

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

**RECEIVED**  
**OCT 01 2012**  
DEPT. OF WATER RESOURCES  
SOUTHERN REGION

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. 37-22594

1. Owner Cottonwood Creek Homeowners Association Phone No. 413-527-5903  
Current address C/O Laurie Sanders, 56 Montague Road, Westhampton, MA 01027
2. Examiner's name Charles E. Brockway EXAM DATE September 27th 2012
3. Accompanied by James Luckman Email jluckman@aol.com  
Address Po Box 4068 Hailey, Idaho 83333  
Relationship to permit holder HOA Board member Phone No. 208-788-3033
4. Source Big Wood River tributary to Malad River

**B. OVERLAP REVIEW**

1. Other water rights with the same place of use None.
2. Other water rights with the same source and point of diversion 37-577CG and 37-657E

**C. DIVERSION AND DELIVERY SYSTEM****1. Point(s) of Diversion:**

| Ident. No. | Gov't Lot | ¼ | ¼  | ¼  | Sec | Twp | Rge | County | Method of Determination/Remarks   |
|------------|-----------|---|----|----|-----|-----|-----|--------|-----------------------------------|
|            |           |   | SW | NW | 20  | 3N  | 18E | BLAINE | Hiawatha Canal Diversion from BWR |
|            |           |   |    |    |     |     |     |        | Delivery from Hiawatha Canal      |
|            |           |   | SW | NE | 29  | 3N  | 18E | BLAINE | Osborn Ditch                      |
|            |           |   |    |    |     |     |     |        |                                   |

**2. Place(s) of Use:** Method of determination 2009 NAIP aerial photography, approved Permit 37-22594

| Twp | Rge | Sec | NE |    |    |    | NW |    |    |    | SW |    |    |    | SE |    |    |    | Totals |
|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|
|     |     |     | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE |        |
| 3N  | 18E | 29  |    |    | X  |    |    |    |    |    |    |    |    |    |    | X  |    |    |        |
|     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |
|     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |
|     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |
|     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |
|     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |
|     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |        |

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 |
|---------------------------------------|------------|----|------------------|-----------|-----------------------------------|
| IDWR # A0009794                       |            |    |                  |           |                                   |
|                                       |            |    |                  |           |                                   |
|                                       |            |    |                  |           |                                   |

\*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 |
|--------------------------------------------|------|------|-----------|------------|------|-------------|
| Submerged Orifice- delivery from Hiawatha. |      |      |           |            |      |             |
|                                            |      |      |           |            |      |             |

2. **Measurements:** \_\_\_\_\_

Diversion from Hiawatha Canal: submerged orifice, see attached rating table for dimensions and flows. Orifice gate pin in 4th hole from top, 8 holes total. From top of diversion box concrete slab, Upstream water level = 21.5", downstream water level = 24.5". Downstream control gate stem height = 9 5/8" showing above wheel.

**E. NARRATIVE/REMARKS/COMMENTS**

Applicants irrigation water rights 37-577CG and 37-657E and water right permit 37-22594 are all diverted by the Watermaster of District 37 from the Big Wood River at the Hiawatha Canal headgate. These water rights are then delivered from the Hiawatha Canal through a lockable and controllable submerged orifice diversion structure. Water is then conveyed to the Applicants property through a delivery ditch where it flows through a series of eight (8) ponds. The area of the ponds is approximately 1.5 acres, calculated using 2009 NAIP aerial photography. During a field visit to the ponds in early 2011, Brockway Engineering made depth measurements along linear transects in select ponds. An average depth was then calculated and assigned to each pond, allowing an estimated volume to be associated with each of the eight ponds(8). A total storage volume of 5.0 acre-feet was estimated for the entire pond system. The pond area or volume has not changed between the date of filing for 37-22594 (February 11th 2011) and this beneficial use examination. Pond areas and volumes have been included on a table, attached to this exam.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

**F. FLOW CALCULATIONS**☒ Additional computation sheets attached

Measured Method:

Delivery from the Hiawatha Canal is through a submerged orifice. See attached table.

Upstream depth to water = 21.5"

Downstream depth to water = 24.5"

Orifice gate pin in 4th hole from top.

Resultant discharge (cfs) from rating table = ~~2.51~~ cfs  
1.50**G. VOLUME CALCULATIONS**

## 1. Volume Calculations for Irrigation:

 $V_{I,R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \text{N/A}$  $V_{D,R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 =$  $V = \text{Smaller of } V_{I,R} \text{ and } V_{D,R} =$ 

## 2. Volume Calculations for Other Uses:

See attached pond volume table, showing individual pond area and volume estimations. 1.5 ac, 5 afa

**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 | 4/15          | 10/31 | 1.45 cfs                     |                          |
| Recreation Storage   | 01/01         | 12/31 |                              | 5.0 AFA                  |
| Aesthetic Storage    | 01/01         | 12/31 |                              | 5.0 AFA                  |
| Wildlife Storage     | 01/01         | 12/31 |                              | 5.0 AFA                  |
|                      |               |       |                              |                          |
| <b>Totals:</b>       |               |       |                              |                          |

## 2. Recommended Amendments

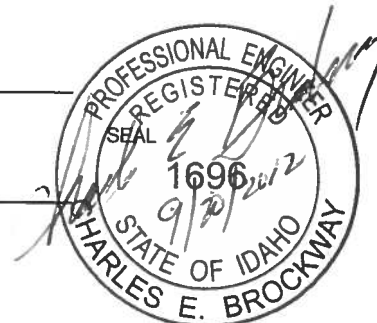
☒ Change P.D. as reflected on page 1☐ Add P.D. as reflected on page 1☐ None☐ Change P.U. as reflected on page 1☐ Add P.U. as reflected on page 1☐ Other

Remove Osborn ditch Point of Diversion.

**I. AUTHENTICATION**

Field Examiner's Signature \_\_\_\_\_ Date \_\_\_\_\_

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



| COTTONWOOD SUBDIVISION DIVERSION FROM HIAWATHA CANAL                                        |        |                                    |      |       |      |                                                |       |       |  |  |
|---------------------------------------------------------------------------------------------|--------|------------------------------------|------|-------|------|------------------------------------------------|-------|-------|--|--|
| SUBMERGED ORFICE-SLIDE GATE                                                                 |        |                                    |      |       |      | C.E. BROCKWAY P.E. April 9, 2010               |       |       |  |  |
| FREE FLOW AND SUBMERGED(Y3>0)                                                               |        |                                    |      |       |      | PRELIMINARY                                    |       |       |  |  |
| GATE COEFFICIENTS,C, FROM HENRY AS REPORTED BY CHOW                                         |        |                                    |      |       |      | Y1= upstream depth to water,                   |       |       |  |  |
| BY CHOW OPEN CHANNEL HYDRAULICS P509                                                        |        |                                    |      |       |      | Y2=downstream                                  |       |       |  |  |
| WATER LEVEL DIFFERENCE IS MEASURED UPSTREAM AND DOWNSTREAM OF GATE                          |        |                                    |      |       |      | C=                                             |       | 0.6   |  |  |
| Q=C*A*(2*g*(Y1-Y2))^.5                                                                      |        |                                    |      |       |      | h=gate opening above floor of structure, A=h*L |       |       |  |  |
| GATE WIDTH L=                                                                               |        | 1.00 FT OR                         |      | 12 IN |      | NO OF GATES=                                   |       | 1     |  |  |
| DESIGN TO DELIVER 1.7 CFS WITH A GATE OPENING OF 6 INCHES AND DELTA WATER LEVEL OF 6 INCHES |        |                                    |      |       |      |                                                |       |       |  |  |
| DISCHARGE THROUGH GATE CFS                                                                  |        |                                    |      |       |      |                                                |       |       |  |  |
| DELTA                                                                                       | DELTA  | GATE OPENING INCHES Gate Stem Hole |      |       |      |                                                |       |       |  |  |
| DEPTH                                                                                       | DEPTH  | 7th                                | 6th  | 5th   | 4th  | 3rd                                            | 2nd   | 1st   |  |  |
| INCHES:                                                                                     | FEET:  | hole                               | hole | hole  | hole | hole                                           | hole  | hole  |  |  |
| Y1-Y2                                                                                       | Y1-Y2  | 1.50                               | 3.5  | 5.50  | 7.50 | 9.50                                           | 11.50 | 12.00 |  |  |
| 0                                                                                           | 0      | 0.00                               | 0.00 | 0.00  | 0.00 | 0.00                                           | 0.00  | 0.00  |  |  |
| 0.125                                                                                       | 0.0104 | 0.06                               | 0.14 | 0.23  | 0.31 | 0.39                                           | 0.47  | 0.49  |  |  |
| 0.25                                                                                        | 0.0208 | 0.09                               | 0.20 | 0.32  | 0.43 | 0.55                                           | 0.67  | 0.69  |  |  |
| 0.375                                                                                       | 0.0313 | 0.11                               | 0.25 | 0.39  | 0.53 | 0.67                                           | 0.82  | 0.85  |  |  |
| 0.5                                                                                         | 0.0417 | 0.12                               | 0.29 | 0.45  | 0.61 | 0.78                                           | 0.94  | 0.98  |  |  |
| 0.625                                                                                       | 0.0521 | 0.14                               | 0.32 | 0.50  | 0.69 | 0.87                                           | 1.05  | 1.10  |  |  |
| 0.75                                                                                        | 0.0625 | 0.15                               | 0.35 | 0.55  | 0.75 | 0.95                                           | 1.15  | 1.20  |  |  |
| 0.875                                                                                       | 0.0729 | 0.16                               | 0.38 | 0.60  | 0.81 | 1.03                                           | 1.25  | 1.30  |  |  |
| 1                                                                                           | 0.0833 | 0.17                               | 0.41 | 0.64  | 0.87 | 1.10                                           | 1.33  | 1.39  |  |  |
| 1.125                                                                                       | 0.0938 | 0.18                               | 0.43 | 0.68  | 0.92 | 1.17                                           | 1.41  | 1.47  |  |  |
| 1.25                                                                                        | 0.1042 | 0.19                               | 0.45 | 0.71  | 0.97 | 1.23                                           | 1.49  | 1.55  |  |  |
| 1.375                                                                                       | 0.1146 | 0.20                               | 0.48 | 0.75  | 1.02 | 1.29                                           | 1.56  | 1.63  |  |  |
| 1.5                                                                                         | 0.125  | 0.21                               | 0.50 | 0.78  | 1.06 | 1.35                                           | 1.63  | 1.70  |  |  |
| 1.625                                                                                       | 0.1354 | 0.22                               | 0.52 | 0.81  | 1.11 | 1.40                                           | 1.70  | 1.77  |  |  |
| 1.75                                                                                        | 0.1458 | 0.23                               | 0.54 | 0.84  | 1.15 | 1.46                                           | 1.76  | 1.84  |  |  |
| 1.875                                                                                       | 0.1563 | 0.24                               | 0.56 | 0.87  | 1.19 | 1.51                                           | 1.82  | 1.90  |  |  |
| 2                                                                                           | 0.1667 | 0.25                               | 0.57 | 0.90  | 1.23 | 1.56                                           | 1.88  | 1.97  |  |  |
| 2.125                                                                                       | 0.1771 | 0.25                               | 0.59 | 0.93  | 1.27 | 1.60                                           | 1.94  | 2.03  |  |  |
| 2.25                                                                                        | 0.1875 | 0.26                               | 0.61 | 0.96  | 1.30 | 1.65                                           | 2.00  | 2.08  |  |  |
| 2.375                                                                                       | 0.1979 | 0.27                               | 0.62 | 0.98  | 1.34 | 1.70                                           | 2.05  | 2.14  |  |  |
| 2.5                                                                                         | 0.2083 | 0.27                               | 0.64 | 1.01  | 1.37 | 1.74                                           | 2.11  | 2.20  |  |  |
| 2.625                                                                                       | 0.2188 | 0.28                               | 0.66 | 1.03  | 1.41 | 1.78                                           | 2.16  | 2.25  |  |  |
| 2.75                                                                                        | 0.2292 | 0.29                               | 0.67 | 1.06  | 1.44 | 1.82                                           | 2.21  | 2.30  |  |  |
| 2.875                                                                                       | 0.2396 | 0.29                               | 0.69 | 1.08  | 1.47 | 1.87                                           | 2.26  | 2.36  |  |  |
| 3                                                                                           | 0.25   | 0.30                               | 0.70 | 1.10  | 1.50 | 1.91                                           | 2.31  | 2.41  |  |  |
| 3.125                                                                                       | 0.2604 | 0.31                               | 0.72 | 1.13  | 1.54 | 1.95                                           | 2.35  | 2.46  |  |  |
| 3.25                                                                                        | 0.2708 | 0.31                               | 0.73 | 1.15  | 1.57 | 1.98                                           | 2.40  | 2.51  |  |  |
| 3.375                                                                                       | 0.2813 | 0.32                               | 0.74 | 1.17  | 1.60 | 2.02                                           | 2.45  | 2.55  |  |  |
| 3.5                                                                                         | 0.2917 | 0.33                               | 0.76 | 1.19  | 1.63 | 2.06                                           | 2.49  | 2.60  |  |  |
| 3.625                                                                                       | 0.3021 | 0.33                               | 0.77 | 1.21  | 1.65 | 2.10                                           | 2.54  | 2.65  |  |  |
| 3.75                                                                                        | 0.3125 | 0.34                               | 0.79 | 1.23  | 1.68 | 2.13                                           | 2.58  | 2.69  |  |  |
| 3.875                                                                                       | 0.3229 | 0.34                               | 0.80 | 1.25  | 1.71 | 2.17                                           | 2.62  | 2.74  |  |  |
| 4                                                                                           | 0.3333 | 0.35                               | 0.81 | 1.27  | 1.74 | 2.20                                           | 2.66  | 2.78  |  |  |
| 4.125                                                                                       | 0.3438 | 0.35                               | 0.82 | 1.29  | 1.76 | 2.23                                           | 2.71  | 2.82  |  |  |
| 4.25                                                                                        | 0.3542 | 0.36                               | 0.84 | 1.31  | 1.79 | 2.27                                           | 2.75  | 2.87  |  |  |
| 4.375                                                                                       | 0.3646 | 0.36                               | 0.85 | 1.33  | 1.82 | 2.30                                           | 2.79  | 2.91  |  |  |
| 4.5                                                                                         | 0.375  | 0.37                               | 0.86 | 1.35  | 1.84 | 2.33                                           | 2.83  | 2.95  |  |  |
| 4.625                                                                                       | 0.3854 | 0.37                               | 0.87 | 1.37  | 1.87 | 2.37                                           | 2.86  | 2.99  |  |  |
| 4.75                                                                                        | 0.3958 | 0.38                               | 0.88 | 1.39  | 1.89 | 2.40                                           | 2.90  | 3.03  |  |  |
| 4.875                                                                                       | 0.4063 | 0.38                               | 0.90 | 1.41  | 1.92 | 2.43                                           | 2.94  | 3.07  |  |  |
| 5                                                                                           | 0.4167 | 0.39                               | 0.91 | 1.42  | 1.94 | 2.46                                           | 2.98  | 3.11  |  |  |
| 5.125                                                                                       | 0.4271 | 0.39                               | 0.92 | 1.44  | 1.97 | 2.49                                           | 3.02  | 3.15  |  |  |
| 5.25                                                                                        | 0.4375 | 0.40                               | 0.93 | 1.46  | 1.99 | 2.52                                           | 3.05  | 3.18  |  |  |
| 5.375                                                                                       | 0.4479 | 0.40                               | 0.94 | 1.48  | 2.01 | 2.55                                           | 3.09  | 3.22  |  |  |
| 5.5                                                                                         | 0.4583 | 0.41                               | 0.95 | 1.49  | 2.04 | 2.58                                           | 3.12  | 3.26  |  |  |
| 5.625                                                                                       | 0.4688 | 0.41                               | 0.96 | 1.51  | 2.06 | 2.61                                           | 3.16  | 3.30  |  |  |
| 5.75                                                                                        | 0.4792 | 0.42                               | 0.97 | 1.53  | 2.08 | 2.64                                           | 3.19  | 3.33  |  |  |
| 5.875                                                                                       | 0.4896 | 0.42                               | 0.98 | 1.54  | 2.11 | 2.67                                           | 3.23  | 3.37  |  |  |
| 6                                                                                           | 0.5    | 0.43                               | 0.99 | 1.56  | 2.13 | 2.70                                           | 3.26  | 3.40  |  |  |

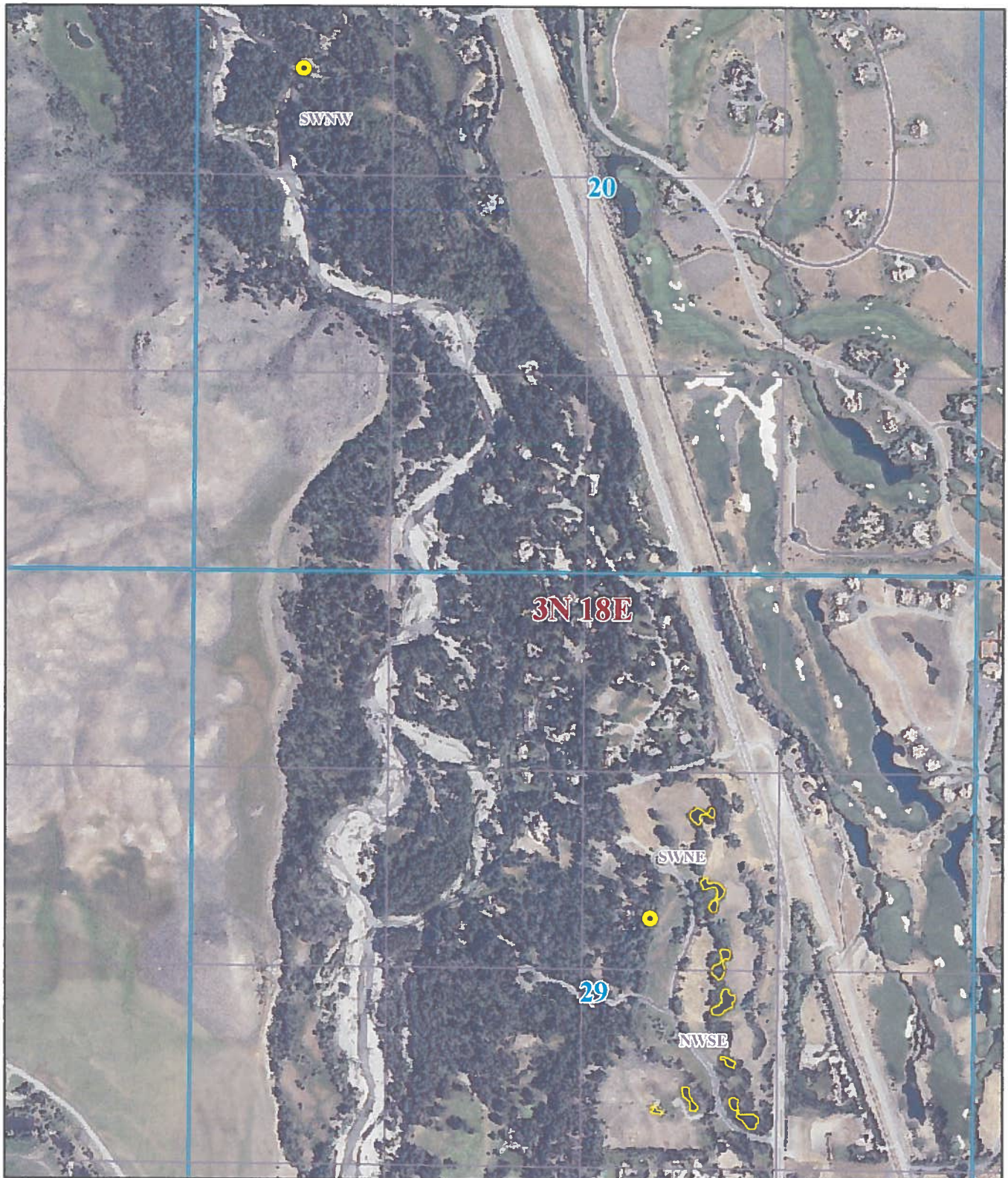
## COTTONWOOD CREEK SUBDIVISION

Ponds Volume Estimate

Brockway Engineering 1/12/2011

| Pond #:                | Surface<br>Area (ac.) | Surface<br>Area (ft2.) | Max<br>Depth (ft) | Average<br>Depth (ft) | Max<br>Width (ft) | Average<br>Volume (ac-ft) |
|------------------------|-----------------------|------------------------|-------------------|-----------------------|-------------------|---------------------------|
| 1                      | 0.19                  | 8081.57                | 7.6               | 3.8                   | 72                | 0.71                      |
| 2                      | 0.26                  | 11450.48               | 7.1               | 3.6                   | 56                | 0.93                      |
| 3*                     | 0.24                  | 10425.67               | 6                 | 3                     | 84                | 0.72                      |
| 4*                     | 0.29                  | 12801.48               | 6                 | 3                     | 84                | 0.88                      |
| 5*                     | 0.07                  | 3175.00                | 6                 | 3                     | 40                | 0.22                      |
| 6                      | 0.30                  | 13057.00               | 5.9               | 3.0                   | 89                | 0.88                      |
| 7*                     | 0.14                  | 6091.76                | 6                 | 3                     | 52                | 0.42                      |
| 8*                     | 0.04                  | 1677.20                | 4                 | 2                     | 26                | 0.08                      |
| TOTAL STORAGE (AC-FT): |                       |                        |                   |                       |                   | 4.84                      |

\*Pond depths and widths are estimates based on 1/12/11 site visit and data collection



0 310 620 1,240 Feet

**COTTONWOOD CREEK HOA  
BENEFICIAL USE EXAM 37-22594  
2009 NAIP AERIAL PHOTOGRAPH**

**Legend**

- POD\_37-22594
- ladesc
- Sections
- twshp
- Ponds 2009





0 115 230 460 Feet

# **COTTONWOOD CREEK HOA BENEFICIAL USE EXAM 37-22594 2009 NAIP AERIAL PHOTOGRAPH**

## **Legend**

- POD\_37-22594
- ▭ lades
- ▭ Sections
- ▭ twnshp
- ▭ Ponds Surface Area =1.5 Ac.

