

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-32966

Exam Date: 11/16/2015

1. Current Owner: HARRIS FAMILY LTD PARTNERSHIP
4940 E MILL STATION
BOISE ID 83716
(208)344-1131

2. Accompanied by: Jim Conger

Phone No: (208) 336-5355

Address: 4824 W. Fairview Ave., Boise, Idaho 83706

Relationship to Permit Holder: Management Company

*Also accompanied by Terry Scanlan (SPF Engineers, Boise)

3. SOURCE

GROUND WATER

TRIBUTARY

BOISE RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 63-365; 63-2973
2. Other water rights with the same point of diversion: None

***Please note several water rights from United Water and various canal companies overlap this place of use but none of them are diverted into or out of the ponds.**

C. DIVERSION AND DELIVERY SYSTEM1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER	L4 NE1/4SW1/4	Sec. 19, Twp 03N,	Rge 03E, B.M.	ADA County
GROUND WATER	SW1/4SE1/4	Sec. 19, Twp 03N,	Rge 03E, B.M.	ADA County
GROUND WATER	SW1/4SE1/4	Sec. 19, Twp 03N,	Rge 03E, B.M.	ADA County

Method of Determination: Visual inspection and GIS.

2.

PLACE OF USE: AESTHETIC STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
03N	03E	19									X			X			X		
											L 4			L 5					

Method of Determination: Visual inspection and GIS.

3. YES Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
YES Aerial Photo Attached (required for irrigation of 10+ acres).
YES 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
Irrigation Storage Pond 1	n/a	n/a	n/a	n/a	Pond intercepting shallow ground water.
Storm water detention Pond 1	n/a	n/a	n/a	n/a	Pond intercepting shallow ground water.
Storm water detention Pond 2	n/a	n/a	n/a	n/a	Pond intercepting shallow ground water.

*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
NONE						

2. Measurements: We couldn't measure the water at the time of the exam, because there is no diversion for this system.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method:

n/a

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{\hspace{2cm}}$$

I.R.

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \underline{\hspace{2cm}}$$

D.R.

$$V = \text{Smaller of } V \text{ and } V = \underline{\hspace{2cm}}$$

I.R. D.R.

2. Volume Calculations for Other Uses:

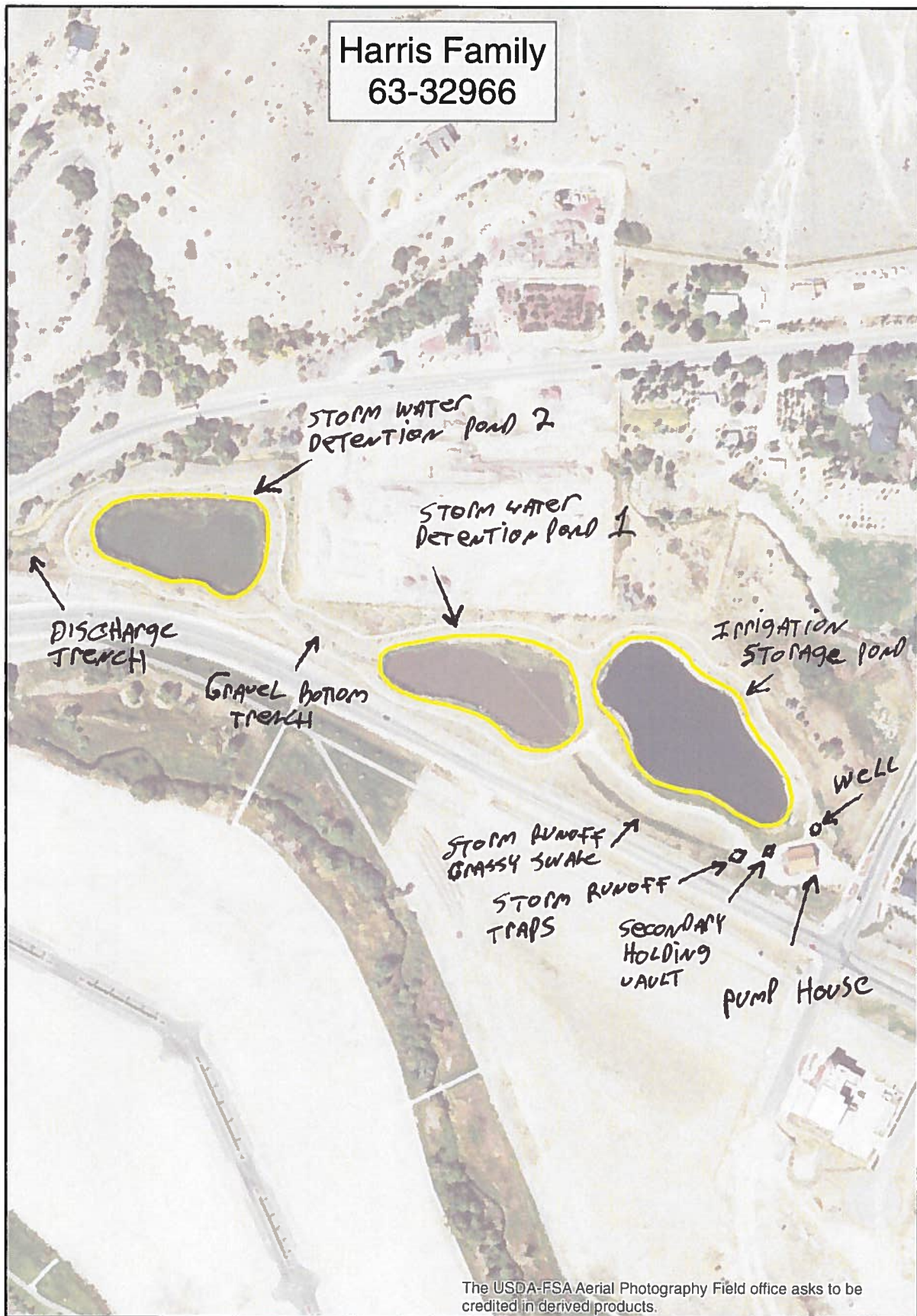
Please See narrative for pond calculations.

G. NARRATIVE/REMARKS/COMMENTS

Please see attached narrative.

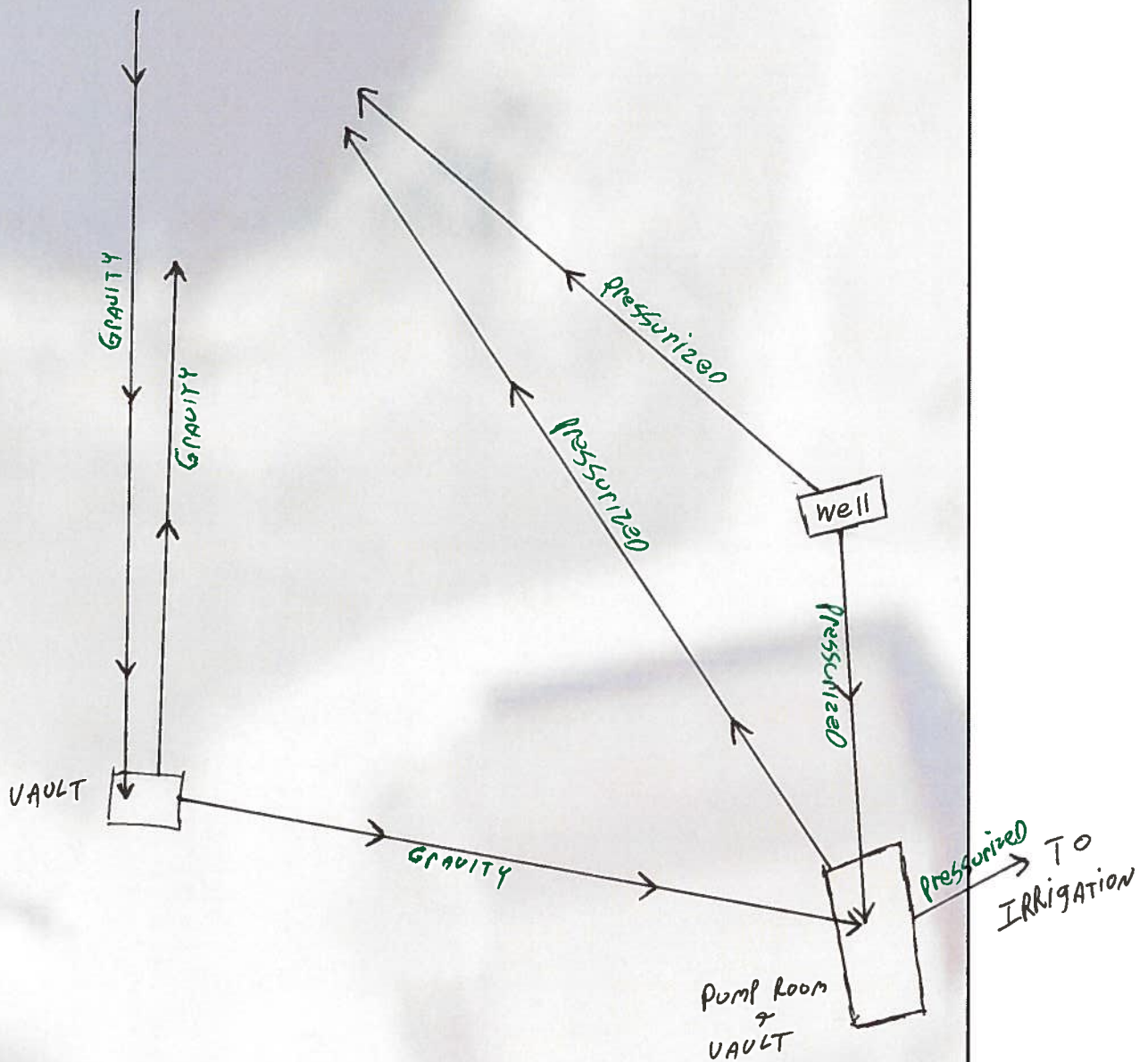
Have conditions of permit approval been met? X Yes No

Harris Family
63-32966



IRRIGATION
STORAGE POND
PAGE 1

Harris Family
63-32966



Water Permit 63-32966
License Exam Narrative Report
November 16, 2015

By: Brian Ragan

At 10:30 am on November 16, 2015, myself, Dan Nelson (IDWR) met Jim Conger (Project Manager, Conger Management Group, 208-713-2527) and Terry Scanlan (SPF Water Engineering) at the site of the three ponds to conduct the license exam. We started by asking questions about how the ponds were used and what water rights were involved. We all then walked around each pond to observe and take photographs to document the system.

The Water Permit is in the name of the Harris Family Ltd. Partnership but the land is owned by Barber Valley Development. Jim Conger stated the intent is to get this license into the name of Barber Valley Development.

System Details

The system consists of three constructed (man-made) ponds, shallow ground water, and a ground water pumping well (IDWR well tag # D0064422).

*Note: It was discovered that a portion of the Storm water retention pond #2 exists within the SE SW, Sec. 19, T3n R3e. The water permit does not account for this so an amendment needs to be submitted by the owner.

The east pond is:

- Named the **"Irrigation Storage Pond 1"**
- Function: aesthetics and store irrigation water
- Source of water:
 - Shallow ground water
 - Ground water from well D0064422, 58-feet deep
- 475 feet long
- 176 feet wide (average)
 - 162 ft, 230 ft, 135 ft
- 26 feet deep max depth (as per info from SPF engineering)
- 2.0 acres surface area
- 20.8 acre-feet total volume (2 acres x (2/5) x 26-ft deep)

The center pond is:

- Named **"Storm Water Detention Pond 1"**
- Function: aesthetics and store/pass through storm water runoff
- Source of water
 - Shallow ground water
 - Storm water from paved areas of subdivision
- 380 feet long
- 113 feet wide (average)
 - 91 ft, 106 ft, 143 ft
- 24 feet deep max depth (as per info from SPF engineering)
- 1.5 acres surface area
- 14.4 acre-feet total volume (1.5 acres x (2/5) x 24-ft deep)

The west pond is:

- Named **"Storm Water Detention Pond 2"**
- Function: aesthetics and store/pass through storm water runoff

- Source of water:
 - Shallow ground water
 - Overflow from storm water detention pond #2
- 341 feet long
- 158 feet wide (average)
 - 116 ft, 167 ft, 192 ft
- 22 feet deep max depth (as per info from SPF engineering)
- 1.4 acre surface area
- 12.3 acre-feet total volume (1.4 acres x (2/5) x 22-ft deep)

The total surface area of the ponds is 4.9 acres and the total volume of the ponds is 47.5 acre-feet.

System Background

1. Shallow ground water is intercepted by all three ponds.
2. Ground water is pumped into the Irrigation Storage Pond or directly into the pump house vault where it can be pumped out for irrigation.
 - During the exam IDWR was told that the irrigation pond and detention pond 1 were connected by a pipe, and even the engineering plan shows a swale ditch connecting these two features.
 - However, during the exam no piping or swale ditch was visible and so it is assumed that the irrigation pond is not connected to any other pond.
3. Stormwater Detention Pond 1 receives storm runoff from the paved areas in the subdivision. The storm runoff from the paved areas first passes through two engineered concrete-cast oil/sediment traps before being discharged into a vegetated swale which runs along the south side of the irrigation pond and then discharges into Detention Pond 2 at its SE corner.
4. Stormwater Detention Pond 2 receives overflow from Stormwater Detention Pond 1. This overflow runs through a gravel bottom trench running east-west between the ponds. Excess water from this pond flows out through a ditch and enters another ditch which then discharges into the Boise River.

System Operation

(see figures below for visuals)

The source of ground water comes from the well on-site with the tag number of D0064422. This well is plumbed so that it can either pump ground water via an underground pipe into a vault in the pump house, which is then pumped out for irrigation, or it can pump water via a separate underground pipe directly into the irrigation storage pond for storage. Additionally, water in the pump house vault can be pumped back into the pond via a separate plastic pipe if the vault fills up too much or to flush out debris that may have accumulated.

Water from the irrigation storage pond can flow under the force of gravity into the pump house vault after first passing through a secondary holding vault to the west of the pump house. IDWR was told the inlet for this water is a pipe which is placed out into the pond, however due to the inlet location it could not be directly observed during the field exam. This secondary vault also has an overflow pipe which allows water to flow under the force of gravity back into the irrigation storage pond. This flow back water enters the irrigation storage pond through a separate pipe.

Combined mitigation for evaporation losses from the ponds comes from water right 63-365 and 63-2973 in the amounts of 0.11 CFS, 25.2 acre-feet. These portions of each right that are for mitigation are

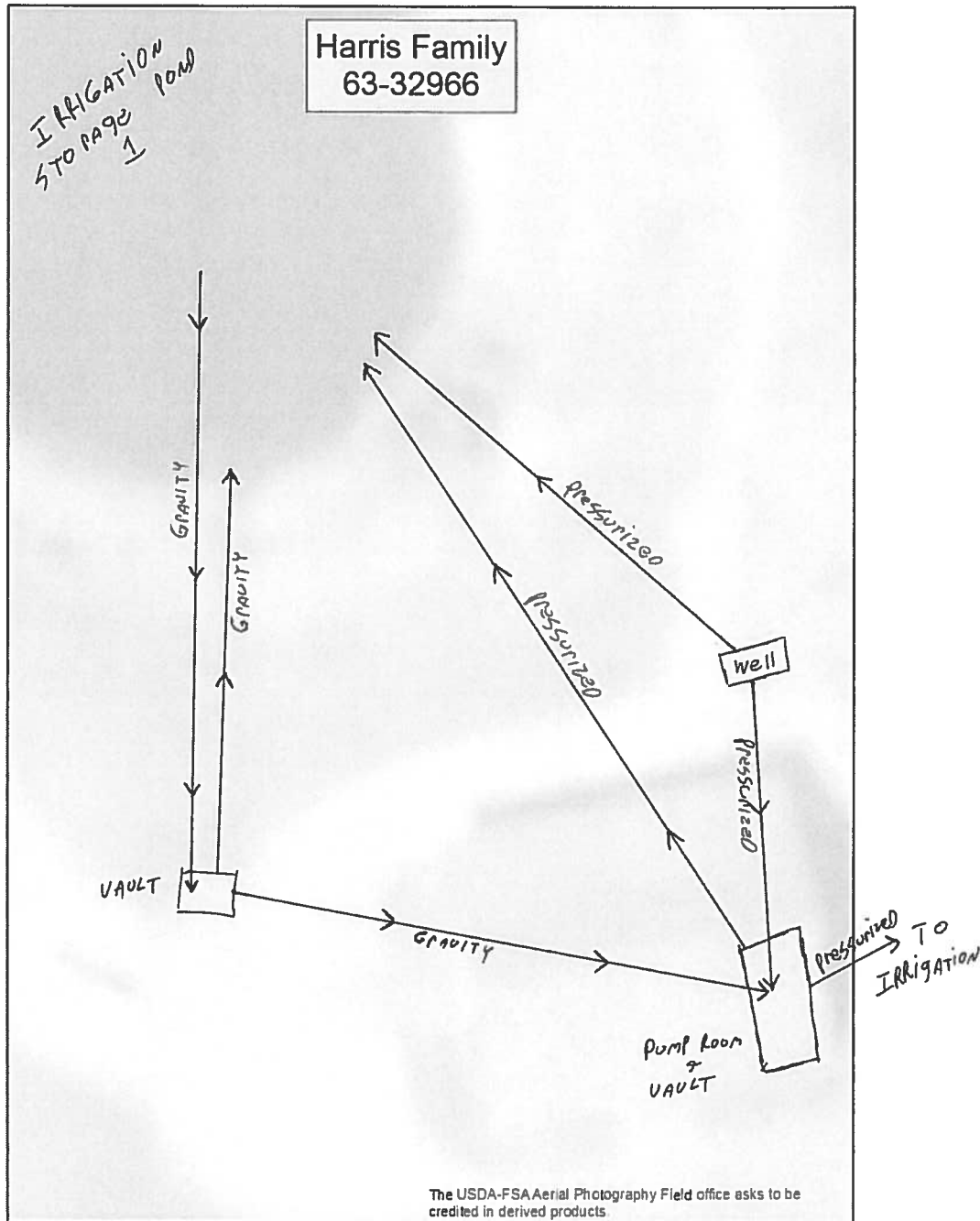
credited for mitigation via non-use, i.e., the amount diverted under each right is reduced by the mitigation amount. Ground water pumped under water permit 63-32966 is only used for irrigation during the irrigation season. The maximum evaporation loss from the biggest of the three (3) ponds is 5.5 acre-feet and multiplying by 3 (for the total number of ponds) is 16.5 acre-feet. There is no seepage loss because these ponds intercept shallow ground water. Therefore the 25.2 acre-feet of mitigation will cover the loss.

Conditions

- Removed condition #1 (26A) from the permit.
- Changed condition #2 from the permit to extend the water bearing zone to a depth of 26 feet to match the max depth of the irrigation storage pond 1.
- Changed condition #3 from the permit to condition 220.
- Kept condition #4 (R05) from permit.
- Kept condition #5 (170) from permit.
- Added condition 938 to the license and used pertinent details.



Showing the various features of the system.



Showing the main components of the system: (1) ground water well, (2) pump room vault, and (3) secondary vault. A portion of the irrigation storage pond is shown in the upper left hand corner of the photo and the enclosed pump house is shown in the lower right hand corner.

PHOTOGRAPHER AND DATE OF PHOTOS Brian Ragan 11 16 2015
FILE NUMBER 63-32966



Pump house / maintenance storage at SE corner of irrigation storage pond 1. Note ground water well which pumps water into the pump house vault and irrigation pond 1. Well tag number D0064422.



Well tag number D0064422.



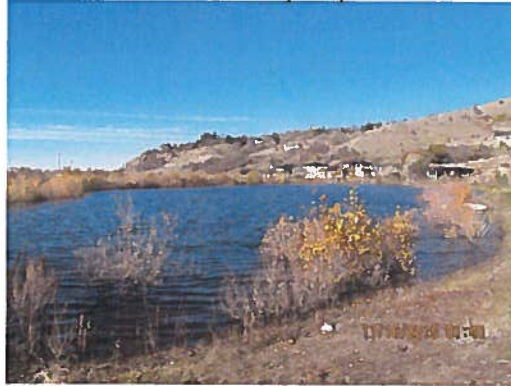
Well tag number D0064422.



Plastic pipe which is used to discharge ground water from the well directly into the irrigation storage pond.



Separate plastic pipe which delivers water from the pump house vault to the irrigation storage pond



Irrigation storage pond 1.



Irrigation storage pond 1 and pump house.



Earthen levee/berm separating irrigation storage pond 1 from storm water detention pond 1.



Storm water detention pond 1.



Grassy swale that delivers storm runoff from the subdivision to storm water detention pond 1.



Discharge point for the grassy swale that delivers storm runoff from the subdivision to storm water detention pond 1.



Discharge point for the grassy swale that delivers storm runoff from the subdivision to storm water detention pond 1.



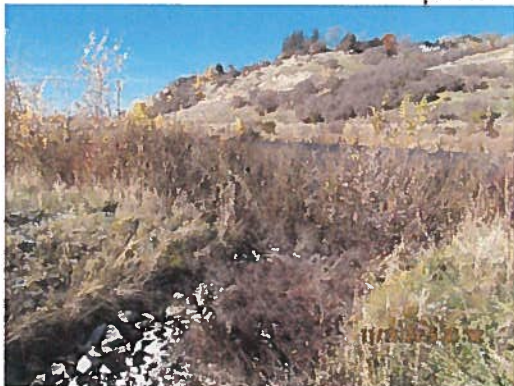
Storm water detention pond 1.



Discharge point from storm water detention pond 1 draining into storm water detention pond 2. Water flows from left to right.



Gravel bottom trench discharging water from storm water detention pond 1 to storm water detention pond 2. Water flows towards bottom of photo.



Gravel bottom trench from storm water detention pond 1 discharging into storm water detention pond 2.



Storm water detention pond 2.



Outlet from storm water detention pond 2 flowing into ditch which ultimately discharges into the Boise River.



Secondary holding vault which gravity flows water into the pump house vault.



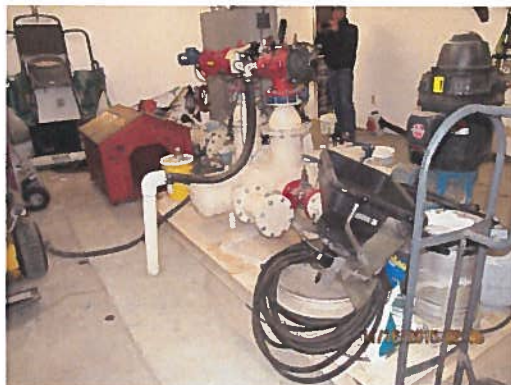
Pump room in the pump house.



Pump label in the pump house.



Pump in the pump house.



Pump room. Vault is located under the pumps.