

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33744
Exam Date: 08/18/2020

1. Current Owner:
BERANNA DAIRY 9166 PERCH RD CALDWELL ID 83607

2. Accompanied by: Bernie Teunissen (owner)
Phone No: (208) 484-5489
Address: 9166 Perch Rd, Caldwell, ID 83607
Relationship to permit Holder: Owner of Beranna Dairy

3. **SOURCE:**
GROUND WATER

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

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: None

2. Other water rights with the same point-of-diversion: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
63-11865	Ground water	Irrigation	License
63-11615	Ground water	Irrigation	License

Comments: 63-11865 is a supplemental right to a different POU. 63-11615 supplies 1.47 cfs to a different 79 acre POU.

C. DIVERSION AND DELIVERY SYSTEM

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

GROUND WATER SE¼ SE¼, Sec. 9, Twp 02N, Rge 03W, B.M. CANYON County

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

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	
02N	03W	9				15.0													15.0

Total Acres: 15.0

PLACE OF USE: STOCKWATER

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02N	03W	9				X													

Method of Determination: Aerial Imagery, ArcMap Tools, and observation during field exam

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.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
No well tag called Hennis well		60	Submersible	Berkeley	s/n 1661914080498
Hennis well	US Electric	30	Centrifugal	Berkeley	

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Ultrasonic Flow Meter	Clamp On	GE	PT878	GA1620004		

2. Measurements: Data collected from GE Panametrics PT878 meter.

Pipe Diameter: 10.88" OD Steel pipe
 Wall thickness: 0.262"
 Transducer spacing: 10.083"

Q (gpm)	Q (ft ³ /s)	V (ft/s)	Q Up
702	1.57	2.67	3944

McCrometer inline flowmeter near well reading about 700 gpm.

McCrometer inline flowmeter at manifold along Farmer Road reading about 200 gpm.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method:

Theoretical Method $Q = (8.8) \times (60 \text{ HP}) \times (82\%) / [(177) + (50 \text{ psi} \times 2.31)] = 1.48 \text{ cfs} (664.4 \text{ gpm})$

% efficiency of 82% based on manufacturer specifications

Lift based on pump set depth f 187 ft – 10 ft as noted on Layne of Idaho invoice a pump repair & maintenance service

Nozzle discharge

Wheeline (Nelson Gold Nozzle WF18): 31 nozzles x 4.30 gpm/nozzle = 133.3 gpm or 0.30 cfs

Handline (V-Rain 9/64" Nozzle): 31 nozzles x 4.19 gpm/nozzle – 129.9 gpm or 0.29 cfs

BU Standard = 15 acres x 0.02 cfs/acre = 0.30 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 15 \text{ acres} \times 4.5 \text{ afa/acre} = 67.5 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.3 \text{ cfs} \times 260 \times 1.9835 = 154.7 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 67.5 \text{ afa}$$

Actual volume measurements provided by water right holder.

WR No. 63-33744

Irrigation Water Use from Hennis Well

Year	Beginning of season ac-ft	End of season ac-ft	Difference ac-ft
2016	43	259	216
2017	259	465	206
2018	465	673	208
2019	673	867	194
Average:			206 ac-ft

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

Beranna Dairy is the the owner of water permit 63-33744 for irrigation and stock water. The property is located approximately 7 miles east of Marsing, Idaho. The proof of beneficial use was submitted on March 18, 2019 with an examination fee of \$100.00. An exam was conducted on August 18, 2020 by water resource agent Allen Bradbury. Bernie Teunissen, the owner of Beranna Dairy accompanied the agent on part of the field exam. Current Canyon County tax parcel data lists Beranna Dairy as the current owner of the property pertinent to the place of use (POU). No ownership change is required. Currently, alfalfa is grown on this POU and the crop is watered by a single wheeline (off during FE) on the quadrangular shaped south side of the field and by handlines (on during FE) on the irregularly shaped north end.

A 12-inch diameter well located at N 43°31.041' by W 116°41.671', (SESE of Section 9, T02N, R03W, Boise Meridian) serves as the point of diversion. The well provides water for this permit as well as water rights 63-11865 and 63-11615. The system consists of a 60 hp Berkeley submersible pump inside the well combined with a 30 hp Franklin centrifugal pump. Both pumps are joined into a 10-inch steel pipeline. There is a McCrometer totalizing flow meter in a straight section of this pipe near the well head. The gage near the well measured a line pressure of 50 psi. Approximately 20 feet from the well the pipe splits with one section heading northwest toward the pivot point for right no. 63-11615 and the other heading east to risers paralleling Farmer Road and lead toward the POU for this permit.

A GE Panametric PT878 Ultrasonic Flow Meter was attached to a straight section of 10.88-inch O.D. steel pipe free from elbows or turbulence to measure rate of flow from the well. Flow was measured over a ten minute average with a final average of 701.0 gpm or 1.56 cfs. This closely matched the nearby McCrometer which hovered near 700 gpm.

Rights 63-11865 and 63-11615 when combined have a total diversion rate of 1.47 cfs, however 63-11865 is a supplemental right. Permit 63-33744 has a diversion rate of 0.30 cfs. During the field exam the pivot for right no. 63-11615 was running and the handlines for 63-33744. On the north end of the POU, there were 31 V-Rain 9/64" nozzles in operation with an estimated 4.19 gpm/head operating at 50 psi. The calculated flow for the handlines is 130 gpm or 0.29 cfs. The wheeline on the south end of the POU has Nelson gold nozzle WF18 heads with a factory estimated rate of 4.30 gpm/nozzle operating at 50 psi. The estimated discharge for 31 nozzles gives 133.3 gpm or 0.30 cfs.

Also in operation during the field exam was a 4-inch rubber hose which originates from a riser along Farm Road to irrigate the two pivot corners of the wiper pivot. Only the hose irrigating the northeast pivot corner (approximately 7.5 acres) was pressurized during the field visit. A McCrometer meter near the valve indicated a flow rate of 200 gpm (0.45 cfs) at 20 psi. The hose system feeds soaker lines that irrigate along corn rows. The soaker hose system was estimated to be irrigating at a rate of 7.5 ac x 0.02 cfs/ac or 0.15 cfs. This would be appropriate considering that the calculated rate for the handlines was 0.30 cfs giving a total of 0.45 cfs. This information is summarized in the table below.

Estimated system usage during field exam.

Irrigation System	Measurement or Calculation During BUFE (cfs)
Pivot (63-11615)	1.11
Soaker (63-11615)	0.15
Handlines (63-33744)	0.30
Total	1.56

Given the above information, I am recommending the diversion rate for this water right remain at 0.30 cfs.

The irrigation system was developed according to the permit and I confirm that the 15 acre place of use has been fully developed. I am recommending the license go forward with the 15 permitted acres.

This right has a stockwater component, however the POU is not fenced and no livestock were observed during the field exam.

Notable Conditions on Permit.

Condition 196. The right holder shall install or construct a straight length of conduit or ditch suitable for installation of a device for measuring the entire flow of water being diverted in connection with this right. If the right holder uses conduit, the straight length of conduit shall be at least fifteen times the diameter of the conduit and shall be above ground or otherwise easily accessible. This condition was completed as evidenced by attached photos. The condition remains on the license as per condition usage description.

The right holder shall install a measuring device acceptable to the Department at the point of diversion authorized under this right. The measuring device shall be capable of displaying diversion flow rate and totalized volume measurement. The right holder shall record the flow rate and volume measurements monthly for any calendar year in which water is diverted and used in connection with this right until proof of beneficial use is filed. The records shall be made available to the Department upon request. An alternative measuring device and/or conduit/ditch method proposed by the right holder may be considered by the Department for a right not exceeding 1.00 cfs and/or 50 acres of irrigation. This condition was completed as evidenced by attached photos. The right holder provided flow records at the time of the exam, also attached.

The point of diversion (well) authorized for this right shall include a measuring device or other suitable method to allow measurement of the static water level in the well. Water level measurements shall be made monthly throughout the year from the beginning of the diversion and use of water in connection with this right until proof of beneficial use is filed. The records shall be made available to the Department upon request. This condition was completed as evidenced by attached photos. The right holder provided depth to water records at the time of the exam, also attached.

Static Water Level

Year	Beginning of season feet	End of season feet	Difference feet
2016	144	155	11
2017	149	152	3
2018	144	153	9
2019	144	152	8
Average:	145.3	153.0	7.8 ft

Prior to submitting proof of beneficial use, the right holder shall not assign ownership of the permit to another individual, corporation, partnership, or association without prior approval of the Department. Ownership is still in the name of Beranna Dairy. This condition was fulfilled and dropped for licensing.

Failure of the right holder to comply with any condition of approval is cause for the Director to cancel the permit. All conditions have been complied with; therefore this condition was dropped for licensing.

If the Department determines based on credible evidence, measurement reports, area data or otherwise that diversion and use of groundwater under this right is causing material injury to any senior water right(s), the Department may order the diversion reduced, the diversion curtailed, or the right holder provide adequate mitigation to remedy the injury. At this time, there is no known evidence of injury. The condition was met and dropped for licensing.

Conditions 26A and 046 were dropped as per Department conditioning standards. Condition 121 was updated to 103 as per department licensing standards. Condition 132 was dropped because no stock water use was developed. Condition 004 was removed because there are no concerns over easements or trespass.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	
IRRIGATION	03/01 to 11/15	0.30 CFS	

Totals: 0.30 CFS

2. Recommended Amendments

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

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

I. AUTHENTICATION Allen Bradbury - Water Resource Agent, Senior

Field Examiner's Name Allen Bradbury Date 12/29/21
Reviewer [Signature] Date 1/31/22

63-33744 BERANNA DAIRY

0.3 CFS IRRIGATION for 15 ACRES



The USDA-FSA Aerial Photography Field office asks to be credited in derived products.

0 0.15 0.3 Miles

63-33744_POD ActiveWR_PODs

63-33744

1 inch = 0.09 miles

1 inch = 450 feet

Layne of Idaho, Inc.

INVOICE

Remit to:

PO Box 1005
Nampa ID 83653

Phone: 208-466-7376
Fax: 208-466-5078

Invoice Number: 16838
Invoice Date: Jul 12, 2017
Page: 1

Bill To:

Beranna Dairy
9166 Perch Lane
Caldwell, ID 83605

Ship to:

Beranna Dairy
9166 Perch Lane
Caldwell, ID 83605

Phone: 208-484-5489
Fax:

Customer ID	Customer PO	Payment Terms	
TEUN001	Bemie	Net 30 Days	
Idaho Power Number	Work Order No.	Ship Date	Due Date
	0617-006		8/11/17

Quantity	Description	Unit Price	Amount
	Lewis Lane 1/8 west of Farmer in field Roundtrip - pull sub and replace with new pump, wet end and motor 60hp s/n 1661914080498, 1 stage submersible set 187" x 6"		
1.00	Pull, set, wire and startup New pump assembly including the following	1,770.00	1,770.00
1.00	60hp 3ph pump motor		
1.00	1 stage 9HC bowl assembly - complete		
1.00	#2/3 sub wire 196'		
2.00	Splice kits		
1.00	6" check valve		
1.00	SS banding 30'		
	Total for above pump assembly		10,778.50
2.00	Replace column pipe 6 x 20' taper	461.50	923.00

**If the grass is
greener on the other
side, you can bet the
water bill is higher.**

Subtotal	13,471.50
Sales Tax	
Total Invoice Amount	13,471.50
Payment/Credit Applied	
TOTAL	13,471.50

All accounts are due and payable per the invoiced terms.

All past due amounts are subject to finance charges of 1-1/2% per month plus cost of collection including attorney fees if incurred.

m 7/13

**Customer
Reference**

Pump Performance Datasheet
American-Marsh Pumps Quotation System 17.2.2.0

Item number : 016
Service :
Quantity : 1
Quote number : 542772

Size : 9HC
Stages : 1
Based on curve number : 9HC
Date last saved : 08 Jun 2017 8:21 AM

Operating Conditions

Flow, rated : 900.0 USgpm
Differential head / pressure, rated (requested) : 200.0 ft
Differential head / pressure, rated (actual) : 197.7 ft
Suction pressure, rated / max : 0.00 / 0.00 psi.g
NPSH available, rated : Ample
Frequency : 60 Hz
Performance
Speed, rated : 3500 rpm
Impeller diameter, rated : 7.42 in
Impeller diameter, maximum : 7.42 in
Impeller diameter, minimum : 6.94 in
Efficiency (bowl / pump) : 81.47 / - %
NPSH required / margin required : 24.01 / 0.50 ft
Ns (total flow) / Nss (imp. eye flow) : 2,292 / 8,933 US Units
MCSF : 658.6 USgpm
Head, maximum, rated diameter : 212.5 ft
Head rise to shutoff (bowl / pump) : 7.45 / - %
Flow, best eff. point (bowl / pump) : 1,082.4 / - USgpm
Flow ratio, rated / BEP (bowl / pump) : 83.15 / - %
Diameter ratio (rated / max) : 100.00 %
Head ratio (rated dia / max dia) : 100.00 %
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] : 1.00 / 1.00 / 1.00 / 1.00
Selection status : Near miss

Liquid

Liquid type : Water
Additional liquid description :
Solids diameter, max : 0.00 in
Solids concentration, by volume : 0.00 %
Temperature, max : 68.00 deg F
Fluid density, rated / max : 1.000 / 1.000 SG
Viscosity, rated : 1.00 cP
Vapor pressure, rated : 0.34 psi.a

Material

Material selected : Cast iron - Standard

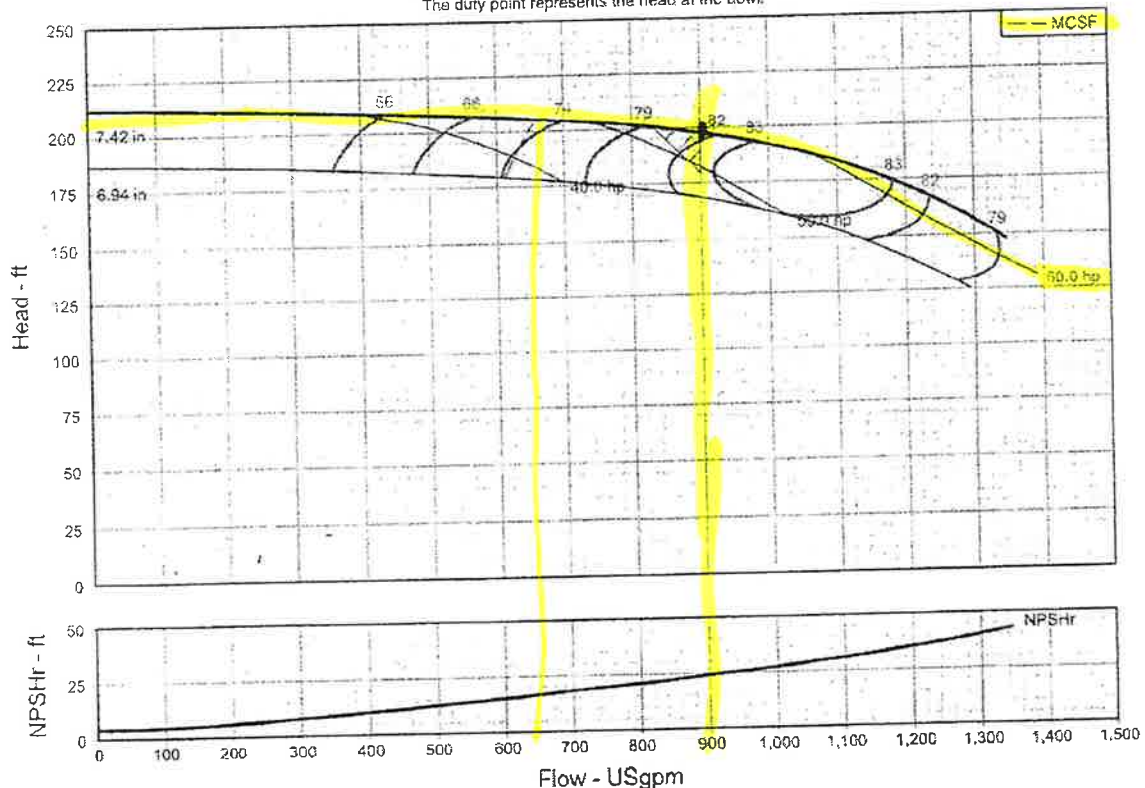
Pressure Data

Maximum working pressure : See the Additional Data page
Maximum allowable working pressure : See the Additional Data page
Maximum allowable suction pressure : N/A
Hydrostatic test pressure : See the Additional Data page

Driver & Power Data (@Max density)

Driver sizing specification : Maximum power
Margin over specification : 0.00 %
Service factor : 1.15
Power, hydraulic : 44.92 hp
Power (bowl / pump) : 55.14 / - hp
Power, maximum, rated diameter : 64.20 hp
Minimum recommended motor rating : 75.00 hp / 55.93 kW

Bowl performance. Adjusted for construction and viscosity.
The duty point represents the head at the bowl.



Hennis well log history

2016.	3/01/2016.	10/15/2016
Acre ft.	43.	259
Static level.	144'	155'
2017	3/01/2017.	11/17/2017
Acre ft.	259.	465
Static level.	149'	152'
2018	3/01/2018.	10/15/2018
Acre ft.	465.	673
Static level.	144'	153'
2019	3/01/2019	10/15/2019
Acre ft.	673.	867
Static level.	144'	152
2020	3/01/2020.	7/07/2020
Acre ft.	867'	934'
Static level.	142'	

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR
BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Jesse L. Hennis
Address 15267 Locust Lane,ampa, ID 83486
Drilling Permit No. 63-92-W-174-000
Water Right Permit No. 63-11615

7. WATER LEVEL

Static water level 143.8 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 58 °F. Quality Good
Describe artesian or temperature zones below.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

8. WELL TEST DATA

☒ Pump ☐ Baller ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
<u>823</u>	<u>27.99</u>	<u>3 1/2</u>

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

9. LITHOLOGIC LOG

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
<u>28"</u>	<u>0</u>	<u>35</u>	<u>Cobbles</u>		
	<u>35</u>	<u>55</u>	<u>Clay</u>		
	<u>55</u>	<u>65</u>	<u>Clay & Cobbles</u>		
	<u>65</u>	<u>80</u>	<u>Sandstone</u>		
	<u>80</u>	<u>130</u>	<u>Sand clay</u>		
	<u>130</u>	<u>310</u>	<u>fine to medium sands</u>		
	<u>310</u>	<u>330</u>	<u>Clay</u>		

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Auger ☒ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____
(backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____
Thickness Diameter From To
.250 inches 12 inches + 2 feet 210 feet
.250 inches 12 inches 310 feet 330 feet
_____ inches _____ inches _____ feet _____ feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun

Size of perforation? _____ inches by _____ inches
Number From To

_____ perforations _____ feet _____ feet
_____ perforations _____ feet _____ feet
_____ perforations _____ feet _____ feet

Well screen installed? ☒ Yes ☐ No

Manufacturer Roseboro Type Wire wrapped

Top Packer or Headpipe _____

Bottom of Tailpipe _____

Diameter 12" Slot size 040 Set from 210 feet to 310 feet

Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Gravel packed? ☒ Yes ☐ No ☐ Size of gravel Well Rock

Placed from 42 feet to 300 feet

Surface seal depth 42' Material used in seal: ☒ Cement grout

☐ Bentonite ☐ Pudding clay ☐ _____

Sealing procedure used: ☒ Tremie Pipe

☐ Temp. surface casing ☐ Overbore to seal depth

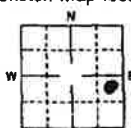
Method of joining casing: ☒ Threaded ☒ Welded

☐ Solvent Weld ☐ Cemented between strata

Describe access port 2" x 2' Sander Pipe
2" x 1/8" Gravel Pipe

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County Canyon

Address of Well Site 15267 Locust Lane

(give at least name of road)

SE NE 1/4 SE 1/4 Sec. 9 T. 2 N or S ☐

R. 2 E or W ☒

10.

Work started 6-4-92 finished 6-7-92

11. DRILLER'S CERTIFICATION

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

Sargent Drilling, Inc. Firm No. 507

Firm Name 9955 N. Virginia St. Date 6-17-92

Address Penng, NV 89506

Signed by Drilling Supervisor Heuch White

and

(Operator) Paul Stahler



Figure 1. Well pump configuration with 30 hp booster pump.



Figure 2. Pipe configuration with diagonal pipe going toward pivot and straight pipe going toward 63-33744 place of use.



Figure 3. Tag on side of 30 hp booster pump.



Figure 4.
Centrifugal
booster pump.



Figure 5. Pressure gage on pipe from booster pump reading about 50 psi.



Figure 6. Pressure gage located between well and booster pump.

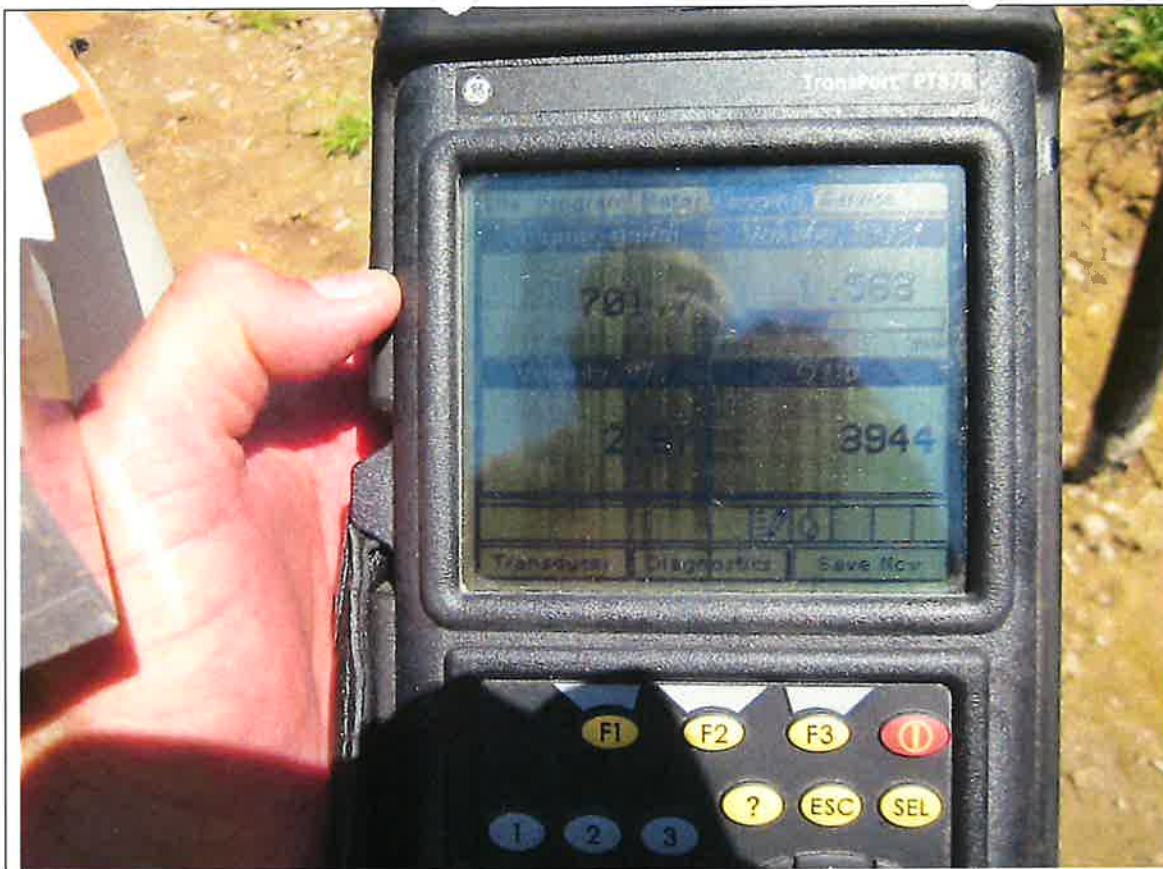


Figure 7. GE Panametrics PT878 flow meter reading of 701.7 gpm (1.56 cfs).



Figure 8. McCrometer flow meter reading between 675 and 700 gpm.



Figure 9. Seven tower center pivot irrigating from same well using WR No. 63-11615 on a different 79 acre POU.



Figure 10. Remanent risers along Farmers Road. This mainline conveys water to 63-33744 POU.



Figure 11. Hose supplying water to drip lines on pivot corners.



Figure 12. Driplines irrigating pivot corners on 79 acre 63-11615 POU.



Figure 13.
Manifold for drip
line supply and
sediment filters.



Figure 14.
McCrometer flow
meter on manifold
showing 200 gpm
at 20 psi.



Figure 15.
Wheel line
irrigation of 63-
33744 POU.



Figure 16. Hand
line irrigation of
63-33744 POU in
north most corner.

63-33744 BERANNA DAIRY

0.3 CFS IRRIGATION for 15 ACRES



The USDA-FSA Aerial Photography Field Office asks to be credited in derived products.

0 0.15 0.3 Miles

63-33744_POD ActiveWR_PODs
63-33744

1 inch = 0.09 miles

1 inch = 450 feet