day.

A measurement was not taken due to the lack of an adequate pipe length before the filtration system. We estimated system capacity by having the manager run zone 8 with 24 sprinkler heads. The manager provided pressure and rate tables for the Signature Pro 6000's #9 blue nozzles. The table gave three pressures 35, 50, and 65 psi with discharge rates of 4.2, 5.4, and 6.3 gpm respectively. Using a pressure of 35 psi and a discharge 4.2 gpm for 24 sprinkler heads yields $(24 \text{ heads} \times 4.2 \text{ gpm}) = 100.8 \text{ gpm}$ or 0.22 cfs.

The original appropriation is permitted for 40 acres at a rate of 0.80 cfs. However, the proof of beneficial use reports 3.5 acres for 0.20 cfs. Given that the actual acreage developed is significantly less than the permit, Rule 37.03b allows for an application rate of 0.03 cfs per acre. A higher rate is desirable for irrigation in an effort to avoid student and athletic activity conflicts during camp operation. As a comparison, using the smallest zone would yield $(12 \text{ heads} \times 4.2 \text{ gpm}) = 50.4 \text{ gpm}$ or 0.11 cfs. The allowed application rate is $(0.03 \text{ cfs/acre} \times 3.5 \text{ acres}) = 0.11 \text{ cfs}$ rounded. The review of historical aerial photos confirmed that approximately 3.5 acres have been consistently watered. It is unclear if other green areas are the result of over spray or leaking sprinkler lines.

For conclusion, see attachment.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

Based on compliance with current IDWR practices/policy the following changes were made to conditions to reflect the change from a permit to a license. Conditions 046 associated with drilling was removed. Also R62 changed to R66 to reflect the change in allowable application rate due to the decrease in developed acres.

F. FLOW CALCULATIONS

☒ Additional computation sheets attached

Measured Method:

A measurement was not taken due to the lack of an adequate pipe length before the filtration system.

Permit Rate = 0.80 cfs

Beneficial Use Standard = 3.5 acres x 0.03 cfs/acre = 0.11 cfs

Fee Rate = 0.20 cfs

Recommended Rate is 0.11 cfs.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 3.5 \text{ acres} \times 3.0 = 10.5 \text{ ac-ft}$$

$$V_{D,R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 0.11 \times 200 \text{ days} \times 1.9835 = 43.6 \text{ ac-ft}$$

$$V = \text{Smaller of } V_{I,R} \text{ and } V_{D,R} = V_{I,R} = 10.5 \text{ ac-ft}$$

2. Volume Calculations for Other Uses:

H. RECOMMENDATIONS

1. Recommended Amounts

[illegible]

2. Recommended Amendments

☒ Change P.D. as reflected on page 1☐ Add P.D. as reflected on page 1☐ None☒ Change P.U. as reflected on page 1☐ Add P.U. as reflected on page 1☐ Other

I. AUTHENTICATION

Field Examiner's Signature

Allen Bradley

Date 9/3/2019

9/3/2019

Reviewer

Date 9-3-2019

9-3-2019

SEAL

In conclusion, it appears that the system is capable of operating at a higher application rate than the allowable application rate. The well drillers report for tag no. D0025212 records that in a 1 hour test this well produced 100 gpm from a 302 foot pumping level. This is consistent with the estimate based on the run with 24 nozzles. The irrigation rate should be licensed for the Beneficial Use Standard of $(0.03 \text{ cfs/acre} \times 3.5 \text{ acres})$ of 0.11 cfs. The camp manager should be advised to reduce the application rate and/or potentially apply for an additional 1.5 acres of irrigation.

BENEFICIAL USE FIELD REPORT
Additional Computation Sheet.

65-13906 Church of the Nazarene

F. FLOW CALCULATIONS

Sprinkler analysis yield rates from 0.22 cfs to 0.34 cfs.

Test Rate

Nozzle Pressure		35	psi
Nozzle Discharge		4.2	gpm
# of Nozzles	Nozzle Discharge (gpm)	Total Discharge (gpm)	Total Discharge (cfs)
24	4.2	100.8	0.22
18	4.2	75.6	0.17
16	4.2	67.2	0.15
15	4.2	63.0	0.14
14	4.2	58.8	0.13
13	4.2	54.6	0.12
12	4.2	50.4	0.11

Nozzle Pressure		50	psi
Nozzle Discharge		5.4	gpm
# of Nozzles	Nozzle Discharge (gpm)	Total Discharge (gpm)	Total Discharge (cfs)
24	5.4	129.6	0.29
18	5.4	97.2	0.22
16	5.4	86.4	0.19
15	5.4	81.0	0.18
14	5.4	75.6	0.17
13	5.4	70.2	0.16
12	5.4	64.8	0.14

Nozzle Pressure		65	psi
Nozzle Discharge		6.3	gpm
# of Nozzles	Nozzle Discharge (gpm)	Total Discharge (gpm)	Total Discharge (cfs)
24	6.3	151.2	0.34
18	6.3	113.4	0.25
16	6.3	100.8	0.22
15	6.3	94.5	0.21
14	6.3	88.2	0.20
13	6.3	81.9	0.18
12	6.3	75.6	0.17

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

779579

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 0025212

DRILLING PERMIT NO. 872180-779579

Other IDWR No. 65-13906

2. OWNER: INTERMOUNTAIN DISTRICT

Name CHURCH OF THE NAZARENE

Address P.O. Box 1159

City NAMPA State ID Zip 83653

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N		Twp. <u>13</u>		North ☒ or South ☐	
E		Rge. <u>4</u>		East ☒ or West ☐	
S		Sec. <u>6</u>		1/4 <u>NE</u> 1/4 <u>NW</u> 1/4	
W		Gov't Lot _____		County <u>VALLEY</u>	
		Lat: _____		Long: _____	
		Address of Well Site <u>389 CABARTON</u>		City <u>CASCADE</u>	
		Road <u>Road</u>		(Give at least name of road - Distance to Road or Landmark)	

Lt. _____ Bk. _____ 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	AMOUNT	METHOD
Material	From To Sacks or Pounds	
Bentonite chips	0 20 30 SACKS	12" TEMP SURFACE CASING
#4 Pea GRAVEL	90 302 1,500 LBS.	

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	+1	89	1.250	STEEL	☒	☐	☒	☐
6	-8	302	200	PVC	☐	☒	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method SAW
 Screens _____ Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
102	162	1/4x6	408	6	PVC	☐	☒
262	302	1/4x6	204	6	PVC	☐	☒

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

21 ft. below ground Artesian pressure _____ lb.
 Depth flow encountered _____ ft. Describe access port or control devices: SANITARY WELL SEAL

11. WELL TESTS:

- ☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
100		302	1 hr.

Water Temp. 53° Bottom hole temp. _____

Water Quality test or comments: good

Depth first Water Encounter 78

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

Core Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
12	0	3	TOP SOIL		
12	3	16	BROWN SANDY CLAY + GRAVEL		
12	16	20	BROWN Decomposed GRANITE		
8	20	24	BROWN Decomposed GRANITE		
8	24	55	GRAY Decomposed GRANITE		
8	55	64	med HARD BROWN + GRAY GRANITE		
8	64	78	GRAY Decomposed GRANITE		59pm
8	78	82	med. HARD GRAY GRANITE		
8	82	100	BROWN + GRAY GRANITE		109pm
8	100	106	med. HARD GRAY GRANITE		
8	106	120	BROWN + GRAY FRACT. GRANITE		609pm
8	120	140	med. HARD GRAY GRANITE		
8	140	170	HARD GRAY GRANITE		
8	170	177	BROWN + GRAY FRACT. GRANITE		
8	177	186	HARD GRAY GRANITE		
8	186	188	BROWN + GRAY FRACT. GRANITE		
8	188	200	HARD GRAY GRANITE		
8	200	245	HARD LT. BROWN GRANITE		
8	245	250	BROWN + GRAY FRACT. GRANITE		
8	250	275	HARD GRAY GRANITE		
8	275	284	med. HARD BROWN GRANITE		
8	284	285	BROWN + GRAY FRACT. GRANITE		1009pm
8	285	302	HARD GRAY GRANITE		

RECEIVED

JUL 18 2002

WATER RESOURCES
WESTERN REGION

Completed _____ Depth 302 (Measurable)
 Date: Started 6-26-02 Completed 7-15-02

13. DRILLER'S CERTIFICATION

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

Company Name GESTIN well DRILLING Firm No. 408

Firm Official Robert W. Martin Date 7-17-02

and

Driller or Operator _____ Date _____

(Sign once if Firm Official & Operator)



System Map

Trinity Pines Camp

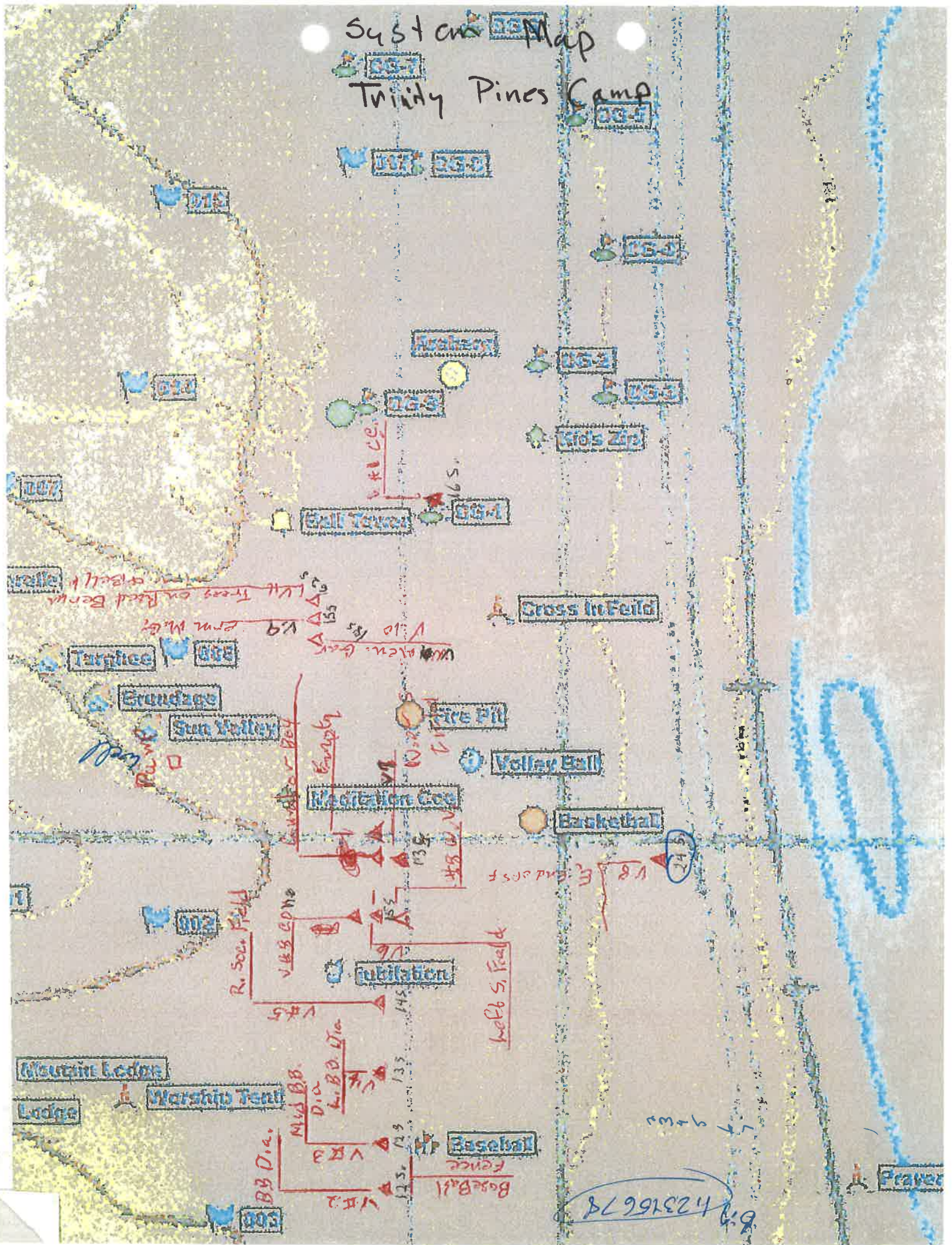




Figure 1. Well tag #D0025212 for Water Right 65-13906.



Figure 2. Well head with sediment filter. Sediment filter specification's showing associated flow range and pressure losses.



Figure 3. The pressure gage before the filtration system did not work and registered zero.



Figure 4. The pressure gage after the filtration system did not appear to work either as it pegged out at 100 psi.



Figure 5. Sprinkler heads on system were Signature Pro 6000.



Figure 6. Nozzles were blue, number 9 with a 25° trajectory. According to manufacturer specifications for an operating pressure of 35 psi, discharge would be 4.2 gpm per head.

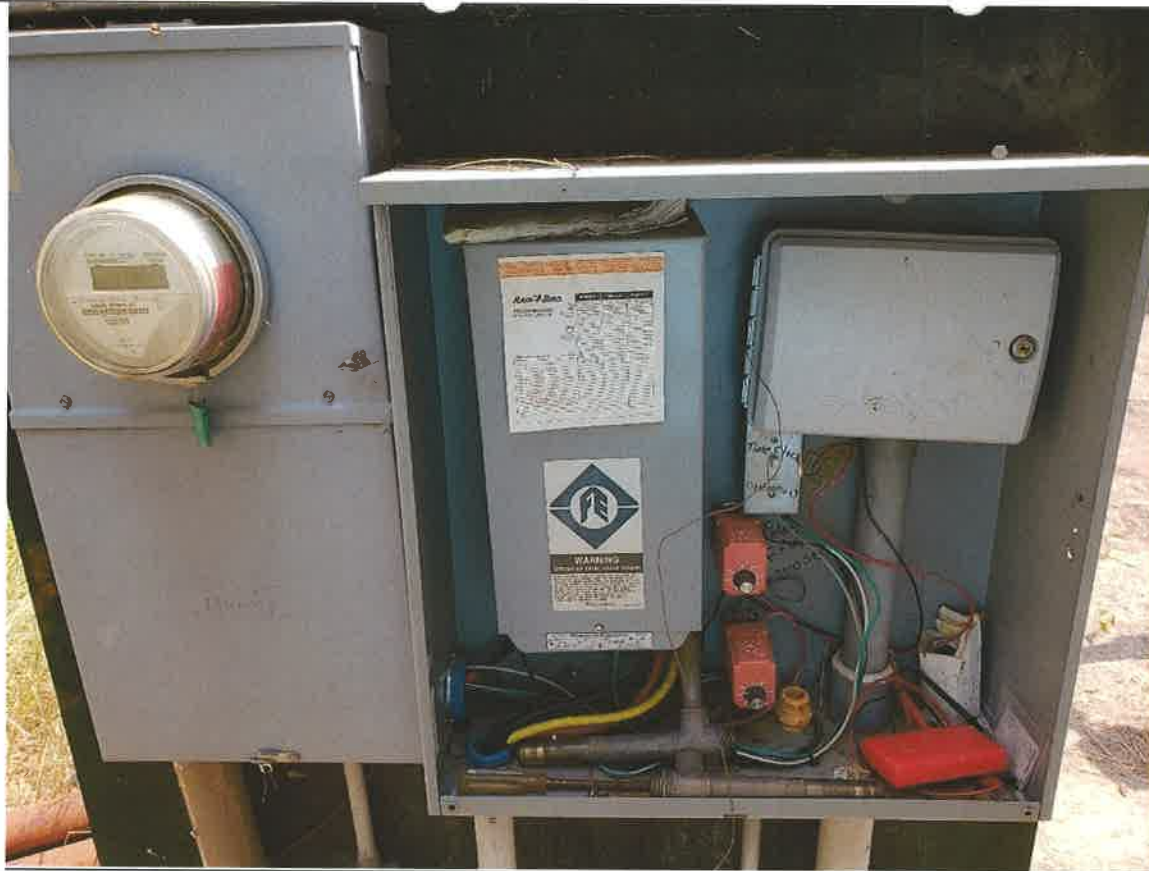


Figure 7. The RainBird ESP-Modular Controller manages the 11 valve sprinkler system with each zone ranging from 12 to 24 sprinkler heads.



Figure 8. There were 11 separate irrigation zones with an average of 15 heads per zone. This photo shows the largest, zone 8, which runs 24 sprinkler heads.

NELSON TURF

Quality. Service. Guaranteed!

5500
6000
6500 PRO SERIES

5500 PRO SERIES Nozzle Color: White 13° trajectory

Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate ¹	Nozzle Number	Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate ¹
PSI	FT	FT	GPM	IN/HR IN/HRA		BAR kPa	m	m	L/min m/hr	mm/hr mm/hrA
20	18	14	0.5	0.30 0.37	51	1.4 138	5.5	4.1	1.9 0.11	7.5 9.4
35	20	15	0.7	0.34 0.42		2.5 242	6.1	4.6	2.6 0.16	8.6 10.7
50	21	16	0.8	0.35 0.44		3.5 345	6.4	4.8	3.0 0.18	8.9 11.1
20	20	15	0.8	0.39 0.48	52	1.4 138	6.1	4.6	3.0 0.18	9.8 12.2
35	24	18	1.2	0.40 0.50		2.5 242	7.3	5.5	4.5 0.27	10.2 12.7
50	25	19	1.3	0.40 0.50		3.5 345	7.6	5.7	4.9 0.30	10.2 12.7
20	22	17	1.1	0.44 0.55	53	1.4 138	6.7	5.0	4.2 0.25	11.1 13.9
35	27	20	1.8	0.42 0.53		2.5 242	8.2	6.2	6.1 0.36	10.7 13.4
50	28	21	1.8	0.44 0.55		3.5 345	8.5	6.4	6.8 0.41	11.2 14.0
20	23	17	1.6	0.58 0.73	54	1.4 138	7.0	5.3	6.1 0.36	14.8 18.5
35	31	23	2.2	0.44 0.55		2.5 242	9.5	7.1	8.3 0.50	11.2 14.0
50	32	24	2.5	0.47 0.59		3.5 345	9.8	7.3	9.5 0.57	11.9 14.9

6500 PRO SERIES Nozzle Color: Blue 25° trajectory

Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate ¹	Nozzle Number	Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate ¹
PSI	FT	FT	GPM	IN/HR IN/HRA		BAR kPa	m	m	L/min m/hr	mm/hr mm/hrA
45	44	33	2.8	0.23 0.29	61	3.1 310	13.4	10.1	10.6 0.64	5.8 7.2
60	46	35	3.3	0.27 0.34		4.1 414	14.0	10.5	12.5 0.75	6.9 8.8
75	46	35	3.8	0.31 0.39		5.2 517	14.0	10.5	14.4 0.86	7.9 9.8
45	48	36	5.2	0.39 0.49	62	3.1 310	14.6	11.0	19.7 1.18	10.0 12.4
60	52	39	6.1	0.41 0.52		4.1 414	15.9	11.9	23.1 1.39	10.5 13.1
75	54	41	7.0	0.44 0.54		5.2 517	16.5	12.4	26.5 1.59	11.1 13.8
45	51	39	7.4	0.52 0.65	63	3.1 310	15.6	11.7	28.0 1.68	13.2 16.4
60	54	41	8.8	0.55 0.68		4.1 414	16.5	12.4	33.3 2.00	13.9 17.4
75	55	41	10.1	0.60 0.75		5.2 517	18.8	12.8	38.2 2.29	15.4 19.2
45	52	39	9.7	0.67 0.83	64	3.1 310	15.9	11.9	36.7 2.20	17.0 21.2
60	57	43	11.6	0.66 0.82		4.1 414	17.4	13.0	43.9 2.63	16.7 20.8
75	60	45	13.2	0.66 0.84		5.2 517	18.3	13.7	50.0 3.00	17.1 21.4

6503 / 6513 PRO HIGH SPEED Nozzle Color: Blue 25° trajectory

Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate ¹	Nozzle Number	Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate ¹
PSI	FT	FT	GPM	IN/HR IN/HRA		BAR kPa	m	m	L/min m/hr	mm/hr mm/hrA
45	43	32	2.8	0.29 0.34	61	3.1 310	13.1	9.8	10.6 0.64	32.3 37.3
60	43	32	3.3	0.34 0.40		4.1 414	13.1	9.8	12.5 0.75	38.1 44.0
75	43	32	3.8	0.40 0.46		5.2 517	13.1	9.8	14.4 0.86	43.8 50.6
45	44	33	5.2	0.52 0.60	62	3.1 310	13.4	10.1	19.7 1.18	57.3 66.1
60	46	35	6.1	0.55 0.64		4.1 414	14.0	10.5	23.1 1.39	61.5 71.0
75	47	35	7.0	0.61 0.71		5.2 517	14.3	10.7	26.5 1.59	67.6 78.0
45	48	36	7.4	0.62 0.72	63	3.1 310	14.6	11.0	28.0 1.68	68.5 79.1
60	50	38	8.8	0.68 0.79		4.1 414	15.2	11.4	33.3 2.00	75.1 86.7
75	50	38	10.1	0.78 0.90		5.2 517	15.2	11.4	38.2 2.29	86.2 99.5
45	46	35	9.7	0.69 1.02	64	3.1 310	14.0	10.5	36.7 2.20	97.8 112.9
60	49	37	11.6	0.93 1.08		4.1 414	14.9	11.2	43.9 2.63	103.0 119.0
75	51	38	13.2	0.98 1.13		5.2 517	15.5	11.7	50.0 3.00	108.2 125.0

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Tel. (309) 690-2200
www.LRNelson.com

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6000 PRO SERIES Nozzle Color: Blue 25° trajectory

Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate ¹	Nozzle Number	Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate ¹
PSI	FT	FT	GPM	IN/HR IN/HRA		BAR kPa	m	m	L/min m/hr	mm/hr mm/hrA
20	30	23	1.0	0.21 0.27	4	1.4 138	9.2	8.9	3.8 0.23	5.4 6.8
35	31	23	1.4	0.28 0.35		2.5 242	9.5	7.1	5.3 0.32	7.1 8.9
50	34	26	1.7	0.28 0.35		3.5 345	10.4	7.8	6.4 0.39	7.2 9.0
20	33	25	1.2	0.21 0.26	5	1.4 138	10.1	7.5	4.5 0.27	5.4 6.7
35	37	28	1.6	0.23 0.28		2.5 242	11.3	8.5	6.1 0.36	5.7 7.1
50	38	29	1.9	0.25 0.32		3.5 345	11.6	8.7	7.2 0.43	6.4 8.0
20	32	24	1.4	0.25 0.33	6	1.4 138	9.8	7.3	5.3 0.32	6.7 8.3
35	38	29	1.9	0.25 0.32		2.5 242	11.6	8.7	7.2 0.43	6.4 8.0
50	40	30	2.3	0.28 0.35		3.5 345	12.2	9.2	8.7 0.52	7.0 8.8
20	38	29	2.2	0.29 0.37	7	1.4 138	11.6	8.7	8.3 0.50	7.5 9.3
35	40	30	2.7	0.33 0.41		2.5 242	12.2	9.2	10.2 0.61	8.3 10.3
50	41	31	3.1	0.36 0.44		3.5 345	12.5	9.4	11.7 0.70	9.0 11.3
35	38	29	3.1	0.41 0.52	8	2.5 242	11.6	8.7	11.7 0.70	10.5 13.1
50	42	32	4.0	0.44 0.54		3.5 345	12.8	9.6	15.1 0.91	11.1 13.8
65	43	32	4.6	0.48 0.60		4.6 449	13.1	9.8	17.4 1.04	12.2 15.2
35	42	32	4.2	0.46 0.57	9	2.5 242	12.8	9.6	15.9 0.95	11.6 14.5
50	47	35	5.4	0.47 0.59		3.5 345	14.3	10.8	20.4 1.23	12.0 14.9
65	48	36	6.3	0.53 0.66		4.6 449	14.6	11.0	23.8 1.43	13.4 16.7
35	42	32	5.4	0.59 0.74	10	2.5 242	12.8	9.6	20.4 1.23	15.0 18.7
50	48	36	6.8	0.57 0.71		3.5 345	14.6	11.0	25.7 1.54	14.4 18.0
65	49	37	8.0	0.64 0.80		4.6 449	14.9	11.2	30.3 1.82	16.3 20.3
35	42	32	6.4	0.70 0.87	11	2.5 242	12.8	9.6	24.2 1.45	17.7 22.1
50	48	36	8.1	0.68 0.84		3.5 345	14.6	11.0	30.7 1.84	17.2 21.4
65	51	38	9.5	0.70 0.88		4.6 449	15.6	11.7	36.0 2.16	17.9 22.3

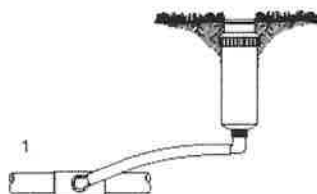
6095 LOW ANGLE Nozzle Color: Green 13° trajectory (optional for 6000 series only)

Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate ¹	Nozzle Number	Pressure	Max Radius	Min Radius	Discharge	Precipitation Rate ¹
PSI	FT	FT	GPM	IN/HR IN/HRA		BAR kPa	m	m	L/min m/hr	mm/hr mm/hrA
20	28	20	0.9	0.26 0.32	4	1.4 138	7.9	5.9	3.4 0.20	6.5 8.1
35	33	25	1.3	0.23 0.29		2.5 242	10.1	7.5	4.9 0.30	5.8 7.3
50	34	28	1.5	0.25 0.31		3.5 345	10.4	7.8	5.7 0.34	6.3 7.9
20	26	20	1.1	0.31 0.39	5	1.4 138	7.9	5.9	4.2 0.25	8.0 9.9
35	33	25	1.4	0.25 0.31		2.5 242	10.1	7.5	5.3 0.32	6.3 7.8
50	35	28	1.7	0.27 0.33		3.5 345	10.7	8.0	6.4 0.39	6.8 8.5
20	26	20	1.4	0.40 0.50	6	1.4 138	7.9	5.9	5.3 0.32	10.1 12.6
35	33	25	1.9	0.34 0.42		2.5 242	10.1	7.5	7.2 0.43	8.5 10.6
50	35	27	2.3	0.34 0.43		3.5 345	11.0	8.2	8.7 0.52	8.7 10.8
20	31	23	2.5	0.50 0.62	7	1.4 138	9.5	7.1	9.5 0.57	12.7 15.9
35	35	26	3.1	0.49 0.61		2.5 242	10.7	8.0	11.7 0.70	12.4 15.4
50	37	28	3.5	0.49 0.61		3.5 345	11.3	8.5	13.2 0.79	12.5 15.6
35	32	24	3.2	0.60 0.75	8	2.5 242	9.8	7.3	12.1 0.73	15.3 19.1
50	38	29	4.0	0.53 0.67		3.5 345	11.6	8.7	15.1 0.91	13.6 16.9
65	39	29	4.7	0.60 0.74		4.6 449	11.9	8.9	17.8 1.07	15.1 18.9
35	34	26	3.9	0.65 0.81	9	2.5 242	10.4	7.8	14.8 0.89	16.5 20.6
50	37	28	4.9	0.69 0.86		3.5 345	11.3	8.5	18.5 1.11	17.5 21.8
65	40	30	5.7	0.69 0.86		4.6 449	12.2	9.2	21.6 1.29	17.4 21.7
35	33	25	5.1	0.90 1.12	10	2.5 242	10.1	7.5	19.3 1.16	22.9 28.6
50	39	29	6.4	0.81 1.01		3.5 345	11.9	8.9	24.2 1.45	20.6 25.7
65	42	32	7.5	0.82 1.02		4.6 449	12.8	9.6	28.4 1.70	20.8 25.9

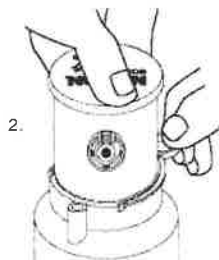
¹ Precipitation rates for square and triangular spacing calculated at 50% of diameter for half-circle operation. Assumes zero wind for precipitation and radius. Adjust for local conditions.

GEAR DRIVE INSTALLATION & ADJUSTMENT

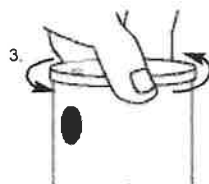
1. ATTACH TO UNDERGROUND PIPE
CAUTION: Do not use pipe dope.
Make sure the gear drive is installed at the finished grade height.



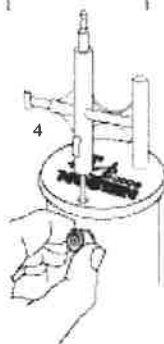
2. CLAMP IN "UP" POSITION
Grab protective cap and pull up until seam appears, slip clamp in place.



3. REMOVING BAYONET PROTECTIVE CAP
It works much like a medicine bottle cap and helps to insure the protective cap stays assembled. Twist the bayonet cap counter-clockwise past the snap until you reach the fixed stop and then lift up to remove. All models are designated with model number stamped in rubber cover for easy identification.

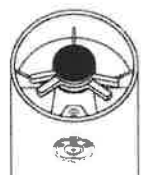


4. SELECT AND INSTALL NOZZLE
Back out nozzle retaining screw. Slip nozzle into hole and replace screw. Make sure screw is driven in enough to clear surrounding plastic, or bayonet cap will not twist on.



For heads at the bottom of slopes, an ADV disk can be installed to reduce run-off when the system is off.

5. FULL CIRCLE ADJUSTMENT
For FULL CIRCLE; leave black side up. No need to set collars.

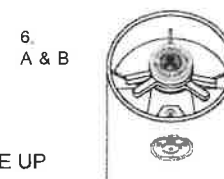


5. Click-Set® Disk

6. PART CIRCLE ADJUSTMENT

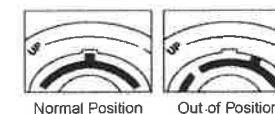
A. REMOVE CLICK-SET® DISK
and manually turn sprinkler until nozzle points to the center of the desired watering area.

B. PLACE CLICK-SET® DISK IN POSITION GRAY SIDE UP
Adjust collars to desired angle.



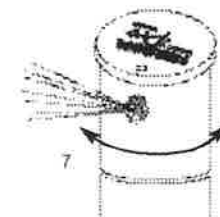
7. MEMORY RING PROTECTION

If sprinkler is manually turned past the set pattern, the memory ring will pop temporarily out of position while the sprinkler rotates around to its original part circle pattern. If the memory ring gets out of position while you are setting the pattern, remove the disk and rotate the ring with your fingers until the tab clicks into place.



8. QUICK ADJUST

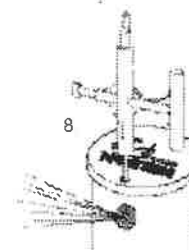
Ratcheting piston allows for quick turret adjustment for part-circle applications— wet or dry.
* THE RATCHETING PISTON, WET OR DRY, WILL NOT BREAK DURING ADJUSTMENT.



9. CHECK WITH WATER ON

Check part circle patterns. Turn diffuser screw clockwise to diffuse spray as needed. Make sure top of diffuser screw is below surrounding plastic.

CAUTION: Turn water on SLOWLY to bleed air during initial start-up. We recommend a velocity fill rate of less than 2 feet per second.



10. REPLACE BAYONET CAP

A. STANDARD INSTALLATION
Twist bayonet cap clockwise and make sure it snaps into the locking position. This will align the bayonet cap on the head.

B. LOCKING SCREW
Twist cap on and line up with nozzle. Turn screw in through dimple on top of cap. Screw in until top of screw is recessed into rubber.



BENEFICIAL USE FIELD REPORT

65-13906 Church of the Nazarene

Test Rate

Nozzle Pressure psi
Nozzle Discharge gpm

# of Nozzles	Nozzle Discharge (gpm)	Total Discharge (gpm)	Total Discharge (cfs)
24	4.2	100.8	0.22
18	4.2	75.6	0.17
16	4.2	67.2	0.15
15	4.2	63.0	0.14
14	4.2	58.8	0.13
13	4.2	54.6	0.12
12	4.2	50.4	0.11

Nozzle Pressure psi
Nozzle Discharge gpm

# of Nozzles	Nozzle Discharge (gpm)	Total Discharge (gpm)	Total Discharge (cfs)
24	5.4	129.6	0.29
18	5.4	97.2	0.22
16	5.4	86.4	0.19
15	5.4	81.0	0.18
14	5.4	75.6	0.17
13	5.4	70.2	0.16
12	5.4	64.8	0.14

Nozzle Pressure psi
Nozzle Discharge gpm

# of Nozzles	Nozzle Discharge (gpm)	Total Discharge (gpm)	Total Discharge (cfs)
24	6.3	151.2	0.34
18	6.3	113.4	0.25
16	6.3	100.8	0.22
15	6.3	94.5	0.21
14	6.3	88.2	0.20
13	6.3	81.9	0.18
12	6.3	75.6	0.17

WPI HSE WCH N77.01.00. W110.02.00.00

Heads - signature Pres 6000

~~2.5 gpm~~ uses #9 blue nozzles

Blue nozzles

@ 35 psi discharge 4.2 gpm $\times 24 \text{ hrs} = 100.8 \text{ gpm} = 0.22 \text{ cfs}$

1 hr/day / 7 days

Ren valve #8 with 24 heads

<u>Value</u>	<u>Heads</u>
1	12
2	12
3	12
4	13
5	14
6	15
7	13
8	24
9	15
10	18
11	16
	<u>168</u>

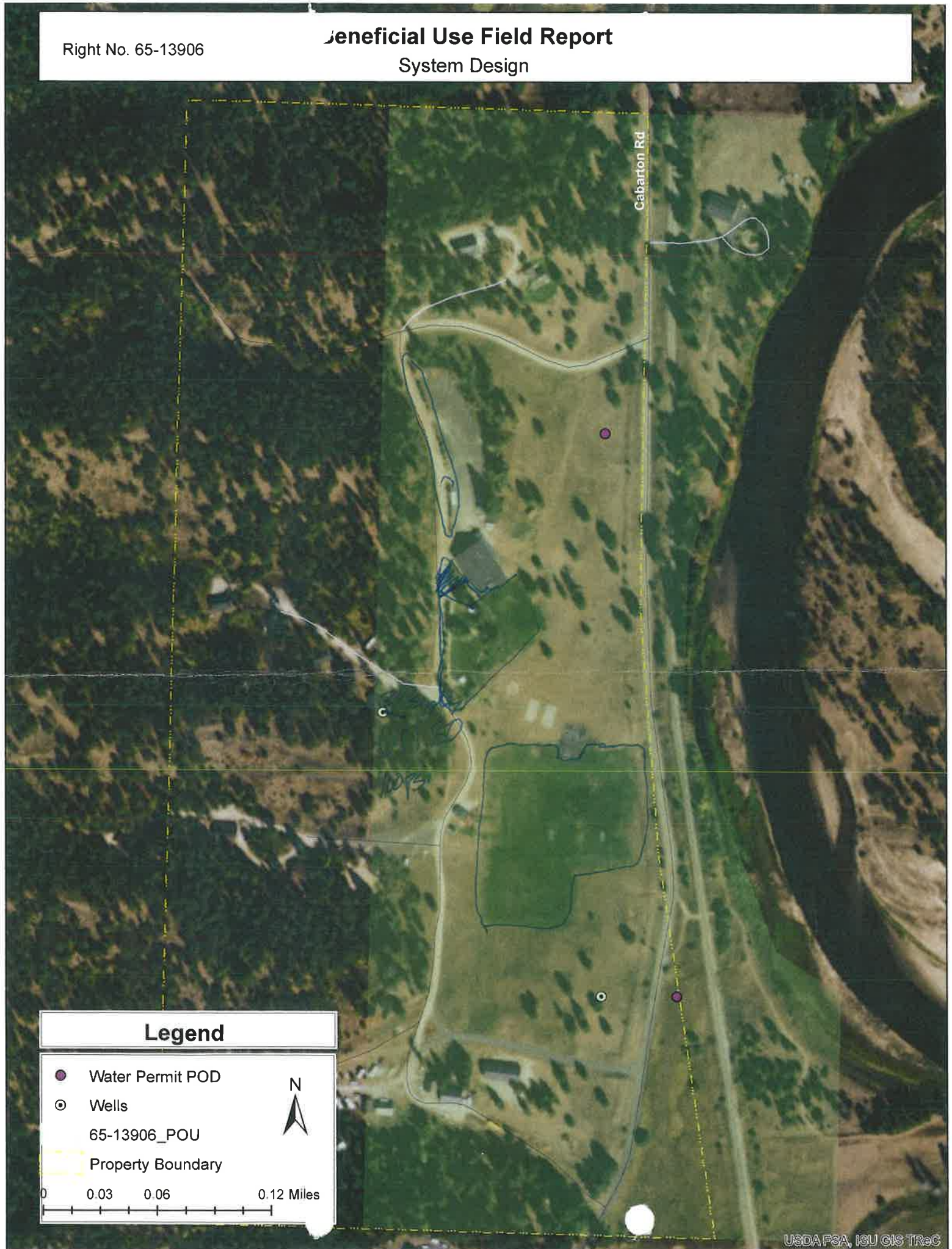
med = 15

avg = 15 heads

@ 35 psi discharge $4.29 \text{ gpm} \times 15 \text{ heads} = 63 \text{ gpm}$ or 0.14 cfs

Beneficial Use Field Report

System Design

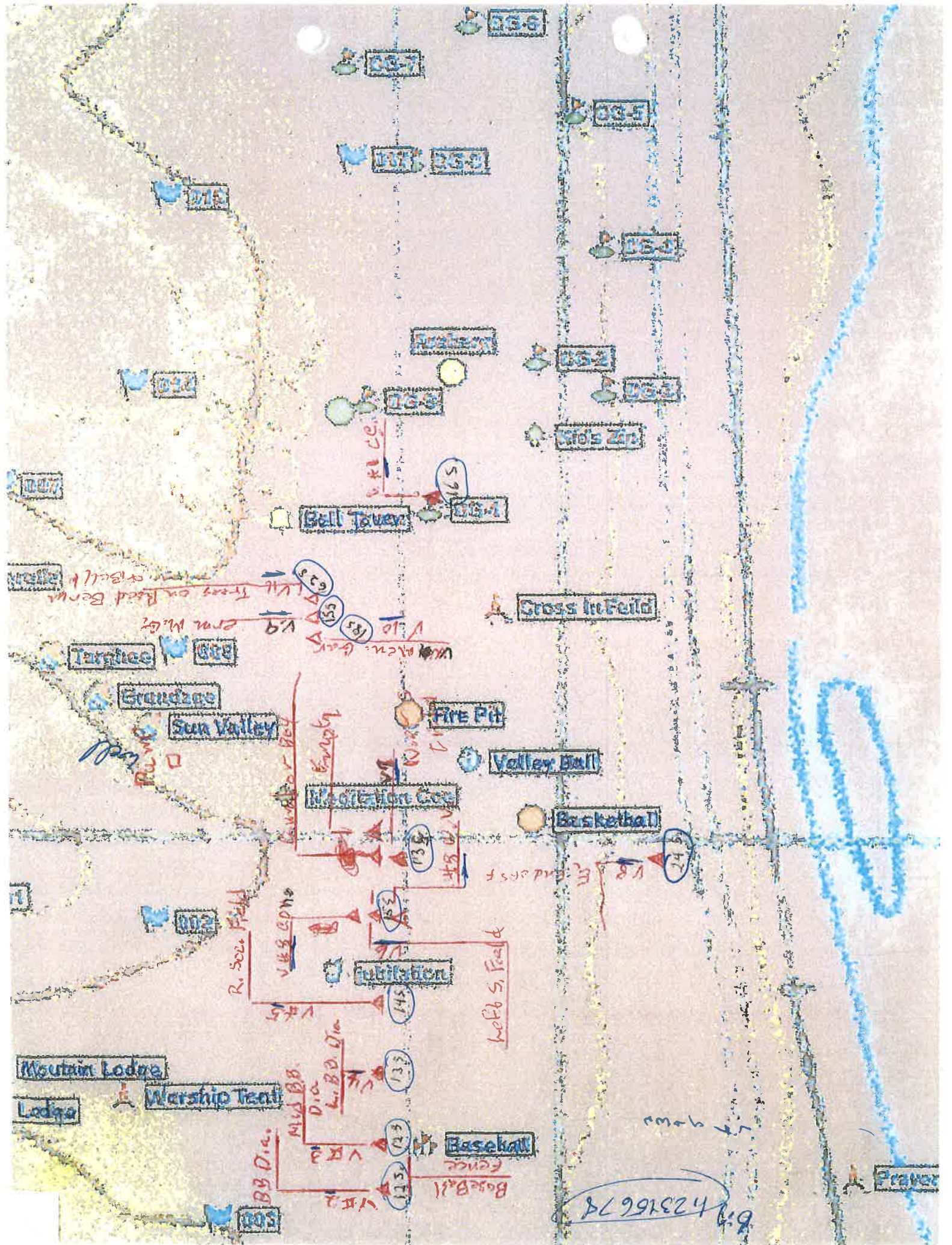


Legend

- Water Permit POD
- Wells
- 65-13906_POU
- Property Boundary



0 0.03 0.06 0.12 Miles





State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region • 2735 Airport Way • Boise, Idaho 83705-5082

Phone: (208) 334-2190 • Fax: (208) 334-2348 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

July 31, 2018

COPY

CHURCH OF THE NAZARENE
INTERMOUNTAIN DISTRICT
PO BOX 1159
NAMPA, ID 83653

RE: Scheduling Field Exam for Water Right Permit No. 65-13906

Dear Permit Holder:

We are planning to conduct water right examinations in the vicinity of the above-referenced permit **this season**. An examination is needed to verify the water use in order to issue a water right license.

The above-referenced permit authorizes **0.80 cfs** of **GROUND WATER** for **IRRIGATION** use. **If you have developed a beneficial use and still own the place of use property, please contact me at your earliest convenience to schedule an examination.**

If you did not develop a beneficial use of water under the permit during the beneficial use period, a license cannot be issued and the permit should be relinquished. If that use was developed, but have ceased using the water and you currently carry no interest in it, please relinquish the permit by submitting the enclosed Relinquishment of Permit form (no fee required).

Please contact me within the next thirty (30) days at (208) 334-2190 to either schedule an examination or submit a relinquishment form. If the Department does not received a response by August 31, 2018, your permit will become void. Thank you for your attention to this matter.

Sincerely,

Aaron Skinner
Water Resource Agent, Sr.
Idaho Department of Water Resources
Phone: (208) 334-2190
Email: aaron.skinner@idwr.idaho.gov

Enclosures: Relinquishment of Permit form
Water Permit Report and Map

State of Idaho
Department of Water Resources

Attachment to Permit to Appropriate Water

65-13906

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections

0 0.1 0.2 0.4 Miles



Overlap Analysis for Permit No. 65-13906 POD

13N04E6

Process	Basin Sequence	Draft	Owner	Source	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Permit	65-13906	N	CHURCH OF THE NAZARENE	GROUND WATER						X												
Water Permit	65-13967	N	PANCHERI, DARWIN; PANCHERI, JOAN L	GROUND WATER										X								
Water Right	65-13967	Y	PANCHERI, DARWIN; PANCHERI, JOAN L	GROUND WATER										X								
Water Right	65-19702	N	UNITED STATES OF AMERICA ACTING THROUGH	PAYETTE RIVER				X	X													
Water Right	65-2534	N	GIVENS PURSLEY LLP; PANCHERI, DARWIN; PANCHERI, DUANE; PANCHERI, JOAN L; PANCHERI, JOAN L	PAYETTE RIVER				X														
Water Right	65-2696	N	GIVENS PURSLEY LLP; PANCHERI, DARWIN; PANCHERI, DUANE; PANCHERI, JOAN L; PANCHERI, JOAN L	PAYETTE RIVER				X														
Water Right	65-4010	N	FIFE, ERNEST E; FIFE, PRISCILLA; INTERMOUNTAIN DISTRICT ADVISORY BOARD	SPRING																		
Water Right	65-8080	N	FIFE, ERNEST; FIFE, PRISCILLA; INTERMOUNTAIN DISTRICT ADVISORY BOARD	SPRINGS										X								

Overlap Analysis for Permit No. 65-13906 POU

13N04E6

Process	Basin Sequence	Draft	Owner	Source	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Right	65-3138	N	CITY OF CASCADE	CAMPBELL CREEK	MUNICIPAL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Permit	65-13906	N	CHURCH OF THE NAZARENE	GROUND WATER	IRRIGATION					20				20								40
Water Permit	65-13967	N	PANCHERI, DARWIN; PANCHERI, JOAN L	GROUND WATER	IRRIGATION									10	18		10			2		
Water Right	65-13967	Y	PANCHERI, DARWIN; PANCHERI, JOAN L	GROUND WATER	IRRIGATION									10	18		10			2		
Water Right	65-12726	N	CITY OF CASCADE	GROUND WATER	MUNICIPAL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	65-13311	N	CITY OF CASCADE	GROUND WATER	MUNICIPAL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	65-13485	N	CITY OF CASCADE	GROUND WATER	MUNICIPAL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	65-10354	N	CITY OF CASCADE	HAZARD CREEK	MUNICIPAL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	65-2534	N	GIVENS PURSLEY LLP; PANCHERI, DARWIN; PANCHERI, DUANE; PANCHERI, JOAN L; PANCHERI, JOAN L	PAYETTE RIVER	IRRIGATION									15				5	28	18	4	70
Water Right	65-19702	N	UNITED STATES OF AMERICA ACTING THROUGH	PAYETTE RIVER	STOCKWATER			X	X													
Water Right	65-10353	N	CITY OF CASCADE	SKEIN CREEK	MUNICIPAL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	65-4010	N	FIFE, ERNEST E; FIFE, PRISCILLA; INTERMOUNTAIN DISTRICT ADVISORY BOARD	SPRING	DOMESTIC								X									
Water Right	65-8080	N	FIFE, ERNEST; FIFE, PRISCILLA; INTERMOUNTAIN DISTRICT ADVISORY BOARD	SPRINGS	DOMESTIC									X								
Water Right	65-8080	N	FIFE, ERNEST; FIFE, PRISCILLA; INTERMOUNTAIN DISTRICT ADVISORY BOARD	SPRINGS	STOCKWATER									X				X				

- Overlap; surface water source with municipal water use
 - Overlap; groundwater source with municipal water use
 - Overlap; groundwater source with irrigation use
 - Overlap; spring water source with domestic use
 - Overlap; spring water source with stockwater use
- within City of Cascade service area LPOU*

779579
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: _____	_____	
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian			

1. WELL TAG NO. D 0025212

DRILLING PERMIT NO. 872180-779579

Other IDWR No. 65-13906

2. OWNER: INTERMOUNTAIN DISTRICT

Name CHURCH OF THE NAZARENE

Address P.O. Box 1159

City NAMPA State ID Zip 83653

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N		Twp. 13		North ☒ or South ☐	
E		Rge. 4		East ☒ or West ☐	
S		Sec. 6		1/4 NE 1/4 NW 1/4	
		Gov't Lot		10 acres County VALLEY 150 acres	
		Lat: _____		Long: _____	
		Address of Well Site 389 CABARTON		City CASCADE	
		Road _____		(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	AMOUNT	METHOD
Material	From To Sacks or Pounds	
Bentonite chips	0 20 30 SACKS	12" TEMP SURFACE CASING
#4 Per gravel	90 302 1,500 lbs.	

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	+1 89	250 STEEL	☒	☐	☒	☐
6	-8 302	200 PVC	☐	☒	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method SAW
Screens _____ Screen Type _____

From To Slot Size Number Diameter Material	Casing	Liner
102 162 4/6x6 408 6 PVC	☐	☒
262 302 4/6x6 204 6 PVC	☐	☒

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

21 ft. below ground Artesian pressure _____ lb.

Depth flow encountered _____ ft. Describe access port or control devices: SANITARY WELL SEAL

11. WELL TESTS:

- ☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
100		302	1 hr.

Water Temp. 53°

Bottom hole temp. _____

Water Quality test or comments: good

Depth first Water Encounter 78

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Water

Bore Dia.	From To	Remarks: Lithology, Water Quality & Temperature	Y	N
12	0 3	TOP SOIL		
12	3 16	BROWN SANDY CLAY + GRAVEL		
12	16 20	BROWN DECOMPOSED GRANITE		
8	20 24	BROWN DECOMPOSED GRANITE		
8	24 55	GRAY DECOMPOSED GRANITE		
8	55 64	med HARD BROWN + GRAY GRANITE		
8	64 78	GRAY DECOMPOSED GRANITE		59pm
8	78 82	med. HARD GRAY GRANITE		
8	82 100	BROWN + GRAY GRANITE		109pm
8	100 106	med. HARD GRAY GRANITE		
8	106 120	BROWN + GRAY FRACT. GRANITE		609pm
8	120 140	med. HARD GRAY GRANITE		
8	140 170	HARD GRAY GRANITE		
8	170 177	BROWN + GRAY FRACT. GRANITE		
8	177 186	HARD GRAY GRANITE		
8	186 188	BROWN + GRAY FRACT. GRANITE		
8	188 200	HARD GRAY GRANITE		
8	200 245	HARD LT. BROWN GRANITE		
8	245 250	BROWN + GRAY FRACT. GRANITE		
8	250 275	HARD GRAY GRANITE		
8	275 284	med. HARD BROWN GRANITE		
8	284 285	BROWN + GRAY FRACT. GRANITE		1009pm
8	285 302	HARD GRAY GRANITE		

RECEIVED

JUL 18 2002

WATER RESOURCES
WESTERN REGION

Completed Depth 302 (Measurable)

Date: Started 6-26-02 Completed 7-15-02

13. DRILLER'S CERTIFICATION

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

Company Name Gestrin Well Drilling Firm No. 408

Firm Official Robert M. Martin Date 7-17-02

and

Driller or Operator _____ Date _____

(Sign once if Firm Official & Operator)