



SPF Water Engineering, LLC
water resource consultants

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WATER RESOURCES
WESTERN REGION

July 26, 2007

Idaho Department of Water Resources
Western Regional Office
2735 Airport Way
Boise, ID 83705-5082

Attention: Steve Lester

Subject: Water Supply, Water Rights, and Water Demands for Choutchourrou Transfer

Dear Steve,

As you requested, enclosed is a spreadsheet identifying the various rights associated with Choutchourrou's dairy including the proposed transferred right. The spreadsheet also identifies the number of associated stock and commercial water uses covered by these water rights. In my review of water right 63-12364, it appears that this right does not list a specific number of stock covered by the right so the numbers provided are my estimates based on a reasonable balance between milking and dry stock. Also enclosed is a dairy water use analysis based on IDWR's Dairy Spreadsheet. Please contact me with any other questions or requests for additional information.

Sincerely,

Scott N. King, P.E.
Senior Project Engineer

File: 408.0010

Choutchourou Transfer
Water Rights and Water Requirements Analysis

July 23, 2007

By: Scott King, SPF Water Engineering LLC
26-Jul-07

	Stockwater: Dairy Cows Number of Animals	Stockwater: Dairy Cows Annual Volume (afa)	Stockwater: Dry Cows Number of Animals	Stockwater: Dry Cows Annual Volume (afa)	Stockwater, Total Number of Animals	Stockwater, Total Annual Volume (afa)	Commercial Annual Volume (afa)	Stockwater and Commercial Total Annual Volume (afa)
63-9179B	400	15.68	135	1.81	535	17.50	17.5	35.00
63-12364	450	17.64	153	2.06	603	19.7	15.1	34.80
63-9179B & 63-12364 combined	850	33.33	288	3.87	1138	37.20	32.60	69.80
63-32654 (transferred from Mellin)	3350	102.17	342	5.63	3692	107.80	0.00	107.80
Grand Total	4200	135.50	630	9.50	4830	145.00	32.60	177.60
Dairy Requirement*	4200	135.50	630	9.50	4830	145	32.7	177.70
*Per IDWR's Dairy Spreadsheet								

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FILE NUMBER _____ Choutchourou Dairy
REVIEWER _____ Scott King
DATE _____ July 11, 2007

DAIRIES: WATER USE WORKSHEET

REQUIRED DAIRY DATA	
NUMBER OF MILKING CATTLE	4200
NUMBER OF DRY CATTLE	530
NUMBER OF REPLACEMENT CATTLE	0
0-2 MONTHS	0
3-4 MONTHS	0
5-8 MONTHS	0
9-12 MONTHS	0
13-15 MONTHS	0
16-24 MONTHS	0
ENTER 1 FOR MANUAL COW WASHING, 2 FOR AUTOMATIC COW WASHING, OR 3 IF SPRINKLERS ARE USED TO FLUSH HOLDING PEN AND WASH COWS	
IF SPRINKLERS ARE USED	3
NUMBER OF SPRINKLERS IN HOLDING PEN	10
NOZZLE DISCHARGE (USE 5.0 GPM IF UNKNOWN)	3.50
TOTAL OPERATION TIME OF SPRINKLERS (MIN/DAY)	600
NUMBER OF MILKINGS PER DAY	2
AVG. LBS. OF MILK PRODUCED PER DAY PER ANIMAL (IDAHO AVG IS 70 LBS.)	70
ARE THERE SEPARATE PUMPS FOR COMMERCIAL AND STOCKWATER USES?	N
IF SO, HOW MANY HOURS PER DAY DOES THE STOCKWATER PUMP RUN?	
HOW MANY HOURS PER DAY DOES THE COMMERCIAL PUMP RUN?	
IF ONLY ONE PUMP, HOW MANY TOTAL HOURS PER DAY DOES IT RUN?	10.0
IS A PLATE COOLER USED?	Y
IS PLATE COOLER WATER LATER RECYCLED FOR OTHER USES? (IF NO PLATE COOLER, LEAVE BLANK)	Y
ARE CORRAL MISTERS USED IN HOLDING PEN?	Y
IF USING CORRAL MISTERS, NUMBER OF MISTERS (IF UNKNOWN, ASSUME 1 MISTER FOR EVERY 5 COWS)	840
NOZZLE DISCHARGE (USE 5 GPH IF UNKNOWN)	5.00
SPRAY INTERVAL (EX. - 2 MIN ON EVERY 5 MIN = 2/5)	1/5
OPERATION TIME OF MISTERS (HRS/DAY)	8
DAYS PER YEAR MISTERS ARE USED	60
ENTER A TOTAL VOLUME IN GPD FOR MISCELLANEOUS WATER USES NOT INDIVIDUALLY CALCULATED BELOW (EX. - RESTROOMS, WASHING MACHINES)	700

CALCULATIONS

DIVERSION RATE (CFS):

STOCKWATER	
MILKING CATTLE (BASED ON MILK PRODUCTION)	***
DRY CATTLE @ 17.0 GPD/HD	***
REPLACEMENT CATTLE	***
TOTAL	0.64
COMMERCIAL	
TOTAL	0.64
TOTAL DIVERSION RATE	0.64

DIVERSION VOLUME (AFA):

STOCKWATER	
MILKING CATTLE	135.5
DRY CATTLE	9.5
REPLACEMENT CATTLE	0.0
TOTAL	145.0
COMMERCIAL	
WASHING OF BULK TANK AND RELATED EQUIPMENT	0.4
BACKFLUSH	4.7
PARLOR/MILKHOUSE/HOLDING PEN CLEANUP	2.0
CATTLE WASHING BASED UPON METHOD OF WASHING	23.5
PLATE COOLER	0.0
CORRAL MISTERS	1.2
MISCELLANEOUS USES	0.8
TOTAL	32.7
TOTAL DIVERSION VOLUME	177.7
CONSUMPTIVE USE VOLUME (AFA)(assuming 100% consumptive):	
STOCKWATER	145.0
COMMERCIAL	32.7
TOTAL CONSUMPTIVE USE	177.7

THEORETICAL FLOW ESTIMATION WORKSHEET

REQUIRED PUMP INFORMATION	PUMP 1	PUMP 2	PUMP 3	PUMP 4	PUMP 5
PUMP HORSEPOWER (HP)	0.00		0.00	0.00	0.00
PUMP EFFICIENCY (%)	70		70	70	70
LIFT (FT)	0		0	0	0
DISCHARGE PRESSURE (PSI)	0		0	0	0
FRICTION LOSSES (FT)	0.0		0.0	0.0	0.0
HOURS PER DAY PUMP OPERATES	0.0		0.0	0.0	0.0

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