

[illegible]

## Method of Determination:

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.

| <u>Well or Diversion</u><br><u>ID No.*</u> | <u>Motor Make</u> | <u>Hp</u> | <u>Motor Serial No.</u> | <u>Pump Make</u> | <u>Pump Serial No. or Discharge</u><br><u>Size</u> |
|--------------------------------------------|-------------------|-----------|-------------------------|------------------|----------------------------------------------------|
| _____                                      | _____             | _____     | _____                   | _____            | _____                                              |

\*Code to correspond with No. on map and aerial photo

**D. FLOW MEASUREMENTS**

1.

| <u>Measurement</u><br><u>Equipment</u> | <u>Type</u> | <u>Make</u> | <u>Model No.</u> | <u>Serial No.</u> | <u>Size</u> | <u>Calib. Date</u> |
|----------------------------------------|-------------|-------------|------------------|-------------------|-------------|--------------------|
| In line meter                          |             | Grain Land  |                  | 12231             | 10"         |                    |

2. Measurements: **SEE STANTON Measurement of 10/30/1990 for permits 47-7813 and 47-7758. Allow 6.25 cfs total flow as documented in 47-7758 file.**

**E. FLOW CALCULATIONS**

\_\_\_\_\_ Additional Computation Sheets Attached

Measured Method:

**F. VOLUME CALCULATIONS**

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \text{NONE}$$

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

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

2. Volume Calculations for Other Uses: See attached graph of historical use.

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in season}) \times 1.9835 =$$

$$V = 6.25 \times 365 \times 1.9835 = 4525$$

(Recommend 4508 as monitored during 1991.)

**G. NARRATIVE/REMARKS/COMMENTS**

Permits 47-7758 and 47-7813 have been developed from a single artesian hot water well drilled in 1982 (Started by Denton in 1981 and completed by Walker Water Systems in 1982). The well produces 6.25 cfs of approximately 103 degree F water at 176 psi. Permit 47-7813 produces power from the well head using the artesian pressure. (See Holmes and Stanton reports for description of turbine and generator) The water is then used for Fish Propagation, heating and a supplemental source of water for irrigation of the golf course. The well is located east of the club house for the golf course in a building. From that building pipelines are run to a house, shops and club house for heating. All spent heating water is collected and conveyed to fish ponds. The main flow from the well is piped to the generator house immediately north of the well house where a turbine and generator are located that generate power. Outflow from the generator is collected and mixed with cold water from Perrine Coulee and from Alpheus Creek Springs and distributed to fish ponds. Outfall from the fish ponds at two points is pumped for irrigation use on the golf course or discharged in the Snake River. Rights combined for the fish propagation uses include: 36-7239, 47-8356, 47-8357, 02-7472 and 47-7758. Rights combined for irrigation include: 36-7239, 36-15455, 47-7758 and shares in the Twin Falls Canal Co which cover the 112 acres irrigated.

Since 1990 IDWR has monitored the hot water use in the Twin Falls Ground Water Management Area (See attached graph or refer to data maintained by Ken Neeley) including this hot well noted as (Canyon Springs Well). Peak use was observed in 1991 of 4508 acre feet which equates to 6.25 cfs running continuously for the entire year. Since 1991 the use has dropped off probably due to reduced discharge because of Pristine Springs new well coming on line and

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

**H. RECOMMENDATIONS****1. Recommended Amounts**

| <u>BENEFICIAL USE</u> | <u>PERIOD OF USE</u> | <u>DIVERSION RATE</u> | <u>ANNUAL VOLUME</u> |
|-----------------------|----------------------|-----------------------|----------------------|
| POWER                 | 01/01 to 12/31       | 6.250 CFS             | 4,508.00 AF          |
|                       | <u>Totals:</u>       | 6.250 CFS             | 4,508.00 AF          |

**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



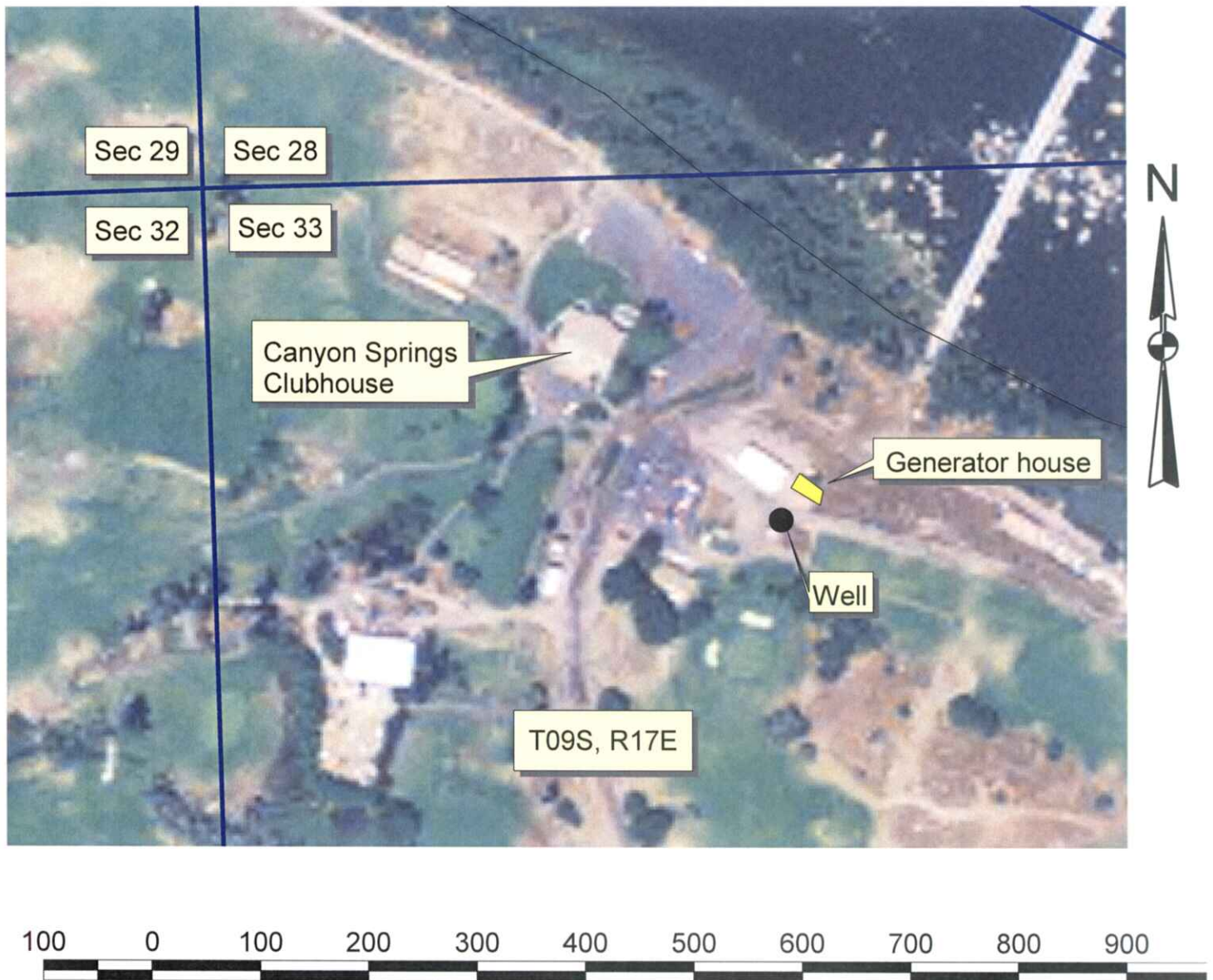
Date

5/19/05

Reviewer

Date

# Field Exam 47-7813 Power Facility



ADM  
5/19/05

T09S, R17E, B.M.

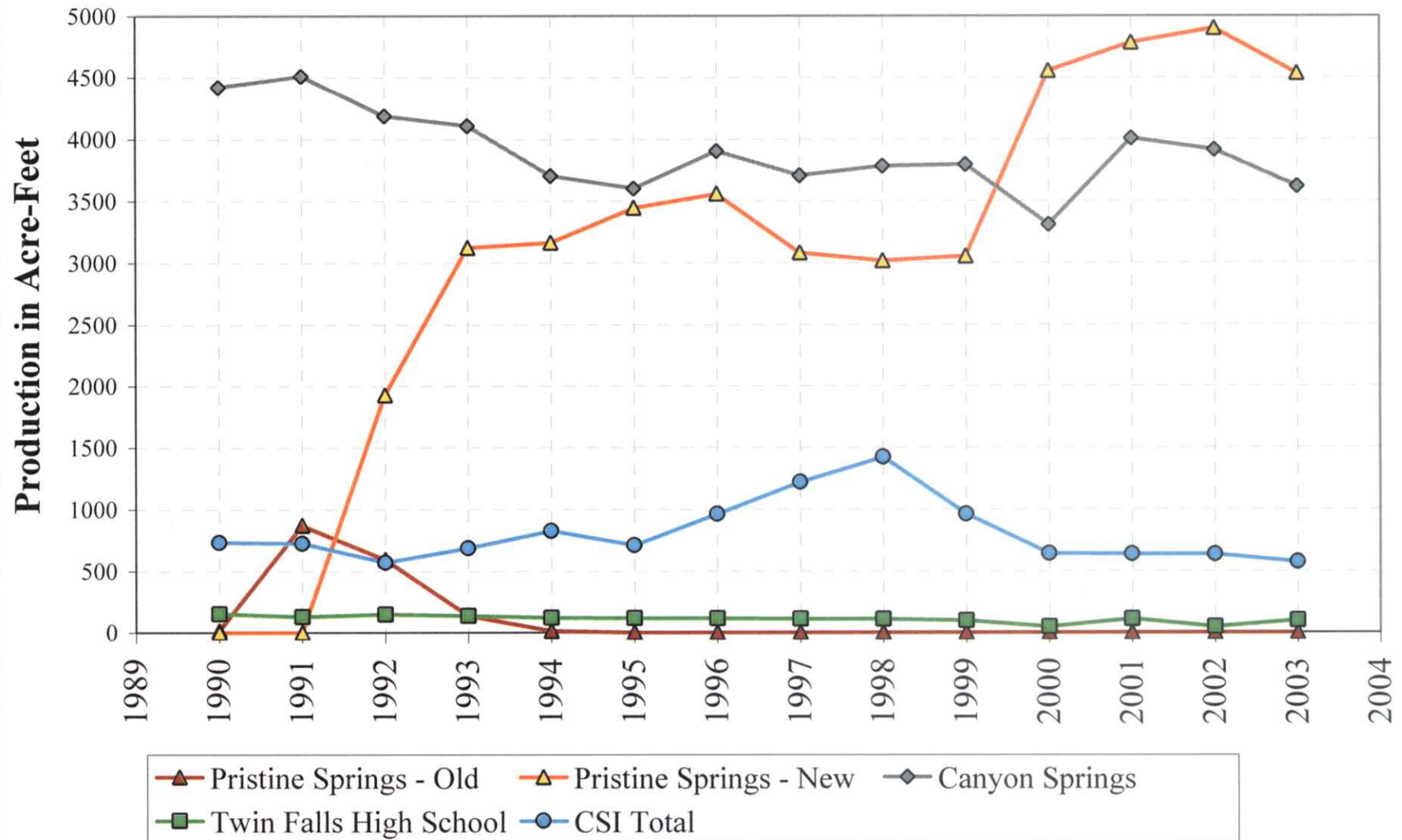
Pd for 47-7813 and 47-7758  
Looking East

Generator house↓

Well house ↓



**Cumulative Production for the Major Users in Twin Falls Area, 1990-2002.**



STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**BENEFICIAL USE FIELD REPORT**

**A. GENERAL INFORMATION**

Permit No. 47-7813

1. Owner: J. D. McCollum Phone No. 732-4506

Current Address: P.O. Box 112, Twin Falls, ID 83303

2. Accompanied by: Mr. McCollum EXAM. DATE: 10-30-90

Address: \_\_\_\_\_ Phone No. \_\_\_\_\_

Relationship to Permit Holder: \_\_\_\_\_

3. Source: Groundwater tributary to \_\_\_\_\_

**B. OVERLAP REVIEW**

1. Other water rights with same place of use: \_\_\_\_\_ ☐ Copies Attached

2. Other water rights with same point of diversion: 47-7758  
\_\_\_\_\_ ☐ Copies Attached ☒ Copies of Field Exam's Attached

**C. SYSTEM DESCRIPTION**

1. **Diversion System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable. ☒ Alternative diagram attached

Scale: 1" = \_\_\_\_\_

2. ☒ Copy of U.S.G.S. 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 or more).  
☒ Photo of Diversion and System Attached (required for all but single household domestic groundwater, and stockwater).

See 47-7758 exam

**System Description (continued)**

3. **Narrative:** Description (As operating at time of measurement. Indicate pressure, number of sprinklers, etc.)

*Artesian hot-water well, pipeline to generator & to other uses.*

*Siemens-Allis 160 hp generator #1-5364-40097-1-1, Byron Jackson turbine #841-S-1403.*

☐ See Remarks on page 4 for continuation

4.

| Well or Diversion Identification No.* | Motor Make | Hp | Motor Serial No. | Pump Make | Pump Serial No. or Discharge Size |
|---------------------------------------|------------|----|------------------|-----------|-----------------------------------|
|                                       |            |    |                  |           |                                   |
|                                       |            |    |                  |           |                                   |
|                                       |            |    |                  |           |                                   |
|                                       |            |    |                  |           |                                   |

\*Code to correspond with No. on map and aerial photo

5. **Point(s) of Diversion:**

| Ident. No. | Gov't. Lot | 1/4      | 1/4      | 1/4       | Sec.      | Twp.      | Rge.       | County            | Method of Determination/Remarks |
|------------|------------|----------|----------|-----------|-----------|-----------|------------|-------------------|---------------------------------|
|            |            | <i>N</i> | <i>E</i> | <i>NW</i> | <i>33</i> | <i>9S</i> | <i>17E</i> | <i>Twin Falls</i> |                                 |
|            |            |          |          |           |           |           |            |                   |                                 |
|            |            |          |          |           |           |           |            |                   |                                 |
|            |            |          |          |           |           |           |            |                   |                                 |

6. **Place(s) of Use:**

Indicate Method of Determination \_\_\_\_\_

| Twp.      | Rge.       | Sec.      | NE 1/4 |        |        |        | NW 1/4 |          |        |        | SW 1/4 |        |        |        | SE 1/4 |        |        |        | Totals |
|-----------|------------|-----------|--------|--------|--------|--------|--------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|           |            |           | NE 1/4 | NW 1/4 | SW 1/4 | SE 1/4 | NE 1/4 | NW 1/4   | SW 1/4 | SE 1/4 | NE 1/4 | NW 1/4 | SW 1/4 | SE 1/4 | NE 1/4 | NW 1/4 | SW 1/4 | SE 1/4 |        |
| <i>9S</i> | <i>17E</i> | <i>33</i> |        |        |        |        |        | <i>P</i> |        |        |        |        |        |        |        |        |        |        |        |
|           |            |           |        |        |        |        |        |          |        |        |        |        |        |        |        |        |        |        |        |
|           |            |           |        |        |        |        |        |          |        |        |        |        |        |        |        |        |        |        |        |
|           |            |           |        |        |        |        |        |          |        |        |        |        |        |        |        |        |        |        |        |
|           |            |           |        |        |        |        |        |          |        |        |        |        |        |        |        |        |        |        |        |
|           |            |           |        |        |        |        |        |          |        |        |        |        |        |        |        |        |        |        |        |
|           |            |           |        |        |        |        |        |          |        |        |        |        |        |        |        |        |        |        |        |
|           |            |           |        |        |        |        |        |          |        |        |        |        |        |        |        |        |        |        |        |

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## D. FLOW MEASUREMENTS

☐ Additional Data Sheets Attached

1.

| Measurement Equipment | Type    | Make | Model No. | Serial No. | Size   | Calib. Date |
|-----------------------|---------|------|-----------|------------|--------|-------------|
| Grain Land            | in-line |      |           | 12231      | 10.00" |             |
|                       |         |      |           |            |        |             |
|                       |         |      |           |            |        |             |
|                       |         |      |           |            |        |             |

2. Measurements:

Measured 2900 gpm average, 3000 gpm / 64.4 sec, on Totalizer. = 6.23 cfs.  
Flow varied 2710 gpm - 2950 gpm (6.04 - 6.57 cfs).

Previous exam measured 176 psi at generator.

## E. FLOW CALCULATIONS

☐ Additional Computation Sheets Attached

1. Measured Method:

176 psi x 2.31 = 407' head  $HP = .1135 \times 6.23 \text{ cfs} \times 407' \text{ head} \times 1.7 = 201 \text{ hp potential}$   
= 150 kW

2. Alternate Method for Checking Purposes:

## F. PUMP EFFICIENCY DATA (Optional)

Discharge Pressure: \_\_\_\_\_ psi x 2.31 = \_\_\_\_\_ ft (1); Dynamic pumping level: \_\_\_\_\_ ft (2)

Total Head: (1) + (2) = \_\_\_\_\_ (3); Flow rate: \_\_\_\_\_ cfs (4)

Water HP: (3) x (4) ÷ 8.8 = \_\_\_\_\_ (5)

Meter Input KW: 3.6 x \_\_\_\_\_ KH x \_\_\_\_\_ CTR or \_\_\_\_\_ MULT x \_\_\_\_\_ PTR x \_\_\_\_\_ N / \_\_\_\_\_ T = \_\_\_\_\_ (6)

Meter Input HP: (6) x 1.34 = \_\_\_\_\_ (7)

Panel Input KW: \_\_\_\_\_ Ave PF x \_\_\_\_\_ Ave Volts x \_\_\_\_\_ Ave Amps x .001732 = \_\_\_\_\_ (6)

Panel Input HP: (6) x 1.34 = \_\_\_\_\_ (7) Efficiency: (5) / (7) x 100 = \_\_\_\_\_ %

## 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:

#### H. REMARKS AND OVERLAP REVIEW ANALYSIS

\* Proof was filed for 6 cfs & exam fee of \$225. Was paid. For another \$25, the full amount of 6.23 cfs can be licensed.  
All fish propagation use is covered under Permit 47-7758 (both exams were done together). That permit covers full water supply, & there were no measuring devices for the 2 separate fish facilities. Diversion volume doesn't increase because of the ponds. Return flows, if any, enter Snake River in NAWWS33T95RDE  
Recommend lic. condition requiring functioning & maintained meas. device at all times.

#### I. RECOMMENDATIONS

##### 1. Recommended Amounts

| Beneficial Use | Period of Use |       | Rate of Diversion<br>Q (cfs) | Annual Volume<br>V (afa) |
|----------------|---------------|-------|------------------------------|--------------------------|
|                | From          | To    |                              |                          |
| Power          | 1-1           | 12-31 | * 6 or 6.23                  |                          |
|                |               |       |                              |                          |
|                |               |       |                              |                          |
|                |               |       |                              |                          |
| Totals:        |               |       |                              |                          |

##### 2. Recommended Amendments

- |                                                                    |                                                      |                                |
|--------------------------------------------------------------------|------------------------------------------------------|--------------------------------|
| <input type="checkbox"/> Change P.D. as reflected above            | <input type="checkbox"/> Add P.D. as reflected above | <input type="checkbox"/> None  |
| <input checked="" type="checkbox"/> Change P.U. as reflected above | <input type="checkbox"/> Add P.U. as reflected above | <input type="checkbox"/> Other |

#### J. AUTHENTICATION

Field Examiner's Name J. E. Stanton  
Signature J. E. Stanton  
Certification Date \_\_\_\_\_  
Field Report Preparation Date 5-6-91

CONSULTANT SEAL

- K. Licensing recommendation shall be prepared by an Idaho Department of Water Resources employee on a computer printout attached hereto.

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**BENEFICIAL USE FIELD REPORT**

*Redone*

**A. GENERAL INFORMATION**

Permit No. 47-7813

1. Owner: J. D. McCollum Phone No. \_\_\_\_\_

Current Address: Box 112 Twin Falls ID 83301

2. Accompanied by: Joe McCollum EXAM. DATE: 5/12/87

Address: \_\_\_\_\_ Phone No. \_\_\_\_\_

Relationship to Permit Holder: Permit Holder

3. Source: Groundwater tributary to \_\_\_\_\_

**B. OVERLAP REVIEW**

1. Other water rights with same place of use: \_\_\_\_\_

☐ Copies Attached

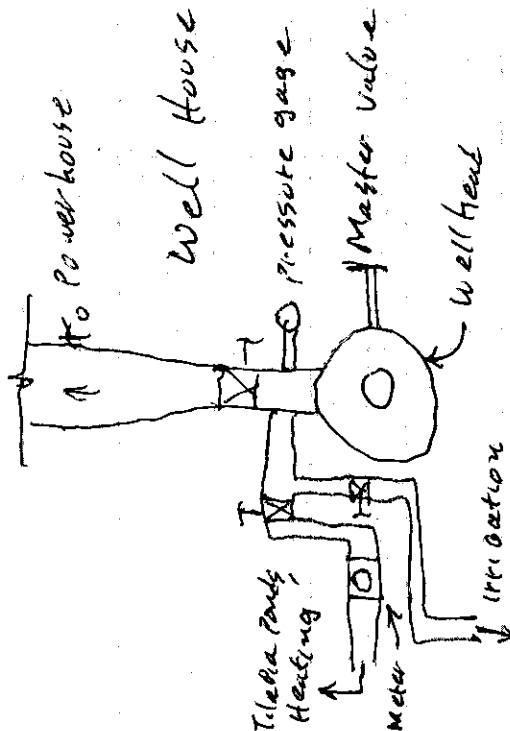
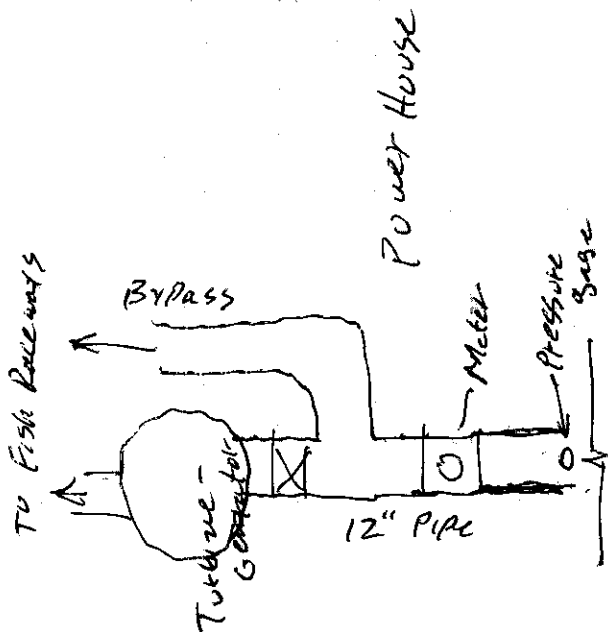
2. Other water rights with same point of diversion: \_\_\_\_\_

☐ Copies Attached

☐ Copies of Field Exam's Attached

**C. SYSTEM DESCRIPTION**

1. **Diversion System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable. ☐ Alternative diagram attached



Scale: 1" = NO SCALE

2. ☐ Copy of U.S.G.S. Quadrangle Attached  
Showing location(s) of point(s) of diversion and  
place(s) of use (required).

☐ Photo of Diversion and System Attached

(required for all but single household domestic groundwater, and stock water.)

☐ Aerial Photo Attached

(required for irrigation of 10 acres or more).

**System Description (continued)**

3. **Narrative:** Description (As operating at time of measurement. Indicate pressure, number of sprinklers, etc.)

Artesian Hot water well discharges TO Power plant & thence TO Fish raceways. Well also has direct connection to Tilapia Fish Ponds, treating & irrigation under other Permit.  
 Turbine rated @ 6.15-6.7 CFS / 293-337 ft head / 107-140 kW / 1800 RPM. Power Panel shows 493 volts, 152 Amps, 1822 RPM

☐ See Remarks on page 4 for continuation

4.

| Well or Diversion Identification No.* | Generator Motor Make | Hp  | Motor Serial No. | Turbine Pump Make | Pump Serial No. or Discharge Size |
|---------------------------------------|----------------------|-----|------------------|-------------------|-----------------------------------|
|                                       | Siemens Allis        | 160 | 1-5364-40047-1-1 | Byram Jackson     | 841-S-1403                        |
|                                       |                      |     |                  |                   |                                   |
|                                       |                      |     |                  |                   |                                   |
|                                       |                      |     |                  |                   |                                   |

\*Code to correspond with No. on map and aerial photo

5. **Point(s) of Diversion:**

| Ident. No. | Gov't. Lot | 1/4 | 1/4 | 1/4 | Sec. | Twp. | Rge. | County | Method of Determination/Remarks |
|------------|------------|-----|-----|-----|------|------|------|--------|---------------------------------|
|            |            |     |     |     |      |      |      |        |                                 |
|            |            |     |     |     |      |      |      |        |                                 |
|            |            |     |     |     |      |      |      |        |                                 |
|            |            |     |     |     |      |      |      |        |                                 |

6. **Place(s) of Use:**

Indicate Method of Determination

| Twp. | Rge. | Sec. | NE 1/4 |        |        |        | NW 1/4 |        |        |        | SW 1/4 |        |        |        | SE 1/4 |        |        |        | Totals |
|------|------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      |      |      | NE 1/4 | NW 1/4 | SW 1/4 | SE 1/4 | NE 1/4 | NW 1/4 | SW 1/4 | SE 1/4 | NE 1/4 | NW 1/4 | SW 1/4 | SE 1/4 | NE 1/4 | NW 1/4 | SW 1/4 | SE 1/4 |        |
|      |      |      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|      |      |      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|      |      |      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|      |      |      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|      |      |      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|      |      |      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|      |      |      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |

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#### D. FLOW MEASUREMENTS

☐ Additional Data Sheets Attached

1.

|   | Measurement Equipment | Type      | Make      | Model No. | Serial No. | Size | Calib. Date |
|---|-----------------------|-----------|-----------|-----------|------------|------|-------------|
| ① | Installed Flowmeter   | Propeller | Mcrometer |           | 85-10-320  | 12"  | New         |
| ② | Installed Flowmeter   | Propeller | Mcrometer |           | 87-3-364   | 3"   | New         |

2. Measurements:

- ① 1000 ft<sup>3</sup> / 3 min 5.58 sec <sup>5.39</sup> water flowing to Power Plant/Raceways  
 ② 100 gal / 30.93 sec <sup>.43</sup> water flowing to Tilapia Ponds

Installed Pressure gage at Pwt. house reads 176 Psi  
 Pressure gage at wellhead reads 165 Psi

#### E. FLOW CALCULATIONS

☐ Additional Computation Sheets Attached

1. Measured Method:

2. Alternate Method for Checking Purposes:

#### F. PUMP EFFICIENCY DATA (Optional)

Discharge Pressure: \_\_\_\_\_ psi x 2.31 = \_\_\_\_\_ ft (1); Dynamic pumping level: \_\_\_\_\_ ft (2)

Total Head: (1) + (2) = \_\_\_\_\_ (3); Flow rate: \_\_\_\_\_ cfs (4)

Water HP: (3) x (4) ÷ 8.8 = \_\_\_\_\_ (5)

Meter Input KW: 3.6 x \_\_\_\_\_ KH x \_\_\_\_\_ CTR or \_\_\_\_\_ MULT x \_\_\_\_\_ PTR x \_\_\_\_\_ N/ \_\_\_\_\_ T = \_\_\_\_\_ (6)

Meter Input HP: (6) x 1.34 = \_\_\_\_\_ (7)

Panel Input KW: \_\_\_\_\_ Ave PF x \_\_\_\_\_ Ave Volts x \_\_\_\_\_ Ave Ampsx .001732 = \_\_\_\_\_ (6)

Panel Input HP: (6) x 1.34 = \_\_\_\_\_ (7) Efficiency: (5)/(7) x 100 = \_\_\_\_\_ %

#### G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

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

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$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$  \_\_\_\_\_

2. Volume Calculations for Other Uses:

H. REMARKS AND OVERLAP. REVIEW ANALYSIS

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I. RECOMMENDATIONS

1. Recommended Amounts

| Beneficial Use | Period of Use |    | Rate of Diversion<br>Q (cfs) | Annual Volume<br>V (afa) |
|----------------|---------------|----|------------------------------|--------------------------|
|                | From          | To |                              |                          |
|                |               |    |                              |                          |
|                |               |    |                              |                          |
|                |               |    |                              |                          |
|                |               |    |                              |                          |
| Totals:        |               |    |                              |                          |

2. Recommended Amendments

- |                                                         |                                                      |                                |
|---------------------------------------------------------|------------------------------------------------------|--------------------------------|
| <input type="checkbox"/> Change P.D. as reflected above | <input type="checkbox"/> Add P.D. as reflected above | <input type="checkbox"/> None  |
| <input type="checkbox"/> Change P.U. as reflected above | <input type="checkbox"/> Add P.U. as reflected above | <input type="checkbox"/> Other |

J. AUTHENTICATION

Field Examiner's Name Loren Holmes

Signature \_\_\_\_\_

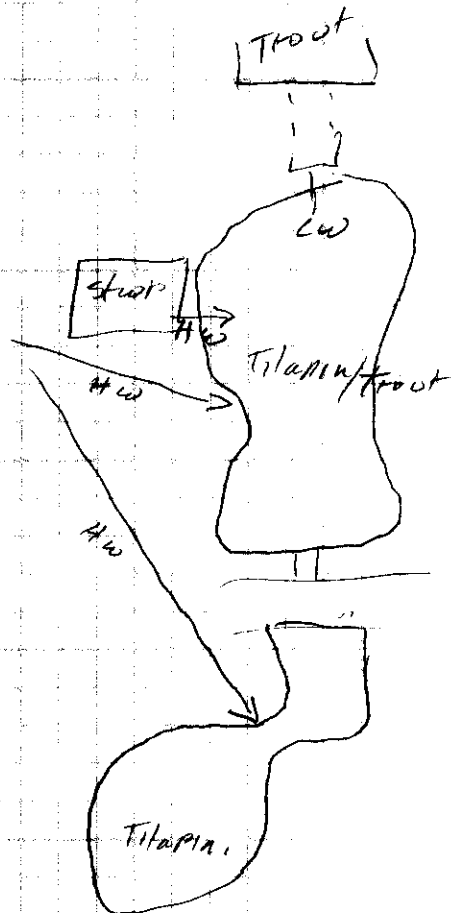
Certification Date \_\_\_\_\_

Field Report Preparation Date 7-22-87

CONSULTANT SEAL

K. Licensing recommendation shall be prepared by an Idaho Department of Water Resources employee on a computer printout attached hereto.

|         |      |         |                    |
|---------|------|---------|--------------------|
| BY      | DATE | PROJECT | SHEET ____ OF ____ |
| CHKD BY | DATE | FEATURE |                    |
| DETAILS |      |         |                    |

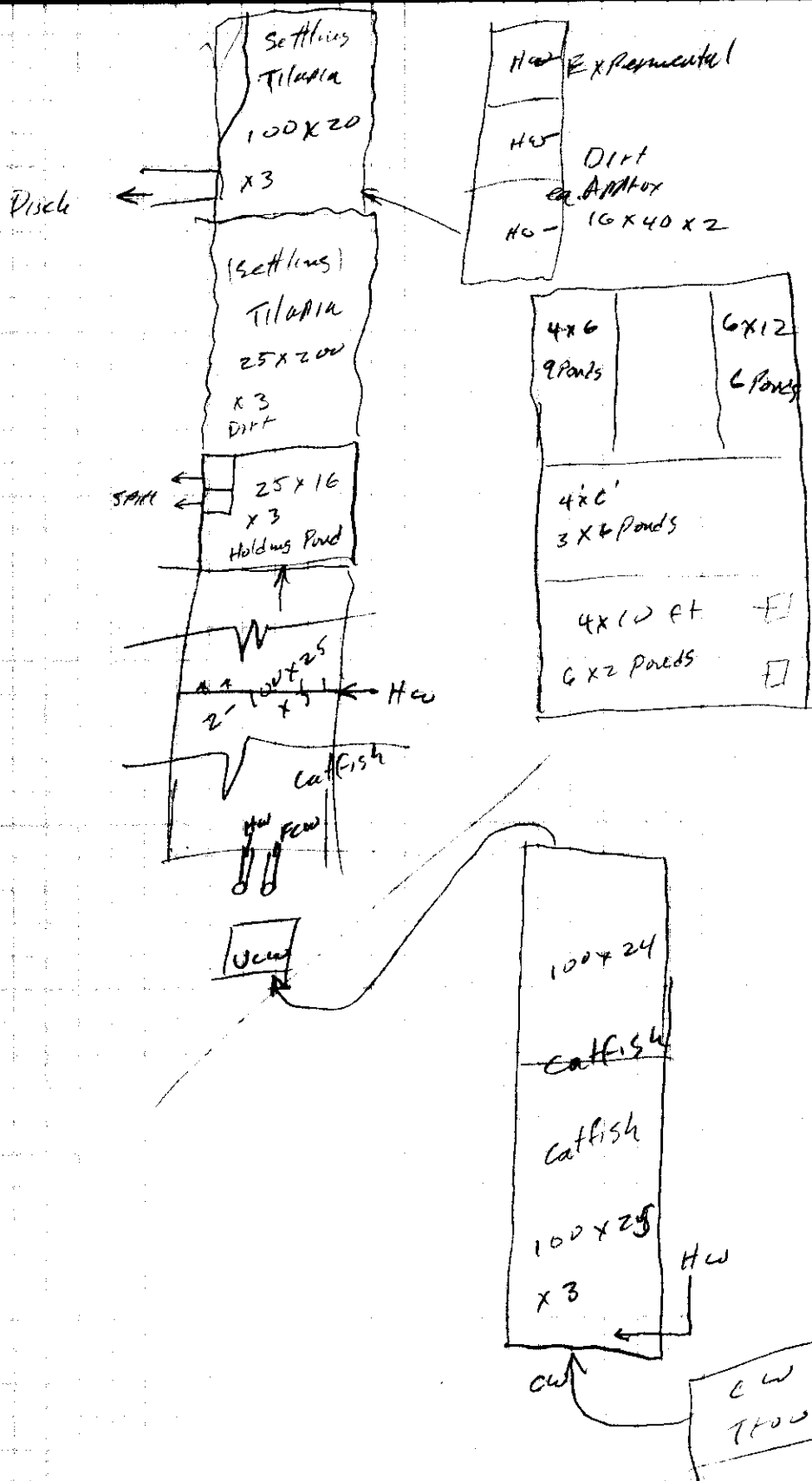


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# COMPUTATION SHEET

|         |      |         |                    |
|---------|------|---------|--------------------|
| BY      | DATE | PROJECT | SHEET ____ OF ____ |
| CHKD BY | DATE | FEATURE |                    |
| DETAILS |      |         |                    |

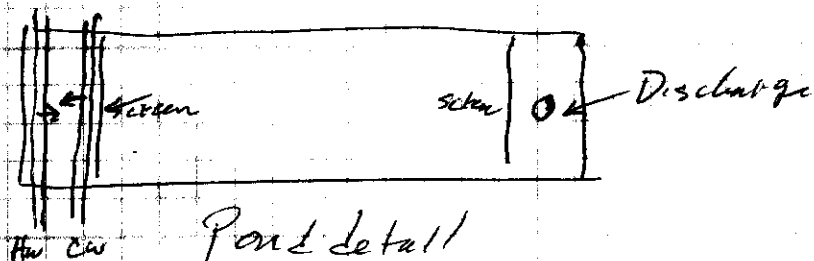


|         |      |         |                    |
|---------|------|---------|--------------------|
| BY      | DATE | PROJECT | SHEET ____ OF ____ |
| CHKD BY | DATE | FEATURE |                    |
| DETAILS |      |         |                    |

East Fringing Ponds

3 sets - 6 Ponds/set 15' x 3.5' x 2.5'  
L W D

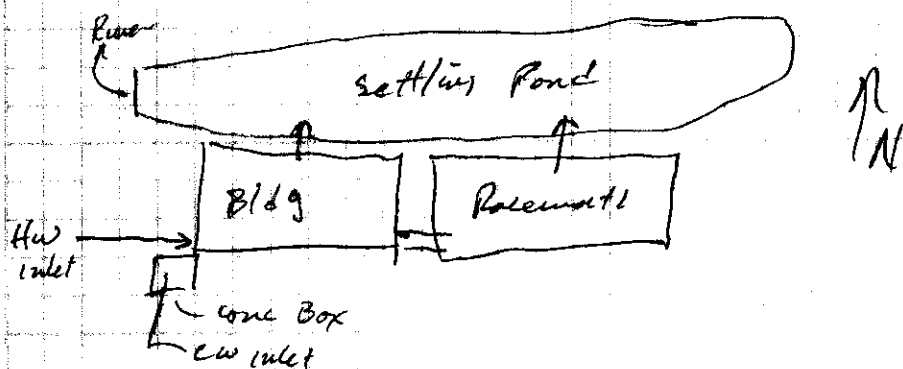
Connected to both hot & cold water - used for tropical aquarium fish, trout, catfish.



24' x 50' hatchery bldg

Table Hatchery Ponds 2/set 8 sets  
ea set 4' x 3' x 1'  
W L D

Settling Pond Approx 40' w x 300' Long x 4' Deep



1st Column

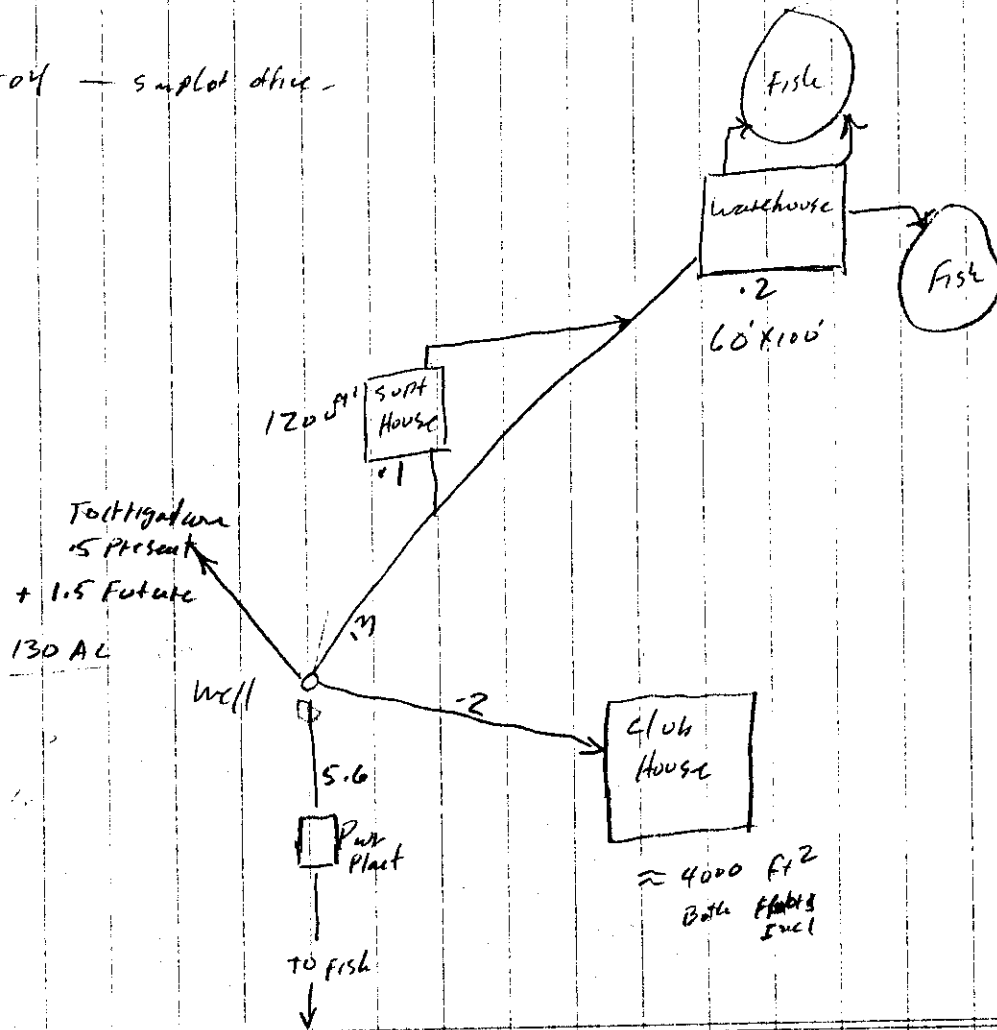
3/18/87

Permits

47-7758

47-7813

733-4504 - sample drive -



Joe's Figures

Major Fish & Plant

5.6

Irrigation

Present

.5

Future Add

1.5

Total 2

Club House

Heat & Rec.

.2

Supt House

.1

Warehouse - Fish

.2

Total .3

Total Use 8.1

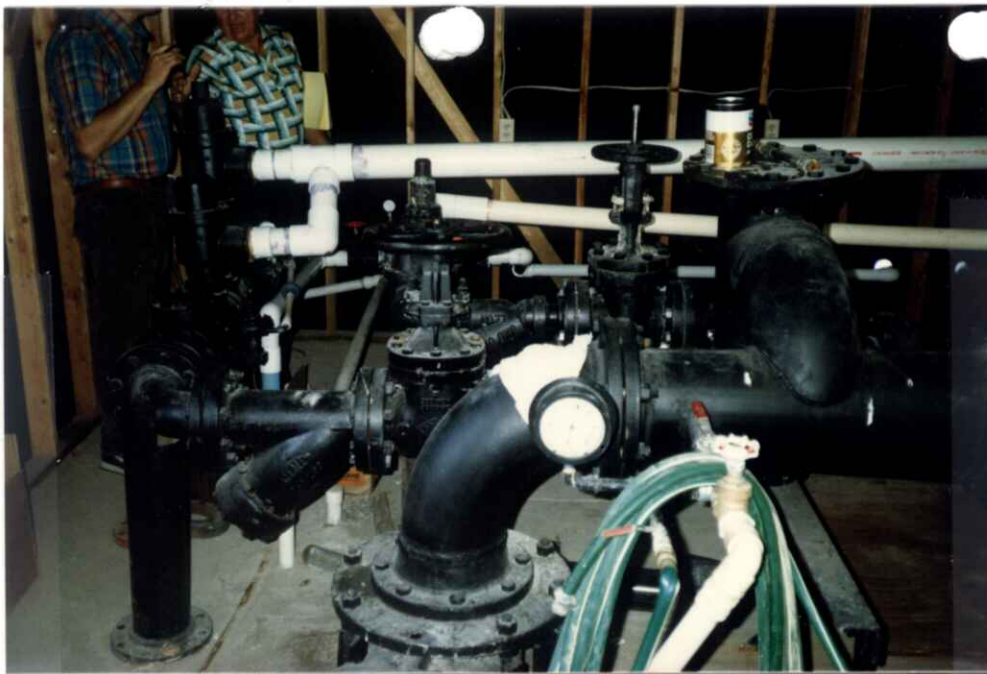
Water Temp 102° - 104°

Joe's AHT

Don Olowinski

Harlet - Thorel Boise

344 - 6000



47-7813

P/D

Photos by  
Holmes in  
1987



P/D



Generator (P/U)