

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33946

Exam Date: 06/14/2019

1. Current Owner:
EAGLECREEK HOMEOWNERS ASSN INC
PO BOX 2654
EAGLE ID 83616
(208) 287-8811

2. Accompanied by: Ryan Martin
Phone No: (208) 484-5593
Address: Boardwalk Assoc. Management
PO Box 2654
Eagle ID 83616
Relationship to permit Holder: Representative

Accompanied by: Scott Pruett
Relationship to permit Holder: HOA Irrigation Manager

3. SOURCE:
GROUND WATER

Method of Determination: Well Driller's Report, Permit No. 87316; On site visual inspection

B. OVERLAP REVIEW

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

Comments: There are multiple water rights that overlap with the place of use (POU) of this permit, including the service areas of irrigation organizations, municipal service areas, and a few domestic use water rights. The domestic water rights appear to have been abandoned with the removal of the homes during redevelopment. At the time of the field exam, the representatives for the permit holder stated that irrigation shares from Ballentyne Ditch Co. are the only other water used for the same purpose at the POU. The permit being examined is supplemental to the irrigation shares from Ballentyne Ditch Co., and the use of groundwater under this permit is only authorized when surface water is insufficient.

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

Comments: Only one other water right has a point of diversion (POD) in the same 40 acre tract. The other water right, 63-16872, is groundwater for domestic use for 1 home, which appears to have been abandoned with the re-development for the subdivisions.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SW¼ NW¼, Sec. 12, Twp 04N, Rge 01W, B.M. ADA County

Method of Determination: GIS and GPS waypoint recorded during field exam
Recorded GPS location of POD: 43° 42' 04.7" North, 116° 24' 43.1" West, elev. 2536'

2. **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	
04N	01W	11				8.1									0.1				8.2
04N	01W	12							17	15									32.0

Total Acres: 40.2

Method of Determination: Visual inspection and GIS; POU shapefile based on irrigated areas identified using Google Earth imagery from 04/2016, which corresponds with end of development period of the permit.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

☒ 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.

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

☒ Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Model No.	Pump Make	Model No.
D0067593	Franklin	25	2366159020	Franklin	Unknown
Pony Motor	Franklin	2	234325	Franklin	Unknown
Main VFD Motor	Franklin	25	236615	Berkeley	7125-450
Lag Motor	Franklin	25	236615	Berkeley	7125-450
Recirculation Pump	US	20	R424	Berkeley	B5WPS

Pump information is taken from the information on panels inside the pump house. After the field exam I requested some information on the system from the representative. The pump curves and information provided do not appear to correspond to the tags posted within the pump house.

D. **FLOW MEASUREMENTS**

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Tyme Flyte	Polysonic		TFP			April 2019

2. Measurements: Attachment "Polysonic Readings" includes the flow ratings averaged over 10 minutes. The average flow measurement after 10 minutes is 307 gpm = 0.684 cfs.

The flow measurement was taken using the section of pipe running along ground level. We dug out a portion of the soil and grass from under the pipe in order to take flow measurements. The flow meter averaged the readings over a 10 minute measurement period.

E. FLOW CALCULATIONSYES Additional Computation Sheets Attached

Measured Method:

TymeFlyte flow measurement 307 gpm = 0.68 cfs

Permit allowed 1.02 cfs

Irrigation requirement = 0.02 cfs / acre * 40.2 acres = 0.80 cfs

I am recommending the diversion rate measured of 0.68 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 40.2 \text{ acres} \times 4.5 \text{ AF / acre} = 181 \text{ AF}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.684 \text{ cfs} \times 260 \text{ days} \times 1.9835 \text{ AF / (cfs days)} = 353 \text{ AF}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 181 \text{ AF}$$

2. Volume Calculations for Other Uses: None**G. NARRATIVE/REMARKS/COMMENTS**

Proof of beneficial use was submitted on April 13, 2016. I conducted the field exam on June 14, 2019, along with Dan Nelson (IDWR staff). Also present for the exam were Ryan Martin, the representative for the permit holder and the property manager for the home owners' association (HOA), and Scott Pruett, the HOA irrigation manager.

The ground water use authorized by this permit is supplemental to surface water from irrigation shares from Ballentyne Irrigation Co. Irrigation shares (surface water) enter the pond at the SE corner. The pond is at the end of the distribution area for Ballentyne Irrigation Co. Outlet canals on the north and south sides of the pond allow excess surface water to flow out of the pond for other water users outside of this permit's POU. At the time of this exam, the HOA has 79.75 irrigation shares from Ballentyne Ditch Co.

Diverting from the well, there are two parallel sections of pipe that join together before releasing water into the pond. The upper pipe allows for the release of artesian flows, and the lower pipe delivers the water pumped from the well. There are controlling works on each of the pipes, allowing for either or both pipes to be closed.

Ground water for this permit is pumped into the same pond as the surface water from irrigation shares. The water stored in the pond is re-diverted to the pressurized irrigation system for the subdivisions of the HOA. According to the representatives for the HOA, ground water is not pumped into the pond unless the volume of surface water is insufficient. There is a float in the pond that kicks the pump on when the pond gets below a certain level. The pond does not remain full year round. The representatives for the HOA said that the irrigation system is shut down and winterized by October 31.

The pump house is approximately 40 feet to the west of the well. The pump house controls the pump diverting from the well, and the pressurized irrigation system for the POU. The meters in the pump house read 65 psi at time of visit. Mr. Martin said that the mainlines for the irrigation system run primarily through the common areas, and behind and between the homes.

Since the time that development was completed under this permit, an additional five acres outside of the NE corner of the POU were added to the HOA's subdivisions. The addition of this property included the addition of 5 irrigation shares, which are part of the total 79.5 shares owned by the HOA. The 5 acres are connected to the same pressurized irrigation system that serves the authorized place of use under this permit. There are plans to incorporate another adjacent section of property to the subdivisions which the HOA intends to connect to the same irrigation system. We informed the representatives that the development for this permit ended once the permit holder submitted the Statement of Completion for Submitting Proof of Beneficial Use (proof of beneficial use). The HOA will need to file for a new application for permit to cover the potential groundwater use for any added acres to this irrigation system.

The permit authorized the irrigation of 51 acres, based on an estimate that 60% of the area would be irrigated after development was completed. I calculated the number of acres that were developed for irrigation using GIS, based on the satellite imagery in Google Earth from the time that the proof of beneficial use was submitted (April, 2016). I found a total of 40.2 acres of land developed for irrigation, as represented in the table in C.2.

Temporary storage pond

The water diverted under this permit is temporarily stored in a pond and is co-mingled with surface water from irrigation shares. The estimated pond size exceeds the storage volume size that would allow the pond to be filled and emptied within 24 hours under this permit (Administrator's Memorandum – Application Processing # 73). During periods when surface water shares are insufficient, the use of the irrigation system we examined would result in an enlargement of the total water use. The calculations for storage volume and maximum volume diverted within 24 hours are below.

Using GIS, the surface area of the pond was measured at 0.41 acres. We estimated the maximum depth of the pond at 10 feet. To calculate the pond capacity, I used the formula for a pond with sloped sides and bottom from the "Storage: Pond Loss Calculation" Excel Workbook from IDWR:

$$\begin{array}{lcl} \text{Area} * \text{Maximum depth} * (2/5) = & \text{Pond volume} & \\ 0.41 \text{ acres} * 10 \text{ ft} * (2/5) & = & 1.6 \text{ AF} \end{array}$$

The maximum volume that can be diverted under this license in 24 hours:

$$\begin{array}{lcl} \text{Authorized diversion rate (cfs)} * 86400 \text{ sec} / 24 \text{ hours} * 1 \text{ af} / 43560 \text{ cf} = & \text{maximum diversion volume within 24 hours} & \\ 0.68 \text{ cfs} * 84600 \text{ sec/day} * 1 \text{ af} / 43560 \text{ cf} & = & 1.35 \text{ AF} / 24 \text{ hours} \end{array}$$

Because the estimated storage volume of the pond (1.6 AF) is greater than the maximum diversion volume for 24 hours authorized under this permit (1.35 AF), I am recommending to the permit holder that they apply for irrigation storage on a new permit to avoid unauthorized use of the pond. The request for irrigation storage could be included on the permit that is needed to authorize the irrigation of the additional 5 acres that were added to the same irrigation system that serves this permit.

Conditions

Conditions # 1-4 were removed because they were complied with and are primarily concerned with the development of the permitted water use.

Condition #9 (#WB7) was modified to a diversion volume of 181 AF to correspond for the standard volume per acre in this region for the number of acres that were developed for irrigation.

Condition # 11 (#X27) was removed because the permit holder did not develop a permissible place of use. There was no rotation of the acres that were irrigated during the development period.

Condition #12 (#165) requires that the authorized water use can only extract water from 200 feet or deeper. The applicants have satisfied Condition 165, which will be brought forward to the license. The well drillers report (amended) from Dec. 14, 2014 states that the sealing procedures of the well end at 235 feet below the surface (see the attached report for well tag D0067593 / drilling permit 873916).

Condition # 13 was a generic condition that has been replaced by # 930 for the license. The generic condition required that the water bearing zone be limited to between 200 feet and 400 fit. The water bearing zone for the license will be between 235 feet and 340 feet, based on the maximum depth of the sealing procedures as indicated in the well driller's report.

The remaining conditions will be brought forward to licensing.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>
IRRIGATION	03/01 to 11/15	0.68 CFS

Totals: 0.68 CFS

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION

David Betts - Water Resource Agent, Senior

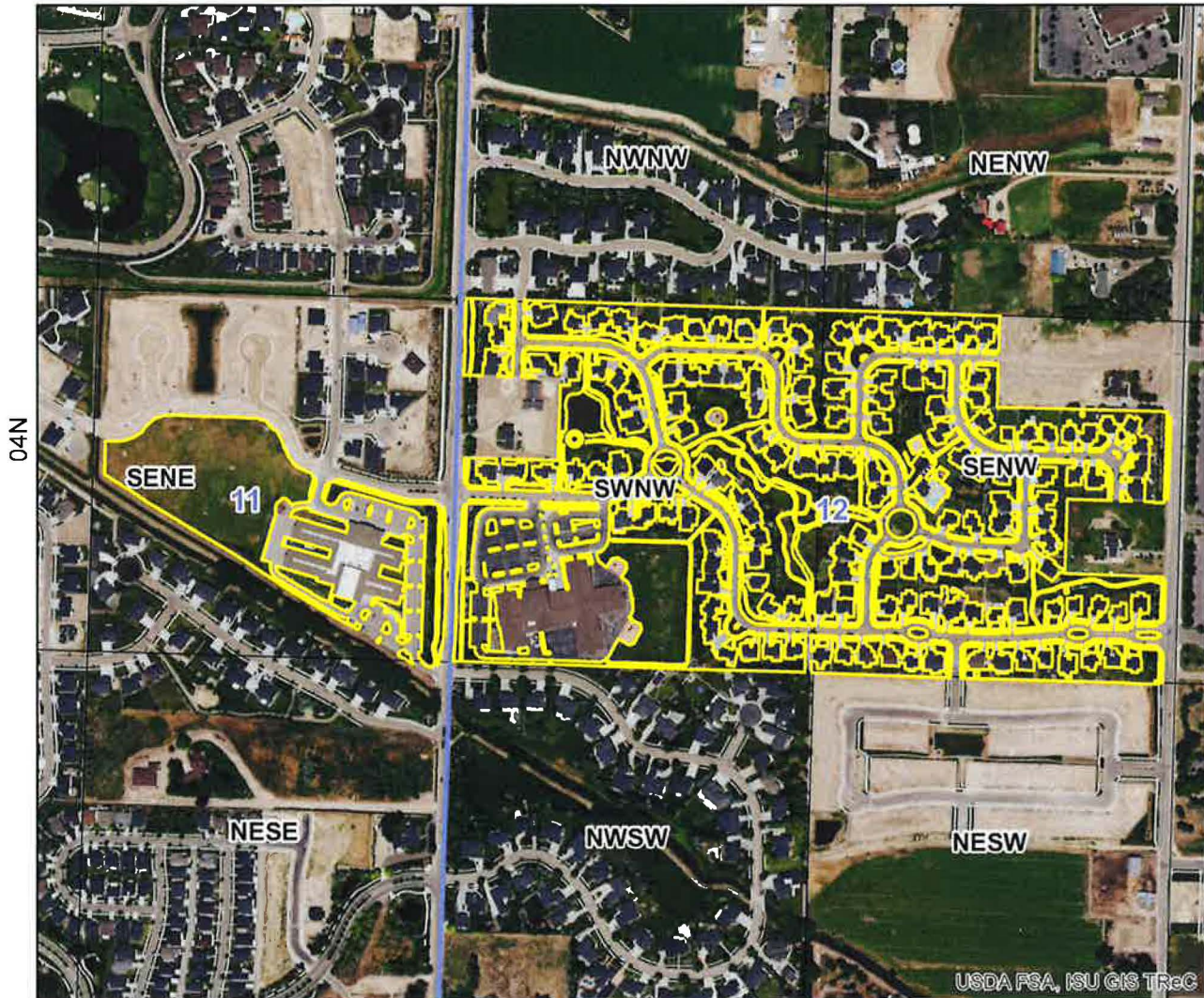
Field Examiner's Name David Betts Date Feb. 13, 2020

Reviewer P. H. Munn Date 6/29/20

State of Idaho
Department of Water Resources
Attachment to Field Exam
63-33946

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

01W

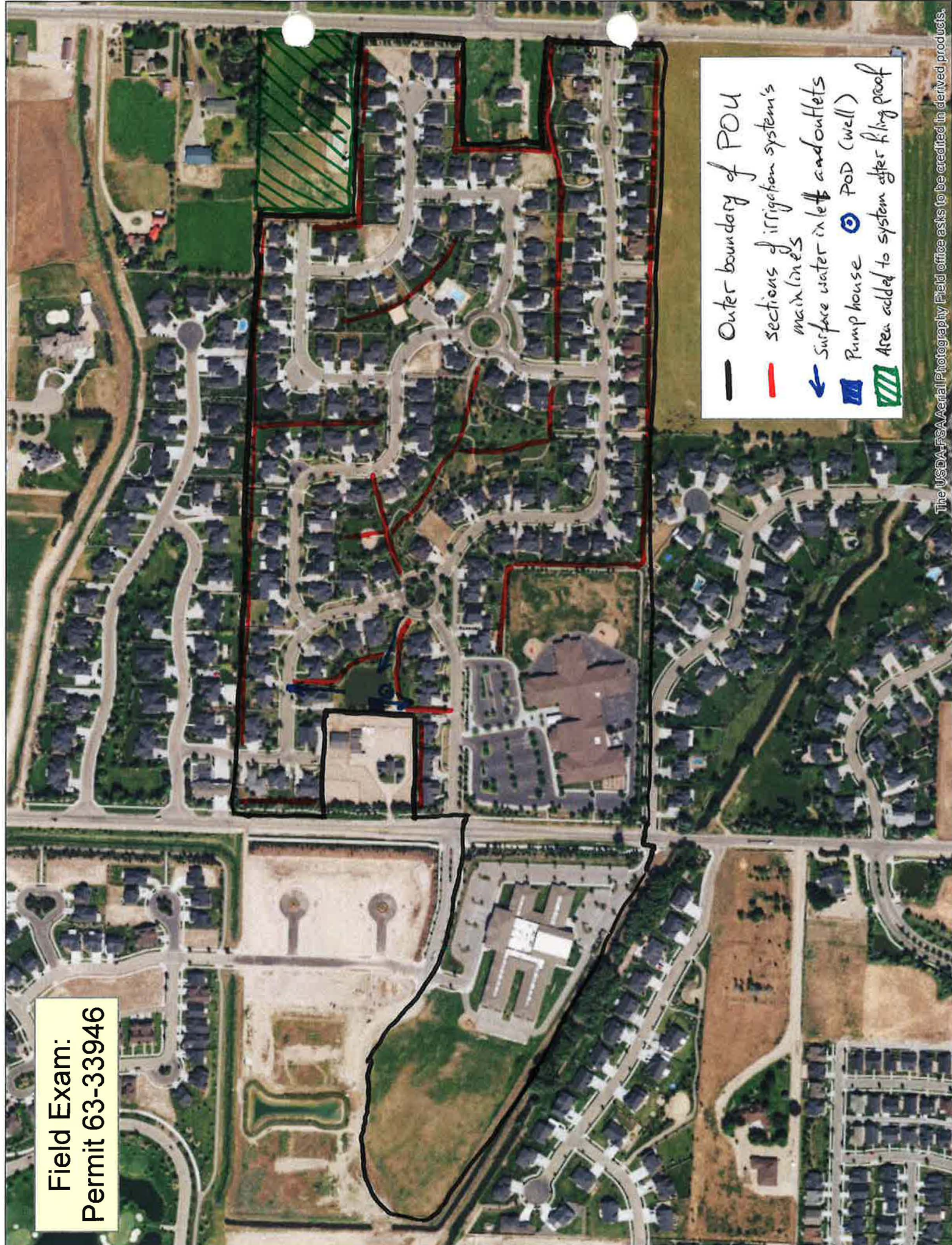


-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.075 0.15 0.3 Miles



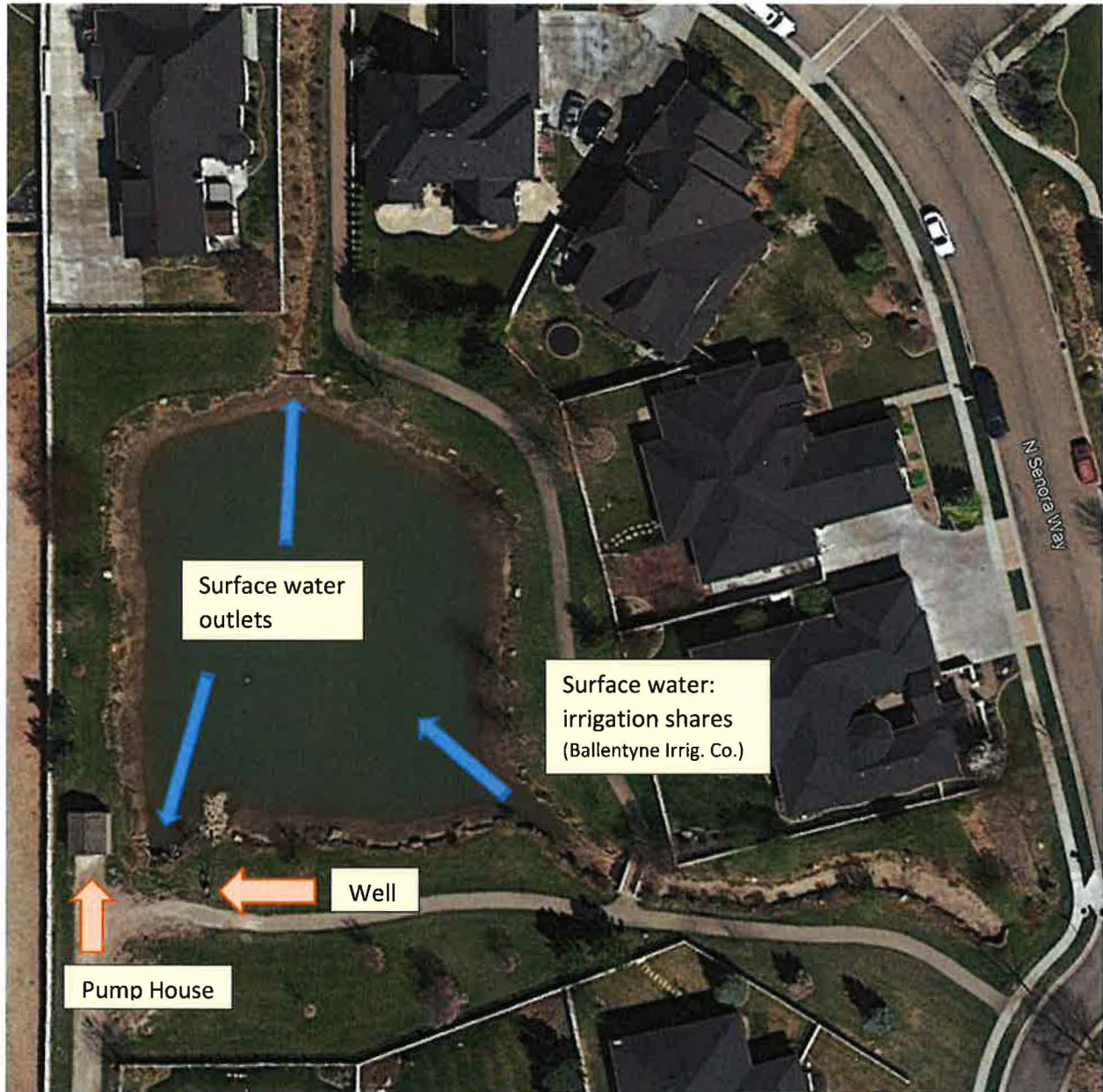
Field Exam:
Permit 63-33946



- Outer boundary of POI
- sections of irrigation system's mainlines
- ← Surface water inlet and outlets
- Pump house
- POD (well)
- ▨ Area added to system after filing permit

Water Right 63-33946 – Diverting Works

The pump house manages extraction of groundwater and overall irrigation system. Groundwater is co-mingled with surface water from irrigation shares in storage pond. Pond has two outlets for releasing excess surface water.



Distance between pump house and well:
approximately 35 feet.

Amended per driller
IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0067593

Drilling Permit No. 967857-87316-873916

Water right or injection well # _____

2. OWNER:

Name Eagle Creek Homeowners Association, Inc

Address P.O. Box 1090

City Eagle State Id. Zip 83680

3. WELL LOCATION:

Twp. 4 North ☒ or South ☐ Rge. 1 East ☐ or West ☒

Sec. 12 1/4 S.W. 1/4 N.W. 1/4

Gov't Lot _____ County Ada

Lat. 43 42.082 (Deg. and Decimal minutes)

Long. 116 24.722 (Deg. and Decimal minutes)

Address of Well Site ~375' E. of Linder Rd. and 200' N. of

Saguaro Dr. City Eagle

(Give at least name of road - Distance to Road or Landmark)

Lot 3 Blk. 2 Sub. Name Senora Creek Subdivision

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 ft ³)	Placement method/procedure
Bentonite chips	0'	25'	550 lbs.	Poured
Bentonite-ceme	25'	235'	100 cubic'	Pumped

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
10"	+1	159'	.365	Steel	☒	☐	☐	☒
8"	159'	268'	.322	Steel	☒	☐	☐	☒
8"	298'	303'	.322	Steel	☒	☐	☐	☒
8"	313'	320'	.322	Steel	☒	☐	☐	☒

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

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____

Manufactured screen ☒ Y ☐ N Type Johnson Vee Wire

Method of installation Lowered

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
268'	298'	.030	30'	8"	Stainless	
303'	313'	.030	10'	8"	Stainless	
320'	340'	.030	20'	8"	Stainless	

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☒ N Type _____

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method
6-9 Sand	235'	348'	86 cubic'	Poured

11. FLOWING ARTESIAN:

Flowing Artesian? ☒ Y ☐ N Artesian Pressure (PSIG) _____

Describe control device 10" Flange

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 11' Static water level (ft) +8'9"

Water temp. (°F) _____ Bottom hole temp. (°F) _____

Describe access port _____

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
21.5"	132	18	☒	☐	☐	☐
6'7"	300	60	☐	☐	☐	☐

Water quality test or comments: 20' 2' 700 GPM 180 min

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	N
17"	0'	2'	Topsoil		X
	2'	11'	Clay		X
15"	11'	22'	Sand & gravel	X	
	22'	25'	Brown clay		X
	25'	50'	Sand, small gravel	X	
	50'	55'	Clay		X
	55'	75'	Sand	X	
	75'	127'	Clay with sand streaks	X	
	127'	148'	Course sand	X	
	148'	156'	Clay		X
13.5"	156'	170'	Sand	X	
	170'	200'	Sand	X	
	200'	215'	Clay		X
	215'	250'	Sand	X	
	250'	263'	Clay		X
	263'	345'	Fine to course sand	X	
	345'	350'	Brown clay		X
16"	0'	23'	.250 Steel casing		

RECEIVED

JAN 26 2015

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 340'
Date Started: Nov 3, 2014 Date Completed: Dec 11, 2014

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 Stevens & Sons Co. No. 153

*Principal Driller [Signature] Date Dec 16, 2014

*Driller [Signature] Date Dec 16, 2014

*Operator II _____ Date Dec 16, 2014

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required

POLYSONIC READINGS

PERMIT #: 63-33946

POINT OF DIVERSION

Well diverting to irrigation pond
(Well Permit # 87316)

FIRST SET OF INFORMATION:

SET-UP INPUT DATA USED DURING
PREPARATION FOR FLOW MEASUREMENTS.

SECOND SET OF INFORMATION:

THESE ARE THE READINGS TAKEN FOR
THIS PUMP. THE TOTAL FLOW WAS
AVERAGED OVER A 10 MINUTE READING.

FLows IN GALLONS PER MINUTE (GPM)

307 GPM FLOW RATE

FLows IN CUBIC FEET PER SECOND (CFS)

307 GPM / 448.8 = 0.68 CFS FLOW RATE

0.75 IN DIAMETER
6.000 IN

0.000 IN
0.000 IN

0.000 IN
0.000 IN

0.000 IN
0.000 IN

0.000 IN
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0.000 IN

08:55:310.556E 00PM 00R
+ 3.333E 00PS 00R
+00000 *10 G 00R
+00000 *10 G 00R

08:56:317.806E 00PM 00R
+ 3.402E 00PS 00R
+00030 *10 G 00R
+00000 *10 G 00R

08:57:315.349E 00PM 00R
+ 3.389E 00PS 00R
+00062 *10 G 00R
+00000 *10 G 00R

08:58:301.684E 00PM 00R
+ 3.230E 00PS 00R
+00092 *10 G 00R
+00000 *10 G 00R

08:59:311.703E 00PM 00R
+ 3.346E 00PS 00R
+00123 *10 G 00R
+00000 *10 G 00R

08:59:310.402E 00PM 00R
+ 3.370E 00PS 00R
+00154 *10 G 00R
+00000 *10 G 00R

08:59:300.859E 00PM 00R
+ 3.221E 00PS 00R
+00185 *10 G 00R
+00000 *10 G 00R

08:59:308.553E 00PM 00R
+ 3.310E 00PS 00R
+00214 *10 G 00R
+00000 *10 G 00R

08:59:301.684E 00PM 00R
+ 3.230E 00PS 00R
+00245 *10 G 00R
+00000 *10 G 00R

08:59:303.797E 00PM 00R
+ 3.261E 00PS 00R
+00275 *10 G 00R
+00000 *10 G 00R

08:59:309.689E 00PM 00R
+ 3.323E 00PS 00R
+00307 *10 G 00R
+00000 *10 G 00R



Point of Diversion, facing north.

Artesian well outlet (upper pipe) and pumped ground water (lower pipe) empty into the same pond as surface water from irrigation shares.



Point of Diversion, facing west towards the Pump House, which is in the southwest corner of the pond.

Pump House approximately 40 feet from Point of Diversion (well).

Surface water irrigation shares enter pond from the southeast corner of the pond.



Facing South towards Pump House and Well, next to the northern outlet for excess surface water from the pond.

Part of the pump house is visible, but vegetation is blocking the view of the well.

The northern outlet can be seen in the photo above on the right.



The gate for the southern outlet from the pond for excess surface water can be seen between the well (pumping water into the pond; IDWR staff removing flowmeter) and the pump house (southwest corner of the pond).

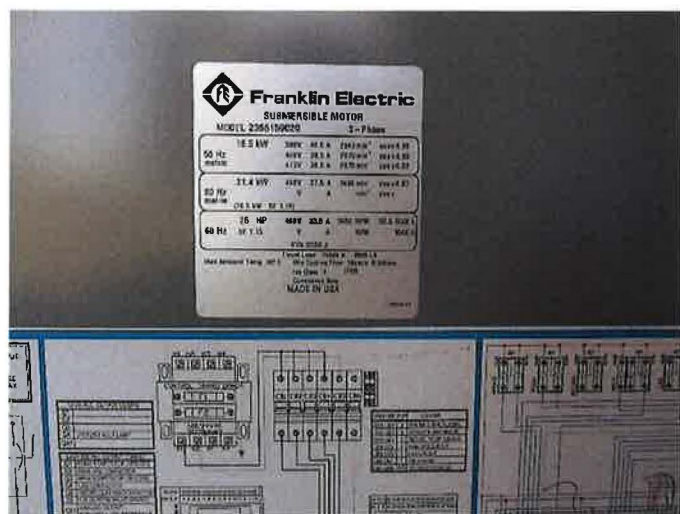
Pond approximately 150 feet from North to South and 130 feet from East to West as measured in GIS



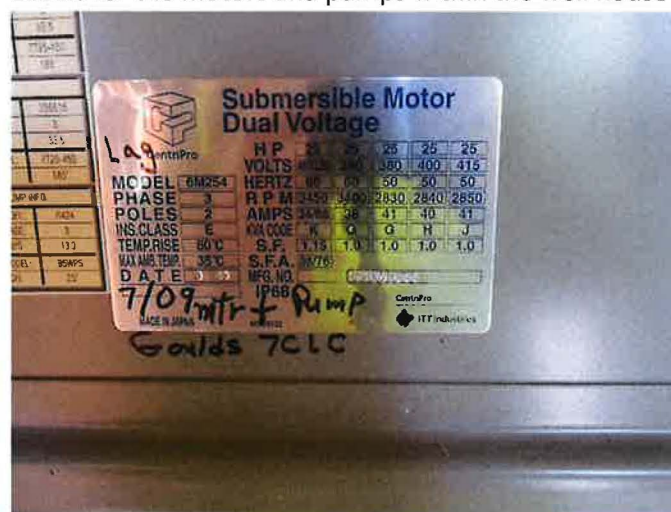
Pump system for irrigation distribution, which includes VFD & and Lag motors (outside), pony pump and recirculation motors (inside) and flushing system (black pipe) for the sand filter.



Labels for the motors and pumps within the well house



Motor for the pump in the well



Field Exam: 63-33946



Photos taken from the entrance to the parking lot to Galileo STEM Academy.

Facing to the east: Planted areas of parking lot with playground and the school's field in the background.



West side of the school and parking lot.

Photos on the bottom right: The roundabout nearest to the point of diversion, located at the intersection of W Saguaro Drive and N Senora Way.

Surface water from irrigation shares (Ballentyne Ditch Co.) pass through the middle of the roundabout before being delivered to the pond next to the point of diversion, less than 300 feet to the west of the roundabout.



Crosswalk on the north side of the Galileo STEM Academy on W Saguaro Drive, facing the pathway to the Pump House, which can be seen above.





Facing east from the roundabout at the intersection of W Saguaro Drive and N Senora Way.

The ditch delivering surface water can be seen at the center of the photo, with the pathway through the common area on the left.



At roundabout near the subdivision's pool, at the intersection of N Bursera Way and W Saguaro Drive.

Roundabout in the foreground, facing north towards pool. Pool house is visible in the background on the left.



Facing east, towards the common area and playground on the north side of the subdivision's swimming pool.



Facing west from the roundabout at the intersection of N Bursera Way and W Saguaro Drive.

One of the pathways running through the common areas of the subdivision.

Place of use for Permit 63-33946:

North Star Public Charter School

Photos in sequence from east to west:



Facing east towards parking lot on the north side of the school. Irrigated areas include lawns around school, and planted areas within and around the parking lot.



West side of school.

All photos taken from the entrance to the parking lot.



Field on west side of school, which includes most of the irrigated acres next to North Star Public Charter School