STATE OF IDAHO

DEPARTMENT OF WATER RESOURCES

IN-OFFICE REVIEW/BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-22669

Exam Date: 7/15/2019

1. Does this qualify for an in-office field exam (IDAPA 035.02.r)? ____Y __X__N
   a. Irrigation of 5 acres or less
   b. Storage of up to 14.6 AF for stockwater purposes only
   c. Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less
   d. Other < >

2. Current Owner: Name: Alan D. Myers
   4531 S.E. 3rd Ave
   New Plymouth, ID 83655
   Owner of Record Correct? __X__Y ____N
   Address of Record Correct? __X__Y ____N
   If No: Address < >

3. Fees have been paid: __X__Y ____N Receipt No: W040444 ($50.00) & W040445 ($50.00) = $100

4. **SOURCE** **TRIBUTARY**
   GROUND WATER NONE
   Method of Determination: GPS and Visual Inspection
   Change in Source: ____Y __X__N

B. OVERLAP REVIEW

1. Other water rights with the same place of use: Yes

Water Right No.	Source	Purpose of Use	Basis
65-4889	Ground Water	Domestic & Stockwater	Decreed
65-9309	Ground Water	Domestic & Stockwater	Decreed
65-9383	Ground Water	Domestic & Stockwater	Decreed
65-9380	Ground Water	Domestic & Stockwater	Decreed
65-10564	Ground Water	Domestic & Stockwater	Decreed

Comments: Overlap review (see attached Overlapping Water Rights Analysis Spreadsheet for detailed explanation) concludes that the five (5) overlapping rights were decreed in the Payette River Basin Adjudication (PRBA). Overlap review determined the overlapping water rights authorize up to:

Stockwater= 0.25 CFS and 13.7 AFA, Domestic Use for 3 homes= 3.6 AFA, Domestic Use for the Dairy Barn = 1.2 AFA for a total when all uses are combined of 0.37 cfs and 18.5 AFA.

2. Other water rights with the same point of diversion: Yes

Water Right No.	Source	Purpose of Use	Basis
65-4889	Ground Water	Domestic & Stockwater	Decreed
65-9309	Ground Water	Domestic & Stockwater	Decreed
65-9383	Ground Water	Domestic & Stockwater	Decreed
65-9380	Ground Water	Domestic & Stockwater	Decreed
65-10564	Ground Water	Domestic & Stockwater	Decreed

Comments: See above comments

C. DIVERSION AND DELIVERY SYSTEM

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

Source	Govt. Lot	¼	¼	Sec.	Twp.	Rge.		County
GROUND WATER		NW	NW	27	07 N	04 W	B.M.	PAYETTE
GROUND WATER		NW	NW	27	07 N	04 W	B.M.	PAYETTE
GROUND WATER		NW	NW	27	07 N	04 W	B.M.	PAYETTE
GROUND WATER		NW	NW	27	07 N	04 W	B.M.	PAYETTE

Method of Determination: GPS and Visual Inspection.

Change in POD? ____Y __X__N Amendment Required? ____Y __X__N

2. **PLACE OF USE:** Use: STOCKWATER

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07N	04W	27						X											

PLACE OF USE: Use: COMMERCIAL

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07N	04W	27						X											

PLACE OF USE: Use: DOMESTIC

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07N	04W	27						X											

Method of Determination: GIS and Visual Inspection
Change in POU? ____Y __X__N Amendment Required? ____Y __X__N

3. _YES_ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

YES Aerial Photo Attached (required for irrigation of 10+ acres).

YES 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
(Well # 1)Weigh Station Well A0018524	Franklin Electric	1.0	2801084915	unknown	25FAIS4-PE
(Well # 2)House Well A0018522	unknown	1.5	unknown	unknown	unknown
(Well # 3)Corral Well A0018523	Franklin Electric	1.5	2823008110	unknown	unknown
(Well # 4)Barn Well D0012989	unknown	5	unknown	unknown	unknown

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

D. FLOW MEASUREMENTS

1.Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
N/A						

2. Measurements: Unable to obtain measurement during field exam. The pipelines on all wells (4) were too small for equipment to obtain accurate reading. Theoretical calculation utilized to determine flow rate.

E. FLOW CALCULATIONS __X__Additional Computation Sheets Attached

Measured Method: Theoretical Calculation-THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Calculation = 0.27 cfs
Permit allowed = 1.00 cfs

License recommend for 0.27 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: N/A

$V_{I.R.}$ = (Acres Irrigated) x (Irrigation Requirement) =_____

$V_{D.R.}$ = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 =_____

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

2. Volume Calculations for Other Uses: Stockwater and Commercial Use calculated using Daily Fresh Water Requirement for Dairy Facility Worksheet (computation sheet attached)

Stockwater Volume Required in AF= 43.5
Commercial Annual Volume Requirement in AF= 43.6
Total Volume Required in AF= 87.1

System Capacity=0.27 cfs *1.9835*365=195.47 AF. The system can provide the required volume needed for all water uses (87.1 AF).

Overlap review determined the overlapping water rights authorize up to: **Stockwater= 0.25 CFS and 13.7 AFA, Domestic Use for 3 homes= 3.6 AFA, Domestic Use for the Dairy Barn = 1.2 AFA for a total when all uses are combined of 0.37 cfs and 18.5 AFA.**

Permit 65-22669 stockwater use license recommendation will be reduced by 13.7AF to account for overlap (43.5 AF-13.7AF = 29.8 AF), commercial use will be reduced by 1.2 AF to account for overlap use for the dairy barn (43.6AF- 1.2 AF = 42.4 AF. Recommended volume for Commercial and Stockwater combined is 72.2 AF.

Permit 65-22669 authorizes stockwater use of 1200 dairy cattle and heifers. The Stockwater Volume Required Calculation of 43.5 AF was based on 750 milking cows, 60 dry cows, and 1,000 heifers (see computation sheet attached). A stockwater volume was calculated on the basis of the permit if the 1200 allotted stock were all dairy cows (this represents the maximum volume allowed for stockwater use based on the approved permit). This volume (1200*.0391) of 46.9 AF exceeds the recommended 43.5 AF stockwater volume. Also, overlapping rights' stockwater volume of 13.7 AF has been subtracted from the recommended stockwater volume (for licensing 65-22669) of 43.5 AF to prevent enlargement (43.5AF-13.7AF=29.8 AF).

G. PURPOSE OF USE

Irrigation ____Y __X__N # Stock__1800_____ Domestic # of Homes ___1 (one) _____

Other: Commercial Use

Change in Purpose of Use? ____Y __X___N

Method of Determination: Visual Inspection

If Yes: From Use _____ To Use _____ Amount _____ CFS _____ AFA_____

H. NARRATIVE/REMARKS/COMMENTS

Water for permit 65-22669 is sourced from four (4) groundwater wells located within Payette County. Well driller reports are available for two of the four wells. Information from the available well driller reports along with information collected during the exam were used to determine a theoretical system capacity for the four wells combined (see attached computation sheet for further explanation). The four wells work in combination to supply water for domestic use, stockwater use, and commercial dairy use. Each individual well is equipped with a submersible pump and pressure tank (Well #2, House Well did not have a pump installed during the field exam) to maintain the desired range of water pressure in the distribution system. During the field exam a pressure reading was obtained from Well #3 (Corral Well). This reading of 53 psi was used for all wells when calculating a theoretical system capacity of 0.27 cfs (see computation sheet for detailed calculation explanation). No pressure readings were available during the time of the exam for the other 3 wells. The system capacity (diversion rate) is not the main concern for this permit because all water uses will not be occurring at the same time. The main concern is volume and if the system can produce the required water volume for stockwater and commercial use. The dairy spreadsheet summary of water use (see dairy computation sheet) indicates a total volume of 87.1 AF is required for a combined use of stockwater and commercial purposes). The system at 0.27 cfs equals 195.47 AF/year. The system can provide the required volume needed for all water uses.

Overlap review (see attached Overlapping Water Rights Analysis Spreadsheet for detailed explanation) concludes that the five (5) overlapping rights were decreed in the Payette River Basin Adjudication (PRBA). Overlap review determined the overlapping water rights authorize up to:

Stockwater= 0.25 CFS and 13.7 AFA, Domestic Use for 3 homes= 3.6 AFA, Domestic Use for the Dairy Barn = 1.2 AFA for a total when all uses are combined of 0.37 cfs and 18.5 AFA.

Permit 65-22669 stockwater use license recommendation will be reduced by 13.7AF to account for overlap (43.5 AF-13.7AF = 29.8 AF), commercial use will be reduced by 1.2 AF to account for overlap use for the dairy barn (43.6AF- 1.2 AF = 42.4 AF. Recommended volume for Commercial and Stockwater combined is 72.2 AF.

No domestic use will be recommended since the overlapping rights each has a domestic component and covers the three homes and dairy barn domestic use.

The point of diversions for this permit are located with the water district 65 boundary but water district 65 does not include groundwater. For data entry purposes the water district field will be labeled EXC for excluded.

Conditions: Condition 1 (26A) will be removed at licensing per Department standards. Condition 2, (046) will be removed at licensing since wells used to divert water have been constructed prior to beneficial use. Condition 3 (01M) will be carried over to licensing since it was listed on the permit. Condition 4 (121) is for permits only and will be replaced with (103) at licensing. Condition 5 (082) will be removed at licensing because it applies to compliance being required prior to water diversion and this condition is not used on licenses. Condition 6 (X02) is required on permits to identify number of stock and is not included on licenses and will be removed. Condition 7 states that commercial use is for a dairy barn, since this was on the permit it will be carried over to licensing. Condition 8 (X01) will be removed at licensing since domestic use will not be carried over to the license since overlapping rights cover the domestic use. The (F06) condition will be added to acknowledge that multiple rights divert from the same 4 well as 65-22669. The (X35) combined limits condition will be added for diversion rate only limiting 65-22669 when combined with all other overlapping rights to 0.37 cfs (since this is the diversion rate decreed on the overlapping rights when combined). Volume will not be included since the overlapping rights volume quantities are all additive.

Have conditions of permit approval been met? __X___Yes _____No

I. RECOMMENDATIONS

1. Recommended Amounts

BENEFICIAL USE	PERIOD OF USE	DIVERSION RATE	ANNUAL VOLUME
STOCKWATER	01/01 TO 12/31	0.27 CFS	72.2
COMMERCIAL	01/01 TO 12/31	0.27 CFS	72.2
	Totals:	0.27 CFS	72.2 AF

2. Recommended Amendments

___Change P.D. as reflected above ___Add P.D. as reflected above __X__None

___Change P.U. as reflected above ___Add P.U. as reflected above __X__None

Other: NONE

J. AUTHENTICATION

Field Examiner's Name Ashley Ritter Date 01/03/2020

Reviewer [signature] Date 1-3-19

State of Idaho
Department of Water Resources

Attachment to Field Exam

65-22669

This map depicts the STOCKWATER and COMMERCIAL place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

Point of Diversion
Place Of Use Boundary
Townships
PLS Sections
Quarter Quarters

0 250 500 1,000 Feet

N


SWSW
22
Weigh Station Well (Well #1)
House
House
House
Hospital Barn
Corral Well (Well #3)
House Well (Well #2)
NWNW
07N04W
27
System Map
Misters
Barn Well (Well #4)
Milking Parlor
N
Legend
Place of Use
Township/Range
Sections

OVERLAPPING WATER RIGHT ANALYSIS
Performed By: Ashley Ritter
Date: 10/7/2019

STOCKWATER						
Basin	Sequence	RightID	Priority Date	Diversion Rate (cfs)	Volume (AFA)	
65	4889	560596	4/1/1939	0.050	2.7	
65	9380	560595	6/1/1940	0.070	4.0	
65	9383	560594	6/1/1933	0.070	4.0	
65	9309	560589	6/1/1933	0.060	3.0	Note: 65-9309 and 65-10564 when combined are limited to 0.06 cfs for all uses (stockwater and domestic) 0.06 is added to stockwater so 0.00 cfs will be used for domestic use calculation
65	10564	560591	6/1/1940	0.060	3.0	
Limits				** 0.060	3.0	
TOTALS				** 0.250	13.7	

DOMESTIC						
Basin	Sequence	RightID	Priority Date	Diversion Rate	Volume	
65	4889	560596	4/1/1939	0.040	1.2	
65	9380	560595	6/1/1940	0.040	1.2	
65	9383	560594	6/1/1933	0.040	1.2	
65	9309	560589	6/1/1933	0.040	1.2	Note: 65-9309 and 65-10564 when combined are limited to 0.06 cfs for all uses (stockwater and domestic) 0.06 is added to stockwater so 0.00 cfs will be used for domestic use calculation
65	10564	560591	6/1/1940	0.040	1.2	
Limits			**	0.040	1.2	
Totals				0.160	4.8	
Limits				** 0.120	4.8	

	Diversion Rate	Volume
Combined Totals	0.370	18.5

There are 5 (five) overlapping water rights that were decreed within the Payette River Basin Adjudication (PRBA): 65-4889, 65-9380, 65-9383, 65-9309 and 65-10564.

65-9309 USED WITH RIGHT NO. 65-10564 IS LIMITED TO A TOTAL COMBINED DIVERSION RATE OF 0.06 CFS AND TO A TOTAL COMBINED ANNUAL DIVERSION VOLUME OF 4.2 AF.

**The combined diversion rate for 65-9309 and 65-10564 is limited to 0.06 cfs. The 0.06 cfs was added into the total diversion rate for stockwater when performing the overlap analysis, therefore no diversion rate is allotted for domestic use when adding total diversion rate values for 65-9309 ad 65-10564. Instead of 0.16 cfs for domestic use 0.12 cfs is used since the allotted 0.06 cfs for the combined rights was added into stockwater use.

Reviewing Overlapping Rights Memo by Dan Nelson an error was found in the total diversion rate calculated.
The memo lists a total of 0.41 cfs which enlarges the combined rights 65-9309 and 65-10564 diversion rate by 0.04 cfs. The overlapping rights total diversion rate is 0.37 cfs (as seen above).

The theoretical System Capacity is 0.27 cfs (see Theoretical Horsepower Equation Sheet for detailed explanation).
65-22669 will be licensed for the full system capacity amount to allow for stockwater and commercial use volume to be met (see dairy use worksheet for details on calculated volume).

65-22669 when combined with the 5 (five) overlapping rights listed above will be limited to a diversion rate of 0.370, since this diversion rate has already been previously decreed.

(cfs)= cubic feet per second
(AFA) = Acre Feet Annually

OVERLAPPING RIGHTS

There are 5 overlapping water rights. These rights are 65-4889, 65-9380, 65-9383, 65-9309, and 65-10564. These rights were decreed in the Payette River Basin Adjudication (PRBA). The PRBA did not recognize small dairy uses as commercial uses and some domestic type use were listed on the same dairy. Therefore, I needed to determine the total number cattle for this dairy prior to filing of this application. I used the following information to determine the total number of cattle that would be allowed on this dairy per existing water rights.

The Field Examiner's Handbook determines that the average dairy cow consumes 0.0391 afa. Therefore, I used the PRBA decreed volumes to determine the number of cattle from each right and the totals.

STOCKWATER:

65-4889 – Stockwater – 2.70 afa / 0.0391 = 69 head of dairy cattle
65-9380 – Stockwater – 4.00 afa / 0.0391 = 102 head of dairy cattle
65-9383 – Stockwater – 4.00 afa / 0.0391 = 102 head of dairy cattle

65-9309 } Combined
65-10564 } Stockwater – 3.00 afa / 0.0391 = 77 head of dairy cattle

TOTALS – STOCKWATER – 13.7 AFA / 0.391 = 350 HEAD OF DAIRY CATTLE

DOMESTIC:

All the water rights allow for domestic of one home and a dairy barn. There are 3 homes on the property and the dairy barn. Since 65-9309 and 65-10564 are combined, this would allow for coverage of the three homes and the dairy barn use. Each right allows a domestic right for 1.2 afa.

3 Homes at 1.2 afa = 3.6 afa
1 dairy barn at 1.2 afa = 1.2 afa

TOTAL DOMESTIC USE IS 4.8 AFA

COMBINED TOTALS

THE FOLLOWING ARE THE TOTAL WATER CURRENTLY ALLOCATED FROM ALL OF THE WATER RIGHTS FOR THE EXISTING DAIRY:

STOCKWATER → 13.7 AFA → 350 HEAD OF DAIRY CATTLE → 0.25 CFS
COMMERCIAL DAIRY BARN → 1.2 AFA → 0.04 CFS → ONE BARN
DOMESTIC → 3.6 AFA → 0.12 CFS → THREE HOMES
TOTAL → 18.5 AFA → 0.41 CFS

Dan Nelson's Overlapping Rights Memo

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 65-22669
Reviewer: Ashley Ritter
Date of Review: 9/24/2019

	Weigh Station Well	House Well	Corral Well		Barn Well	
P/D No.:	Well #1	Well #2	Well #3		Well #4	
PUMP HORSEPOWER	1	1.5	1.5		5	
BOOSTER HORSEPOWER	0	0	0		0	
PUMPING LEVEL	65	65	65		100	
STATIC WATER LEVEL	48					
DISCHARGE PRESSURE	53	53	53		53	
Well Depth	100					
RATE OF FLOW (cfs)	0.03	0.05	0.05		0.14	0.27
	15	22	22		62	121.15

The above calculates the formula = $Q = \frac{8.0 * (\text{Efficiency}) * hp}{\text{depth to water} + 2.31*(\text{psi}) + \text{friction}}$

Assumptions: %70 efficiency.
No Friction

Examiners Notes:

The pumps for this system are (2) - 1.5 horsepower (hp) pumps, (1) - 1.0 hp pump, and (1) - 5.0 hp pump (4 pumps/wells total). According to Valley Pump & Equipment Co., Inc. the total well depth is 100 feet (matched well log total depth) pump setting depth for well #1 is 80 feet, and static water level is 48 feet. Pumping water level was calculated using the Theoretical Dynamic Pumping Level Diagraph for Wells (8/95)rdh. The calculation sheet states that if bowl level is known (80 feet for Well #1) a pumping water level of 10 to 15 feet above the setting depth may be used, thus 80 feet - 15 feet = 65 feet. It is assumed that Wells 1, 2, and 3 are similarly constructed (well logs are not available for Well # 2 and #3) and a pumping water level of 65 feet is used for calculations for all three wells.). Well #4 was constructed to a depth of 112 feet (based on available well log data with well tag D0012989). The Well Driller's Report Well Test indicated a pumping water level of 100 feet while yielding 30 gpm. This pumping level of 100 feet is used for calculations for Well #4. Well #3 was operating during the field exam and a pressure reading of 53 psi was obtained in the field. This pressure value is used for all four (4) wells for calculation purposes. Based on these calculation parameters the system capacity is 0.27 cfs or approximately 115 gpm.

764191

Form 238-7
11/97

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 0012989
DRILLING PERMIT NO. ____-____-____-_____-_____
Other IDWR No. _____

2. OWNER:
Name Alan Myers
Address 4531 SE 3rd. Ave.
City New Pymouth State ID Zip 83655

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. 4 East ☐ or West ☒
Sec. 27, NW 1/4 NW 1/4 NW 1/4
Gov't Lot ____ County Payette
Lat: : : Long: : :
Address of Well Site 4531 SE 3rd Ave.
City New Plymouth
(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 Material	From	To	AMOUNT Sacks or Pounds	METHOD
bentonite	0	18	250lb	overbore

Was drive shoe used? ☒Y ☐ N Shoe Depth(s) 111
Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+1	111	.25	steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
Perforations Method _____
Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
72' ft. below ground Artesian pressure ____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: removeable cap

11. WELL TESTS:
☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
30gpm	30'	100'	2hr

Water Temp. 56deg Bottom hole temp. 56
Water Quality test or comments: _____
Depth first Water Encounter 68,

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8"	0	8	soil and clay		n
	8	18	sand and clay		n
6	18	65	sand and clay		n
	65	68	sand		n
	68	102	sand and clay	y	
	102	112	clay		n
	112		heavy sand	y	

RECEIVED
JUN 26 2000
Department of Water Resources

RECEIVED
JUN 21 2000
WATER RESOURCES
WESTERN REGION

Completed Depth 112' (Measurable)
Date: Started 4-27-00 Completed 5-15-00

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 Driscoll Well Drilling Firm No. 524
Firm Official _____ Date 4-27-00
and
Driller or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

- 5hp. pump

069443

WELL LOG AND REPORT TO THE STATE RECLAMATION ENGINEER OF IDAHO

RECEIVED
JUL 8 1957
Department of Reclamation

Log No. .....
Rec. ..... 19.....
Well No. .....
Permit No. .....
DO NOT FILL IN

Owner Ray West Driller H.C. Nicholson
Address SW of City, New Plymouth Address 921 6th Ave S. Lic. No. 54
Location of Well: NW ¼ NW ¼ Sec. 27, T. 7 N/S, R. 4 E/W Payette County.
and ..... feet N/S, and ..... feet E/W from ..... corner of ..... ¼ ..... ¼ Sec. .....
Water will be used for Domestic & Commercial Total depth of well 100 ft
Size of drilled hole 6 inches Weight of casing per linear foot 25 55 lbs
Thickness of casing 5/16 Casing Material Steel Pipe
e.g., pipe, concrete, wood.
Diameter, length and location of casing 6 inches — 100 ft
(Casing 12" in diameter and under give inside diameter; casing over 12" in diameter give outside diameter.)

Number and size of perforations — located — feet to — feet
from surface of ground.
Other Perforations: —
If flowing well, give flow in c.f.s. — or g.p.m. — and shut in pressure —
If nonflowing well, give depth of standing water from surface 35 ft
If flowing well, describe control works —
(Type and size of valve, etc.)
On pumping test delivery was — g.p.m. or — c.f.s. Drawdown was — feet
Length of time pumped during check was — hr. — min. Water temp. — °Fahrenheit.
Date of commencement of well 5-22-57 Date of Completion of well 5-24-55
Type of well rig 71 Star-Drill

CASING RECORD

Diam. Casing, sheet again	From Feet	To Feet	Length	"Remarks" — Seals, Grouting, Etc.
5-21	Surface	25 ft	25 ft	All casings welded.
5-22	25 ft	39.2	14.2	
5-23	39.2	46.2	7.	
5-23	46.2	53.2	7.	
"	53.2	66.9	13.7	
"	66.9	82.4	15.7	
"	82.4	96.4	14.	
5-24	96.4	100.	4.8	

GENERAL INFORMATION—Pumping Test, Quality of Water, Etc.

NWNW 5.27 7N 4W

65

* 1.0 hp pump

WELL LOG

From Feet	To Feet	Type of Material	Drilling Time Hrs.	Drilling Time Min.	Water-bearing Formation Ans. Yes or No	Casing Perforated Ans. Yes or No
Surface	25 ft	Started hitting hard-pan with streaks of rock.	5	30	No	No
25	99½	GRAVEL & SAND, water.	12	15	yes	No
99½	100	GRAVEL & water (60 gals min)	4		Yes	No
		If more space is required use Sheet No. 2				

WELL DRILLERS STATEMENT

This well was drilled under my jurisdiction and the above information is true and correct to the best of my knowledge and belief.

Signed W. C. Nicholson

By Juanani Dease Nicholson

License No. 54

Dated 6-29, 19 57

Subscribed and sworn before me this .....day of .....19.....

NOTARIZATION NOT NECESSARY UNDER NEW LAW.

.....
Notary Public

.....
Residing at

My Commission expires .....

DAILY FRESH WATER REQUIREMENT FOR DAIRY FACILITY

DATEOF EXAM: July 15, 2019
Water Right Number: 65-22669
Water Right Holder: ALAN D MYERS
Prepared By: ASHLEY RITTER

STOCKWATER REQUIREMENTS

Animal Type	Number of Animals	Diversion Rate (N = 0.00022 for Dry Cows and Heifers/Replacements and N= 0.00065 for Dairy Cows)	Diversion Volume (N = 0.0134 for Dry Cows and Heifers/Replacements and N= 0.0391 for Dairy Cows)
MILKING/LACTATING COWS	750	0.49	29.3
DRY COWS	60	0.01	0.8
HEIFERS/REPLACMENT	1,000	0.22	13.4
TOTAL =		0.72	**43.5**

Please Note: See Administrative Memo Number 3 - Section 3 for Stock Water Calculation Process.

Stockwater Annual Volume Needed in AF =	**43.5 AF**
Stockwater Diversion Rate Needed in CFS =	**0.72 CFS**

COMMERCIAL RATE & VOLUME REQUIREMENT

Wash Pen Requirements

GPM Per Nozzle (Per Owner or IDWR Standards)	Number of Nozzels	Total Gpm (GPM/Nozzel X Number of Nozzels)	Minutes per Day Wash Pen Used	Total GPD (Total GPM X Minutes Used)	Total AFA (Total GPD X 365 days / 325850)
0.00	0	0	0	0	0.0

Milking Parlor Requirements

Item	Gals/ Operation	Operations/Day (Per Owner or IDWR Standards)	Total GPD (Gals/ Operation X Operations / Day)	Total AFA (Total GPD X 365 Days / 325850)	GPM if Diverted in 2 Hrs. (GPD / 120 Min.)	CFS if Diverted in 2 Hrs. (GPM / 448.8)
BULK TANK	1,000	1	1,000	1.1	8	0.02
*COW PREP Lely Astronaut milking machines (750 milking cows milked 3 times/day)	0.5	2,250	1,125	1.3	9	0.02
PIPELINES	1,380	6	8,280	9.3	69	0.15
PARLOR CLEANUP	2,070	3	6,210	7.0	52	0.12
WASHPEN CLEANUP (Dry Scrape)	0	0	0	0.0	0	0.00
<other>			0	0.0	0	0.00
<other>			0	0.0	0	0.00
Total Milking Parlor Use				18.6	138	0.31

***The average water consumption of a Lely Astronaut milking robot is 1.9L per milking. This allows for all cleaning of the milking system excluding the milk tank cleaning. 1.9 L (https://www.lely.com/nz/solutions/milking/grazing/faq/)**

HOSPITAL BARN USE

Item	Gals/ Operation	Operations/Day (Per Owner or IDWR Standards)	Total GPD (Gals/ Operation X Operations / Day)	Total AFA (Total GPD X 365 Days / 325850)	GPM if Diverted in 2 Hrs. (GPD / 120 Min.)	CFS if Diverted in 2 Hrs. (GPM / 448.8)
BULK TANK	900.0	1	900	1.0	8	0.02
COW PREP- IODINE (NO WATER USE)	0.0	0	0	0.0	0	0.00
PIPELINES	2,070.0	3	6210	7.0	52	0.12
PARLOR CLEANUP	0.0	0	0	0.0	0	0.00
WASHPEN CLEANUP Dry Scrape)	0.0	0	0	0.0	0	0.00
<other>			0	0.0	0	0.00
<other>			0	0.0	0	0.00
Total Milking Parlor Use				8.0	59	0.13

DAILY FRESH WATER REQUIREMENT FOR DAIRY FACILITY

MISCELLANEOUS USES

Item	Gal/ Operation	Operations/Day (Per Owner or IDWR Standards)	Total GPD (Gals/ Operation X Operations / Day)	Total AFA (Total GPD X 365 Days / 325850)	GPM if Diverted in 2 Hrs. (GPD / 120 Min.)	CFS if Diverted in 2 Hrs. (GPM / 448.8)
TOWEL WASHING	0	0.00	0.00	0.00	0	0.00
# of EMPLOYEES	7	15.00	105.00	0.12	1	0.00
SHOWERS & RESTROOMS (Fixtures)	0	0.00	0.00	0.00	0	0.00
MAINTENANCE SHOP (NO WATER)	0	0.00	0.00	0.00	0	0.00
Equipment Cleanup	10,000	1.00	10,000.00	11.20	83	0.19
Misters	50	1.00	50.00	0.06	0	0.00
Feed Mix	5	1,000.00	5,000.00	5.60	42	0.09
TOTAL MISCELLANEOUS USES			15,155.00	16.98	126	0.28

Commercial Diversion Rate Required if Diverted in 2 Hrs. in CFS =	0.72 CFS
Commercial Annual Volume Required in AF =	43.6 AF

SUMMARY OF WATER USE	
Stockwater Volume Requirement in AF =	43.5
Commercial Annual Volume Requirement in AF =	43.6
TOTAL VOLUME REQUIRED =	87.1

Stockwater Diversion Rate Requirement in CFS =	0.72
Commercial Diversion Rate Requirement in CFS =	0.72
TOTAL DIVERSION RATE REQUIRED =	1.44

Please Note: The diversion rate calculated in this spreadsheet is based on diverting all of the water needed in a 2-hour period Per Processing Administrative Memo #3. The actual diversion rate should be determined by performing an actual measurement on the system and/or a theoritical calculation . The diversion rate shown above is only included to show the maximum diversion rate that would be required for this size of dairy operration.

- Ketosis indication
- Acidosis indication
- Number of milkings per cow
- Cow location

6. What is the energy consumption of a robot shed?

The average energy consumption of a Lely Astronaut milking robot is 0 26kWh per milking.

7. What is the water consumption of a robot shed?

The average water consumption of a Lely Astronaut milking robot is 1 9L per milking. This allows for all cleaning of the milking system excluding the milk tank cleaning

8. Can robots be installed in my existing shed?

Simple answer is yes, depending on whether or not there is adequate roof height for robot placement and pre-milk collection yard space.

9. What are the labour requirements of a robotic milking system?

On New Zealand pasture based robotic milking systems, on average farms are operating at 171 cows per labour unit with the best performing having 319 cows per labour unit

65-22669
Photos taken by Ashley Ritter on 07/15/2019

Weigh Station Well (Well #1) and associated pressure tank.

Weigh Station Well (Well #1) supply line.

Corral Well (Well #3) with associated pressure tank and supply line with pressure gauge (reading 53 psi while on site).

Barn Well (Well #4) and associated pressure tank.

Barn Well (Well #4) supply line.

Lely Astronaut Auto Milking Machine (6 units on-site).

Lely Astronaut Auto Milking Machine with water supply line.

Hospital Barn bulk tank (900 gallons)

Hospital Barn, iodine used for prep, water used for flushing lines.

Cow pen South-East of the milking parlor

Cow pen West of Milking Parlor

Water line for Misters along top edge cow pen

North View of Dairy looking toward the Hospital Barn