



BRAD LITTLE
Governor

GARY SPACKMAN
Director

July 21, 2021

LAVAR THORNTON
2800 FORREY RD
KUNA ID 83634

AND LAYNE THORNTON
3224 SWAN FALLS RD
KUNA ID 83634

RE: Water Right Permit No. 63-33074

Dear Permit Holder:

The Idaho Department of Water Resources (Department) is reviewing the three permits referenced above prior to issuing a water right license. By issuing a license, the Department confirms the extent of development that has been established in compliance with the terms of the permit.

On July 1, 2019, Department staff received a letter and field reports from certified water right examiner, Scott King, concerning the above referenced permits. Mr. King found in his field report that 4 acres were being irrigated in the SWSE of Section 3 in Township 1 North, Range 1 East, B.M. that was not included on your permit. In order to move this permit forward to licensing, an amendment of permit is required to add the 4 acres onto the permit.

The enclosed Application for Amendment form depict the elements of each water right as they will appear on the licenses when issued. Please review the amendment form carefully. If you concur with the information presented, please sign and return the form with the \$100.00 filing fee within 14 days. Only one of you are required to sign the amendment form.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Daniel A. Nelson

Analyst 3

Water Right Section

Idaho Department of Water Resources

Telephone # (208) 287-4856

Email – dan.nelson@idwr.idaho.gov

Enclosure(s): Three Applications for Amendment with maps

cc Scott King – SPF Water Engineering

Nelson, Dan

From: Nelson, Dan
Sent: Tuesday, October 22, 2019 11:12 AM
To: 'sking@spfwater.com'
Subject: Questions on field report for permit 63-33074

Hello Scott,

I am reviewing the field report for permit 63-33074. You ask to add the 4 acre parcel in the SWSE of Section 3, Township 1 North, Range 1 East. I have no problems adding this 4 acre piece. It will require an amendment, since it wasn't included on the permit. You did mark the amendment needed box on the field report form, so I think you expected that an amendment of permit was needed.

There are 3.8 acres of the 4 acres in the SWSE that are covered by water right 63-34286. You didn't include this water right in your analysis, so I will need to tweak some of your number to account for this water right. This will reduce your recommendation from 2.82 cfs to 2.75 cfs. It will also limit the volume from the 1454 af to 554 af. ($422 \text{ acres} \times 4.5 \text{ af/ac} = 1899 \text{ af total}$) – 1344.6 af authorized by existing rights = 554.4 af rounded to 554). Water right 63-34286 is authorized to divert water from all four wells, so it should have been a part of the analysis anyway.

I wanted to check with you to see if you had any issues with these changes before I moved forward with the licensing of the permit.

Dan Nelson

MEMORANDUM

TO: Water Right File 63-33074

FROM: Daniel Nelson – Analyst 3

DATE: October 22, 2019

SUBJECT: Licensing Review of Water Right 63-33074

The field exam for this right was performed by Certified Field Examiner Scott King of SPF Water Engineering.

History and Overlap:

Water rights 63-2986, 63-31951, and 63-31953 all overlap the place of use, and water rights 63-2986, 63-31951, 63-31953, 63-31950, 63-31952, 63-32112, 63-33399, 63-34286, and permit 63-33401 all overlap the point of diversion. It should be noted that Mr. King did not include water right 63-34286, 63-31950, and 63-31952 in his overlap analysis, so my numbers will vary somewhat from his calculations.

The existing water rights authorize a combined total of 5.69 cfs, 1344.6 af to irrigate 299.8 acres at the place of use described in this permit and field report. The field examiner stated that there are a total of 422 acres irrigated. The existing rights that cover the 299.8 acres are slightly short of the full rate per acre and volume per acre allowed. The rate per acre for the existing rights is approximately 0.018979 cfs per acre and the volume per acre is 4.484990 af per acre for the 299.8 acres. This would allow a bit of room to bring the diversion rate and volume up to the Department standard for entire 422 acres. Please see the attached spreadsheet for the breakdown of the water use from the existing water rights on the property.

The current water rights that are authorized to divert from the wells associated with this permit authorize a combined diversion rate of 7.44 cfs. There are combined limits on water rights 63-2986, 63-31951, and 63-31953, so this right will also need a combined right to limit the overall rate of diversion from these wells.

Water rights 63-31950 and 63-31952 that lists two of the four wells have a different owner, and are currently in the Water Supply Bank. They could be diverted from these wells if they are removed from the Water Supply Bank. Even though these two rights are authorized under the water rights to divert from these two wells, I have no way of knowing if they have the legal authority and easements to use these wells. Regardless of whether or not these rights have the legal authority to be diverted from these four wells they will still need to be addressed in the overlap analysis, but shouldn't hinder the licensing of this permit.

Place of Use:

Mr. King recommended a total acreage of 422 acres. In Mr. King's recommendation, he determined that 126 additional acres are required to be considered for this permit. As stated above he neglected to include 3.8 acres authorized by water right 63-34286. Therefore, the additional acres of irrigation are limited to 122 acres (422 acres – 299.8 acres currently authorized = 122.2 acres rounded to 122 acres per Department Standards).

It should be noted that the permit included the entire 422 acre place of use, and was not filed as a permissible place of use to cover the acres not covered by the other rights. Mr. King also recommended the entire 422 acre place of use. Mr. King recommended the entire place of use to cover the shortfall of diversion rate and volume for the 299.8 acres covered by existing water rights. Therefore, we can recommend the entire 422 acre place of use.

Diversion Rate:

Mr. King did not supply his calculations on how he determined the flow rate for this permit, but it appears as though he based his recommendation on the 422 acres listed in the place of use, and then subtracted out the existing rights he was aware of. The total diversion rate that can be authorized is 8.44 cfs (422 acres X 0.02 cfs/acre = 8.44 cfs). With this number you would then need to subtract the diversion rate authorized by the existing water rights for the 422 acre place of use of 5.69 cfs (Please see attached overlap spreadsheet for calculations). This would leave a total diversion rate needed for the 422 acres of 2.75 cfs (8.44 cfs – 5.69 cfs = 2.75 cfs). This diversion rate would match Mr. King's recommendation if he included the 0.07 cfs from 63-34286. The 122 additional acres being added to the system would be fully covered at a diversion rate of 2.44 cfs and the remaining 0.31 cfs would be used to bring the other 299.8 acres up to a full inch per acre or 0.02 cfs per acre.

To determine that capacity of the 4 wells, Mr. King performed measurements on wells #2 and #3. Mr. King relied on a previous measurement for Well #1 found in the field examiner's report for water right 63-7982. My review of these three measurements determined that these measurements seem reasonable. Mr. King also performed a theoretical calculation on Well #4, because it would be too costly to operate at the time of the field examination. In my review of Mr. King's calculations, I was concerned that about the lift used by Mr. King. Mr. King used a lift of 185 feet, and well driller reports on nearby wells show the static water level at 190 feet, with approximately 20 feet of drawdown. Therefore, I ran an analysis based on the measurements taken on the other three wells in the system and compared them using the theoretical calculations compared to Mr. King's recommended flow rates. Due to the elevation changes, I determined that the 65 psi Mr. King used would probably a bit too high, would be closer to 49 psi which matched Well #3. Based on this information, it appears as though a combined diversion capacity from all of the wells of 11.21 cfs seems reasonable. Please see the attached theoretical spreadsheet for my analysis.

There are number of water rights owned by the permit holder on these 4 wells. Some of the rights are only used from one or two of the wells, and the rest list all 4 wells. There are 4 rights 63-32112, 63-33399, 63-31950, and 63-31952 that are authorized to use one or more of these that are not used on the place of use described in the permit and field report. The total combined diversion rate for the rights that do not supply water to the 422 acres is 1.75 cfs. The total combined diversion rate for all of the rights that divert from these wells is 10.19 cfs. The total combined diversion rate of the existing water rights from these wells is less than the 11.21 cfs Mr. King determined was the capacity of the system. It should be noted that permit 63-33401 is a permit for 0.84 cfs that also diverted from these four wells, but even with this additional rate the capacity of the system shouldn't be exceeded. Please see attached overlap spreadsheet for an in-depth analysis.

Mr. King did not recommend that this permit be licensed as a permissible place of use, and the permit was not filed as a permissible place of use. Therefore, we can recommend that this permit be issued for a diversion rate of 2.75 cfs.

Diversion Volume:

Mr. King recommended a volume based on the diversion rate he allocated to this permit. The total 422 acres included in the place of use for this permit at 4.5 af would be limited to 1,899 af, which Mr. King calculated ($422 \text{ acres} \times 4.5 \text{ af/ac} = 1,899 \text{ af}$). The existing water rights already authorize a total of 1,344.6 af for the 299.8 acres or 4.484990 af per acre. There is some volume available for the entire 422 acres in excess of the volume authorized for those rights. This permit already provides additional diversion rate for the 299.8 acres already covered by a water right, so it can also provide additional volume for those acres.

In order to calculate the volume that this permit needs to cover, I took the entire volume needed for the 422 acres of 1,899 af and subtracted the 1,344.6 af authorized by the existing rights on the 422 acre place of use. The volume needed is 554 af ($1,899 - 1,344.6 \text{ af} = 554.4 \text{ af}$ rounded to 554 af). The 122.2 acres at a full 4.5 af/acre would be 549.9 af, so this permit would allow an additional 4.5 af to bring the acres already covered by the existing water right up to the full 4.5 af per acre.

I am recommending a total volume for this permit of 554 af.

Conditions:

A combined condition is necessary for this permit, because water rights 63-2986, 63-31951, and 63-31953 have a combined limitation condition. This permit will also need a combined limitation condition to show the limits of the diversion rates imposed on the existing rights and to limit the total number of acres to 422 acres. The condition will be as follows:

Rights 63-2986, 63-31951, 63-31953, 63-33074, and 63-34286 when combined shall not exceed a total diversion rate of 8.44 cfs, a total annual maximum diversion volume of 1900 af at the field headgate, and the irrigation of 422 acres.

Water rights 63-31950, 63-31952, 63-32112 and 63-33399 do not need to be included in the combined rate of diversion, since they supply water to separate farms. Even though they use the same points of diversion, those rights when combined with the 8.44 cfs limitation for this farm would not exceed the estimated system capacity.

Conditions R65 and 01M will be carried forward to licensing. Condition 004 will also be carried forward to licensing, since the water system crosses under a county road. Condition 121 will be changed to condition 103 as is standard. Condition X36 is no longer active and shouldn't have been used on the permit, so it will be replaced with condition F06. The remainder of the conditions will be removed at licensing.

PLACE OF USE OVERLAP FOR PERMIT 63-33074

Water Right	Diversion Rate in CFS	Volume In AF	Acres	Rate Per Acre In CFS	Volume Per Acre In AF	Combined Rate In CFS	Combined Acres	Combined Rate Per Acre In CFS
63-34286	0.07	17.1	3.8	0.01842	4.5	5.62	296	0.018986
63-2986	0.92	360	80	0.01	4.5			
63-31951	3.6	652.5	225	0.02	2.9			
63-31953	1.33	315	70	0.02	4.5			
Totals	5.69	1344.6	299.8	0.018979	4.484990			

Please Note: The above totals are a combination of water right 63-34286 and the combined totals of water rights 63-2986, 63-31951, and 63-31953.

Point of Diversion Overlap for Permit 63-33074

Water Right	Diversion Rate in CFS	Combined Diversion Rate in CFS	
63-34286	0.07	5.62	
63-2986	0.92		
63-31951	3.6		
63-31953	1.33		
63-32112	0.52		
63-33399	0.76		
63-31950	0.08		This right is for a different owner, and the rights are currently in the Water Supply Bank. However, they could be used if released from the bank.
63-31952	0.39		This right is for a different owner, and the rights are currently in the Water Supply Bank. However, they could be used if released from the bank.

Total Diversion Rate of Rights That Don't Supply Water to the 422 acre Place of Use In CFS
1.75

Total Diversion Rate from 4 wells = 7.44 CFS
 Diversion Rate For This Permit = 2.75 CFS
 Total Diversion Rate After Permit is Licensed = 10.19 CFS
 System Capacity = 11.21 CFS

Please Note: Total diversion rate authorized from the existing water rights for all 4 wells is 7.44 cfs, and when added to the 2.75 cfs diversion rate for this permit would still be below system capacity.

Also note that permit 63-33401 is not included in these calculations, because it is still a permit. It can add up to an additional 0.84 cfs, but even with the 0.84 cfs the authorized diversion rate would still be under the system capacity. (10.19 cfs + 0.84 cfs = 11.03 cfs).

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 63-33074
 Reviewer: Dan Nelson
 Date of Review: 10/21/2019

P/D No.:

PUMP HORSEPOWER
 BOOSTER HORSEPOWER

PUMPING LEVEL

DISCHARGE PRESSURE

RATE OF FLOW (cfs)

Well 4	Well 3	Well 2	Well 1		
150	200	200	75		
0	0	0	0		
210	210	215	100		
54	49	80	85		
2.76	3.81	3.08	1.56	1.56	
1239	1711	1383	700		
				11.21	11.21

The above calculates the formula =

$$Q = \frac{\text{Efficiency} \times \text{hp}}{\text{ter} + 2.31 \times (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency,
 No Friction

Examiners Notes: Scott King measured wells 1-3, but was not able to measure well #4. Mr. King performed a theoretical calculation for Well #4. There are well logs for wells 1-3, but no well log for Well #4. However, Well #3 is reasonable close and shows a static water level of 194 feet with 16 feet of drawdown for a pumping water level 210 feet. Well #3 is 1/4 of a mile north of Well #4. There is another well driller's report for a H. John Keys less than a 1/2 of a mile southwest of Well #4 that has a static water level of 190 feet. Therefore, a pumping water level of 210 feet seems reasonable for Well #4. Mr. King used a pumping water level of 185 feet, which is above the static water level in wells in that area. So I wanted to do a theoretical comparison to see what the pressures and water levels would be on the wells measured.

The number in red above is the result of the theoretical calculation performed by Mr. King. The numbers in green above are the measured flow rates provided by Mr. King. The purple number is the combination of all of Mr. King's flow rates. The black numbers are the results of the flow rates needed to match Mr. King's Calculations.

As you can see above, Well #3 would have a pumping water level of 210 feet as stated on the well driller's report and an approximate pressure of 49 psi to deliver the amount measured of 3.81 cfs. Well #4 at the same pumping water level as Well #3 would need to pump against a pressure of 54 psi, which is higher than the 49 psi for Well #3. The pressures needed for Well #1 and #2 are between 80 and 85 psi, which seems reasonable. Wells #1 and #2 are 20 feet lower in elevation than Well #3 and #4, so the pressure would need to be higher on Wells #1 and #2, because they are pumping uphill and to a greater distance to the main filed locations.

When comparing the measured diversion rates to a theoretical calculation, Mr. Kings estimate for Well #4 does seem reasonable. All of the measurements taken by Mr. King also seem reasonable. I would have liked to have a pressure reading taken at each site, but the season is over and Mr. King can't get back into the field at this time.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED
JUL 01 2019
DEPT 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. 63-33074

1. Owner Lavar Thornton and/or Layne Thornton Phone No. 208-922-5779
Current address 2800 Forrey Rd, Kuna, ID 83634 / 3224 Swan Falls Rd, Kuna, ID 83634-1732
2. Examiner's name Scott King EXAM DATE 6/21/2019
3. Accompanied by Lavar Thornton Email _____
Address same
Relationship to permit holder same Phone No. 208 631-6998
4. Source Ground Water tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use 63-2986, 63-31951, 63-31953. City of Kuna Municipal.
2. Other water rights with the same source and point of diversion 63-2986, 63-31951, 63-31953, 63-32112, 63-33399 and 63-33401

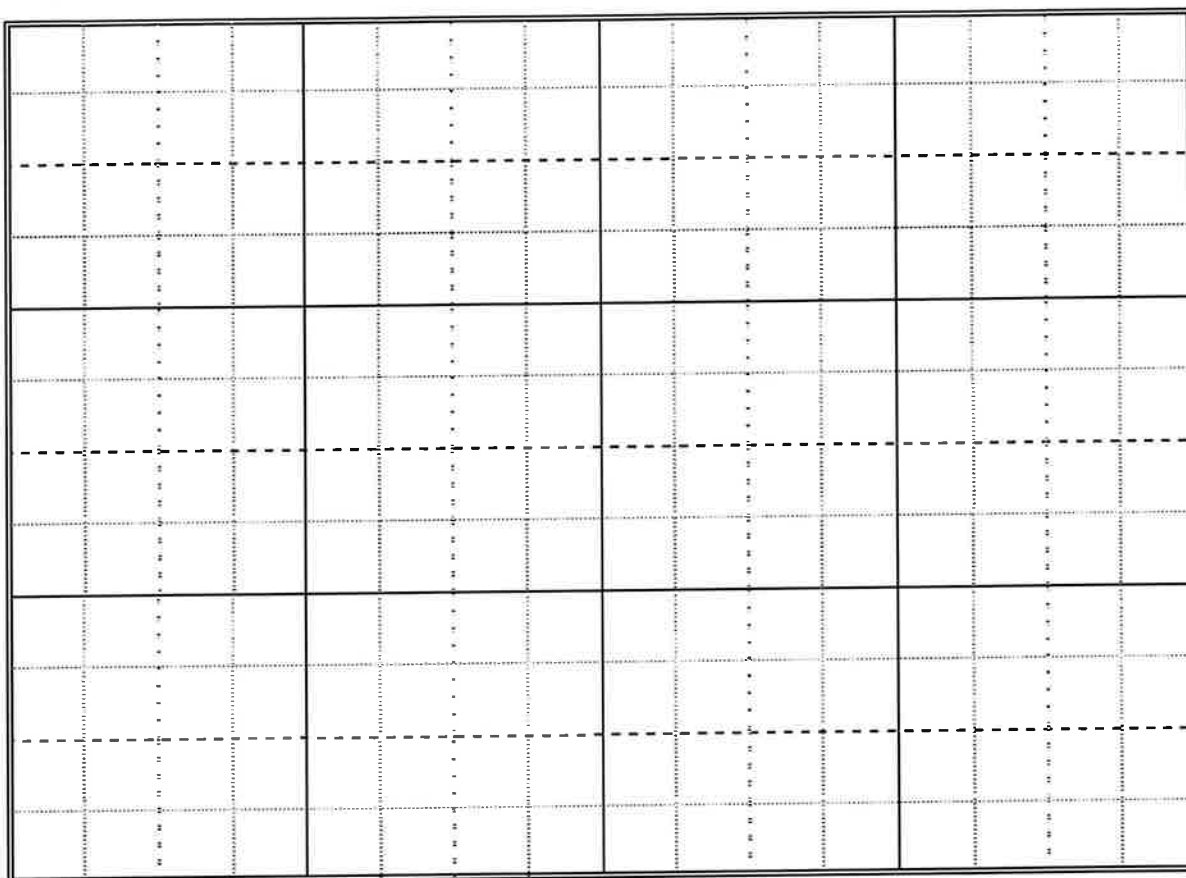
C. DIVERSION AND DELIVERY SYSTEM**1. Point(s) of Diversion:**

Ident. No.	Gov't Lot	1/4	1/4	1/4	Sec	Twp	Rge	County	Method of Determination/Remarks
1			SW	SW	34	2N	1E	ADA	GPS and on-site inspection
2	1		NE	NE	3	1N	1E	ADA	GPS and on-site inspection
3			SE	NE	3	1N	1E	ADA	GPS and on-site inspection
4			NE	SE	3	1N	1E	ADA	GPS and on-site inspection

2. Place(s) of Use: Method of determination On-site inspection, 2015 & 2017 NAIP imagery

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
1N	1E	2								38	35		22	32					127
		3	38	35	40	33					35	21			36	40	4	13	295
			It 1	It 2															
																			422

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
1	US Electric	75	3493108	Johnston	JT3184, 8-inch
2	GE	200	GMJ728117	Layne & Bowler	45856
3	US Electric	200	E05-AA68-M A1	Unknown	10-inch

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

4 || US Electric || 150 hp || 1281477 || Johnston || 1638

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
GE TransPort PT878	Ultrasonic	GE	PT878	7140	variable	April 5, 2019

2. **Measurements:** _____

Well 1 measured at 1.56 cfs during licensing of 63-7982. Well 4 measured at 5.0 cfs during licensing of 63-7474. Well 2 measured at 3.09 cfs, and well 3 measured at 3.81 cfs during this field exam.

E. NARRATIVE/REMARKS/COMMENTS

Four wells serve an interconnected system irrigating 530 acres.

Water rights 63-2986, 63-31951, 63-31953 combined authorize 5.62 cfs for the irrigation of 296 acres. This permit no. 63-33074 adds 126 acres, bringing the total to 422 acres. Permit 63-33074 also provides additional diversion rate and annual volume to the acres authorized by the decreed water rights.

The Section 34 SWSW point of diversion also serves water rights 63-32112, 63-33399. All four points of diversion serve permit 63-33401. Water rights 63-32112 and 63-33399 together authorize 1.28 cfs for irrigation of 106 acres. Permit 63-33401 provides additional diversion rate for the 106 acres.

All rights combined are recommended to authorize 10.56 cfs for irrigation of 528 acres.

Alfalfa seed is the primary crop this year. Alfalfa seed has a low irrigation water demand. The owner has not needed to turn on well #4 and requested that prior measurements be used as to not incur power company demand charges for a well that will not be used this year. Prior flow measurement was 5.0 cfs with a 125-hp motor and open discharge. The system now has 150-hp motor and pressure discharges. Flow capacity was calculated with a theoretical equation based on 150-hp motor, pump efficiency, 185-ft pumping water level, and 65 psi discharge pressure.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

F. FLOW CALCULATIONS☒ Additional computation sheets attached

Measured Method:

Well 1 measured at 1.56 cfs with a McCrometer propeller meter for 63-7982.

Well 2 measured at 3.08 cfs with an ultrasonic meter.

Well 3 measured at 3.81 cfs with an ultrasonic meter.

Well 4 measured at 5 cfs cfs but had a theoretical capacity of 4.16 cfs with 125 hp motor and open discharge. It currently has 150 hp motor and pressure discharges. $150 \times 8.8 \times 0.7 / (185 + 65 \times 2.31) = 2.76$ cfs**G. VOLUME CALCULATIONS**

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 422 \times 4.5 = 1899$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 2.82 \times 260 \times 1.9835 = 1454$$

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

2. Volume Calculations for Other Uses:

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Irrigation	3/1	11/15	2.82	1454
Totals:			2.82	1454*

*When combined with 63-2986, 63-31951, & 63-31953, total annual volume limited to 1899 af.

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

Scott N. King

Date

July 1, 2019

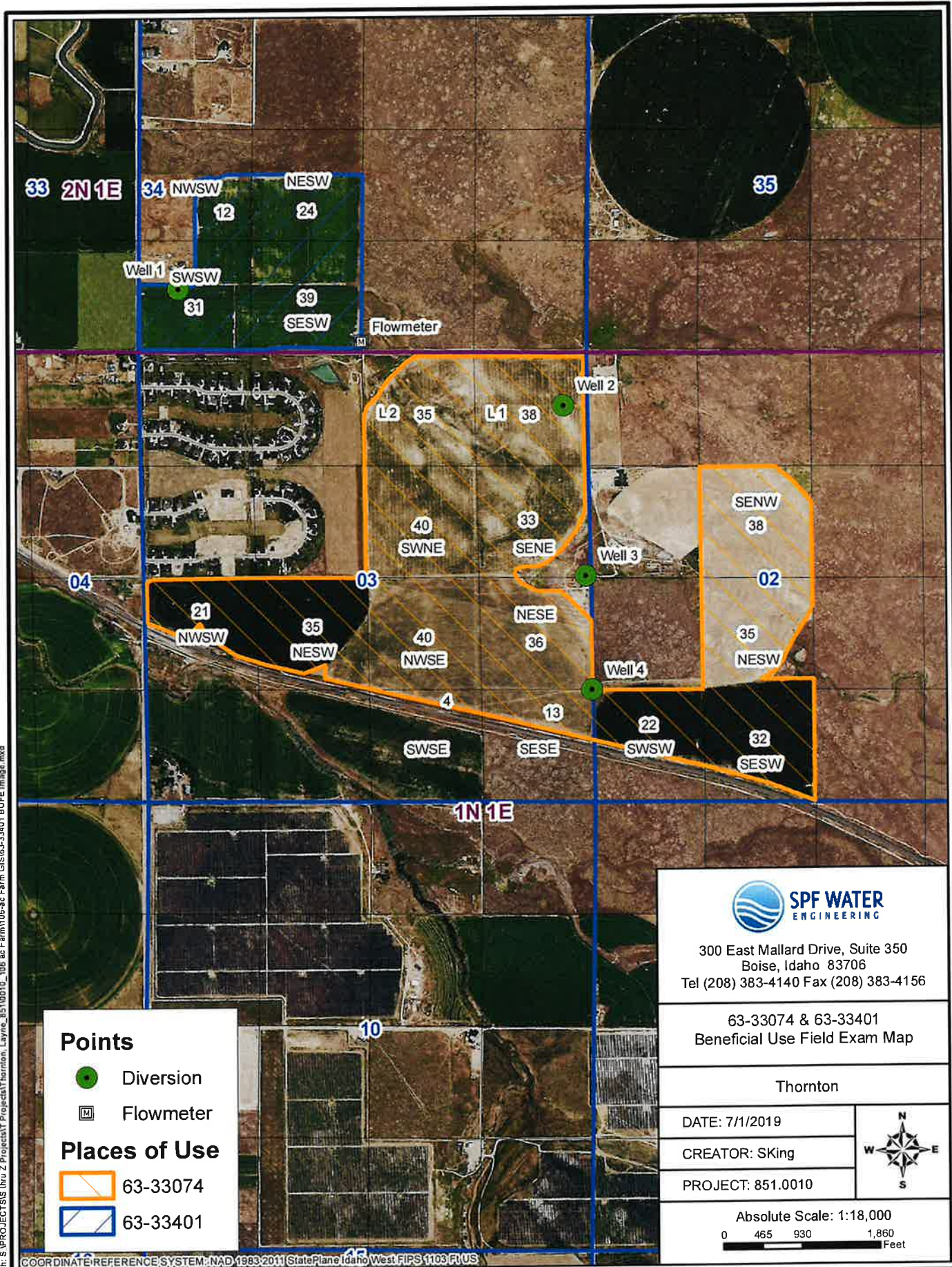
Reviewer

Date



Attachment A
Field Exam Map

Path: S:\PROJECTS\Irru Z\Project\Irru Z\Thornton Layne_8510010_106 ac Farm\106-ac Farm GIS\63-33401 BUFE Image.mxd



Points

-  Diversion
-  Flowmeter

Places of Use

-  63-33074
-  63-33401



300 East Mallard Drive, Suite 350
Boise, Idaho 83706
Tel (208) 383-4140 Fax (208) 383-4156

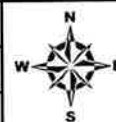
63-33074 & 63-33401
Beneficial Use Field Exam Map

Thornton

DATE: 7/1/2019

CREATOR: SKing

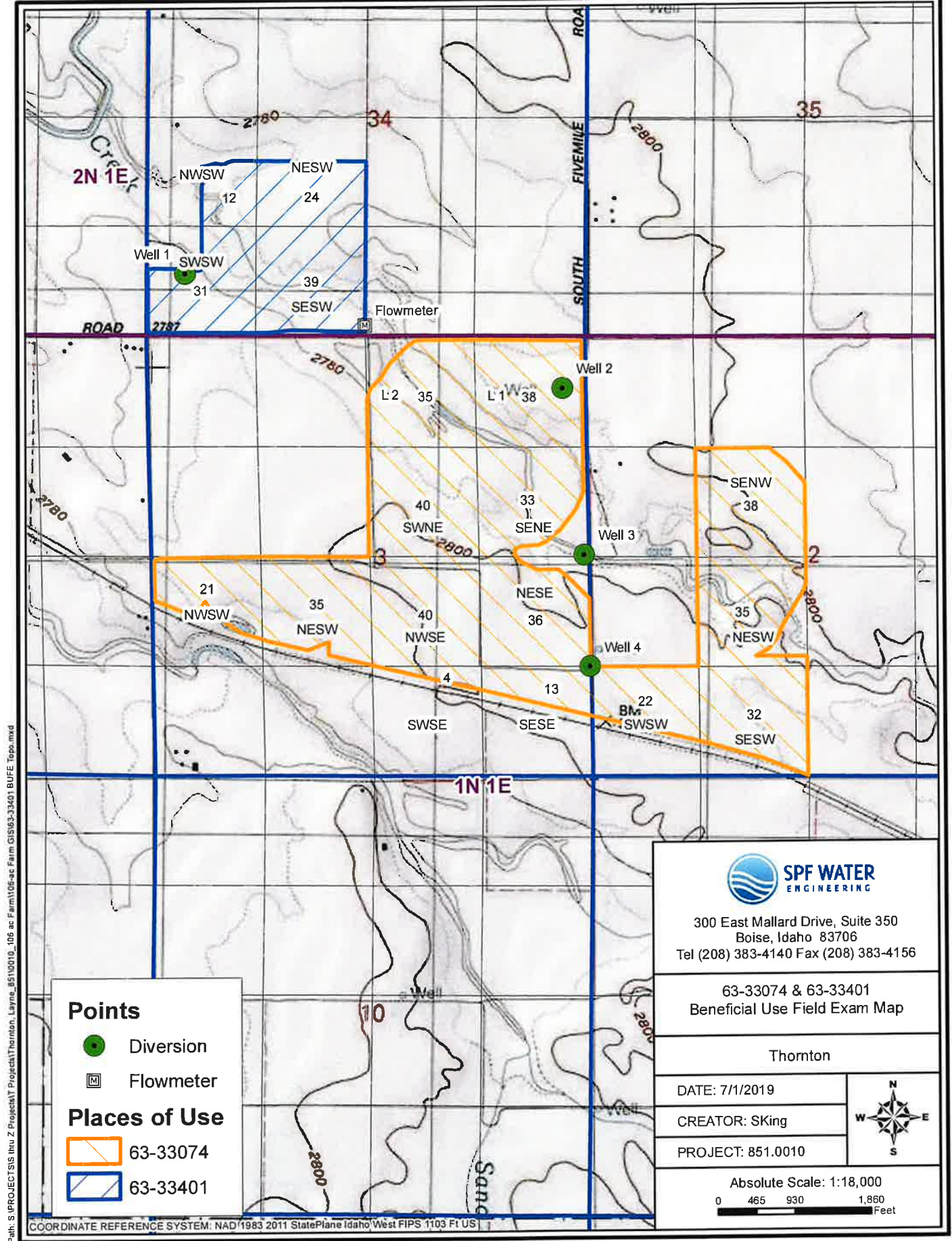
PROJECT: 851.0010



Absolute Scale: 1:18,000

0 465 930 1,860
Feet

COORDINATE REFERENCE SYSTEM: NAD 1983 2011 StatePlane Idaho West FIPS 1103 F US



Attachment B

Flow Rate and Volume Calculations

Permit: 63-33074 & 63-33401
 Owner: Thornton
 Site Name: Well 2 (aka Miller North)
 POD Location: 1N 1E 3 NeNE (lt 1)
 Tag No: D0057946
 Meter: GE TransPort PT878
 Type: Portable Ultrasonic Time Flight Liquid Flow Meter
 Serial Number: 7140
 Calibration Date: April 5, 2019
 Operator: Scott King

Date/Time	Volume (gal/m)	(+)Total (gal)	(-)Total (gal)	Error #
6/21/2018 12:14	1377	26399	0	0
6/21/2018 12:15	1382	27785	0	0
6/21/2018 12:16	1386	29194	0	0
6/21/2018 12:17	1379	30519	0	0
6/21/2018 12:18	1385	31927	0	0
6/21/2018 12:19	1383	33331	0	0
6/21/2018 12:20	1386	34719	0	0
6/21/2018 12:21	1386	36067	0	0
6/21/2018 12:22	1388	37461	0	0
6/21/2018 12:23	1386	38875	0	0
6/21/2018 12:24	1378	40281	0	0

Time	10 minutes
Volume	13882 gallons
Rate	1386 gpm
Rate	3.09 cfs

Permit: 63-33074 & 63-33401
 Owner: Thornton
 Site Name: Well 3 (aka Miller Middle)
 POD Location: 1N 1E 3 SENE
 Tag No: D0064612
 Meter: GE TransPort PT878
 Type: Portable Ultrasonic Time Flight Liquid Flow Meter
 Serial Number: 7140
 Calibration Date: April 5, 2019
 Operator: Scott King

Date/Time	Volume (gal/m)	(+)Total (gal)	(-)Total (gal)	Error #
6/21/2018 11:10	1703	34134	0	0
6/21/2018 11:11	1703	35862	0	0
6/21/2018 11:12	1705	37578	0	0
6/21/2018 11:13	1709	39236	0	0
6/21/2018 11:14	1709	40949	0	0
6/21/2018 11:15	1698	42682	0	0
6/21/2018 11:16	1705	44418	0	0
6/21/2018 11:17	1700	46121	0	0
6/21/2018 11:18	1698	47776	0	0
6/21/2018 11:19	1702	49483	0	0
6/21/2018 11:20	1715	51223	0	0

Time	10 minutes
Volume	17089 gallons
Rate	1709 gpm
Rate	3.81 cfs

ACREAGE
Found 109
Recommended 109
Irrigation Requirement 4.5 Ac Ft/Ac

USE
Irrigation Q = 1.56 c.f.s. V = 980.5 AF/Ann. from 4/1 to 10/31
Domestic Q = c.f.s. V = AF/Ann. from to
Livestock Q = c.f.s. V = AF/Ann. from to

Is water co-mingled? yes no X

Name source:
twp. N/S, Rge E/W, B.M., Sec , Sub 1/4 1/4 County

Exchange? yes no X

Name source exchanged with:
twp. N/S, Rge E/W, B.M., Sec , Sub 1/4 1/4 County

Point of injection:
twp. N/S, Rge E/W, B.M., Sec , Sub 1/4 1/4 County

Point of exchange:
twp. N/S, Rge E/W, B.M., Sec , Sub 1/4 1/4 County

Total Q measured 700 gpm/min = 1.56 cfs Method of measurement in-line-meter

Total Q recommended 1.56 cfs Meter No 75-B-139 Type McCracker Condition Operational

Total V recommended 980.5 AF/Ann.

Recommended Amendments:

P.D.
Place of Use
Other
None

MEASUREMENT CALCULATION:
McCracker in-line-meter # 75-B-139 on 8" discharge at
700 gpm = 1.56 cfs

SYSTEM DESCRIPTION:
6F Pump Model 15K1405CR9, 50HP, serial # 6915686 on Johnston pump Serial
JT 318 on 14" well with booster pump Century Motor 25 HP # 6-323050-01
Serial # 2N on Beckhy pump Serial # 73B2080 Model # B6-JP-BL
on 12" well.

REMARKS:

Examiner's Signature YJ Lujan Date 7/12/76

Checked by Date

Approved by Date

NAME OF PARTY J. Evan Merrell, PEEMPLOYEE Cindy Hodges.

RE: Mr. Merrell was farm manager when proof
was submitted in 1977. He performed measurements
on these 2 wells:

North well ^(#1, NENE) - A concrete ditch runs west of the well & turns south. In the south ditch, there are flashboard slots into which a plywood weir was placed for the measurement = 1.4 cfs

South well ^(#2, NESE) - This well discharges into a basin then down concrete ditch to the west. A cross sectional area was measured, then velocity was measured with a depth-integrated float. These 2 measured then used to compute flow. Total $6.4 - 1.4 = 5.0$ cfs assumed

(see original proof, rec'd 10-28-1977)

Mr Merrell is satisfied with the accuracy of these measurements at the time he took them. The proof form is signed by him & is in the file.

MIRRORED

FEB 01 1993

Attachment C

Exam Photos



Figure 1: Well 1 75-hp vertical turbine.



Figure 2: Flowmeter installed on Well 1.



Figure 3: Discharge pipe of Well 1 showing flowmeter location.

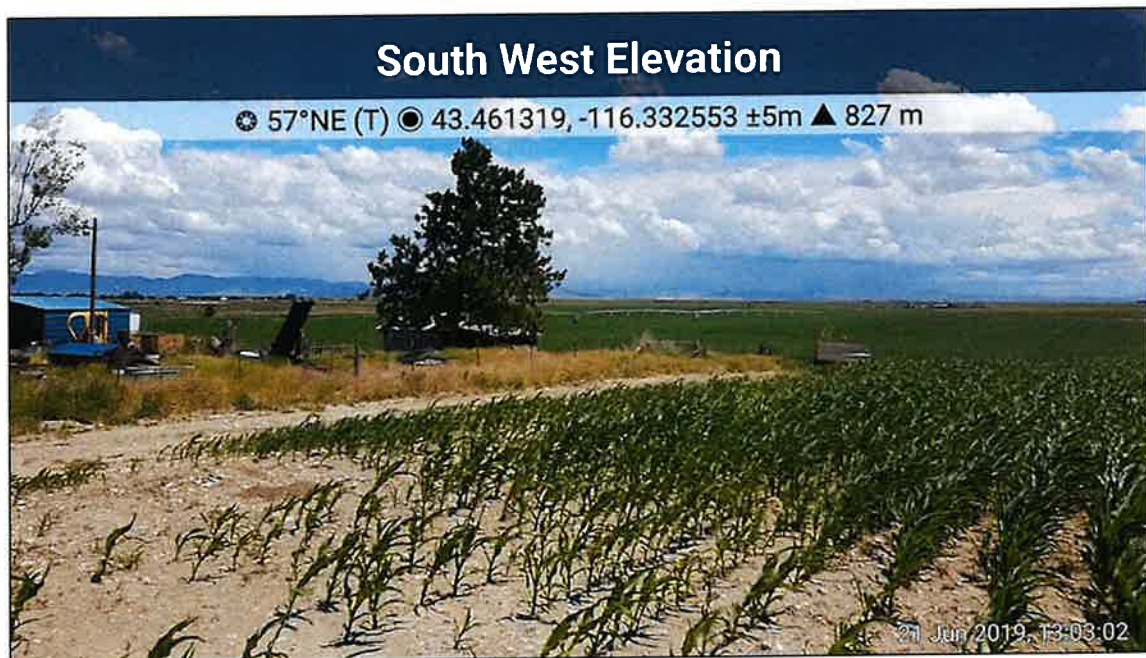


Figure 4: Place of use photo taken near well.



Figure 5: Flowmeter installed north of Kuna-Mora road on pipeline serving 63-33401 place of use.



Figure 6: Figure 5 flowmeter installed in pit north of Kuna-Mora Road.



Figure 7: Well 2 equipped with 200 hp motor and vertical turbine pump.

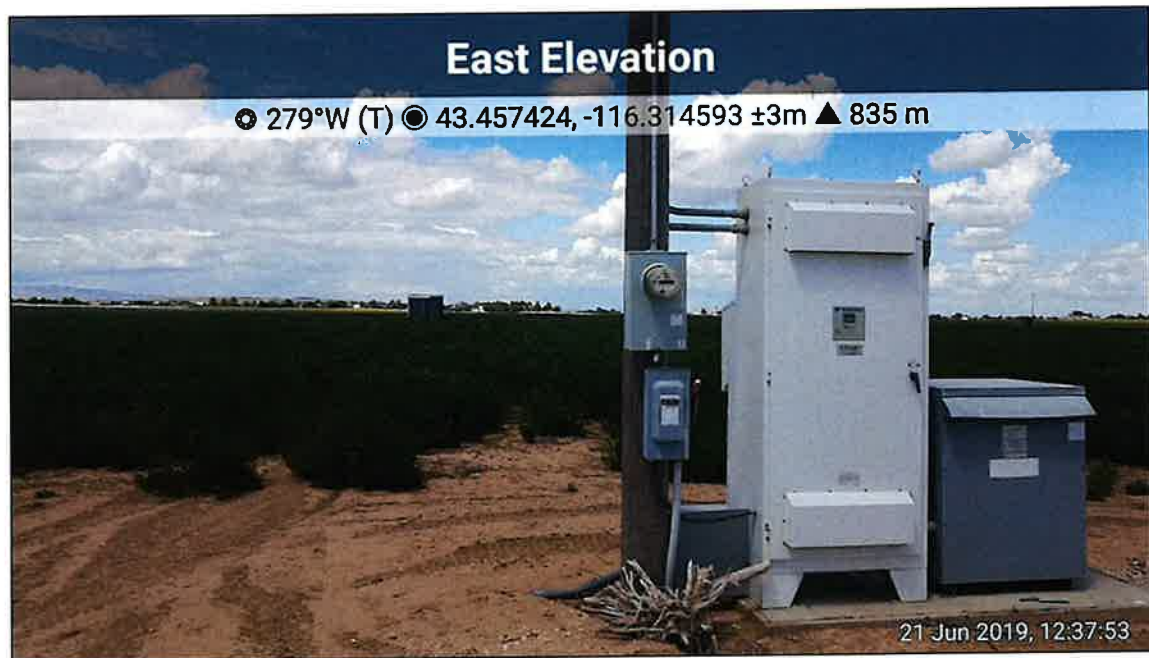


Figure 8: Variable speed drive controls for Well 2 with well house in background.



Figure 9: Well 3 equipped with 200-hp motor and vertical turbine pump.



Figure 10: Well 3 variable speed drive controls.



Figure 11: Well 4 equipped with 150 hp motor and vertical turbine pump.