STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 67-15100
Exam Date: 07/31/2020
08/24/2022

1. Current Owner:
JOE E RANDALL 2210 E HUBBARD RD KUNA ID 83634

2. Accompanied by: Joe E Randall (owner) & Bob Shirts (leasee)
Phone No: (208) 888-9079 (Owner), (208)550-1174 (leasee)
Address: 2210 E Hubbard RD, Kuna, ID 83634
Relationship to permit Holder:

3. **SOURCE:** MONROE CREEK **Tributary** WEISER RIVER

Method of Determination: Permit application, IDWR records, and field examination

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
67-724	Monroe Creek	Irrigation	Decreed
67-634	Mann Creek	Irrigation	Decreed
67-2032	Monroe Creek	Irrigation	Decreed
67-2386	Mann Creek	Irrigation	Decreed
67-2389	Mann Creek	Irrigation	Decreed

Comments: water rights from Monroe Creek Irrigation District and Bureau of Reclamation storage

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

Water Right No.	Source	Purpose of Use	Basis

Comments: Added POD is in SWNW QQ, however permit proposed POD in NWNW QQ. MCID water was already diverted to the lower pivot from NWNW QQ.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

Parent Right – delivers water to upper pivot
MONROE CREEK SW¼ NW¼, Sec. 28, Twp 11N, Rge 05W, B.M. WASHINGTON County

Child Right – delivers water to lower pivot
MONROE CREEK NW¼ NW¼, Sec. 28, Twp 11N, Rge 05W, B.M. WASHINGTON County

Method of Determination: Field examination, Garmin Handheld GPS, and ArcMap tools with aerial imagery.

Parent Right 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	
11N	05W	28			37					1									38.0

Total Acres: 38.0

Child Right 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	
11N	05W	28								12									12.0

Total Acres: 12.0

Method of Determination: Aerial Imagery, ArcMap Tools, and field exam (see narrative for project error discussion).

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.
Y 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.

Y Aerial Photo Attached (required for irrigation of 10+ acres).

Y Photo of Diversion and System Attached

4.

Diversion ID No.	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Upper Diversion		25			4-inch
Lower Diversion	US Motors (Nidec)	25		Goulds VIT-CATM	10WALC 6 Stage 5-inch

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Flow meter	In-line Magmeter	Seametrics	AG3000	02018000178	4"	
Ultrasonic Flow Meter	Clamp-on	GE	PT878	GAA1834221		

2. Measurements:

Lower Diversion/Upper Pivot – irrigates 38 acres:

Measured Method: Seametrics AG3000 In-line Magmeter
Reading from 7/30/2020 - Display Panel Readings: 94 PSI, 60Hz,24 A, 14Kw
Reading from 8/24/2022 - Display Panel Readings: 82 PSI 60 Hz, 26A, 16Kw

Lower POD/Upper Pivot (38 acres)

Reading Date	Device	Rate (gpm)	Rate (cfs)	Rate/Acre
7/30/2020	Mag-Meter	250	0.557	0.015
8/24/2022	Mag-Meter	310	0.691	0.018
Design Specs	Specified Flow	320	0.713	0.019
Theoretical	None	343	0.764	0.020
Beneficial Use Rate	None	342	0.760	0.020

There were discrepancies in the two different readings of the Seametrics mag-meter at the lower diversion. These could be due to the rolling hill terrain that the pivot operates on and the resulting changes in operating pressures. At the follow-up exam, the mag-meter read 0.691 cfs or 0.018 cfs/acre. Notably, the design specs show a specified flow of 0.713 cfs just slightly under the beneficial use rate at 0.19 cfs/acre, however pump is capable of higher rates according to Goulds pump curves. The theoretical rate with a hypothetical 70% efficiency rate yields a flow rate of 0.764 cfs or 0.02 cfs/acre. This is similar to the calculated beneficial use rate 0r 0.760 or 0.02 cfs/acre. See Section E, flow calculations below.

Upper Diversion/Lower Pivot – irrigates 27acres:

Measured Method: Data collected with ultrasonic flow meter GE Panametrics PT878 on 8/24/2022.
25 hp pump
Pipe Diameter: 4 inches
Transducer spacing: 3.85 inches (97.8 mm)
The GE Panametric PT878 Ultrasonic Flow Meter was attached to the 4-inch steel pipe approximately 52 inches from the upper goose neck and 70 inches from where the pipe entered the ground (figure 5, 8/24/22 photos). The device registered a flow of 0.622 cfs or 279.1 gpm with diagnostics within tolerance limits (figures 6 & 7, 8/24/22 photos).

Upper POD/Lower Pivot (27 acres)

Reading Date	Device	Rate (gpm)	Rate (cfs)	Rate/Acre
8/24/2022	GE Panametrics**	279	0.622	0.023
Theoretical*	None	292	0.65	0.024
Beneficial Use Rate	None	243	0.541	0.020

*A theoretical calculation was made based on an estimated operating pressure of 98 psi (same as lower pump.)

*** There was a malfunction in the PT878, S/N GAA1834221 (State Property Tag #305120) a few weeks later which resulted in the inability to download the 15 minutes of data collection. The above table is based on the photo of the screen (Figure 6 photos). A second photo of the diagnostic screen pertaining to the data collection can be seen in Figure 7 of the attached photos.*

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Theoretical Method

Lower Diversion/Upper Pivot
Display panel reading pressure of 82 psi.
Theoretical Method Q = (8.8) X (25 HP) X (70%) / [(12 ft) +(82 psi x 2.31) = 0.76 cfs (343.2 gpm)

Design specifications for the Lower Diversion/Upper Pivot pump describe the Goulds VIT-CATM 10WALC 6 Stage 5-inch pump driven by a 25 horsepower US Motors (Nidec) motor system as capable of producing 320 gpm or 0.713 cfs.

Upper Diversion/Lower Pivot

No functioning pressure gauge, operating pressure estimated (based on lower pump).

Theoretical Method Q = (8.8) X (25 HP) X (70%) / [(10 ft) +(98 psi x 2.31) = 0.65 cfs (292.4 gpm)

Original Permit: BU Standard Q = 50 acres x 0.02 cfs/acre = 1.0 cfs

Split POU:

Lower Diversion/Upper Pivot: BU Standard Q = 38 acres x 0.02 cfs/acre = 0.76 cfs

Upper Diversion/Lower Pivot: BU Standard Q = 12 acres x 0.02 cfs/acre = 0.24 cfs

Beneficial Use Rates by Field

		Ac. Associated w/Permit	Rate/Acre	Total Rate/Field
Parent Right	Lower Diversion/Upper Pivot (East)	38	0.02	0.76
Child Right	Upper Diversion/Lower Pivot (West)	12	0.02	0.24
		50		1.00

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$V_{I.R.}$ = (Acres Irrigated) x (Irrigation Requirement) = 50 acres x 4.5 ac-ft = 225 ac-ft

$V_{D.R.}$ = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = (1.0 cfs) x (260 days) x 1.9835 = 515.7 ac-ft

V = Smaller of $V_{I.R.}$ and $V_{D.R.}$ = 225 ac-ft

Parent - Lower Diversion/Upper Pivot: $V_{I.R.}$ = (Acres Irrigated) x (Irrigation Requirement) = 38 acres x 4.5 ac-ft = 171 ac-ft

Child - Upper Diversion/Lower Pivot: $V_{I.R.}$ = (Acres Irrigated) x (Irrigation Requirement) = 12 acres x 4.5 ac-ft = 54 ac-ft

G. NARRATIVE/REMARKS/COMMENTS

Joe E Randall is the owner of water permit 67-15100 for irrigation near Weiser, Idaho in Washington County. The proof of beneficial use was submitted on 9/12/2019 with an examination fee of $100. Aerial imagery confirms that the irrigation system was in place by the 2018 irrigation season. An exam was conducted on July 31, 2020, by water resource agent Allen Bradbury. Joe E Randall (owner) and Bob Shirts (lessee of the property) accompanied the agent on the field exam. Current Washington County tax parcel data shows Joe E Randall as the current owner of the property pertinent to the place of use, therefore no ownership change is necessary. Currently, alfalfa is the crop grown on this POU and the crop is watered by a pivot sprinkler system pumped from Monroe Creek tributary to the Weiser River.

I met Joe and Bob at a pump station in the SWNW of Section 28, T11N, R05W, Boise Meridian (GPS location 44.260400°, -116.952860°), hereafter called the lower POD, which was purported to be the diversion for the permit. However, permit 67-15100 lists the POD in the NWNW quarter-quarter of section 28, hereafter called the upper POD. The permit shapefile outlines a 50-acre trapezoidal shaped POU. It was not understood at the time of the initial field exam that the lower pivot overlaps the place of use for permit 67-15100. The upper POD, which supplies the lower pivot, was not in operation on the initial visit. The lower POD which supplies the upper pivot (furthest west) was in operation. There are no diversions between the upper and lower diversions. Therefore, the upper POD was not visited or measured during the initial visit.

A follow-up exam was conducted on August 24, 2022, by water resource agent Allen Bradbury for the purpose of measuring the upper diversion. Bob Shirts (lessee of the property) accompanied the agent on part of the field exam. The POD in the NWNW T11N R05W 28 diverts Monroe Creek Irrigation District (MCID) water and permit #67-15100 water to the lower pivot. Both pivots were running at the time of this follow-up exam.

System Description Lower Point of Diversion and Upper Pivot

A concrete dam checks up water into a vertical CMP which serves as a vault for pumping water from Monroe Creek. The system consists of a Goulds VIT-CATM 10WALC 6 Stage 5-inch pump driven by a 25 horsepower US Motors (Nidec) motor. The pump intake is a 5-inch pipe drawing water from approximately 12 feet down. The system is equipped with an inline Seametrics totalizing flow meter as per condition 01J. However, the system does not contain a long enough section of pipe for an ultrasonic flow meter reading (not required). The lower diversion pump in SWNW supplies water to the upper pivot in the westmost field. At the time of the field exam, approximately 38 acres were being irrigated by a four-tower Reinke pivot sprinkler with an overhang and end gun.

System Description Upper Point of Diversion and Lower Pivot

Water is drawn from Monroe Creek through an 8-inch steel pipe with a 25 hp pump that is mounted 6-feet off of the ground on a CMP. There was a tag on the motor identifying horsepower and electrical specifications, but the brand of motor could not be determined. The outflow is a 4-inch steel pipe angling down from the pump at approximately 40 degrees. The pumping system is not equipped with a measuring device which is not in compliance of the Monroe Creek measurement order and condition 01J. Due to extremely murky water conditions the exact depth of the intake footer could not be determined, the total lift was estimated at 8-10 feet (figure 4). The upper diversion pump in NWNW of section 28 supplies water to the lower pivot, in the eastmost field. At the time of the field exam, approximately 27 acres were being irrigated by a four-tower Reinke pivot sprinkler with an overhang and end gun.

Point of Diversion Amendment

The original permit listed the POD in NWNW Sec. 28, Twp 11N, Rge 05W, the field exam revealed that this is the location of an existing pump which supplies the lower pivot. A new pumping station was installed to supply the upper pivot, located at SWNW Sec. 28, Twp 11N, Rge 05W, therefore a permit amendment is need for the new POD location.

Place of Use Analysis – Westmost and Eastmost Fields

Westmost Field. The westmost field is irrigated by the lower pivot which covers 27.0 acres total with 25 acres in SENW and 2 acres in SWNW. The lower pivot which covers 27 acres, and the fixed sets, 8 acres, forms distinct field on a system supplied from the upper pump. This system is operated in such a way as to partially irrigate the pivot corners and partially overlaps the upper pivot when pointing east creating a 12 acre overlap of the SENW QQ of the permitted POU. The westmost field is also irrigated by 24 to 30 fixed set sprinklers along the edge of the bench. Approximately 8.0 acres (3.0 acres in the SENW and 5.0 acres in SWNW) are covered by the fixed sets. The fixed sets are plumbed into both systems (according to Mr. Shirts) and can be ran with either pivot or independently by adjusting the appropriate valves. Each nozzle is affixed to an 8-foot tall standpipe and spaced approximately 100 feet apart. Historical aerial imagery show the westmost field was formerly irrigated by handlines or wheelines and covered about 23 acres with MCID water (according to 2015 aerial imagery). Sometime after 2015, the lower pivot was installed covering 27 acres including an additional 12 acres included on this permit. In a conversation with Mr. Randall on 1/4/2022, it was determined that the original acres irrigated by the MCID water consists of acres below the old Highline Ditch. The fixed sets are entirely within the original acres covered by MCID water and are not considered part of the acres irrigated by this permit. It is recommended that the 12 acres irrigated by this permit be split into a separate water right with the upper pump as the point of diversion.

Eastmost Field. The eastmost field is irrigated by the upper pivot which covers 38.0 acres total with 37 acres in the SWNE and 1 acre in the SENW). The upper pivot forms a separate field of 38 acres on a separate system pulling water from the lower pump. There were 13 acres of irrigation found in the SENW and 37 acres in the SWNE. The original permit allowed 10 acres in the SENW and 40 acres in the SWNE. Therefore, the permit will need an amendment to move 3 acres from the SWNE to the SENW.

There are 73 total irrigated acres from the two pumping stations including 23 acres of MCID water plus the 50 acres on the permit. The conclusion is that the permit should be split to reflect the individual systems. The westmost field with its combination of 23 MCID acres and 12 acres of additional water with a supply from the upper diversion would cover the lower pivot and fixed sets. The westmost field with the 38 acre pivot supplied from the lower diversion would comprise the parent water right. The full beneficial use was developed for all 50 acres. I am recommending that each field with its corresponding POD should be split into two separate water rights after the initial amendment is completed.

Measurements

Lower Point of Diversion. During the initial field exam, Mr. Shirts started the system and let it run for approximately twenty minutes. At this point the mag-meter read 250 gpm and the Phase Technologies control panel displayed 94 psi at 60 Hz ,24 A, 14 Kw. Mr. Shirts mentioned that the system usually runs at about 98 psi. During the field exam, the pivot was pointing approximately due north, which is the lowest elevation in the pivot's rotation. Mr. Shirts explained this as the reason for the lower pressure reading. Contour lines show that when the pivot points southeast it is as its highest elevation of 2,320 feet and when point due north the last tower may be as low as 2,240 feet, a difference of 80 feet (see attached map). During the follow-up exam, both pivots were running. The Seametrics flow meter at the lower diversion read 310 gpm with the control panel display reading 82 psi at 60 Hz ,26 A, 16 Kw. This discrepancy could be due to the rolling hill terrain that the pivot operates on and the resulting changes in operating pressures. Also noted is the close approximation to the stated design specifications of the pump and motor which is designed to produce an average of 320 gpm though it could produce slightly more according to the total design parameters.

Upper Diversion. The ultrasonic flow meter measured a slightly lower flow of 0.622 cfs or 0.023 cfs/acre than predicted by the theoretical flow of 0.65 cfs or 0.024 cfs/acre. However, both the pump lift and pressure were very rough estimates. The beneficial use rate of 0.02 cfs/acre on 27 acres would be 243 gpm or 0.541 cfs.

In the final analysis, there were several inconsistencies in the actual flow measurements and the theoretical calculations. When the two systems are added together the rate per acre comes at 0.02 cfs per acre as per the standard beneficial use rate. In recommend a split at licensing the water right should be split into a parent right of 38 acres for the eastmost field and lower diversion with a rate of 0.76 cfs and a child right of 12 acres for the westmost field and upper diversion.

Permit Split at Licensing

Since the upper and lower PODs described above are completely separate systems serving separate POUs, the permit was split at licensing to reflect this fact. Right 67-15100 is for the lower POD and the eastmost field/upper pivot described above. Right 67-15466 is for the upper POD and the westmost field/lower pivot described above.

Overlap & Discrepancies in Map and Legal Description

The township, range and section lines do not align with the Washington County tax lot lines. The section lines are slightly shifted to the northeast. This misalignment creates the impression that there are approximately 3.5 irrigated acres in the NESW & NWSE quarter quarters that were not on the permit. However, the acres in question are attributed to a projection error in the Departments Public Land Survey System (PLS) layer and therefore are not included in the legal description of the water right. The shape was redrawn to align with the Departments PLS grid lines to reflect the correct legal description of 37 acres in the SWNE and 13 acres in the SENW rather than aligning with the Washington County tax parcel layer.

Measurement Device

Though the new lower POD has an in-line mag-meter, the upper POD does not have a measuring device. Therefore, the development of this permit was not in compliance with the condition 01J, which reads, "*Prior to diversion of water under this right, the right holder shall install and maintain a measuring device and lockable controlling works of a type acceptable to the Department as part of the diverting works.*" In addition, a measurement order was issued by IDWR in 1995 for Monroe Creek in Water District 67. I am recommending that a notice be sent out to request compliance with the measurement order before a license is issued. Due to the measurement order, I do not recommend a waiver of condition 01J, but recommend that a measuring device acceptable to IDWR standards and requirements be installed no later than the start date of next irrigation season, 3/1/2024. As part of the draft permit amendment cover letter, a few paragraphs were included to notify the permit holder. A copy is included in this folder.

On March 20, 2024, Mr. Randall submitted photographic evidence and an invoice as evidence that a proper measuring device had been installed on the upper POD associated with WR 67-15466.

Changes in Condition from Permit to Licensing

Condition 26A was removed as per licensing standards.

Condition 121 was replaced with condition 103 as per department standards.

Condition 01J was removed as per licensing standards for consumptive uses > 0.20 cfs within water district boundaries, replaced with condition R43.

Retained 086, R05, and R65.

Have conditions of permit approval been met? _X_ Yes ____ No

H. RECOMMENDATIONS

1. Recommended Amounts

Parent Right 67-15100 - Lower Diversion/Upper Pivot

Beneficial Use	Period of Use	Rate of Diversion	Volume
IRRIGATION	03/01 to 11/15	0.76 CFS	171 AF
	Totals:	0.76 CFS	171 AF

Child Right - Upper Diversion/Lower Pivot

Beneficial Use	Period of Use	Rate of Diversion	Volume
IRRIGATION	03/01 to 11/15	0.24 CFS	54 AF
	Totals:	0.24 CFS	54 AF

2. Recommended Amendments

____ Change P.D. as reflected above _X_ Add P.D. as reflected above ____ None

____ Change P.U. as reflected above _X_ Add P.U. as reflected above ____ None

I. AUTHENTICATION

Allen Bradbury - Water Resource Agent, Senior

Field Examiner's Name Allen Bradbury Date 3/21/24

Reviewer _____ Date 3/21/24

SPLIT FROM WATER RIGHT 67-15100 RANDALL

Water Right or Property Owner	Tax Parcel #/Lot	Area within POU Shapefile	Water Right Number	Total Acres	Split Acres	Ratio	Total Flow Rate (cfs)	Split Flow Rate	Rounded Flow Rate	Total Volume	Split Volume	Rounded Volume
67-15100 RANDALL			67-15100	50			1.00			225		
RANDALL JOE E	RP11N05W281300	67-15100_Randall_Parent	67-15100		38	0.76		0.76	0.76		171.0	171
RANDALL JOE E	RP11N05W281300	67-xxxxx_Randall_Child	67-		12	0.24		0.24	0.24		54.0	54
					50.00	1.00		1.00	1.000		225	225

WARRINGTON IRRIGATION, INC.

1398 Malheur Drive
Ontario, OR 97914
541-889-9063 Phone

Invoice

Date	Invoice #
12/18/2023	155832

Randall Century Ranch

Bill To	Ship To
Randall, Joe 2210 E Hubbard Rd Kuna, ID. 83634	

P.O. Number	Terms	Rep	Ship	Via	F.O.B.	Project
	Net 10		12/18/2023			

Quantity	Item Code	Description	Price Each	Amount
1	Special Ord...	4"Gate Valve w/ Locking option	590.00	590.00
1	seametrics ...	4" SeaMetrics Flometer AG3000	2,442.00	2,442.00
10	Steel 4" 10 ...	4" 10 Gauge Steel Pipe	25.00	250.00
2	steel 10 ga ...	4" Steel 10 Gauge 90* Elbow	80.75	161.50
5	flange 4" st...	4" Steel Flange	25.00	125.00
1	steel 10 ga ...	4" Steel 10 Gauge 45* Elbow	48.08	48.08
	nip black 2"...	Half- 2" Steel Sch 40 Nipple	4.36	4.36
6	welding	Welding & Manufacturing (hourly)	85.00	510.00
3.5	Welding on...	Welding & Installation on Site	150.00	525.00
5	4" Steel x S...	4" Steel x Steel Bolt Pack (5/8" x 2")	9.24	46.20
5	flange gask ...	4" Non Asbestos Flange Gasket- full face	7.80	39.00
1	air vent 2" ...	2" Air Vent AV	38.00	38.00

Total $4,779.14

67-15100 Randall - Adjusted POU

Source: Monroe Crk trib Weiser R.

Permit: 1.0 cfs for 50 acres
Proposed License: 1.0 cfs for 50 acres



- 67-15100 Add POD
- 67-15100 Permit POD
- Monroe Creek PODs
- MCID Irrigation in 2009
- Upper_Pivot_AdjustedtoQ-Q
- 12-acre_SENW_AdjustedQ-Q
- Lower_Pivot_AdjustedtoQ-Q

0 0.15 0.3 Miles

1 inch = 0.09 miles

1 inch = 500 feet

67-15100 Randall - Unadjusted POU

Source: Monroe Crk trib Weiser R.

Permit: 1.0 cfs for 50 acres
Proposed License: 1.0 cfs for 50 acres



- 67-15100 Add POD
- 67-15100 Permit POD
- Monroe Creek PODs
- Lower Pivot UnajustedQQ
- Upper Pivot UnajustedQQ
- 12-acre_SENW_UnadjustedQ-Q
- MCID Irrigation in 2009

0 — 0.15 — 0.3 Miles

1 inch = 0.09 miles

1 inch = 500 feet

67-15100 Randall - East and West Fields

Source: Monroe Crk trib Weiser R.

Permit: 1.0 cfs for 50 acres
Proposed License: 1.0 cfs for 50 acres



67-15100 Add POD
67-15100 Permit POD
Monroe Creek PODs
West Field
23-Acre MCID
East Field

0 0.15 0.3 Miles

1 inch = 0.09 miles
1 inch = 500 feet

11N05W28 67-15100 RANDALL OVERLAP ANALYSIS

Process	Basin Sequence	Draft	Owner	Source	POD POU	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Permit	67-15100	N	RANDALL, JOE E	MONROE CREEK	POU	IRRIGATION			40					10									50
Water Right	67-2191A	N	HAND, JACK W; HAND, MAIDA I; OWEN, KAREN N	MONROE CREEK	POU	IRRIGATION										8							8
Water Right	67-7003A	N	HAND, JACK W; HAND, MAIDA I; OWEN, KAREN N	MONROE CREEK	POU	IRRIGATION										8							8
Water Right	67-14638	N	HAND, JACK W; HOLT, CHARLENE P; HOLT, RICHARD L	MONROE CREEK	POU	IRRIGATION														6			6
Water Right	67-14640	N	HAND, JACK W; HOLT, CHARLENE P; HOLT, RICHARD L	MONROE CREEK	POU	IRRIGATION														18			18
Water Right	67-14639	N	HAND, JACK W; HOLT, CHARLENE P; HOLT, RICHARD L; SALES UNLTD INC	MONROE CREEK	POU	IRRIGATION									38					6			44
Water Right	67-14641	N	HAND, JACK W; HOLT, CHARLENE P; HOLT, RICHARD L; SALES UNLTD INC	MONROE CREEK	POU	IRRIGATION									38					22			60
Water Right	67-14524	N	HAND, JACK W; HOLT, RICHARD L	MONROE CREEK	POU	IRRIGATION									2	28							30
Water Right	67-14528	N	HAND, JACK W; HOLT, RICHARD L	MONROE CREEK	POU	IRRIGATION									2	28		15			15		60
Water Right	67-7003B	N	OWEN, KAREN N	MONROE CREEK	POU	IRRIGATION										2							2
Water Right	67-7801	N	SHAW, CYNTHIA D; SLYTER, CHET L; SLYTER, ROY L	MONROE CREEK	POU	IRRIGATION		23			2												25
Water Right	67-724	N	MONROE CREEK IRRIGATION DISTRICT	MONROE CREEK	POU	IRRIGATION		X			X	X	X	X	X	X							
Water Right	67-634	N	MONROE CREEK IRRIGATION DISTRICT	MANN CREEK	POU	IRRIGATION		X			X	X	X	X	X	X							

Process	Basin Sequence	Draft	Owner	Source	POD POU	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Right	3-2006	N	WEISER FLAT PIPE LINE CO LTD; WEISER IRRIGATION DISTRICT	SNAKE RIVER	POU	IRRIGATION											X	X				X	
Water Right	3-7005	N	WEISER IRRIGATION DISTRICT	SNAKE RIVER	POU	IRRIGATION											X	X				X	

Process	Basin Sequence	Draft	Owner	Source	POD POU	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Right	67-10	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-11	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-12	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-13B	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-14	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-14621	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-15	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-16	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-17	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-18	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-19	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-20	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-21	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-2168B	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-2169G	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-22	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-8	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	
Water Right	67-9	N	WEISER IRRIGATION DISTRICT	WEISER RIVER	POU	IRRIGATION											X	X				X	

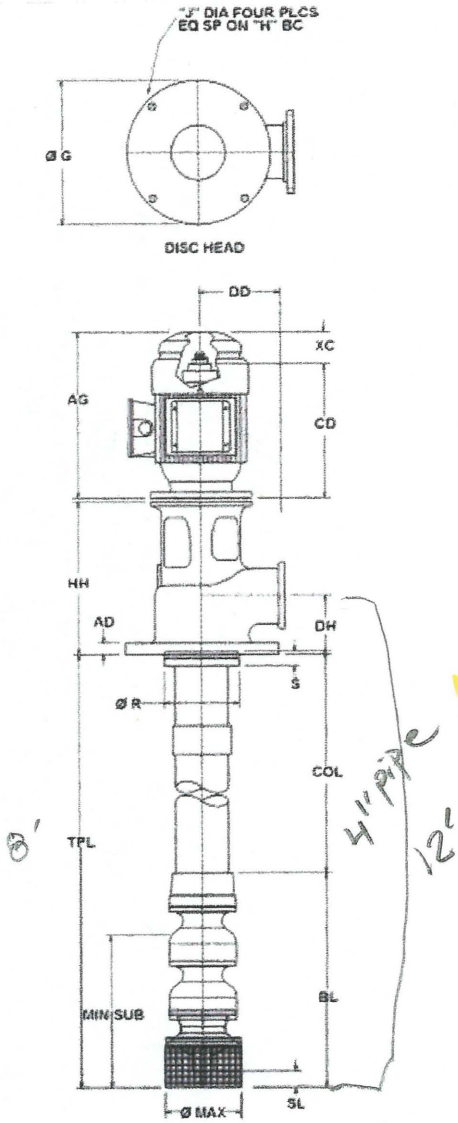
Process	Basin Sequence	Draft	Owner	Source	POD POU	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Right	67-7957	N	BRIGHT, NORMA J; BRIGHT, WILBERT A	GROUND WATER	POU	IRRIGATION										0.6							0.6
Water Right	67-7982	N	GETTLE, JEANNE M; GETTLE, MICHAEL N	GROUND WATER	POU	IRRIGATION											0.8						0.8
Water Right	67-7213	N	HAND, JACK W; HAND, MAIDA I; OWEN, KAREN N	GROUND WATER	POU	IRRIGATION										8							8
Water Right	67-7362	N	ROCKY J & JEAN L PIETZ TRUST; SAWYER, DARREL P	GROUND WATER	POU	IRRIGATION												3					3

GOULDS WATER TECHNOLOGY
a xylem brand

Random curve

OUTLINE DRAWING

Quote Number: 9001-170417-023:1
Model: VIT-CATM
Size: 10WALC 6 Stage(s)



DIMENSIONS

AD	0.75	inch
AG	28.13	inch
BD	12.0	inch
BL	60.42	inch
CD	24.75	inch
CL	0.00	inch
COL	35.64	inch
DD	9.00	inch
MIN SUB	22.10	inch
DH	5.00	inch
G	16.50	inch
H	14.00	inch
HH	13.50	inch
J	0.63	inch
L	0.00	inch
M		
R	7.50	inch
S	1.81	inch
SL	1.58	inch
SU	0.00	inch
SUT	0.00	inch
TUBE	0.00	inch
TPL	96.00	inch
UG	0.00	inch
V	0.00	inch
W	0.00	inch
X	0.00	inch
XC	3.22	inch
Y	0.00	inch
Z	0.00	inch
Max Dia	10.63	inch
Discharge	(125 #) 4" [102mm]	inch
Suction	(150 #) 6	inch

Weights

Total bowl	415.00	lb
Total column	80	lb
Discharge head	150.00	lb
Driver	305.00	lb
Approx weight	950.00	lb

PUMP DATA

No. of Units	1.00
Model:	VIT-CATM 10WALC
Stages:	6
Col Size:	4" [102mm]
Shaft:	1.0000 in dia
Flow:	320.00 USGPM
Head:	248.00 ft
Driver Mfr:	US Motors
Driver Type:	VHS
Rating:	25 Hp [18.6 kW]
Speed:	1800 RPM
Phase:	3
Frequency:	60 Hz
Voltage:	230/460

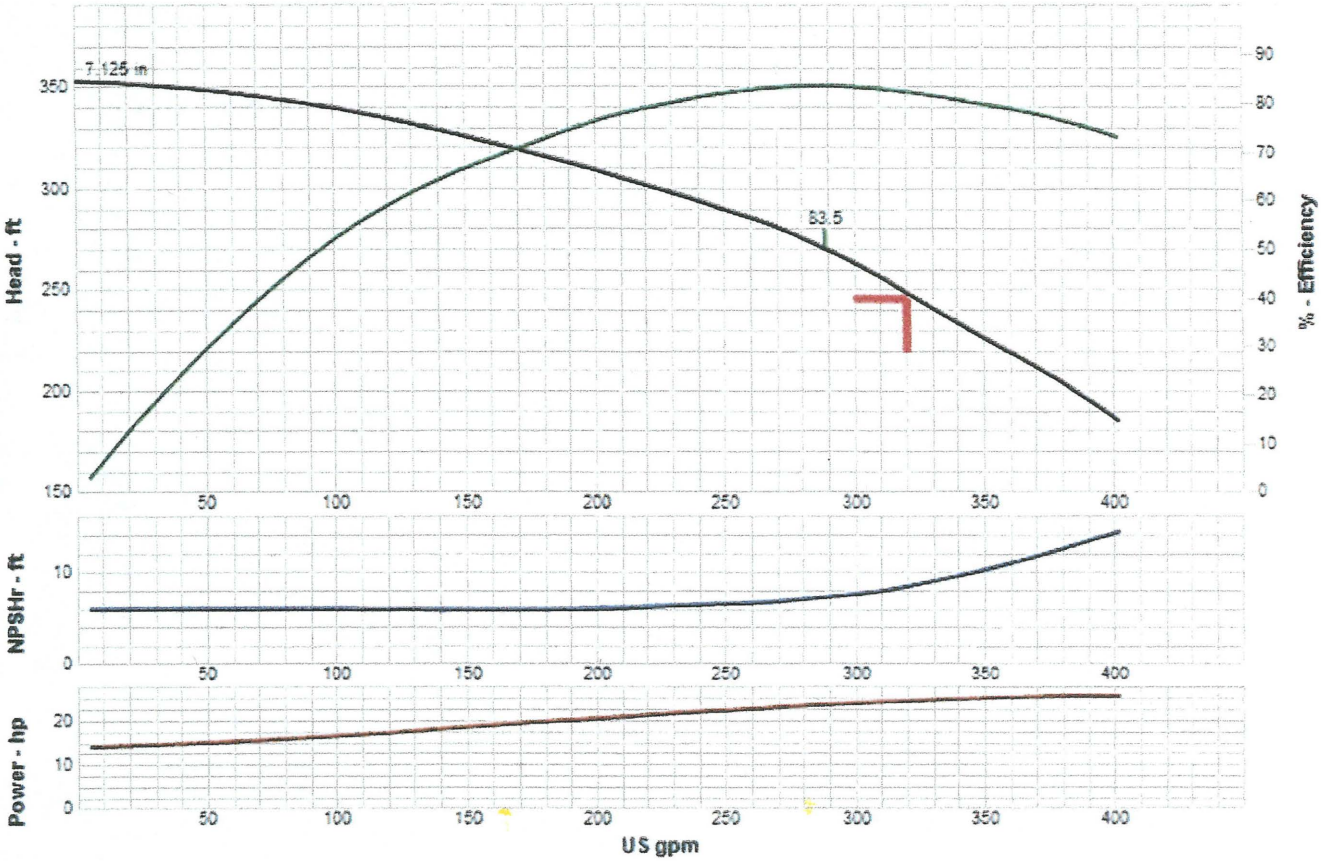
No.	NOTES
1	*Total Pump Length ± 1.0 inch.*
2	*Tolerance on all dimensions is .12 or ± .12 inch per 5 ft, whichever is greater.*
3	*All dimensions shown are in inches unless otherwise specified.*
4	*Drawing not to scale.*
5	*½" NPT – Gauge Conn (plugged)*
6	*Driver may be rotated at 90° intervals about vertical centerline for details refer to driver dimension drawing.*
7	*Refer to product IOM for impeller setting requirements.*
8	*This assembly has been designed so that its natural frequency responses avoid the specific operating speeds by an adequate safety margin. The design has assumed the foundation to be rigid.*

DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED	
Certified by	
Date of certification	
Pump serial number	
Project Name	WARRINGTON IRR - 320GPM@245'TH@8 FT TPL
Tag	

GOULDS WATER TECHNOLOGY
a xylem brand

PERFORMANCE CURVE

Quote Number: 9001-170417-023:1
Model: VIT-CATM
Size: 10WALC 6 Stage(s)



Driver Size Criteria:	Max power on design curve (NOL)	Best Efficiency:	83.50 %
Speed:	1770	Flow at BEP:	288.00 USGPM
Impeller Trim:	7.1250 inch	Min Flow:	72.10 USGPM
Frequency:	60 Hz	Derate Factor:	0.0000
Additional Impeller Trim:	7.125 inch	NPSH Required:	8.58 ft
Impeller Maximum Trim:	7.3100 inch	NPSH Actual:	39.18 ft
Specified Flow:	320.00 USGPM	Shut-Off Head:	353.00 ft
Specified Head:	245.00 ft	Fluid Type:	Water
Head at Design:	248.00 ft	Temperature / Specifc Gravity:	70°F / 1.00
Efficiency at Design:	82.20 %	Viscosity:	0.9695 cP
Power at Design:	24.40 Hp	Allowable Sphere Size:	0.50 inch
Flow on Design Trim at Max Power:	402 USGPM	Thrust K Factor:	4.6000 lbs/ft
Max Power on Design Curve:	25.70 Hp	Additional Thrust K Factor:	4.6000 lbs/ft
Run-Out Flow:	0.00 USGPM	Max Lateral:	0.63 inch
Run-Out Head:	0 ft		

DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED	
Certified by	
Date of certification	
Pump serial number	
Project Name	WARRINGTON IRR - 320GPM@245'TH@8 FT TPL
Tag	



Figure 1. 25 hp pump sitting atop 6-foot tall CMP. 8-inch intake pipe on the right and 4-inch outflow on the left side.

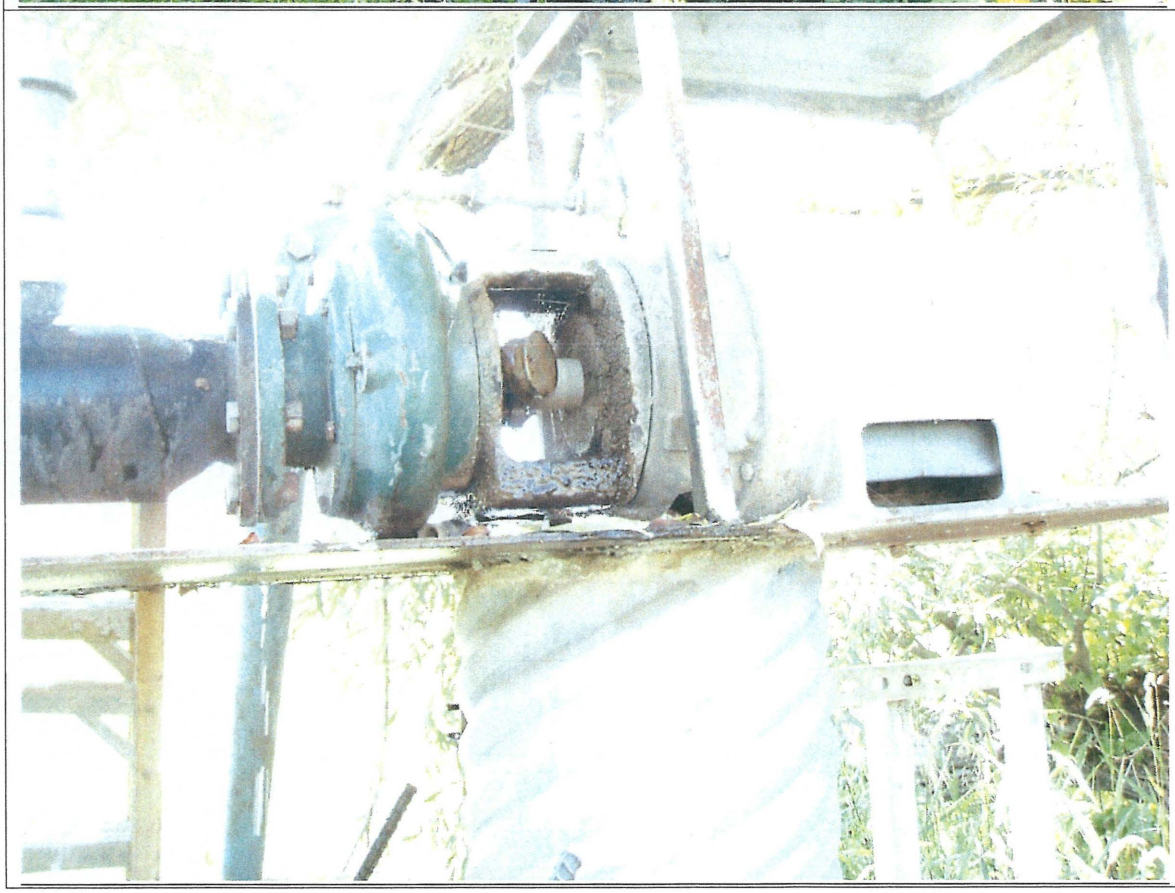


Figure 2. 25 hp pump and motor, unknown brand. Also, showing neckdown of intake to pump.



Figure 3. Tag on pump verifying 25 hp and electrical rating.



Figure 4. Intake pipe from Monroe Creek.



Figure 5. Configuration of Panametric ultrasonic flowmeter transducers on outflow pipe. The device is 52" from upper gooseneck and 70" from the entry of the pipe into the ground.

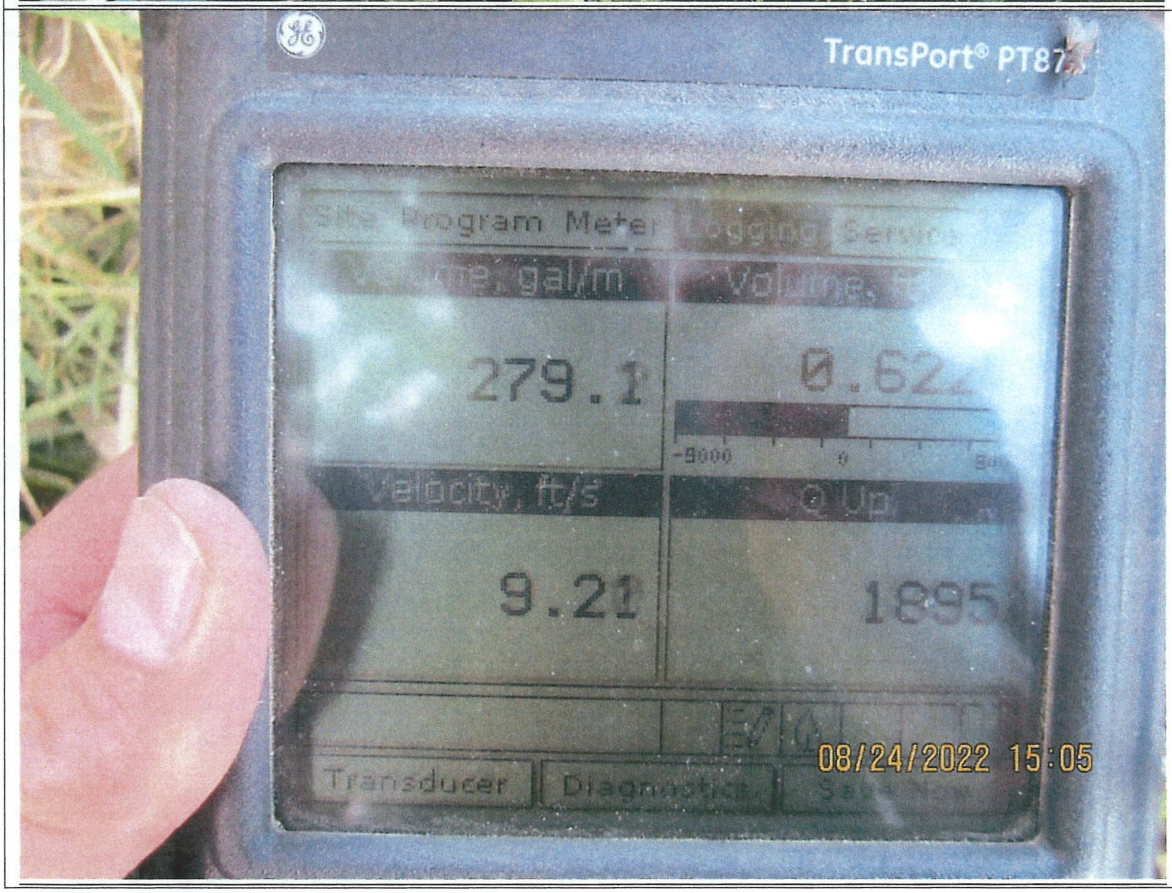


Figure 6. Photo of recording screen logging a volume 279 gpm or 0.622 cfs.

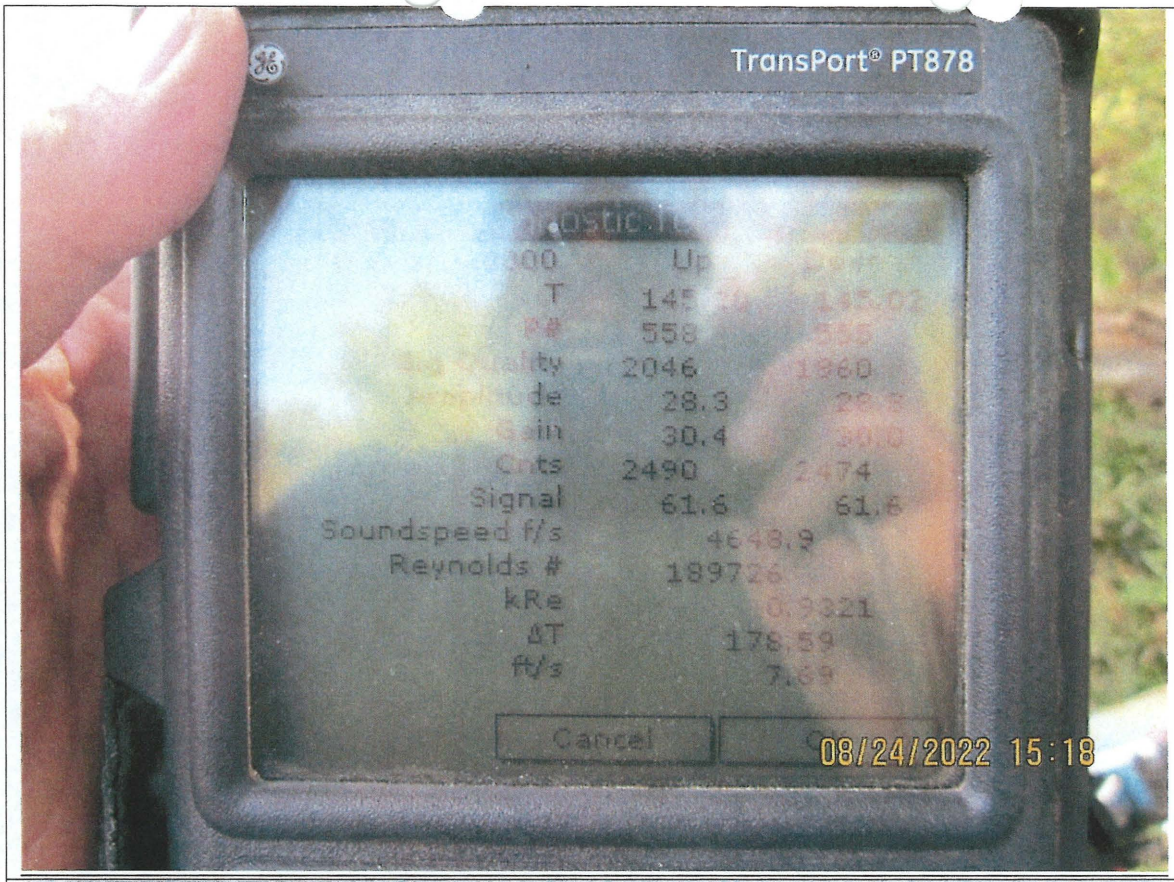


Figure 7. Photo of device screen showing error diagnostics.



Figure 8. Reinke pivot. Lower pivot fed from upper diversions pointing southwest. Inset of blue Nelson orbitor nozzle.



Figure 9. Looking at end gun on lower pivot.



Figure 10. Manifold for fixed set sprinklers.



Figure 11. There are approximately 30 fixed set sprinklers mounted on 8-foot vertical stand pipes.



Figure 12. Portion of field in northwest covered by fixed set sprinklers.



Figure 1. Pump and motor sitting on CMP.



Figure 2. Specifications for US Motors/Nidec 25 hp motor.



Figure 3. Looking upstream on Monroe Creek at concrete diversion dam and pump station.



Figure 4. Looking downstream on Monroe Creek at concrete diversion and CMP underneath E Indianhead Road.

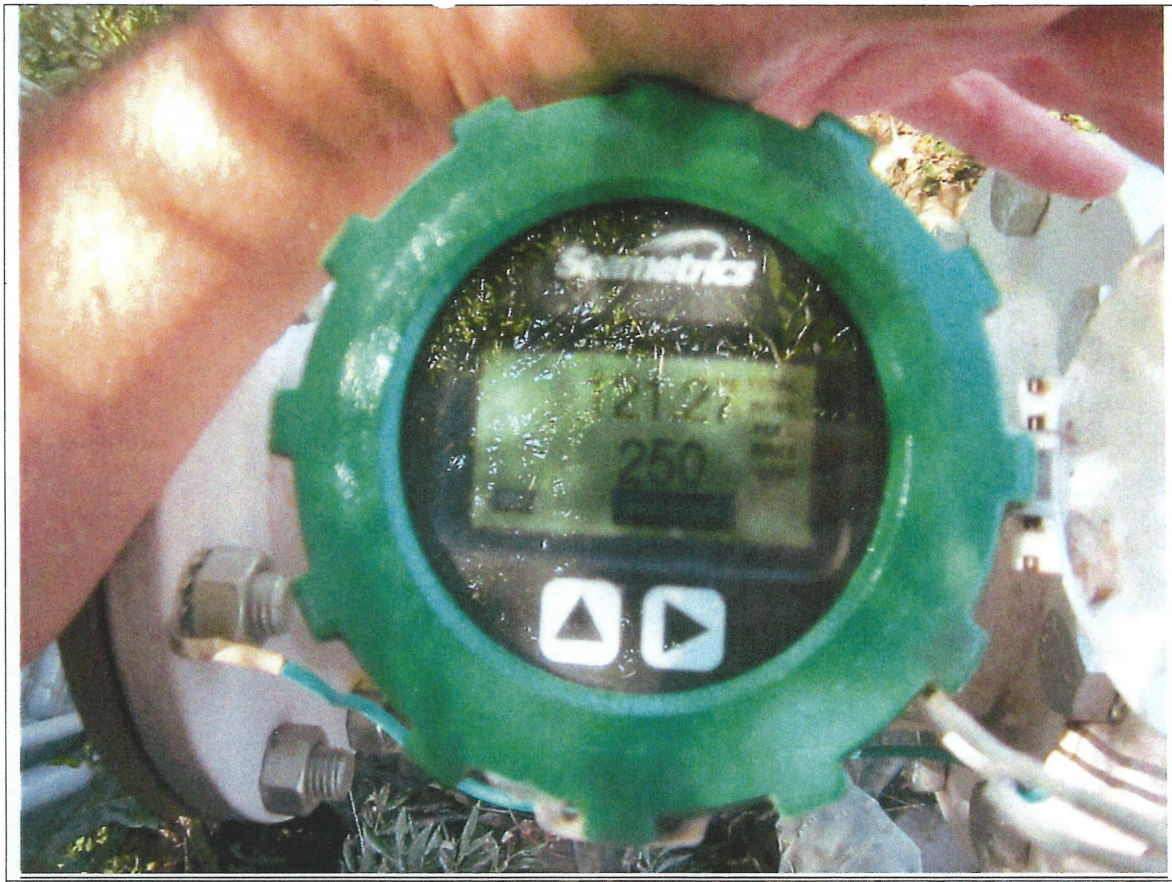


Figure 5. Seametrics flow meter reading 250 gpm.



Figure 6. Side panel label of Seametrics flow meter.

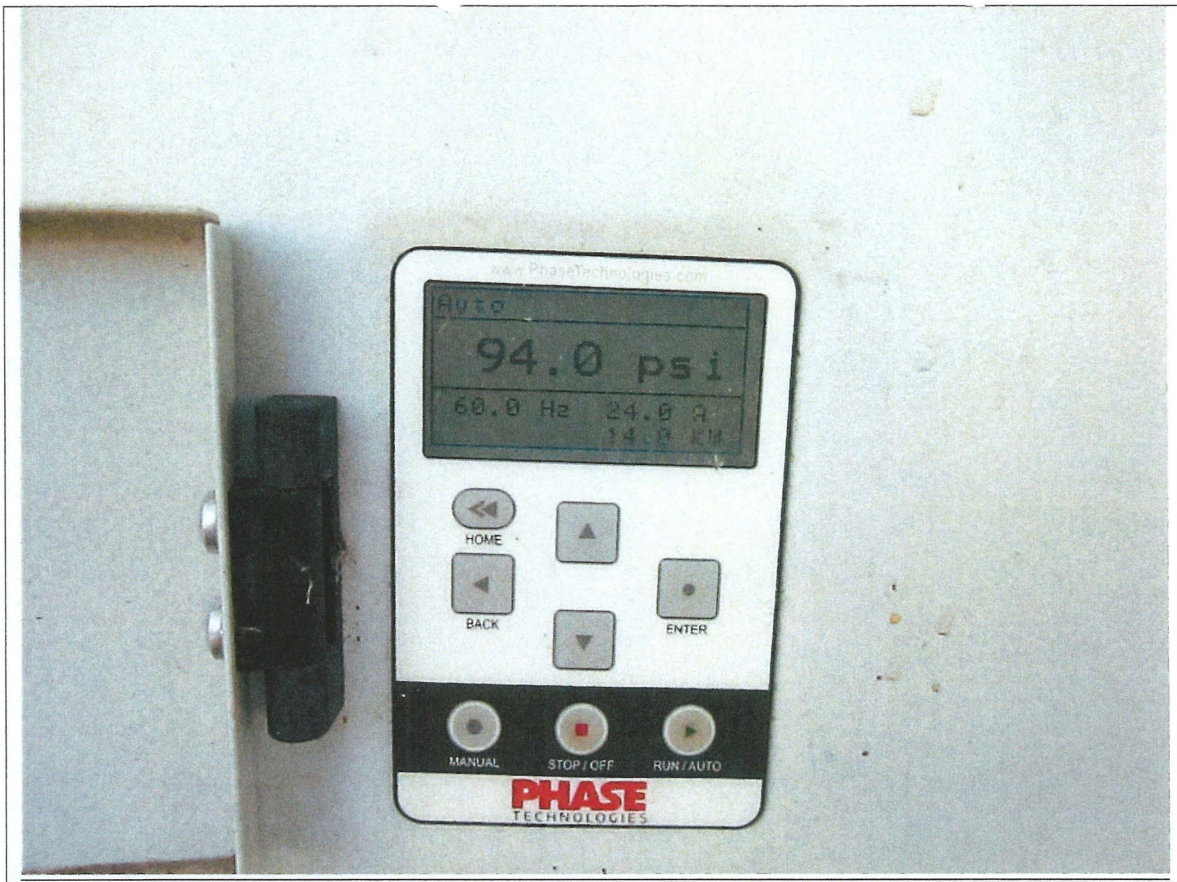


Figure 7. Display panel showing pressure of 94 psi.



Figure 8. Sand separator setup at pump.



Figure 9. End gun on pivot in operation.



Figure 10. Alfalfa crop under pivot irrigation.



Figure 11. Upper diversion on Monroe Creek, with 4-inch outflow pipe but no measuring device.



Figure 12. Newly installed Seametrics AG3000 flow meter and lockable valve. Twelve acres and this POD were split from original water right # 67-15100 into 67-15466, pending completion of locking and measurement conditions.