

Weaver, Mathew

From: Terry Scanlan [TScanlan@spfwater.com]
Sent: Wednesday, September 29, 2010 9:32 AM
To: Weaver, Mathew
Cc: Carol MacGregor
Subject: RE: Belvidere Hot Springs - WR Permits 65-13912 & 13913
Attachments: MacGregor Test Plan.pdf; MacGregor Test Data; Geological 2-26-09.pdf

Mat –

1. Attached is correspondence that constitutes the approved test plan.
2. Attached is a 9/2/08 email to Mike McVay that includes the first 7 days of the August/September 2008 test data. I have additional test data for intermittent pumping for the second week of that test, but have not been authorized to release it. I prepared a draft report of the test, along with my conclusions and recommendations, but was not authorized to release it.
3. The “four-day” test referred to is the first four days of the August/September 2008 test. That data is in the 9/2/08 email to McVay.
4. The 2-26-09 letter from Haizlip and Matthews is attached.

Yes, please copy me on your technical memorandum.

Terry

From: Weaver, Mathew [mailto:Mathew.Weaver@idwr.idaho.gov]
Sent: Wednesday, September 29, 2010 8:57 AM
To: Terry Scanlan
Subject: Belvidere Hot Springs - WR Permits 65-13912 & 13913

Terry,

I have been asked by Shelley to perform a technical review of the material submitted by SPF and Musgrove Engineering in compliance with various conditions of the water right permits 65-13912 and 65-13912. In regards to this matter I have reviewed a letter from Carol Lynn MacGregor dated November 4, 2009 (see attached). The following is an excerpt from page 2 of that letter, the added points of emphasis are mine.

*[IDWR] **approved a test plan** for this geothermal well which was **conducted by Terry Scanlan in late August and early September of 2008**. This test could not be completed because of faulty equipment (I am still trying to get a refund for this). The data from a **four-day test** without interruption were supplied electronically to IDWR staff. Jill Hazlipp and Dan Matthews sent you a **letter on February 26, 2009**, questioning any conclusions based upon so brief a test. They wanted to do another test in 2009.*

Regarding the above excerpt I cannot find in our files the following:

- 1) A copy of an approved test plan
- 2) Any data or report regarding the Aug/Sep 2008 pump test

3) Any data or report regarding the "four-day" test

4) A copy of the letter from Hazlipp and Matthews dated February 26, 2009

I was wondering if you had copies of any of the four documents and/or studies described above? Also, in regards to my forthcoming technical memorandum should I copy SPF on the document?

Thank you for your help,

Mat Weaver, PE

Staff Engineer

Idaho Department of Water Resources

(208) 287-4914

<<MacGregor Ltr 11-4-09.pdf>>

**SPF**Water Engineering, LLC
water resource consultants

July 29, 2008

John Westra
Western Region Manager
Idaho Department of Water Resources
2735 Airport Way
Boise, ID 83705

Subject: Geothermal Well Test Schedule - Permit 65-13913 (Carol MacGregor)

Dear John:

In conformance with the second condition in your approval letter of June 24, 2008, this letter provides a schedule for the geothermal well test associated with Permit 65-13913.

Test pumping will begin at approximately noon on Monday, August 25 and will continue through noon on Monday, September 1. Depending on the response of the spring and aquifer, pumping may be extended beyond September 1.

Pre-test monitoring will occur intermittently until the start of testing. Post-test monitoring will also occur intermittently following testing. All monitoring equipment should be in place and available for IDWR inspection by August 10.

Test procedure and monitoring will be in compliance with the following documents.

- Idaho Department of Water Resources (IDWR) test plan approval letter (6/24/08)
- SPF response to IDWR test plan comments (6/4/08)
- IDWR test plan comments (4/7/08)
- SPF test plan (3/3/08)

In addition to the monitoring previously proposed, I plan to also take some measurements of discharge from the Duane Pancheri swimming pool at Brush Creek using a short pipe extension, 5-gallon bucket, and stop watch. The purpose of the spot measurements will be to confirm the accuracy of the pipeline flow meter.

Please contact me with any questions.

Sincerely,

Terry M. Scanlan, P.E., P.G.

Cc: Carol Lynn MacGregor
Darwin Pancheri
Duane Pancheri

File: 199.0010



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way • Boise, Idaho 83705-5082

Phone: (208) 334-2190 • Fax: (208) 334-2348 • Web Site: www.idwr.idaho.gov

C. L. "BUTCH" OTTER
Governor

DAVID R. TUTHILL, JR.
Director

June 24, 2008

Terry Scanlan PE, PG
SPF Water Engineering LLC
600 East River Park Lane Suite 105
Boise ID 83705

RE: MacGregor Geothermal Well Test –Appropriation Permit #65-13913

Dear Mr. Scanlan:

Our office has completed review of the MacGregor geothermal well test plan submitted March 3, 2008 and clarifications on June 4, 2008. **This letter will serve as approval for the plan with the following approval conditions:**

-The testing will be facilitated per approved test plans and conditions of approval on permit to appropriate water #65-13913.

-The permit hold shall provide a 10 day notice to the Department and the Pancheris prior to the commencement of testing. Department staff will make an on-site confirmation of the equipment and procedures prior to the test.

-Department staff may participate in any of the testing and will provide notice of specific times and dates to the permit holder.

-The permit holder will coordinate testing with the Pancheris for access to property and data collection locations.

-The permit holder will provide the Department and Pancheris test data and a findings report upon completion of the test.

Should you have questions, please contact me at the Western Regional Office, phone 334-2190.

Sincerely,

John Westra
Western Region

Cc: Duane & Darwin Pancheri
Enclosure: 4/14/08 Pancheri Response Letter

RECEIVED

APR 21 2008

WATER RESOURCES
WESTERN REGION

April 16, 2008

Department of Water Resources
John Westra
2735 Airport Way
Boise, ID 83705-5082

Dear John Westra;

We received your letter concerning MacGregor's geothermal well.
We feel the test protocol is insufficient.

We would like to receive copies of the test regarding temperature
Measurement, pumping levels, pumping rate and data collection intervals.

As to the testing we would like to be provided with the information as to the specific
times and dates of the testing so we can be involved with the testing. We are not
interested in any monetary expense for we have already spent a lot of money on
MacGregor's project.

Sincerely,

Darwin Pancheri
Duane Pancheri

Duane Pancheri
Darwin Pancheri
#65-12891 and 65-13332

**SPF**

Water Engineering, LLC
water resource consultants

June 4, 2008

Darwin Pancheri
9325 Missouri Avenue
Nampa, ID 83686

Subject: Test Plan for Permit 65-13913
Carol MacGregor – Geothermal Well

Dear Darwin:

Enclosed is a response to John Westra's letter of April 7 regarding testing of Carol MacGregor's geothermal well.

John's letter of April 7 requested that we *"Provide to our agency a written response from water right holders #65-12891 & 65-13332 (Pancheris) outlining their desired level of participation in the testing process."* If you desire to participate in the well testing, please send John a letter to that effect.

Regardless of your level of participation in testing, I will send you a letter with a test schedule prior to the test so that you know what we are planning to do. Unless I hear otherwise, I'll assume that it will be OK to conduct monitoring of spring flows and temperatures on your side of the fence during the test period. Your continued cooperation is much appreciated.

Sincerely,

Terry M. Scanlan

Cc: John Westra
Carol MacGregor

**SPF**

Water Engineering, LLC
water resource consultants

June 4, 2008

Duane Pancheri
4700 North Can-Ada Road
Star, ID 836669

Subject: Test Plan for Permit 65-13913
Carol MacGregor – Geothermal Well

Dear Duane:

Enclosed is a response to John Westra's letter of April 7 regarding testing of Carol MacGregor's geothermal well.

John's letter of April 7 requested that we *"Provide to our agency a written response from water right holders #65-12891 & 65-13332 (Pancheris) outlining their desired level of participation in the testing process."* If you desire to participate in the well testing, please send John a letter to that effect.

Regardless of your level of participation in testing, I will send you a letter with a test schedule prior to the test so that you know what we are planning to do. Unless I hear otherwise, I'll assume that it will be OK to collect flow readings from the flow meter on your pipeline during the test period. Your continued cooperation is much appreciated.

Sincerely,

Terry M. Scanlan

Cc: John Westra
Carol MacGregor

**SPF**

Water Engineering, LLC
water resource consultants

June 4, 2008

John Westra
Western Region Manager
Idaho Department of Water Resources
2735 Airport Way
Boise, ID 83705

Subject: Test Plan for Permit 65-13913
Carol MacGregor – Geothermal Well

Dear John:

Thank you for your response letter dated April 7, 2008 regarding the proposed test plan for Permit 65-13913.

The plan had anticipated testing in March or April 2008. Due to plan review timing, spring runoff, and other factors, it now appears that testing will not occur until July or August of 2008.

Regarding **Condition of Approval No. 8**, you asked the following questions.

1. *Does the permit holder intend to complete further development to the authorized flow rate or is the source development complete?* Additional source development is contemplated in the future. However, Dr. MacGregor proposes to conduct testing now to determine impact prior to investing in additional source development. Based on the results of proposed testing, Dr. MacGregor can decide the best course of action for additional permit development, if any. If additional permit development occurs, Dr. MacGregor will conduct additional testing as requested by the Department.
2. *A flow rate of 80 gpm and test duration of 7 days were chosen. Please address the basis of these rates and explain how this will satisfy the above requirements?*
 - The 80 gpm flow rate is based on the results of preliminary well testing conducted in October 2007. The well was test pumped for 6.5 hours at 94 gpm with approximately 47.4 feet of drawdown below a static water level of 1.55 feet from top of well casing. The pump is set at a depth of 63 feet. Based on this test, the well should be capable of producing 80 gpm for one week with a projected pumping level of 46 feet, 17 feet above the pump. If hydraulic boundaries are encountered, pumping levels will be deeper than 46 feet. As an alternative, it may be possible to pump at a rate of up to 105 gpm. However, there is less certainty that this rate could be maintained for the duration of the test. For purpose of

hydraulic analysis, our preference is to conduct a constant rate test rather than a variable rate test.

- The seven-day duration was chosen to provide what we believe is long enough for potential impacts to develop. The plan allows for the test to be extended for a longer duration if appropriate, but with a reduced monitoring schedule.

Regarding **geothermal well test data**, you asked the following.

1. Provide more detail regarding temperature measurement, pumping levels (static, dynamic), pumping rate, and data collection intervals. As described in the plan, the following measurement points are proposed.
 - MacGregor Geothermal Well (water level, temperature, and pumping rate). Level will be measured with electric line well sounder, temperature will be measured with YSI digital temperature probe or glass thermometer, and pumping rate will be measured with installed McCrometer totalizing flow meter.
 - MacGregor Spring Weir (temperature and flow rate). Temperature will be measured with YSI digital temperature probe or glass thermometer, and flow rate will be measured with existing 90 degree v-notch weir. Note that the weir is sometimes flooded by irrigation water from the Pancheri irrigation ditch. Measurements will not be collected if the weir is flooded.
 - MacGregor Hot Tub (influent temperature from MacGregor spring pump). Temperature will be measured with YSI digital temperature probe or glass thermometer.
 - MacGregor Spring Pump Effluent (spring pump flow rate). Volumetric monitoring with a bucket and stop watch had been anticipated. However, given your requirement for a totalizing flow meter, the meter will be installed on the discharge from the pump rather than on the effluent pipe.
 - Duane Pancheri Pipeline Vent (spring discharge temperature). Temperature will be measured with YSI digital temperature probe that is lowered into vent pipe.
 - Duane Pancheri Pipeline Flow Meter (spring flow rate). Flow rate will be measured with existing Water Specialties totalizing flow meter.
 - Darwin Pancheri Pump (temperature and pumping rate). Temperature will be measured with YSI digital temperature probe at the inlet to pump sump and pumping rate will be measured with installed totalizing flow meter.
2. *What are the test procedures, boundaries, and criteria?* The test will be a constant-rate pumping test. Pumping rate will be maintained for a minimum of 7 days, with pumping rate curtailed only if excessive drawdown occurs in the pumping well resulting in well pump cavitation. Given that the test will occur during the non-heating season, there is no necessity to curtail pumping during the test period if impacts to surface water flows occur. The test can be extended beyond 7 days if warranted by hydraulic response (i.e., pumping water level has

not stabilized on a semi-logarithmic trend, surface flows are decreasing, or temperature is changing).

3. *The proposal lists a variable speed submersible pump. Will the flow rate be held constant as the pumping level is drawn down? Yes, unless the pumping water level reaches the pump intake. In that event, pumping rate will be reduced to prevent cavitation.*

Regarding **water systems**, you asked the following.

1. *Provide basic sketches and labeling of the MacGregor and Pancheri water systems relating to the test data measurement points, places of use, diversions, pumps, flowmeters, valving, etc. See attached schematic.*
2. *The proposal states that ground water will be discharged into a ditch downstream from the spring intakes. Provide information showing the discharge location will not influence test data measurement. The discharge from the well pump will be piped to the existing irrigation ditch that is located east of the springs. Past monitoring demonstrates that hot spring flows (as reflected by Pancheri pipeline flow rate) do not increase when the irrigation ditch is filled. On the contrary, flow rates normally decline during the summer and increase in the fall and winter. Therefore, discharge of pumped water to the ditch is not anticipated to impact test measurements.*

Regarding **additional requirements**, you asked the following.

1. *Provide to our agency a written response from water right holders 65-12891 and 65-13332 outlining their desired level of participation in the testing process. See attached letters to Duane Pancheri (65-12891) and Darwin Pancheri (65-13332) requesting written comment.*
2. *Prior to the test, piping-valving will be in place from the MacGregor test well to provide direct delivery of water to water right holders 65-12891 and 65-13332 should the test result in injury to the water right holders. If necessary, the discharge pipe from the well can be directed into the Darwin Pancheri pump sump. The sump is attached to the Duane Pancheri pipeline, so that any water that is not pumped by Darwin Pancheri will flow through the Duane Pancheri pipeline. However, even if impacts to surface water flows from the springs occur, injury is not anticipated for the following reasons. First, the test is now proposed to take place during summer months when water is not diverted under 65-13332 for heating purposes. Second, although water is diverted during summer under 65-13332 for swimming pool use, totalizing flow meter readings indicate that diversions in 2008 under water right 65-12891 will reach the annual volume allowed by approximately July 1. The test is currently scheduled to take place after July 1. Therefore, impacts to water right 65-12891 will not occur.*

3. *Totalizing flow meters shall be installed on the MacGregor well and spring pump prior to testing. A totalizing flow meter will be installed on the MacGregor spring pump. There is an existing flow meter on the MacGregor well.*

Regarding Department Participation/Approval,

1. *The permit holder shall provide a 10-day notice to the Department prior to the commencement of testing. Department staff will make an on-site confirmation of the test equipment and procedures prior to the test. Notice will be provided at least 10 days in advance of the test.*
2. *Department staff may participate in any of the testing and will provide notice of specific times and dates. We welcome Department participation in this test.*
3. *Submit to the Department a revised "Test Plan" document for final review/approval. Final approval will be contingent on the sufficiency of information and completion of tasks outlined above. The Revised Test Plan is essentially a compilation of the information in the March 3, 2008 Test Plan and this document. We request that the Department provide comment on the information in this letter within 30 days, and we will submit another Revised Test Plan at that time if necessary to address comments. A detailed schedule for test pumping will be submitted to the Department a minimum of 10 days prior to test pumping.*

Please contact me with questions or comments.

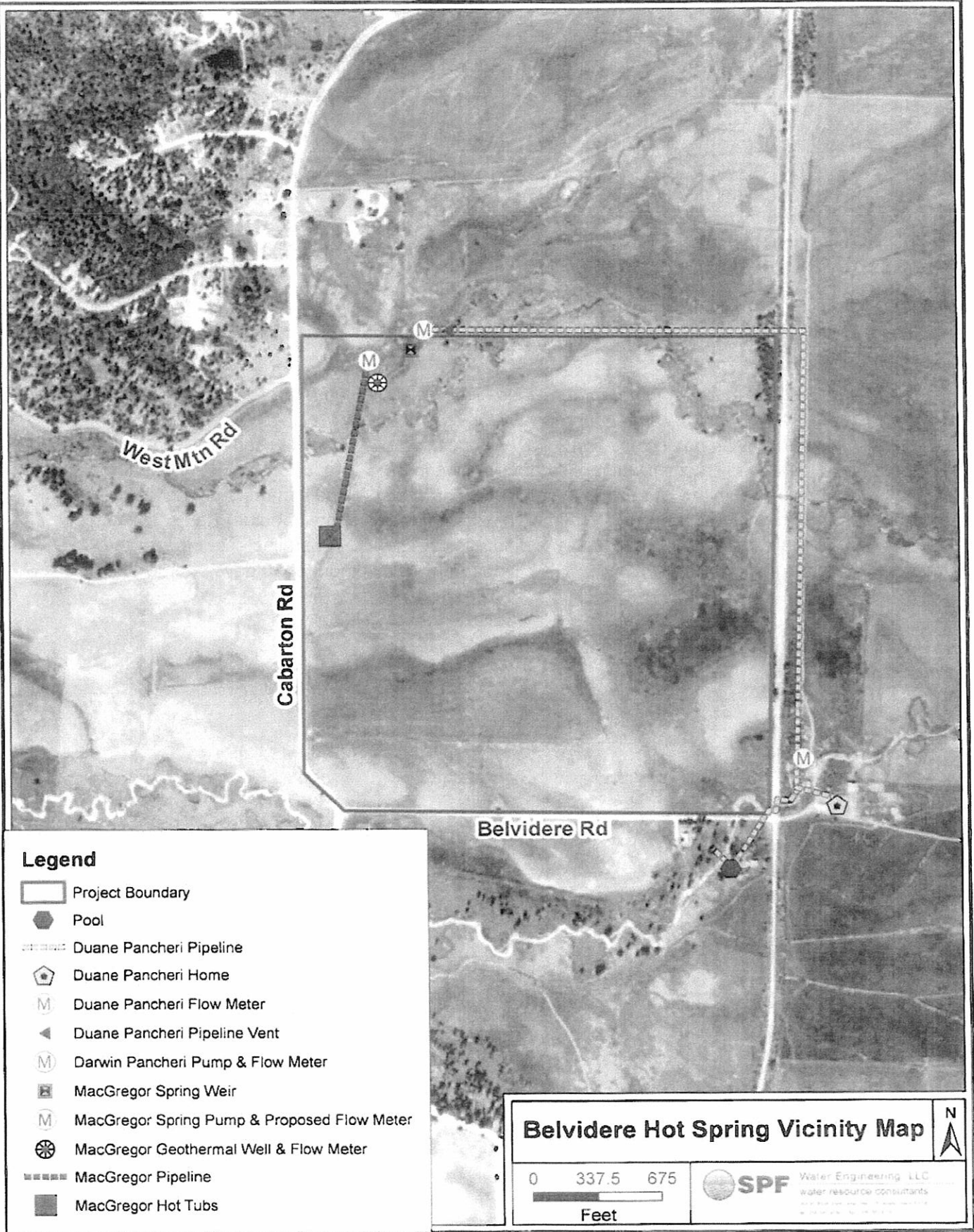
Sincerely,



Terry M. Scanlan, P.E., P.G.

Cc: Carol Lynn MacGregor
Duane Pancheri (65-12891)
Darwin Pancheri (65-13332)

File: 199.0010





State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way • Boise, Idaho 83705-5082

Phone: (208) 334-2190 • Fax: (208) 334-2348 • Web Site: www.idwr.idaho.gov

C. L. "BUTCH" OTTER
Governor

DAVID R. TUTHILL, JR.
Director

April 7, 2008

Terry Scanlan, PE, PG
SPF Water Engineering LLC
600 East River Park Lane Suite 105
Boise ID 83705

RE: Test Plan for Permit 65-13913
Carol MacGregor – Geothermal Well

Dear Mr. Scanlan:

Thank you for your letter of 3/3/08 proposing a test plan for the MacGregor geothermal well. My staff and I have reviewed the proposal and request the following:

Condition of Approval #8

I would draw your attention to a portion of permit condition #8 which states:

"The proposed test must be capable of determining the impact to surface water flow from Belvidere Hot Springs resulting from the diversion of low-temperature geothermal ground water authorized by this water right."

The permit authorizes 2 cfs of flow from 3 points of diversion (wells). If the permit holder is intending to further develop to the authorized flow rate, it seems the proposed test is premature based on the above condition language. Assuming only one well is going to be developed, the permit then should be amended to reflect one point of diversion and a reduced flow rate. The amended permit should then become the test foundation for determining impact. Please address the following:

-Does the permit holder intend to complete further development to the authorized flow rate or is the source development complete?

- A flow rate of 80 gpm and test duration of 7 days were chosen, Please address the basis of these rates and explain how this will satisfy the above requirements?

Geothermal Well Test Data

Provide more detail regarding temperature measurement, pumping levels (static, dynamic), pumping rate, and data collection intervals. What are the test procedures, boundaries, and criteria? The proposal lists a variable speed submersible pump. Will the flow rate be held constant as the pumping level is drawn down?

Page 2.
MacGregor

Water Systems

- Provide basic sketches and labeling of the MacGregor and Pancheri water systems relating to the test data measurement points, places of use, diversions, pumps, flowmeters, valving, etc.
- The proposal states that ground water will be discharged into a ditch downstream from the spring intakes. Provide information showing the discharge location will not influence test data measurements.

Additional Requirements

- Provide to our agency a written response from water right holders #65-12891 & 65-13332 (Pancheris) outlining their desired level of participation in the testing process.
- Prior to the test, piping-valving will be in place from the MacGregor test well to provide direct delivery of water to water right holders #65-12891 and 65-13332 (Pancheris) should the test result in an injury to the water right holders.
- Totalizing flow meters shall be installed on the MacGregor well and spring pump prior to testing.

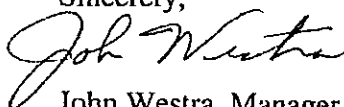
Department Participation/Approval

- The permit holder shall provide a 10 day notice to the Department prior to the commencement of testing. Department staff will make an on-site confirmation of the test equipment and procedures prior to the test.
- Department staff may participate in any of the testing and will provide notice of specific times and dates.
- Submit to the Department a revised "Test Plan" document for final review/approval. Final approval will be contingent on the sufficiency of information and completion of tasks outlined above.

Should you have any questions, please contact Rob Whitney or me at the Western Regional Office, phone 334-2190.

We appreciate your cooperation.

Sincerely,



John Westra, Manager
Western Region

Cc: Darwin Pancheri; Duane Pancheri

**SPF**

Water Engineering, LLC
water resource consultants

March 3, 2008

Steve Lester
Water Right Supervisor
Idaho Department of Water Resources
2735 Airport Way
Boise, ID 83705

COPY

Subject: Test Plan for Permit 65-13913
Carol MacGregor – Geothermal Well

Dear Steve:

Condition No. 8 of Permit 65-13913 states the following.

Prior to beneficially using water as authorized by this water right, the right holder shall propose a test to divert water from wells constructed as points of diversion described by this water right. The proposal for the diversion test must be submitted to the Department and to the holders of water rights no. 65-12891 and no. 65-13332 prior to the test. The proposed test must be capable of determining the impact to surface water flow from Belvidere Hot Springs resulting from the diversion of low-temperature geothermal ground water authorized by this water right. The Department must approve the proposed test. The water right holder shall include the Department and the holder of water rights no. 65-12891 and no. 65-13332 as participants in the test to the extent participation is desired by the Department and the holders of water rights no. 65-12891 and no. 65-13332.

The first well proposing diversion under permit 65-13913 was drilled in August 2007. The well is 151 feet deep and is equipped with a variable speed 5-hp submersible pump rated to 100 gpm at 100 feet TDH. Pump setting depth is 63 feet. The discharge pipe from the well is equipped with a totaling flow meter. The well driller's report and pump curve are attached.

A preliminary pumping test of the well was conducted on October 19, 2007. The well produced an average rate of 94 gpm for 6.5 hours. Pumping water level at the end of the test was 49 feet below the top of the well casing. Water temperature was 108 degrees F.

A pumping test is proposed to address condition No. 8 of the permit. The proposed pumping rate will be 80 gpm. Water will be discharged to the ditch downstream from the MacGregor and Pancheri spring intakes. Monitoring will be conducted at the following locations.

- MacGregor Geothermal Well (water level, temperature, and pumping rate)
- MacGregor Spring Weir (temperature and flow rate)
- MacGregor Hot Tub (influent temperature from MacGregor spring pump)
- MacGregor Spring Pump Effluent (spring pump flow rate)
- Duane Pancheri Pipeline Vent (spring discharge temperature)
- Duane Pancheri Pipeline Flow Meter (spring flow rate)
- Darwin Pancheri Pump (temperature and pumping rate)

Proposed duration of the test is 7 days. During the 7-day test, measurements will be hourly for the first 8 hours of testing and daily thereafter. If adverse impacts occur, the test duration can be shortened. If adverse impacts do not occur, the test may be extended. Data collection after 7 days may be reduced to every two or three days. Data will also be collected before the test period to establish pre-test trends and after the test period to establish post-test trends.

Following conclusion of testing, test data will be furnished to the Department and the holders of water rights 65-12891 and 65-13332.

We propose to begin testing in late March 2008.

Please contact me with any questions.

Sincerely,



Terry M. Scanlan, P.E., P.G.

Cc: Carol Lynn MacGregor
Duane Pancheri (65-12891)
Darwin Pancheri (65-13332)

File: 199.0010

[Close](#)IDAHO DEPARTMENT OF WATER RESOURCES
Water Permit Report

03/02/2008

WATER RIGHT NO. 65-13913

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	CAROL LYNN MAC GREGOR 1109 WARM SPRINGS AVE BOISE, ID 83712 (208) 386-9494

Priority Date: 08/02/1999
Status: Active

<u>Source</u>	<u>Tributary</u>
GROUND WATER	

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
COMMERCIAL	1/01	12/31	2 CFS	
HEATING	1/01	12/31	2 CFS	
Total Diversion			2 CFS	

Location of Point(s) of Diversion:

GROUND WATER	SENE	Sec. 13	Township 13N	Range 03E	VALLEY County
GROUND WATER	SENE	Sec. 13	Township 13N	Range 03E	VALLEY County
GROUND WATER	SENE	Sec. 13	Township 13N	Range 03E	VALLEY County

Place(s) of use:

Place of Use Legal Description: COMMERCIAL VALLEY County

Township	Range	Section	Lot	Tr	Acres	Lot	Tract	Acres	Lot	Tract	res	Lot	Tract	Acres
13N	03E	13		SENE										
	04E	18	2	NESE										
				SWNW			SENW							
				NESW		3	NWSW							

Place of Use Legal Description: HEATING same as COMMERCIAL

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.	X10	Any initial use of low-temperature geothermal water for commercial purposes must derive a benefit from the heat of the water prior to the water being used for a commercial purpose for which the heat of the water has no value.
3.	106	Prior to the diversion and use of water under this approval, the right holder shall comply with applicable water quality permitting requirements administered by the Department of Environmental Quality.
4.	027	Use of water under this right shall be non-consumptive.
5.	R05	Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 65.
6.	01M	After specific notification by the Department, the right holder shall install one or more totalizing flow meters to record the amount of water diverted and shall annually report the amounts of water diverted to the Department as directed.
7.		Prior to construction of the diversion works and delivery system and the diversion of water under this right, other than for conducting the tests described in the following paragraph, the right holder shall submit detailed designs to the Department for approval for use of low-temperature geothermal water in heating the spa buildings and associated hot water soaking pools or swimming pools. The designs must be based on computations using recognized engineering methodologies that determine the temperatures and quantities of water necessary to provide the low-temperature geothermal water for heating the spa buildings and to maintain sufficient temperature and pass through of hot water to the proposed pools.
8.		Prior to beneficially using water as authorized by this water right, the right holder shall propose a test to divert water from wells constructed as points of diversion described by this water right. The proposal for the diversion test must be submitted to the Department and to the holders of water rights no. 65-12891 and no. 65-13332 prior to the test. The proposed test must be capable of determining the impact to surface water flow from Belvidere Hot Springs resulting from the diversion of low-temperature geothermal ground water authorized by this water right. The Department must approve the proposed test. The water right holder shall include the Department and the holder of water rights no. 65-12891 and no. 65-13332 as participants in the test to the extent participation is desired by the Department and the holders of water rights no. 65-12891 and no. 65-13332.
9.		Following completion of the diversion tests and analysis of the test data, the Department will act on one of the following alternatives: (1) disallow diversion and use of water under the permit; (2) limit the diversion rate and volume of water diverted by the right holder to prevent reductions in the amount of water historically diverted as authorized by water right nos. 65-12891 and 65-13332; or (3) require direct delivery of water from the right holder's wells, at no cost to the holder of water rights no. 65-12891 and no. 65-13332.

10.	046 to replace reductions in the quantity or temperature of water historically diverted by the holders of rights no. 65-12891 and no. 65-13332 caused by diversions under permit no. 65-13913. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
-----	---

Dates:

Proof Due Date: 10/01/2011

Proof Made Date:

Approved Date:

Moratorium Expiration Date:

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Application Received Date: 08/02/1999

Protest Deadline Date: 01/03/2000

Number of Protests: 3

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

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Well ID No.			
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat:	:	Long:	:

1. WELL TAG NO. D 0052036
DRILLING PERMIT NO. 900667-847572
Water Right or Injection Well No. 65-13913

2. OWNER:

Name Carol Lynn McGregor
Address 1109 Warm Springs Av
City Boise State ID Zip 83712

3. LOCATION OF WELL by legal description:

You must provide address or Lot, Blk, Sub. or Directions to well.

Twp. 13 North ☒ or South ☐
Rge. 3 East ☒ or West ☐
Sec. 13 1/4 5/4 1/4 N/4 1/4
Gov't Lot _____ County _____
Lat: _____ Long: _____ Valley

Address of Well Site east of West Mountain Rd &
Cabarton Rd intersection City Cascade
Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other heating & commercial

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
bentonite chips	0	4	8 sks	poured
cement	4	40	13 sks	pumped

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 8'Was drive shoe seal tested? ☒ Y ☐ N How? drawdown

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
12"	+1	40	250	steel	☒	☐	☒	☐
8"	+1	72	322	steel	☒	☒	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☒ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____

Screen Type & Method of Installation _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

2 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

12. WELL TESTS:

☒ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
60	21'	23'	30 minutes

Water Temp. 108 Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
15	0	4	topsoil		X
	4	10	soil & granite gravels	X	
	10	18	decomposed granite		X
12	18	40	granite		X
	40	70	decomposed granite	X	
8	70	120	medium hard granite	X	
	120	151	hard granite	X	

Completed Depth 151 (Measurable)Date: Started 7/7/07 Completed 7/24/07

14. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Stevens & Sons Firm No. 153Principal Driller _____ Date 8/14/07and Driller or Operator II John H. Smith Date 8/14/07

Operator I _____ Date _____

Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.

PERFORMANCE CURVES

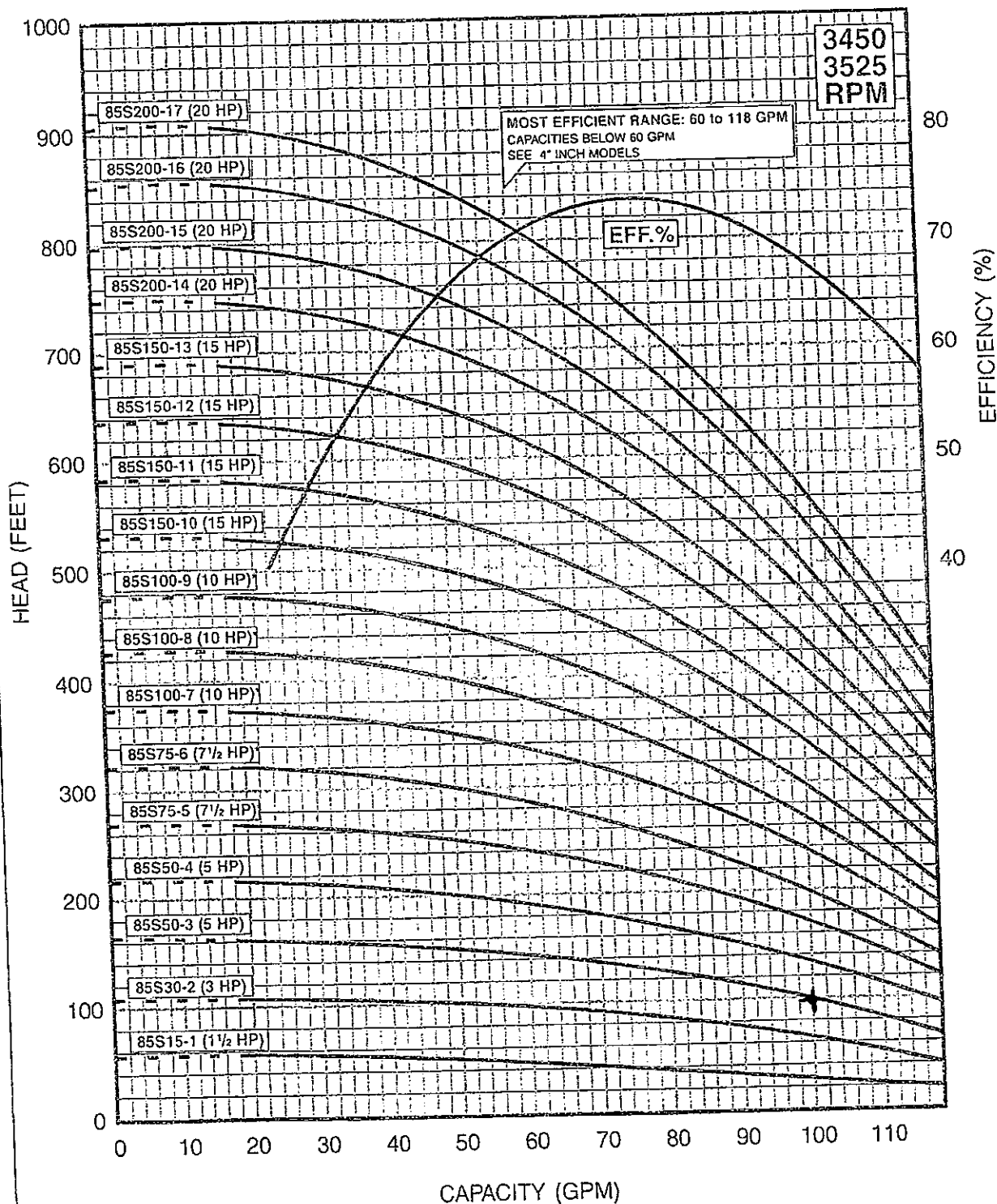
85 GPM

MODEL 85S

LOW RANGE: 18 -118 GPM

OUTLET SIZE: 3" NPT

NOMINAL DIA. 6"



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

4" MOTOR STANDARD, 1.5-5 HP/3450 RPM

6" MOTOR STANDARD, 7.5-50 HP/3450 RPM.

* Alternate motor sizes available.

Performance conforms to ISO 9906 Annex A
@ 5 ft. min. submergence.