

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED

NOV 17 2022

DEPARTMENT OF
WATER RESOURCES

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. 63-340461. Owner Mellin Properties LTD PartnershipPhone No. 208-250-2963Current address 10100 W Franklin Rd. Boise, ID 837092. Examiner's name Patrick Kelly and Scott KingEXAM DATE 11/3/20223. Accompanied by Ralph MellinEmail rmellin1a@msn.com

Address _____

Relationship to permit holder Owner

Phone No. _____

4. Source Ground Water

tributary to _____

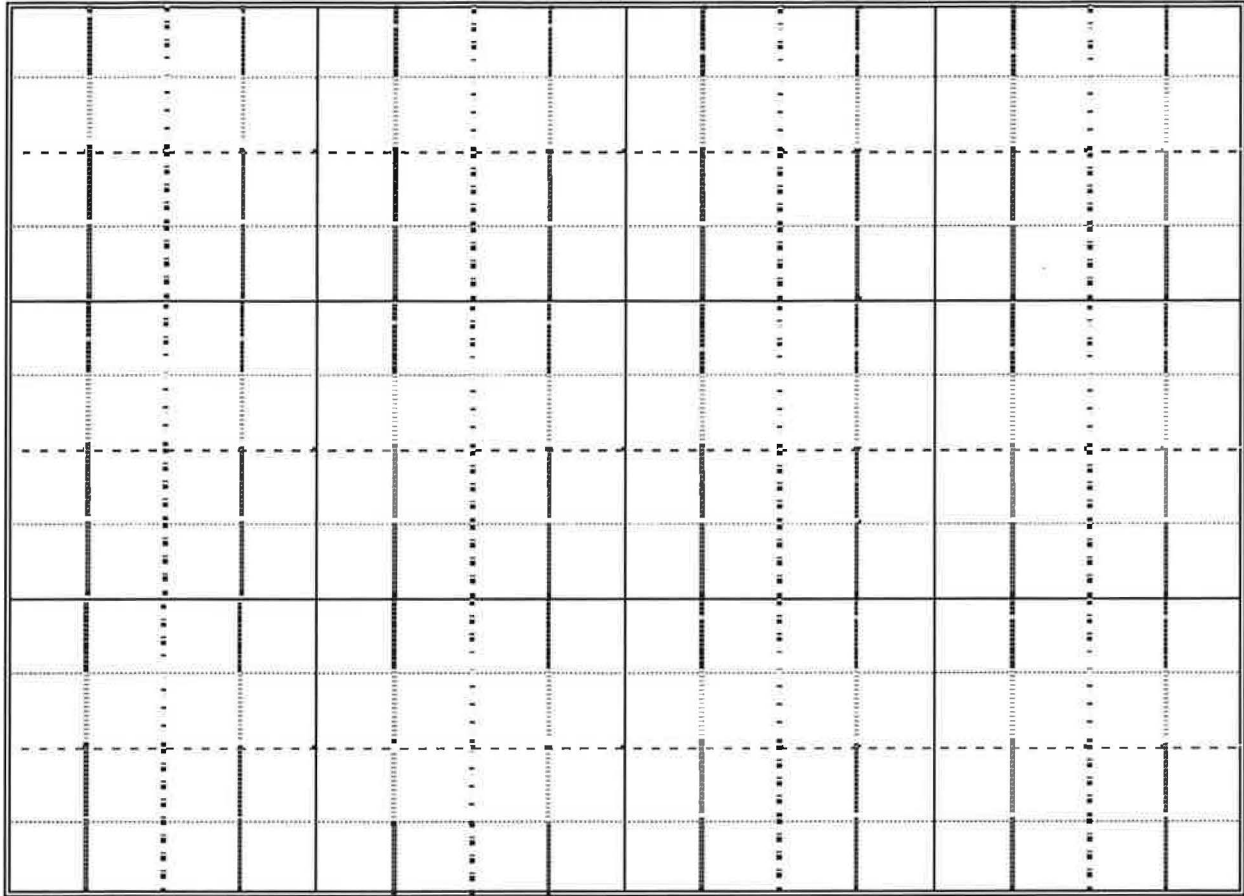
B. OVERLAP REVIEW1. Other water rights with the same place of use None.2. Other water rights with the same source and point of diversion 63-33141**C. DIVERSION AND DELIVERY SYSTEM****1. Point(s) of Diversion:**

Ident. No.	Gov't Lot	1/4	1/4	1/4	Sec	Twp	Rge	County	Method of Determination/Remarks
			NE	SE	24	01N	01E	Ada	Metal Tag #D0095871
									GPS: 43 24.354, -116 16.484

2. Place(s) of Use: Method of determination System design, digital mapping tools.

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
01N	01E	24													34	34			68

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
D0083307	US Motors	150	Y10Y236R063R-1	Goulds	8", model 11CHC (used)

*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
GE Panametrics	Ultrasoni	GE	PT878	07140	402 Hz	March 2022

2. **Measurements:** _____

GE Panametrics ultrasonic device used to measure diversion rate on system mainline

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

[illegible]

F. FLOW CALCULATIONS☐ Additional computation sheets attached

Measured Method:

Ultrasonic flow meter readings:

t Fwd Gallons

15:27 118,938.348

15:38 127,910.861

Total Fwd Gallons = 8,972.5

Avg Q over 10 minute test: 897.3 gpm or 2.00 cfs

2.00 cfs / 136 acres = 0.015 cfs/acre = 1.00 cfs

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I,R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 68 \text{ acres} \times 4.5 \text{ af/acre} = 306 \text{ af}$$

$$V_{D,R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 1.00 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 516 \text{ af}$$

$$V = \text{Smaller of } V_{I,R} \text{ and } V_{D,R} = 306 \text{ af}$$

2. Volume Calculations for Other Uses:

No other uses permitted.

H. RECOMMENDATIONS**1. Recommended Amounts**

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Irrigation	03/01	11/15	1.00	306
Totals:			1.00	306

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



Date 11-14-2022

Reviewer



Date 6/26/24



Ownership

Water right permits 63-33141 & 63-34046 were applied for and issued in the name of Mellin Properties LTD Partnership, signed by Ralph Mellin (General Partner). Parcel data collected from Ada County Assessor's Office shows that the place of use (parcel #'s S2124410000 & S2124430000) is owned by Mellin Properties LTD Partnership. Changes to ownership are not necessary.

Water Right Overlap

Water right permits 63-33141 & 63-34046 do not overlap in POU. Both rights are diverted from the same well and irrigation system. Surface water rights do not exist on the land. No other water rights should be considered.

Point of Diversion

Water right permits 63-33141 & 63-34046 were issued within the NE¼SE¼. IDWR well construction tools show a well with tag no. D0095871 within this quarter-quarter. The existing well described in the field exam report is the only point of diversion. Permit 63-33141 describes a POD to the 10-acre tract. HDR recommends removing the 10-acre description since the legal description is incorrect and the 10-acre tract description is reserved for spring sources. Amendments to the POD are not recommended.

Place of Use

Lindsey Manufacturing Co. design plans were used to calculate a total place of use of 134.34 acres. The north half pivot (63-34046) is a slight 0.32-acre smaller POU due to end gun area not irrigating around the well site in the NE¼SE¼.

Both permits 63-33141 & 63-34046 authorize an 80-acre place of use. A 67.33-acre POU in the south half pivot leaves a 33.7-acre POU in each quarter-quarter. A 67.01-acre POU in the north half pivot leaves a 33.5-acre POU in each quarter-quarter. Using IDWR standards, tenths of an acre are not used when the irrigation use is greater than ten acres. Irrigation use in each quarter-quarter rounds to 34 acres. Amendments to the POU are not recommended.

Well and System

Ground water is diverted from a well completed October 15, 2022, by Treasure Valley Drilling. The well is located at 43° 24.354' N, -116° 16.484' E. At the time of the exam Mr. Mellin was still working for an agreement with the BLM and a private property owner to gain easement to deliver three-phase electric power to the well. The well was operating with a large generator at the time of the exam.

According to the well driller's report, the well was cased with 20-inch casing to 40 feet. The remainder of the well was drilled to 410 feet deep open hole. Well test data on the log describes a 1,200-gpm yield with 44 feet of drawdown. This suggests a highly productive well but does not include important details how the well test was conducted. The well is in an area of known high-capacity wells operated by CS Beef, Simplot, and other ground water users.

The pressurized irrigation system consists of a single pivot system. The pivot spans seven 179-foot zones with 55 feet of overhang. The endgun is designed to throw at 0, 40, and 80 feet depending on pivot location. Additional system information is included in this field exam report.

Water Measurement

Diversion rates were measured using a GE Panametrics ultrasonic flow meter. Water diverted from the well mainline is long enough to gain measurement directly from the well. The pivot was on and irrigating at the time of the exam. The table below describes forward gallons over an 11-minute period (10-minute average). The pivot system was designed to divert 1,100 gpm. An 8-inch Growsmart IM3000 magnetic flow meter is installed on the system. Flow readings on the device varied greatly from 820 to over 1,400 gpm and was highly inconsistent. It is possible given the location of the device so near the well head, turbulence in the pipe was affecting an accurate reading. Other issues may be the cause.

A GE Panametrics ultrasonic flow meter operated by HDR was placed on the mainline. Flow readings from the device were consistent between 880 to 910 gpm. Diagnostics of the meter were checked during measurement and all parameters were within an acceptable range.

Pivot	Time	Fwd Gallons Start	Fwd Gallons End	Total Gallons	Diversion Rate (cfs)
1	15:27 to 15:38	118,938.348	127,910.861	8,972.5	2.00

The owner provided the attached pump curve and statements dated November 6, 2022. The pump is designed to deliver 1,100 gpm at 456 ft total dynamic head. The Well Driller's Report documents a pump test with static water level of 286 feet, drawdown of 44 ft at 1200 gpm (for a pumping water level of 330 feet). Discharge pressure during the exam was 38 psi, equivalent to 88 ft of head. Estimating friction loss at 10 ft of head, operating total dynamic head was $330 + 88 + 10 = 428$ ft. Theoretical pumping capacity: $Q = 150 \text{ hp} \times 80\% \text{ curve efficiency} \times 3960 / 428 \text{ ft TDH} = 1110 \text{ gpm}$. IDAPA Beneficial Use Examination Rules 37.03.02 require diversion rate measurement for this system. Pump curve, owner's statement, and theoretical calculation are provided for IDWR's consideration of adjusting diversion rate above the measured rate due to system design, pump wear, and Scott Storm's discussion with owner as documented in owner's statement.

Conditions of Approval

Standard conditions of approval were issued to the permit. The permit holder has met all conditions of approval.

Beneficial Use

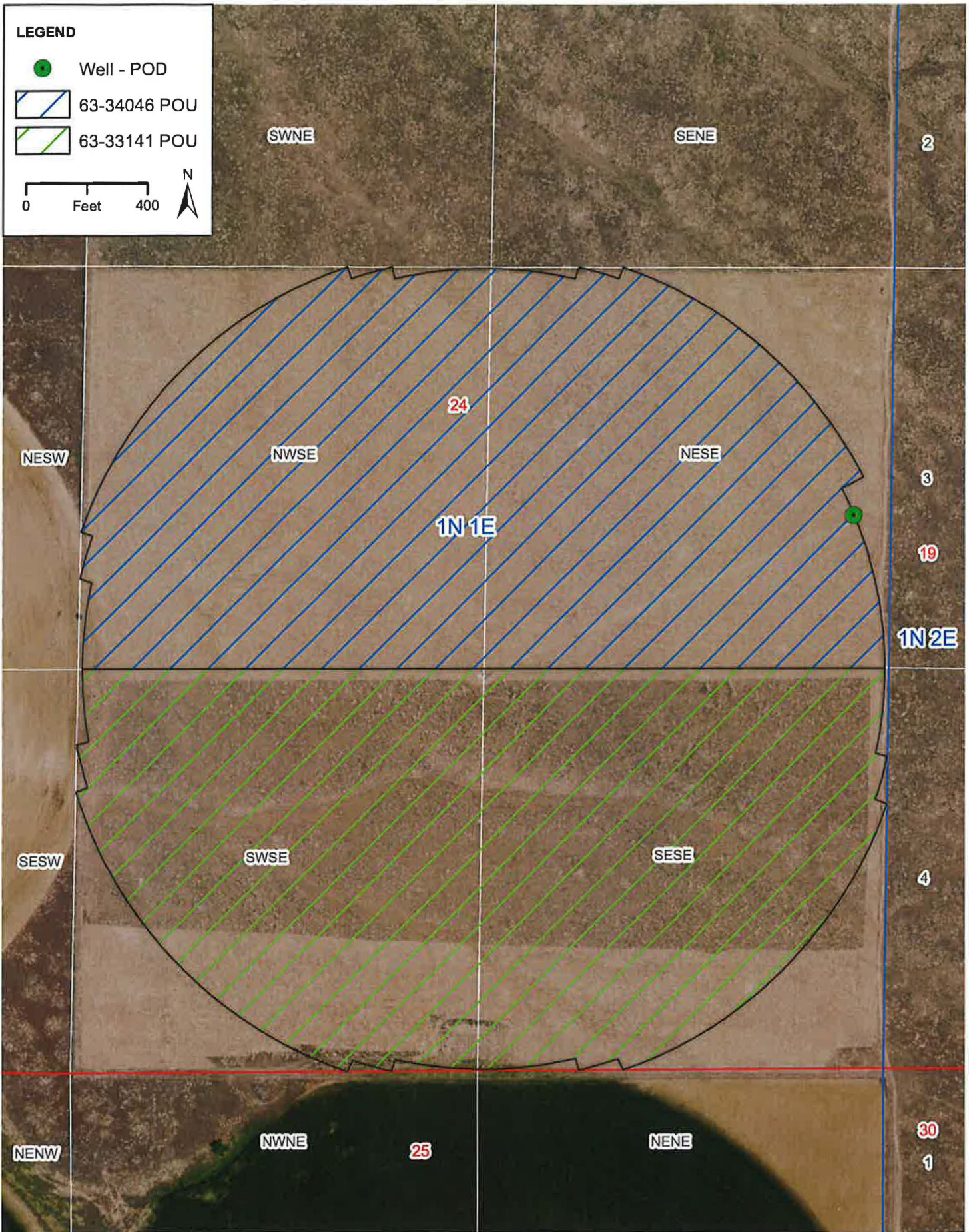
During the field exam, the owner provided an invoice from Valley Agronomics, LLC. This invoice dated September 29, 2022, shows that Mellin Farms LLC purchased 20,000 pounds of wheat seed. This seed was broadcast and lightly disked in the field and visible during the field exam. Seeds from this crop have begun to sprout. Photographs were provided to HDR by the owner showing a complete irrigation cycle.

Recommendations

The pivot system was measured diverting a total of 2.00 cfs on a total of 136 acres. Under a single right, this would equate to a rate per acre of 0.015 cfs per acre. Under each right independently, the system can deliver an inch per acre, and a combined use limit of both rights limited to 2.00 cfs could be issued. However, this would give the owner the opportunity to irrigate an inch per acre across all 136 acres, leaving the 2.00 cfs combined use limit meaningless.

To prevent enlargement, the rights should be licensed at the 0.015 cfs per acre, or 0.019 cfs per acre if accommodation is provided for the designed capacity.

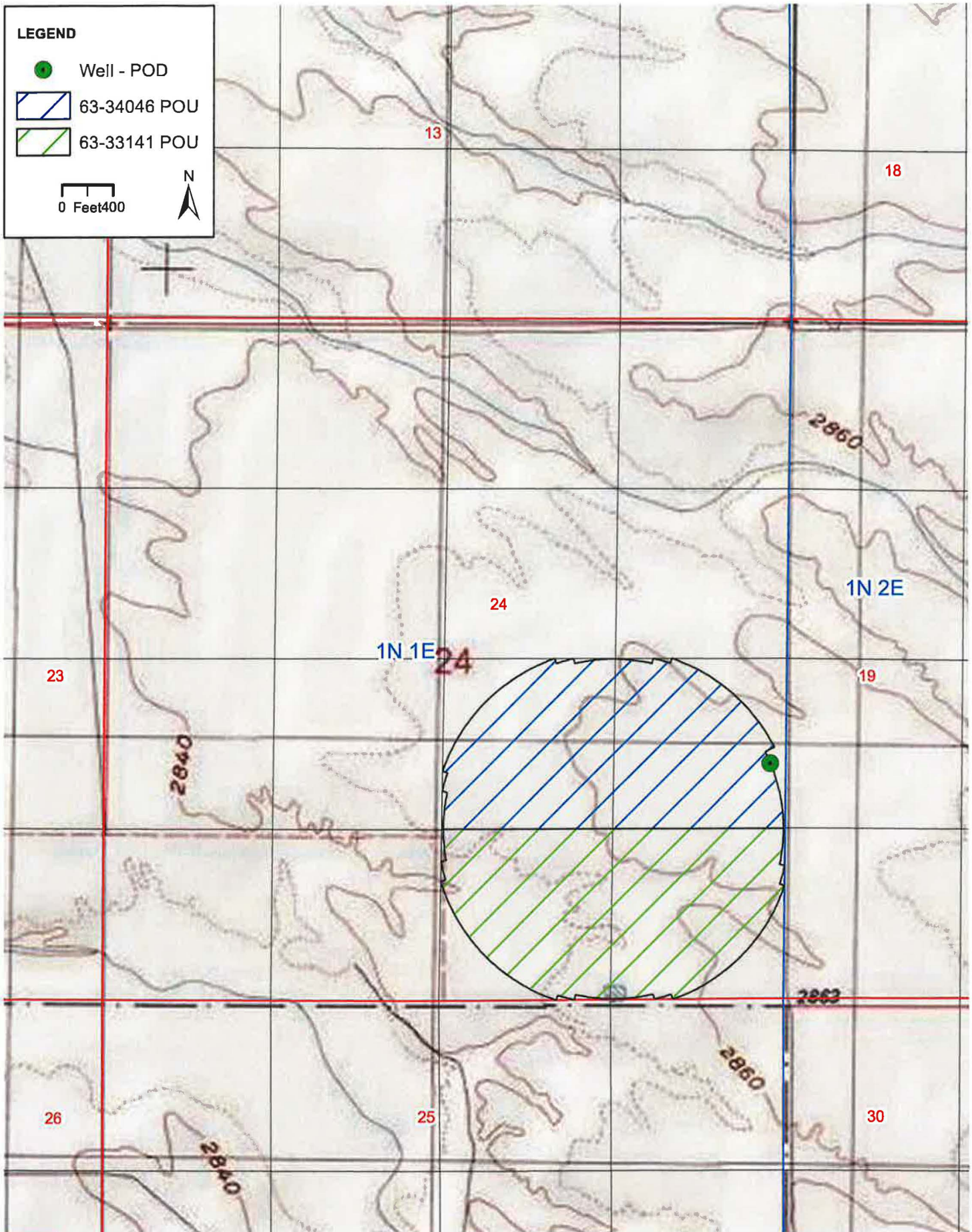
Beneficial use examination rules defined by IDAPA 37.03.02 requires volumes to be reported for irrigation uses from ground water. IDWR's 4.5 af/acre standard headgate requirement was used to calculate a maximum diversion volume of 306 af.



DATA SOURCE: NAIP 2021

63-33141 & 63-34046 FIELD EXAM SYSTEM DIAGRAM

MELLIN PROPERTIES LIMITED PARTNERSHIP



DATA SOURCE: USA Topo Maps

63-33141 & 63-34046 FIELD EXAM

SYSTEM DIAGRAM

MELLIN PROPERTIES LIMITED PARTNERSHIP

T.1N., R.1E., B.M.



BARKER RD

S BROKEN SKY LN

S COLE RD

S COLE RD

Sand Cr

NICHOLSON RD

Sand Cr

11

12

7

8

14

13

18

17

T.1N. R.2E

23

24

19

20

26

25

30

29

well
water
line
Mellin

1840

1860

Lindsay Manufacturing Co.



2707 North 108th Street
Omaha, NE 68164
800 - 829 - 5300 office

Farm: Field1

Grower:

10/26/2022

Systems:	Length	Spans	Total area including endgun
● Pivot 1	1314.67 ft	7 spans + 55 ft o.h.	67.33 acres

Pipe and Wire:	Length / Size	Description
● Pipe 1	1349.59 ft / 10" 100# PIP	3.7 PSI LOSS @ 1100 GPM
● Wire 1	1428.43 ft / #2 CABLE CON	8 VOLT DROP



Pivot 1

Pivot Area: **62.33** acres
 Endgun Area: **5.00** acres
 Total Area: **67.33** acres

System Length: **1314.67** ft
 # of Spans: **7 + overhang**
 Deg. of Sweep: **180.0°**
 Endgun Throw: **80.0 & 40.0** ft

Color on map:



Spans

# of Spans: 7	Span 1 (180.2)	Span 2 (359.1)	Span 3 (538.0)	Span 4 (716.9)	Span 5 (895.8)	Span 6 (1074.8)	Span 7 (1253.7)	Overhang (1314.7)
Length:	179	179	179	179	179	179	179	55 ft
Pipe Size:	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	5 - 9/16"

Endgun Areas

Endgun 1: (Throw = 80.0 ft)

# of Areas: 2	Start / Stop Angle (Deg. from North)	Start / Stop Angle (Deg. from Pivot Start)	Start / Stop Location (Lat/Long)		Area (acres)
Area 1	106.1° / 159.9°	16.6° / 70.4°	43.403417309° -116.274637499°	43.401031992° -116.277688908°	2.33
Area 2	200.2° / 250.1°	110.7° / 160.6°	43.401033747° -116.281099967°	43.403191517° -116.284044083°	2.17

Endgun 2: (Throw = 40.0 ft)

# of Areas: 4	Start / Stop Angle (Deg. from North)	Start / Stop Angle (Deg. from Pivot Start)	Start / Stop Location (Lat/Long)		Area (acres)
Area 1	98.5° / 106.1°	9.0° / 16.6°	43.403883887° -116.274497517°	43.403417309° -116.274637499°	0.16
Area 2	159.9° / 165.2°	70.4° / 75.6°	43.401031992° -116.277688908°	43.400932213° -116.278123393°	0.11
Area 3	194.9° / 200.2°	105.4° / 110.7°	43.400933521° -116.280665675°	43.401033747° -116.281099967°	0.11
Area 4	250.1° / 255.5°	160.6° / 166.0°	43.403191517° -116.284044083°	43.403515716° -116.284181803°	0.12

Lindsay Manufacturing Co.

2707 North 108th Street
Omaha, NE 68164
800 - 829 - 5300 office



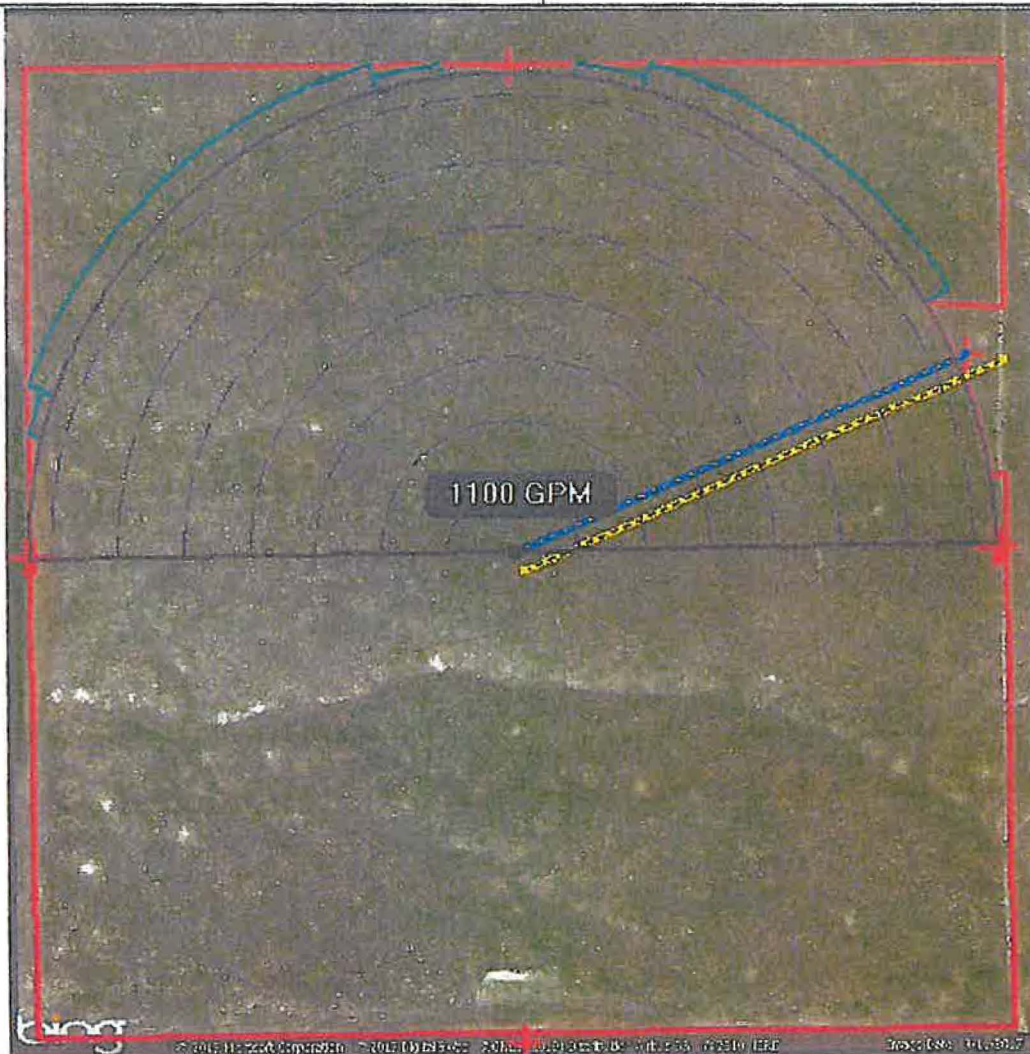
Farm: Field1

Grower:

10/26/2022

Systems:	Length	Spans	Total area including endgun
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Pipe and Wire:	Length / Size	Description
● Pipe 1	1349.59 ft / 10" 100# PIP	3.7 PSI LOSS @ 1100 GPM
Ⓢ Wire 1	1428.43 ft / #2 CABLE CON	8 VOLT DROP



Pivot 1

Pivot Area: **62.33** acres
 Endgun Area: **4.68** acres
 Total Area: **67.01** acres

System Length: **1314.67** ft
 # of Spans: **7 + overhang**
 Deg. of Sweep: **180.0°**
 Endgun Throw: **80.0 & 40.0** ft

Color on map:



Spans

# of Spans: 7	Span 1 (180.2)	Span 2 (359.1)	Span 3 (538.0)	Span 4 (716.9)	Span 5 (895.8)	Span 6 (1074.8)	Span 7 (1253.7)	Overhang (1314.7)
Length:	179	179	179	179	179	179	179	55 ft
Pipe Size:	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	5 - 9/16"

Endgun Areas

Endgun 1: (Throw = 80.0 ft)

# of Areas: 2	Start / Stop Angle (Deg. from North)	Start / Stop Angle (Deg. from Pivot Start)	Start / Stop Location (Lat/Long)		Area (acres)
Area 1	289.8° / 344.2°	20.3° / 74.7°	43.405643753° -116.284046344°	43.407892243° -116.280735128°	2.36
Area 2	15.8° / 58.8°	106.3° / 149.3°	43.407890854° -116.278040460°	43.406287120° -116.275156814°	1.87

Endgun 2: (Throw = 40.0 ft)

# of Areas: 3	Start / Stop Angle (Deg. from North)	Start / Stop Angle (Deg. from Pivot Start)	Start / Stop Location (Lat/Long)		Area (acres)
Area 1	284.4° / 289.8°	14.9° / 20.3°	43.405319419° -116.284183470°	43.405643753° -116.284046344°	0.12
Area 2	344.2° / 352.2°	74.7° / 82.7°	43.407892243° -116.280735128°	43.407994414° -116.280063285°	0.17
Area 3	7.9° / 15.8°	98.4° / 106.3°	43.407993718° -116.278712104°	43.407890854° -116.278040460°	0.17

Valley Agronomics, LLC
20870 VanSlyke Rd
Greenleaf ID 83626
208-453-5960
Pest Lic#: 312

MELLIN FARMS LLC
10100 W FRANKLIN RD
BOISE, ID 83709

Invoice

60058674

Invoice Date 09/29/2022
Due Date 10/15/2022

Customer ID 441460

Salesperson JCRANE
Shipping Loc. GRNLF
Field ID D1 Pivot
Farm ID Desert Desert
Acres 141
Ticket(s) 6039098

Comments: Wheat Spreading Cole Rd.

Quantity	Description	Unit Price	Total \$
3.345 Tons	0-0-0-85 Sulfur Gran Bulk Ton	660.00 /Tons	2,207.70
1.765 Tons	21-0-0-24 Ammonium Sulfate Bk Tn EPA / PCP Reg. Num. UNKNOWN	630.00 /Tons	1,111.95
20000.000 Lbs	WHEAT OVATION	.37 /Lbs	7,400.00
14.980 Tons	BLENDING FEE	6.00 /Tons	89.88
141.000 Acre	AIRFLOW	12.50 /Acre	1,762.50

Terms: Thank you for your business!

Sub Total 12,572.03

Amount Due 12,572.03

Remit To: Valley Agronomics LLC
PO Box 365
Rupert ID 83350
Phone #: 208-453-5960

Invoice

600586'

MELLIN FARMS LLC
Joshua Gates 55282 LS SF Exp. Date 12/31/2022

* Signature of Principal Driller and rig operator are required.

November 6, 2022

Mellin Project on Extreme South Cole Road

To whom it may concern:

It would be nice if consideration is given to the design quantity of water that this pump is designed to pump. The pump curve should show about 1,100 gpm when pumping from the drawdown level of ³⁰⁰~~340~~ feet with its eight stages.

The pivot design quantity also is 1,100 gpm in its available chart.

This used pump has some wear on its bowls so it now pumps about 900 gpm until the bowls are rebuilt.

By

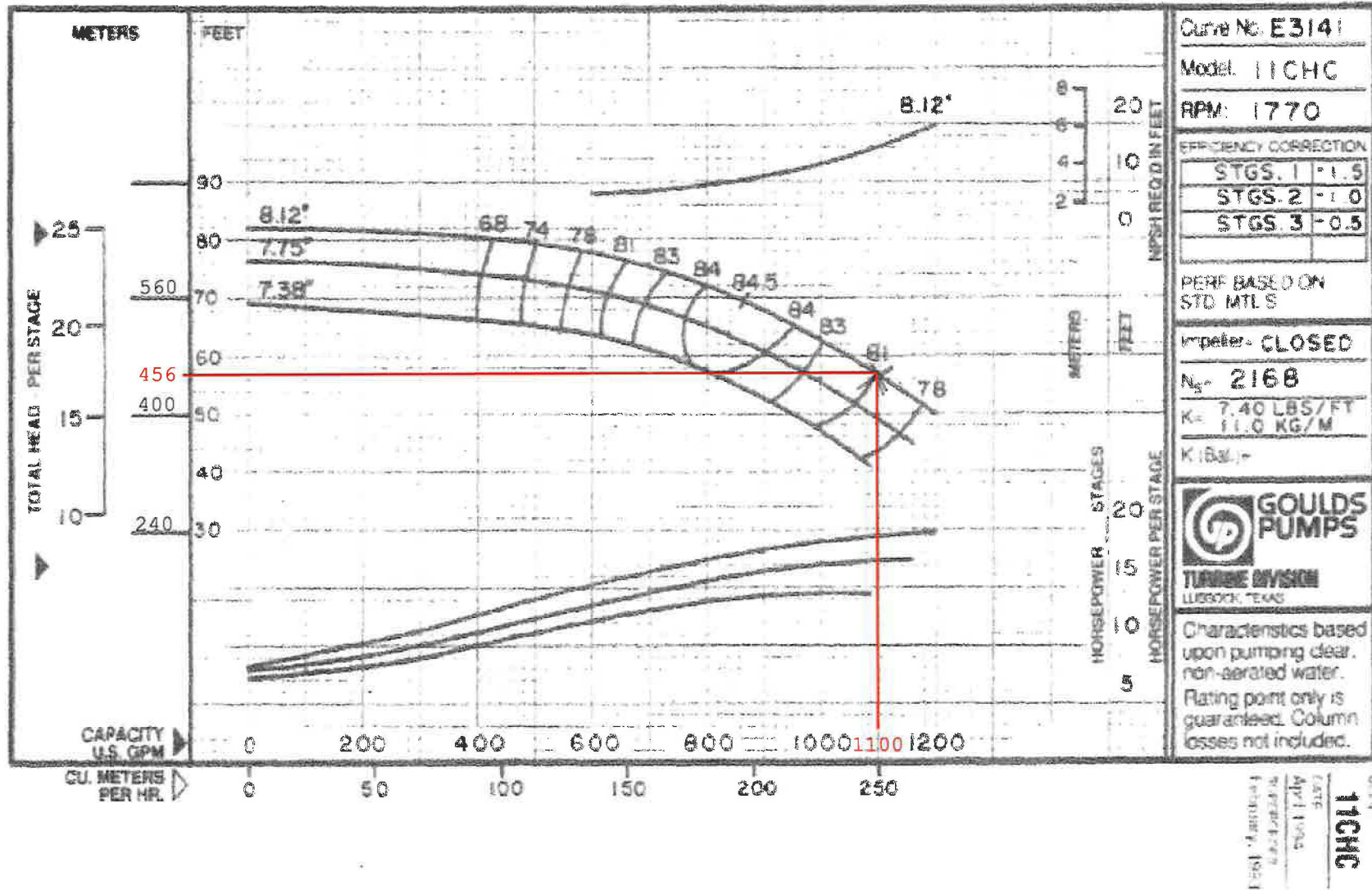
Ralph Mellin
Ralph Mellin

(PS The Idaho Department of Water Resources' District Supervisor of Water Rights, Scott Storm, personally indicated to me about two weeks ago that a water meter reading may not be needed if it would be difficult to bring a diesel generator back to pump water for a meter reading. That is they might be able to determine water quantity from a pump curve and related data with the ~~at~~ drawdown level.)

This could be better for licensing so an additional permit application would not be needed for the small amount of additional water upon the rebuilding of the worn pump bowls.

Ralph Mellin

Ralph Nelson



For South Lake Road - has eight stages (bowls)

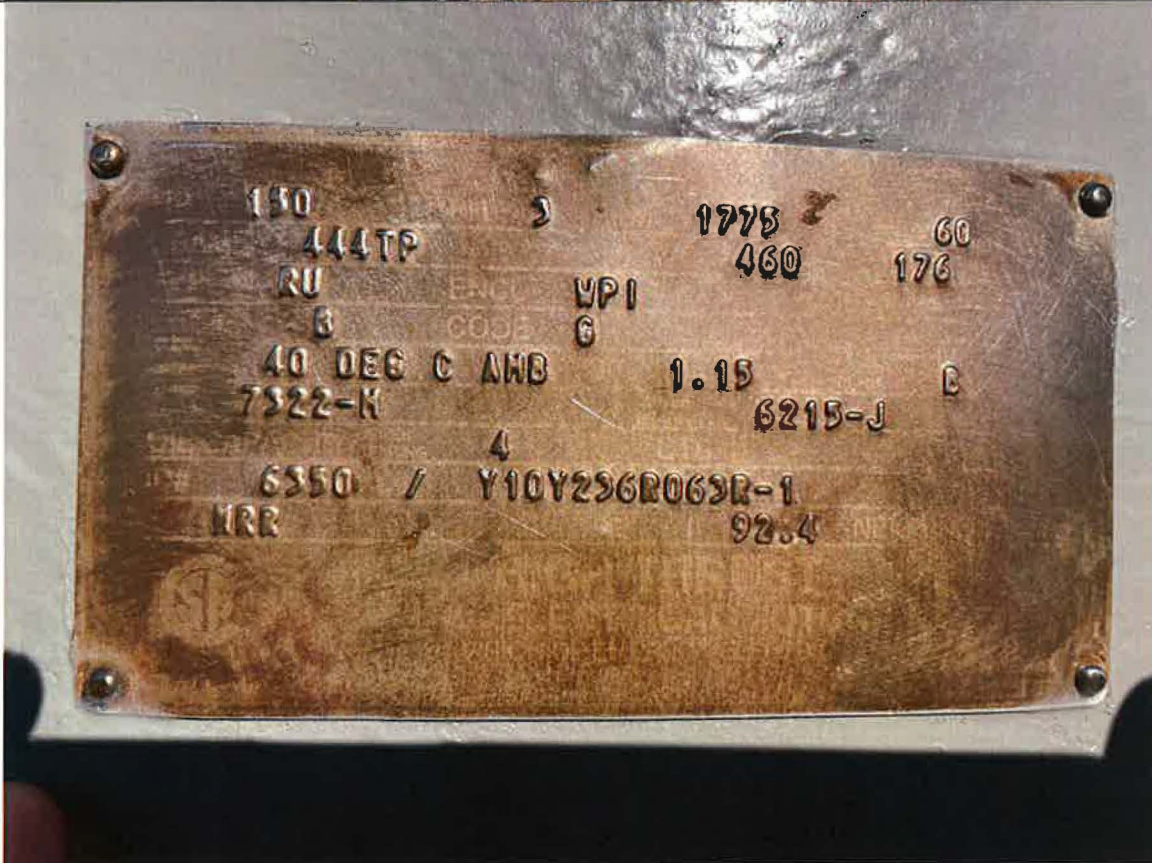


Point of Diversion

43 24.354
-116 16.484

NE¼SE¼
Sec. 24
Twp. 1 North
Rge. 1 East

Well located at end of
S. Cole Road, on east
side of property.



Motor Plate

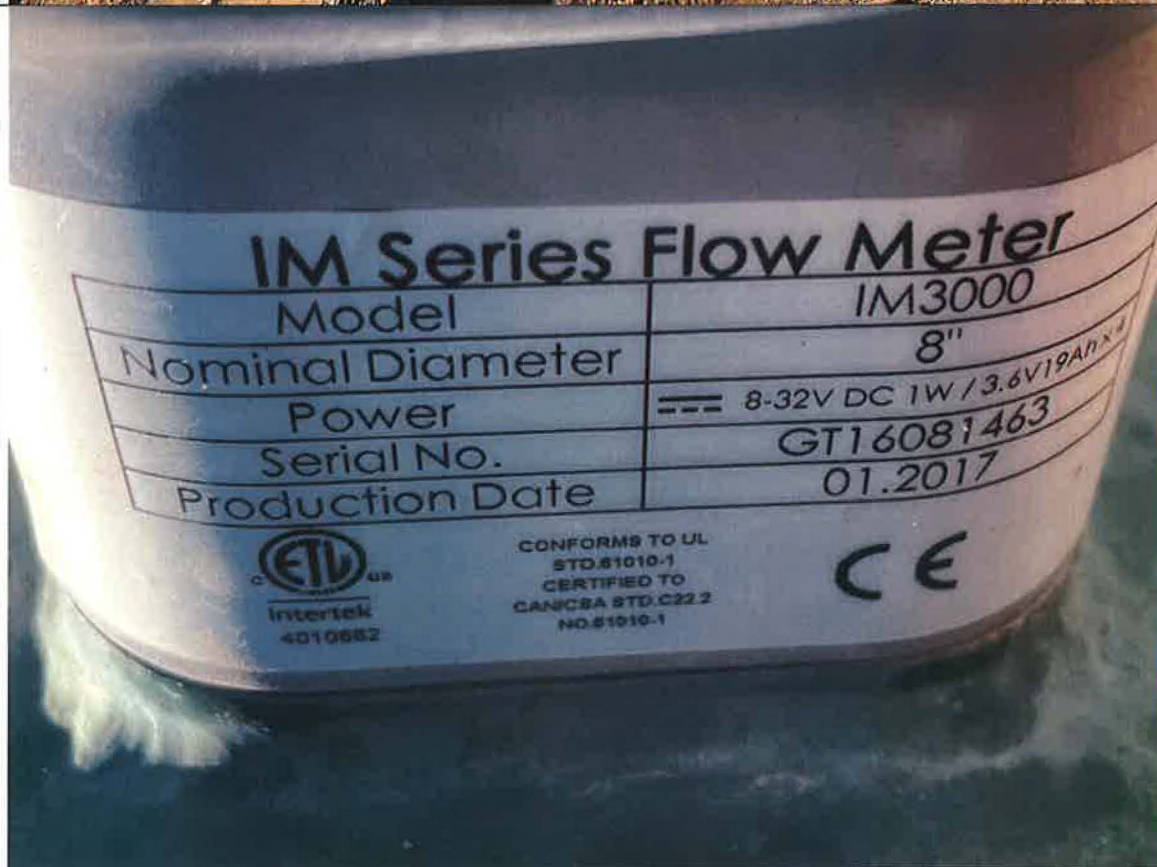
Difficult to interpret
information.

hp: 150
Hz: 60
Phase: 3



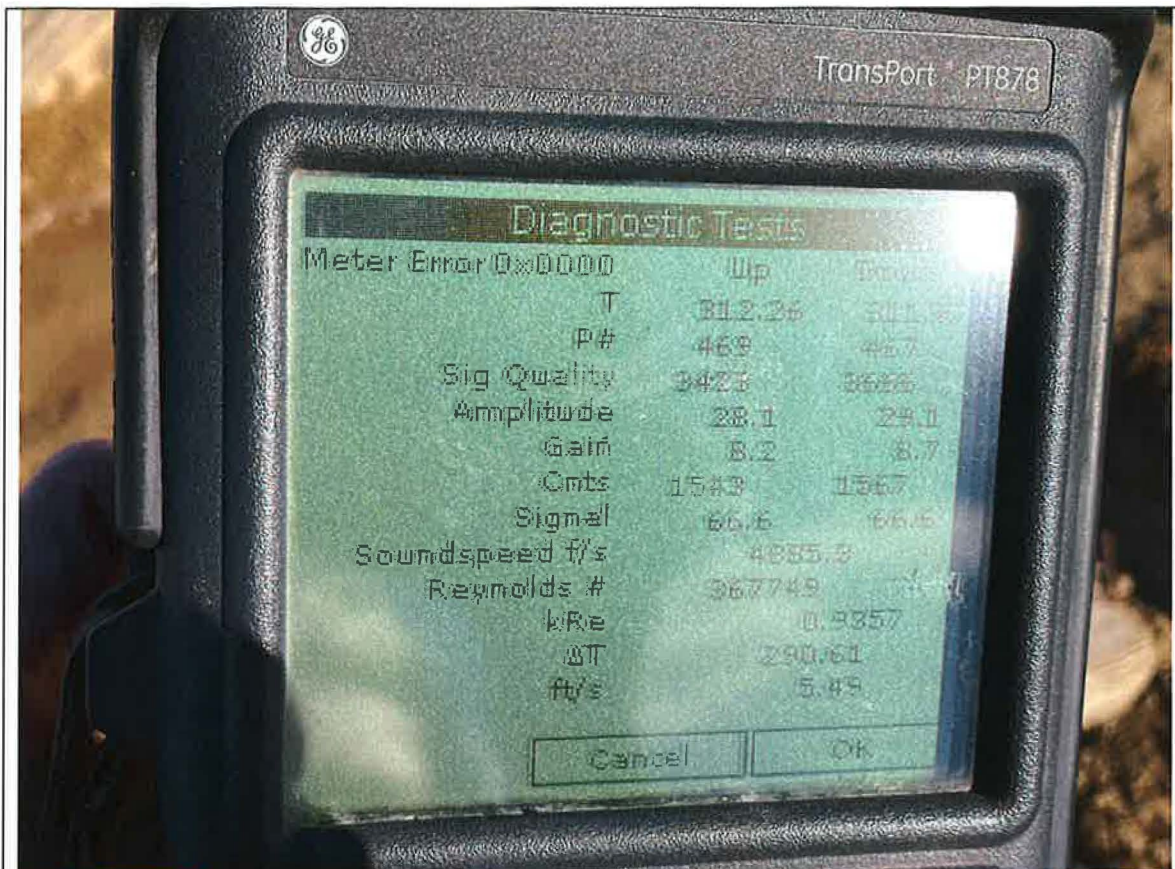
Mainline from well to pivot system.

Flow meter shown on right, GE ultrasonic device placed further down pipe on left.



Magnetic Flow Meter

Manufacturer: Lindsay
Model: IM3000
S/N: GT16081463



Diagnostics collected during testing.

Parameters all within acceptable range.



Live flow observed during exam.



Pivot system and
irrigation place of use.



Place of use. Wheat
seed shown sprouting
at time of field exam.