STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-23460
Exam Date: 8/6/19

1. Current Owner:
   ANTHONY HENDRICKSON 4600 NW 2ND AVE NEW PLYMOUTH ID 83655 AND/OR
   LORRAINE HENDRICKSON 4600 NW 2ND AVE NEW PLYMOUTH ID 83655

2. Accompanied by: Anthony (Tony) Hendrickson
   Phone No: (208) 278-5234
   Address: 4600 NW 2ND AVE, NEW PLYMOUTH, ID 83655
   Relationship to permit Holder: same

3. **SOURCE:**
GROUND WATER

Method of Determination: Permit application, IDWR records, and field examination

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis

Comments: Noble Ditch Co. and Lake Reservoir Co

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

Water Right No.	Source	Purpose of Use	Basis

Comments: none

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
GROUND WATER SW¼ SW¼, Sec. 27, Twp 08N, Rge 04W, B.M. PAYETTE County

Method of Determination: Field examination and Garmin Handheld GPS point (43.99639°,-116.80929° Well Location)

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
08N	04W	27											12.5						12.5

Total Acres: 12.5

Method of Determination: Aerial Imagery, ArcMap Tools, and observation during field exam.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.
__X__ Indicate weir size/pipe as applicable.

Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be
____ 1:24,000 or greater.

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

__X__ Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0060395	Franklin	5		Robbco 5 Hp	150 gpm

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements:

E. FLOW CALCULATIONS

__X__ Additional Computation Sheets Attached

Measured Method:

Theoretical Pump Calculation

Open discharge from well into vertical CMP holding tank with a 5 hp pump set at an approximately 65 feet.

(8.8) x (5 hp) x 0.70 / [(63) + (25 X 2.31)] = 0.25 cfs or 112.6 gpm

Nozzle Discharge Calculation

Small Wheeline: Nozzle diameter (D) = 11/64", Nozzle Pressure (P) = 70 psi

$Q_n = 28.9 \times D^2 \sqrt{P} = 28.9 \times (0.172)^2 \times (\sqrt{70}) = 7.34$ gpm/nozzle

A total of 5 nozzles were counted running during the field exam.

5 x 7.34 gpm = 36.7 gpm or 0.08 cfs

Big Wheeline: Nozzle diameter (D) = 1/8", Nozzle Pressure (P) = 30 psi

$Q_n = 28.9 \times D^2 \sqrt{P} = 28.9 \times (0.125)^2 \times (\sqrt{30}) = 2.56$ gpm/nozzle

A total of 22 nozzles were reported to operate on big line by the landowner.

22 x 2.56 gpm = 56.3 gpm or 0.13 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$V_{I.R.}$ = (Acres Irrigated) x (Irrigation Requirement) = (12.5 acres) x (4.5 af) = 56.3 af
$V_{D.R.}$ = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = (0.13 cfs) x (260 days) x 1.9835 = 67.0 af
V = Smaller of $V_{I.R.}$ and $V_{D.R.}$ = 56.3 af

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

The field exam was conducted on August 6, 2019 by water resource agents Cody Parker and Allen Bradbury. Permit holder and property owner, Tony Hendrickson, accompanied the agents on the field exam. Current Canyon County tax parcel data confirms Anthony Roger Hendrickson and Lorraine Jeanette Hendrickson to be the current owners of the property pertinent to the place of use (POU) and point of diversion (POD). No ownership change is required.

Groundwater is pumped from a well drilled in 2014. The well drillers report, well tag # D0060395, describes a 104 foot deep well, completed April 21, 2012. Documents provided by the permit holder at the time of the exam described a 5 hp Franklin motor and a 5 Hp Robbco submersible pump set at 63 feet. Water delivery occurred through open discharge into a vertical CMP holding tank, 48" x 48". The water from the holding tank was pressurized by a 7.5 HP Baldor Reliancer motor for conveyance into 8-inch pvc mainline. A wheeline system consisting of two separate line applies irrigation water to a 12.5 acre place of use planted in alfalfa. The shorter wheeline runs five sprinkler heads fitted with 11/64" nozzles irrigating 1.5 acres. The longer wheeline runs twenty-two sprinkler heads fitted with 1/8" nozzles irrigating 11.0 acres.

The POU was determined using aerial photography, GIS, and field exam observation to determine irrigation within the beneficial use period. The permit authorized the irrigation of 15 acres and proof of beneficial use was received on May 20, 2015. Review of 2013 through 2015 aerial imagery shows continual irrigation during the beneficial use period, however the amount of area irrigated differs from the permitted acres due to acreage in the north end of the property that is not irrigated and the 1.5 acres occupied by the farm yard and home.

Aerial photography and field observation documented that the well water could be delivered to approximately 12.5 acres. I am recommending a POU based on the apparent acres irrigated as calculated from GIS of 12.5 acres.

The proposed rate of diversion was 0.30 cfs on the original application, permit, and proof of beneficial use. However, a direct measurement could not be taken from the short pipeline between the well and the holding tank. The holding tank was not equipped with a drain, therefore a measurement could not be gained by a timed fill either. The theoretical discharge calculation for the 5 Hp pump, based on a lift of 65 feet, operating at 25 psi, yielded a theoretical flow of 0.25 cfs or 112.6 gpm. The permit holder communicated that the well drew down too rapidly and would run out of water, possibly indicating an oversized pump or perhaps some limits to the production capacity of the well. In an effort to get comparative measurements a theoretical calculation was made based on nozzle discharge. The smaller line was operating at 70 psi during the time of the field exam. The five heads operating with 11/64" nozzles on the small line were calculated to produce 7.34 gpm per head or 36.7 gpm (0.08 cfs) total. The twenty-two heads operating with 1/8" nozzles on the longer line were calculated to produce 2.56 gpm per head or 56.3 gpm (0.13 cfs) total. The system could potentially fill the holding tank at a higher rate as calculated in pump equation, however this cannot be determined. The nozzle discharge equation at least offers some hint of the limits of the system. I am recommending the theoretical rate based on the nozzle discharge calculation of the longer wheeline of 0.13 cfs for licensing.

Overlap review found surface water delivery for irrigation from the Noble Ditch Co. and Lake Reservoir Co., however the landowner reports that neither ditch can access his property and neighbors will not grant easements for access via pipelines. Overlap analysis found no overlap for the POD.

Conditions 046 and 26A were removed as per department licensing standards. Condition 121 was updated to 103. Condition 004, concerning right of way and easements was removed.

Have conditions of permit approval been met? _X_ Yes ____ No

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use	Rate of Diversion	Volume
IRRIGATION	03/01 to 11/15	0.13 CFS	56.3 AF
	Totals:	0.13 CFS	56.3 AF

2. Recommended Amendments

____ Change P.D. as reflected above ____ Add P.D. as reflected above _X_ None

____ Change P.U. as reflected above ____ Add P.U. as reflected above _X_ None

I. AUTHENTICATION

Allen Bradbury - Water Resource Agent, Senior

Field Examiner's Name Allen Bradbury Date 9/25/20

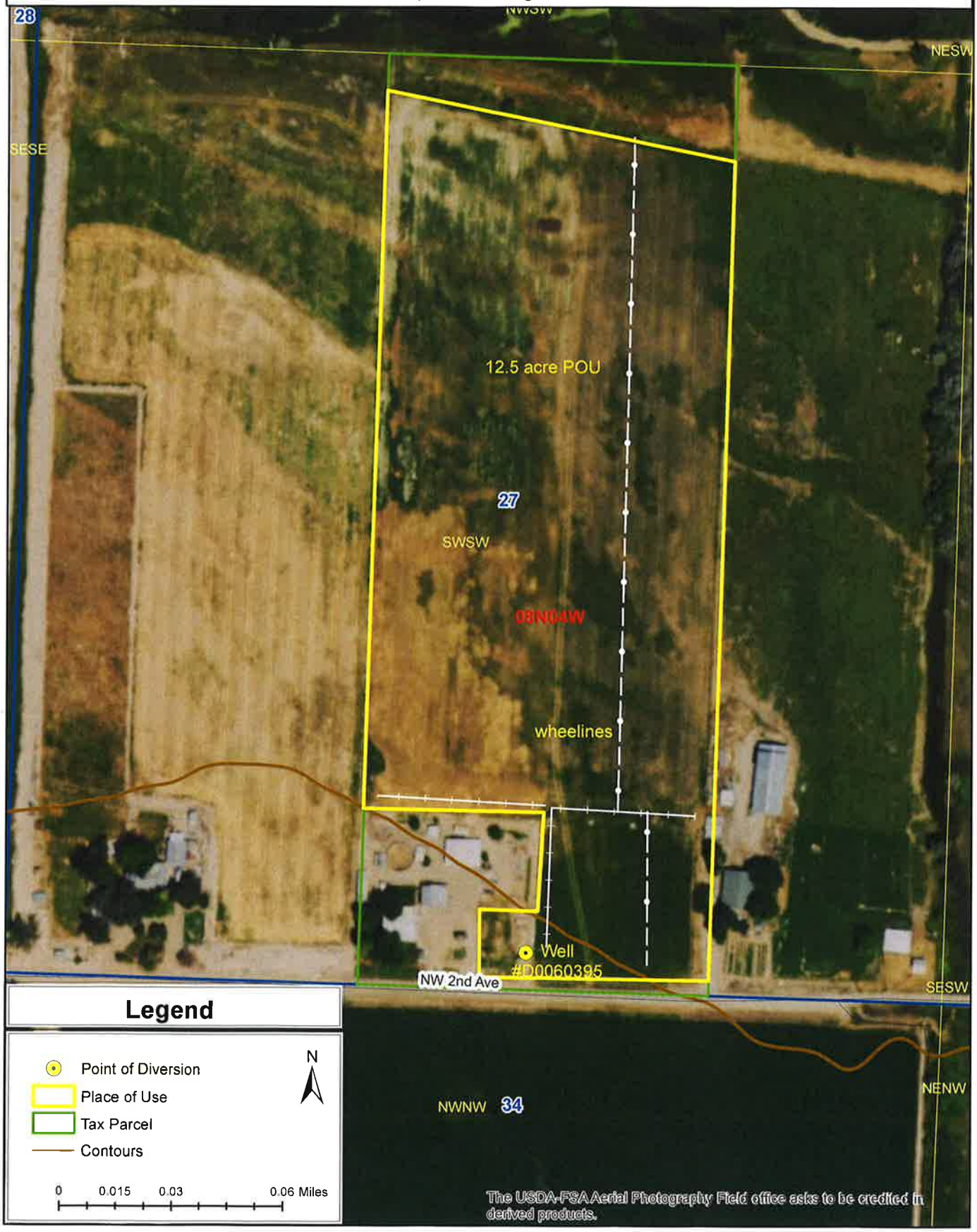
Reviewer _____ Date _____

Right No. 65-23460

Beneficial Use Field Report

System Design

WRA Allen Bradbury



BENEFICIAL USE FIELD REPORT CALCULATIONS

Permit #: 65-23460 **Proof Due:** 12/1/2016 **Proof Subm:** 5/20/2015
Permit Name: Tony Hendrickson **Priority Date** 7/19/2011 **Exam Date:** 8/6/2019

Flow Rate 0.30
Fee Rate 0.21 to 1.00
Exam Fee $100.00

0.00 to 0.20	$50.00	2.01 to 3.00	$150.00
0.21 to 1.00	$100.00	3.01 to 4.00	$175.00
1.01 to 2.00	$125.00	4.01 to 5.00	$200.00

Proposed Well Use: Irrigation **Drill Date:** 4/21/2012 **Well Depth:** 104 ft **Pump Set:** 63 ft ft
Permit Uses: Irrigation **Tag #:** D0060395

	cfs	gpm
Proposed Rate	0.30	134.65
Permit Rate	0.30	134.65
Proof Report	0.30	134.65
Irrig. Only	0.30	134.65
Stockwater		0.00
Domestic		0.00

Acres Proposed:	15.0
Acres Permitted:	15.0
Acres Developed:	12.5

FLOW CALCULATIONS

Meter Type: n/a
Meter Reading: gpm
0.000 cfs

	Line 1	Line 2
Nozzle Size	11/64	1/8
PSI	70	30
Input # heads:	5	22
Input gpm/head	7.3	2.6
gpm/line	36.7	56.3
cfs/line	0.08	0.13
		0.21

Theoretical Method Est. Pump Set 63 + 2 = 65

Pump from well
Q = (8.8) X (HP) X E / TDH

HP =	E =	H =	PSI =	Q =	Q =
5.0	70.0%	65	25	**0.25** cfs	**112.62** gpm

Pump from holding tank

HP =	E =	H =	PSI =	Q (cfs)	Q (gpm)
7.5	70.0%	0	70	**0.29**	**128.24**

HP = Total Brake Horsepower of pumping plant (including booster)
Eff. = Pumping plant efficiency (assume 70% or 0.70)
TDH = Total dynamic head = [(LIFT) + (PSI X 2.31)]
PSI = Pumping pressure measured in PSI near pump (if open discharge assume [0])
Q = rate of flow in cubic feet per second,

Recommended Flow Rate: 0.13

Consumptive Use	4.5	**Headgate Requirement**		4.5		
Season of Use	3/1	11/15	=	260	days	
Volume (VIR)	12.5	X	4.5	=	56.3 af	
Volume (DR)	0.130	x	260	x	1.9835 =	67.04 af
BU Standard Rate	12.5	X	0.02	=	0.25 cfs	
Rate/acre	0.130	/	12.5	=	0.010 cfs/ac	

V I.R. = (Acres Irrigated) x (Irrigation Requirement)
V D.R. = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835
V = Smaller of V I.R and V D.R

Recommendation Standards for diversion rate (choose most restrictive)

0.30 Permit Rate – the rate applied for
0.30 Fee Rate – the maximum rated paid for on the fee schedule.
0.25 Beneficial Use (BU) standard = x.x ac * 0.020 cfs/acre
0.00 Measured Value – the value measured in the field
0.13 Theoretical Rate - the rate calculated
0.25 Theoretical Rate - the rate calculated

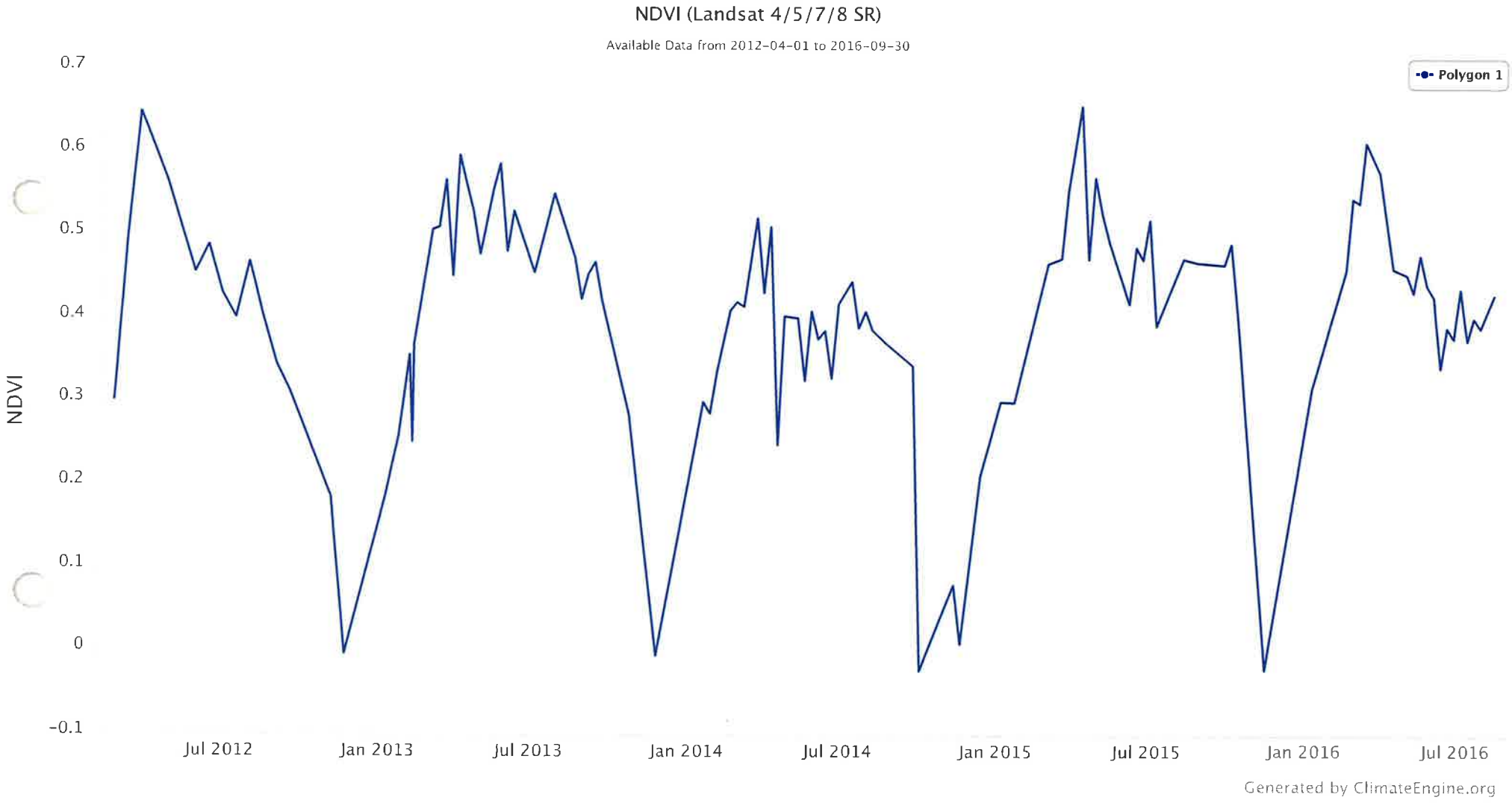

NDVI (Landsat 4/5/7/8 SR)
Available Data from 2012-04-01 to 2016-09-30
Polygon 1
NDVI
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
Jul 2012
Jan 2013
Jul 2013
Jan 2014
Jul 2014
Jan 2015
Jul 2015
Jan 2016
Jul 2016
Generated by ClimateEngine.org

Figure 1. Well tag #D0060395.

Figure 2. Well pumping into small CMP holding tank.

Figure 3. CMP holding tank with overflow pipe, inflow pipe, and outflow to booster pump.

Figure 4. Booster pump attached to holding and pumping out to mainline.

Figure 5. 7.5 hp Booster pump.

Figure 6. Booster pump tag.

Figure 7. Irrigated hay field. Larger wheeline in background has 20 sprinkler heads with 1/8" nozzles.

Figure 8. Small wheeline of 5 sprinkler heads with 11/64" nozzles.

Form 238-7
6/07

W5

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

862804

1. WELL TAG NO. D 0060395
Drilling Permit No. 914184-862806
Water right or injection well # 65-23460
2. OWNER: Anthony and Lorraine Hendrickson
Name Tony Hendrickson
Address 4600 NW 2nd Ave
City New Plymouth State Idaho Zip 83655

3.WELL LOCATION:
Twp. 8 North ☒ or South ☐ Rge. 4 East ☐ or West ☒
Sec. 27 10 acres 1/4 SW 40 acres 1/4 SW 160 acres 1/4
Gov't Lot _____ County Payette
Lat. 43 ° 59.780 (Deg. and Decimal minutes)
Long. 116 ° 48.566 (Deg. and Decimal minutes)
Address of Well Site 4600 NW 2nd Ave
(Give at least name of road + Distance to Road or Landmark) City New Plymouth
Lot. _____ Blk. _____ Sub. Name _____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation ☐ Thermal ☐ Injection
☐ Other _____

5. TYPE OF WORK:
☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
Bentonite	0	22	950	Temp Casing 12"
				& Overbore

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/ Schedule	Material	Casing	Liner	Threaded	Welded
8	1	24	.250	Steel	☒	☐	☐	☒
6	-13	104	f480	PVC	☐	☒	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 24

9. PERFORATIONS/SCREENS:
Perforations ☐ Y ☒ N Method _____
Manufactured screen ☒ Y ☐ N Type Slotted PVC
Method of installation Lowered

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
54	104	.020		6	PVC	F480

Length of Headpipe 40 Length of Tailpipe 1
Packer ☐ Y ☒ N Type _____

10.FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method

11. FLOWING ARTESIAN:
Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____
Describe control device In Well Seal

12. STATIC WATER LEVEL and WELL TESTS:
Depth first water encountered (ft) 10 Static water level (ft) 6
Water temp. (°F) 60 Bottom hole temp. (°F) _____
Describe access port In Well Seal

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Test method: Pump	Bailer	Air	Flowing artesian
104	50+	2hr	☐	☐	☒	☐
36	150	2hr	☒	☐	☐	☐

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water Y	Water N
12	0	2	Top Soil		
12	2	8	Dirty Sand & Gravel		
12	8	16	Sand & Gravel	X	
12	16	23	Blue Clay		
8	23	29	Blue Clay		
8	29	30	Black Sand	X	
8	30	41	Blue Silty Sand		
8	41	42	Black Sand		
8	42	53	Blue Clay		
8	53	54	Black Silt and Sand		
8	54	60	Black Silt		
8	60	62	Black Sand		
8	62	70	Blue Silt		
8	70	75	Black Sand	X	
8	75	84	Blue Clay		
8	84	92	Black Sand	X	
8	92	96	Blue Silt		
8	96	98	Black Sand	X	
8	98	104	Blue Clay		

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JUN 27 2012
WATER RESOURCES
WESTERN REGION

Per diagram - bentonite type is 3/8 chips. (see waiver) MP

Completed Depth (Measurable): 104
Date Started: Apr 6, 2012 Date Completed: Apr 21, 2012

14. DRILLER'S CERTIFICATION:
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Dallas Drilling & Pump Co. No. 445
*Principal Driller _____ Date 5/1/2012
*Driller _____ Date 5/1/2012
*Operator II _____ Date _____
Operator I _____ Date _____

*** Signature of Principal Driller and rig operator are required.**

Form #
Wav 8/08

Well ID Tag No._____

Request for Waiver of Administrative Rules for Well Construction Standards

This request is made pursuant to IDAPA 37.03.09, Rule 025.01.b for waiver from specific minimum construction requirements identified below. This request is specific to a well to be constructed for Tony Hendrickson (the legal well/property owner) and associated with the tag number listed above. This request is made jointly by the licensed well driller and the property owner. The well driller and well owner hereby acknowledge that they concur with this request and understand they are jointly responsible for ensuring that the ground water resources will be protected against waste and contamination. Approval of this request only implies that the construction plan as proposed appears to meet the intent of the Rules and should protect the groundwater from waste and contamination. Approval of this request is not an endorsement by the Department of adequate well construction or completion. Approval does not constitute a waiver of any other standards not identified on this request. The following rule(s) are requested to be waived: (must identify specific Rule(s) by number from IDAPA 37.03.09)

1) 37.03.09 08
2) 37.03.09 10 Alternative Methods
3) _____

Reason for request: Don't want Seal entering the Water Bearing Zone

Describe additional safeguards being employed to accommodate for variance from the required standard. **(Well completion diagram required. Please attach to this application).**

_____

_____

By signing below, the well driller and well owner acknowledge that they have discussed the associated risks and benefits of this proposal, are ultimately responsible for the proper construction of this well, and are in agreement with this request.

Well Driller _____ Date 5/11/2012

Well Owner _____ Date 5-14-12

IDWR Representative _____ Date 7/9/12

☐Approved ☐ Denied

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WESTERN REGION

State

Tony Hendrickson
Tag # D0060395
Water-Right # 65-23460

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