

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 2-10461

Exam Date: 10/1/2015

1. Current Owner: ALLEN NOBLE FARMS INC
PO BOX 1582
BOISE, ID 83701
2. Accompanied by: Craig Castigneto
Phone No: 208-250-7148
Address:
Relationship to Permit Holder: Farm Manager for Allen Noble

3. SOURCE

Snake River

TRIBUTARY

Columbia River

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 2-2171, 2-2160A See attached overlap comparison sheet
2. Other water rights with the same point of diversion: 2-2160A, 2-2160B, 2-2171, 2-2162, 2-2170, 2-2167, 2-2198
Permits: 2-10460, 2-10463, 2-10464

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

SNAKE RIVER L5(SENW) Sec. 22, Twp 01N, Rge 03W, CANYON County

Method of Determination: ArcMap tools using PLSS maps over aerial imagery.

2. PLACE OF USE:

IRRIGATION within CANYON County

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
01N	03W	11					40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0					320.0
01N	03W	14					40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0					320.0

POU Total Acres: 640.0

Method of Determination: POU describes acres under permit holders active water rights.

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.

Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
1	US Motors	150	1263850		
2	US Motors	150	1257485		
3	US Motors	150	1207695		
4	US Motors	150	1263849		
5	US Motors	200	1217728		
6	US Motors	200	1319346		
8	US Motors	300	1280354		
9	US Motors	300	1266433		
10	GE	300	ENJ511127		

*Code to correspond with No. on diagram

Pump House Diagram:

8	9	10	NORTH ↓
3	4	5	
1	2	6	

D. FLOW MEASUREMENTS

1.Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Open Channel	Acoustic Doppler Current Profiler	Teledyne	StreamPro	432	2,000 kHz	
Open Channel	Acoustic Doppler Velocimeter	SonTek	FlowTracker	P4553		

2. Measurements: Collected on-site during field exam.**E. FLOW CALCULATIONS**☒ Additional Computation Sheets AttachedMeasured Method: Acoustic Doppler Current Profiler

See attached flow measurements

Permit 3.76 cfs
 B.U. Standard Allowance 12.8 cfs
 B. U. Proof Fee \$175 → 3.01 to 4.00 cfs
 Measured Rate 3.66 cfs

License Recommendation 3.66 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 640 \times 4.5 = 2,880.0$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 3.66 \times 260 \times 1.9835 = 1,887.499$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 1,887.499$$

2. Volume Calculations for Other Uses: None.

G. NARRATIVE/REMARKS/COMMENTS

The field exam was conducted by Corbin Knowles, Angie Grimm, Dennis Owsley and Patrick Kelly on October 1, 2015. Craig Castigneto of Allen Noble Farms escorted our group about the properties and ran the pump operations.

The purpose of the four permits filed on this system is to bring the diversion rate up to an inch per acre on the 1,623 acres already covered by existing water rights. The four permits total an extra diversion rate of 8.83 cfs. There is an existing 23.63 cfs authorized under active water rights. The goal of the field exam was to measure a maximum diversion rate of 32.46 cfs.

There is a pump station located on the north shore of the Snake River at the POD described above that pumps water roughly 500 feet up the ridge to a ditch. There are a total of nine pumps that are owned by several parties. A total of three pumping ponds exist on the ditch where booster pumps feed pivots and wheel lines. These pumping ponds and booster stations are privately owned and operated by individual users on the ditch.

Open channel measurements were completed by Dennis Owsley using a Teledyne Acoustic Doppler Current Profiler, (aka "the boat") and Angie Grimm using the Handheld ADV (FlowTracker). At the start of the test, all pumps were running. A flow reading of 22.7 cfs was recorded by Dennis while Angie measured 22.9 cfs. This was significantly lower than the 32.46 cfs target. This began the question of which pumps were delivering their share of the water. It was decided that the pumps would be shut down, and restarted in groups by which they serve an individual user.

Run 2 consisted of pumps labeled 8, 9 & 10, owned by Allen Noble Farms Inc. Permit 2-10461 owned by Allen Noble Farms Inc sought to add 3.76 cfs to existing rights 2-2171 and 2-2160A which each allows the appropriation of 4.52 cfs on a total of 640 acres. $4.52 + 4.52 = 9.04$ cfs. Measurements taken by Dennis found a total discharge of 12.7 cfs coming from the three pumps. This means an additional 3.66 cfs has been additionally appropriated by Allen Noble Farms Inc.

Run 3 consisted of pumps labeled 3, 4 & 5, owned by Catherine, Steven and Donald Vander Stelt. Permit 2-10464 owned by the Vander Stelt's sought to add 2.25 cfs to existing rights 2-2167 and 2-21698 which allows the appropriation of 4.77 and 2.38 cfs respectively on a total of 315 acres. $4.77 + 2.38 = 7.15$ cfs. Measurements taken by Dennis found a total discharge of 8.06 cfs coming from the three pumps. This means an additional 0.91 cfs has been additionally appropriated by the Vander Stelt's.

Run 4 consisted of pumps labeled 1 & 2, owned by A D Cattle Co Inc. Permit 2-10460 owned by the A D Cattle Co Inc sought to add 1.88 cfs to existing rights 2-2160B which allows the appropriation of 4.52 cfs on a total of 320 acres. Measurements taken by Angie found a total discharge of 3.38 cfs coming from the two pumps. No additional water has been appropriated by A D Cattle Co Inc.

Run 5 consisted of pump labeled 6, owned by Bigfoot Farms LLC. Permit 2-10463 owned by the Bigfoot Farms LLC sought to add 0.94 cfs to existing rights 2-2162 and 2-2170 which allows the appropriation of 2.38 and 0.54 cfs respectively on a total of 193 acres. $2.38 + 0.54 = 2.92$ cfs. Measurements taken by Angie found a total discharge of 2.08 cfs coming from the pump. No additional water has been appropriated by Bigfoot Farms LLC.

The system seems to operate more efficiently when all nine pumps are not running at once. When each individual run is added, a total of 26.17 cfs is measured. However, a significant drop in flow rate is found when all nine pumps run together.

Combined use limits will be placed on the rights in terms of total acres, since multiple water rights overlap the same place of use.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	3/1 TO 11/15	3.66 CFS	

Totals: 3.66 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 ☐ Other

I. AUTHENTICATION

Field Examiner's Name Patrick Kelly Date 10-1-2015

Reviewer _____ Date _____

Station Name: jones noble morris field exam

meas. No. 0
Date: 10/01/2015

Party:	Width: 5.09 ft	Processed by:
Boat/Motor:	Area: 5.87 ft²	Mean Velocity: 2.16 ft/s
Gage Height: 0.00 ft	G.H.Change: 0.000 ft	Discharge: 12.7 ft³/s

Area Method: Avg. Course	ADCP Depth: 0.230 ft	Index Vel.: 0.00 ft/s	Rating No.: 1
Nav. Method: Bottom Track	Shore Ens.:10	Adj.Mean Vel: 0.00 ft/s	Qm Rating: U
MagVar Method: None (0.0°)	Bottom Est: Power (0.1667)	Rated Area: 0.000 ft²	Diff.: 0.000%
Depth Sounder: Not Used	Top Est: Power (0.1667)	Control1: Unspecified	
Discharge Method: None		Control2: Unspecified	
% Correction: 0.00		Control3: Unspecified	

Screening Thresholds:	ADCP:
3T 3-Beam Solution: YES	Type/Freq.: StreamPro / 2000 kHz
NT 3-Beam Solution: YES	Serial #: 432 Firmware: 31.13
3T Error Vel.: 0.33 ft/s	Bin Size: 3 cm Blank: 50 cm
NT Error Vel.: 1.61 ft/s	BT Mode: 0 BT Pings: 1
3T Up Vel.: 1.00 ft/s	WT Mode: 12 WT Pings: 6
NT Up Vel.: 4.00 ft/s	
Use Weighted Mean Depth: YES	
Max. Vel.: 4.31 ft/s	
Max. Depth: 1.77 ft	
Mean Depth: 1.15 ft	
% Meas.: 36.30	
Water Temp.: None	
ADCP Temp.: 66.3 °F	

Performed Diag. Test: YES

Performed Moving Bed Test: NO

Performed Compass Calibration: NO Evaluation: NO

Meas. Location:

Project Name: jones noble morris field exam

Software: 2.11

#	Edge Distance		#Ens.	Discharge						Width	Area	Time		Mean Vel.		% Bad	
	L	R		Top	Middle	Bottom	Left	Right	Total			Start	End	Boat	Water	Ens.	Bins
4 L	1	1	49	4.03	5.05	2.40	0.883	0.953	13.3	5	6	13:14	13:15	0.07	2.13	0	0
5 R	1	1	62	3.74	4.17	2.12	1.02	1.02	12.1	5	5	13:16	13:17	0.06	2.20	0	0
Mean	1	1	55	3.88	4.61	2.26	0.953	0.989	12.7	5	6	Total	00:02	0.06	2.16	0	0
Dev	0	0	9	0.200	0.624	0.200	0.100	0.050	0.849	0.2	0.5			0.01	0.05		
)/M	0.00	0.00	0.17	0.05	0.14	0.09	0.10	0.05	0.07	0.04	0.09			0.18	0.02		

marks:



Buried Pipeline

Open Ditch

POU

Booster Pond

POD

2-10461

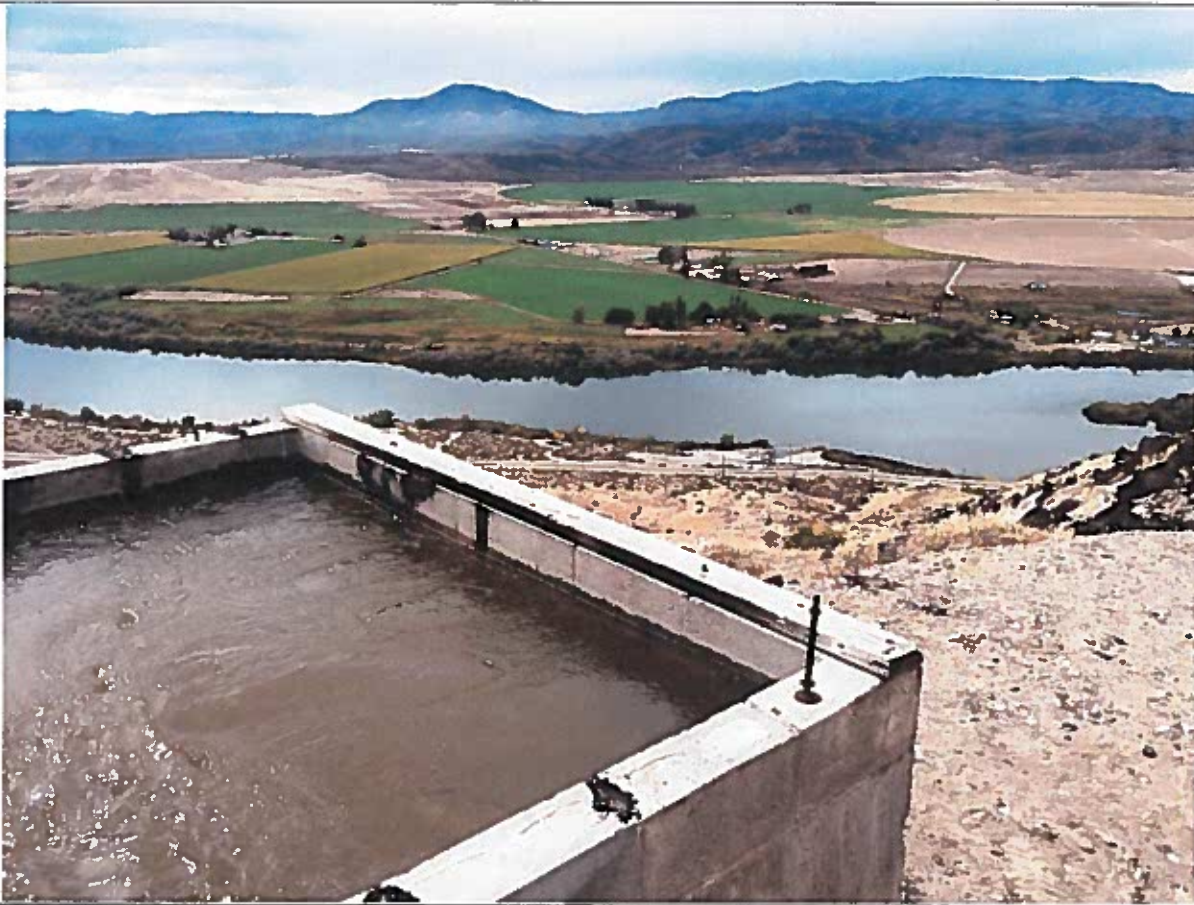
Three 300 hp pump labeled 8,9 & 10 deliver a total of 12.7 cfs measured at the ditch head. Water is delivered to a pumping pond where booster pumps pressurize a wheel line system. Combined Limits: 2-2160A, 2-2171 & 2-10461 total 640 acres.



Pumping station looking north. Water is delivered above ridge in photo.



Pumps are lined in three rows of three, 9 pumps total, labeled as shown. (There is no No. 7)



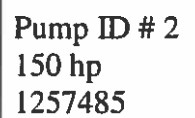
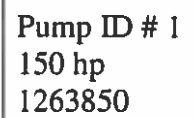
Ditch head on ridge facing south towards Snake River.

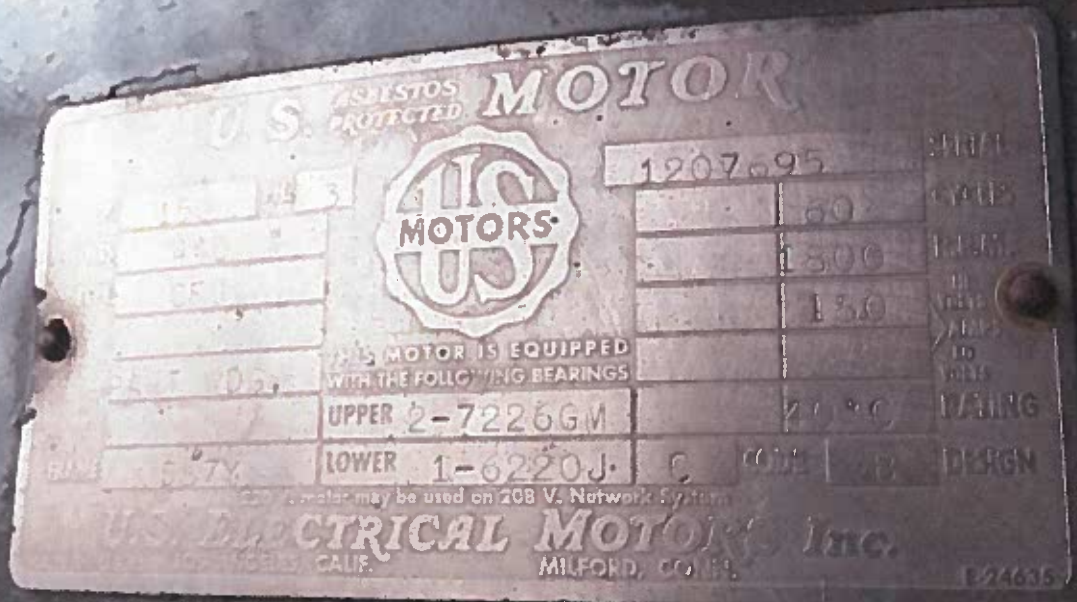
Pumping station seen on shoreline.



Ditch head on ridge facing NE.

Measurement location shown.

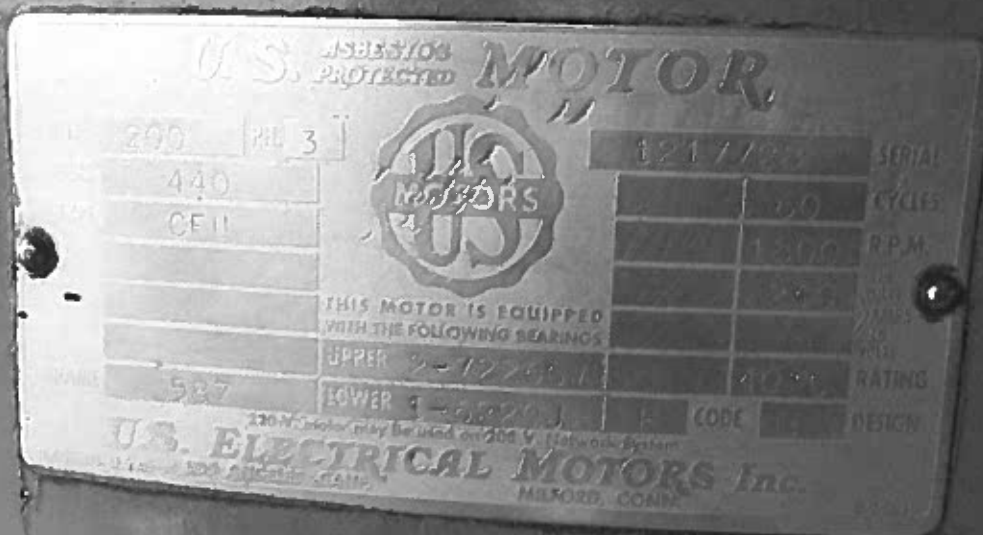




Pump ID # 3
150 hp
1207695



Pump ID # 4
150 hp
1263849



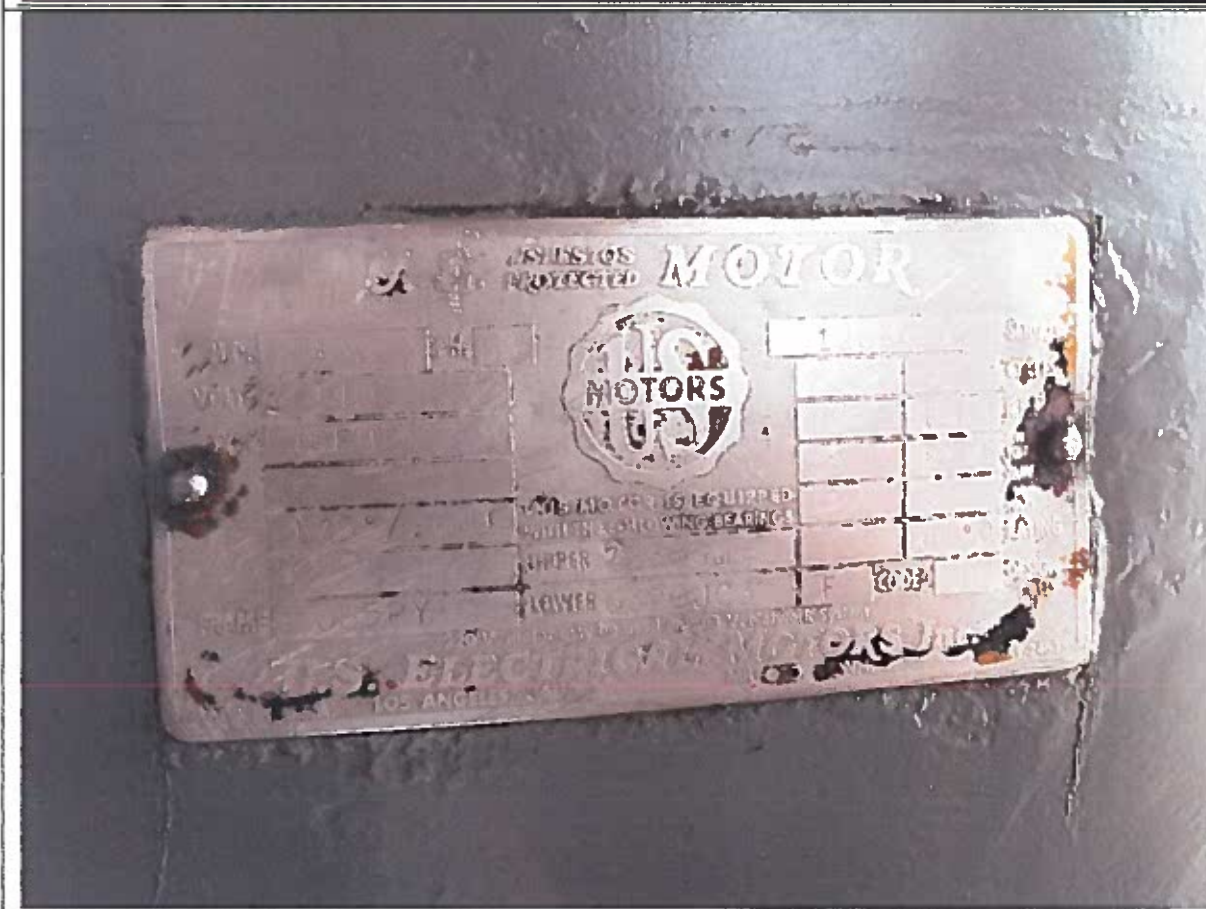
Pump ID # 5
200 hp
1217728



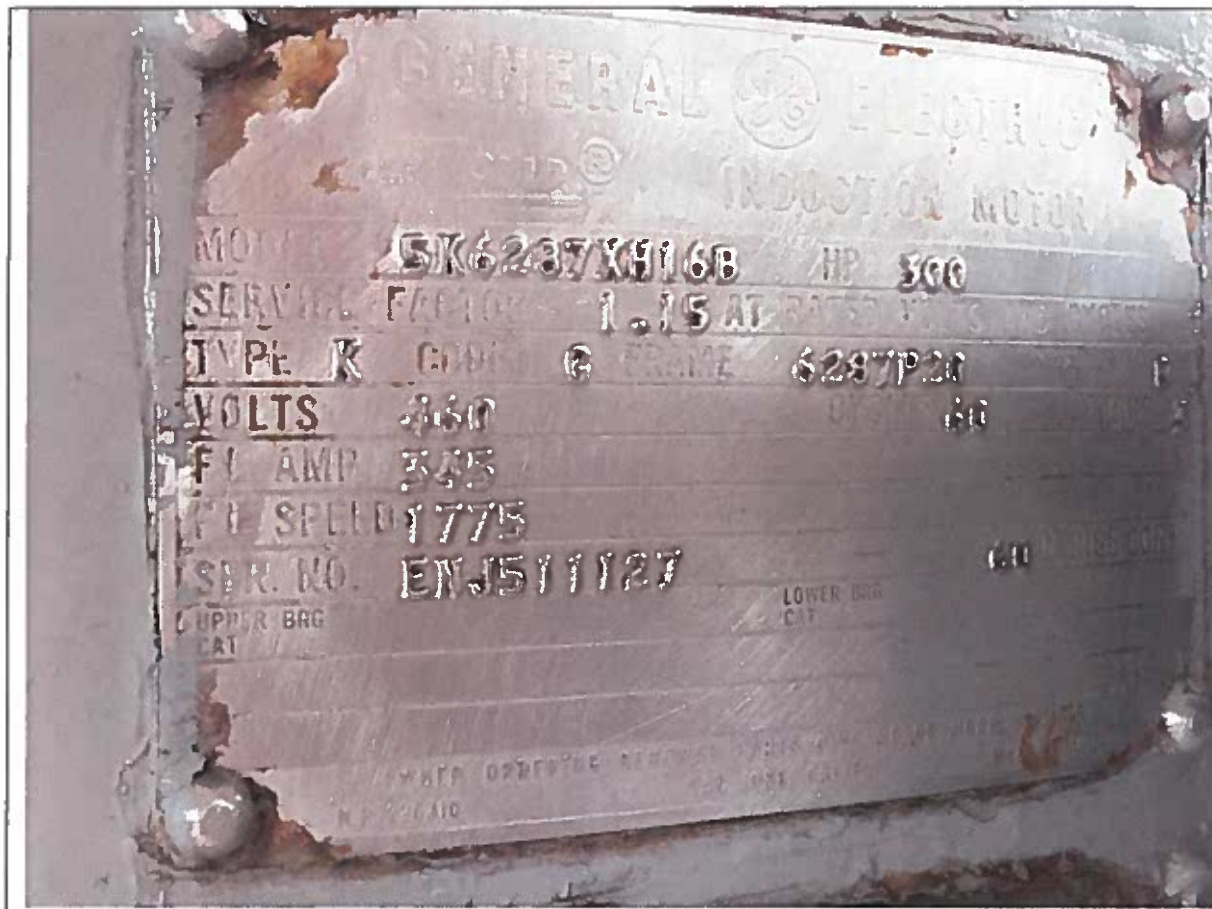
Pump ID # 6
200 hp
1319346



Pump ID # 8
300 hp
1280354



Pump ID # 9
300 hp
1266433



Pump ID # 10
300 hp
ENJ511127

Process	Basin Sequence	Draft	Owner	Source	POD/ POU	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Permit	2-10461	N	ALLEN NOBLE FARMS INC	SNAKE RIVER	POU					40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0					320
Water Right	2-2171	N	ALLEN NOBLE FARMS INC	SNAKE RIVER	POU					40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0					320
			STELT, CATHERINE VANDER;																			
Water Right	2-2193	N	STELT, DONALD LEE VANDER;	SNAKE RIVER	POU			40.0	40.0									40.0	40.0	40.0	40.0	240
			STELT, B M K INC																			
Water Right	2-7081	N	B M K INC	SNAKE RIVER	POU	37.0	37.0															74

4.52
acs

Process	Basin * Sequence	Draft	Owner	Source	POD/ POU	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Permit	2-10460	N	A D CATTLE CO INC	SNAKE RIVER	POU	40.0	40.0	40.0	40.0									40.0	40.0	40.0	40.0	320
Water Permit	2-10461	N	ALLEN NOBLE FARMS INC	SNAKE RIVER	POU					40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0					320
Water Right	2-2160A	N	ALLEN NOBLE FARMS INC	SNAKE RIVER	POU					40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0					320
Water Right	2-2160B	N	A D CATTLE CO INC	SNAKE RIVER	POU	40.0	40.0	40.0	40.0									40.0	40.0	40.0	40.0	320
Water Right	63-19675	N	A D CATTLE CO INC	GROUND WATER	POU																X	0
Water Right	63-31627	N	ALLEN NOBLE FARMS INC	GROUND WATER	POU												X					0

4.52
6