State of Idaho
DEPARTMENT OF WATER RESOURCES
322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098
Phone: (208) 287-4800 • Fax: (208) 287-6700 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

January 3, 2017

JAKE AND JENNIFER TRAUGHBER
368 SOUTH 200 EAST
JEROME ID 83338

RESPONSE DEADLINE 2/1/2017

RE: Water Supply Bank Rental Fees for 2017 Rental Agreements

Dear Renter,

The following are your 2017 water rentals from the Water Supply Bank:

Rental	Start	End	Water Right	Rental Volume (AF)	Total Rental Fee	Owner Fee (90%)	Admin Fee (10%)	Rental Fee Due Date
1	2016	2019	36-2087K	4.2	$71.40	$64.26	$7.14	1/1/2017
1	2016	2019	36-2113K	1.7	$28.90	$26.01	$2.89	1/1/2017
1	2016	2019	36-2161K	1	$17.00	$15.30	$1.70	1/1/2017
1	2016	2019	36-2289M	0.6	$10.20	$9.18	$1.02	1/1/2017
1	2016	2019	36-2311K	2.1	$35.70	$32.13	$3.57	1/1/2017
1	2016	2019	36-2500K	2.1	$35.70	$32.13	$3.57	1/1/2017
1	2016	2019	36-2614K	3.2	$54.40	$48.96	$5.44	1/1/2017
1	2016	2019	36-7307K	2.1	$35.70	$32.13	$3.57	1/1/2017
1	2016	2019	36-7362K	2.4	$40.80	$36.72	$4.08	1/1/2017
1	2016	2019	36-7477K	1.1	$18.70	$16.83	$1.87	1/1/2017
1	2016	2019	36-7606K	1	$17.00	$15.30	$1.70	1/1/2017
1	2016	2019	36-7779K	3.3	$56.10	$50.49	$5.61	1/1/2017
1	2016	2019	36-7832K	0.5	$8.50	$7.65	$0.85	1/1/2017
1	2016	2019	36-10225K	1	$17.00	$15.30	$1.70	1/1/2017
1	2016	2019	36-15169K	17.8	$302.60	$272.34	$30.26	1/1/2017
			Total	44.1	$749.70	$674.73	$74.97	

Our records indicate that payment has not yet been received for the above water right rentals.

If you have not already done so, please remit payment of **$749.70** prior to the due dates above and enclose a copy of this letter with your payment.

If you have questions about your rental, you can contact me at 208-287-4918.

Regards,

Remington Buyer
Water Supply Bank Coordinator

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WATER SUPPLY BANK RENTAL AGREEMENT

RECEIVED
DEC 23 2015
DEPARTMENT OF WATER RESOURCES

This is to certify that: **JAKE AND JENNIFER TRAUGHBER**
368 SOUTH 200 EAST
JEROME ID 83338
208-280-1113

filed an application to rent water from the Water Supply Bank ("Bank"). The Idaho Water Resource Board ("Board"), being authorized to operate a Bank and to contract by and through the Director of the Idaho Department of Water Resources ("Director, Department") for rental of water from the Bank, agrees to rent water as follows:

Summary of Water Rights or Portions Rented from the Bank

Water Right	Priority Date	Source	Tributary	Rented Rate	Annual Rented Volume
36-2087K	1/23/1950	Ground Water	NA	0.02 cfs	4.2 af
36-2113K	3/12/1951	Ground Water	NA	0.01 cfs	1.7 af
36-2161K	1/11/1952	Ground Water	NA	0.01 cfs	1.0 af
36-2289M	12/2/1955	Ground Water	NA	0.01 cfs	0.6 af
36-2311K	11/23/1956	Ground Water	NA	0.01 cfs	2.1 af
36-2500K	7/18/1961	Ground Water	NA	0.01 cfs	2.1 af
36-2614K	6/7/1965	Ground Water	NA	0.02 cfs	3.2 af
36-7307K	2/26/1973	Ground Water	NA	0.02 cfs	2.1 af
36-7362K	8/2/1973	Ground Water	NA	0.01 cfs	2.4 af
36-7477K	5/28/1974	Ground Water	NA	0.01 cfs	1.1 af
36-7606K	2/4/1976	Ground Water	NA	0.01 cfs	1.0 af
36-7779K	2/22/1978	Ground Water	NA	0.02 cfs	3.3 af
36-7832K	12/11/1978	Ground Water	NA	0.01 cfs	0.5 af
36-10225K	5/1/1985	Ground Water	NA	0.01 cfs	1.0 af
36-15169K	12/11/1969	Ground Water	NA	0.04 cfs	17.8 af
		Total Annual Combined Limit		**0.18 cfs**	**44.1 af**

Annual Combined Rental Totals **0.18 cfs** **44.1 af***

* This rental is limited to 28.5 af due to a change in nature of use

Term of Rental: **This rental is in effect from the day the Idaho Water Resource Board signs the rental agreement and shall be in effect until December 31, 2019.**

Rental Fee: **Years 2016-2017 $749.70 annually**
Years 2018-2019 $882.00 annually

The fee for rental of the above-described water is $749.70 annually for years 2016-2017 and $882.00 annually for years 2018-2019. Ten percent ($74.97/$88.20) will go to the Department for administrative costs, and the remainder will be paid to the lessor(s). An annual payment shall be received by the Department prior to January 1 each year for the duration of the rental period. The agreement will be void if payment is not received prior to the due date in a given year. To terminate the agreement prior to the end of the rental period, written notice must be received by the Department at least 30 days prior to the rental fee due date. No rental fees will be refunded once the fee is collected and the start date for a Rental Agreement has passed.

Detailed water right conditions are attached.

SUPPORT DATA
IN FILE # 36-2087K

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WATER SUPPLY BANK RENTAL AGREEMENT

The undersigned renter agrees to use the water rented under this agreement in accordance with the Water Supply Bank rules and in compliance with the limitations and conditions of use described in this agreement:

Signature of Renter	Jake Traughber Printed Name and Title*	12-15-15 Date
Signature of Renter	Jennifer Traughber Printed Name and Title*	12-15-15 Date

*Please provide title of signatory if signing on behalf of a company or organization or with power of attorney

Having determined that this agreement satisfied the provisions of Idaho Code § 42-1763 and IDAPA 37.02.03.030 (Water Supply Bank Rule 30), for the rental and use of water under the terms and condition herein provided, and none other, I hereby execute this Rental Agreement on behalf of the Idaho Water Resource Board.

By _____ Date 12/24/2015
BRIAN PATTON, Acting Administrator
Idaho Water Resource Board

Rental Approved by IDWR _____ Date 12-24-2015

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WATER SUPPLY BANK RENTAL AGREEMENT

WATER USE DETAILS

LOCATION OF POINT(S) OF DIVERSION

GROUND WATER SW¼NW¼ Sec. 9 Twp 09S Rge 17E JEROME County

BENEFICIAL USE

COMMERCIAL AND STOCKWATER

SEASON OF USE

01/01 TO 12/31

RENTER'S PLACE OF USE: COMMERCIAL AND 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	
09N	17E	9							X										

CONDITIONS APPLICABLE TO ALL RENTED WATER RIGHTS

1. The use of water under this agreement shall be subject to the provisions of Idaho Code § 42-1766.
2. Rental of the specified right from the bank does not, in itself, confirm the validity of the right or any elements of the water right, or improve the status of the right including the notion of resumption of use. It does not preclude the opportunity for review of the validity of this water right in any other department application process.
3. Use of water under this agreement does not constitute a dedication of the water to renter's place of use, and upon expiration of this agreement, the points of diversion and place of use of the water shall revert to those authorized under the water right and/or again be available to rent from the bank.
4. This rental does not grant any right-of-way or easement to use the diversion works or conveyance works of another party.
5. Use of water under this agreement shall not prejudice any action of the Department in its consideration of an application for transfer or permit filed by the applicant for this same use.
6. Renter agrees to comply with all applicable state and federal laws while using water under this agreement.
7. Renter agrees to hold the Board, the Director and the state of Idaho harmless from all liability on account of negligent acts of the renter while using water.
8. Renter acknowledges and agrees that the Director may terminate diversion of water if the Director determines there is not a sufficient water supply for the priority of the right or portion thereof being rented.
9. Failure of the renter to comply with the conditions of this agreement is cause for the Director to rescind approval of the rental agreement.
10. The right holder shall maintain a totalizing measuring device of a type approved by the Department as a part of the diverting works.
11. The water rented under this agreement is appurtenant to irrigation of 12.3 acres.
12. This rental agreement does not authorize the construction of a well.
13. Use of water under this agreement will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 130.

CONDITIONS APPLICABLE TO RIGHTS 36-10225K

14. This water right is an enlargement of Rights 36-2087K, 36-2113K, 36-2161K, 36-2289M, 36-2311K, 36-2500K, 36-2614K, 36-7307K, 36-7362K, 36-7477K, 36-7606K, 36-7779K, 36-7832K, and 36-15169K pursuant to Section 42-1426, Idaho Code. It is subordinate to all water rights with a priority date earlier than April 12, 1994, that are not decreed as enlargements pursuant to Section 42-1426, Idaho Code. As between water rights decreed as enlargements pursuant to Section 42-1426, Idaho Code, the earlier priority right is the superior right.

Idaho Water Resource Board

Water Supply Bank Rental Agreement

Effective until December 31, 2019

This map depicts the **rental place of use** pursuant to the rental agreement and is attached to the agreement solely for illustrative purposes.

2013 USDA-FSA Aerial Photography

- Authorized Rental Point of Diversion
- Authorized Rental Place of Use
- Townships
- PLS Sections
- Quarter Quarters

N

0 200 Yards

Form 42-1761-2 01/15

STATE OF IDAHO
WATER RESOURCE BOARD

RECEIVED
SEP 16 2015
DEPARTMENT OF
WATER RESOURCES

APPLICATION TO RENT WATER FROM THE BOARD'S WATER SUPPLY BANK

Applicant Name: Jake and Jennifer Traughber

Is this application being submitted with a lease application as a lease/rental package? Yes ☐ No ☑

An *Application to Rent Water from the Board's Water Supply Bank* must be completed in accordance with the minimum requirement checklist below to be acceptable for processing by the Idaho Department of Water Resources (IDWR). This checklist is part of the rental application and must be included with the rental application. **Applications that do not meet the minimum requirements will not be placed in the processing queue and may be returned until all minimum requirements have been met.**

Applications to rent water should be submitted well in advance of the desired start date for the use of water. Rental applications may be submitted as early as November 1 of the year prior to the intended use of rental water. Rental applications submitted more than one year in advance of the proposed start date for water use will not be accepted and will be returned to applicants. Rental applications will not be processed if they are received after the end of the rental season of use.

One rental application per beneficial use of water. One rental application can be submitted if you propose to rent water from multiple sources. For multiple beneficial uses of water, individual rental requests should be submitted for each unique beneficial use of water.

For additional instructions on completing a rental application, visit the Department's website at www.idwr.idaho.gov.

Checked All Items as Either Attached (Yes) or Not Applicable (N/A)

		YES	
		☑	Completed *Application to Rent Water from the Board's Water Supply Bank*
Attachment	**N/A**	**YES**	
2		☑	A map showing the proposed point(s) of diversion, place(s) of use, and water diversion and distribution systems proposed to be used with your rental request
3A	☐	☑	Detailed information on a proposed use of rental water
3E	☐	☑	Authorization from the owner/operator of the rental point(s) of diversion
3G	☐	☑	Water modeling to account for the impacts of the rental request
3J	☐	☑	Documents justifying a need to rent water for irrigation at a rate of flow greater than 0.02 cfs/acre
3K	☐	☑	Authorization from the owner/operator of the property at the proposed rental place(s) of use
4B	☐	☑	Explanation of how the rental water will sufficiently accomplish your rental purposes
4C	☐	☑	Explanation of consumptive use amounts for water rights experiencing a change in nature of use

Department Use Only – Proposed Water Right(s)

STATE OF IDAHO
WATER RESOURCE BOARD

Application to Rent Water (Continued)

1. CONTACT INFORMATION

A. Applicant Jake and Jennifer Traughber

Mailing Address 368 South 200 East Jerome Idaho 83338

Email Address _____ Phone Number (208) 280-1113

B. Is this application being completed by an authorized representative on behalf of the applicant? Yes ☑ No ☐

If yes, representatives (includes company employees if the applicant is a corporation, as well as legal counsel or consultants) should provide their information below if they desire to be included on correspondence with the rental applicant.

Representative Greg Sullivan Professional Title Engineer

Organization Brockway Engineering Relationship to Applicant Consultant

Mailing Address 2016 North Washington Street Suite 4 Twin Falls, Idaho 83301

Email Address greg.sullivan@brockwayeng.com Phone Number 208-736-8543

2. MAP

Create a map of the proposed point(s) of diversion, place(s) of use, and water diversion, delivery and distribution systems. Make sure the place of use is outlined with an obvious, bolded line. For irrigation purposes, note that the place of use outlined on your map cannot exceed the number of acres you are proposing to rent. Attach the map to this application and label it **Attachment 2.**

3. DESCRIPTION OF PROPOSED USE FOR RENTAL WATER

A. Describe the purpose of your rental request. Include any anticipated rates of water application, water use practices or number of stock (if any). If the proposed use is not for irrigation, please provide a detailed description of the proposed use and how you determined the amount of rental water required. Attach additional sheets if required and label it **Attachment 3A:**

Intended use is for stock and commercial water use at an existing dairy facility. See attached water demand spreadsheet. It is proposed to rent 38.0 acre-feet of water but only utilize 28.5 acre-feet of water at the dairy.

B. Enter the desired and/or minimum necessary rates of flow, volume, or irrigable acres requested for your rental purposes:

Desired Rate (Cubic Feet/Second)	Desired Volume (Acre-Foot)	Minimum Rate* (Cubic Feet/Second)	Minimum Volume* (Acre-Foot)	Acres (if applicable) (Acre)
0.18 CFS	38.0 AF	0.18 CFS	38.0 AF	N/A AC

Sometimes water rights available for rent provide an exceptionally low rate per acre and/or low volume per acre. This section is meant to establish an acceptable range of water sufficient for your proposed water use. Please see question 4B and complete if necessary.

C. Enter the proposed start date and latest possible start date for using rental water. Also provide the number of years you would like to rent water:

Proposed Start Date (month/day/year)	Latest Possible Start (month/day/year)	* Proposed Rental Duration (Max 5 Years)	** For multi-year rentals, indicate whether you desire to rent water for remaining years if a rental request cannot be approved for the first year?	
1/01/2016	12/31/2016	4	☑ **Yes**, approve rental for all remaining future years.	☐ **No**, return rental request if first year is unapprovable.

* ***The number of years permissible for a rental is subject to the lease contract duration for the water right(s) being rented.***

** ***Subject to the availability of rentable water. A multi-year rental that cannot begin during the first year requested may be approved for some or all remaining years, depending on availabilty. Rental requests will be returned if no water is available to rent in the first and/or subsequent years of the rental request.***

STATE OF IDAHO
WATER RESOURCE BOARD

Application to Rent Water (Continued)

D. Refer to the map you created in item 2 and specify the location of the point(s) of diversion (POD) from which rental water is proposed to be diverted:

Water Source	TWP	RGE	SEC	¼	¼	¼	County	Other water rights for the same purpose diverted from this POD
Ground Water	09S	17E	9		SW	NW	Jerome	
Ground Water	09S	17E	9		SW	NW	Jerome	

The entry in this grid must match the map from item 2 on the application.

E. Do you own and/or possess the authority to divert water from the above POD(s)? Yes ☑ No ☐
If no, provide documentation from the owner/operator confirming your authorization to use the POD(s) and label it **Attachment 3E.**

F. Do any POD(s) identified in Question 3D divert from a water source that may require water modeling? Yes ☑ No ☐
Refer to the Water Modeling Requirements Information Sheet to determine if a rental POD may require water modeling.

G. Has water modeling been provided with your rental request? Yes ☑ No ☐

If yes, include as **Attachment 3G.** Otherwise please explain why modeling was not provided:

Rental applications that require modeling will be returned if modeling is not provided.

H. Specify the proposed beneficial use: ☐ Irrigation ☑ Commercial ☐ Industrial ☐ Municipal
☐ Groundwater Recharge ☐ Mining ☑ Stockwater ☐ Other: _____

I. Refer to the map you created in item 2 and specify below the places you propose to use water. If for irrigation, specify the number of acres to be irrigated per ¼ ¼ tract. Otherwise indicate usage by marking the ¼ ¼ tracts with the first letter of your proposed use identified above:

TWP	RGE	SEC	NE				NW				SW				SE				TOTALS
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
09S	17E	9							X										

The entry in this grid must match the map from item 2 on the application. **Total Acres (for irrigation)**

J. For irrigation uses, do you propose a water diversion rate greater than 0.02 cfs/acre? N/A ☑ Yes ☐ No ☐
If yes, explain the justification for this rate of flow and attach any supporting documents as **Attachment 3J**:

K. Do you own the land at the proposed rental place of use (POU)? Yes ☑ No ☐
If no, attach documentation from the POU owner/operator confirming your authorization to use the POU and label it **Attachment 3K.**

L. Describe your water distribution system and how water will be delivered from the POD(s) to the proposed POU(s):
Existing well, mainlines and delivery system.

Application to Rent Water (Continued)

M. List all other water rights and sources of water at the rental place of use for the same purpose and explain why additional water is required. Include privately owned water rights and water received from a municipal supplier, an irrigation district, a canal company, or any other water deliver entity:
36-15271

4. RENTAL REQUESTS FOR SPECIFIC WATER RIGHTS

A. Are you requesting to rent specific water rights? Yes ☑ No ☐
If yes, specify below the water rights you are requesting to rent. Otherwise continue to Section 5 of this application form.

Please note: Diversion rates and volumes to be rented from a leased water right must be proportionate to the per acre diversion rates and per acre volume limits of the water right leased to the Bank. Applicants should query a water right's rental availability by reviewing active lease and rental documents, searchable via IDWR's website, to ensure all elements of a water right remain available in sufficient quantity to satisfy a rental request.

Water rights identified below must either already be leased to the Bank or a lease proposal should accompany the rental request. **Rental requests for water rights not yet leased to the Bank will be returned if companion lease applications are not provided with the rental request.**

For leased rights with combined limits, applicants should request to rent against the combined limit diversion rate, volume or acre limits.

Elements of Water Rights Leased to the Bank (Contract Details)								Leased totals minus water actively engaged in rental agreement equals rental availability	Rental Request		
Water Right Number	Nature of Use	Water Source	Rate (CFS)	Volume (AF)	Acres (AC)	Start (year)	End (year)		Rate (CFS)	Vol. (AF)	Acres (AC)
	See attached water right rental list with diversion rates and volumes										
Applicants must ensure the requested rate per acre and volume per acre do not exceed the rate per acre and volume per acre that have been leased to the Water Supply Bank								TOTAL	0.18 CFS	38.0 AF	9.5 AC

Attach multiple copies of this page if space above is insufficient to list all water rights requested to be rented on this application.

B. If water right conditions, combined limits, or the sum of all water right elements being requested provide an unconventional duty of water (e.g., an unusually low rate per acre or volume per acre for irrigation use), explain how your proposed rental will sufficiently accomplish your intended purposes. Attach a separate page if space is insufficient and label it **Attachment 4B:**
N/A

Application to Rent Water (Continued)

C. Does your rental request propose to change the nature of use for any water right(s) being requested? Yes ☑ No ☐

If yes, explain how the water right(s) will be converted to new uses. Include the historic, consumptive use amounts for the water right being rented, as well as the new consumptive use amount for your proposed beneficial use. Attach a separate page if space is insufficient and label it **Attachment 4C:**

The proposed rented water rights are for irrigation use. A 3.0 acre-feet/acre of consumptive use was used to calculate the consumptive volume of 28.5 afa.

5. ADDITIONAL INFORMATION

A. Is this the first time that rental water is being requested for this purpose at the rental place of use? Yes ☐ No ☑

If no, list previous rental requests/agreements and explain why you have not secured a permanent water right for your needs:

Previous rental contracts have been secured for 2014 and 2015. No additional water rights have been located that are available for purchase and permanent transfer.

B. Have you or do you intend to submit an application for permit or transfer proposing a similar use as this rental? Yes ☐ No ☑

If yes, describe:

C. Was this rental application submitted in response to a Notice of Violation (NOV) or a pending NOV? Yes ☐ No ☑

If yes, describe the date and location of the NOV.

DECLARATION

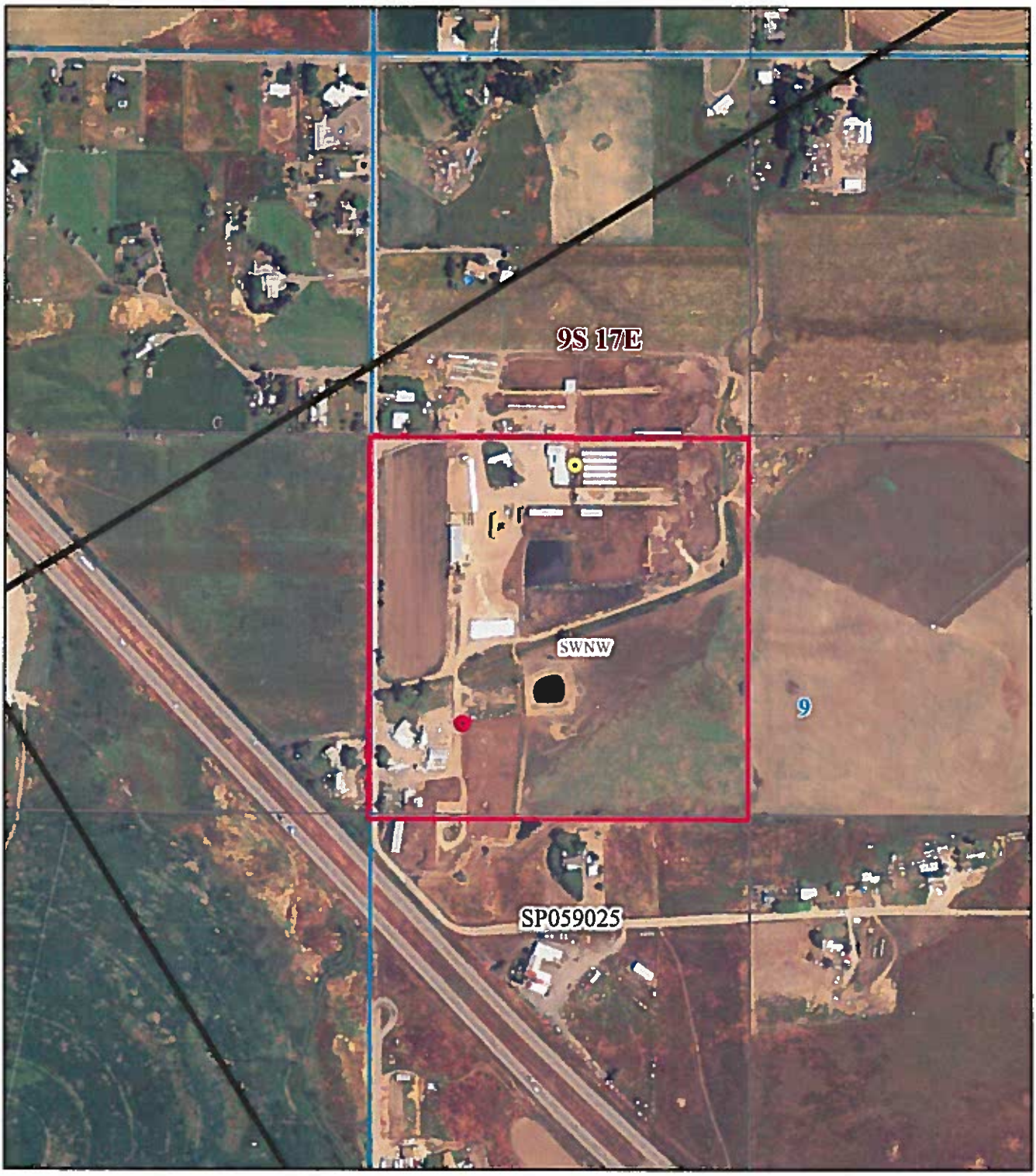
I hereby assert that the information contained in this application is true to the best of my knowledge. I understand that any willful misrepresentations made in this application may result in rejection of the application or cancellation of an approval. I understand that if this rental application is approved, it will be subject to the provisions of Section 42-1766, Idaho Code and all applicable state and federal laws.

Jake Traughber	Jake Traughber	9-14-15
Signature of Applicant	Printed Name of Applicant	Date
Jennifer Traughber	Jennifer Traughber	9-14-15
Signature of Representative	Printed Name of Representative	Date

Mail to:

Idaho Department of Water Resources
P.O. Box 83720
Boise, ID 83720-0098

Path: F:\Projects\Traughber Dairy\Arcview Maps\WSB Rental 36-15271.mxd



0 200 400 800 Feet

TRAUGHBER - WATER SUPPLY BANK
RENTAL 2015, 36-15271
NAIP 2011 AERIAL PHOTO.

Legend

- Well
- Water_Rights_POD
- Water_Rights_POU
- ESPA CELLS
- twnshp
- Sections
- QQ Lines

N

BROCKWAY ENGINEERING, PLLC.
ALR - OCT. 16, 2013

Multiple Irrigation to Stock and Commercial			
Total Acres	1009.6		
CFS	19.65		
AFA	4038.4	4.00	AFA/acre
Acres wsb/ Transfering	9.5		
	0.00941	%	

Water Right	Amount				WSB Rental Amount	
	cfs	AFA	Acres	Acre Limit	cfs	AFA
36-2087K	1.99	504.8	126.2		0.02	3.2
36-2113K	1.03	205.2	51.3		0.01	1.3
36-2161K	0.6	122	30.5		0.01	0.8
36-2289M	0.16	66.4	16.6		0.00	0.4
36-2311K	1.24	248	62		0.01	1.6
36-2500K	0.82	251.6	62.9		0.01	1.6
36-2614K	1.69	386.4	96.6		0.02	2.5
36-7307K	1.27	256.8	64.2	1009.6	0.01	1.7
36-7362K	2.05	866.1	639.3		0.02	5.6
36-7477K	0.66	131.2	32.8		0.01	0.8
36-7606K	0.61	124	31		0.01	0.8
36-7779K	1.93	401.2	100.3		0.02	2.6
36-7832K	0.16	62.8	15.7		0.00	0.4
36-10225K	0.58	120.4	30.1		0.01	0.8
36-15169K	5.76	2156	539		0.05	13.9
Total	20.55	5902.9			0.19	38.0

Rental Amount

	9.5	Acres
	0.18	CFS
Volume at 4.0 acre-ft/acre	38.0	AFA
Volume at 3.0 acre-ft/acre	28.5	AFA

Multiple Irrigation to Stock and Commercial			
Total Acres	1009.6		
CFS	19.65		
AFA	4038.4	4.00	AFA/acre
Acres wsb/ Transfering	9.5		
	0.00941	%	

Water Right	Amount				WSB Rental Amount	
	cfs	AFA	Acres	Acre Limit	cfs	AFA
36-2087K	1.99	504.8	126.2		0.02	3.2
36-2113K	1.03	205.2	51.3		0.01	1.3
36-2161K	0.6	122	30.5		0.01	0.8
36-2289M	0.16	66.4	16.6		0.00	0.4
36-2311K	1.24	248	62		0.01	1.6
36-2500K	0.82	251.6	62.9		0.01	1.6
36-2614K	1.69	386.4	96.6		0.02	2.5
36-7307K	1.27	256.8	64.2	1009.6	0.01	1.7
36-7362K	2.05	866.1	639.3		0.02	5.6
36-7477K	0.66	131.2	32.8		0.01	0.8
36-7606K	0.61	124	31		0.01	0.8
36-7779K	1.93	401.2	100.3		0.02	2.6
36-7832K	0.16	62.8	15.7		0.00	0.4
36-10225K	0.58	120.4	30.1		0.01	0.8
36-15169K	5.76	2156	539		0.05	13.9
Total	20.55	5902.9			0.19	38.0

Rental Amount

	9.5	Acres
	0.18	CFS
Volume at 4.0 acre-ft/acre	38.0	AFA
Volume at 3.0 acre-ft/acre	28.5	AFA

Mitigation Analysis Period

Trimester

Trimester Annual | 1 | 2 | Trimester AF/T

Total Reach Depletion Impacts

AF/T:	0.0	0.0	0.1	0.2	0.05	1.78	0.3	0.2	0.0	0.1	0.0

One-Way Analysis of Independent Transfers

Transfer 1 : K & K Real Estate LLC to Troughber 2010-2016 Rental

100.0% Pre-SS 38.0 AFA 8.5 Acres $ 646.00
100.0% Post-SS 28.5 AFA 8.5 Acres

WR No.	Div Rate (CFS)	Con. Vol. (AFA)	No. of Irr. Acres	Priority Date	POD Location	Dedicated Vol. AFA/ AFT	Model Node

Impact by Reach (AF/Trimester)

	Ashton to Rexburg	Hesse to Shelley	Shelley to Nr Bickft	Nr Bickft To Neeley	Neeley to Minidoka	Dev Wbl To Buhl	Buhl to 1000 Spr	1000 Spr	1000 Spr to Milad	Milad	Milad to Bancroft
Transfer 1: Proposed Steady State Impacts following Transfer											
Pre-SS	0.01	0.02	0.13	0.44	0.12	4.68	4.25	2.04	0.16	0.78	0.03
Post-SS	0.01	0.02	0.13	0.45	0.12	4.69	4.25	2.04	0.16	0.78	0.03
Transfer: Worst Case Transient State Impacts following Transfer											
Pre-TS	0.01	0.02	0.13	0.44	0.12	4.66	4.25	2.04	0.16	0.78	0.03
Post-TS	0.02	0.02	0.18	0.64	0.17	6.46	4.54	2.21	0.18	0.80	0.03
Steady State Analysis: Mitigation Check 1 - >10% of Historical	0.6%	0.4%	0.3%	0.3%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mitigation Check 2: > 2 AF/T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mitigation Check 3 - >10% of Total	0.1%	0.1%	1.0%	3.5%	0.0%	37.6%	33.6%	16.1%	1.3%	6.1%	0.2%
Mitigation Required?	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Mitigation Vol. Req'd (ac-ft)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transient State Analysis: Mitigation Check 1 - >10% of Historical	23.1%	30.2%	40.4%	44.1%	41.6%	37.87%	8.6%	8.3%	9.7%	14.4%	12.0%
Mitigation Check 2: > 2 AF/T	0.0	0.0	0.1	0.2	0.05	1.78	0.3	0.2	0.0	0.1	0.0
Mitigation Required?	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Mitigation Vol. Req'd (ac-ft)	0.0	0.0	0.1	0.2	0.0	1.78	0.3	0.2	0.0	0.1	0.0

Read Me

Transfer 2 : Notch Butte

0.0% Pre-SS 0.0 AFA 0.0 Acres
0.0% Post-SS 0.0 AFA 0.0 Acres

WR No.	Div Rate (CFS)	Con. Vol. (AFA)	No. of Irr. Acres	Priority Date	POD Location	Dedicated Vol. AFA/ AFT	Model Node

Impact by Reach (AF/Trimester)

	Ashton to Rexburg	Hesse to Shelley	Shelley to Nr Bickft	Nr Bickft To Neeley	Neeley to Minidoka	Dev Wbl To Buhl	Buhl to 1000 Spr	1000 Spr	1000 Spr to Milad	Milad	Milad to Bancroft
Transfer: Proposed Steady State Impacts following Transfer											
Pre-SS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Post-SS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Transfer 1: Worst Case Transient State Impacts following Transfer											
Pre-TS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Post-TS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Steady State Analysis: Mitigation Check 1 - >10% of Historical	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.0%	0.0%	0.0%	0.0%	0.0%
Mitigation Check 2: > 2 AF/T	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0
Mitigation Check 3 - >10% of Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mitigation Required?	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Mitigation Vol. Req'd (ac-ft)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transient State Analysis: Mitigation Check 1 - >10% of Historical	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.0%	0.0%	0.0%	0.0%	0.0%
Mitigation Check 2: > 2 AF/T	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0
Mitigation Required?	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Mitigation Vol. Req'd (ac-ft)	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0

Evaluation of overall mitigation requirements per reach Steady State and Transient State, and Off-Setting Benefits (Sum of reach debits only where mitigation is required and credits)

Carry out one way analysis. If reach depletions go up, it is a debit, if they go down, it is a credit. Sum all debits, only where mitigation is required (dark yellow), and all credits (light yellow). Mitigation is required for the full amount of the summed values if greater than zero.

Steady state analysis represents permanent mitigation requirements at future steady state (or last timestep from the ESPAM Transfer Tool model run).

Transient state analysis represents mitigation requirements for the worst or maximum time step in the model run.

Steady State Summary of Modified Stream Depletions Following Transfer(s)
Impact by Reach (AF/Trimester)

	Ashton to Rexburg	Hesse to Shelley	Shelley to Nr Bickft	Nr Bickft To Neeley	Neeley to Minidoka	Dev. Wbl. To Buhl	Buhl to 1000 Spr	1000 Spr	1000 Spr to Milad	Milad	Milad to Bancroft
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Summary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Evaluation of transient state mitigation requirement is not comprehensive across all time steps. Instead this evaluation finds the maximum stream depletion following the start of the transfer and looks at depletion amounts from that time step. In many instances this depletion is greater than the depletion associated with the steady state condition or final time step. This evaluation is merely an indicator of whether transient depletions must be considered, not an indicator of all transient impacts.

Transient State Summary of Modified Stream Depletions Following Transfer(s)
Impact by Reach (AF/Trimester)

	Ashton to Rexburg	Hesse to Shelley	Shelley to Nr Bickft	Nr Bickft To Neeley	Neeley to Minidoka	Dev. Wbl. To Buhl	Buhl to 1000 Spr	1000 Spr	1000 Spr to Milad	Milad	Milad to Bancroft
1	0.0	0.0	0.1	0.2	0.0	1.78	0.3	0.2	0.0	0.1	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Evaluation of Permanent Mitigation Efforts (non-use, acreage consolidation) In Addition to Off-Setting Transfer Benefits - Steady State Evaluation Only

Set Aside 1 (Non-Use/Desiccation):

WR No.	Div. Rate (CFS)	Con. Vol. (AFA)	No. of Irr. Acres	Priority Date	POD Location	Dedicated Vol. AFA/ AFT	Model Node

Non-Use: Proposed Steady State Impacts following Change

Non-Use 1: Worst Case Transient State Impacts following Change

Impact by Reach (AF/Trimester)

	Ashton to Rexburg	Hesse to Shelley	Shelley to Nr Bickft	Nr Bickft To Neeley	Neeley to Minidoka	Dev. Wbl. To Buhl	Buhl to 1000 Spr	1000 Spr	1000 Spr to Milad	Milad	Milad to Bancroft
SS Reach Impacts:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TS Reach Impacts:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Reset Fds

Re-evaluation of overall mitigation requirements per reach, Steady State Only (Sum of reach debits only where mitigation is required and credits)

Steady State Summary of Modified Stream Depletions Following Transfer(s)
Impact by Reach (AF/Trimester)

	Ashton to Rexburg	Hesse to Shelley	Shelley to Nr Bickft	Nr Bickft To Neeley	Neeley to Minidoka	Dev. Wbl. To Buhl	Buhl to 1000 Spr	1000 Spr	1000 Spr to Milad	Milad	Milad to Bancroft
Total 1- Way Transfer Depletions:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Mitigation Efforts:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Transient State Summary of Modified Stream Depletions Following Transfer(s)
Impact by Reach (AF/Trimester)

	Ashton to Rexburg	Hesse to Shelley	Shelley to Nr Bickft	Nr Bickft To Neeley	Neeley to Minidoka	Dev. Wbl. To Buhl	Buhl to 1000 Spr	1000 Spr	1000 Spr to Milad	Milad	Milad to Bancroft
Total 1- Way Transfer Depletions:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Mitigation Efforts:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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ENTER STARTING DATE FOR SIMULATION, THEN PUSH "UPDATE DATES" BUTTON		TRANSFER NO:	
YEAR	1950	TRANSFER NAME:	
SEASON	SPRING		

38.0 AFA

38.0 AFA

ENTER CELL LOCATIONS:	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	59	50		
COLUMN	25	16		

TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL With Transfer AF/TRIMESTER	FROM1 WELL Without Transfer AF/TRIMESTER	FROM2 WELL With Transfer AF/TRIMESTER	FROM2 WELL Without Transfer AF/TRIMESTER	FROM3 WELL With Transfer AF/TRIMESTER	FROM3 WELL Without Transfer AF/TRIMESTER
SPR 1950	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1950	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1950	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1951	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1951	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1951	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1952	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1952	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1952	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1953	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1953	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1953	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1954	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1954	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1954	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1955	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1955	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1955	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1956	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1956	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1956	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1957	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1957	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1957	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1958	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1958	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1958	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1959	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1959	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1959	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1960	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1960	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1960	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1961	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1961	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1961	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1962	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1962	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1962	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1963	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1963	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1963	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1964	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1964	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1964	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1965	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1965	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1965	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1966	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1966	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1966	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1967	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1967	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1967	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1968	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1968	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1968	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1969	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1969	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1969	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1970	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1970	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1970	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1971	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1971	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1971	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1972	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1972	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1972	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1973	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1973	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1973	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1974	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1974	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1974	0.0	12.7	12.7	0.0	0.0	0.0	0.0

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ENTER STARTING DATE FOR SIMULATION. THEN PUSH "UPDATE DATES" BUTTON

YEAR: 1950

SEASON: SPRING

TRANSFER NO:

TRANSFER NAME:

ENTER CELL LOCATIONS:

	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	59	50		
COLUMN	25	16		

38.0 AFA

38.0 AFA

TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL With Transfer AF/TRIMESTER	FROM1 WELL Without Transfer AF/TRIMESTER	FROM2 WELL With Transfer AF/TRIMESTER	FROM2 WELL Without Transfer AF/TRIMESTER	FROM3 WELL With Transfer AF/TRIMESTER	FROM3 WELL Without Transfer AF/TRIMESTER
SPR 1975	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1975	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1975	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1976	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1976	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1976	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1977	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1977	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1977	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1978	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1978	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1978	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1979	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1979	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1979	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1980	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1980	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1980	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1981	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1981	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1981	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1982	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1982	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1982	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1983	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1983	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1983	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1984	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1984	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1984	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1985	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1985	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1985	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1986	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1986	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1986	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1987	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1987	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1987	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1988	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1988	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1988	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1989	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1989	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1989	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1990	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1990	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1990	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1991	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1991	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1991	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1992	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1992	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1992	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1993	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1993	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1993	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1994	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1994	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1994	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1995	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1995	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1995	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1996	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1996	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1996	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1997	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1997	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1997	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1998	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1998	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1998	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 1999	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 1999	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 1999	0.0	12.7	12.7	0.0	0.0	0.0	0.0

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ENTER STARTING DATE FOR SIMULATION, THEN PUSH "UPDATE DATES" BUTTON

YEAR 1950

SEASON SPRING

TRANSFER NO:

TRANSFER NAME:

ENTER CELL LOCATIONS:

	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	59	50		
COLUMN	25	16		

38.0 AFA

38.0 AFA

TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL With Transfer AF/TRIMESTER	FROM1 WELL Without Transfer AF/TRIMESTER	FROM2 WELL With Transfer AF/TRIMESTER	FROM2 WELL Without Transfer AF/TRIMESTER	FROM3 WELL With Transfer AF/TRIMESTER	FROM3 WELL Without Transfer AF/TRIMESTER
SPR 2000	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2000	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2000	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2001	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2001	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2001	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2002	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2002	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2002	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2003	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2003	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2003	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2004	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2004	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2004	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2005	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2005	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2005	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2006	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2006	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2006	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2007	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2007	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2007	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2008	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2008	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2008	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2009	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2009	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2009	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2010	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2010	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2010	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2011	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2011	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2011	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2012	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2012	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2012	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2013	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2013	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2013	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2014	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2014	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2014	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2015	0.0	0.0	12.7	0.0	0.0	0.0	0.0
SUM 2015	0.0	0.0	12.7	0.0	0.0	0.0	0.0
WIN 2015	0.0	0.0	12.7	0.0	0.0	0.0	0.0
SPR 2016	12.7	0.0	12.7	0.0	0.0	0.0	0.0
SUM 2016	12.7	0.0	12.7	0.0	0.0	0.0	0.0
WIN 2016	12.7	0.0	12.7	0.0	0.0	0.0	0.0
SPR 2017	12.7	0.0	12.7	0.0	0.0	0.0	0.0
SUM 2017	12.7	0.0	12.7	0.0	0.0	0.0	0.0
WIN 2017	12.7	0.0	12.7	0.0	0.0	0.0	0.0
SPR 2018	12.7	0.0	12.7	0.0	0.0	0.0	0.0
SUM 2018	12.7	0.0	12.7	0.0	0.0	0.0	0.0
WIN 2018	12.7	0.0	12.7	0.0	0.0	0.0	0.0
SPR 2019	12.7	0.0	12.7	0.0	0.0	0.0	0.0
SUM 2019	12.7	0.0	12.7	0.0	0.0	0.0	0.0
WIN 2019	12.7	0.0	12.7	0.0	0.0	0.0	0.0
SPR 2020	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2020	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2020	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2021	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2021	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2021	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2022	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2022	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2022	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2023	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2023	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2023	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2024	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2024	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2024	0.0	12.7	12.7	0.0	0.0	0.0	0.0

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ENTER STARTING DATE FOR SIMULATION, THEN PUSH "UPDATE DATES" BUTTON		TRANSFER NO:	
YEAR	1950	TRANSFER NAME:	
SEASON	SPRING		

ENTER CELL LOCATIONS:	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	59	50		
COLUMN	25	16		

38.0 AFA

38.0 AFA

TRIMESTER OF ACTIVITY	TO WELL	FROM1 WELL		FROM2 WELL		FROM3 WELL	
	Projected Use AF/TRIMESTER	With Transfer AF/TRIMESTER	Without Transfer AF/TRIMESTER	With Transfer AF/TRIMESTER	Without Transfer AF/TRIMESTER	With Transfer AF/TRIMESTER	Without Transfer AF/TRIMESTER
SPR 2025	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2025	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2025	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2026	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2026	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2026	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2027	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2027	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2027	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2028	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2028	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2028	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2029	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2029	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2029	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2030	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2030	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2030	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2031	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2031	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2031	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2032	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2032	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2032	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2033	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2033	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2033	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2034	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2034	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2034	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2035	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2035	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2035	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2036	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2036	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2036	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2037	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2037	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2037	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2038	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2038	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2038	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2039	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2039	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2039	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2040	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2040	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2040	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2041	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2041	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2041	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2042	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2042	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2042	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2043	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2043	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2043	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2044	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2044	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2044	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2045	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2045	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2045	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2046	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2046	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2046	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2047	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2047	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2047	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SPR 2048	0.0	12.7	12.7	0.0	0.0	0.0	0.0
SUM 2048	0.0	12.7	12.7	0.0	0.0	0.0	0.0
WIN 2048	0.0	12.7	12.7	0.0	0.0	0.0	0.0

Livestock Confinement Operations

Water Requirements and Consumptive Use Worksheet

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COMPLETE BLUE HIGHLIGHTED SECTIONS ONLY

Prepared for: Jake and Jennifer Traughber

Revision: 9801
Run Date: 10/3/2013

Remarks:

Herd Information - User Input

Number of milking cows	649	Breed:	Large
Number of dry cows	75		
Number of other adult dry animals	6		

Calves at age:		Heifers at age:	
1 month	0	5 - 18 months	164
2 months	0	15 - 18 months	165
3 months	0	18 - 24 months	57
4 months	114		

ANIMAL INFORMATION
Use defaults or enter values if known

Average body weight	1300	lbs	Nearest weather station	Jerome
Milk fat percentage	3.3	%	Number of milkings/day	3
Average days dry	60			
Annual milk yield per animal	23000	lbs/year	Check: Total herd size based on days dry	493
Percent dry matter in ration	90	%	HERD SIZE NOT CONSISTENT WITH DAYS DRY	

Lagoon Information - User Input

Lagoon Number	Top width	Top length	SS (h:v)	Max depth	Average depth factor	% days with water	Top Area	Bottom Area	Average Area
1	150	160	3	6	0.8	100	24000	18744	22949
2	200	130	3	8	0.8	100	26000	18656	24531
3									
4									
5									
6									
7									
8									
9									
10									
						TOTAL ACRES	1.15	0.86	1.09

Facility Information - User Input

	Holding Pen 1	Holding Pen 2	
Holding pen active	1	0	(0 = not used or nonexistent)
Number of sprinklers in pen	0		
Average line pressure	30		psi
Sprinkler nozzle size - primary	0	0	inches
Sprinkler nozzle size - secondary	0	0	(enter 0 for single-nozzle sprinklers)
Daily operation time of sprinklers	0		minutes
Percent of days per year cows are washed	0		%

Number of free stalls	380	
Length of each free stall	8	feet
Width of each free stall	3	feet

Is the feeding area flushed to lagoon?	Yes
Is this housing area flushed to lagoon?	No

	Barn	Feeding	Housing
Flushing recycle rate	0%	100%	0%

CLEANING VOLUMES
Use defaults or enter manufacturer volumes

Cleaning parlor floor	1750	3000	Cleaning pipeline	300	400
Cleaning milkroom	0	200	Cleaning equipment	100	200
Cleaning bulk tank	0	400			

Land Application Information - User Input

Type of system	Hand Lines	
Predominant cropping	FCorn	
Percent of waste water which goes to meet crop irrigation requirement	10	%

Stockwater Component

Drinking Water Calculation for Lactating Cows

4% fat-corrected milk yield	20585	lbs/year
Daily average FCM yield	67.49	lbs/day
Daily average milk yield	75.41	lbs/day
Estimated DMI	44.94	lbs/day

METHOD 1: Kertz

Estimated total water intake (TWI)	272.8	lbs/day or
	32.7	gal/day
As-fed feed daily intake	49.9	as-fed lb/day
Water content of feed	4.99	lb/day in feed
Drinking water intake	267.8	lb/day or
	32.1	gal/day
Drinking water requirement for lactating cows	20843	gal/day
	23.3	ac-ft/year

METHOD 2: Holter and Urban
Regression equation with DMI, milk production, and dry matter %

Drinking water intake	99.1	liters/day
	26.2	gal/day
	16984	gal/day
	19.0	ac-ft/year

Max drinking water requirement	**23.3**	**ac-ft/year**

Drinking Water Calculation for Dry Cows

Estimated DMI	24.7	lbs/day
Average drinking water intake	13	gal/day
Average drinking water requirement	1053	gal/day
	1.2	**ac-ft/year**

Drinking Water Calculation for Replacement Herd (Calves and Heifers)

Age	GPD	Ac-Ft/year
1 mo	0	0.00
2 mo	0	0.00
3 mo	0	0.00
4 mo	371	0.42
5 mo	689	0.77
15-18 mo	1073	1.20
18-24 mo	482	0.54
Drinking water requirement for replacement herd	2613 gpd	**2.93 ac-ft/year**

TOTAL STOCKWATER COMPONENT 27.5 AC-FT/YEAR

Commercial Component

Milking Parlor Water Usage Calculation

*Volume needed **per milking** in each parlor for:*

Cleaning parlor floor	1750	gal	Cleaning pipeline	300	gal
Cleaning milkroom	0	gal	Cleaning equipment	100	gal
Cleaning bulk tank	0	gal	Cleaning cows	324.5	gal

Total milking parlor volume	7423.5	gal/day
Second milking parlor volume	0	gal/day
Recycled water	0	gal/day
	8.32	**ac-ft/year**

Holding Pen Water Usage Calculation

	Pen 1	Pen 2	
Output of primary nozzle	#N/A	#N/A	gpm
Output of secondary nozzle	0	0	gpm
Holding pen flushing volume	3000	0	gal
Sprinkler volume	#N/A	0	gal/day
Total holding pen volume	3000	0	gal/day
Recycled water	0	0	gal/day
	3.36		**ac-ft/year**

Other Flushing Water Calculation

Daily volume needed for:

Feeding area flushing	2000	gal/day
Housing area flushing	0	gal/day
Total other flushing volume	2000	gal/day
Recycled water	2000	
	0.00	**ac-ft/year**

TOTAL COMMERCIAL COMPONENT **11.7 AC-FT/YEAR**

Consumptive Use Calculation

A. Lagoon Evaporation

Annual reference ET (Allen & Brockway , 1983)	4.51	feet	
Annual open water coeff (Kohler Nordenson Fox)	0.90		
Annual open water (lagoon) evaporation	4.06	feet	
Manual override: Input annual lagoon evap		feet	
Total lagoon water surface area at full	50000	sq. ft.	
Total lagoon bottom area	37400	sq. ft.	
Average surface area when water is present	47480	sq. ft. =	1.09 ac
Total lagoon evaporation	**4.43**	**ac-ft/year**	

B. Animal usage: milk, metabolism, and excretion loss

	Milking	Dry	
Waste excretion volume per cow	1.3	1.3	ft^3/day/1000lb
Water content	87.5	88.4	%
Total water volume in excrement	7179	905	gal/day
Percent of excrement flushed to lagoons	55	% (based on areas which are flushed)	
Consumptive use (evap.) of water in excrement	45	%	
Consumptive use (evap.) volume	3638	gal/day	
Excrement c.u. attributable to drinking water	3571	gal/day	
Total milk production - assume 100% leaves site	48941	lbs/day or	5868 gal/day
Water content of milk	5105	gal/day	
Water content attributable to drinking water	5012	gal/day	
Water use for animal metabolism	9095	gal/day	
Metabolism water attributable to drinking water	8929	gal/day	
Consumptive use - replacement herd (100%)	2613	gal/day	
Total animal consumptive use from drinking water	20126	gal/day or	**22.5 ac-ft/year**
Percent of drinking water intake	91.9	%	

C. Parlor/holding pen cleanup

Average sprinkler washing system evap loss	2	%	
Free stall total area	9120	sq. ft. =	0.21 acres
Length of time free stall concrete is wet	1	hr/day	
Average evaporation from wet concrete	0.15	in./day	
Sprinkler system loss volume	0.00	ac-ft/year	
Free stall evaporation volume	0.04	ac-ft/year	
Total cleanup loss	**0.04**	**ac-ft/year**	

D. Land application site

Crop evapotranspiration	2.43	ac-ft/ac/year
Irrigation diversion volume	3.47	ac-ft/ac/year
System efficiency	70	%
Waste water volume to lagoons	16.5	ac-ft/year
Waste water volume available for land application	12.1	ac-ft/year
Total crop consumptive use of waste water	**0.8**	**ac-ft/year**

Summary

Consumptive Use

Lagoon evaporation	4.43	
Animal milk, excretion, & metabolism	22.5	
Parlor and holding pen cleanup	0.04	
Crop consumptive use on land application	0.8	
Total consumptive use	**27.9**	**ac-ft/year**
Percent of diversion volume consumed	71.2	%
Annual crop consumptive use - IDWR allowable	689	mm
	2.3	afa
Equivalent irrigated acres	**12.3**	**acres**

Drinking Water

Milking herd	23.3	
Non-milking herd (dry cows)	1.2	
Replacement herd (calves and heifers)	2.9	
Total drinking water volume	**27.5**	**ac-ft/year**
Diversion volume to acres conversion factor	**3.18**	**ac-ft/ac**

Commercial

Milking parlor	8.32	
Holding pen and cleanup	3.4	
Other flushing water	0.00	
Total commercial volume	**11.7**	**ac-ft/year**
TOTAL DIVERSION VOLUME REQUIREMENT	**39.1**	**AC-FT/YR**