STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 36-8740
Exam Date: 7/25/2007

1. Current Owner: ARKOOSH PRODUCE INC
PO BOX 3014
POCATELLO ID 83206-3014
(208)478-7978

2. Accompanied by: Rick Cantrell
Phone No: 208-536-6148
Address: 2930S 2300E Wendell ID 83355
Relationship to Permit Holder: Farm Manager for Luis Bettencourt—new owner (need change in ownership form)

3. **SOURCE**
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 36-10821B, (36-7054B and 36-7116D are for commercial and stock uses only and authorize irrigation as a secondary use)

2. Other water rights with the same point of diversion: 36-8739 and 36-10821B (not authorized, transfer required)

C. DIVERSION AND DELIVERY SYSTEM

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

GROUND WATER SW1/4NE1/4 Sec. 30, Twp 07S, Rge 16E, B.M. GOODING County Method of Determination: Site Visit/Imagery.

2.

PLACE OF USE: The only reason this permit was approved for processing in the moratorium area is because of pre-1987 development. There should be no new irrigated acres under this permit or 36-8739 so the place of use will be the same as what was historically irrigated. Right 36-10821B superseded rights 36-7810 through 36-7813. Right 36-7810 covered the land that this new permit covers, so I used the documentation/maps in file 36-7810 and compared that against the current POU under 36-10821B to determine the historic place of use. It appears that land outside the allowable place of use has been irrigated while a few acres that were authorized did not get irrigated. See below for a breakdown of acres irrigated under both 36-8739 and 36-8740.

	18 9/18 0.6	23 25.6/~~35~~ 23	25 19/~~35~~ 19
20 19.1/20 19.1	6 39/39 33 38.2	23 39.3/33 10 7.8	23 34.1*/~~33~~ 29
17 19.4/17 19.4	37 37.2/37 37.2	10 10.5/10 6.8	8.6/0

Acres Permitted Under Permit 36-8740 Total of 127 acres

Acres Permitted Under Permit 36-8739 Total of 118 acres

Actual Irrigated Acres under 36-8740 Total of 129.1 acres

Total Actual Acres Irrigated Between Both Permits

Acres Historically Irrigated (acres allowed to be irrigated under these two permits)

Method of Determination: Site Visit and Imagery
Sec. 30 7S 16E

Overlap Analysis: 36-7054B and 36-7116D are for commercial and stock uses only and authorize irrigation as a secondary use. These rights are not being evaluated for historical use because they were transferred to the current place of use in 2002. Right 36-10821B overlaps the place of use entirely and this permit was applied for to boost the rate from 0.016 cfs/acre to the standard 0.02 cfs/acre.

Right 36-10821B 10.2 cfs over 626.5 acres= 0.016 cfs/acre
Right 36-8740 0.53 cfs over 127 acres = 0.004 cfs/acre
0.02 cfs/acre

I will recommend the place of use based on allowable acres and what was actually irrigated.

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07S	16E	30								.6	38.2	19.1 L3	17.0 L4	37.0		7.8	6.8		126.5

Total Acres: 126.5

0.6 acres were recommended in the **SENW** since this was the actual amount found to be irrigated in that 1/41/4
38.2 acres were recommended in the **NESW** because this was the total amount found to be irrigated in that 1/41/4
19.1 acres were recommended in the **NWSW** because this was the total amount found to be irrigated in that 1/41/4
17 acres were recommended in the **SWSW** because that is the historical amount irrigated in that 1/41/4
37 acres were recommended in the **SESW** because that is the historical amount irrigated in that 1/41/4
7.8 acres were recommended in the **NWSE** since the total historical amount irrigated was 33 and 25.2 is covered under 36-8739
6.8 acres were recommended in the **SWSE** since the total historical amount irrigated was 10 and 3.2 is covered under 36-8739

3.

Well or Diversion ID No.	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
A0003744	RU Upthrust/Highthrust	100	R295400170H	LB Vertical	44903 (Back-up Well)
A0003743	Holloshaft B	200	CC1006903	Wel Line	LP96165 (Primary Well)

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Panametrics			PT868			
Polysonic		Tyme-Flyte		150232		4/2007

2. Measurements: On 7/25/2007 the back-up well was inactive so no measurement was taken. The primary well averaged 1981.3 gpm and the pivot averaged 838.5 gpm.

E. FLOW CALCULATIONS

___x__Additional Computation Sheets Attached

Measured Method: A measurement was taken at the "south" pivot in the center of the field in the SW1/4 of Sec. 30 7S 16E using the Panametrics and averaged 838.5 gpm or 1.87 cfs.

The primary well was measured using the Polysonic and averaged 1981.3 gpm or 4.41 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

*No additional volume under this permit

G. NARRATIVE/REMARKS/COMMENTS

The groundwater from the well is pumped directly into a holding pond where it is mixed with wastewater/runoff from the dairy. Once mixed the water is then pumped out to the fields for land application. There are three pumps located to the south of the pond. The pumps were covered heavily with brush and the pump specs were not visible.
The pivot (aka south pivot) has 7 towers, a gauge pressure of 71 PSI and a total system flow rating of 900 gpm with a pipe length of 1293 ft. The end gun type is SRNV100 and has a radius of 103.9 ft and is rated at 120 gpm. Based on these specs the total system capacity is 1020 gpm or 2.27 cfs (1.87 cfs is what was measured).

In order to determine if additional beneficial use had been developed beyond what was already in place I looked at the capacities of the four wells authorized under 36-10821B. Note that well A0003744, aka the back-up well, is not being used at this time and 36-10821B will need to file a transfer to change the PD from A0003744 to A0003743 or just add A0003743 to the system. At this time the fields permitted under 36-8739 and 36-8740 are being irrigated entirely by well A0003743.
Capacity of well according to memo dated 3/15/95 by Mel Shulte
A0003743: 4.41 cfs (this is based on measurement I took with polysonic at field exam. The back-up well has a capacity of 1.54 cfs)
A0003741: 3.46 cfs
A0003742: 1.36 cfs
Well in SENESE: 7.11 cfs
16.34 cfs total or 13.47cfs when adding PDs currently authorized under 36-10821B

When the current rate of 36-10821B (10.2 cfs) is added to the rates from 36-8739 (1cfs) and 36-8740 (0.53 cfs), the total is 11.73 cfs, which means there is additional beneficial use beyond what is authorized under 36-10821B since the system capacity exceeds 10.2 cfs.

Have conditions of permit approval been met? _x_ Yes _____ No

H. RECOMMENDATIONS

1. Recommended Amounts

BENEFICIAL USE	PERIOD OF USE	DIVERSION RATE	For volume limit see conditions
IRRIGATION	3/15-11/15	0.530 CFS	No additional volume
	Totals:	0.530 CFS	

2. Recommended Amendments

_x_ Change P.D. as reflected above ___ Add P.D. as reflected above ___ None

_x_ Change P.U. as reflected above ___ Add P.U. as reflected above ___ Other

I. AUTHENTICATION

Field Examiner's Name Cherie Padilla Date 7/25/07

Reviewer CJ Date 8/08

□2

LOG DUMP
BETT Page# 1

BETTENCOURT

Start Date	25 JUL 07
Start Time	12:51:30 PM
End Date	25 JUL 07
End Time	01:00:30 PM

HH:MM:SS		VOLUM GAL/M	VEL Ft/s	+TOTL GAL
12:51:30	P	842	5.73	0
12:52:30	P	840	5.71	854
12:53:30	P	839	5.70	1683
12:54:30	P	838	5.70	2510
12:55:30	P	836	5.69	3363
12:56:30	P	840	5.71	4189
12:57:30	P	832	5.66	5035
12:58:30	P	838	5.70	5880
12:59:30	P	841	5.72	6703
01:00:30	P	839	5.70	7549

South Pivot permitted under 36-8740

OUTER DIAMETER
12.8000 IN

PERMIT# 36-8739 + 36-8740

PIPE MATERIAL
? CS,SS

Well A0003743

WALL THICKNESS
0.2240 IN

INNER LINING
? NO LING.

KIND OF FLUID
? WATER

SENSOR MOUNTING
? V

TYPE OF SENSOR
? SMALL

DATA CHANGE
? NO

SPACING
10.115 IN V

MODE SELECT
INPUT

OUTER DIAMETER
12.8000 IN

PIPE MATERIAL ER
? CS,SS

OUTER DIAMETER
12.8000 IN

PIPE MATERIAL
? CS,SS

WALL THICKNESS
0.2240 IN

INNER LINING
? NO LING.

OUTER DIAMETER
12.8000 IN

PIPE MATERIAL
? CS,SS

WALL THICKNESS
0.2240 IN

INNER LINING
? NO LING.

KIND OF FLUID
? WATER

SENSOR MOUNTING
? V

TYPE OF SENSOR
? SMALL

DATA CHANGE
? NO

SPACING
10.115 IN V

MODE SELECT
DATA SET

DATA SET MODE
? PRINTER

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-00000 *10 G 00R

1,979 gpm avg

1981.3 gpm

Field Exam Photos 7/25/2007 for 36-8739 and 36-8740 Luis Bettencourt
Taken By: Cherie Padilla Location: Gooding County

1

2

Photo 1: Metal tag ID for back-up well A0003744 that was not active at the time of site visit. I was informed this well will only be used in a situation where the primary well is not working.
Photo 2: Pump tag from the back-up well

Field Exam Photos 7/25/2007 for 36-8739 and 36-8740 Luis Bettencourt
Taken By: Cherie Padilla Location: Gooding County

3

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Photo 3: Tag giving pump specs from back-up well
Photo 4: Back-up well

Field Exam Photos 7/25/2007 for 36-8739 and 36-8740 Luis Bettencourt
Taken By: Cherie Padilla Location: Gooding County

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6

Photo 5: Back-up well
Photo 6: East pivot serving 36-8379. Picture taken facing south.

Field Exam Photos 7/25/2007 for 36-8739 and 36-8740 Luis Bettencourt
Taken By: Cherie Padilla Location: Gooding County

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8

Photo 7: Small pivot serving 36-8739. Picture taken facing west.
Photo 8: Same small pivot

Field Exam Photos 7/25/2007 for 36-8739 and 36-8740 Luis Bettencourt
Taken By: Cherie Padilla Location: Gooding County

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Photo 9: Southerly pivot serving 36-8740. Picture taken facing west.
Photo 10: Same pivot.

Field Exam Photos 7/25/2007 for 36-8739 and 36-8740 Luis Bettencourt
Taken By: Cherie Padilla Location: Gooding County

11

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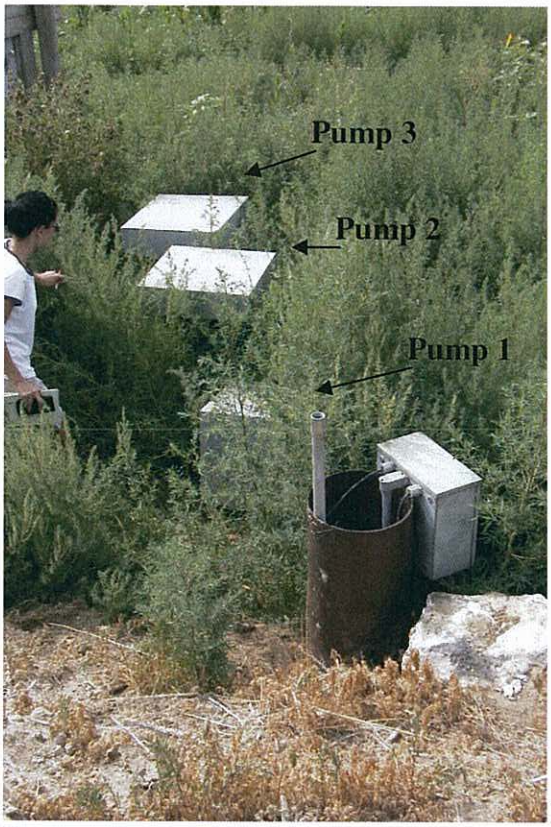
Photo 11: Pump information from primary well A0003743
Photo 12: Pump information from primary well A0003743

Field Exam Photos 7/25/2007 for 36-8739 and 36-8740 Luis Bettencourt
Taken By: Cherie Padilla Location: Gooding County



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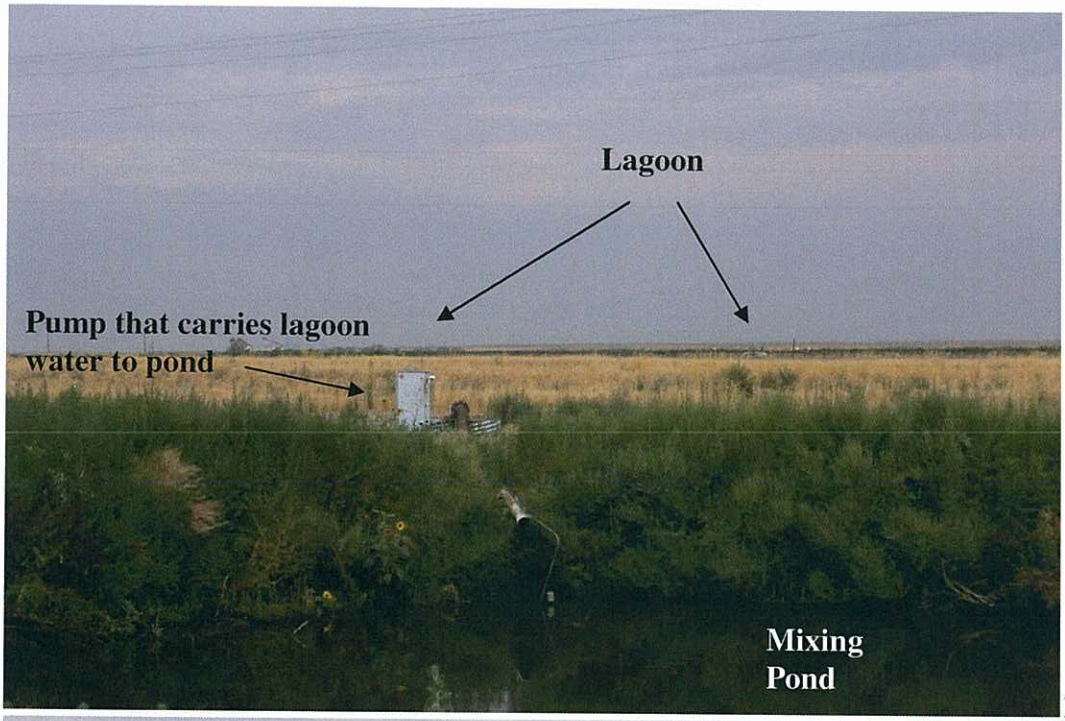
14

Photo 13: 3 different pumps to pivots. Picture is facing south. Pump 1 runs to the small pivot serving 36-8739. Pump 2 runs to the "east pivot" serving 36-8739. Pump 3 runs to the "south pivot" serving 36-8740.
Photo 14: 3 pumps on other side of power controls. Picture is facing west.

Field Exam Photos 7/25/2007 for 36-8739 and 36-8740 Luis Bettencourt
Taken By: Cherie Padilla Location: Gooding County



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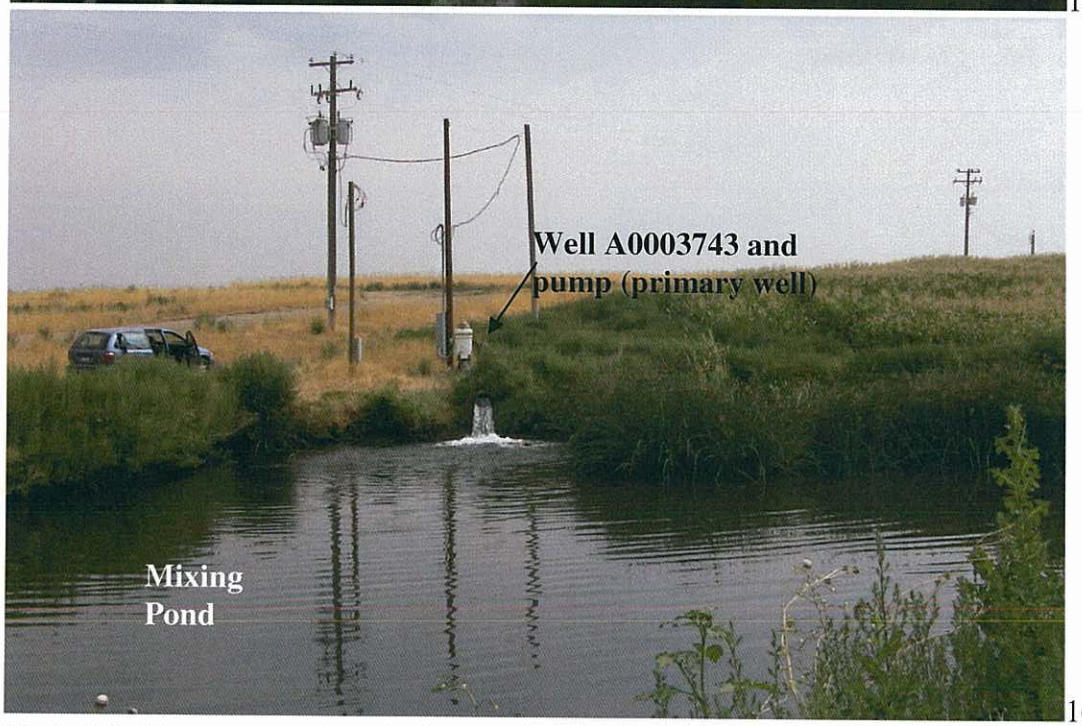

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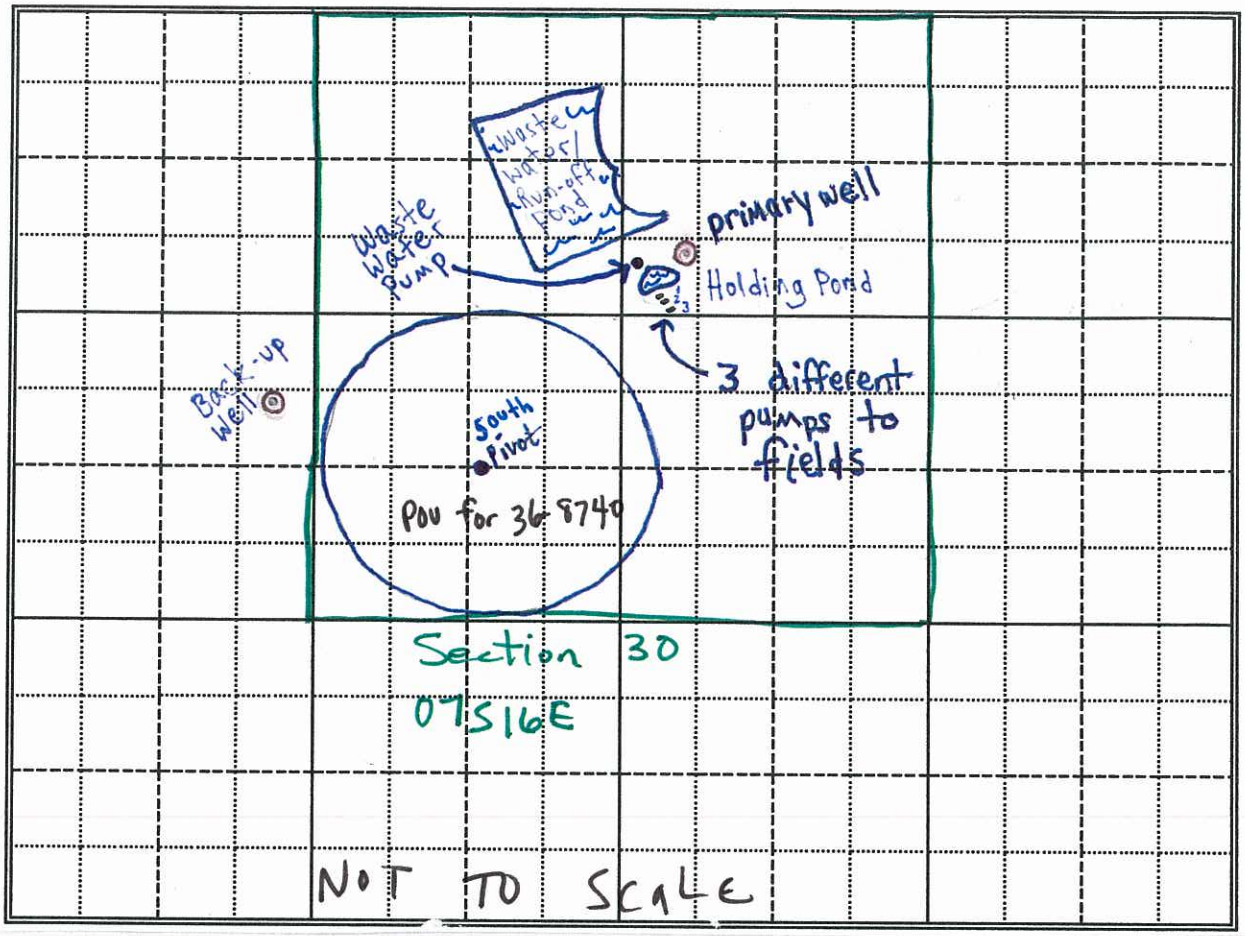
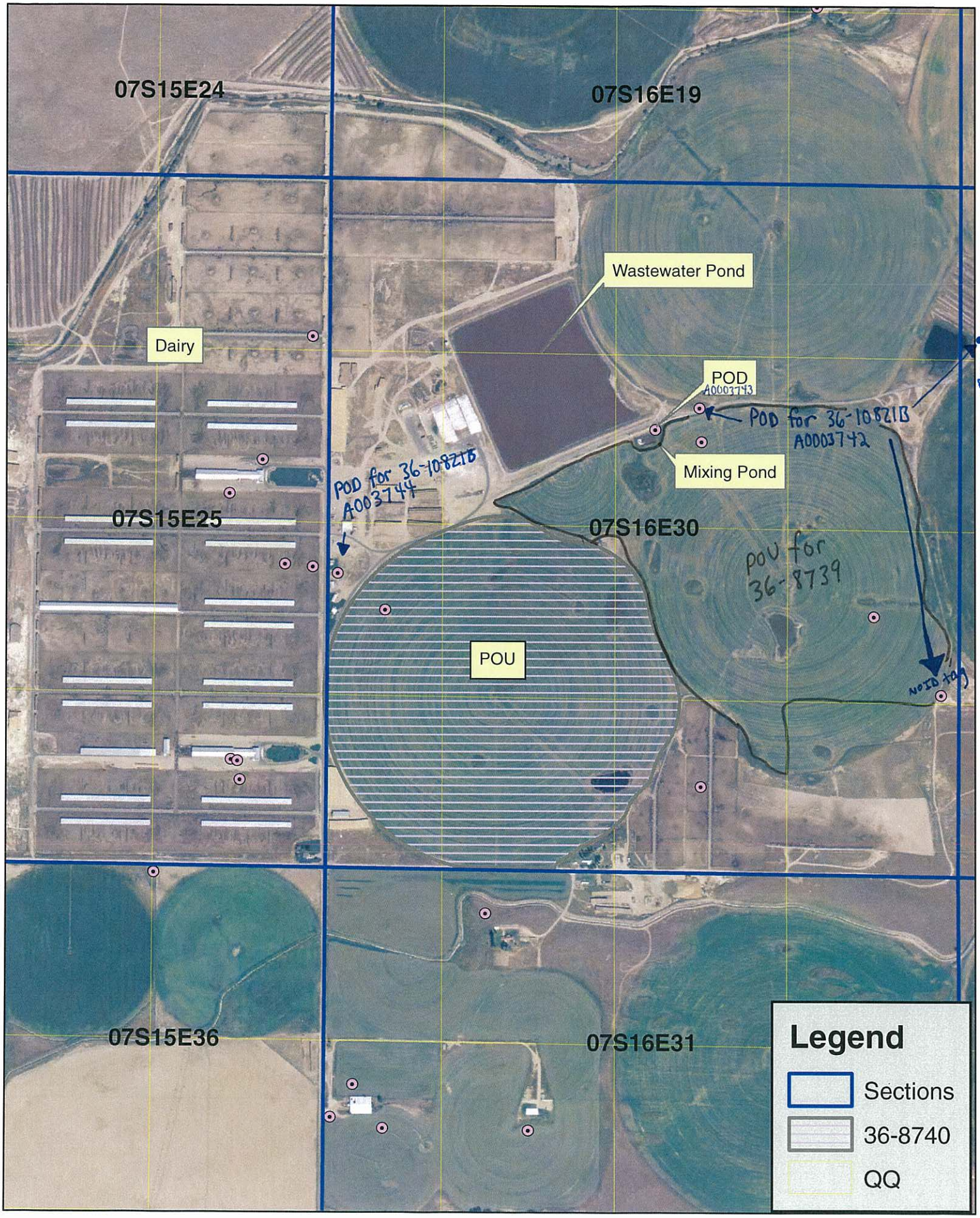
Photo 15: Picture was taken facing northwest. The pump brings in water from the lagoon on the other side of the road where it mixes with groundwater.
Photo 16: Picture was taken facing northeast. The capacity was measured to be 4.41 cfs. The water is dispensed into this mixing pond and then pumped out to fields once mixed with lagoon water.

3. **Delivery System Diagram**: Indicate all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable.

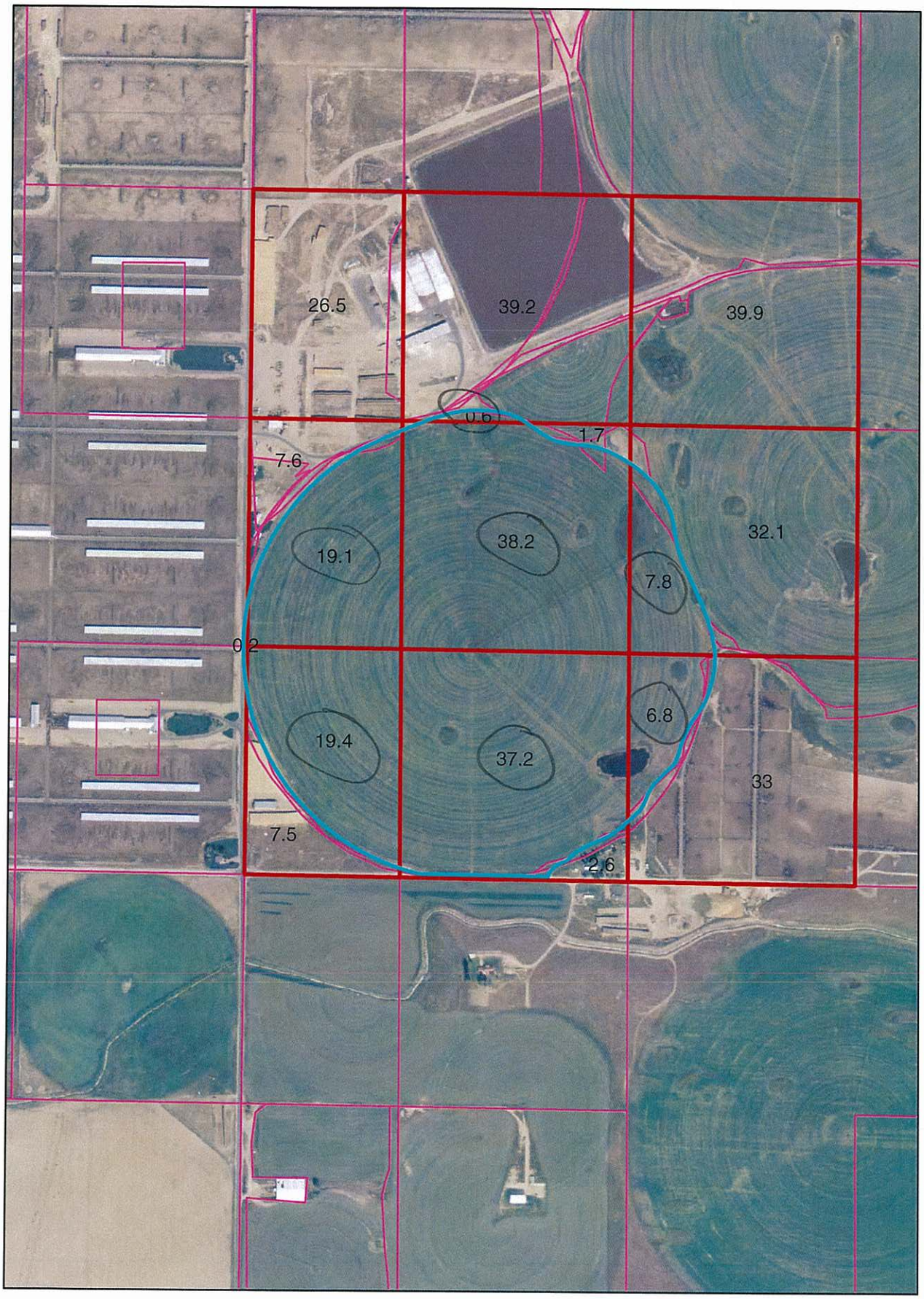


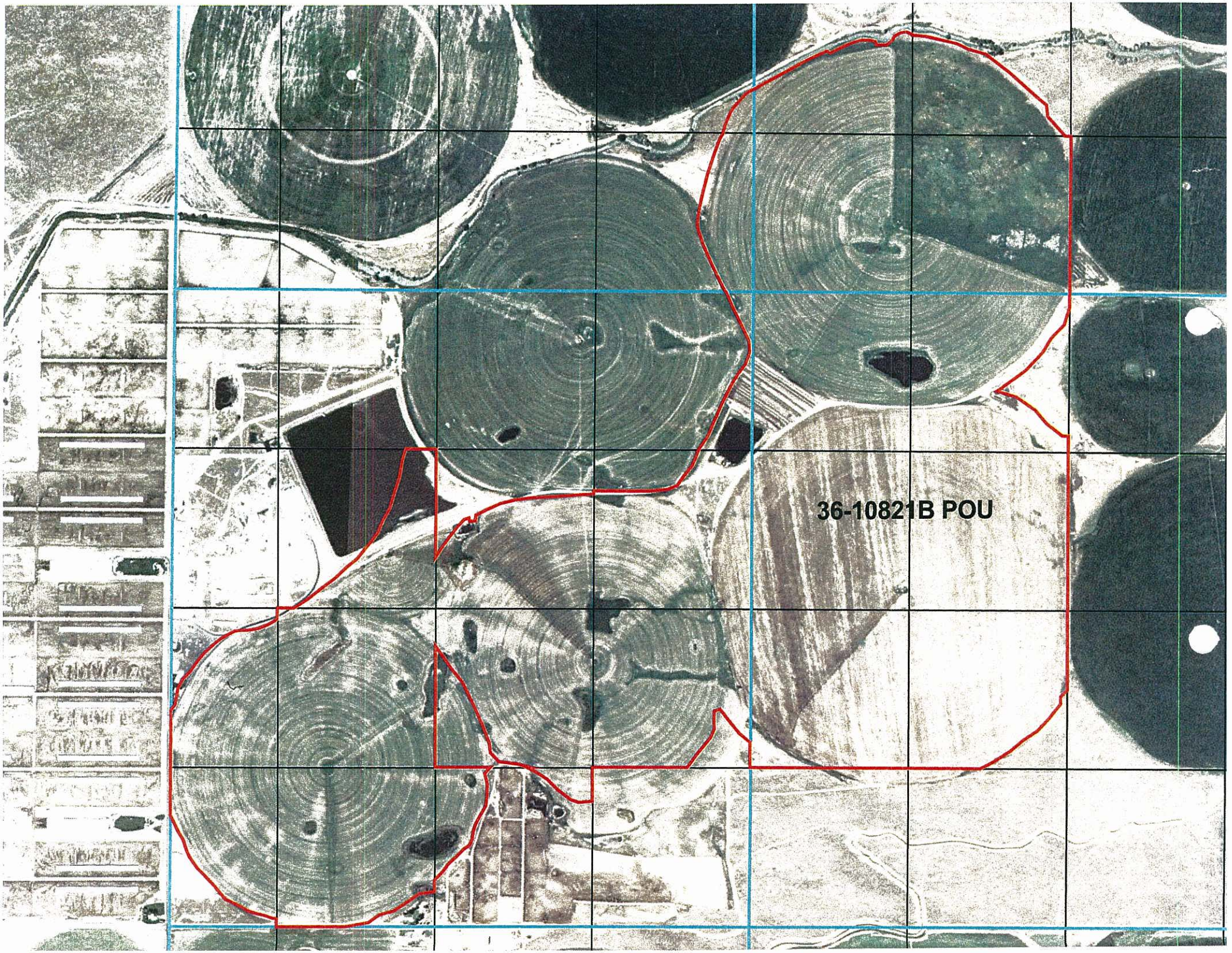
Pump #1 runs to the small pivot authorized under 36-8739
Pump #2 runs to large "east" pivot" "
Pump #3 runs to large "South" pivot authorized under 36-8740

36-8740 Field Exam Map



Actual Irrigated Acres Under 36-8740




36-10821B POU

MEMORANDUM

To: Shelley Keen
Water Right Supervisor
State Office

From: Mel Schulte
Southern Region

Part of field exam info. CP

Date: March 15, 1995

Re: Aarkoosh & Zidan Permits 36-07809, 36-07810, 36-07811, 36-07812 & 36-07813 (now 36-108213)

On March 13, 1995 I met with Jim Aarkoosh, Harry LeMoyne and Craig Moore to re-examine in the field the well locations and which pivot each well serves. In the process we also attempted to determine which of the Annubar measurements dated 5-13-1987 would logically relate to each well.

Using a well probe, I determined the static level in three of the wells and compared those measurements with the original well logs. Two wells showed a decline of about 20' and the third a drop of about five feet. Since the irrigation season has not started, we believe the aquifer level is at a low level at this time of year. Therefore, we compromised to estimate the level in the wells to be down about ten feet. I used this information to perform a theoretical estimate of what each pumping system could produce to use as a comparison of the measurements performed on 5-13-1987. Below is a summary of information obtained for each permit.

<u>36-07809</u>

P/D: SWNE, S30, 7S, 16E (SAME AS SHOWN ON LICENSE DATED 2-11-1995)

P/U: SAME AS SHOWN ON LICENSE DATED 2-11-1995

Measurement: Theoretical on 3-13-1995 of 2.62 cfs supports the 2.45 cfs Annubar measurement and the 2.45 cfs on the License dated 2-11-1995.

<u>36-07810</u>

P/D: NWSW (LT3), S30, 7S, 16E (SAME AS LICENSE DATED 2-11-1995)

P/U: SAME AS SHOWN ON LICENSED DATED 2-11-1995

Measurement: It is not clear which Annubar measurement relates to this system. A theoretical estimate on 3-13-1995 supports the 1.54 cfs on the License dated 2-11-1995. It is a mystery as to why the applicant applied for 1.54 cfs for 127 acres. The current owner indicated a desire to apply for additional water. It appears an error was made in the first filing and a second application

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APR 25 1995

would be moratorium exempt based on documentation in file that shows usage prior to inception of the SRBA.

36-07811

P/D: SWNE, S30, 7S, 16E (SAME AS LICENSE DATED 2-11-1995)

P/U: The acres specified in the 2-11-1995 total 103.2 acres. The Beneficial Use Field Report dated 5-13-1987 recommends 118 acres. The ASCS estimates 117.4 acres under the pivot and a 9.2 acre corner that are serviced by the well and system for this permit. I think this right is entitled to a total of 118 acres.

Measurement: It is not clear which Annubar measurement relates to this system but all measurements support the 1.36 cfs on the 2-11-1995 License. The theoretical estimate on 3-13-1995 of 2.64 cfs also supports the 1.36 cfs rate.

The owner indicated a desire to apply for additional water for this system which is justified on the basis that the rate requested by the previous owner and approved is insufficient to operate the pivot that has been in place since the permit was developed.

36-07812

P/D: NESE, S30, 7S, 16E (SAME AS LICENSE DATED 2-11-1995)

P/U: SAME AS LICENSE DATED 2-11-1995

Measurement: It appears the Annubar measurement of 2.07 cfs dated 5-13-1987 associated with this system is not the correct one for this system. A theoretical estimate on 3-13-1995 predicts a capacity of 7.11 cfs. A 400 hp motor and pump serves this system. Even if the system was valved back the pivot requires more than 2.07 cfs (929 gpm) to operate. The original system design (see attached copy) estimated a gallonage of 1400 gpm (3.12 cfs). I think this right is entitled to a diversion rate of 3.80 cfs (.02 cfs/acre) because the system is capable of producing that rate.

36-07813

P/D: NWNW, S29, 7S, 16E (SAME AS LICENSE DATED 2-11-1995)

P/U: SAME AS LICENSE DATED 2-11-1995

Measurement: It appears the Annubar measurement of 2.03 cfs dated 5-13-1987 associated with this system is not the correct one for this system. A theoretical estimate on 3-13-1995 predicts a capacity of 3.46 cfs. A 200 hp motor and pump serves this system. Even if the system was valved back the pivot requires more than 2.03 cfs (911 gpm) to operate. The original system design for the

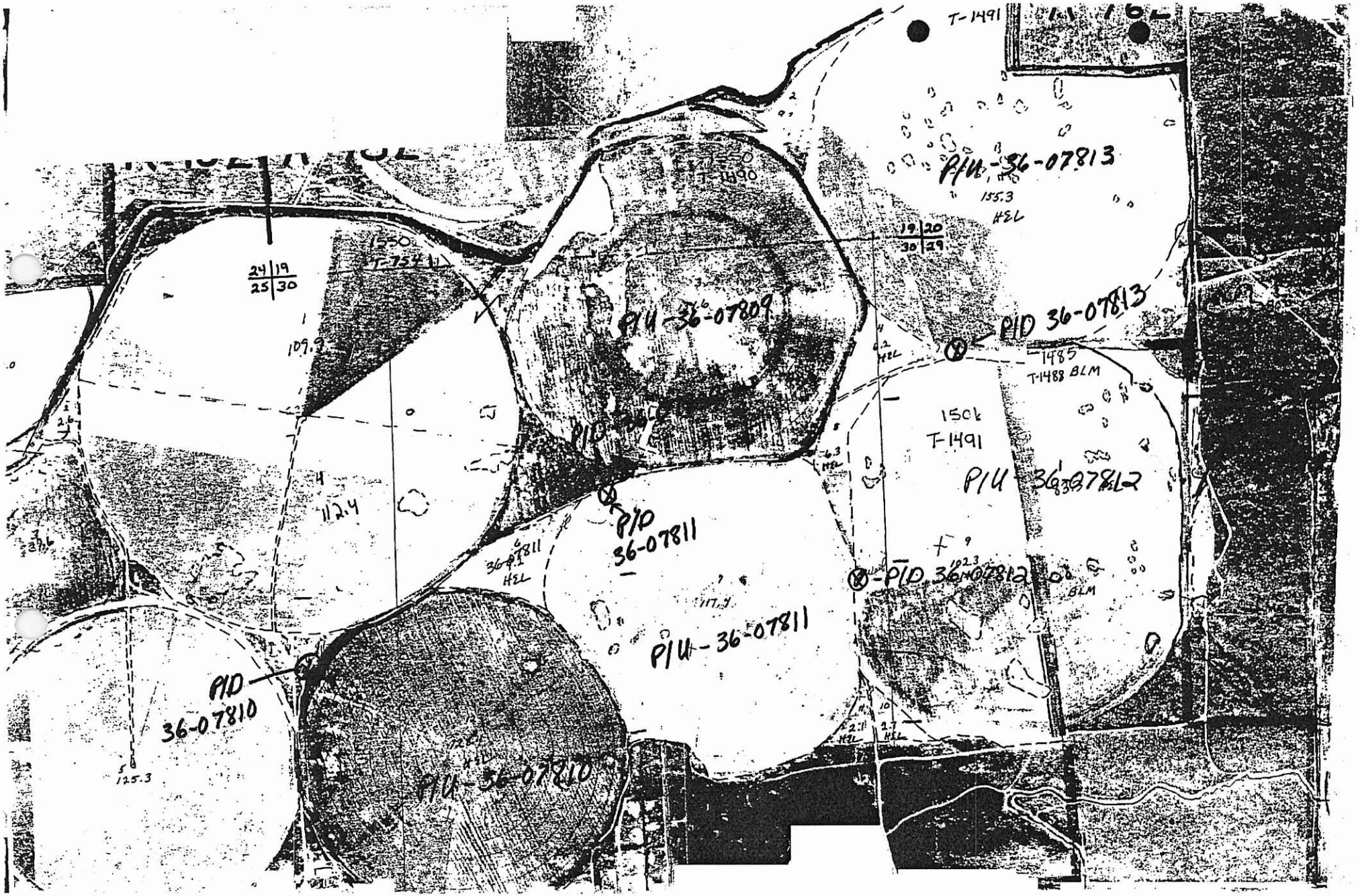
APR 25 1995

pivot alone (see attached copy) estimated a gallonage of 1300 gpm (2.90 cfs). I think this right is entitled to more than 2.03 cfs. I think a rate of 3.46 cfs based on the theoretical calculation is defensible.

Enclosed are copies of several documents relating to the information above. If you have any questions or need additional assistance on my part please let me know.

MTS

APR 25 1995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BLM
PIU-36-07809
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