

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-23627

Exam Date: 02/21/2024

1. Current Owner:

GREG M DAVIS 4825 ADAMS RD NEW PLYMOUTH ID 83655-5175 AND/OR
KATHERINE J DAVIS 4825 ADAMS RD NEW PLYMOUTH ID 83655-5175

2. Accompanied by: Greg and Travin Davis

Phone No: (208) 740-0345

Address: See above

Relationship to permit Holder: Permit holder and his son

3. SOURCE:

GROUND WATER

Method of Determination: IDWR records and the field exam observations.**B. OVERLAP REVIEW**

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

YES Overlap

Water Right No.	Source	Purpose of Use	Basis
65-4362	GW	Stockwater & Domestic	Decreed
65-22706	GW	Stockwater & Commercial	License

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

NO Overlap

Water Right No.	Source	Purpose of Use	Basis
65-4362	GW	Stockwater & Domestic	Decreed
65-22706	GW	Stockwater & Commercial	License

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

GROUND WATER NE¼ NE¼, Sec. 20, Twp 07N, Rge 04W, B.M. PAYETTE County

GROUND WATER NE¼ NE¼, Sec. 20, Twp 07N, Rge 04W, B.M. PAYETTE County

Method of Determination: ArcMap and Field Exam observations.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	
07N	04W	20	X	X	X	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	
07N	04W	20	X	X	X	X													

Method of Determination: ArcMap and Field Exam observations.

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. 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 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

D. FLOW MEASUREMENTS

1. **Measurements:** N/A. An IDWR field exam for permit 65-22706, performed on 02/07/2020, established a theoretical flow rate of 0.45 cfs. for Stockwater and Commercial use. Water rights 65-22706 and 65-4362 (the two overlapping water rights authorized for use at this dairy) were conditioned for a combined flow rate of 0.45 cfs. Greg Davis assured us that no changes have been made to the two wells or the distribution system since the 2020 field exam. The same 0.45 cfs is used for this field exam because the wells and the distribution system have not been altered in any way.

E. FLOW CALCULATIONS

Measured Method: N/A

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

2. Volume Calculations for Other Uses:

Stockwater & Commercial for entire dairy: **168.1 AF**

☒ See Dairy Water Use Spreadsheet

G. NARRATIVE/REMARKS/COMMENTS

On February 21, 2024 Jana Reeder (IDWR) and I conducted a field exam at Davis Dairy for groundwater permit 65-23627. Permit 65-23627 was approved for a total diversion rate of 1.90 cfs (Stockwater 1.79 cfs and Commercial 0.110 cfs). Two overlapping water rights at the dairy, 65-4362 and 65-22706, are authorized for a combined diversion rate of 0.45 cfs. and 132.0 AF for Commercial and Stockwater uses.

Greg Davis (permit holder) and his son Travin discussed development of permit 65-23627 and showed us their water use at the dairy. There are two existing wells approximately 200 feet apart that are tied together into a single distribution line that delivers water throughout the dairy POU. Greg Davis assured us that no changes have been made to the two wells or the distribution system since the 2020 field exam. We inspected the distribution system and determined there was no place to measure the flow rate with the General Electric model PT878 polysonic flowmeter that we brought with us. The pipeline from the wells was buried and multiple buried lines fed troughs in the corrals before the main line from the wells entered the dairy barn. A measurement at the barn would not reflect the total diversion through the system. However, the 0.45 cfs (approximately 200 gpm) covered under the existing rights is a relatively large diversion rate for a dairy of this size according to Jana Reeder (deputy water district 130 water master & ESPA meter compliance specialist). Jana indicated that in her years of experience (100 plus dairies) that a dairy of this size typically has total diversion rates of less than 100 gpm. Mr. Davis indicated that both wells have variable speed pumps (demand driven) which would be further indicative of a total diversion rate of significantly less than 200 gpm.

On February 07, 2020 an IDWR employee performed a field exam at the dairy for permit 65-22706. An inspection of the wells and distribution system on that 2020 field exam also determined that there was no place to use a flowmeter to measure a flow rate. Consequently, that field exam, using the IDWR Dairy Water Use spreadsheet, established a flow rate of 0.45 cfs based on an IDWR-approved theoretical math formula using the horsepower rating of the two pump motors and the pump efficiencies. Greg Davis assured us that no changes have been made to the two wells or the distribution system since the 2020 field exam. Because the distribution system design prevents a flow rate measurement, permit 65-23627 will be licensed for a combined flow rate of 0.45 cfs (from the 2020 field exam) when combined with the two overlapping water rights mentioned in the first paragraph.

The IDWR Dairy Water Use spreadsheet, used on the field exam from 02/07/2020, also determined a combined volume of approximately 138.5 AF for the two associated water rights. Note that the two existing rights, 65-4362 and 65-22706, allow for a combined total of 138.6 AF. I also used the IDWR Dairy Water Use spreadsheet for this field exam to determine if there is some extra volume, above 138.6 AF, that may be licensed for permit 65-23627. Mr. Davis indicated that the dairy has grown since 2020 and he provided a list of the numbers of additional cattle at the dairy. In addition, conversations with Mr. Davis revealed a little more potential volume for miscellaneous uses. The spreadsheet calculations, based on the additional cattle at the dairy, indicate a total volume of 168.1 AF. Permit 65-23627 will be licensed for a volume of 29.5 AF (the amount in excess of the authorized combined volume of 138.6 AF from the two existing rights).

I recommend licensing 65-23627 for a flow rate of 0.45 cfs and 29.5 AF for Stockwater and Commercial uses

I also recommend conditioning 65-23627, when combined with 65-4362 and 65-22706, for a flow rate of 0.45 cfs and 168.1 AF for Stockwater and Commercial uses.

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>Diversion Volume</u>
STOCKWATER	01/01 to 12/31	0.45 CFS	29.5 AF
COMMERCIAL	01/01 to 12/31	0.45 CFS	29.5 AF

Totals: 0.45 CFS 29.5 AF

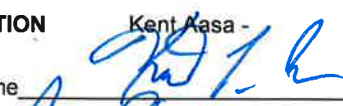
2. Recommended Amendments

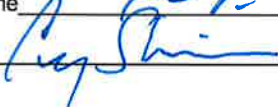
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION

Kent Asa -

Field Examiner's Name  Date 02-29-2024

Reviewer  Date 02-29-2024

65-23627 POD

● 43°56'14.82", -116°50'9.97" ±16ft ▲ 2421ft



● 43°56'15.17", -116°50'7.32" ±88ft ▲ 2425ft



65-23627
Stockwater POU



65-23627
Commercial POU



Field Exam 65-23627

FILE NUMBER 65-23627
REVIEWER KA
DATE February 29, 2024

DAIRIES: WATER USE WORKSHEET

THEORETICAL FLOW ESTIMATION WORKSHEET

REQUIRED DAIRY DATA

NUMBER OF MILKING CATTLE 3200
NUMBER OF DRY CATTLE 300
NUMBER OF REPLACEMENT CATTLE: 0-2 MONTHS 500
3-4 MONTHS 500
5-8 MONTHS 500
9-12 MONTHS 500
13-15 MONTHS 500
16-24 MONTHS 500
ENTER 1 FOR MANUAL COW WASHING, 2 FOR AUTOMATIC COW WASHING,
OR 3 IF SPRINKLERS ARE USED TO FLUSH HOLDING PEN AND WASH COWS 1
IF SPRINKLERS ARE USED: NUMBER OF SPRINKLERS IN HOLDING PEN 0
NOZZLE DISCHARGE (USE 5.0 GPM IF UNKNOWN) 0.00
TOTAL OPERATION TIME OF SPRINKLERS (MIN/DAY) 0
NUMBER OF MILKINGS PER DAY 3
AVG. LBS. OF MILK PRODUCED PER DAY PER ANIMAL (IDAHO AVG IS 70 LBS.) 90
ARE THERE SEPARATE PUMPS FOR COMMERCIAL AND STOCKWATER USES? N
IF SO: HOW MANY HOURS PER DAY DOES THE STOCKWATER PUMP RUN? 0
HOW MANY HOURS PER DAY DOES THE COMMERCIAL PUMP RUN? 0
IF ONLY ONE PUMP, HOW MANY TOTAL HOURS PER DAY DOES IT RUN? 24.0
IS A PLATE COOLER USED? Y
IS PLATE COOLER WATER LATER RECYCLED FOR OTHER USES? (IF NO PLATE
COOLER, LEAVE BLANK) N
ARE CORRAL MISTERS USED IN HOLDING PEN? N
IF USING CORRAL MISTERS: NUMBER OF MISTERS (IF UNKNOWN,
ASSUME 1 MISTER FOR EVERY 5 COWS) 0
NOZZLE DISCHARGE (USE 5 GPM IF UNKNOWN) 0.00
SPRAY INTERVAL (EX - 2 MIN ON EVERY 5 MIN = 2/5) - 0 0
OPERATION TIME OF MISTERS (HRS/DAY) 0
DAYS PER YEAR MISTERS ARE USED 0
ENTER A TOTAL VOLUME IN GPD FOR MISCELLANEOUS WATER USES NOT
INDIVIDUALLY CALCULATED BELOW (EX - RESTROOMS, WASHING MACHINES) - 0

CALCULATIONS

DIVERSION RATE (CFS):

STOCKWATER
MILKING CATTLE (BASED ON MILK PRODUCTION) ***
DRY CATTLE @ 17.0 GPD/HD ***
REPLACEMENT CATTLE ***
TOTAL 0.27

COMMERCIAL
TOTAL 0.27

TOTAL DIVERSION RATE 0.27

DIVERSION VOLUME (AFA):

STOCKWATER
MILKING CATTLE 128.9
DRY CATTLE 4.5
REPLACEMENT CATTLE 20.2
TOTAL 153.7

COMMERCIAL
WASHING OF BULK TANK AND RELATED EQUIPMENT 0.6
BACKFLUSH 0.0
PARLOR/MILKHOUSE/HOLDING PEN CLEANUP 0.0
CATTLE WASHING BASED UPON METHOD OF WASHING 5.4
PLATE COOLER 0.0
CORRAL MISTERS 0.0
MISCELLANEOUS USES 8.4
TOTAL 14.4

TOTAL DIVERSION VOLUME 188.1

CONSUMPTIVE USE VOLUME (AFA)(assuming 100% consumptive):

STOCKWATER 153.7
COMMERCIAL 14.4
TOTAL CONSUMPTIVE USE 188.1

REQUIRED PUMP INFORMATION

	PUMP 1	PUMP 2	PUMP 3	PUMP 4	PUMP 5
PUMP HORSEPOWER (HP)	25.00		0.00	0.00	0.00
PUMP EFFICIENCY (%)	70		70	70	70
LIFT (FT)	230		0	0	0
DISCHARGE PRESSURE (PSI)	40		0	0	0
FRICTION LOSSES (FT)	3.0		0.0	0.0	0.0
HOURS PER DAY PUMP OPERATES	12.0		0.0	0.0	0.0

CALCULATIONS

THEORETICAL FLOW RATE (CFS) *	0.47	0.00	0.00	0.00	0.00
DIVERSION VOLUME (AFA) **	171.3	0.0	0.0	0.0	0.0

* IF PUMP EFFICIENCY IS UNKNOWN, 70% MAY BE ASSUMED.

** DIVERSION VOLUME IS THE ABSOLUTE MAXIMUM VOLUME BASED ON THE
THEORETICAL FLOW RATE ASSUMING PUMP RUNS EVERY DAY OF THE YEAR.

EVALUATION OF EQUIVALENT IRRIGATED ACREAGE

IRRIGATION RIGHT (BEFORE CHANGE)

DIVERSION RATE 4.80 CFS
ACRES OF IRRIGATION 240.0 ACRES
DIVERSION VOLUME 4.0 AC-FT/AC
CONSUMPTIVE USE VOLUME 3.0 AC-FT/AC
IRRIGATION IS BEING CONVERTED FOR WHICH PORTION OF THE
DAIRY OPERATION - STOCKWATER (S), COMMERCIAL (C), OR
BOTH (B)? B

CALCULATIONS

IRRIGATION DIVERSION RATE PER ACRE 0.020 CFS/AC
REDUCTION OF IRRIGATION BASED ON DIVERSION RATE 13.5 ACRES
REDUCTION OF IRRIGATION BASED ON DIVERSION VOLUME 42.0 ACRES
REDUCTION OF IRRIGATION BASED ON CONSUMPTIVE USE 56.0 ACRES

misc uses from 2020 exam
plus CIP line & Tank flush
this exam.

State of Idaho
Department of Water Resources
Attachment to Water Right
65-23627

This map depicts the COMMERCIAL & STOCKWATER 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.



0 0.05 0.1 0.2 Miles

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

