

RECEIVED

MAY 29 2020

DEPARTMENT OF WATER RESOURCES

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED

MAY 29 2020

DEPARTMENT 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 INFORMATION

Permit No. 63-34330

- 1. Owner Gardner Mace Ranch LC
Phone No. 208-246-8909
Current address c/o Weston Arnell, Gardner Company, 800 W Main St, Ste 1220, Boise, ID 83702
2. Examiner's name Scott N. King
EXAM DATE November 18, 2019
3. Accompanied by Weston Arnell
Email
Address 101 S Capitol Blvd Ste 1201
Relationship to permit holder
Phone No. 208-246-8909
4. Source Ground Water
tributary to Boise River

B. OVERLAP REVIEW

Eagle Water Co, United Water Idaho Inc, 63-33864 (pmt)

- 1. Other water rights with the same place of use 63-16272, -16373, -182, -216A, -161CF, -182, -34329 (pmt)
2. Other water rights with the same source and point of diversion None

C. DIVERSION AND DELIVERY SYSTEM

1. Point(s) of Diversion: See attachment B.

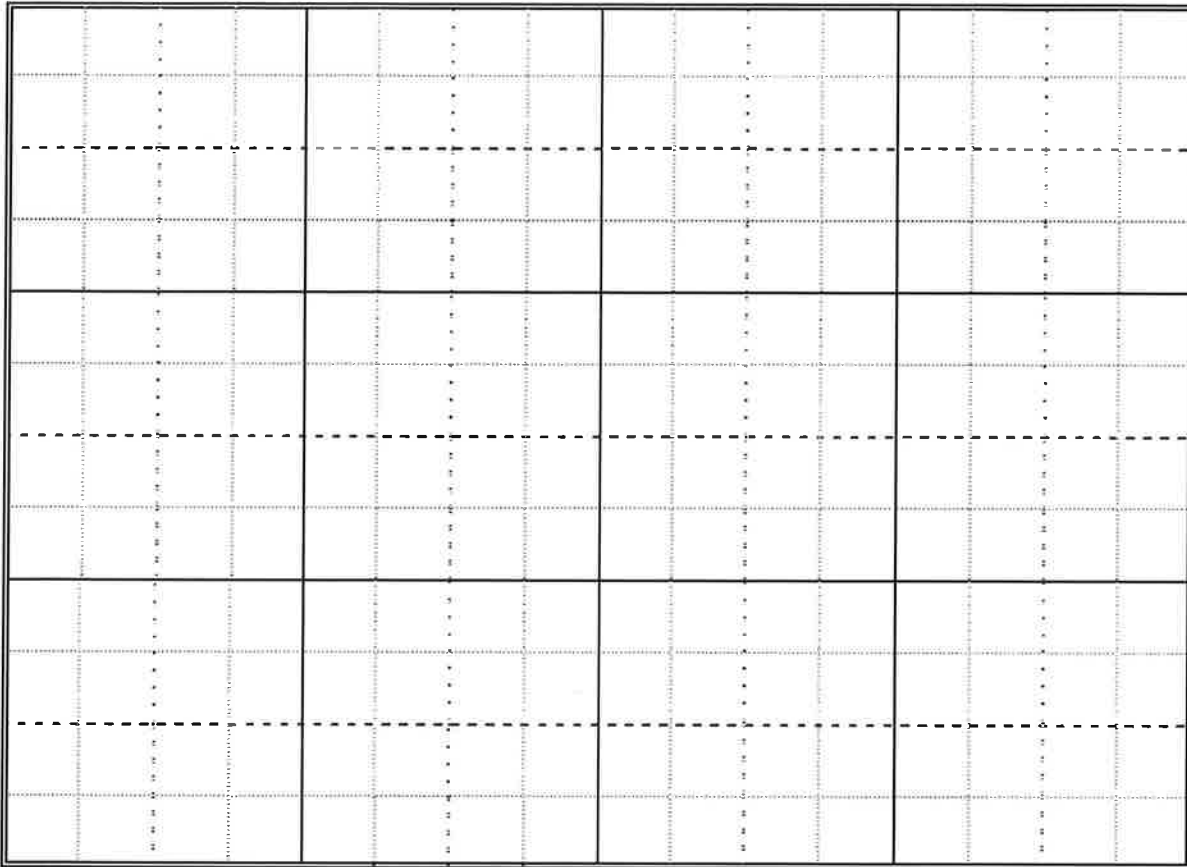
Table with columns: Ident. No., Gov't Lot, 1/4, 1/4, 1/4, Sec, Twp, Rge, County, Method of Determination/Remarks. Row 1: 1, , NW, NW, 17, 4N, 1E, Ada, GPS, Imagery, Field Examination

2. Place(s) of Use: Method of determination GPS, Aerial Imagery

Table with columns: Twp, Rge, Sec, NE, NW, SW, SE, NE, NW, SW, SE, NE, NW, SW, SE, NE, NW, SW, SE, Totals. Row 1: 4N, 1E, 17, X, X, X, X, X, X, X, X, X, X, X, X, X, X, X, X, X

X = Aesthetic and Recreation

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or see attached.



Scale: 1" = _____

- 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

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
1	CentriPro	20	unknown	Goulds	Model VIS-WF. 7WALC 3 stg

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Installed Flowmeter	unknown	unknown	unknown	unknown	unknown	

2. **Measurements:** _____
 Discharge is measured with an permanently installed flowmeter integral with the package pressurized irrigation pump station.

F. FLOW CALCULATIONS

Additional computation sheets attached

Measured Method:

Installed flowmeter averaged 159 gpm (0.35 cfs)

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{I,R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$ _____

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

$V = \text{Smaller of } V_{I,R} \text{ and } V_{D,R} =$ _____

2. Volume Calculations for Other Uses:

$0.35 \text{ cfs} \times 1.9835 \text{ af/cfs-day} \times 92 \text{ days} = 63.9 \text{ af}$

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Aesthetic	10/1	12/31	0.35	63.9
Recreation	10/1	12/31	0.35	63.9
Totals:			0.35	63.9

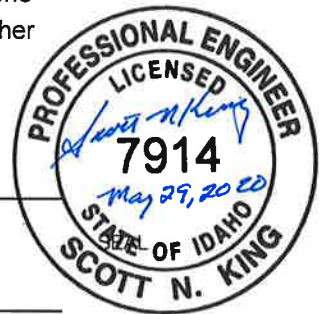
2. Recommended Amendments

- 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

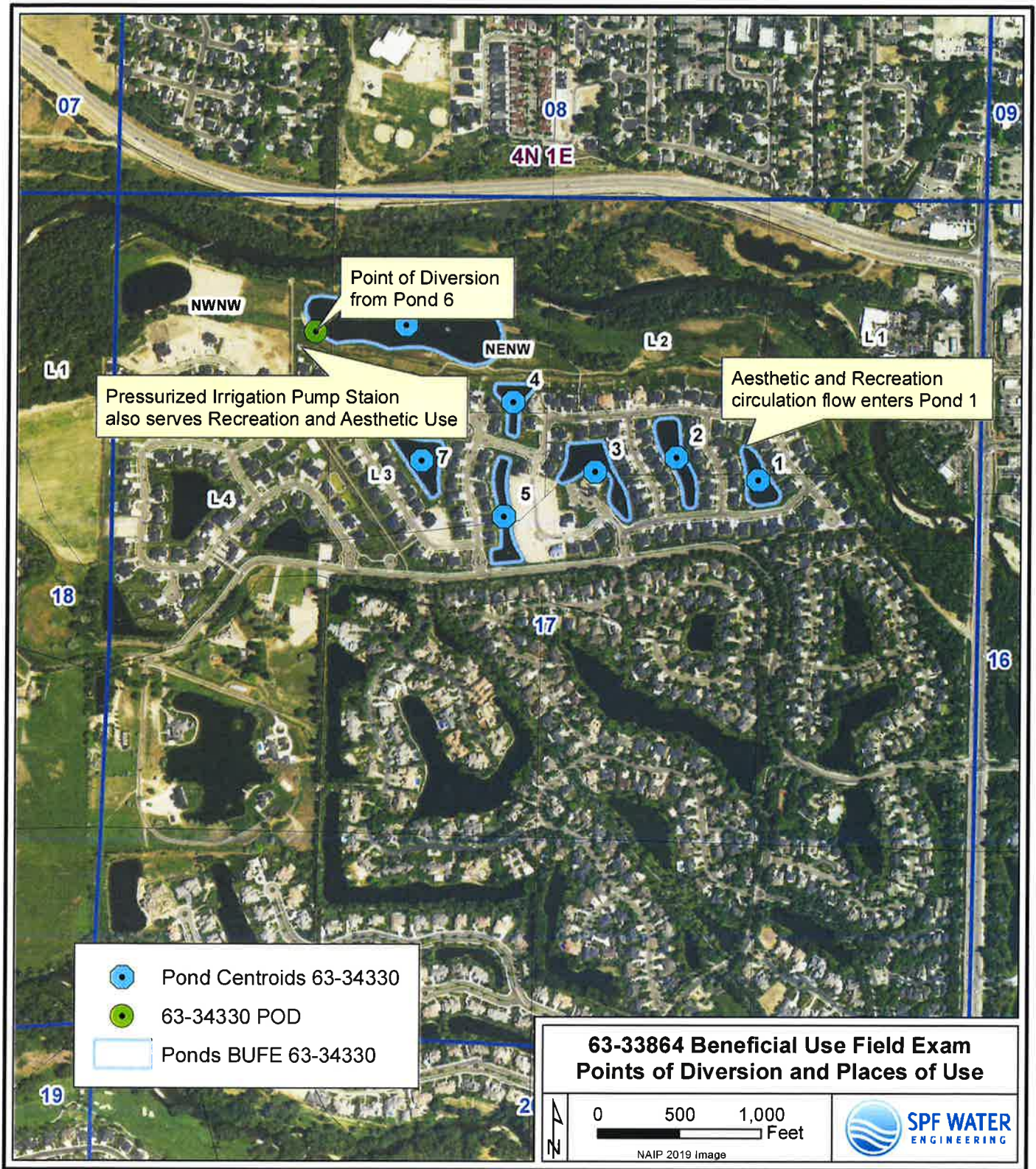
I. AUTHENTICATION

Field Examiner's Signature Scott N. King Date 5/29/2020

Reviewer _____ Date _____






Attachment A
Field Exam Map



Point of Diversion from Pond 6

Pressurized Irrigation Pump Station also serves Recreation and Aesthetic Use


Aesthetic and Recreation circulation flow enters Pond 1

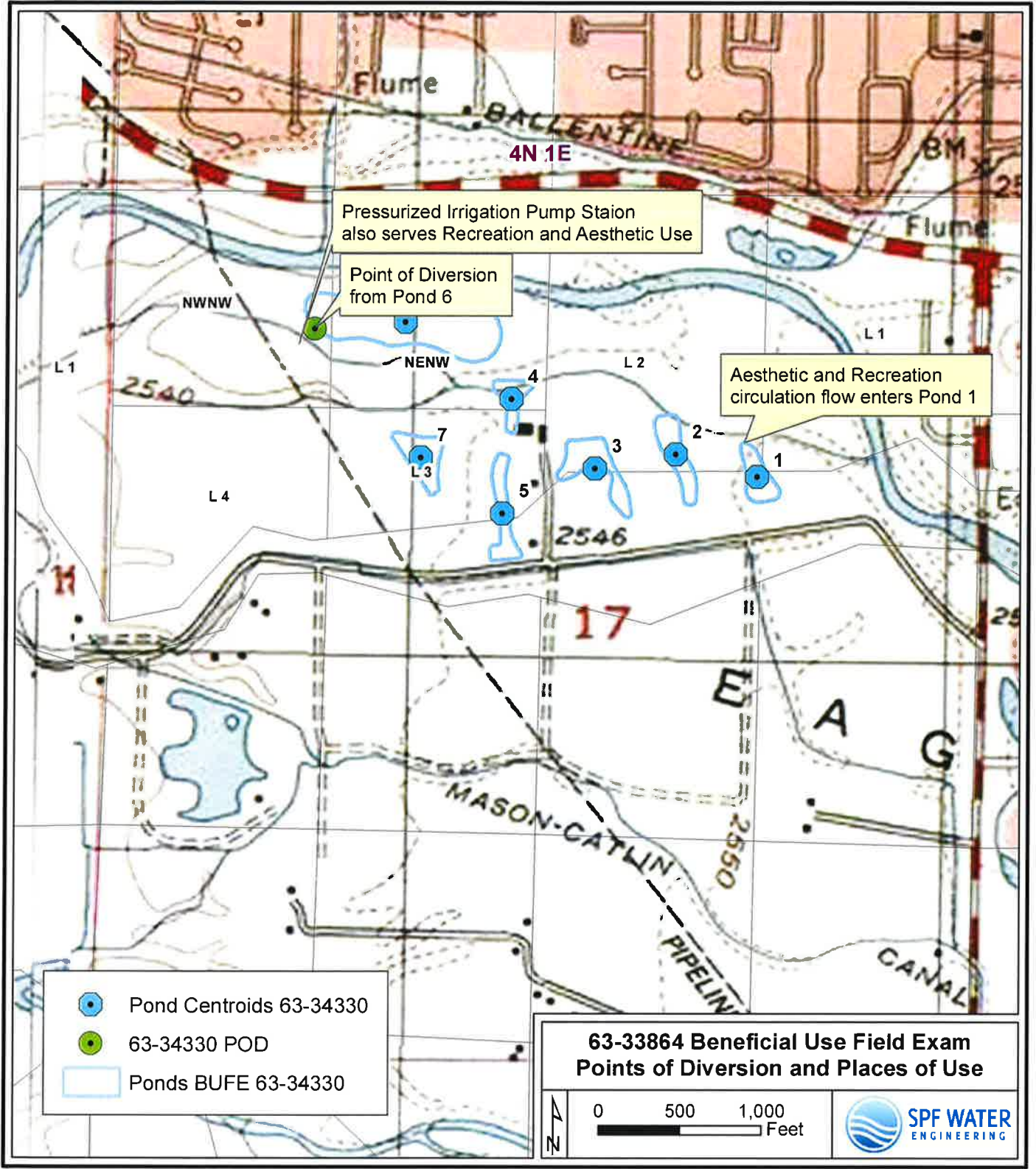
-  Pond Centroids 63-34330
-  63-34330 POD
-  Ponds BUFE 63-34330




63-33864 Beneficial Use Field Exam
Points of Diversion and Places of Use

0 500 1,000 Feet

NAIP 2019 Image






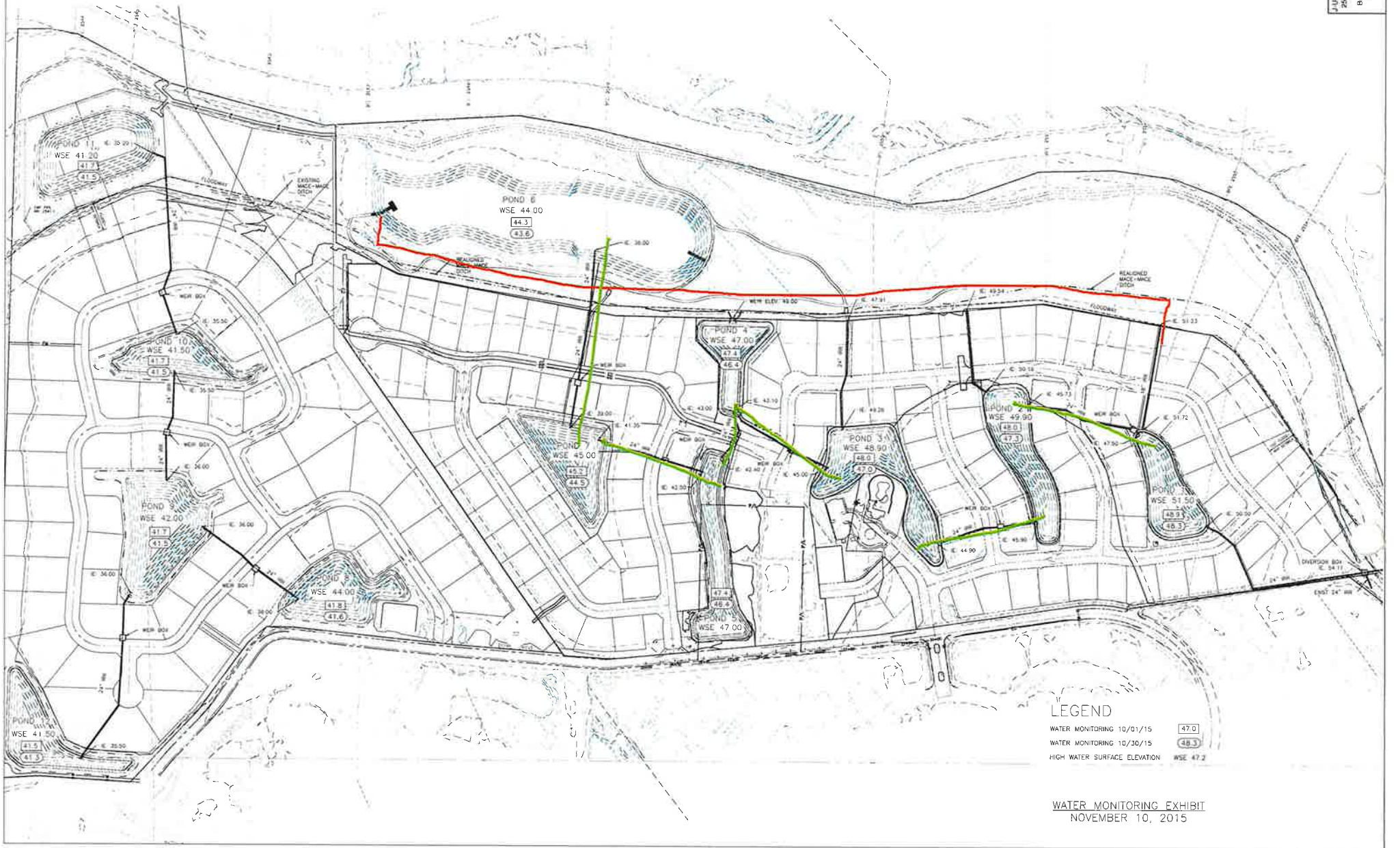
-  Pond Centroids 63-34330
-  63-34330 POD
-  Ponds BUFE 63-34330

**63-33864 Beneficial Use Field Exam
Points of Diversion and Places of Use**

0 500 1,000
Feet



Attachment B
System Components



WATER MONITORING EXHIBIT
NOVEMBER 10, 2015

OVERALL PUMP PARAMETERS

Capacity:	245.00 USGPM	Total Dynamic Head:	233.00 ft
Total Pump Length:	0.00 ft	Impeller Trim:	5.250 inch
Pump Type:	VIS -Submersible Vertical Turbine (Borehole) Pumps	Number of Stages:	3
Pump K-Factor:	2.63 lbs/ft	Pumping Level:	0.00 ft
Additional Pump K-Factor:	2.63 lbs/ft		
Pump Operating Speed [RPM]:	3550		

BOWL DATA

Total Bowl Length:	23.620 inch	Bowl Shaft Limit :	246 Hp
Bowl Shaft Diameter:	1.188 inch	Bowl Shaft Material:	416SS
Bowl Diameter:	7.120 inch		

COLUMN DATA

Column Diameter :	4 inch	Column Elongation:	0.00001 inch
Column Wall Thickness:	0.230 inch	Shut Off Column Elongation:	0.00002 inch
Column Load:	216.60 lb		

HORSEPOWER DATA

Bowl Hp at Design:	19 Hp	Rating:	20 Hp [14.9 kW]
Thrust Load Loss:	0.00000 Hp		

OTHER DATA

Hydraulic Thrust:	612.70 lb	Actual Head Above Grade:	232.53 ft
Thrust at Shut Off:	956.68 lb	Shut Off Discharge Pressure:	155.40 psi
Column Loss:	0.02 ft	NPSHa:	34.00 ft
Head Loss:	0.45 ft	NPSHr:	14.70 ft @design
Total Loss:	0.47 ft	NPSH Margin:	2.00 ft
Thrust at Design:	625.30 lb		

EFFICIENCY DATA

Bowl Efficiency:	76.30 %	Overall Efficiency:	0.00 %
Motor Efficiency:	0.00 %	KWH per 1000 gallons:	0.00
Pump Efficiency:	75.00 %		

FLUID DATA

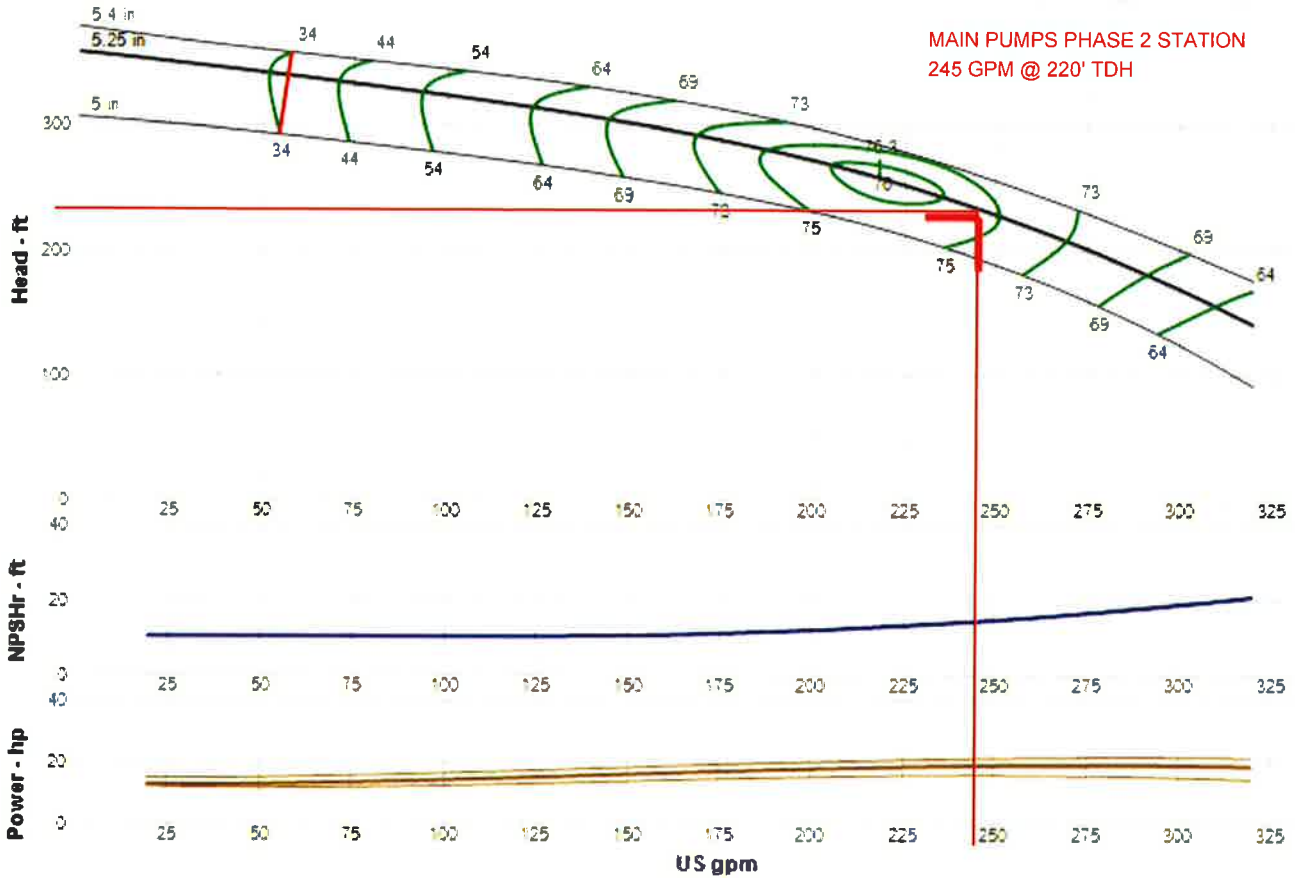
Fluid Type:	Water	Specific Gravity:	0.9999
Temperature:	70.00°F	Viscosity:	0.9695 cP

COMPONENT WEIGHTS

Bowl Weight:	128 lbs	Column Weight:	0 lbs
Head Weight:	0 lbs	Can Weight:	
Driver Weight:	152 lbs	Total Pump Weight:	280 lbs

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Certified by	
Date of certification	
Pump serial number	
Project Name	Mace River #2 - 20HP VIS
Tag	



Driver Size Criteria:	Max power on design curve (NOL)	Best Efficiency:	76.30 %
Speed:	3550 RPM	Flow at BEP:	218.00 USGPM
Impeller Trim:	5.250 inch	Min Flow:	54.40 USGPM
Additional Impeller Trim:	5.2500 inch	Derate Factor:	1.0000
Frequency:	60 Hz	Specified NPSH Avail:	34.00 ft
Impeller Maximum Trim:	5.400 inch	NPSH Required:	14.70 ft
Specified Flow:	245.00 USGPM	Shut-Off Head:	359.00 ft
Specified Head:	228.000 ft	Fluid Type:	Water
Head at Design:	233.00 ft	Temperature / Specific Gravity:	70.00°F / 0.9999
Efficiency at Design:	75.20 %	Viscosity:	0.9695 cP
Power at Design:	19 Hp	Allowable Sphere Size:	0.38 inch
Flow on Design Trim @ Max Pwr:	272.00 USGPM	Thrust K Factor:	2.63 lbs/ft
Max Power on Design Curve:	19.30 Hp	Additional Thrust K Factor:	2.63 lbs/ft

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Certified by	
Date of certification	
Pump serial number	
Project Name	Mace River #2 - 20HP VIS
Tag	

OPERATING CONDITIONS

Temp / SG: 70.00° F / SP.GR 0.9999
 Fluid type: Water
 Vapor pressure: 0.3633 psi
 Viscosity: 0.9695 cP
 Specified flow: 245.00 USGPM
 Total dynamic head: 233.00 ft
 Pumping level: 0.00 ft

PERFORMANCE AT 3550 RPM

Bowl efficiency: 75.20 % @design, 76.30 % Best Efficiency
 Run out capacity: 272.00 USGPM
 Power: 19 Hp @design, 19.30 Hp NOL
 NPSHr: 14.70 ft @design
 Design thrust: 625.30 lb @design
 Shut off pressure: 155.40 psi

MATERIALS AND DIMENSIONS

Bowl: Cast Iron CL30 Enamel
 Bowl Wear Ring Material: None
 Impeller: 316SS
 Impeller Wear Ring Material: Not Included
 Impeller Balance: Mnf.Standard
 Impeller Lock Method: Taper lock
 Impeller diameter: 5.250 inch
 Bowl shaft: 416SS, 1.188 inch diam.
 Suction adapter bearings: Bronze C90300 "G" Modified
 Bowl bearings: Bronze
 Suction adapter: Ductile Iron 65-45-12
 Bowl features: No Added Features
 TPL: 0.00 ft
 Sump/Pit Depth: 0.00 ft
 Documentation: Standard pump installation and operation manual and order data

DRIVER

Type: Standard
 Manufacturer: CentriPro
 Rating: 20 Hp [14.9 kW]
 Motor Diameter / Frame / Enclosure: 6 inch / 6 inch / SUBM
 Phase / Frequency / Volts: 3 / 60 Hz / 460
 Speed: 3600 RPM
 Construction: STD
 Coupling material: SST 416

TESTING

Hydrostatic: None

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Certified by:	
Date	
Quotation number:	9001-180202-038
Project:	Mace River #2 - 20HP VIS
Tag:	



TURBINE SUBMITTAL

Quote Number: 9001-180202-038:1

Model: VIS-WF

Size: 7WALC 3 Stage(s)

Performance: None
Final Inspection: None
Other: None

COATING

Coating information: Goulds Water Technology Standard Blue Enamel; Bowl Assembly - STD; Riser Assembly - STD; Head Assembly - STD

ADDITIONAL FEATURES

Check valve: None
Sanitary Well Seal: No
Additional bowl features:
Additional riser features:
Additional driver features:
Additional head features:
Additional misc. features:

WEIGHTS

Total bowl weight: 128 lbs
Column weight: 0 lbs
Head weight: 0 lbs
Driver weight: 152 lbs
Total unit weight: 280 lbs

Our offer does not include specific review and incorporation of any Statutory or Regulatory Requirements and the offer is limited to the requirements of the design specifications. Should any Statutory or Regulatory requirements need to be reviewed and incorporated then the Customer is responsible to identify those and provide copies for review and revision of our offer.

Our quotation is offered in accordance with our comments and exceptions identified in our proposal and governed by our standard terms and conditions of sale – Xylem Americas attached hereafter.

For units requiring performance test, all performance tests will be conducted per ANSI/HI 14.6 standards unless otherwise noted in the selection software submittal documents. Test results meeting with grade 2B tolerances for pumps with a rated shaft power of 134HP or less and grade 1B for greater than 134HP will be considered passing.

Customer is responsible for verifying that the recommendations made and the materials selected are satisfactory for the Customer's intended environment and Customer's use of the selected pump. Customer is responsible for determining the suitability of Xylem recommendations for all operating conditions within Customer's and/or End User's control. Xylem disclaims all warranties, express or implied warranties, including, but not limited to, warranties of merchantability and fitness for a particular purpose and all express warranties other than the limited express warranty set forth in the attached standard terms and conditions of sale – Xylem Americas attached hereafter.

Xylem does not guarantee any pump intake configuration. The hydraulic and structural adequacies of these structures are the sole responsibility of the Customer or his representatives. Further, Xylem accepts no liability arising out of unsatisfactory pump intake field operating conditions.

The Customer or his representatives are referred to the Hydraulic Institute Standards for recommendations on pump intake design. To optimize the hydraulic design of a field pump intake configuration, the Customer should strongly consider performing a detailed scale model pump intake study. However, the adequacies of these recommendations are the sole responsibility of the Customer.

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Certified by:	
Date	
Quotation number:	9001-180202-038
Project:	Mace River #2 - 20HP VIS
Tag:	

OUTLINE DRAWING

Quote Number: 9001-180202-038:1
Model: VIS-WF
Size: 7WALC 3 Stage(s)

PUMP DATA

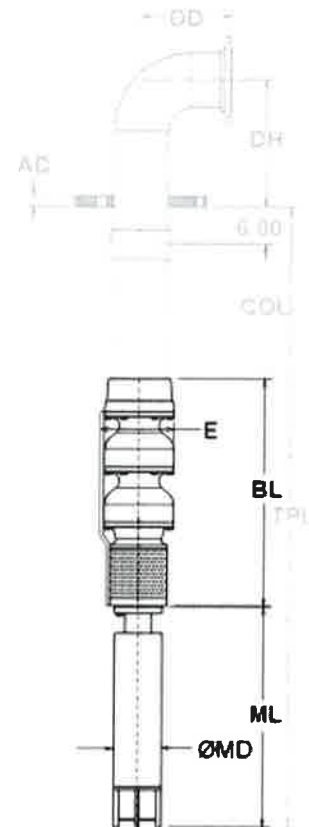
No. of Units	1.00	each
Model:	VIS-WF 7WALC	
Stages:	3	
Riser Size:	4	
Flow:	245.00	USGPM
Head:	233.00	ft
Driver Mfq:	CentriPro	
Rating:	20 Hp [14.9 kW]	
Speed:	3550	RPM
PH:	3	
Frequency:	60	Hz
Voltage:	460	

DIMENSIONS

AD	0.00	inch
BL	23.62	inch
COL	4.00	inch
DD	0.00	inch
MIN SUB	16.28	inch
DH	0.00	inch
G	0.00	inch
H	0.00	inch
HH	0.00	inch
J	0.00	inch
K	0	
MD	6	inch
ML	30.30	inch
E (R)	0.00	inch
TPL	0.00	inch
CV Dia.		
Head Flanged Rating	150#	

Weights

Total bowl	128	lb
Total column	0.00	lb
Discharge head	0	lb
Driver	152	lb
Approx weight	280	lb

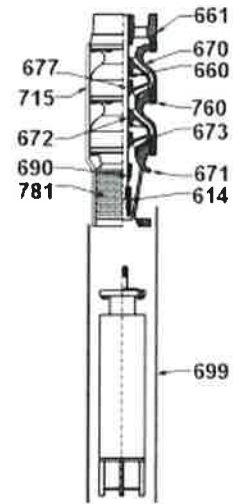


No.	NOTES
1	T.P.L. (Total Pump Length) is the distance to lowest projection on pump ± 1.0 inch.
2	Tolerance on all dimensions is .12 or ± .12 inch per 5 ft, whichever is greater.
3	All dimensions shown are in inches unless otherwise specified.
4	Drawing not to scale.

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Certified by	
Date of certification	
Pump serial number	
Project Name	Mace River #2 - 20HP VIS
Tag	

BILL OF MATERIAL

ITEM	Part Name	CODE	MATERIAL	ASTM#
Bowl Assembly				
614	Coupling Sub/Motor	2218	416SS	A582M-95b
660	Bowl-Shaft	2227	416SS	A582M-95b
661	Bearing – Discharge	1109	Bronze C90300 "G" Modified	B584-00
670	Bowl - Intermediate	6911	Cast Iron CL30 Enamel	A48-94e1
671	Sub Adapter	1018	Ductile Iron 65-45-12	B148-97e1
672	Bearing - Int Bowl	1109	Bronze C90300 "G" Modified	B584-00
673	Impeller	1203	316SS	A744M-00
677	Collet - Impeller	2242	Carbon steel	A108-99
680	Wear Ring - Bowl	N/A	None	N/A
681	Wear Ring - Impeller	N/A	None	N/A
690	Bearing-Suction	1109	Bronze C90300 "G" Modified	B584-00
-	-	-	-	-
715	Guard-Cable	3215	304SS	A240M-00
758	Capscrew-Hex (Mot)	2228	304SS	A276
760	Capscrew-Hex	2298	Steel Bolting Gr8	J429-99
781	Screen-Suction	3211	316SS	A240M-00
789	Washer - Upthrust	6266	TIVAR 1000	N/A



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Attachment C
Exam Photos



Figure 1: Pond 1 inflow from community's pressurized irrigation system.



Figure 2: Pond 1 close-up of inflow into pond from 6-inch PVC pipe.



Figure 3: Mechanical piping inside pressurized pumping system.



Figure 4: Pump system display shows flow which ranged from 158 to 160 gpm during exam.

Attachment D
Proof of Beneficial Use

Copy

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
STATEMENT OF COMPLETION
FOR SUBMITTING PROOF OF BENEFICIAL USE

FOR OFFICE USE ONLY	
Amt. of Fee \$	_____
Receipt No.	_____
Received By	_____
Date Received	_____

The Idaho Department of Water Resources considers this form a statement by the permit holder(s) that development of a water right has been **completed** and that water has been applied to beneficial use to the extent described below. **This form must be accompanied by an examination fee, when necessary, or by a completed Beneficial Use Field Report prepared by a certified water right examiner.** Please refer to the instructions and fee schedule for this form. If ownership of the permit has changed, contact any Department office or visit the Department's website at idwr.idaho.gov for an *Assignment of Permit* form. If you wish to relinquish your permit because you have not established the authorized use of the water and are not applying for an extension, please notify the Department in writing.

1. Permit No. 63-34330 Telephone No. 208-246-8909

2. Name of Permit Holder(s) Gardner Mace Ranch LC

3. Mailing Address 101 S. Capitol Blvd, Ste 1700 City Boise
State ID Zip 83702 Email _____

4. Source of Water Ground Water If **GROUND WATER** (well), Date Drilled mo. _____ / yr. _____
Well Driller _____ Drilling Permit Number _____

5. Extent of use(s) completed **as authorized by the water right permit:**
Domestic (No. of households) _____ Stockwater (No. and type of stock) _____
Irrigation (No. of acres) _____ Other 12 pond recirculation system

6. Total rate of diversion or storage volume for which proof is submitted 1.6 cfs OR _____ acre-feet.

7. Compliance with a measuring device requirement, lockable controlling device requirement, and/or other conditions of permit:
Refer to the approval conditions on your permit and respond accordingly.
The Department will not issue a license if permit conditions are not met.

Measuring Device	Is a measuring device required?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	If yes , has the measuring device been installed?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Lockable Controlling Device	Is a lockable device required to control the diversion?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	If yes , has the lockable device been installed?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Fish Screen	Is a fish screen required?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	If yes , has the fish screen been installed?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Other Conditions of Permit
Do the approval conditions on your permit require you to submit additional information in connection with your proof of beneficial use? If yes, list the conditions below and attach documents with the required information.
_____ Completed? Yes No

8. Fee Enclosed \$ n/a or not applicable . See fee schedule on page 2 of the instructions.
Proof statements filed without an appropriate fee, will be considered incomplete.

9. Person to contact to accompany the Department representative during field examination of the water system.
Name n/a - exam by SPF Telephone Number _____
Mailing Address _____ City _____
State _____ Zip _____ Email _____

The information given on this form is my true statement of the extent to which the above numbered permit has been developed and water has been diverted and applied to a beneficial use. I understand that any undeveloped portion of the permit is relinquished to the State of Idaho.

Signature of Permit Holder Walter Cull Project Manager Date 9/19/19
(Include your title, if on behalf of company or organization)

Mail to: Idaho Department of Water Resources, PO Box 83720, Boise, ID 83720-0098