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Hydraulics

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Water Resources

April 17, 2013

Regional Manager
Idaho Department of Water Resources
900 N. Skyline Drive, Suite A
Idaho Falls, ID 83402-1718

RECEIVED

APR 19 2013

Department of Water Resources
Eastern Region

Re: Sam's Hollow Water Company – 2012 Annual Report
Project No. 370-04-2001

Dear Regional Manager:

Enclosed please find the 2012 annual report required by the approved mitigation plan for Sam's Hollow Water Company in Bear Lake. If you have any questions or need additional information, please do not hesitate to contact me.

Cordially,

Greg Sullivan, M.S.

Cc: Sam's Hollow Water Company

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Project No. 370-01-1999

RECEIVED

APR 19 2013

**Department of Water Resources
Eastern Region**

2012 Annual Report on Water Use and Mitigation for the Sam's Hollow Water Company

Prepared for:

Sam's Hollow Water Company
Bear Lake, Idaho

March 22, 2013

For information concerning this report, contact
Greg W. Sullivan, M.S., E.I.T.
Charles G. Brockway, Ph.D., P.E.



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Project No. 370-01-1999

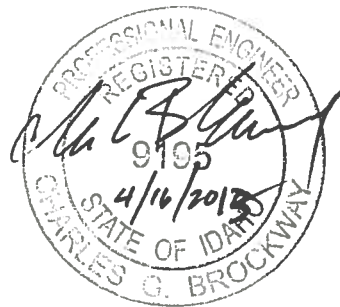
2012 Annual Report on Water Use and Mitigation for the Sam's Hollow Water Company

Prepared for:

**Sam's Hollow Water Company
Bear Lake, Idaho**

April 16, 2013

For information concerning this report, contact
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Project Build-Out History

In 2006 there were no homes or water-using facilities in use on the Project. Project build out during 2007 was minimal with only one residence being furnished water. In 2008 there were an additional 9 units constructed and the club house was completed in 2008. There were 4 units constructed in 2009. In 2010 there were 3 additional units constructed. There were 6 residential households constructed in 2011 and 1 commercial structure. In 2012 there were 15 units constructed in the project area. The Point project area has 7 homes built with on-site sewage treatment. The other 8 homes constructed in the project area are connected to the St. Charles Sewer District. The total residential households constructed in the project area is 38. Locations of the residences are shown on the attached map. A total of 10 residential homes and the clubhouse have been constructed inside of the irrigation place of use and qualify for mitigation acres.

Irrigated Acres

Mitigation for water use on residential and commercial units requires that irrigated acres formerly supplied with surface water be dried up to compensate for consumptive use depletion of the development. The 2008 annual report documented the fact that 2.05 acres had been removed from irrigation due to construction of roadways (note that other roads were in place prior to the approved mitigation plan and are not accounted for). The assumed area of house footprints, driveways, and other hardscape areas per residence is 4,000 ft². The assumed area of turf, garden area and landscaping areas per residence is 5,000 ft² for a total displaced area of 9,000 ft² per residence. The approximate area removed from irrigation for the clubhouse, pool area and parking lot is 1.0 acres or 43,560 ft². Based on procedures developed by Dr. Robert Hill and adopted in the Bear River Ground Water Management Plan, the consumptive depletion for grass pasture is 1.18 ac-ft/acre/year.

Table 1 provides the total accumulated mitigation from the construction of structures within the water right place of use from the start of the project until the end of the current reporting year of 2012.

Table 1: Summary of Mitigation Provided by Construction through 2012.

		ft ² /structure	Acres	AFA
Road Ways			2.05	2.42
Homes	10	9000	2.07	2.44
Condos	0	12000	0.00	0.00
Commercial	1	43560	1.00	1.18

Total Removed for Mitigation 5.12 Acres 6.04 AFA

Estimated Project Depletion

The estimated consumptive depletion from residences and other facilities was determined using procedures developed by Dr. Robert Hill and adopted in the Bear River Ground Water Management Plan. For the Sam's Hollow system, the depletion values for potable water and irrigation of residences and commercial facilities were developed and included in the Plan for the project. Table 2 was developed to assist in estimating depletion each year based on the facilities build out. Table 2 shows the annual unit depletion and the number of units on line in 2012. The total estimated depletion from the thirty eight (38) units and club house on line in 2012 is 14.06 acre feet.

Table 2. Depletion analysis for Sam's Hollow Water Company in 2012. All depletions are in acre-feet annually.

Entities with On-Site Sewage Disposal

	Unit Depletion	Occupied Units	Total Depletion
Domestic Potable Water - Homesites	0.03	8	0.24
Irrigation - Homesites	0.14	8	1.12

Entities with St. Charles Sewer District Service

	Unit Depletion	Occupied Units	Total Depletion
Domestic Potable Water - Homesites	0.19	30	5.70
Irrigation - Homesites	0.14	30	4.20

Domestic/Irrigating - Condominiums (Per Building = 4 units)	0.5	0	0.00
Irrigation - Condominiums	0.14	0	0.00

Potable Water - Commercial	2.8	1	2.80
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All Depletion Values are in Acre-Feet Annually

The annual depletion value is based on a rate of 40.2% occupancy

Total Homesites	38
Total Condominiums	0
Total Commercial Sites	1
Total Depletion	14.06 afa

Water Supply Available for Mitigation

The 140.5 shares in Fish Haven Water Users owned by Sam's Hollow Water Company can be diverted through any of three ditches: the Upper North Ditch, Number 1 Ditch, and Number 3 Ditch. Each ditch has been instrumented with water measuring flumes and flow measurements have been recorded since May 22, 2004. The flumes were installed by the Fish Haven Water Users Company with assistance from Sam's Hollow Water Company and are being monitored by Sam's Hollow Water Company.

During 2012, discharge readings were obtained from June 5, 2012 through October 31, 2012 and are shown on the attached spreadsheet. This log shows that there was approximately 3102.3 acre-feet of irrigation water diverted into Upper North Ramped Flume, Ditch No. 1 and Ditch No. 3 during the irrigation season of 2012, of which 564.9 acre-feet was allotted to Sam's Hollow Water Company.

Correspondence with Brent Skinner on March 12, 2010 indicated that 22.2 acres of previously irrigated land covered by the 140.5 shares in Fish Haven Water Users was dried up in 2009.

Mitigation Water Returned to Bear Lake

Water was returned to Bear Lake via the mitigation pipeline and was measured by the flow meter located just east of the Fish Haven Cemetery. The pipeline, conveying water from the retention pond, under the highway, and to Bear Lake is an 8-inch PVC pipe with a Siemens SITRANS FM electromagnetic water meter Type MAG 8000 installed in the pipeline (see attached photograph). The meter has a totalizer and instantaneous discharge readout which reads in gallons and gallons per minute. The meter is maintained by Sam's Hollow staff.

The meter was installed in 2007 to record the mitigation water volume. For the 2012 season, mitigation flow commenced to Bear Lake on August 2, 2012. The mitigation flow turn terminated on October 12, 2012. Table 3 shows the mitigation pipeline flow meter readings

The total volume returned to Bear Lake during the 2012 irrigation season was 10.37 acre feet.

Table 3. Flow Meter Readings for the Sam's Hollow Mitigation Pipeline.

Date	Time	Reading (gallons)	Volume (acre-feet)
8/2/2012	-	7460300	22.89
10/12/2012	-	10839800	33.27
Total Mitigation Volume		3379500	10.37

The consumptive use reduction appurtenant to the 5.12 acres removed from irrigation provided 6.04 acre feet to mitigate for the project depletion in 2012, which was

insufficient to provide the entire mitigation requirement. Therefore, 6.80 acres (8.02 acre feet) of additional irrigated acres beyond those dried up on the residential footprints and roadways will be added to the mitigation acres for the current development build-out.

The additional 6.80 acres of additional irrigated acres to be dried up will come from the 22.2 acres that was dried up in 2009. The remaining total of 15.40 acres of the 22.2 acres is available for future mitigation needs.

At the conclusion of 2012, total cumulative volume of water discharge into Bear Lake is 56.18 acre feet. The cumulative volume required for mitigation from project development is 42.97 acre feet. (See Figure 1)

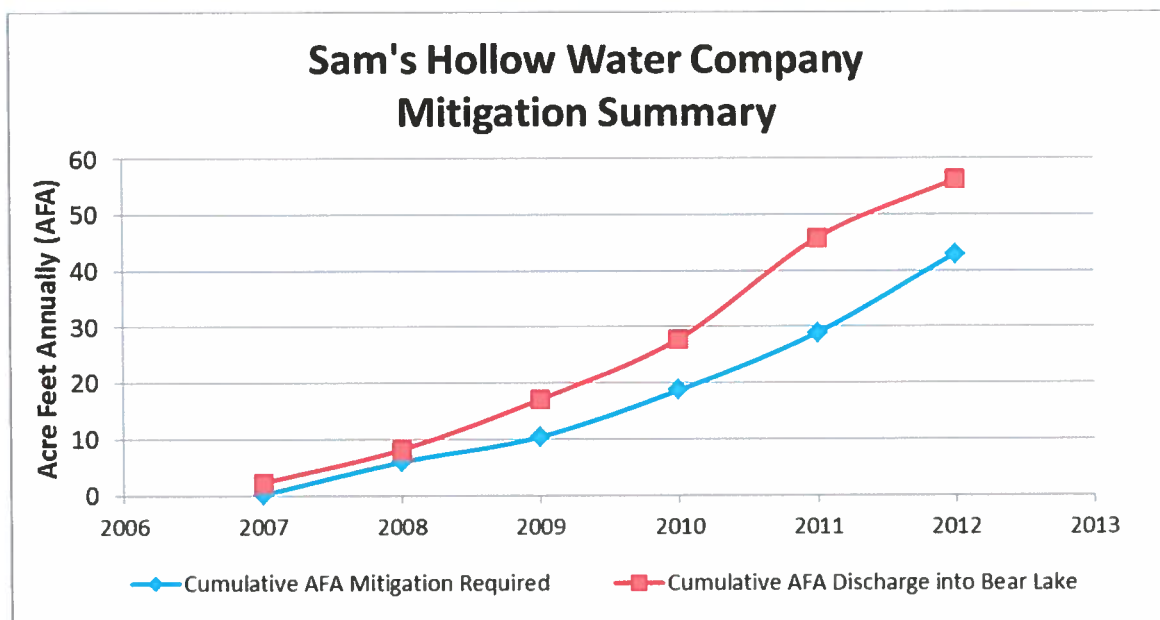


Figure 1: Sam's Hollow Water Company Mitigation Summary

Projection of 2013 Sufficiency of Mitigation Water

It is estimated that the mitigation requirement for 2013, based on a projected build-out, will be 10 additional homes comprised of 8 residential homes outside of the irrigation area and 2 residential homes within the water right place of use. Of the 10 additional homes, it is expected that there will be 5 residential homes with on-site sewage treatment. The total expected residential units online will be 48 units. The club house will continue to be utilized with no additional conversion of irrigated areas to commercial

uses. The calculated depletion for residences and commercial uses under these assumptions will be 16.56 feet. It is estimated that the seasonal water availability for Sam's Hollow in 2013 will be adequate to provide mitigation water for the expected number of units on-line in 2013. Currently (March 21, 2013) the Bear River Basin snow pack based on NRCS SNOTEL data is at 54% of normal. The runoff for Fish Haven Creek will be lower than normal based on the current snow pack but ample water for mitigation is expected to be available. However, mitigation flow to Bear Lake will need to commence earlier in anticipation of possible insufficient late season water availability.

Regarding the consumptive use balance, the projected 48 units on line in 2013 (12 homes and the club house within the currently irrigated area) will provide a total of 6.52 acre-feet of the required 16.56 acre-feet estimated depletion for 2013. Therefore, 8.50 acre-feet must be provided from additional irrigation reduction in the amount of 10.04 acres. The 15.4 acres remaining from the 22.2 acres dried up in 2009 will be sufficient to mitigate for the proposed additional 2013 project depletion.



Terminus of the Sam's Hollow mitigation pipeline.

Note: Date on photo is incorrect. The correct date is July 2007.

