

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33932
Exam Date: 07/30/2019

1. Current Owner:
GARY VAN VLIET 26257 MATTHEWS RD PARMA ID 83660-7306 AND/OR
JOAN D VAN VLIET 26257 MATTHEWS RD PARMA ID 83660-7306
2. Accompanied by: Ryan Van Vliet
Phone No: (208) 722-4059
Address: 27859 Scott Pit Road
Relationship to permit Holder: Family

3. SOURCE:
GROUND WATER

Method of Determination: Field Observations

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
63-21768	Groundwater	Domestic	
63-11245	Groundwater	Stock water	
63-21767	Surface Water from S. Boise Drain	Irrigation	

Comments:

Water Right 63-21768 was claimed by the applicant in Snake River Basin Adjudication (SRBA) in 1990, and has a priority date of June 15, 1971. The water right covered the diversion of groundwater from 2 wells to be used for one domestic home and the operations of a small dairy at that time. The wells are 6 inches and 10 inches in diameter and were used to grow the dairy operations over time. As the dairy operations grew, the 6 inch well became disconnected from the dairy to serve the domestic purposes for the home located adjacent to the dairy operations. The 6" well and its domestic use are no longer associated with the dairy operations; permit 63-33932 intends to replace the stock water originally covered under water right 63-21768.

Water Right 63-11245 was originally filed on March 22, 1990 for the purposes of diverting groundwater from 2 wells for stock water purposes at a diversion rate of 0.65 cfs in order to increase the existing dairy operations. The permit holder failed to submit proof of beneficial use by July 1, 1991 and a lapse notice was sent to the permit holder on July 5, 1991 stating the permit was of no further force nor effect. The permit holder filed proof of beneficial use for the lapse permit on May 24, 2000, and over the course of a year submitted proof of the well usage during the authorized permit period from June 28, 1990 to July 1, 1991. The Idaho Department of Water Resources (IDWR) received proof of the wells usage during the authorized permit period and reinstated permit 63-11245 and advanced the priority date to May 24, 2000. Based on the beneficial use field exam performed on May 24, 2001 the diversion rate from the wells for water right 63-11245 was proven to be 0.34 cfs for the stock water and domestic use. Water Right 63-11245 covered only a portion of the stock water needed for the dairies operations. The permit holder agreed to file application for permit 63-31231 for the additional dairy uses not listed in water right 63-11245. Water Right 63-11245 was modified by Transfer No. 79220 to include a new well for stock water purposes and to transfer the stock water use from the 12" well to a new 14" well. A transfer approval notice was sent on April 4, 2014 allowing Water Right 63-11245 to be transferred to the new well. In total there are 3 Points of Diversion (POD) associated with this water right.

IDWR issued permit 63-31231 to cover the remaining uses of the dairy not covered under the Water Right 63-11245. The permit holder failed to submit proof of beneficial use and the permit lapsed.

Water Right 63-21767 irrigates 55 Acres from the South Boise Drain which is tributary to the Boise River. The water right is intended to irrigate the area around the dairy. Water right 63-21767 combined water rights 63-7688 and 63-7689 for a total diversion of 2.2 cfs for irrigation purposes around the dairy. Water Right 63-08404 irrigates 94.0 Acres from the South Boise Drain, and is intended to irrigate around the dairy as well. Water rights for irrigating around the dairy do not impact the water rights for stock water or commercial uses of the dairy operations over these Places of Use (POU).

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
63-11245	Groundwater	Stockwater	

Comments: Water right 63-11245 included an additional POD to the existing system.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER NE¼ NE¼, Sec. 14, Twp 05N, Rge 06W, B.M. CANYON County
 GROUND WATER NE¼ NE¼, Sec. 14, Twp 05N, Rge 06W, B.M. CANYON County
 GROUND WATER NE¼ NE¼, Sec. 14, Twp 05N, Rge 06W, B.M. CANYON County

Method of Determination: GIS Verification

PLACE OF USE: STOCKWATER

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	06W	11															X		
05N	06W	14	X																

PLACE OF USE: COMMERCIAL

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	06W	14	X																

Method of Determination: GIS Verification

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

x Indicate weir size/pipe as applicable.

Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be

x 1:24,000 or greater.

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

x Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
A0020309	N/A	7.5	N/A	N/A	N/A
D0015100	Franklin	20.0	N/A	Franklin	N/A
D0067202	Franklin	20.0	N/A	Franklin	N/A

D. FLOW MEASUREMENTS

1. A flow measurement was not possible because of the small pipe diameters of the distribution system and the conditions for taking a reliable measurement did not exist at the well locations.
2. Measurements: Flows were calculated using the known well depths, pump types, and motor sizes supplying the distribution system.

E. FLOW CALCULATIONS

Measured Method: Verified flows using pump curves from manufacturer

Based on the manufacturers curves associated with the new well, a diversion rate of 0.44 cfs is recommended for this water right. Refer to the pump curve attached with this report. When combined with water right 63-11245 the diversion rate shall not exceed 0.44 cfs which was based on theoretical calculations from the beneficial use exam from water right 63-11245. This recommendation is made consistent with the IDWR water right condition X35.

Summary of Well Capacities:

Well #1 (Tag# A0020309; From Pump Curve associated with Water Right 63-11245)	0.20 cfs
Well #2 (Tag# D0015100; From Pump Curve associated with this Water Right)	0.24 cfs
Well #3 (Tag# D0067202; Standby Well in case Well #2 breaks down)	<u>0.00 cfs</u>
	0.44 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for dairy operations:

Based on the stockwater and commercial requirements of the dairy in conjunction with the allowable volumes under Water Rights 63-21768 and 63-11245, a volume of 27.4 AF is recommended for Water Right 63-33932. Refer to the volume calculations attached with this report.

G. NARRATIVE/REMARKS/COMMENTS

The dairy started in 1971 and used a 6" well to pump groundwater for domestic use and for allowable stock water purposes under that domestic use. The water right was decreed in the Snake River Basin Adjudication as water right 63-21768 for domestic use and its allowable stock water use through two ground water wells: the original 6 inch well and a 10 inch well. The dairy expanded its operations in 1986 to include 1,000 dairy cows and got water right 63-11245 for the stock water portion of the dairy. Water right 63-11245 served to increase the stock water at the dairy using the same Points of Diversion (POD) listed in water right 63-21768. A field exam was performed on water permit 63-11245, and determined that the permit holder needed to include commercial use as part of the dairy operations as well.

In 2001, the permit holder filed permit 63-31231 to cover the commercial use. During the development period, the permit holder filed a well drilling permit to replace the 6 inch well for a 12 inch well (D0015100) according to the well drilling permit. At the time of replacement, the 6 inch well should have been disconnected from the dairy, and used solely for the purposes of domestic use under water right 63-21768. The permit lapsed and the conditions for replacing the well were never verified.

In 2014, the permit holder filed for permit 63-33932 to cover the commercial use for the dairy, and filed a water right transfer (79220) to include another point of diversion for the dairy that allowed 3 POD for water right 63-11245. At the time the transfer was filed, there was no record of the 6 inch well for water right 63-21768 being disconnected from the dairy because water permit 63-31231 had lapsed. As part of the water right transfer, a new 14 inch well (D0067202) was drilled in 2014 bringing the total POD to 3 for the dairy operations, and one POD for domestic purposes. During the field examination, it was confirmed that the 6 inch well is used only for domestic purposes at the dairy operator's home adjacent to the dairy, and is no longer connected to the dairy. Based on the research for the lapsed permit 63-31231 and the beneficial use field exam for permit 63-33932, water right 63-21768 has a 6 inch domestic well as its POD within its original POU and is no longer considered part of water right 63-11245 and permit 63-33932.

Currently the water supplies for the dairy include 3 POD: a 10 inch well, 12 inch well, and a 14 inch well. The 10 inch well supplies the dairy with stock water via a 2.5 inch buried pipe while the 12 inch and 14 inch wells supply stock water and commercial water to the remaining portions of the dairy via a 3" pipe. The main purpose for this water right is to include the commercial use of water at the dairy as well as address stock water increases since 1986 and the stock water associated with 63-21768.

At the time water right 63-11245 was issued, the dairy operations used a storage tank for purposes of collecting the water from the cooling process, back flushing, and cleaning the bulk tanks. The recycled water was then used to clean the wash pen. Since that time, the storage tank is no longer used and the operations of the dairy have transitioned to more current washing techniques which has eliminated the need to store recycled water and repurpose it for other uses.

The permit holder applied for stock water to meet the needs of 2,400 dairy cows and 200 dry cows. When in the field with the dairy operator, the counts were confirmed to be 1,300 dairy cows, 160 dry cows, and 900 heifers. Based on the information from the dairy operator, and visual observations made on site, these numbers were reasonable and are recommended to be incorporated into the final water right.

The commercial use of water in the dairy operations were addressed in the field with the operator. The commercial uses in the dairy operation include the washing of the milking parlor/bulk tanks, the maintenance shed, and the towel washer. The estimated volumes were provided by the permit holder and a walk through of the facility confirmed the volumes and frequency of use for the bulk tank, pipelines, parlor clean up, wash pen clean up, maintenance shop, and towel washing.

Based on the observations made in the field and the information provided by the dairy operator (point of contact in the

frequency of use for the bulk tank, pipelines, parlor clean up, wash pen clean up, maintenance shop, and towel washing.

Based on the observations made in the field and the information provided by the dairy operator (point of contact in the permit), the volume of water associated with stock water and the dairy's commercial use as stated below are recommended for this license.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
STOCKWATER	01/01 to 12/31	0.44 CFS	27.4 AF
COMMERCIAL	01/01 to 12/31	0.44 CFS	27.4 AF

Totals:

0.44 CFS

27.4 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 ☒ None

I. AUTHENTICATION

Randy Broesch - Engineer, Staff

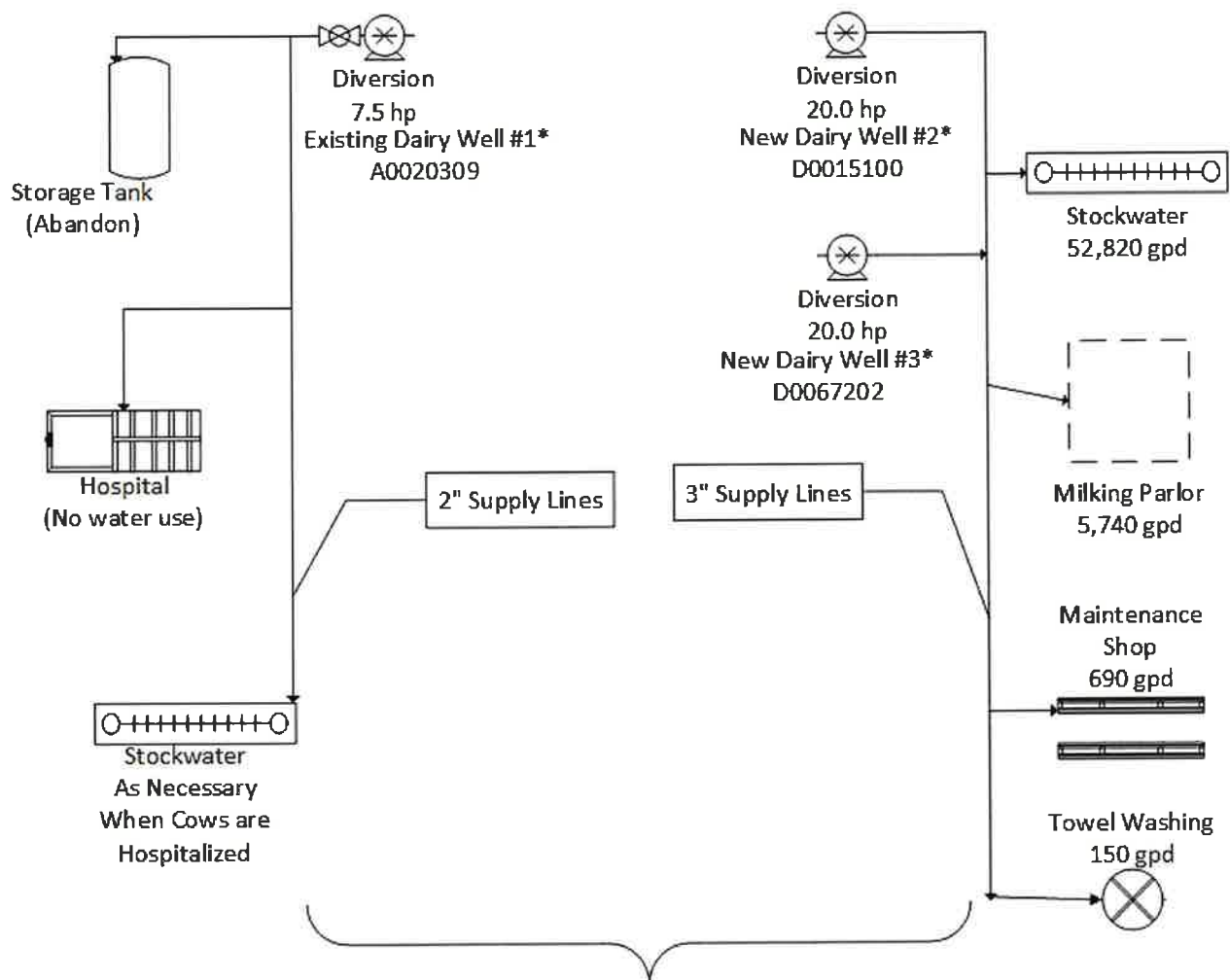
Field Examiner's Name Randy H. Broesch P.E. Date 18-Aug-2021

Reviewer FF Date 9/2/21



There are two POU associated with water right 63-33932 in which one is located on the south side of Brumback Road and the other is located on North side of Brumback Road. The POU located on the north side of Brumback Road is for stock water use only; while the POU on the south side of Brumback Road has both stock water and commercial uses. All POD for this water right reside on the south side of Brumback Road. In total there are 4 POD in the southern POU: 1. A 6 inch domestic well, 2. A 10inch well, 3. A 12 inch well and 4. A 14 inch well. The low producing well resulted from the lapsed permit 63-31231. The well from transfer No. 79220 is a 14 inch well. The domestic 6" well is not associated with this water right, but has been highlighted to show that it resides in the POU associated with the dairy operations because the dairy operator lives on site within the POU.

Van Vliet Dairy Water Use Schematic



Daily Diversion Volume (No Misters in the dairy operation)
59,400 gal

Annual Diversion for Stockwater and Commercial Uses
27.4 Ac-ft

Overlapping Water Right 63-11245 39.10 Ac-ft

Diversion Rate

0.44 cfs

Figure 2 Schematic of Van Vliet Dairy Operation

SUBMERSIBLE PUMPS

4400 SERIES

[MENU](#)


6-INCH HIGH CAPACITY - 125 GPM

Dimension Information

HP	Stages	Motor Size	Length	Pump Wt. (lbs)
			Pump End Only	
5	2	4" & 6"	12.94	29
7.5	3	4" & 6"	15.05	30
10	4	4" & 6"	17.13	31
15	7	6"	23.37	35
20	9	6"	27.54	38
25	11	6"	31.70	40
30	13	6"	35.87	43
40	18	6"	46.27	48

Order Information

6" Submersible Turbine Pump Ends							
GPM	HP	Stages	Motor Bracket Size	Discharge Size	Order No.	Model No.	Shipping Wt. (lbs)
125	5	2	4" & 6"	3"	94822502	125FASS6-PE	34
	7.5	3	4" & 6"	3"	94822503	125FA7S6-PE	35
	10	4	4" & 6"	3"	94822504	125FA10S6-PE	36
	15	7	6"	3"	94822507	125FA15S6-PE	40
	20	9	6"	3"	94822509	125FA20S6-PE	43
	25	11	6"	3"	94822511	125FA25S6-PE	45
	30	13	6"	3"	94822513	125FA30S6-PE	48
	40	18	6"	3"	94822518	125FA40S6-PE	53

Specifications

Minimum Well I.D.	6"
Minimum Submergence Above Inlet	5'
Discharge	3"
Maximum Working Pressure	550 psi

Note: Refer to Franklin Electric AIM data for motor cooling requirements.

Materials of Construction

Part Name	Common Material Name	Material Spec. No.
Discharge Bracket	303 Stainless Steel	AISI Type 303
Top Bowl	Glass-filled Modified PPO	PPO
Eye/Hub Seal	Polyurethane	Polyurethane
Bearings, Disch. & Suction	Ceramic	Ceramic
Impeller	Glass-filled Modified PPO	PPO
Pump Shaft	416 Stainless Steel	AISI Type 416
Suction Bracket	303 Stainless Steel	AISI Type 303
Suction Screen	Stainless Steel	18-8 Stainless Steel
Cable Guard	Stainless Steel	18-8 Stainless Steel
Shaft Coupling	Stainless Steel	316 P.M. Stainless Steel
Upthrust Washer	Canvas Phenolic	Canvas Phenolic
Bolting	Stainless Steel	300 Series Stainless Steel

Note: Bowl bearing and shaft options available. Contact customer service for available options.

Figure 4 Specifications for New Dairy Well #2 and #3

SUBMERSIBLE PUMPS

4400 SERIES

MENU



6-INCH HIGH CAPACITY - 125 GPM

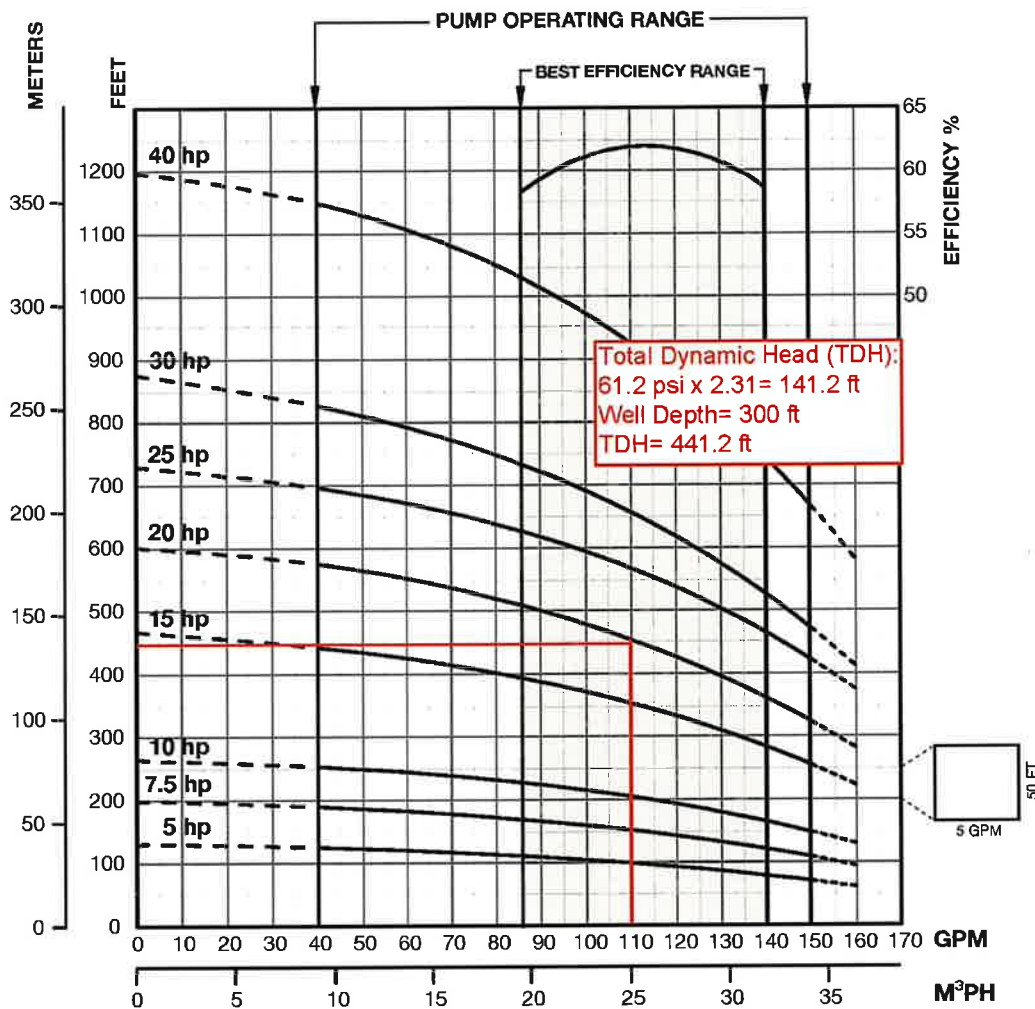


Figure 5 Pump Curve for New Dairy Wells #2 and #3

DAILY FRESH WATER REQUIREMENT FOR DAIRY FACILITY

FOR: Van Vliet Dairy 63-33932
 BY: Randall A. Broesch P.E.
 DATE: 6/16/2021

Stockwater Requirements

Animal Type	Number	Use/day	Total GPD	Total GPY
MILKING COWS	1,300.00	35.00	45,500.00	16,607,500.00
DRY COWS	180.00	12.00	1,920.00	700,800.00
HEIFERS	900.00	6.00	5,400.00	1,971,000.00
TOTAL GALLONS			52,820.00	19,279,300.00

Stockwater Annual Volume Needed in AF = 59.2 AF

COMMERCIAL VOLUME REQUIREMENT

Wash Pen Requirements

GPM Per Nozzle	Number of Nozzles	Total Gpm	Time Per Use (in minutes)	Number of Uses	Total GPD	Total GPY
0.00	0.00	0	0.00	0.00	0.00	0.00

Milking Parlor Requirements

Item	Gals/ Operation	Times/Day	Total GPD	Total GPY
BULK TANK #1	320.00	1.50	480.00	175,200.00
BULK TANK #2			0.00	0.00
PIPELINES	560.00	2.00	1,120.00	408,800.00
PARLOR CLEANUP	1,035.00	2.00	2,070.00	755,550.00
WASHPEN CLEANUP	1,035.00	2.00	2,070.00	755,550.00
Total Milking Parlor Use			5,740.00	2,095,100.00

HOSPITAL BARN USE

Item	Gals/ Operation	Times/Day	Total GPD	Total GPY
BULK TANK	0.00	0.00	0.00	0.00
COW PREP	0.00	0.00	0.00	0.00
PIPELINES	0.00	0.00	0.00	0.00
PARLOR CLEANUP	0.00	0.00	0.00	0.00
WASHPEN CLEANUP	0.00	0.00	0.00	0.00
Total Milking Parlor Use				0.00

MISCELLANEOUS USES

Item	Gal/ Operation	Times/Day	Total GPD	GALS/YEAR
TOWEL WASHING	50.00	3.00	150.00	54,750.00
MAINTENANCE SHOP	690.00	1.00	690.00	251,850.00
			0.00	0.00
			0.00	0.00
			0.00	0.00
			0.00	0.00
			0.00	0.00
			0.00	0.00
TOTAL MISCELLANEOUS USES			840.00	306,600.00

Commercial Annual Volume Required in AF =

7.4

Stockwater Volume Requirement in AF =	59.17
Commercial Annual Volume Requirement in AF =	7.37
Volume Recommended for Total Dairy Operation =	66.54
Stockwater from Water Right 63-11245 =	-39.1
Stockwater/Commercial Water for Water Right for 63-33962 =	27.44

Figure 6 Daily Freshwater Requirement for Van Vliet Dairy



Figure 7 Original 6" Dairy Well Used for Domestic Purposes Only Within POU

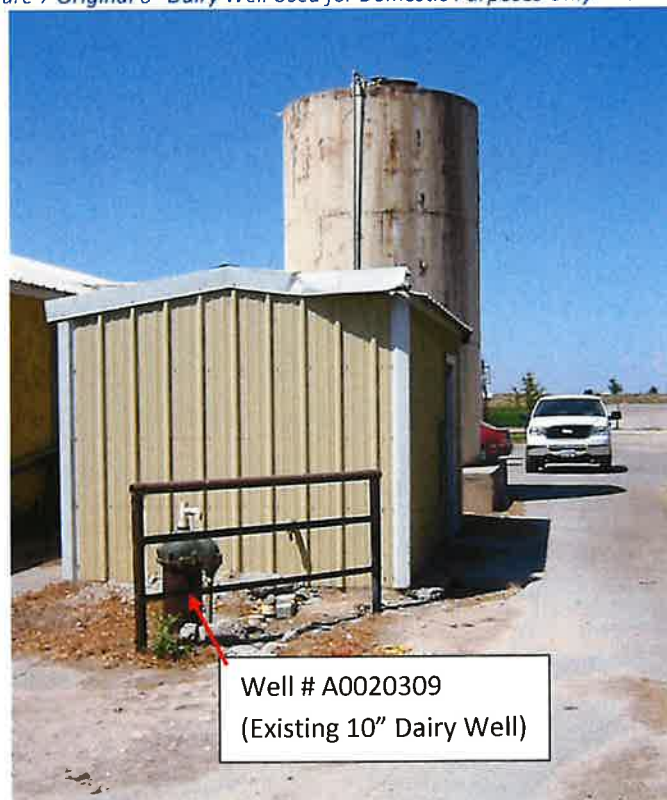


Figure 8 10" Well Tag # A0020309



Figure 9 View Looking South at Wells D0015100 & D0067202 with Stock watering area behind the wells



Figure 10 Stock Water Area Surrounding Original Barn Well