

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

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NOV 23 2016
DEPT OF WATER RESOURCES

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 63-334911. Owner Frank Tiegs LLCPhone No. 509-545-4545Current address PO Box 3350 Pasco, WA 993022. Examiner's name Greg SullivanEXAM DATE November 7, 20163. Accompanied by Ben Davis

Email _____

Address 13735 Missouri Avenue Nampa, Idaho 83686Relationship to permit holder Farm ManagerPhone No. 509-727-00334. Source Ground Water

tributary to _____

B. OVERLAP REVIEW1. Other water rights with the same place of use 63-32686, 63-32690, 63-32692, 63-32694, 63-32685 and 63-326892. Other water rights with the same source and point of diversion 63-32685, 63-32686, 63-32687, 63-32688, 63-32689, 63-32690, 63-32692 and 63-32694**C. DIVERSION AND DELIVERY SYSTEM**

1. Point(s) of Diversion:

Ident. No.	Gov't Lot	1/4	1/4	1/4	Sec	Twp	Rge	County	Method of Determination/Remarks
			SE	NW	10	02N	03W	Canyon	Site Visit (North Well)
			NE	NE	14	02N	03W	Canyon	Site Visit (South Well)

2. Place(s) of Use:

Method of determination Aerial Photography

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02N	03W	14	40	40	40	40	40	40	31	35									306

SCANNED

DEC 28 2017



- ☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (required)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ Photo of diversion and system attached

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
South Well	GE	60	5K6266XC1A	Vert Line	29721
North Well	GE	300	5K6316XC78A	Johnson	

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

1.

2. Measurements:

300 Hp well was measured at 1800 gpm

60 Hp well provides 510 gpm based on flow requirements for the pivots

See attached Narrative letter.

[illegible]

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

[illegible]

F. FLOW CALCULATIONS

☐ Additional computation sheets attached

Measured Method:
South Well

850 gpm/pivot x 60% of the pivot operating = 510 gpm or 1.14 cfs (approximation)

North Well

Flow Calculation was obtained by 12 inch flow meter at 1800 gpm or 4.01 cfs

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 105.6 \times 4.5 = 475.2$$

$$V_{D,R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 1.88 \times 259 \times 1.9835 = 965.8$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{475.2}$$

2. Volume Calculations for Other Uses:

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion	Annual Volume
	From	To	Q (cfs)	V (afa)
Irrigation	3/01	11/15	2.11	475.2
Totals:			2.11	475.2

2. Recommended Amendments

- ☐ Change P.D. as reflected on page 1 ☐ Add P.D. as reflected on page 1 ☒ None
☐ Change P.U. as reflected on page 1 ☐ Add P.U. as reflected on page 1 ☐ Other

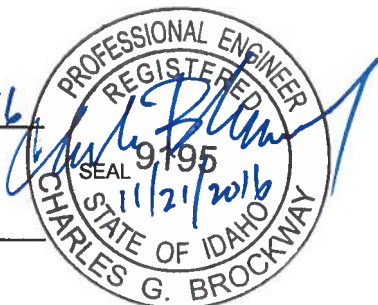
I. AUTHENTICATION

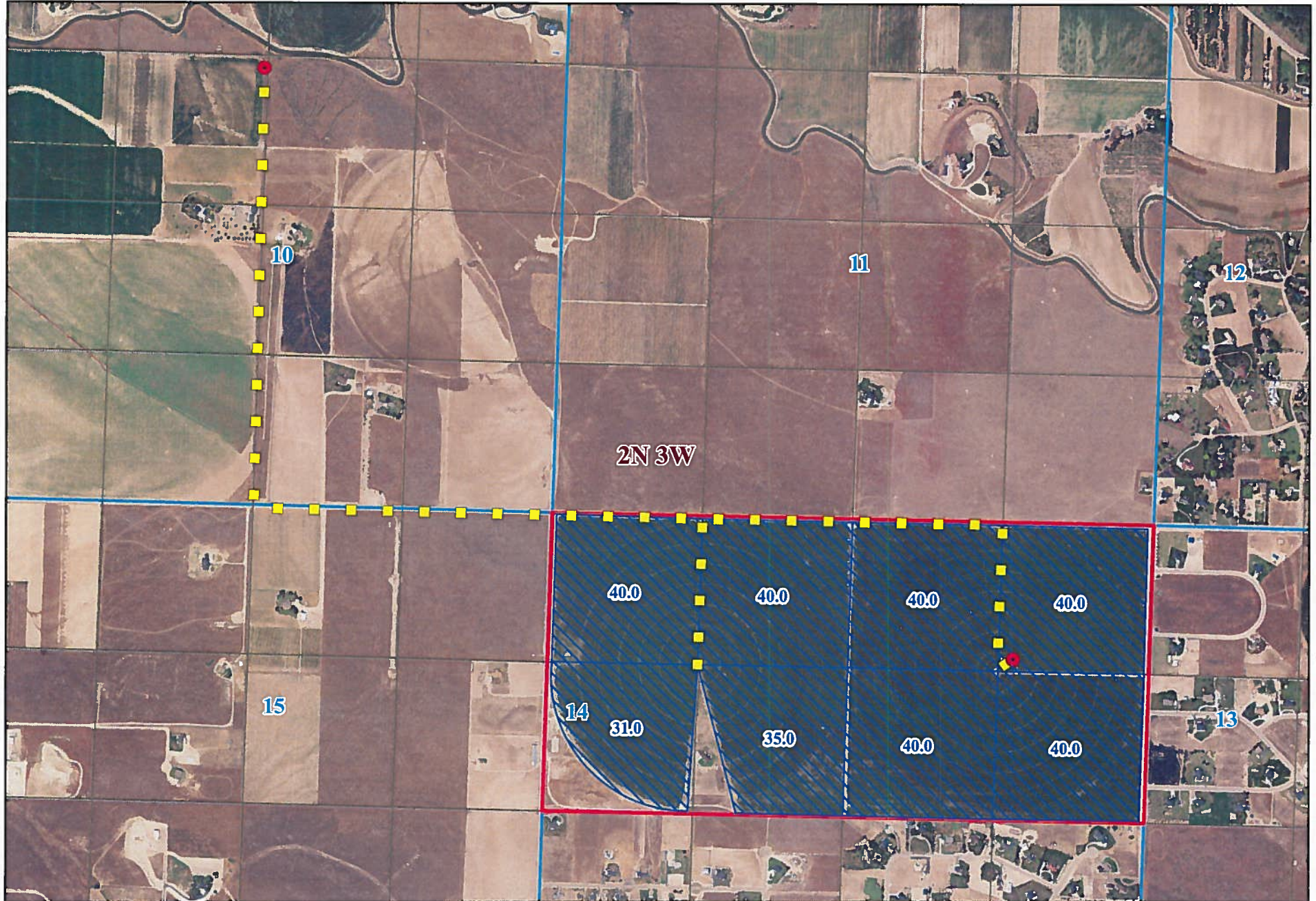
Field Examiner's Signature

Date 11/21/2011

Reviewer

Date _____





0 250 500 1,000 Feet

BROCKWAY ENGINEERING, PLLC.
GWS - Date: 11/8/2016

HARVEST FARM

63-33491 PERMIT
NAIP 2015 AERIAL



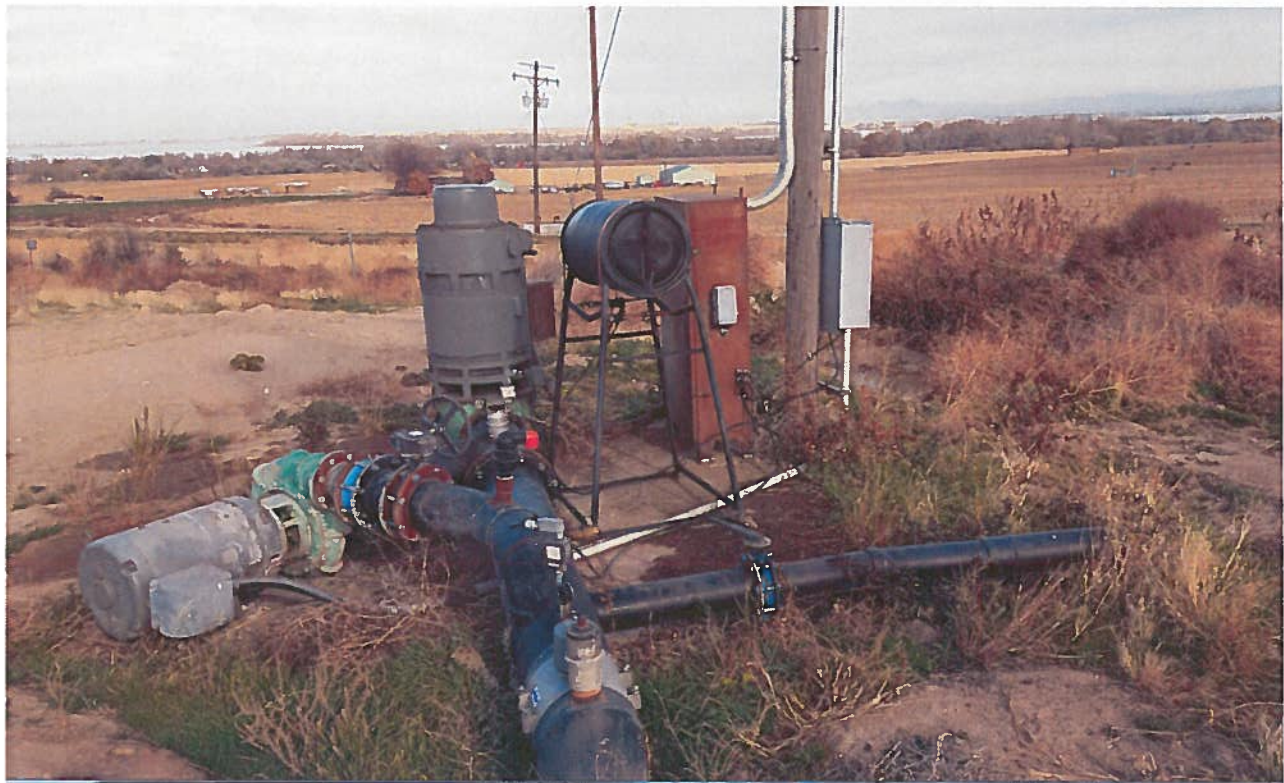
POD South Well 02N 03W Section 14 NENE
60 Hp Motor



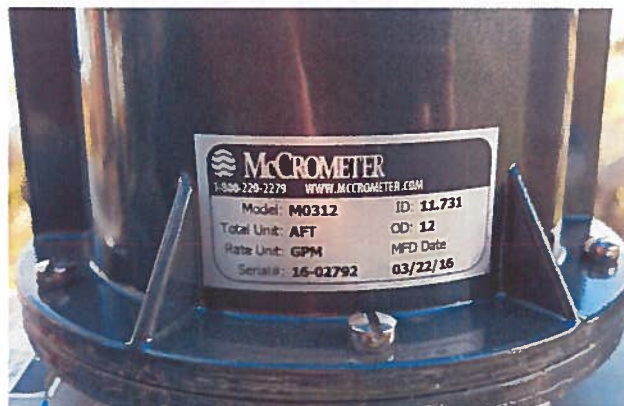
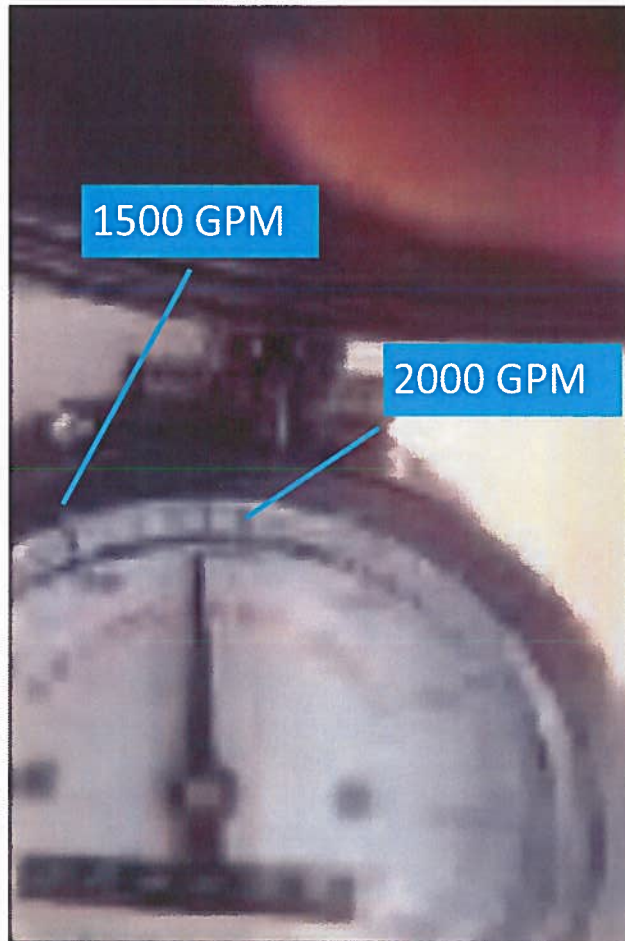
POD South Well 02N 03W Section 14 NENE
60 Hp Motor



POD North Well 02N 03W Section 10 SENW
300 Hp Motor
McCrometer Meter



POD North Well 02N 03W Section 10 SENW
300 Hp Motor
McCrometer Meter



Associated Water Rights 63-32687 and 63-32688
McCrometer Meters Locations



Permit 63-33491

Narrative/Remarks/Comments for Beneficial Use Field Report

A field examination for Permit 63-33491, an irrigation permit held by Frank Tiegs LLC. Based on aerial photographs and the site visit the following information has been observed. The wells have been drilled. The pumps and motors have been installed and are currently providing water to the designated place of use.

There are two wells that are identified as authorized PODs for water right permit 63-33491. The North Well is located at Township 02N Range 03W Section 10 SENW. The South Well is located at Township 02N Range 03W Section 14 NENE. There was insufficient pipe spacing to attach a strap-on ultrasonic meter to record flow measurements during the field exam for either the North Well or the South Well.

The North Well has a 300 Hp motor and has a 12 inch McCrometer flow meter that was installed in 2016. The pump was turned on and a measurement of 1800 gpm (4.01 cfs) was obtained after the system had stabilized. In documenting the flow rate, a video of the meter head was inadvertently taken rather than a photograph. The attached screen shot of the video clearly indicates a flow of 1800 gpm.

A well log for the North Well was obtained from IDWR well driller log database. The North Well was drilled in 1993 and is 430 feet in depth. The North Well is cased from 2 to 358 feet and is open from 359 to 430 feet. This well construction satisfies the condition on Permit 63-33491 that the water bearing zone to be appropriated is from 250 to 492 feet. No well log for the South Well was found in the IDWR database.

The South Well has 60 Hp motor and provides irrigation water to fields owned by Frank Tiegs in addition to land under water rights 63-32687, 63-32688, 63-32685 and 63-32689.

Water rights 63-32687 and 63-32688 divert water from the South Well to irrigation in a neighboring subdivision to the east. Two 6 inch McCrometer flow meters are used to measure the amount of water provided to these two water rights. The two flow meters are located on the west side of the road between the pivot and the subdivisions.

Water rights 63-32685 and 63-32689 have places of use on NENE Section 14, but are not owned by Frank Tiegs LLC and are currently under lease contract with the Idaho Water Supply Bank.

During the field exam, the South Well was turned on and water was only flowing to the closest irrigation pivot. Due to topographic constraints, the South Well was only able to operate approximately 60% of the pivot located in the NE of Sec 14. The irrigation pivot package for the pivot on the NE of Sec 14 is 850 gpm/pivot, based on attached information from Agri Lines Irrigation. The South Well is able to provide approximately 510.0 gpm (1.14 cfs). Because there is no flow meter or an adequate location to attach a portable flow meter, the 510.0 gpm is based on calculating 850 gpm by the 60% of functioning sprinkler nozzles of the pivot when the South Well is operating.

Permit 63-33491 is used on the same place of use as existing decreed rights 63-32694, 63-32692, 63-32690 and 63-32686 owned by Frank Tiegs LLC. These four water rights are diverted from the North Well and the South Well. The combined acre limit for these water rights is 211.9 acres within a 317.5-acre PPU. The combined annual volume limit for these four water rights is 934.0 acre feet. The combined diversion rate for these four water rights is 2.75 cfs.

Permit 63-33491 allows 105.6 acres of irrigation within the same PPU, bringing the total to 317.5 acres in combination with the existing decrees. During the field exam and through utilizing aerial photographs, 306.0 acres were identified that are being irrigated by 63-32694, 63-32692, 63-32690, 63-32686 and permit 63-33491. In order to preserve the flow rate on the permit, it is recommended that the permit be licensed for the permitted acres at 0.02 cfs/acre with a combined limit of 306 acres between all rights. The system has adequate diversion capacity to support the permitted flow rate in combination with the decreed rights.

It is recommended that water right permit 63-33491 be licensed with an acre limit of 105.6 acres ($317.5 - 211.9 = 105.6$ acres), an annual volume limit of 475.2 acre feet per year ($105.6 \times 4.5 = 475.2$ afa) and a diversion rate of 2.11 cfs ($105.6 \times 0.02 = 2.11$ cfs).

It is further recommended that water rights 63-32694, 63-32692, 63-32690, 63-32686 and 63-33491 have a combined acre limit of 306.0 acres, a combined annual volume limit of 1377.0 acre-feet annually and a combined diversion rate of 4.85 cfs.

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Permit Report

10/11/2016

WATER RIGHT NO. 63-33491

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	FRANK TIEGS LLC PO BOX 3350 PASCO, WA 99302 (509)545-4545
Original Owner	TODD HINES 3879 RD 6 NW EPHRATA, WA 98823 (509) 787-6302

Priority Date: 03/23/2011
Status: Active

<u>Source</u>	<u>Tributary</u>
GROUND WATER	

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
IRRIGATION	03/01	11/15	2.1 CFS	
Total Diversion			2.1 CFS	

Location of Point(s) of Diversion:

GROUND WATER	SENW	Sec. 10	Township 02N	Range 03W	CANYON County
GROUND WATER	NENE	Sec. 14	Township 02N	Range 03W	CANYON County

Place(s) of use:

Place of Use Legal Description: IRRIGATION CANYON County

<u>Township</u>	<u>Range</u>	<u>Section</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>
02N	03W	14		NENE	40		NWNE	40		SWNE	40		SENE	40
				NENW	40		NWNW	40		SWNW	40		SENW	37.5

Total Acres: 317.5

Conditions of Approval:

1. 26A Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.
2. 004 This right does not grant any right-of-way or easement across the land of another.
3. R65 This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.5 afa per acre at the field headgate for irrigation of the place of use.
4. 01M After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.
5. Water bearing zone to be appropriated is from 250 to 492 feet. —
The Director retains jurisdiction to require the right holder to provide purchased or leased natural flow or stored water to offset depletion of Lower Snake River flows if needed for salmon migration purposes. The amount of water required to be released into the Snake River or a tributary, if needed for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this permit.
6. 121

Dates:

Proof Due Date: 12/01/2016

Proof Made Date:

Approved Date: 12/07/2011

Moratorium Expiration Date:

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Application Received Date: 03/23/2011

Protest Deadline Date: 11/21/2011

Number of Protests: 0

Field Exam Date::
Date Sent to State Off:
Date Received at State Off:

Other Information:
State or Federal:
Owner Name Connector:
Water District Number:
Generic Max Rate per Acre: 0.02
Generic Max Volume per Acre: 4.5
Swan Falls Trust or Nontrust:
Swan Falls Dismissed:
DLE Act Number:
Cary Act Number:
Mitigation Plan: False

Close

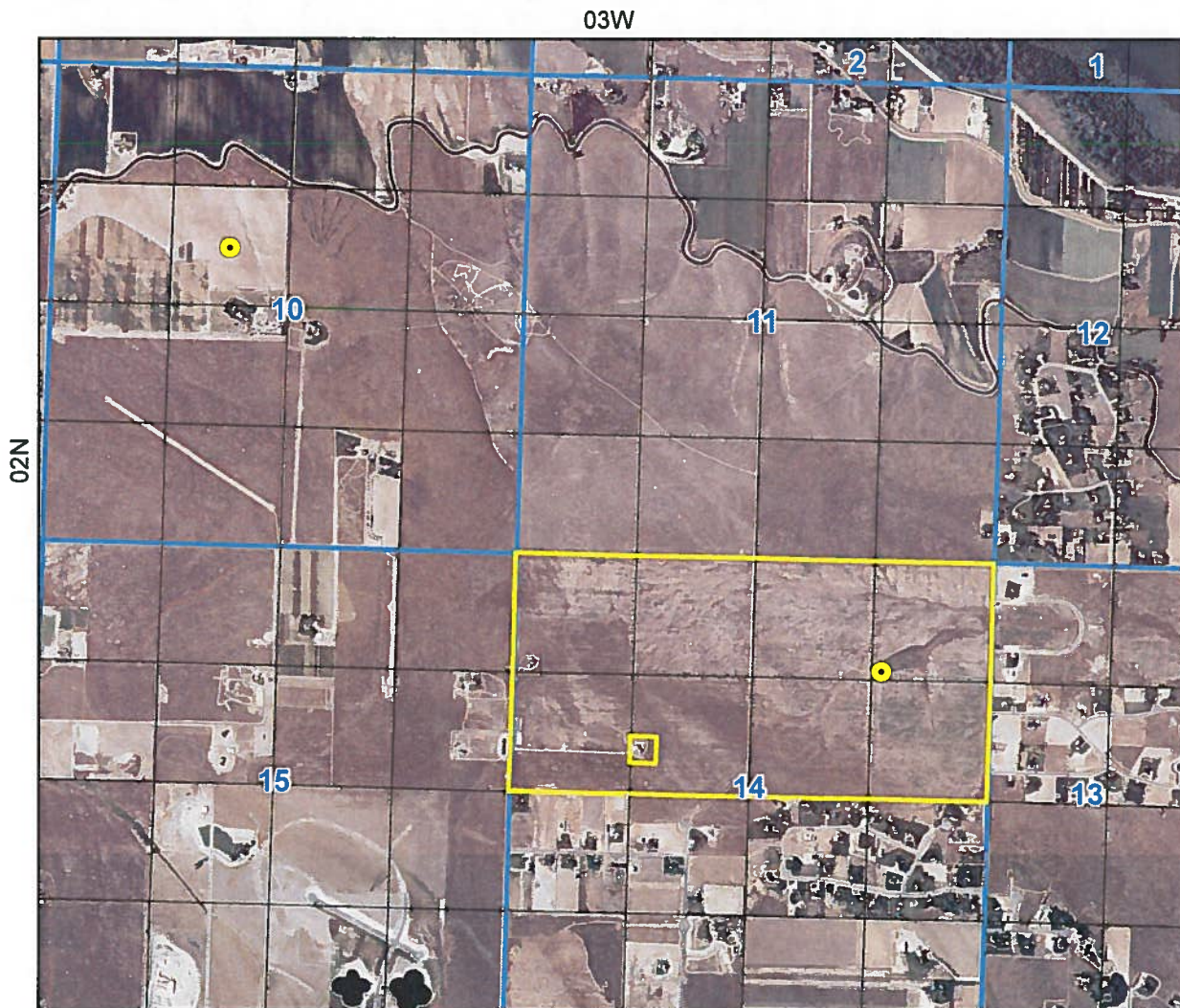
State of Idaho
Department of Water Resources

Permit To Appropriate Water

63-33491

IRRIGATION

The map depicts the place of use for the water use listed above and point(s) of diversion of this right as currently derived from interpretations of the paper records and is used solely for illustrative purposes. Discrepancies between the computer representation and the permanent document file will be resolved in favor of the actual water right documents in the water right file.



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

0 0.25 0.5 1 Miles



AGRI LINES IRRIGATION

MARCH 17, 2014

WISHNW-27603

CUSTOMER : PASCO FARMS

VALLEY 8000 - 108
7 TOWER - 1280.01 FT
SYSTEM 850 GPM @ 40 PSI

P.O. NO. : 34462
JOB NO. : HIGH SIDE
LEGAL : LEWIS LANE #1
CROP :

NELSON S3000 SPINNERS
NELSON 15 & 20 PSI REGULATORS
NO ENDGUN
ELEVATION 0 FT UP, 0 FT DOWN

115 NORTH SECOND

PARMA, IDAHO 83660

(208) 722-5121

WARRANTY

WATER APPLICATION UNIFORMITY OBTAINED WITH THIS SYSTEM CAN BE ADVERSELY AFFECTED BY MANY VARIABLES INCLUDING THE IMPROPER MAKEUP OR INSTALLATION OF THE SPRINKLER OR SPRAY NOZZLE PACKAGE, OBSTRUCTED NOZZLES, MAINTAINING INCORRECT PIVOT PRESSURE, UNFAVORABLE CLIMATIC CONDITIONS, TIGHT AND/OR SLOPING SOILS, IMPROPER END GUN ARC SETTINGS, ERRATIC AND IMPROPER OPERATING SPEED OF THE SYSTEM, POOR QUALITY OF WATER WITH ABRASIVES, CORROSIVES, AND/OR SOLIDS WHICH CAN CAUSE PLUGGING AND JAMMING, AS WELL AS INHERENT VARIABLES IN THE MANY COMPONENTS COMPRISING THE SYSTEM. THEREFORE WISH NORTHWEST, INC., MAKES NO WARRANTY AS TO THE UNIFORMITY OF COVERAGE OBTAINED FROM THIS WATER APPLICATION PRINTOUT OTHER THAN ITS MATHEMATICAL ACCURACY.

IT IS THE RESPONSIBILITY OF THE END USER TO DETERMINE IF ANY INCOMPATIBILITY EXISTS BETWEEN THE WATER DISTRIBUTION DEVICES AND THE CROP, THE SOIL, AND THE PHYSICAL STRUCTURE OF THE MECHANICAL MOVE SYSTEM. WISH NORTHWEST, INC., THEREFORE, DISCLAIMS ANY LIABILITY FOR DAMAGES DUE TO FAILURE OF THE SYSTEM TO PERFORM AS CONTEMPLATED.

FIGURES PRESENTED ON THIS COMPUTER PRINTOUT ARE BASED ON THE FOLLOWING:

1. DATA FURNISHED TO WISH NORTHWEST, INC., ON PIPE LENGTH, DIAMETER, SURFACE FINISH, OUTLET SPACINGS, WATER FLOW, PIVOT PRESSURE AND ALL OTHER APPLICABLE INFORMATION.
2. THERE IS 100% WATER APPLICATION EFFICIENCY (ZERO WIND VELOCITY AND NO EVAPORATION).
3. PIVOT PRESSURE IS MEASURED ON THE MAIN HORIZONTAL DISTRIBUTION PIPE JUST AFTER THE LAST ELBOW.
4. MAIN PIPE PRESSURE IS CALCULATED AS IF THE PIVOT IS ALWAYS ON LEVEL GROUND.
5. SPRINKLER OR SPRAY NOZZLE BASE PRESSURE MAY BE LESS THAN MAIN LINE PIPE PRESSURE DUE TO THE USE OF PRESSURE REGULATORS. WHERE DROP PIPES ARE USED THE STATIC HEAD IS ADDED TO AND FRICTION LOSS IS SUBTRACTED FROM THE MAIN LINE PIPE PRESSURE TO DETERMINE INLET PSI. REGULATORS ARE CONSIDERED MOUNTED AT THE SAME HEIGHT AS THE SPRINKLING DEVICE UNLESS NOTED.

VALLEY 8000 - 108

MARCH 17, 2014

WISHNW-27603

DEALER

AGRI LINES IRRIGATION
115 NORTH SECOND
PARMA, IDAHO 83860

IRRIGATOR

PASCO FARMS
LEWIS LANE #1
34462

TOTAL TARGET GPM	850.00	FRICTION FACTOR USED	150	SPANS	LENGTH	PIPE I.D.
TOP OF PIVOT PRESSURE	40.00	TOTAL LENGTH	1280.01	1	180.92	6.415
NO ENDGUN		NUMBER OF TOWERS	7	5	180.18	6.415
NUMBER OF OUTLETS	142	NUMBER OF SPRINKLERS	126	1	179.91	6.415
				OH	18.28	6.415

NELSON S3000 SPINNERS - BEIGE PLATES FIRST 4 POSITIONS
NELSON R3000 ROTATORS - D10 BROWN PLATES BALANCE
NELSON BLUE TOP INTEGRAL 15 & 20 PSI SERIES REGULATORS
DROPS AVERAGE 9.5 FT OF .75 I.D. SURELINE FLEXIBLE HOSE
ELEVATION IS 0 FT UP AND 0 FT DOWN

CAUTIONS AND WARNINGS

- 1 . Inadequate crop clearance and/or structural interference may cause poor water distribution, resulting in decreased uniformity and possible streaking.
- 2 . Over watering at beginning of system due to practical limitations on smallest nozzle sizes available and/or allowable for proper operation.
- 3 . Spacing per customer request - This statement usually refers to a spacing which is considered too wide to ensure proper overlap and uniformity.
- 4 . Spacing exceeds guidelines recommended by manufacturer.

OUTLET NO.	LAST OUTLET	DISTANCE TO PIVOT	GPM NEED	GPM DEL.	PIPE PSI	NOZZLE PSI	SPRINKLER LABEL AND NOZZLE SIZE	SPRK NO.	REG SIZE	PLUG NO.
1		5.40	-	-	-	-	-	-	-	1
2		14.40	-	-	-	-	-	-	-	2
3		23.40	-	-	-	-	-	-	-	3
4	32.40	32.40	0.60	0.70	39.03	16.71	S3000 10 BEIGE	1	NNB15LF	
5		41.40	-	-	-	-	-	-	-	4
6	18.02	50.42	0.94	1.01	38.51	16.60	S3000 12 GOLD	2	NNB15LF	
7		59.42	-	-	-	-	-	-	-	5
8	18.00	68.42	1.28	1.35	38.09	16.49	S3000 14 LIME	3	NNB15LF	
9		77.42	-	-	-	-	-	-	-	6
10	18.00	86.42	1.61	1.58	37.78	16.41	S3000 15 LIME/LAV	4	NNB15LF	
11		95.36	-	-	-	-	-	-	-	7
12	17.94	104.36	1.95	2.01	37.58	16.27	R3000 17 LAV/GRAY	5	NNB15LF	
13		113.36	-	-	-	-	-	-	-	8
14	18.00	122.36	2.28	2.22	37.48	16.19	R3000 18 GRAY	6	NNB15LF	
15		131.36	-	-	-	-	-	-	-	9
16	17.94	140.30	2.62	2.50	37.49	16.10	R3000 19 GRAY/TURQ	7	NNB15LF	
17		149.30	-	-	-	-	-	-	-	10
18	18.00	158.30	2.96	3.00	37.61	15.93	R3000 21 TURQ/YEL	8	NNB15LF	
19		167.30	-	-	-	-	-	-	-	11
20	18.00	176.30	3.32	3.32	37.70	15.83	R3000 22 YELLOW	9	NNB15LF	
TOWER 1	180.92	180.92	-	-	-	-	-	-	-	
21		185.59	-	-	-	-	-	-	-	12
22	18.29	194.59	3.66	3.82	37.32	21.03	R3000 22 YELLOW	10	NNB20LF	
23		203.59	-	-	-	-	-	-	-	13
24	18.00	212.59	3.97	3.83	36.70	21.04	R3000 22 YELLOW	11	NNB20LF	
25		221.59	-	-	-	-	-	-	-	14
26	18.02	230.61	4.31	4.14	36.18	20.92	R3000 23 YEL/RED	12	NNB20LF	
27		239.61	-	-	-	-	-	-	-	15
28	18.00	248.61	4.64	4.55	35.78	20.84	R3000 24 RED	13	NNB20LF	
29		257.61	-	-	-	-	-	-	-	16
30	18.00	266.61	3.70	3.82	35.49	21.02	R3000 22 YELLOW	14	NNB20LF	
31	8.94	275.55	2.57	2.58	35.38	21.61	R3000 18 GRAY	15	NNB20LF	
32	9.00	284.55	2.66	2.58	35.30	21.60	R3000 18 GRAY	16	NNB20LF	
33	9.00	293.55	2.74	2.89	35.25	21.45	R3000 19 GRAY/TURQ	17	NNB20LF	
34	9.00	302.55	2.83	2.89	35.22	21.45	R3000 19 GRAY/TURQ	18	NNB20LF	
35	9.00	311.55	2.90	2.89	35.23	21.45	R3000 19 GRAY/TURQ	19	NNB20LF	
36	8.94	320.49	2.98	2.89	35.26	21.44	R3000 19 GRAY/TURQ	20	NNB20LF	
37	9.00	329.49	3.08	3.20	35.31	21.29	R3000 20 TURQJOISE	21	NNB20LF	
38	9.00	338.49	3.16	3.20	35.40	21.29	R3000 20 TURQJOISE	22	NNB20LF	
39	9.00	347.49	3.25	3.20	35.51	21.29	R3000 20 TURQJOISE	23	NNB20LF	
40	9.00	356.49	3.38	3.46	35.51	21.16	R3000 21 TURQ/YEL	24	NNB20LF	
TOWER 2	180.18	361.10	-	-	-	-	-	-	-	
41	9.28	365.77	3.47	3.46	35.40	21.16	R3000 21 TURQ/YEL	25	NNB20LF	
42	9.00	374.77	3.50	3.46	35.16	21.16	R3000 21 TURQ/YEL	26	NNB20LF	
43	9.00	383.77	3.58	3.46	34.84	21.16	R3000 21 TURQ/YEL	27	NNB20LF	
44	9.00	392.77	3.67	3.82	34.56	20.98	R3000 22 YELLOW	28	NNB20LF	
45	9.00	401.77	3.76	3.82	34.31	20.98	R3000 22 YELLOW	29	NNB20LF	
46	9.02	410.79	3.84	3.82	34.08	20.98	R3000 22 YELLOW	30	NNB20LF	

OUTLET NO.	LAST OUTLET	DISTANCE TO PIVOT	GPM NEED	GPM DEL.	PIPE PSI	NOZZLE PSI	SPRINKLER LABEL AND NOZZLE SIZE	SPRK NO.	REG SIZE	PLUG NO.
47	9.00	419.79	3.92	3.82	33.88	20.98	R3000 22 YELLOW	31	NNB20LF	
48	9.00	428.79	4.00	4.14	33.70	20.87	R3000 23 YEL/RED	32	NNB20LF	
49	9.00	437.79	4.09	4.14	33.56	20.87	R3000 23 YEL/RED	33	NNB20LF	
50	9.00	446.79	4.16	4.14	33.44	20.86	R3000 23 YEL/RED	34	NNB20LF	
51	8.94	455.73	4.24	4.14	33.35	20.86	R3000 23 YEL/RED	35	NNB20LF	
52	9.00	464.73	4.34	4.14	33.29	20.86	R3000 23 YEL/RED	36	NNB20LF	
53	9.00	473.73	4.43	4.55	33.25	20.78	R3000 24 RED	37	NNB20LF	
54	9.00	482.73	4.51	4.55	33.25	20.77	R3000 24 RED	38	NNB20LF	
55	9.00	491.73	4.58	4.55	33.27	20.77	R3000 24 RED	39	NNB20LF	
56	8.94	500.67	4.66	4.54	33.31	20.77	R3000 24 RED	40	NNB20LF	
57	9.00	509.67	4.76	4.90	33.39	20.69	R3000 25 RED/WHITE	41	NNB20LF	
58	9.00	518.67	4.84	4.90	33.49	20.69	R3000 25 RED/WHITE	42	NNB20LF	
59	9.00	527.67	4.93	4.90	33.62	20.69	R3000 25 RED/WHITE	43	NNB20LF	
60	9.00	536.67	5.09	4.90	33.64	20.69	R3000 25 RED/WHITE	44	NNB20LF	
TOWER 3	180.18	541.28								
61	9.28	545.95	5.18	5.31	33.55	20.60	R3000 26 WHITE	45	NNB20LF	
62	9.00	554.95	5.18	5.31	33.33	20.60	R3000 26 WHITE	46	NNB20LF	
63	9.00	563.95	5.27	5.31	33.03	20.60	R3000 26 WHITE	47	NNB20LF	
64	9.00	572.95	5.35	5.31	32.77	20.60	R3000 26 WHITE	48	NNB20LF	
65	9.00	581.95	5.44	5.31	32.54	20.60	R3000 26 WHITE	49	NNB20LF	
66	9.02	590.97	5.53	5.68	32.33	20.52	R3000 27 WHITE/BLUE	50	NNB20LF	
67	9.00	599.97	5.60	5.68	32.15	20.52	R3000 27 WHITE/BLUE	51	NNB20LF	
68	9.00	608.97	5.69	5.68	32.00	20.52	R3000 27 WHITE/BLUE	52	NNB20LF	
69	9.00	617.97	5.77	5.68	31.87	20.51	R3000 27 WHITE/BLUE	53	NNB20LF	
70	9.00	626.97	5.84	5.68	31.78	20.51	R3000 27 WHITE/BLUE	54	NNB20LF	
71	8.94	635.91	5.92	5.68	31.71	20.51	R3000 27 WHITE/BLUE	55	NNB20LF	
72	9.00	644.91	6.03	6.17	31.67	20.41	R3000 28 BLUE	56	NNB20LF	
73	9.00	653.91	6.11	6.17	31.66	20.41	R3000 28 BLUE	57	NNB20LF	
74	9.00	662.91	6.19	6.17	31.67	20.41	R3000 28 BLUE	58	NNB20LF	
75	9.00	671.91	6.26	6.17	31.72	20.41	R3000 28 BLUE	59	NNB20LF	
76	8.94	680.85	6.34	6.17	31.79	20.40	R3000 28 BLUE	60	NNB20LF	
77	9.00	689.85	6.45	6.58	31.89	20.32	R3000 29 BLUE/DK BRN	61	NNB20LF	
78	9.00	698.85	6.53	6.58	32.01	20.32	R3000 29 BLUE/DK BRN	62	NNB20LF	
79	9.00	707.85	6.61	6.58	32.17	20.32	R3000 29 BLUE/DK BRN	63	NNB20LF	
80	9.00	716.85	6.80	6.58	32.20	20.31	R3000 29 BLUE/DK BRN	64	NNB20LF	
TOWER 4	180.18	721.46								
81	9.28	726.13	6.89	7.03	32.14	20.22	R3000 30 DK BROWN	65	NNB20LF	
82	9.00	735.13	6.87	7.03	31.94	20.22	R3000 30 DK BROWN	66	NNB20LF	
83	9.00	744.13	6.95	7.03	31.68	20.22	R3000 30 DK BROWN	67	NNB20LF	
84	9.00	753.13	7.03	7.03	31.44	20.22	R3000 30 DK BROWN	68	NNB20LF	
85	9.00	762.13	7.13	7.03	31.23	20.22	R3000 30 DK BROWN	69	NNB20LF	
86	9.02	771.15	7.21	7.03	31.04	20.22	R3000 30 DK BROWN	70	NNB20LF	
87	9.00	780.15	7.29	7.42	30.89	20.13	R3000 31 DK BRN/ORN	71	NNB20LF	
88	9.00	789.15	7.37	7.42	30.76	20.13	R3000 31 DK BRN/ORN	72	NNB20LF	
89	9.00	798.15	7.46	7.42	30.66	20.13	R3000 31 DK BRN/ORN	73	NNB20LF	
90	9.00	807.15	7.52	7.42	30.59	20.13	R3000 31 DK BRN/ORN	74	NNB20LF	
91	8.94	816.09	7.60	7.42	30.55	20.13	R3000 31 DK BRN/ORN	75	NNB20LF	
92	9.00	825.09	7.71	7.96	30.53	20.01	R3000 32 ORANGE	76	NNB20LF	

OUTLET NO.	LAST OUTLET	DISTANCE TO PIVOT	GPM NEED	GPM DEL.	PIPE PSI	NOZZLE PSI	SPRINKLER LABEL AND NOZZLE SIZE	SPRK NO.	REG SIZE	PLUG NO.
139	9.00	1248.39	11.64	11.85	30.62	19.81	R3000 39 BLK/DTURQ	123	NNB20HF	
140	9.00	1257.39	11.59	11.85	30.71	19.81	R3000 39 BLK/DTURQ	124	NNB20HF	
TOWER 7	179.91	1261.73								
141	8.91	1266.30	11.63	11.85	30.71	19.81	R3000 39 BLK/DTURQ	125	NNB20HF	
142	9.14	1275.44	12.40	12.43	30.71	19.75	R3000 40 DK TURQ	126	NNB20HF	
OVERHANG	18.28	1280.01								

TOTAL GPM = 850.78
GPA = 7.19

MINIMUM RECOMMENDED REGULATOR INLET PRESSURE IS 25.00 PSI
WITH GRADUATED ELEVATION OF .00 FT THE INLET PRESSURE IS 31.68 PSI FOR SPRINKLER 126
THIS POSITION IS THE CLOSEST TO THE MINIMUM RECOMMENDED INLET PRESSURE

HYDRAULICS SUMMARY

TOWER NUMBER	ACRES UNDER SPAN	GPM NEED	ACTUAL GPM	GPM PER ACRE	AVERAGE IN. PER HR DELIVERED UNDER SPAN	30 HR	AVERAGE IN. DELIVERED FOR REVOLUTION TIME	48 HR	60 HR
1	2.38	16.98	16.93	7.17	0.016	0.57	0.76	0.95	
2	7.04	50.67	50.68	7.20	0.016	0.57	0.76	0.95	
3	11.73	84.35	84.22	7.18	0.016	0.57	0.76	0.95	
4	18.41	118.04	117.82	7.18	0.016	0.57	0.76	0.95	
5	21.09	151.72	151.86	7.20	0.016	0.57	0.76	0.95	
6	25.77	185.41	184.96	7.18	0.016	0.57	0.76	0.95	
7	30.41	218.74	219.87	7.23	0.016	0.58	0.77	0.96	
OVERHANG	3.35	24.10	24.44	7.29	0.016	0.58	0.77	0.97	
TOTAL	118.16	850.00	850.78	7.20					

SUMMARY OF SPRINKLERS

1 S3000 10 BEIGE
1 S3000 12 GOLD
1 S3000 14 LIME
1 S3000 15 LIME/LAV
1 R3000 17 LAV/GRAY
3 R3000 18 GRAY
5 R3000 19 GRAY/TURQ

SUMMARY OF REGULATORS

8 NNB15LF
95 NNB20LF
22 NNB20HF

5 R3000 21 TURQ/YEL
8 R3000 22 YELLOW
3 R3000 20 TURQUOISE
6 R3000 23 YEL/RED
5 R3000 24 RED
4 R3000 25 RED/WHITE
5 R3000 26 WHITE
6 R3000 27 WHITE/BLUE
5 R3000 28 BLUE
4 R3000 29 BLUE/DK BRN
6 R3000 30 DK BROWN
5 R3000 31 DK BRN/ORN
7 R3000 32 ORANGE
6 R3000 33 ORN/DK GRN
6 R3000 34 DK GREEN
5 R3000 35 DK GRN/PUR
6 R3000 36 PURPLE
9 R3000 37 PUR/BLK
7 R3000 38 BLACK
4 R3000 39 BLK/DTURQ
1 R3000 40 DK TURQ
16 PLUGS

TOTAL OF 126 REGULATORS

NOZZLE POSITION CHART

S3000 10	BEIGE	1
S3000 12	GOLD	2
S3000 14	LIME	3
S3000 15	LIME/LAV	4
R3000 17	LAV/GRAY	5
R3000 18	GRAY	6, 15, 16
R3000 19	GRAY/TURQ	7, 17, 18, 19, 20
R3000 20	TURQUOISE	21, 22, 23
R3000 21	TURQ/YEL	8, 24, 25, 26, 27
R3000 22	YELLOW	9, 10, 11, 14, 28, 29, 30, 31
R3000 23	YEL/RED	12, 32, 33, 34, 35, 36
R3000 24	RED	13, 37, 38, 39, 40
R3000 25	RED/WHITE	41, 42, 43, 44
R3000 26	WHITE	45, 46, 47, 48, 49
R3000 27	WHITE/BLJE	50, 51, 52, 53, 54, 55
R3000 28	BLUE	56, 57, 58, 59, 60
R3000 29	BLUE/DK BRN	61, 62, 63, 64
R3000 30	DK BROWN	65, 66, 67, 68, 69, 70
R3000 31	DK BRN/ORN	71, 72, 73, 74, 75
R3000 32	ORANGE	76, 77, 78, 79, 80, 81, 82
R3000 33	ORN/DK GRN	83, 84, 85, 86, 87, 88
R3000 34	DK GREEN	89, 90, 91, 92, 93, 94
R3000 35	DK GRN/PUR	95, 96, 97, 98, 99
R3000 36	PURPLE	100, 101, 102, 103, 104, 106
R3000 37	PUR/BLK	105, 107, 108, 109, 110, 111, 112, 113, 114
R3000 38	BLACK	115, 116, 117, 118, 119, 120, 121
R3000 39	BLK/DTURQ	122, 123, 124, 125
R3000 40	DK TURQ	126

PRECIPITATION CHART

KISHNW-27603

MARCH 17, 2014

DEALER - AGRI LINES IRRIGATION

IRRIGATOR - PASCO FARMS
FIELD NO - LEWIS LANE #1

TOTAL LENGTH PIPE = 1280.01
GPM UNDER PIPE = 850.78
ACRES UNDER PIPE = 118.16
RANGE OF ENDGUN = .00
GPM OF ENDGUN = .00
ACRES UNDER ENDGUN = .00

SYSTEM PRESSURE = 40 PSI
TOTAL GPM = 850.78

MOTOR SIZE (HP) = .6
LOADED MOTOR RPM = 1800
CENTER GEAR BOX RATIO = 53
WHEEL GEAR BOX RATIO = 52
TIRE SIZE = 14.9 X 24
LAST TOWER SPEED (FPM) = 7.68

PRECIPITATION BASED			1/2 TIMER BASED		
PRECIPITATION INCHES	1/2 TIMER SETTING	TIME HOURS	1/2 TIMER SETTING	PRECIPITATION INCHES	TIME HOURS
.27	100.00	17.21 - 1032 min	100.00	.27	17.21 - 1032 min
.30	91.25	18.86	90.00	.30	19.12
.40	68.44	25.14	80.00	.34	21.51
.50	54.75	31.43	70.00	.39	24.58
.60	45.63	37.71	60.00	.46	28.68
.70	39.11	44.00	50.00	.55	34.42
.75	36.50	47.14	45.00	.61	38.24
.80	34.22	50.29	40.00	.68	43.02
.90	30.42	56.57	35.00	.78	49.17
1.00	27.38	62.86	30.00	.91	57.36
1.25	21.90	78.57	25.00	1.10	68.83
1.50	18.25	94.29	20.00	1.37	86.04
1.75	15.64	110.00	15.00	1.83	114.72
2.00	13.69	125.72	10.00	2.74	172.08
2.25	12.17	141.43	5.00	5.48	344.16

CAUTION: The relationship between precipitation rate, timer setting, and hours per revolution provided above are theoretical numbers based on the data list at the top of the page. Actual precipitation rates may vary due to the following field and machine conditions: wind drift; evaporation; tire slippage, tire loaded radius; drive train efficiency; elevation changes; soil type. Due to these varying field and machine conditions the above chart should be used as a guide only.

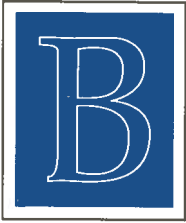
115 NORTH SECOND
PARMA, IDAHO 83660

VALLEY 8000 - 108
NELSON S3000 SPINNERS
NELSON 15 & 20 PSI REGULATORS
.75 I.D. SURELINE FLEXIBLE HOSE
NO ENDGUN

Installation Chart

Page 1

Out #	Drop Len	Sprk #	Noz Size	Reg	Out #	Drop Len	Sprk #	Noz Size	Reg	Out #	Drop Len	Sprk #	Noz Size	Reg	Out #	Drop Len	Sprk #	Noz Size	Reg
1	PLUG				6		30	22	20LF	11		75	31	20LF	16		120	38	20HF
2	PLUG				7		31	22	20LF	12		76	32	20LF	17		121	38	20HF
3	PLUG				8		32	23	20LF	13		77	32	20LF	18		122	39	20HF
4		1	10	15LF	9		33	23	20LF	14		78	32	20LF	19		123	39	20HF
5	PLUG				10		34	23	20LF	15		79	32	20LF	20		124	39	20HF
6		2	12	15LF	11		35	23	20LF	16		80	32	20LF	TOWER 7				
7	PLUG				12		36	23	20LF	17		81	32	20LF			1	125	39
8		3	14	15LF	13		37	24	20LF	18		82	32	20LF	2		126	40	20HF
9	PLUG				14		38	24	20LF	19		83	33	20LF					
10		4	15	15LF	15		39	24	20LF	20		84	33	20LF					
11	FLUG				16		40	24	20LF	TOWER 5									
12		5	17	15LF	17		41	25	20LF			1	85	33	20LF				
13	ELUG				18		42	25	20LF	2		86	33	20LF					
14		6	18	15LF	19		43	25	20LF	3		87	33	20LF					
15	PLUG				20		44	25	20LF	4		88	33	20LF					
16		7	19	15LF	TOWER 3					5		89	34	20LF					
17	ELUG						45	26	20LF	6		90	34	20LF					
18		8	21	15LF	2		46	26	20LF	7		91	34	20LF					
19	PLUG				3		47	26	20LF	8		92	34	20LF					
20		9	22	15LF	4		48	26	20LF	9		93	34	20LF					
TOWER 1					5		49	26	20LF	10		94	34	20LF					
					6		50	27	20LF	11		95	35	20LF					
1	PLUG				7		51	27	20LF	12		96	35	20LF					
2		10	22	20LF	8		52	27	20LF	13		97	35	20LF					
3	PLUG				9		53	27	20LF	14		98	35	20LF					
4		11	22	20LF	10		54	27	20LF	15		99	35	20LF					
5	PLUG				11		55	27	20LF	16		100	36	20LF					
6		12	23	20LF	12		56	28	20LF	17		101	36	20LF					
7	PLUG				13		57	28	20LF	18		102	36	20LF					
8		13	24	20LF	14		58	28	20LF	19		103	36	20LF					
9	PLUG				15		59	28	20LF	20		104	36	20LF					
10		14	22	20LF	16		60	28	20LF	TOWER 6									
11		15	18	20LF	17		61	29	20LF			1	105	37	20HF				
12		16	18	20LF	18		62	29	20LF	2		106	36	20HF					
13		17	19	20LF	19		63	29	20LF	3		107	37	20HF					
14		18	19	20LF	20		64	29	20LF	4		108	37	20HF					
15		19	19	20LF	TOWER 4					5		109	37	20HF					
16		20	19	20LF			1	65	30	20LF	6		110	37	20HF				
17		21	20	20LF	2		66	30	20LF	7		111	37	20HF					
18		22	20	20LF	3		67	30	20LF	8		112	37	20HF					
19		23	20	20LF	4		68	30	20LF	9		113	37	20HF					
20		24	21	20LF	5		69	30	20LF	10		114	37	20HF					
TOWER 2					6		70	30	20LF	11		115	38	20HF					
					7		71	31	20LF	12		116	38	20HF					
1		25	21	20LF	8		72	31	20LF	13		117	38	20HF					
2		26	21	20LF	9		73	31	20LF	14		118	38	20HF					
3		27	21	20LF	10		74	31	20LF	15		119	38	20HF					
4		28	22	20LF															
5		29	22	20LF															



BROCKWAY
ENGINEERING
P.L.L.C.

Hydraulics

Hydrology

Water Resources

RECEIVED

NOV 23 2016

DEPARTMENT OF
WATER RESOURCES

November 22, 2016

Darla Block
Idaho Department of Water Resources
322 East Front Street
PO Box 83720
Boise, ID 83720

Re: Water Right Permit 63-33491

Dear Darla:

Attached to this letter is the Statement of Completion signed by Frank Tiegs and a Beneficial Use Field Report stamped by Charles G. Brockway and signed by Greg Sullivan for water right permit 63-33491.

Please review the two documents and let me know if there is any additional information required by IDWR for Permit 63-33491 to become a License.

Sincerely,

Greg Sullivan

CHARLES E.
BROCKWAY,
PH.D., P.E.

CHARLES G.
BROCKWAY,
PH.D., P.E.

2016 NORTH
WASHINGTON
STREET • SUITE 4

TWIN FALLS,
IDAHO 83301

208•736•8543

FAX: 736•8506

Cc: Frank Tiegs

Enc: Statement of Completion, Beneficial Use Field Report, Water Permit Report, Well
Drillers Log, IDWR Permit Aerial Map, Pivot Package Design by Agri Lines Irrigation