

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-16951
Exam Date: 07/16/2020

1. Current Owner:
STIMSON LUMBER CO 520 SW YAMHILL ST STE 700 PORTLAND OR 97204-1330
2. Accompanied by: Britt Madison
Phone No: 208-765-1414
Address: 7600 N. Mineral Drive STE 400, Coeur D'Alene ID 83815
Relationship to permit Holder: Representative

3. **SOURCE:**
UNNAMED STREAM

Tributary
BEAVER LAKE

Method of Determination: Arcmap and DRG

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
95-13452	GROUNDWATER	DOMESTIC	PARTIAL DECREE

Comments: Right 95-13452 uses groundwater from a well servicing 1 home for domestic purposes with up to ½ acre irrigation included that directly overlaps the irrigation system associated with this right. Condition X35 was added at time of licensing to mitigate overlap concerns between rights 95-13452 and 95-16951.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

UNNAMED STREAM SW¼ NW¼, Sec. 16, Twp 54N, Rge 03W, B.M. BONNER County

Method of Determination: GPS; POD is a submersible pump in stream located at -116°43.071, 48°01.742.

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
54N	03W	16							2.0										2.0

Total Acres: 2.0

Method of Determination: Field exam and Arcmap aerial imagery.

3. Delivery System Diagram Attached (required). Indicate all major components and distances between components.
☒ Indicate weir size/pipe as applicable.
 Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be
☒ 1:24,000 or greater.
☒ Aerial Photo Attached (required for irrigation of 10+ acres).
☒ Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
N/A					

D. FLOW MEASUREMENTS

1.

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

2. Measurements: Applicant's water system included buried poly pipe routed from a 1hp STA-RITE submersible pump directly to a pressurized sprinkler system, making flow measurements non-attainable. Pressurized irrigation system installation specifications were used to determine that 6ea rainbird 5000 SAM series sprinklers with 1.5 nozzle size operated at one time producing a flow rate of 6 sprinklers x 1.5 gpm = 9 gpm = **0.02 cfs** considering Department rounding standards.

E. FLOW CALCULATIONS
☒ Additional Computation Sheets Attached

Measured Method:

Applicant provided specification details for the pressurized irrigation system used at the POU as follows:

- Rainbird 5000 SAM style sprinkler heads
- 17 zones total, with 6ea sprinklers per zone
- 1.5 nozzle size, which produce 1.5 gpm per sprinkler
- 6ea sprinklers x 1.5 gpm = 9.0 gpm = 0.02 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.0 \text{ acres} \times 3.0 \text{ afa} = 6.0 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.02 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 8.5$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 6.0 \text{ af}$$

2. Volume Calculations for Other Uses:

Irrigation use is from a surface water source, as such there are no volumes applied to license.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 7/16/2020 with the applicant's representative, Britt Madison, showed water being diverted from an unnamed stream for irrigation purposes around one home. At the POD, the applicant had installed a metal culvert vertically to capture stream water, with a 1hp STA-RITE submersible pump diverting water to a pressurized sprinkler system. Water was piped from pump to the irrigation POU using buried poly-pipe making flow measurements un-attainable. Pressurized irrigation system installation specifications were used to determine a flow rate. The system incorporated 17 zones, each with 6ea Rainbird 5000 SAM series sprinklers with 1.5 nozzle size that operated at one time producing a flow rate of 6 sprinklers x 1.5 gpm = 9 gpm = **0.02 cfs** considering Department rounding standards, which will be applied as the maximum diversion rate on the license.

Permit 95-16951 was approved for the development of irrigation for 115 acres, with 5 points of diversion approved. During the field exam, it was identified the applicants leased pasture land to farmers who harvested hay crops. Irrigation of these fields for 2nd or 3rd cuttings was accomplished using a KIFCO water reel big gun, model B-140 reel accompanied by a 9hp Subaru-Robin EX27D pump. Specifications for this water system identify a maximum capacity of 80 gpm limited by the 9hp pump performance specs. During licensing review, it was identified that water right 95-9697 is already appurtenant to this right's POU, with the same irrigation water system used for both 95-9697 and 95-16951. According to the Department's records, permit 95-16951 was filed to add a fifth point of diversion located in Beaver Lake. The Permit also was filed to add an additional 1.76 cfs for irrigation use above the 0.27 cfs supplied by water right 95-9697 for the irrigation of up to 115.0 acres. The 80 gpm 9hp pump used by the applicant's has a capacity of 0.18 cfs, which is less than what right 95-9697 provides for the same irrigation water system.

During this field examination, it was observed that the fifth point of diversion, BEAVER LAKE L2 (NW1/4NE1/4) Sec. 16, Twp 54N, Rge 03W, B.M. BONNER County, had not been developed for beneficial use in the permit's development period. Additionally, irrigation occurring at the place of use only exceeded the 108.4 acres appurtenant with right 95-9697 in the form of 2.0 acres irrigated around 1 home on the applicant's property. Based on this information, 4 of the points of diversion associated with the irrigation of pasture land were removed from the permit during licensing review. The permit's diversion rate was reduced from 2.03 cfs, and the license is being recommended for 0.02 cfs diverted from an unnamed stream to irrigate the 2 acres not associated with existing right 95-9697.

Field exam notes were taken, and the irrigation occurring around the applicant's home was traced out on field maps. During licensing review, Arcmap aerial imagery was used to trace out the irrigation area, which equals 2.0 acres. The annual volume associated with 2 acres of irrigation equals 6.0 af, but as this is a surface source water right there will be no volume metrics applied to the license. The applicants used water to irrigation around the home, and includes forested area that is watered to minimize fire hazards throughout the irrigation season. Active irrigation was observed from the pressurized sprinkler system. Arcmap imagery with the recommended POU layer active shows a minor ribbon of overlap where right 95-9697 and 95-16951 border; during the field exam the area in question was identified as buffer land between the lawn fence and pasture land, and the only irrigation system watering the minor ribbon of overlap land is coming from the pressurized lawn irrigation system. As such, this portion of right 95-9697's POU is not recommended to be considered as an overlap concern for irrigation.

Condition 26A was removed from the permit during licensing review. Condition R62 was replaced with R58 describing that this right when combined with all other rights shall provide no more than 3.0 afa per acre for irrigation of the place of use. The applicants have an existing water right 95-13452 that uses groundwater from a well servicing 1 home for domestic purposes with up to ½ acre irrigation included that directly overlaps the irrigation system associated with this right. Condition X35 was added at time of licensing to mitigate overlap concerns between rights 95-13452 and 95-16951 and describe that when combined shall not exceed the irrigation of 2.0 acres. There are no other overlap concerns for this right.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>
IRRIGATION	04/01 to 10/31	0.02 CFS

Totals: 0.02 CFS

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 X None

I. AUTHENTICATION Luke Bates - Water Resource Agent

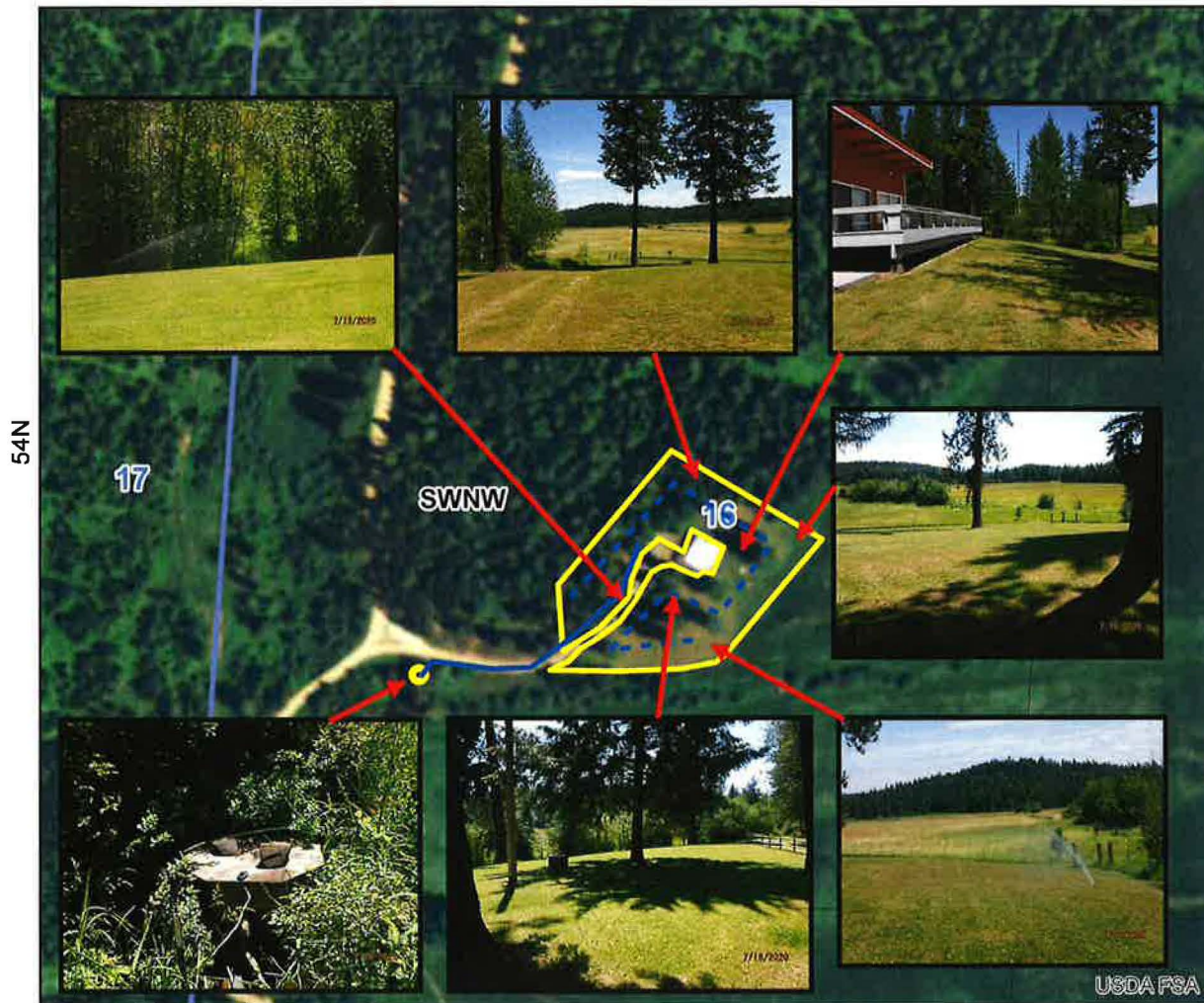
Field Examiner's Name Luke Bates Date 11/13/2020

Reviewer Adam Fink Date 11/27/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam
95-16951

IRRIGATION system diagram.

03W



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

0 0.035 0.07 0.14 Miles



STA-RITE® HS Series

Signature 2000® stainless steel 4" submersible pumps

ORDERING INFORMATION															
GPM	MOTOR TYPE	HP	STGS.	PH	VOLT	ASSEMBLED PUMP			PUMP END			MOTOR		CONTROL BOX	
						CATALOG NUMBER	LENGTH INCHES*	WEIGHT POUNDS*	CATALOG NUMBER	LENGTH INCHES*	WEIGHT POUNDS*	CATALOG NUMBER	WEIGHT POUNDS*	CATALOG NUMBER	WEIGHT POUNDS*
20**	2 WIRE	3/4	5	1	230	S20P4HS07221	23-3/4	30	L20P4DH	12-1/2	8-1/2	P42B0007A2	23		
		1	7	1	230	S20P4HS10221	27-1/4	34	L20P4EH	14-3/4	9-3/4	P42B0010A2	25		
		1-1/2	9	1	230	S20P4HS15221	32	39	L20P4FH	16-3/4	10-3/4	P42B0015A2	29		
	3 WIRE	3/4	5	1	230	S20P4HS07231	23-3/4	30	L20P4DH	12-1/2	8-1/2	P43B0007A2	23	SMC-CR0721	5
		1	7	1	230	S20P4HS10231	27-1/4	34	L20P4EH	14-3/4	9-3/4	P43B0010A2	25	SMC-CR1021	5
		1-1/2	9	1	230	S20P4HS15231	30-1/2	39	L20P4FH	16-3/4	10-3/4	P43B0015A2	29	SMC-CR1521	7
		1-1/2	9	3	230		L20P4FH	16-3/4	10-3/4	P43B0015A3	23				
		1-1/2	9	3	460		L20P4FH	16-3/4	10-3/4	P43B0015A4	23				
		2	12	1	230		L20P4GH	20-1/4	12-1/2	P43B0020A2	31			SMC-CR2021	7
		2	12	3	230		L20P4GH	20-1/4	12-1/2	P43B0020A3	32				
		2	12	3	460		L20P4GH	20-1/4	12-1/2	P43B0020A4	32				
		3	17	1	230		L20P4HH	25-3/4	15	P43B0030A2	40	SMC-CR3021	7		
		3	17	3	230		L20P4HH	25-3/4	15	P43B0030A3	32				
		3	17	3	460		L20P4HH	25-3/4	15	P43B0030A4	32				
		5	28	1	230		L20P4JH	38	21	P43B0050A2	70			SMC-CR5021	8
		5	28	3	230		L20P4JH	38	21	P43B0050A3	55				
		5	28	3	460		L20P4JH	38	21	P43B0050A4	55				
		7-1/2	40	3	230		L20P4KH	53-3/4	30	P43B0075A3	70				
		7-1/2	40	3	460		L20P4KH	53-3/4	30	P43B0075A4	70				
		10	54	3	460		L20P4LH	71	41	P43B0100A4	78				
30***	2 WIRE	1	5	1	230	S30P4HS10221	26-1/2	35	L30P4EH	14	9-3/4	P42B0010A2	25		
		1-1/2	6	1	230	S30P4HS15221	30-1/2	39	L30P4FH	15-1/4	10-3/4	P42B0015A2	29		
	3 WIRE	1	5	1	230	S30P4HS10231	26-1/2	35	L30P4EH	14	10	P43B0010A2	25	SMC-CR1021	5
		1-1/2	6	1	230	S30P4HS15231	29	39	L30P4FH	15-1/4	11	P43B0015A2	29	SMC-CR-1521	7
		1-1/2	6	3	230		L30P4FH	15-1/4	11	P43B0015A3	23				
		1-1/2	6	3	460		L30P4FH	15-1/4	11	P43B0015A4	23				
		2	8	1	230		L30P4GH	18-1/4	12	P43B0020A2	31			SMC-CR2021	7
		2	8	3	230		L30P4GH	18-1/4	12	P43B0020A3	23				
		2	8	3	460		L30P4GH	18-1/4	12	P43B0020A4	23				
		3	12	1	230		L30P4HH	24	15	P43B0030A2	40	SMC-CR3021	7		
		3	12	3	230		L30P4HH	24	15	P43B0030A3	32				
		3	12	3	460		L30P4HH	24	15	P43B0030A4	32				
		5	20	1	230		L30P4JH	35-3/4	20	P43B0050A2	70			SMC-CR5021	8
		5	20	3	230		L30P4JH	35-3/4	20	P43B0050A3	55				
		5	20	3	460		L30P4JH	35-3/4	20	P43B0050A4	55				
		7-1/2	28	3	230		L30P4KH	50	27	P43B0075A3	70				
		7-1/2	28	3	460		L30P4KH	50	27	P43B0075A4	70				
		10	38	3	460		L30P4LH	65-1/2	35	P43B0100A4	70				

*Length and Weight are approximate.

**For 10 GPM, 15 GPM and 20 GPM discharge is 1-1/4" NPT.

***For 30 GPM and 50 GPM discharge is 2" NPT.

NOTE: On 2 HP and larger – Pump, Motor, Control Box or Magnetic Starter must be ordered separately.

†Check Valve not included on 5 HP, 7-1/2 HP and 10 HP models. Check Valve not included on 50 GPM models.

TrimLine™ version maximum outside diameter is 3-3/4". Standard version maximum outside diameter on all models is 3-7/8".

5000 Series Rotors

5000 Series Std. Angle Rain Curtain™ Nozzle Performance						
Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h	
25	1.5	33	1.12	0.20	0.23	
	2.0	35	1.50	0.24	0.27	
	2.5	35	1.81	0.28	0.33	
	3.0	36	2.26	0.34	0.39	
	4.0	37	2.91	0.41	0.47	
	5.0	39	3.72	0.47	0.54	
	6.0	39	4.25	0.54	0.62	
	8.0	36	5.90	0.88	1.01	
35	1.5	34	1.35	0.22	0.26	
	2.0	36	1.81	0.27	0.31	
	2.5	37	2.17	0.31	0.35	
	3.0	38	2.71	0.36	0.42	
	4.0	40	3.50	0.42	0.49	
	5.0	41	4.47	0.51	0.59	
	6.0	43	5.23	0.54	0.63	
	8.0	43	7.06	0.74	0.85	
45	1.5	35	1.54	0.24	0.28	
	2.0	37	2.07	0.29	0.34	
	2.5	37	2.51	0.35	0.41	
	3.0	40	3.09	0.37	0.43	
	4.0	42	4.01	0.44	0.51	
	5.0	45	5.09	0.48	0.56	
	6.0	46	6.01	0.55	0.63	
	8.0	47	8.03	0.70	0.81	
55	1.5	35	1.71	0.27	0.31	
	2.0	37	2.30	0.32	0.37	
	2.5	37	2.76	0.39	0.45	
	3.0	40	3.47	0.42	0.48	
	4.0	42	4.44	0.48	0.56	
	5.0	45	5.66	0.54	0.62	
	6.0	47	6.63	0.58	0.67	
	8.0	50	8.86	0.68	0.79	
65	1.5	34	1.86	0.31	0.36	
	2.0	35	2.52	0.40	0.46	
	2.5	37	3.01	0.42	0.49	
	3.0	40	3.78	0.45	0.53	
	4.0	42	4.83	0.53	0.61	
	5.0	45	6.16	0.59	0.68	
	6.0	48	7.22	0.60	0.70	
	8.0	50	9.63	0.74	0.86	

Precipitation rates based on half-circle operation

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASAE Standards; ASAE S398.1.

5000 Series Std. Angle Nozzle Performance							METRIC
Pressure bar	Nozzle	Radius m	Flow m ³ /h	Flow l/m	■ Precip mm/h	▲ Precip mm/h	
1.7	1.5	10.10	0.25	4.2	5	6	
	2.0	10.70	0.34	5.4	6	7	
	2.5	10.70	0.41	6.6	7	8	
	3.0	11.00	0.51	8.4	8	10	
	4.0	11.3	0.66	10.8	10	12	
	5.0	11.90	0.84	13.8	12	14	
	6.0	11.90	0.97	16.2	14	16	
	8.0	11.00	1.34	22.2	22	26	
2.0	1.5	10.20	0.28	4.8	5	6	
	2.0	10.80	0.36	6.0	6	7	
	2.5	10.90	0.44	7.2	7	9	
	3.0	11.20	0.55	9.0	9	10	
	4.0	11.6	0.71	12.0	11	12	
	5.0	12.10	0.91	15.0	12	14	
	6.0	12.40	1.05	17.4	14	16	
	8.0	11.80	1.45	24.0	21	24	
2.5	1.5	10.40	0.31	5.4	6	7	
	2.0	11.00	0.41	6.6	7	8	
	2.5	11.30	0.50	8.4	8	9	
	3.0	11.20	0.62	10.2	9	11	
	4.0	12.3	0.81	13.2	11	13	
	5.0	12.70	1.03	17.4	13	15	
	6.0	13.20	1.21	20.4	14	16	
	8.0	13.30	1.63	27.0	19	21	
3.0	1.5	10.60	0.34	6.0	6	7	
	2.0	11.20	0.45	7.8	7	8	
	2.5	11.30	0.56	9.6	9	10	
	3.0	12.10	0.69	11.4	9	11	
	4.0	12.7	0.89	15.0	11	13	
	5.0	13.50	1.13	18.6	12	14	
	6.0	13.90	1.34	22.2	14	16	
	8.0	14.10	1.79	30.0	18	21	
3.5	1.5	10.70	0.37	6.0	7	8	
	2.0	11.30	0.49	8.4	8	9	
	2.5	11.30	0.60	10.2	9	11	
	3.0	12.20	0.74	12.6	10	12	
	4.0	12.8	0.97	16.2	12	14	
	5.0	13.70	1.23	20.4	13	15	
	6.0	14.20	1.45	24.0	14	17	
	8.0	14.90	1.93	32.4	18	20	
4.0	1.5	10.60	0.40	6.6	7	8	
	2.0	11.10	0.52	9.0	8	10	
	2.5	11.30	0.64	10.8	10	12	
	3.0	12.20	0.80	13.2	11	12	
	4.0	12.8	1.04	17.4	13	15	
	5.0	13.70	1.32	22.2	14	16	
	6.0	14.90	1.55	25.8	15	17	
	8.0	15.20	2.06	34.2	18	21	
4.5	1.5	10.40	0.42	7.2	8	9	
	2.0	10.70	0.55	9.0	10	11	
	2.5	11.30	0.68	11.4	11	12	
	3.0	12.20	0.84	13.8	11	13	
	4.0	12.8	1.10	18.0	13	15	
	5.0	13.70	1.40	23.4	15	17	
	6.0	14.60	1.64	28.2	15	18	
	8.0	15.20	2.19	36.6	19	22	

You are here: [Our Products](#) > [Water-Reels](#) > [B-Series Water-Reels](#) > [Model B 140](#)

Model Applications:



MODEL B 140

Tube Inner Diameter/Length: 1.4"x350'

Irrigated Width: 100 - 198'

Irrigated Length: 400 - 449'

Irrigated Area Per Run (Acres): 0.2 - 1.5

Drive System: Bellows ([Learn More](#))

GPM Range: 18 - 80

Inlet PSI Range: 47 - 149

Hours Per Full Run: 3.7 - 10

Sprinkler Options: Sime K1, Sime Hidra, Neslon SR75 Big Gun Sprinkler, Komet Twinmax



PRIMARY PUMP OPTIONS

5.5Hp Gas Primary Pump

9Hp Gas Primary Pump

SUBARU-ROBIN EX27D

Subaru

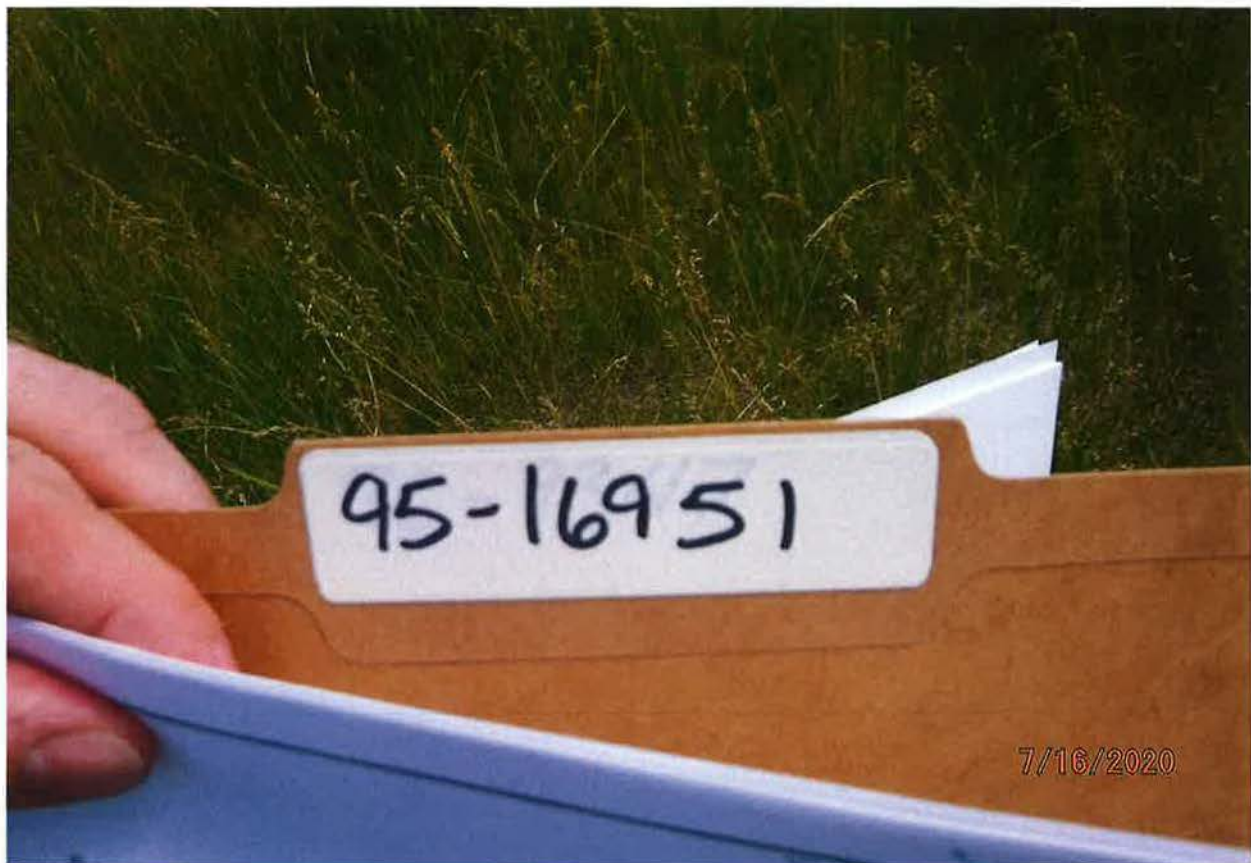


The **Robin-Subaru EX27D** is a 0.3 L (265 cc, 16.17 cu-in) natural aspirated single-cylinder four-stroke air-cooled internal combustion small gasoline engine with a horizontal shaft, manufactured by the Industrial Products division of Subaru Corporation for general-purpose applications.

The Subaru EX27D engine has a single cylinder, heavy-duty chain-driven overhead camshaft (OHC) system, a sophisticated mechanical compression release system, and heavy-duty recoil starter. This engine used a horizontal draft, float type carburetor, transistorized magneto ignition system, splash type lubricating system and forced-air cooling system. The EX27D is equipped with 6.1 L (1.61 US. gal. 1.34 Imp. gal.) fuel tank.

This engine produced 9.0 PS (6.6 kW; 8.9 HP) at 4,000 rpm of horsepower and 18.6 N·m (1.9 kg·m, 13.7 ft·lb) at 2,500 rpm of torque.

9HP Pump



POD – 1 HP SUBMERSIBLE PUMP IN UNNAMED STREAM



POD – SUBMERSIBLE STA-RITE MODEL 20P3HS10231, 3 WIRE 1 HP PUMP





IRRIGATION POU





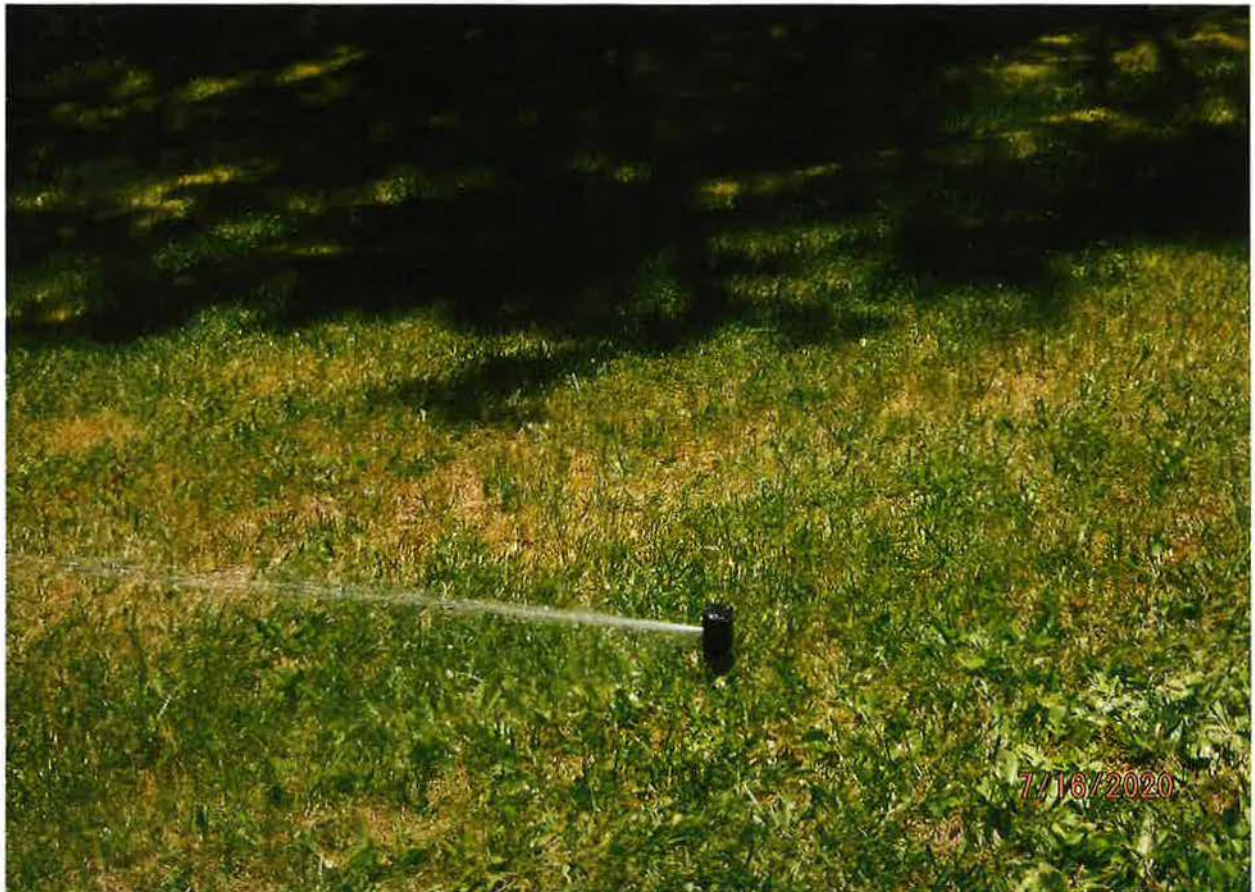
IRRIGATION POU





IRRIGATION POU





RAINBIRD PRESSURIZED IRRIGATION SYSTEM - 1.5 NOZZLE SIZE = 1.5 GPM PER SPRINKLER

