

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-13831

Exam Date: 7/30/2012

1. Current Owner: HOWARD MAXWELL And
LYNN B MAXWELL
17 TWILEGAR LN
HORSESHOE BEND ID 83629
(208)793-3229

2. Accompanied by: Lynn Maxwell
Phone No: (208) 793-3229
Address: Same as Above
Relationship to Permit Holder: Same

3. **SOURCE**

GROUND WATER

TRIBUTARY

N/A

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 65-11094
2. Other water rights with the same point of diversion: None

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NE1/4SE1/4 Sec. 26, Twp 07N, Rge 02E, B.M.

BOISE County

Method of Determination: GPS Location N43.913134° W116.176746° Garmin model GPSmap 76 Datum NAD 83

2. **PLACE OF USE:** STOCKWATER

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
07N	02E	26													X				

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
07N	02E	26													10	1			11

Total Acres: 11

Method of Determination: Bing (2011) Aerial Photography w/ field verification.

3. X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- X Aerial Photo Attached (required for irrigation of 10+ acres).
- X Photo of Diversion and System Attached

4. <u>Well or Diversion ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
<u>Metal Tag D0018701</u>	<u>Unknown</u>	<u>5</u>	<u>Unknown</u>	<u>Goulds</u>	<u>Pump Model 55GS50 412 4" Discharge</u>

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1. <u>Measurement Equipment</u>	<u>Type</u>	<u>Make/Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
<u>No physical measurement @ exam</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

See Flow Calculations Section below for Theoretical HP Equation, Pump Curve, Well Log Pump Test, & Well Driller Pump Installation Pump Test Estimations.

2. Measurements: None taken. Well discharge piping not suitable (buried) for polysonic measurement. Irrigation accomplished through mixed methods, i.e. hoses, various sprinklers, handline, etc. Did not do sprinkler estimation.

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method: Theoretical HP Equation:

HP = 5

PSI = 60 (est. pressure closed system irrigation)

Z = 90 ft (Well Driller pumping level when pump installed and tested reported to owner)

$Q = (8.8 \times 0.7 \times \text{HP}) / [Z + (2.31 \times \text{PSI})] = (8.8 \times 0.7 \times 5) / [90 + (2.31 \times 60)] = 0.13 \text{ cfs}$ est. capacity of pumping system

Measured Method: Pump Curve (attached):

TDH = 228.6 ft {per HP Equation est. above $[90 + (2.31 \times 60)]$ } -> Q = ~62 gpm = **0.14 cfs** est. pump capacity

Measured Method: Well Capacity/Well Log Pump Test:

Well Log Pump Test : Discharge = 60 gpm = **0.13 cfs** w/ 60 ft drawdown pumped for 2 hours.

Measured Method: Well Pump Test when Pump Installed:

Well Driller Pump Installation Pump Test (reported to owner): Discharge = 55 gpm = **0.12 cfs** w/ 90 ft pumping level pumped for 1½ hours.

Theoretical HP Equation est. capacity of pumping system = **0.13 cfs**

Pump Curve est. pump capacity = **0.14 cfs**

Well Capacity/Well Log Pump Test = **0.13 cfs**

Well Pump Test when Pump Installed = **0.12 cfs**

Permitted Rate = **0.82 cfs**

Beneficial Use Limit (Irrigation + Stockwater) = **0.22 cfs** (11 ac x 0.02 cfs/ac) + **0.02 cfs** (10 horses/mules) = **0.24 cfs**

Proof of Beneficial Use fee paid = \$50.00 = up to **0.20 cfs**

Recommend System Measurement (Pump Curve) Limit Rate = 0.14 cfs

Highest rate allowable based on pump curve 0.14 cfs recommended.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 11 \text{ ac} \times 4.5 \text{ afa/ac} = 49.5 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.14 \text{ cfs} \times 231 \text{ days} \times 1.9835 = 64.1 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 49.5 \text{ afa} < 64.1 \text{ afa} = \text{Recommend 49.5 afa}$$

2. Volume Calculations for Stockwater:

$$V_R = (\text{\# of horses/mules}) \times (\text{drinking water volume requirement}) = 10 \text{ head} \times 12 \text{ gpd/head} = 120 \text{ gpd} = 0.1 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in period of use}) \times 1.9835 = 0.02 \text{ cfs} \times 365 \text{ days} \times 1.9835 = 14.5 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 0.1 \text{ afa} < 14.5 \text{ afa} = \text{Recommend 0.1 afa}$$

G. NARRATIVE/REMARKS/COMMENTS

SYSTEM DESCRIPTION:

System consists of an 8" dia well with a 4" discharge line piped to 4" buried line to buried mainline for handline sprinkle irrigation and several hand faucets for hose connection to water lawn and fill stock troughs. The Maxwells currently have alfalfa growing in the fields. Stockwater for a maximum of 10 horses/mules.

OVERLAP:

Right 65-11094 authorizes diversion of spring water for domestic and stockwater use on the same property. Spring water is used for internal domestic use. Lawn and landscape irrigation from the well. There are no other water rights associated with the P/U. There are no other uses/water rights associated with the P/D well.

P/U OWNERSHIP:

Based on taxlot data and aerial imagery, it appears alfalfa fields in approximately 1 acre of neighboring property (7N 2E 26 NWSE) not owned by Maxwells. Due to the alignment issues/errors occasionally found with taxlot, PLSS, and aerial imagery data, I recommend including the 1 acre within the P/U recognized under the right without requesting access information from the Maxwells, but recommend placing condition no. 004 (This right does not grant any right-of-way or easement across the land of another.) on the license.

COMPLIANCE WITH PERMIT CONDITIONS:

To the best of my knowledge, owner has complied with all permit conditions.

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>
STOCKWATER	01/01 to 12/31	0.02 CFS	0.1 AF
IRRIGATION	03/15 to 11/15	0.14 CFS	49.5 AF
<u>Totals:</u>		0.14 CFS	49.6 AF

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

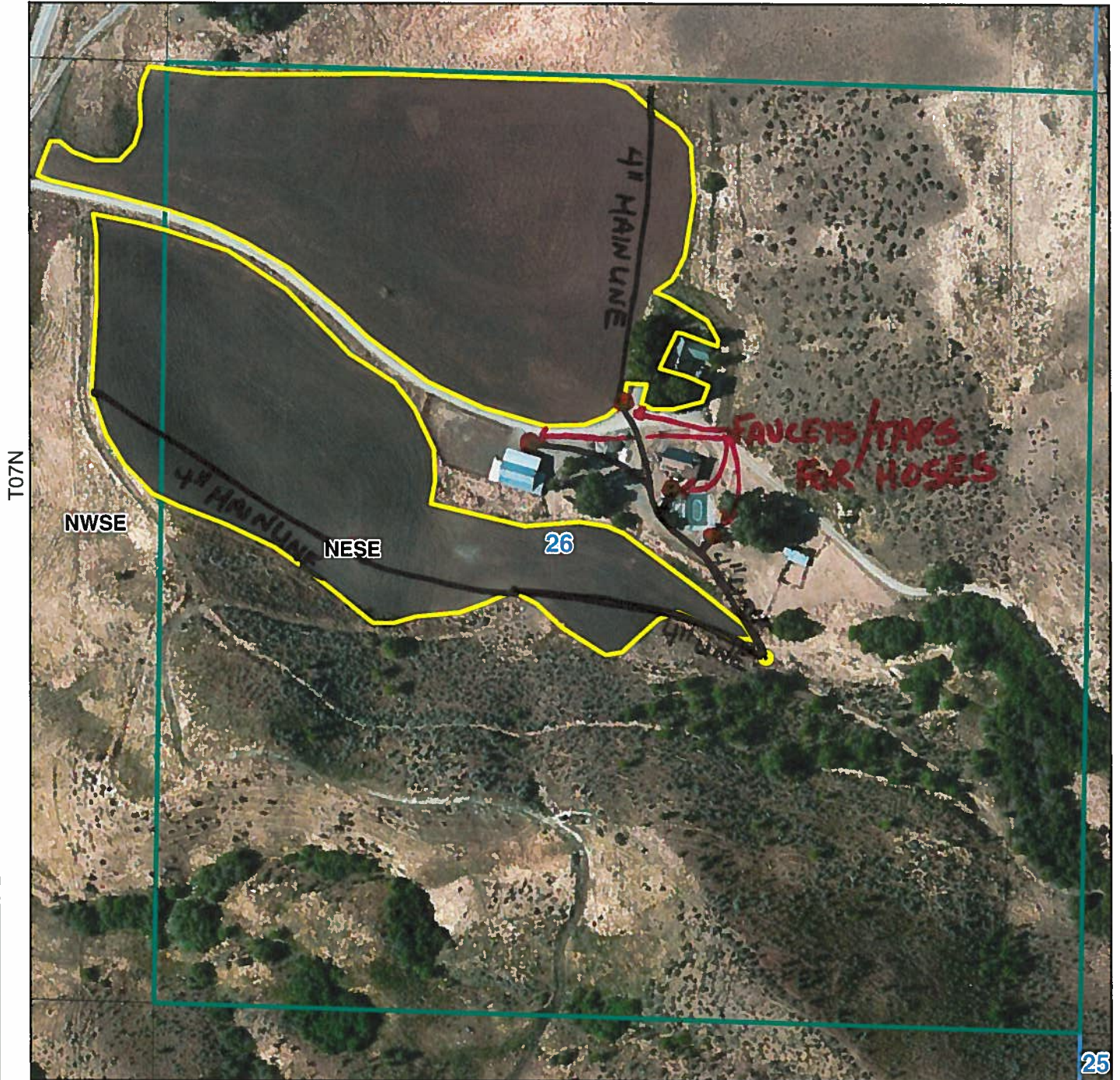
I. AUTHENTICATION

Field Examiner's Name Angela M. Quinn Date 8/2/2012

Reviewer _____ Date _____

Beneficial Use Field Report System Diagram & Map 65-13831

R02E



● Point of Diversion

0 0.025 0.05 0.1 Miles

Bing (2011) Imagery

Place Of Use Boundary Irrigation

Place Of Use Boundary Stockwater

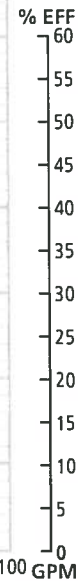
Townships

PLS Sections

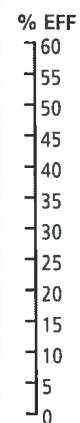
Quarter Quarters



METERS	FEET
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METERS FEET



Model 55GS

SELECTION CHART

Horsepower Range 1½ – 5, Recommended Range 20 – 80 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																									
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500	
55GS15	1½	0	78	71	64	54	42	24																				
		20	61	51	37																							
		30	49	35																								
		40	32																									
		50																										
		60																										
Shut-off PSI			52	43	35	26	17	9																				
55GS20	2	0		76	71	65	58	50	41	28																		
		20	69	63	56	48	37	24																				
		30	62	55	46	35	21																					
		40	54	45	34																							
		50	43	32																								
		60	29																									
Shut-off PSI			76	67	58	50	41	32	24	15																		
55GS30	3	0		80	76	72	68	63	58	52	44	35																
		20	75	71	67	62	56	49	42	32																		
		30	70	66	61	55	48	40	30																			
		40	65	60	54	47	39	28																				
		50	59	53	46	37	26																					
		60	52	45	36	25																						
Shut-off PSI			102	94	85	76	68	59	50	42	33	24																
55GS50	5	0				80	78	76	73	71	68	65	62	58	55	50	46	40	34	27								
		20		80	77	75	73	70	67	64	61	57	53	49	44	39	32	25										
		30	79	77	75	72	70	67	64	60	57	53	48	43	38	31	24											
		40	77	74	72	69	66	63	60	56	52	47	42	37	30	23												
		50	74	71	69	66	63	59	55	51	47	42	36	29	22													
		60	71	68	65	62	59	55	51	46	41	35	28	20														
Shut-off PSI			178	169	161	152	143	135	126	117	109	100	91	83	74	65	57	48	39	31								

Horsepower Range 7½ – 10, Recommended Range 20 – 80 GPM, 60 Hz, 3450 RPM

Pump Model	HP	PSI	Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																									
			20	60	100	140	180	220	260	300	340	380	420	460	500	540	580	620	660	700	740	780	820	860	900	940	980	
55GS75	7½	0			79	76	73	70	66	62	58	52	46	39	31	22												
		20		78	76	73	69	66	61	57	52	45	38	30	20													
		30	80	77	74	71	67	63	59	54	48	41	33	24														
		40	78	75	72	69	65	61	56	51	44	37	28															
		50	76	73	70	67	63	58	53	47	40	32	23															
		60	75	72	68	64	60	55	50	43	36	27																
Shut-off PSI			261	243	226	209	191	174	157	139	122	105	88	70	53	36												
55GS100	10	0			80	78	76	75	73	71	68	66	63	60	56	51	47	41	35	28								
		20		80	78	76	74	73	70	68	65	62	59	55	51	46	40	33	26									
		30		79	77	75	73	71	69	67	64	61	57	53	48	42	36	29	22									
		40	79	78	76	74	72	70	68	65	62	59	55	50	45	39	32	25										
		50	78	77	75	73	71	69	66	63	60	56	52	47	42	35	28	21										
		60	77	76	74	72	70	67	65	61	58	54	49	44	38	31	24											
Shut-off PSI			353	336	319	301	284	267	250	232	215	198	180	163	146	128	111	94	76	59								

4/2011

IDAHO DEPARTMENT OF WATER RESOURCES
FIELD EXAMINERS
WELL INSPECTION FORM

1. IDENTIFICATION # D0018701 (Tag #, etc.)

OTHER APPLICABLE # WR # 65-13831 (Water right #, etc.)

2. OWNER HOWARD & LYNN MAXWELL Phone (208) 793-3229

Address 17 TWILEGAR LN City HORSESHOE BEND

State ID Zip 83629 Email _____

3. WELL LOCATION (GPS required in Degrees Decimal Minutes – use PLS if GPS not available)

Lat. N 43.913134° Long. W 116.176746°

Twp 7N Rge 2E Sec 26 ¼ NE ¼ SE

4. WELL CONSTRUCTION ☒ Well log attached ☐ Well log not found

Any obvious construction problems that may be a source for contamination or waste? ☐ Yes ☒ No

If yes, describe below &/or see attached (list any that apply): ☐ Photos ☐ Diagram ☐ Other

5. HYDROLOGIC INFORMATION

Static water if measured _____ ft. Water temperature if measured _____ °F

Flowing artesian ☐ Yes ☐ No Pressure if measured _____ psi

NOTES NO MEASUREMENTS TAKEN. WELL USED FOR IRRIGATION & STOCKWATER.

INSPECTED BY Angeli M. Quinn DATE 7/30/2012

868626-771358
IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat: _____ Long: _____

1. WELL TAG NO. D 18701
DRILLING PERMIT NO. _____
Other IDWR No. _____

2. OWNER:
Name Howard & Lynn Maxwell
Address 17 Twilegar
City Horse Shoe Bend State ID Zip 83629

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N
W E S
Twp. 7 North ☒ or South ☐
Rge. 2 East ☒ or West ☐
Sec. 26 1/4 NE 1/4 SE 1/4
Gov't Lot _____ County Boise
Lat: _____ Long: _____
Address of Well Site 17 Twilegar Ln
City Horse Shoe Bend
(Give at least name of road + distance to road or landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
Bentonite	4	74	20 Bags	Poured in	

Was drive shoe used? ☒ N ☐ Shoe Depth(s) 78'
Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	12	78	250	Steel	☒	☐	☐	☐
6"	48	248	198	PVC	☐	☒	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method Saw
Screens _____ Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
148	248	1/8	530	6"	PVC	☐	☒

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

4' ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
60	60'		2 hrs

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
12"	0	18	Brown Sandy Clay		☒
10"	18	74	Brown Sandy Clay		☒
8"	74	85	Med. Hard Grey Granite c. fc.	☒	
8"	85	130	Hard Blue Clay w/cracks	☒	
8"	130	205	Med. Hard Grey Granite/cracks	☒	
8"	205	242	Hard white Granite		☒
8"	242	251	Med. Hard Grey Granite/cracks	☒	
8"	251	263	Hard white Granite		☒

RECEIVED

FEB 12 2002

WATER RESOURCES
WESTERN REGION

Completed _____ Depth 248' (Measurable)
Date: Started 10-1-01 Completed 10-10-01

13. DRILLER'S CERTIFICATION

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

Company Name Skinner & Son Well Firm No. 635

Firm Official _____ Date 10-15-01

and Driller or Operator _____ Date 10-15-01

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

WC RECEIPT # W027950 - \$200.00

65-13831 Beneficial Use Field Report Photos



65-13831 Exam 7/30/2012: POD facing west. Well in foreground. Control box underneath upside down stockwater trough southwest of well.



65-13831 Exam 7/30/2012: POU facing west. Alfalfa field south, west, and north of barn.