Ban Lund Rpts.

September 29, 2000

MEMORANDUM

To: Bob Sutter
From: Shane Bendixsen
Subject: Warren Lloyd of Bancroft, Idaho.

It is my understanding that Mr. Warren Lloyd has made a "delivery call" for ground water in the Bancroft-Lund Ground Water Management Area. He believes he has only been able to receive half his water right of 650 gallons per minute due to junior water right holders' pumpage. This is based on a letter from his attorney, Randall C. Budge, to the Idaho Department of Water Resources dated August 29, 2000. The following is a brief review of historic and current ground water conditions in the area.

The Lloyd well is located in T09S-R39E, sec 23 NENE (see Attachment #1). Attachment #1 also presents ground water hydrographs for wells currently monitored by USGS. Hydrograph #1 has only two measurements prior to 1994, but has been measured quarterly (four times per year) since. Though the data is somewhat short term, it does suggest a stable aquifer.

Hydrograph #2 has data dating back to 1928 and has been measured quarterly since 1967. All historic and current data suggest an extremely stable aquifer.

Hydrographs #3 and #4 present an aquifer fluctuating with the climate: increases in the early to mid 1980's: decreasing levels from 1987 to 1993: increases from 1993 to 1998: and decreases for the past two years resulting from slightly below normal precipitation.

Hydrograph #5 is outside the management area and suggests an extremely stable aquifer that only fluctuates seasonally.

Hydrograph #6 has been measured numerous times while the well was pumping (labeled 'pump lifts'), but still has responded to same climatic changes as seen with #3 and #4. It does show a decline of approximately eight to ten feet since the early 1970's (0.2 to 0.3 feet per year), but given that it has responded to above normal precipitation previously, it is possible with a five to ten year wet period, it could recover.

With the exception of hydrograph #5, all wells have their highest water levels in the fall and lowest in the spring. This suggests recharge from irrigation diversions exceed

pumpage withdrawals during the summer months. If excessive pumpage were effecting the aquifer the opposite should be observed: lowest water levels in the fall and highest in the spring.

Attachment #2 presents tabular ground water data collected by the USGS within an approximate one-mile radius of the Lloyd well. Two wells with water level measurements dating back to 1928 suggest that ground water levels have declined ten to twenty feet since 1928. This is based on extremely limited data and could be reflective of wells recently pumped and not fully recovered (i.e. the individual who takes the measurement does not always know if the well has been recently pumped). Well 09S39E-23AAA1 is located in the same section as Mr. Lloyd's well. The water level difference between 1982 and 1996 was 1.8 feet.

Attachment #3 presents data collected by IDWR staff and the water measurement district. While the data is short term (1996 through 1999), nothing suggests decreasing water levels. Data for the Lloyd well is also presented. Note that his pumping levels are approximately 90 to 105 feet while his static level is 65 to 70 feet. This is not an unreasonable pump lift, but a good producing well.

IDWR staff also measured discharge for Mr. Lloyd's well on July 9, 1999, the same day the pumping level was recorded (per communication Tim Luke, IDWR). Discharge was approximately 1442 gpm and drawdown was approximately 32 feet (assuming an approximate static level of 70 feet). This produces a specific capacity (Q/s) of 45 gpm/ft. of drawdown.

Norton (1981) analyzed specific capacities in the Gem Valley area. He described wells completed in mostly basalts had specific capacities ranging from 270 to 2625 gpm/ft. Wells completed in both alluvium and basalts ranged from 2 to 31 gpm/ft. He concluded wells in the basalts were good to excellent producers while wells in alluvium and basalts were poor to good producers. A review of well logs shows that Mr. Lloyds well is completed in basalts and alluvium. This suggests that Mr. Lloyd's well with a specific capacity of 45 gpm/ft is a good producing well.

Attachment #4 presents a detailed ground water hydrograph from the Holsten Observation well. Locations are shown on Attachments #1 and #5. A continuous recorder was installed on the well in June, 1999 and data presented is current to November, 1999. Depth to water measurements are at a minimum of one per day.

The hydrograph shows a decrease of approximately three feet from mid-June to mid-July and then a steady increase of approximately six feet to mid-November. In 1999, diversions did not start until June, peaked in July and continued through September. Though lagged, this correlates with the hydrograph. This is the same trend the USGS hydrographs exhibit. The hydrograph does not show any large drawdown associated with well interference.

The Lloyd well is ¼ mile Northwest from the Holsten well. Attachment #5 presents this and the location of other points of ground water diversion (irrigation wells). Any type of well interference seen in the Mr. Lloyd's well should also be seen in the Holsten well. Since no interference was seen in the Holsten well, it must be assumed there was no interference with the Lloyd well.

Mr. Lloyd's claim that he did not receive half his water right should be held suspect based on:

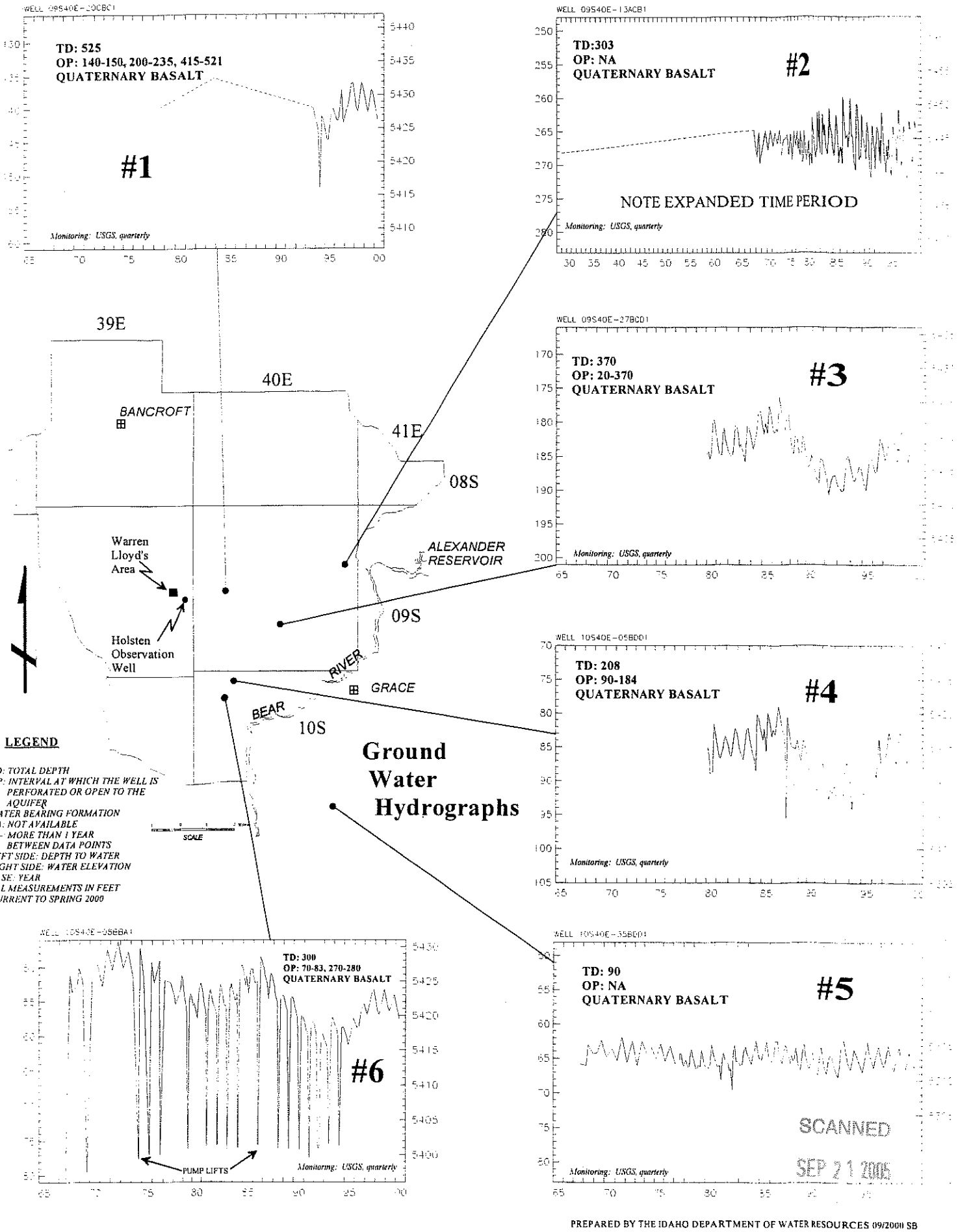
- Regional ground water levels have not significantly changed. Six wells monitored quarterly by the USGS do not suggest the basin is in overdraft.
- Ground water levels for five wells monitored in the management area show the highest water levels in the fall and lowest in the spring. This suggests recharge during the summer months exceeds pumpage withdrawals.
- Data in the same section as Mr. Lloyd show the difference in water levels between 1982 and 1996 was 1.8 feet.
- Data collected from the Lloyd well from 1996 through 1999 shows static water levels of approximately 65 to 70 feet and pump lifts of 90 to 105 feet. This suggests a good producing well.
- Specific capacity data from 1999 suggests he has a good producing well.
- A monitoring well with a continuous recorder ¼ mile Southwest from the Lloyd well detected no well interference from nearby pumping in 1999. This suggests the Lloyd well had no well interference.

Though none of the above mentioned is conclusive, they all suggest the same. There is no ground water level problems in the area. If Mr. Lloyd has a problem meeting his irrigation demands, it is a problem with his well, not the aquifer.

cc Norm Young
Hal Anderson
Glen Saxton
Paul Castelin
Tim Luke

REFERENCES

Norton, Marc, A., Investigation of the Ground Water Flow System in Gem Valley, Idaho Department of Water Resources, open file report, September, 1981.



ATTACHMENT #1

Well Number **09S39E-13DBB1**

Measurement Date	Depth to Water	Status	Agency
6/11/68	70.8	STATIC	USGS
10/31/68	62.1	STATIC	USGS
12/6/68	62.4	STATIC	USGS
3/27/69	66.4	STATIC	USGS
10/27/83	72	STATIC	USGS
6/1/92	102.4	Pumping	USGS

Well Number **09S39E-14CDC1**

Measurement Date	Depth to Water	Status	Agency
8/28/67	65.5	Pumping	USGS
4/10/68	66.3	Pumping	USGS
11/12/68	63.1	STATIC	USGS

Well Number **09S39E-15ADA1**

Measurement Date	Depth to Water	Status	Agency
8/20/28	100	STATIC	USGS
8/29/67	110.8	STATIC	USGS
4/10/68	121.6	Pumping	USGS

Well Number **09S39E-16ADA1**

Measurement Date	Depth to Water	Status	Agency
8/28/28	21	STATIC	USGS
8/29/67	27	STATIC	USGS
12/6/68	29.2	Recently Pumped	USGS
3/27/69	32.7	STATIC	USGS
10/25/83	33.4	STATIC	USGS

Well Number **09S39E-23AAA1**

Measurement Date	Depth to Water	Status	Agency
3/1/82	70	STATIC	Driller
5/1/96	71.8	STATIC	USGS

Well Number **09S39E-25ABB1**

Measurement Date	Depth to Water	Status	Agency
6/11/68	42.1	STATIC	USGS
10/25/83	41.2	STATIC	USGS
5/1/96	49.5	STATIC	USGS

ATTACHMENT #2

Bancroft - Lund

Water Level Measurement Wells

Date: 10/5/00

Curtis Stoddard Farms - A0004115

Date	Water Level	P=Pumping A=Static	Measured By:
06-Jun-96	77.0	A	DWR
10-Oct-96	80.4	A	DWR
06-Jun-97	70.2	A	WD13T
13-Jun-97	70.2	A	WD13T
25-Jun-97	76.8	P	WD13T
08-Jun-98	79.0	P	WD13T
01-Jul-98	70.25	A	WD13T
09-Jul-98	76.83	P	WD13T
21-Jul-98	81.5	P	WD13T
03-Nov-98	72.0	A	WD13T
24-Jun-99	75.39	P	TLUKE
01-Jul-99	76.64	P	WD13T
08-Jul-99	87.5	P	WD13T
15-Jul-99	91.43	P	BSCHOLER
21-Jul-99	91.56	P	WD13T
30-Jul-99	80.67	A	WD13T
13-Aug-99	80.18	A	WD13T
23-Aug-99	79.35	A	WD13T
09-Sep-99	78.38	A	WD13T
18-Sep-99	82.18	P	WD13T
15-Oct-99	77.44	A	WD13T
04-Nov-99	75.85	A	TLUKE
04-Nov-99	75.85	A	TLUKE

Keith Lloyd - A0004132

Date	Water Level	P=Pumping A=Static	Measured By:
01-May-96	49.50	A	DWR
20-Jun-96	64.0	A	WD13T
02-Jul-96	74.0	P	WD13T
10-Jul-96	80.0	P	WD13T
15-Jul-96	73.0	A	WD13T
02-Aug-96	52.0	A	WD13T
22-Aug-96	60.20	A	WD13T
10-Oct-96	50.0	A	WD13T
11-Oct-96	50.0	A	WD13T
06-Jun-97	46.30	A	WD13T
13-Jun-97	46.30	A	WD13T
27-Jun-98	46.33	A	WD13T
01-Jul-98	44.0	A	WD13T
04-Jul-98	45.0	A	WD13T
21-Jul-98	44.0	A	WD13T
03-Nov-98	44.0	A	WD13T
24-Jun-99	78.79	P	TLUKE
01-Jul-99	65.20	P	WD13T
08-Jul-99	53.52	A	WD13T
15-Jul-99	66.26	P	BSCHOLER
21-Jul-99	57.94	A	WD13T
30-Jul-99	51.63	A	WD13T
13-Aug-99	60.67	P	WD13T
01-Sep-99	50.09	A	WD13T
08-Oct-99	47.50	A	WD13T

Rindlisbaker- Longhorn - A0004109

Date	Water Level	P=Pumping A=Static	Measured By:
04-Nov-96	132.86	A	TLUKE
05-Jun-96	139.0	A	DWR
11-Oct-96	134.8	A	DWR
09-Apr-99	136.76	A	DWR
24-Jun-99	148.25	P	WD13T
01-Jul-99	136.14	A	WD13T
08-Jul-99	146.37	P	WD13T
15-Jul-99	135.61	A	BSCHOLER
21-Jul-99	147.25	P	WD13T
30-Jul-99	134.72	A	WD13T
13-Aug-99	134.03	A	WD13T
01-Sep-99	133.28	A	WD13T
18-Sep-99	138.44	A	WD13T
15-Oct-99	132.29	A	WD13T
04-Nov-99	132.86	A	TLUKE

Carl Jorgensen North Well - A0003599

Date	Water Level	P=Pumping A=Static	Measured By:
02-Jul-96	113.9	A	WD13T
11-Jul-96	113.4	A	WD13T
01-Aug-96	112.4	A	WD13T
13-Jun-97	112.7	A	WD13T
27-Jun-98	112.65	A	WD13T
13-Jul-98	112.65	A	WD13T
09-Apr-99	113.01	A	WD13T
18-Jun-99	114.55	A	TLUKE
23-Jun-99	114.06	A	TLUKE
01-Jul-99	114.61	P	WD13T
08-Jul-99	113.07	A	WD13T
15-Jul-99	113.78	P	BSCHOLER
22-Jul-99	112.6	A	WD13T
30-Jul-99	112.34	A	WD13T
13-Aug-99	111.84	A	WD13T
01-Sep-99	115.36	A	WD13T
08-Sep-99	110.95	A	WD13T
09-Oct-99	110.3	P	WD13T
05-Nov-99	110.98	A	TLUKE

Don Rigby - Pond Well A0004102

Date	Water Level	P=Pumping A=Static	Measured By:
21-May-96	74.4	A	CONSULTANT
21-May-96	106	P	CONSULTANT
05-Jun-96	109	P	DWR
10-Jun-96	109.4	P	DWR
11-Jul-96	74.4	A	CONSULTANT
11-Oct-96	103.8	P	DWR
24-Jun-97	70.25	A	WD13T
29-Jun-98	70.25	A	WD13T
13-Jul-98	71.17	A	WD13T
09-Apr-99	70.11	A	DWR
24-Jun-99	65.99	A	TLUKE
08-Jul-99	64.72	A	WD13T
15-Jul-99	64.17	A	BSCHOLER
22-Jul-99	64.42	A	WD13T
30-Jul-99	61.7	A	WD13T
13-Aug-99	65.35	A	WD13T
01-Sep-99	65.43	A	WD13T
18-Sep-99	66.86	A	WD13T
02-Oct-99	66.89	A	WD13T
13-Oct-99	67.94	A	WD13T
04-Nov-99	67.24	A	TLUKE
04-Nov-99	67.25	A	TLUKE

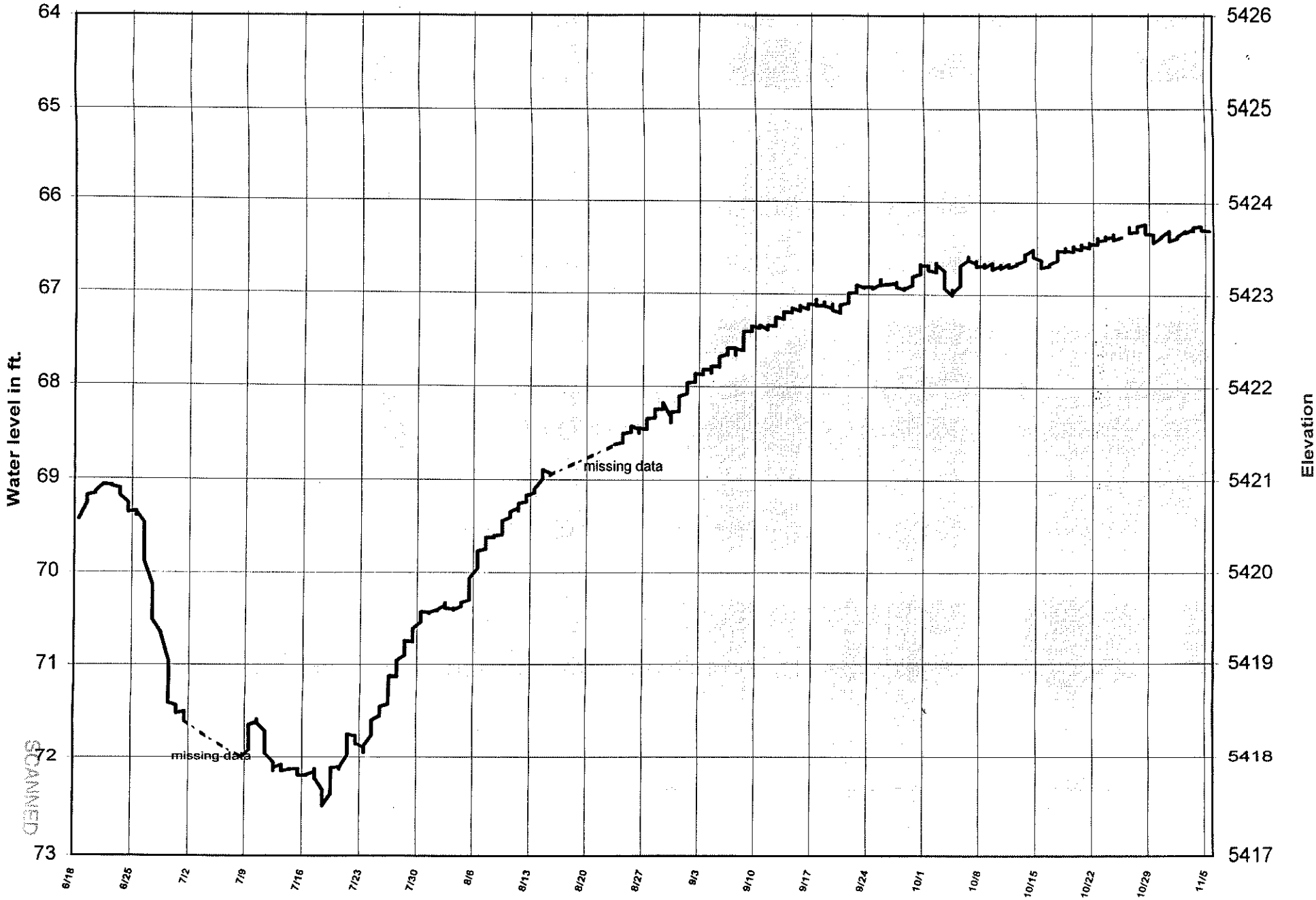
Warren Lloyd - A0004116

Date	Water Level	P=Pumping A=Static	Measured By:
01-May-96	71.8	A	DWR
06-Jun-96	73.8	A	DWR
10-Jun-96	92.3	P	WD13T
20-Jun-96	92.3	P	WD13T
27-Jun-96	92.7	P	WD13T
02-Jul-96	89.7	P	WD13T
06-Jul-96	76.8	A	WD13T
09-Jul-96	107.2	P	DWR
11-Jul-96	104.0	P	DWR
12-Jul-96	103.5	P	DWR
16-Jul-96	93.7	P	WD13T
24-Jul-96	101.5	P	WD13T
30-Jul-96	80.3	A	WD13T
12-Aug-96	105.0	P	WD13T
21-Aug-96	78.7	A	WD13T
11-Sep-96	77.1	A	WD13T
10-Oct-96	73.4	A	DWR
06-Jun-97	67.3	A	WD13T
25-Jun-97	67.8	A	WD13T
12-Jul-97	68.3	A	WD13T
08-Jun-98	67.3	A	WD13T
26-Jun-98	67.3	A	WD13T
09-Jul-98	67.8	A	WD13T
18-Sep-98	70.4	A	DWR
08-Apr-99	65.3	A	DWR
17-Jun-99	67.8	A	WD13T

ATTACHMENT #3

Bancroft-Lund - Holsten Observation Well, 1999

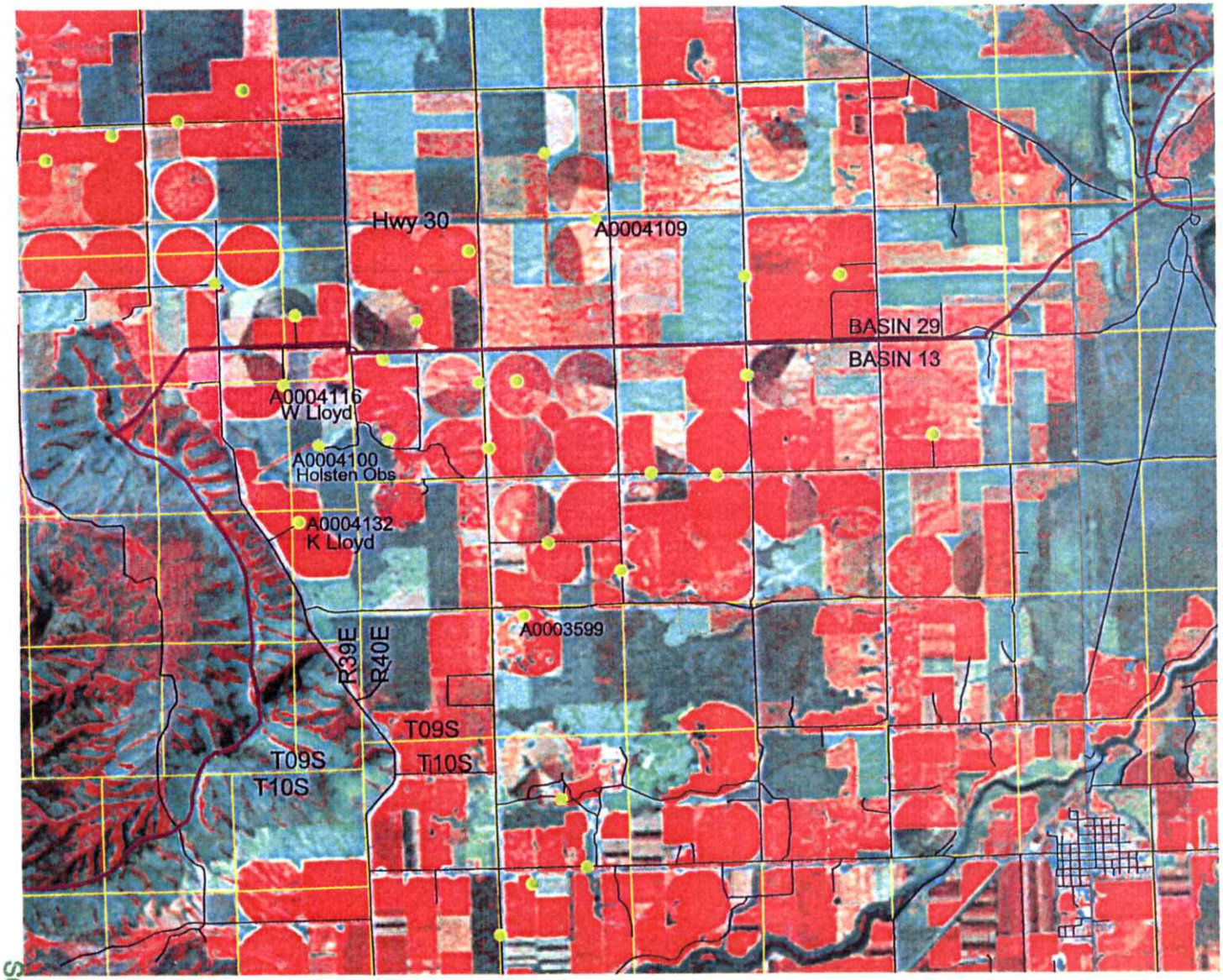
A0004100 - T09S, R39E, SEC24, SWSENE



ATTACHMENT #4

File: n/wtrmeas/HOLSTENOBSWELL991.XLS

ATTACHMENT 5
BANCROFT-LUND AREA
IRRIGATION WELLS



Administrative BasinsAdminbas
Irrigation WellsBancwells.shp
Streets.shp
Primary road with limited access
Primary road
Secondary and connecting road
Local road
Road, major and minor categories unknown
Ferry crossing
PLSS Section LinesSections.shp

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