

[illegible]

See Attached Topo Map &  
2006 Aerial Photo

☒ 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       |
|---------------------------------------|---------------|----|------------------|-----------|-----------------------------------------|
| Snake River Pump                      | Diesel-Driven |    |                  | Cornell   | 4RB EM 16-4, 12" Impeller, 4" Discharge |
|                                       |               |    |                  |           |                                         |
|                                       |               |    |                  |           |                                         |

#### D. FLOW MEASUREMENTS

| Measurement Equipment | Type  | Make       | Model No.         | Serial No. | Size | Calib. Date          |
|-----------------------|-------|------------|-------------------|------------|------|----------------------|
| Cornell pump curve    |       |            |                   |            |      |                      |
| Current meter         | Pygmy | Gurley JBS | 625 Aqua-calc Pro | AR2072     |      | 10/20/2008 Spin Test |

**2. Measurements:** The pump performance curves indicate that the pump is rated to produce approximately 2 cfs (898 gpm) at 40 feet TDH at 1200 rpm, and 3 cfs (1,346 gpm) at 82 feet TDH at 1800 rpm. Measured discharge from the pump, while operating a low rpms (tachometer was inoperative) and throttled with a butterfly valve was in excess of 2 cfs, based on measured velocity of 10 fps (pygmy meter) downstream from the submerged outlet of the 6-inch diameter pipe. Capacity of the pump and pipeline at higher rpms is more than 3 cfs.

## **E. NARRATIVE/REMARKS/COMMENTS**

### **Description of Diversion Facilities.**

Water can be diverted into the pond by pumping directly from the Snake River. The Snake River pump consists of a diesel-driven end suction pump that discharges to a 6-inch PVC pipeline. The pipeline extends approximately 150 feet to the pond. The pump is a Cornell 4RB EM16-4 with 12.00-inch impeller. The centerline of the impeller is approximately 8 feet above the water surface in the Snake River, and approximately 1 foot above the water level of the pond. Therefore, the lift from the river is 7 feet plus friction loss. Friction loss at 2 cfs flow rate is estimated to be approximately 10 feet.

The second point of diversion listed on the permit in Section 4, T3N, R5W, is located on an unnamed drain. The permit lists the Snake River as the only water source. If pumped, backflow from the Snake River could be diverted from this location. At the time of the field exam, a pump system at this location had not been developed. Diversion of drain water, tributary to the Snake River, as a second source of water for the pond has been proposed on an accompanying application for permit.

### **Description of Storage Facility**

The pond and wetland system was excavated and graded in substantial accordance with the plan prepared by the US Fish and Wildlife Service. The plan indicates a maximum capacity of 44 acre feet and a surface area of 17.5 acres. Maximum depth on the plan is approximately 5 feet, although Mr. Caldwell indicated that the maximum depth was approximately 7 feet. Therefore, capacity may be slightly more than 44 acre feet.

At the time of the field examination, water level surface (as measured on a staff gage near the outlet) was 2.26 feet. Full pond level is approximately 3.0 feet.

The pond water level is controlled by an outlet structure at the northeast corner, near the pump site and pump pipeline. The check structure is an Agri Drain in-line water control structure. The outlet structure discharges through an estimated 20-inch diameter PVC pipe. The outlet of the PVC pipe is protected with a 24-inch diameter corrugated metal pipe at the discharge point at the unnamed stream.

### **Beneficial Use**

The pond and adjacent wetlands were being utilized by waterfowl (coots, mallards, and widgeon), shorebirds (snipe), and other birds at the time of the field examination. The attached email correspondence from the Idaho Department of Fish and Game and US Fish and Wildlife Service confirm the value of the wildlife habitat created through the diversion and storage of water under this permit.

Have conditions of permit approval been met?  X  yes    \_\_\_ no

## F. FLOW CALCULATIONS

(Pump Curves) Additional Computation Sheets Attached

Measured Method:

See Flow Measurements, Item D.

## 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:

$$17.5 \text{ acres pond surface area} \times 7' \text{ maximum depth} = 122.5 \text{ ac-ft} \times 0.4 \text{ correction factor for sloped ponds} \\ = \text{approximately } 50 \text{ ac-ft}$$

## H. RECOMMENDATIONS

### 1. Recommended Amounts

| Beneficial Use       | Period of Use |       | Rate of Diversion<br>Q (cfs) | Annual Volume<br>V (afa) |
|----------------------|---------------|-------|------------------------------|--------------------------|
|                      | From          | To    |                              |                          |
| Diversion to Storage | 1/1           | 12/31 | 2.0                          |                          |
| Wildlife Storage     | 1/1           | 12/31 |                              | 50.0                     |

### 2. Recommended Amendments

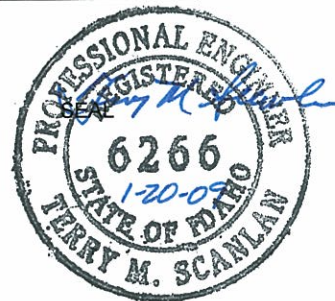
☐ Change P.D. as reflected above    ☐ Add P.D. as reflected above    ☐ None  
☐ Change P.U. as reflected above    ☒ Add P.U. as reflected above    ☐ Other

## I. AUTHENTICATION

Field Examiner's Name Terry M. Scanlan Date January 20, 2009

Field Examiner's Signature 

Reviewer \_\_\_\_\_ Date \_\_\_\_\_



**ATTACHMENT A**

**PERMIT RECORD AND PROOF OF BENEFICIAL USE**

Close

IDAHO DEPARTMENT OF WATER RESOURCES  
Water Permit Report

12/7/2008

WATER RIGHT NO. 2-10343

| Owner Type    | Name and Address                                                                                                    |
|---------------|---------------------------------------------------------------------------------------------------------------------|
| Current Owner | TFR PARTNERSHIP<br>C/O RICHARD CALDWELL<br>45625 MANZO DR<br>INDIAN WELLS, CA 92210<br>(208)378-5243                |
| Attorney      | MOORE SMITH BUXTON & TURCKE CHTD<br>C/O BRUCE M SMITH<br>950 W BANNOCK, STE 520<br>BOISE, ID 83702<br>(208)331-1800 |

Priority Date: 03/13/2008  
Status: Active

| Source      | Tributary      |
|-------------|----------------|
| SNAKE RIVER | COLUMBIA RIVER |

| Beneficial Use       | From  | To    | Diversion Rate | Volume |
|----------------------|-------|-------|----------------|--------|
| WILDLIFE STORAGE     | 01/01 | 12/31 |                | 50 AFA |
| DIVERSION TO STORAGE | 01/01 | 12/31 | 2 CFS          |        |
| Total Diversion      |       |       | 2 CFS          |        |

## Location of Point(s) of Diversion:

SNAKE RIVER|NWNW Lt 3|Sec. 04|Township 03N|Range 05W|OWYHEE County  
 SNAKE RIVER|SWSW Lt 3|Sec. 33|Township 04N|Range 05W|OWYHEE County

## Place(s) of use:

Place of Use Legal Description: WILDLIFE STORAGE OWYHEE County

| Township | Range | Section | Lot | Tract | Acres | Lot | Tract | Acres | Lot | Tract | Acres | Lot | Tract | Acres |
|----------|-------|---------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|
| 03N      | 05W   | 5       | 1   | NENE  |       |     |       |       |     |       |       |     |       |       |
| 04N      |       | 32      | 4   | SESE  |       |     |       |       |     |       |       |     |       |       |
|          |       | 33      | 3   | SWSW  |       |     |       |       |     |       |       |     |       |       |

## 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. WB9 Water shall not be diverted under this right when flows in the Snake River are below established minimum flow amounts at any of the following locations: Weiser, 4750 cfs; Johnson Bar, 5000 cfs; Lime Point 13,000 cfs.
3. 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.
4. This right authorizes the diversion of water to fill the reservoir and the diversion of water to replace evaporation and seepage losses from the reservoir, up to a combined annual total of 50 AF.

Dates:  
 Proof Due Date: 07/01/2010  
 Proof Made Date:  
 Approved Date: 06/19/2008  
 Moratorium Expiration Date:  
 Enlargement Use Priority Date:

Enlargement Statute Priority Date:  
Application Received Date: 06/07/2007  
Protest Deadline Date: 04/21/2008  
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:  
Generic Max Volume per Acre:  
Swan Falls Trust or Nontrust:  
Swan Falls Dismissed:  
DLE Act Number:  
Cary Act Number:  
Mitigation Plan: False

**ATTACHMENT B**

**PUMP CURVES**

# 4RB - 1800 RPM

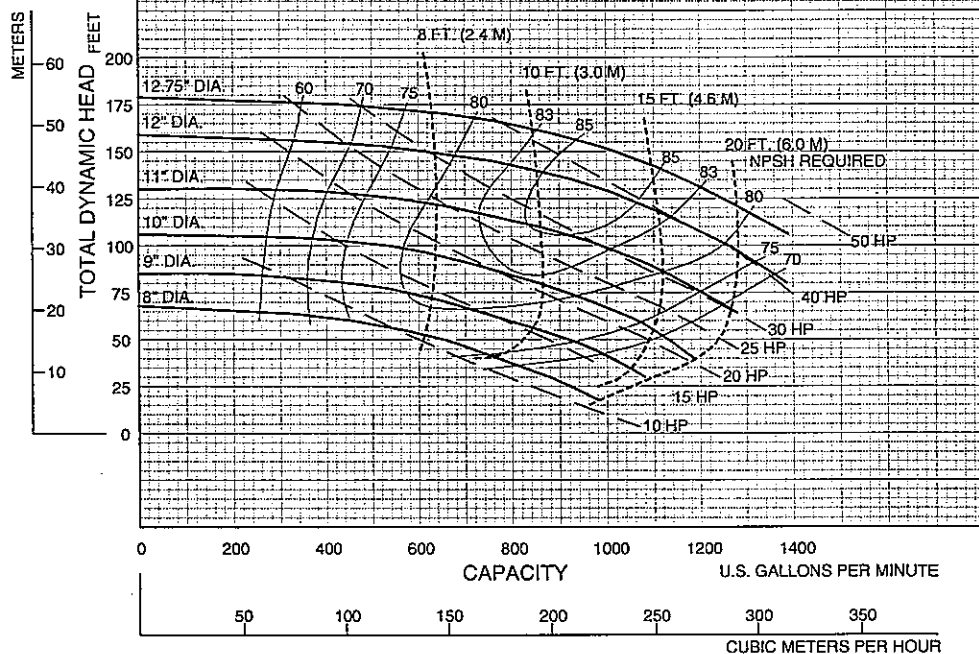
See Section IV for Maximum Operating Pressure Ratings

Feet x .305 = Meters  
Inches x 25.4 = Millimeters  
GPM x .227 = Cubic Meters/Hour  
GPM x 3.785 = Liters/Minute  
HP x .746 = KW

| Speed | Impeller Dia. | Style    | Solids Dia. | N <sub>s</sub> | Suction | Discharge | No. vanes |
|-------|---------------|----------|-------------|----------------|---------|-----------|-----------|
| 1775  | VARIOUS       | ENCLOSED | .84"        | 1332           | 6"      | 4"        | 7         |

SINGLE VOLUTE

MOUNTING CONFIG.: CC, VM, F, VF, EM, VC



Performance shown is for best water clear-  
liquid electric configuration with packing.  
Other mounting styles or liquids may require  
horsepower and/or performance adjustments.

6/99

# 4RB - 1200 RPM

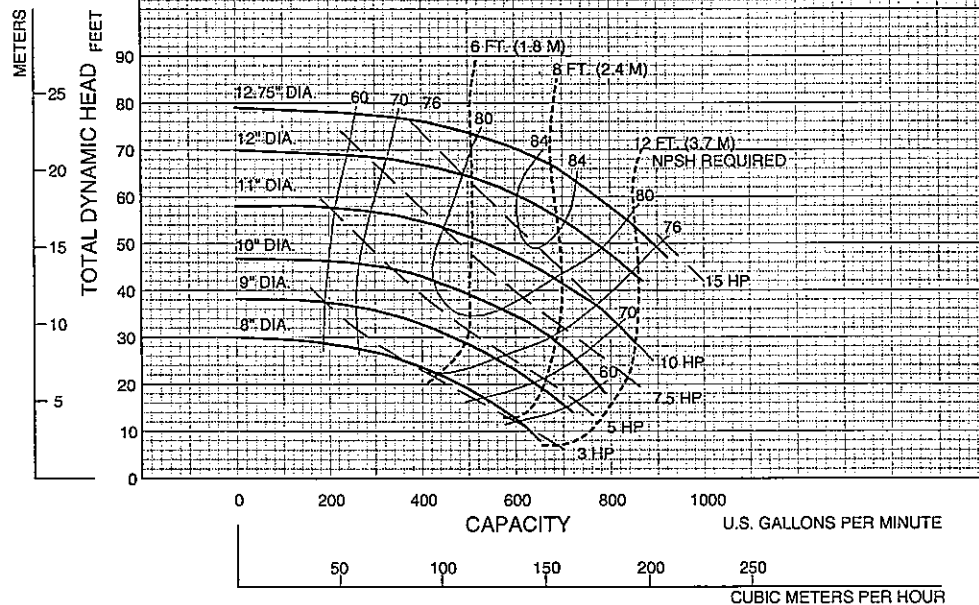
See Section IV for Maximum Operating Pressure Ratings

Feet x .305 = Meters  
Inches x 25.4 = Millimeters  
GPM x .227 = Cubic Meters/Hour  
GPM x 3.785 = Liters/Minute  
HP x .746 = KW

| Speed | Impeller Dia. | Style    | Solids Dia. | N <sub>s</sub> | Suction | Discharge | No. vanes |
|-------|---------------|----------|-------------|----------------|---------|-----------|-----------|
| 1180  | VARIOUS       | ENCLOSED | .84"        | 1332           | 6"      | 4"        | 7         |

SINGLE VOLUTE

MOUNTING CONFIG.: CC, VM, F, VF, EM, VC



Performance shown is for best water clear-  
liquid electric configuration with packing.  
Other mounting styles or liquids may require  
horsepower and/or performance adjustments.

6/99



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91

R-Series 60Hz

# 4RB - Various RPM

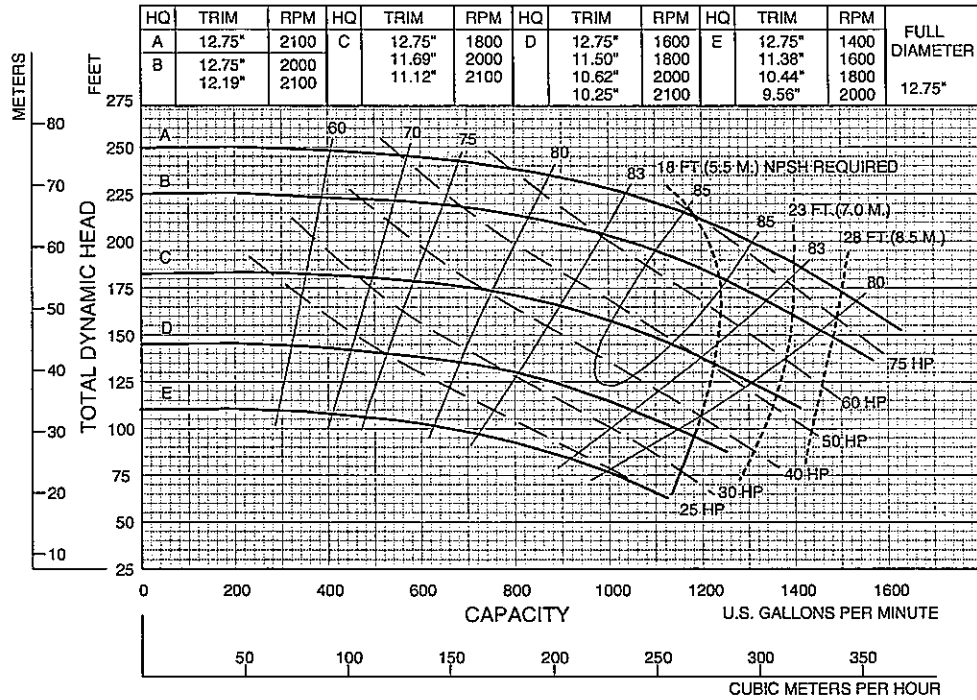
See Section IV for Maximum Operating Pressure Ratings

Feet x .305 = Meters  
Inches x 25.4 = Millimeters  
GPM x .227 = Cubic Meters/Hour  
GPM x 3.785 = Liters/Minute  
HP x .746 = KW

| Speed   | Impeller Dia. | Style    | Solids Dia. | N <sub>S</sub> | Suction | Discharge | No. vanes |
|---------|---------------|----------|-------------|----------------|---------|-----------|-----------|
| VARIOUS | VARIOUS       | ENCLOSED | .84"        | 1332           | 6"      | 4"        | 7         |

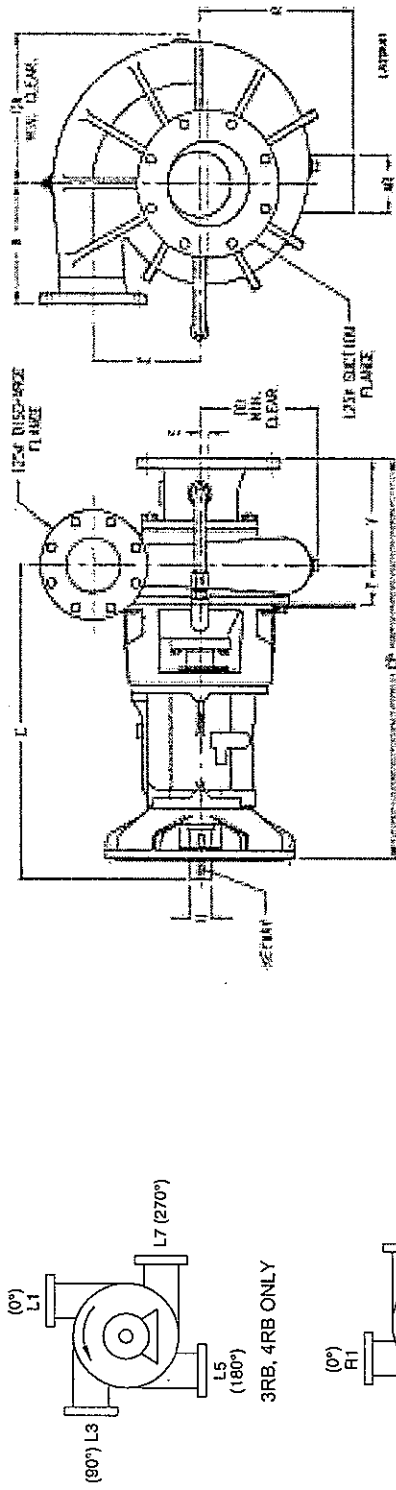
SINGLE VOLUTE

MOUNTING CONFIG.: CC, VM, F, VF, EM, VC



Performance shown is for clean water, design liquid configuration with padding.  
Other mounting styles or liquids may require horsepower and/or performance adjustments.

R-SERIES HORIZONTAL ENGINE MOUNTED (EM16) PUMP WITH TANGENTIAL VOLUTE



- NOTES:
- 1. Frame mounting foot thickness is .75".
  - 2. Flange connection dimension can vary  $\pm$  .12 inch.
  - 3. Do not use for construction unless certified.

- NOTES:
- a. Discharge positions viewed from the drive end.
  - b. Consult factory for other discharge positions.

| PUMP DIMENSIONS |       |            |       |      |       |       |       |       |       |      |      |   |      |      |      |         |
|-----------------|-------|------------|-------|------|-------|-------|-------|-------|-------|------|------|---|------|------|------|---------|
| MODEL           | FRAME | CONNECTION |       | AR   | C     | CP    | DA    | DD    | R     | S    | T    | U | X    | Y    | Z    | KEYWAY  |
|                 |       | DISCH.     | SUCT. |      |       |       |       |       |       |      |      |   |      |      |      |         |
| 2.5RB           | EM16  | 2.5        | 4     | 5.25 | 25.5  | 29.5  | 9     | 8.75  | 14.88 | -    | 2.87 | 2 | 9.75 | 6    | 6.75 | .50X.25 |
| 3RB             | EM16  | 3          | 5     | 5.25 | 25.61 | 28.88 | 10    | 9.5   | 14.88 | -    | 3    | 2 | 8.5  | 5.25 | 7.75 | .50X.25 |
| 3RC             | EM16  | 3          | 5     | 5.25 | 25.61 | 28.88 | 10    | 9.5   | 14.88 | -    | 3    | 2 | 8.5  | 5.25 | 7.75 | .50X.25 |
| 4RB             | EM16  | 4          | 6     | 5.25 | 25.75 | 31.12 | 11    | 10.25 | 14.88 | -    | 3.12 | 2 | 10   | 7.38 | 8    | .50X.25 |
| 4RC             | EM16  | 4          | 6     | 5.25 | 25.75 | 31.12 | 11    | 10.25 | 14.88 | -    | 3.12 | 2 | 10   | 7.38 | 8    | .50X.25 |
| 5RB             | EM16  | 5          | 8     | 5.25 | 28.61 | 36.41 | 14.25 | 11.75 | 15.48 | 0.88 | 3.47 | 2 | 11   | 9.78 | 10   | .50X.25 |
| 5RB-S           | EM16  | 5          | 8     | 5.25 | 25.38 | 33.16 | 14.25 | 11.75 | 15.48 | 0.88 | 3.47 | 2 | 11   | 9.78 | 10   | .50X.25 |
| 5RC             | EM16  | 5          | 8     | 5.25 | 25.38 | 33.16 | 14.25 | 11.75 | 15.48 | 0.88 | 3.47 | 2 | 11   | 9.78 | 10   | .50X.25 |
| 6RB             | EM16  | 6          | 10    | 5.25 | 29.06 | 36.97 | 15.38 | 12.25 | 15.48 | 1    | 3.91 | 2 | 11   | 9.91 | 9.5  | .50X.25 |
| 6RB-S           | EM16  | 6          | 10    | 5.25 | 25.81 | 33.73 | 15.38 | 12.25 | 15.48 | 1    | 3.91 | 2 | 11   | 9.91 | 9.5  | .50X.25 |
| 6RC             | EM16  | 6          | 10    | 5.25 | 25.81 | 33.73 | 15.38 | 12.25 | 15.48 | 1    | 3.91 | 2 | 11   | 9.91 | 9.5  | .50X.25 |

2/12/03

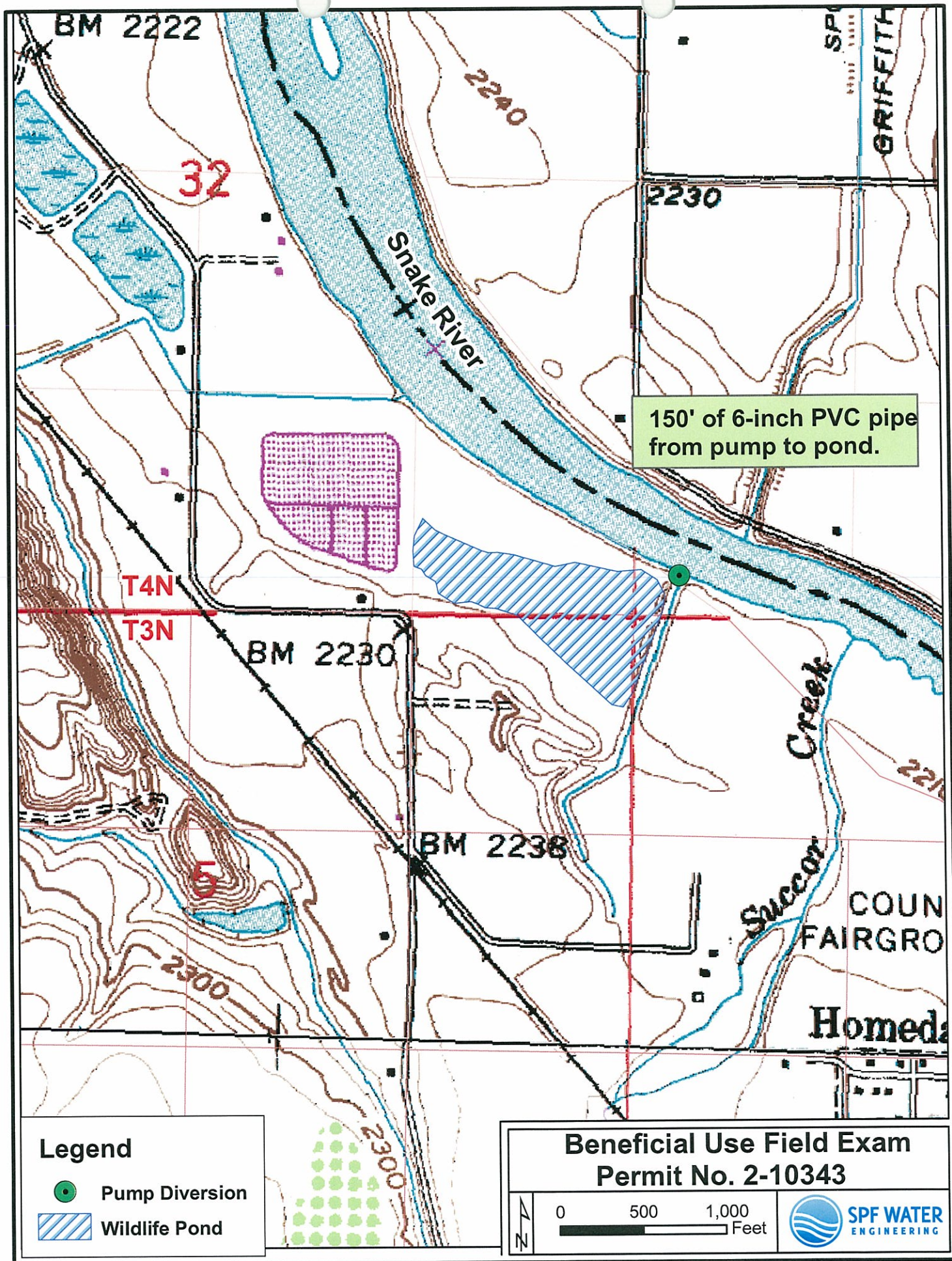


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DIM2107



**ATTACHMENT C**  
**TOPO MAP AND 2006 AERIAL PHOTO**



150' of 6-inch PVC pipe  
from pump to pond.

**Legend**

-  Pump Diversion
-  Wildlife Pond

**Beneficial Use Field Exam  
Permit No. 2-10343**



2006 Aerial Photo

Snake River

150' of 6-inch PVC pipe  
from pump to pond.

T4N

T3N

### Legend

-  Pump Diversion
-  Wildlife Pond

Beneficial Use Field Exam  
Permit No. 2-10343



0 500 1,000  
Feet

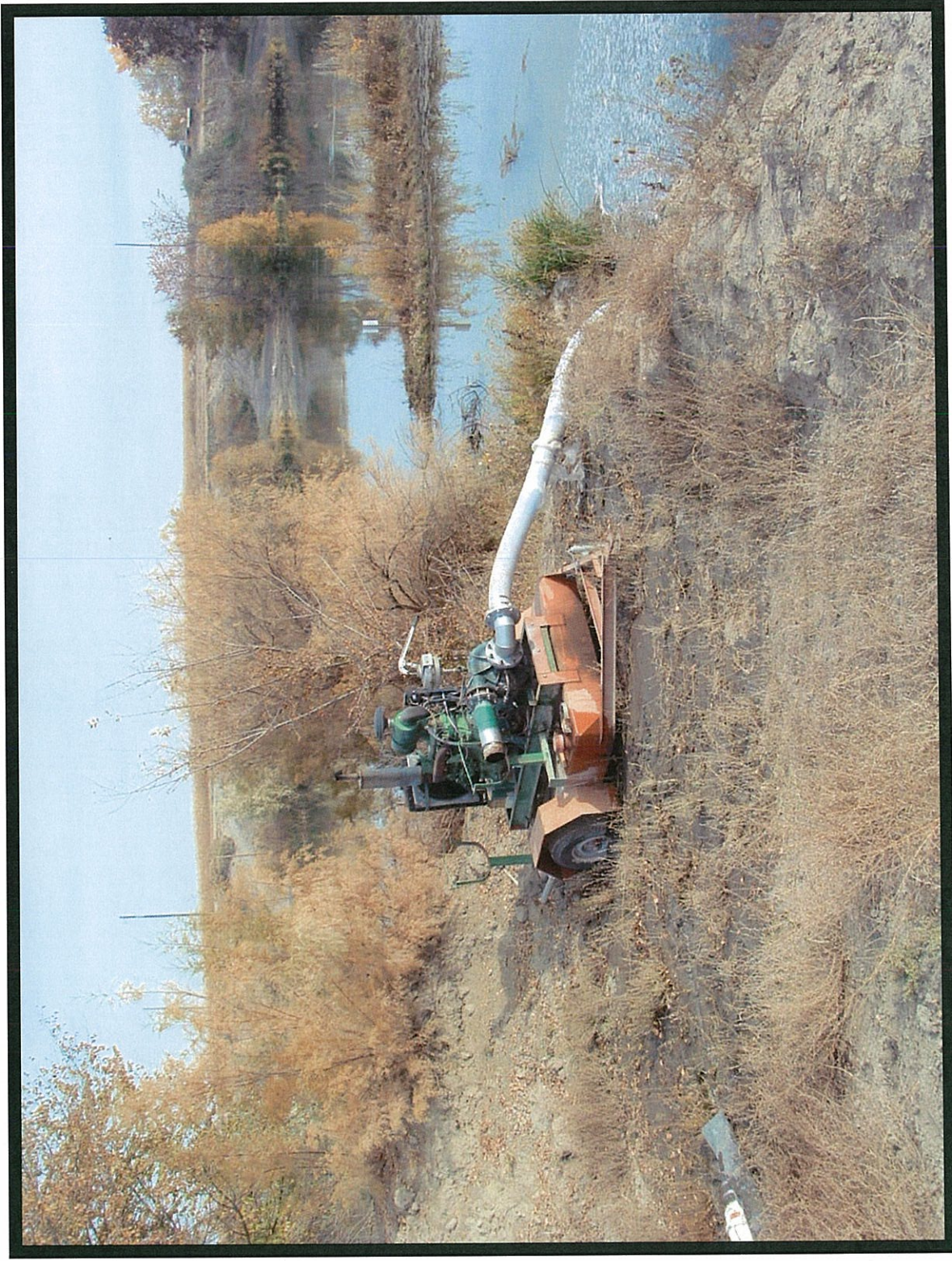


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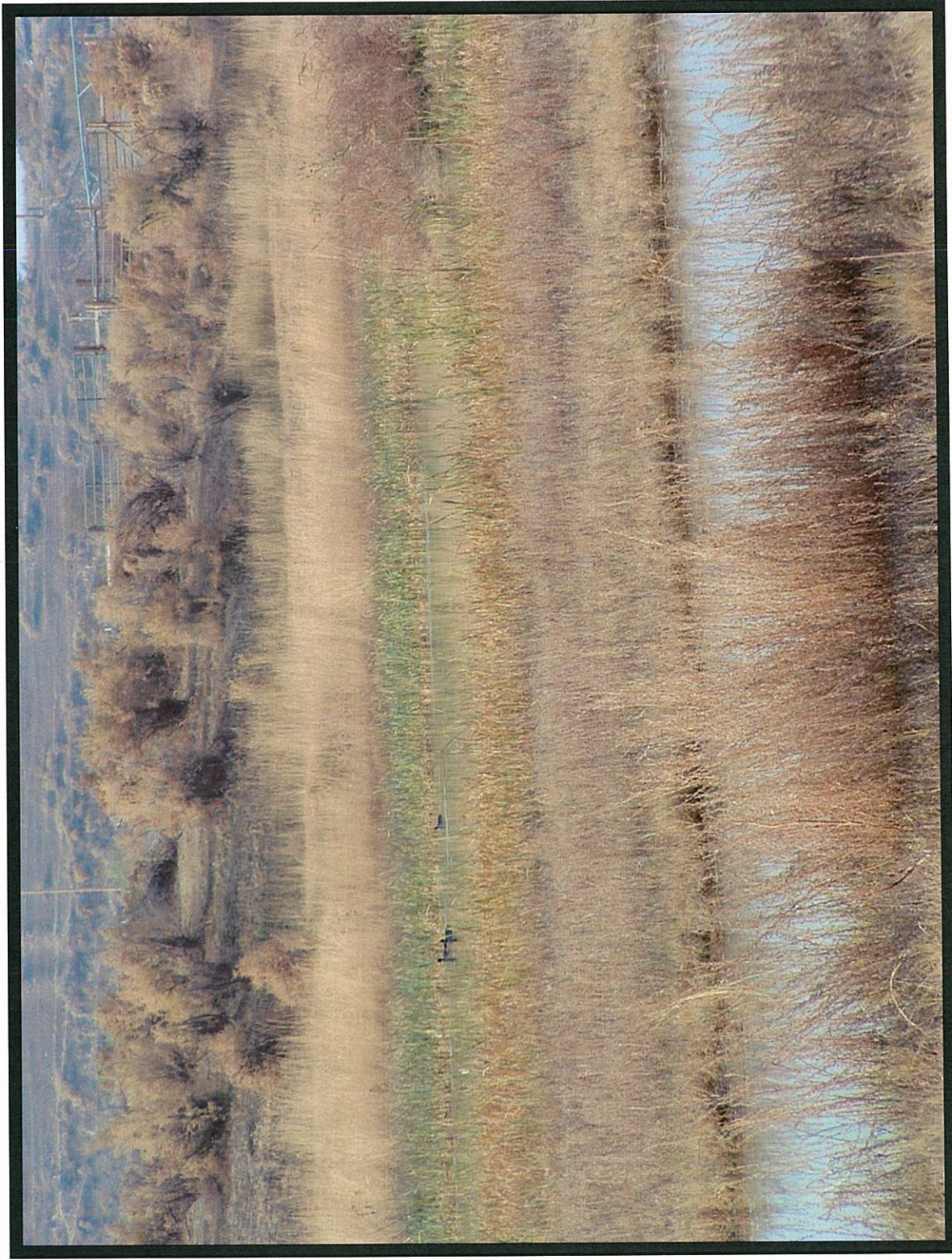
**ATTACHMENT D**  
**PHOTOS**



View of pond looking SW from NE corner. Staff gage is visible



Pump at diversion point from the Snake River



Shallow water habitat at west end of pond



View from south side looking NE



View from east side looking west



Overflow control structure



Overflow pipe to drain near Snake River

**ATTACHMENT E**

**CORRESPONDENCE FROM IDFG AND USF&W**

## Terry Scanlan

---

**From:** Dennis\_Mackey@fws.gov  
**Sent:** Monday, November 03, 2008 10:19 AM  
**To:** Terry Scanlan  
**Cc:** johngingerich@earthlink.net; aogden@idfg.idaho.gov; caldwellrichardc@aol.com  
**Subject:** RE: TFR Wetlands

Terry:

Prior to wildlife habitat improvements on the 40 acres, the area was intensively grazed with very little vegetative cover for wildlife other than greasewood shrubs. "Wetland" habitat was limited to a degraded, temporarily flooded, pool providing primarily resting habitat for ducks and geese when water was available, and very little food or cover for migratory birds.

The project was implemented between TFR, the FWS and the IDFG in October 2007 to enhance approximately 17 acres of wetland and 23 acres of upland habitat to benefit migrating and breeding birds, especially shorebirds and wading birds such as black-necked stilts and American avocets. Habitat in the late summer and fall is expected to provide good habitat for ducks and geese, as well as resident bird species such as pheasants, quail and other species. The wetland has a high proportion of shallow water areas (i.e. <2 foot water depths) that, with proper water level and vegetation management, is expected to provide high-quality shorebird and wading bird habitat, and abundant food (vegetation and invertebrates) for waterfowl and other migratory birds.

We are very satisfied with the project results the first year. For example, prior to habitat improvements, there were no nesting stilts or avocets on the property. This summer, we observed 7 stilt and/or avocet nests on two of the islands in the wetland, and based on pair counts and behavior of these two species, there were 10 stilt and 8 avocet nesting pairs. In addition, a variety of shorebirds and waterfowl used the wetland this spring and summer including mallards, Canada geese, northern shovelers, cinnamon teal, blue-winged teal, buffleheads, white-faced ibis, yellowlegs, gulls, great blue herons, and killdeer. The FWS and IDFG intend to work with the landowners to develop a management plan for the wetland to maintain high-quality wetland habitat.

Feel free to give me a call if you need any other information.

Thanks.

Dennis

Dennis Mackey  
Partners for Fish and Wildlife Program Coordinator  
U.S. Fish and Wildlife Service  
Snake River Fish and Wildlife Office  
1387 South Vinnell Way, Suite 368  
Boise, Idaho 83709  
Office Phone: 208-378-5267  
Cell: 208-401-4902  
Fax: 208-378-5262  
Email: dennis\_mackey@fws.gov  
Visit our website at <http://www.fws.gov/idaho/>

"A true conservationist is a man who knows that the world is not given by his fathers but borrowed from his children." John James Audubon

"Terry Scanlan"

**Lori Graves**

---

**From:** Terry Scanlan  
**Sent:** Friday, October 31, 2008 11:31 AM  
**To:** Lori Graves  
**Subject:** FW: TFR Wetlands

-----Original Message-----

**From:** Terry Scanlan  
**Sent:** Friday, October 31, 2008 9:02 AM  
**To:** 'Ogden,Andy'  
**Subject:** RE: TFR Wetlands

Thanks, Andy. That is just what I needed.

-----Original Message-----

**From:** Ogden,Andy [mailto:aogden@idfg.idaho.gov]  
**Sent:** Friday, October 31, 2008 8:09 AM  
**To:** Terry Scanlan  
**Cc:** Dennis\_Mackey@fws.gov; Johngingerich@earthlink.net  
**Subject:** RE: TFR Wetlands

The most important biological benefit from the construction of small ponds like this is that it creates shallow water feeding areas and the vegetation associated with still or slow moving water that is less than 3 feet deep that is vital to production of ducks and geese. Even though the Snake River is just adjacent to the site, it doesn't provide this kind of wildlife habitat because the water is too deep, moving and disturbed by carp.

The pond provides important habitat for migrating shorebirds that is in very limited supply in SW Idaho due to the human caused destruction of shallow water, alkaline soils wetlands. The pond is also providing nesting habitat for several rare shore birds at this time and will require some management that requires water fluctuations, etc. in the future to retain this very rare mud flat habitat.

I think many people don't appreciate the difference that water depth and movement make to wildlife. They may just see the surface of the water but not understand the important differences between a well maintained wetland and deeper water area in the amount of shoreline habitat (the more "edge" available, the more valuable it is for wildlife, insect production (food) and nesting habitat that is critical to maintain not only ducks and geese but also a wide variety of non game birds that need help to survive today and in the future.

This wetland will also contribute to improving water quality in the Snake River because of the water cleansing properties of the emergent vegetation growing in the pond and the deposition of suspended soils being carried by the agricultural run off into the river.

This pond provides a lot of beneficial uses.

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**From:** Terry Scanlan [mailto:TScanlan@spfwater.com]  
**Sent:** Thursday, October 30, 2008 3:42 PM  
**To:** John Gingerich  
**Cc:** Dennis\_Mackey@fws.gov; Ogden,Andy  
**Subject:** RE: TFR Wetlands

Thanks, John.

Dennis and Andy – I conducted the beneficial use field exam today for the water right permit associated with John's wetland project. Although the beneficial use by wildlife is apparent to my non-biologist eyes, could each of you send me a short email message verifying that use of the water for the pond and wetland provides a wildlife benefit from the perspective of your agency? I can include your responses with my field exam submittal to IDWR as additional verification of beneficial use of the water for wildlife purposes. Thanks in advance.

11/4/2008

Terry M. Scanlan, P.E., P.G.  
SPF Water Engineering, LLC  
300 East Mallard Drive, Suite 350  
Boise, ID 83706  
208-383-4140 office  
208-383-4156 fax

-----Original Message-----

**From:** John Gingerich [mailto:johngingerich@earthlink.net]  
**Sent:** Thursday, October 30, 2008 3:28 PM  
**To:** Terry Scanlan  
**Cc:** Dennis\_Mackey@fws.gov; 'Andy Ogden'  
**Subject:** TFR Wetlands

Terry, I want to thank you for all the help today. I know most of it was unplanned but we are very happy that we finally got the job done.

I have copied both Dennis Mackey and Andy Ogden on this message so that you have their email addresses in case you want to contact them.

We hope to see you again one of these days.

John Gingerich, TFR Partner  
916-715-1459 Cell Phone