

OK *MS*

MEMORANDUM

TO: GLEN SAXTON

FROM: GARY SPACKMAN *Gary*

RE: MEASUREMENT OF SYSTEM CAPACITY FOR DOUBLE DIAMOND GRAVITY PRESSURE IRRIGATION SYSTEM LOCATED NEAR HORSESHOE BEND, IDAHO

On March 9, 1994, I held an additional hearing regarding the Double Diamond application to transfer water. One of the questions raised at the hearing is the capacity of the Double Diamond gravity pressure irrigation system, which diverts water from Porter Creek. The parties agreed to accept the results of a test of the capacity of the system, using mutually acceptable test criteria, results, and will not ask for an additional hearing after the evidence is presented.

The parties are looking for someone from the department who is not tainted by past proceedings, but who is knowledgeable about water measurement. I thought perhaps Scott King, as the new water resources engineer, could work with the parties to design and conduct an acceptable test, and submit the results to me as the hearing officer.

The parties are anticipating the development of a plan by about April 1. If you are willing to allow Scott to work on this project, I will be happy to visit with him further. Thanks.

10:00

As per Gary:

Contact Steve Lester at Western, discuss date to inspect diversion and system.

*Steve Lester  
Western*

Develop and propose testing criteria for measuring system capacity. Measure by April 1.

*Tests by April  
Develop and  
propose testing  
criteria  
Rumsey, Donald  
Dovel, George*

Rumsey - applicant  
Double D

~~336-4801~~  
~~(208) 465-5998~~

Dovel - protestant

793-2768

3-21-94 4:00 MRC  
3-22 Don RC. Meet 10:00 at farm  
8:00 am

3-21-94 11:00 Wed or Thurs am okay  
3-22 8:00am 10:00 okay

discussing @ meter

## MEMO

To: Gary  
Glen

From: Scott K. *SK*

Date: March 23, 1994

Subject: Travel notes from Double Diamond visit

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### Travel Notes

March 23, 1994

Horseshoe Bend, Double Diamond

In response to Gary's request for an unbiased flow measurement of the diversion from Porter Cr. to Double Diamond ranch, Steve Lester and I met with George Dovel and Don Rumsey to inspect the diversion.

We agreed I would try to measure flow in the 10" steel pipe crossing Jackass Cr. using the ultrasonic and/or collins flowmeters. We agreed that the system should be running at capacity for a reasonable amount of time before making the measurement.

The pump delivering water from the Payette should be off and the gate valve closed. It is interesting that both parties seem to agree that the flow from porter creek is increased when the river pump is on. Intuitively, it seems that turning on the river pump would increase the system pressure, which would cause the Porter diversion to be reduced.

The two parties could not agree if the 40 hp in-line booster pump, located downstream from the Payette/Porter connection, should be on or off. Operating this pump will increase pressure and flow in the system. It would seem that a measurement of the system "at capacity" would encourage use of the booster, unless the booster was not necessary for adequate operation of the system at capacity.

An examination of the delivery system will be made to verify beneficial use of the water and to confirm the earlier flow measurement. I will measure pressure at either end of each lateral, count nozzles, measure nozzle sizes, and calculate flow from each lateral. The sum of these flows should be reasonably close to the flow in the pipe. It is reasonable to expect a degree of loss in any distribution system.

If the in-field measurements are reasonably close to the in-pipe measurement(s) at Jackass Cr., we would accept the in-pipe measurement.

I will develop a "protocol" for testing this system. Both parties and their attorneys must agree before measurements are made. Either March 24 or 25, I will tap the pipe crossing porter creek while it is still empty.

MEMORANDUM

To: Gary S.  
From: Scott K. *SK*

Date: April 7, 1994

Subject: Double Diamond--Rumsey proposes to replace leaky mainline crossing Jackass Creek, Dovel protests.

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I contacted both parties today to notify them of proposed measurement protocol. Faxed copy to Dovel.

Rumsey wants to replace the steel mainline which crosses Jackass Cr. When I tapped this pipe for the Collins meter, I noticed that it was old, rusty, and had some small holes in it. He said he was going to replace it at the first of next week or earlier. He is going to be gone on Monday. He will contact me when his system is ready.

I contacted Dovel again to notify him of this change. He said he is going to protest the pipe replacement as Rumsey is "changing the system." I explained that although new pipe will have lower friction losses which may increase flow, flow will probably be reduced due to less leaks, and that the bottom line will not amount to a hill of beans. He still protested the principal of the change.

I again contacted Rumsey and notified him of Dovel's protest.

A new test date has not been set.

## MEMORANDUM

To: Gary Spackman — *File*  
From: Scott King

Date: May 20, 1994

Subject: Results of Porter Creek flow measurements

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May 11, 1994, 2:00 p.m.

Don Rumsey, George Dovel, Sherl Chapman, and I met at the Double Diamond Ranch. I installed the department's ultrasonic flowmeter on the 10 inch steel pipeline crossing Jackass Creek. Unfortunately, excessive air in the pipe prevented use of the ultrasonic meter, so Sherl and I installed a collins meter.

The amount of air in the system was so excessive that the collins meter provided inaccurate results. We shut down some lines in order to reduce the amount of air entering the pipeline, but this effort was unsuccessful. It was agreed that the best method to measure the flow under these conditions was to current meter the ditch near the pipe entrance, and measure the overflow with a bucket and stopwatch. As it was getting late, we agreed to make these measurements the next day.

May 12, 1994, 10:00 a.m.

Upon arriving at the ranch, I measured the flow over the 3' cipoletti weir at the Porter Creek diversion. At 0.50' of head, 3.57 cfs was entering the ditch.

I then used the Swoffer 2100 current meter to measure the flow in the ditch before it entered the pipeline. This flow was 3.19 cfs, or 1431 gpm. At this time, all the flow entered the main pipeline, and none was overflowing. The owner's recently installed propeller type flowmeter (McCrometer) indicated a flow of 1430 gpm, which agreed with the open channel measurement.

Don, Sherl, George, and I then inspected the system. The in-line booster pump was running. The river pumps were off and the gate valve closed, thereby isolating these pumps from the system and preventing water from flowing from the system into the Payette River.

One short hand line on the uppermost portion of the system was shut off because the average pressure was below 20 psi. All other lines were operating adequately (after some adjustment by the owner).

The gate valve located at the end of the 8" mainline was closed. This valve isolates the Porter Creek system from the other system(s).

Upon verifying that the proper valves were closed and that all lines were operating adequately, we measured the overflow at the Jackass Creek crossing using a 6 gallon bucket and stopwatch. The average time to fill the 6 gallon bucket was 11 seconds, resulting in an overflow of 33 gpm. Thus, the system capacity with the in-line booster pump on is 3.12 cfs, or 1400 gpm.

$$\begin{aligned}\text{System Flow} &= \text{Ditch Flow} - \text{Overflow} \\ &= 3.188 \text{ cfs} - 0.073 \text{ cfs} \\ &= 3.115 \text{ cfs}\end{aligned}$$

At this flow rate, 265 nozzles were operating at an average pressure of about 37 psi. Nozzle sizes were varied, ranging from 9/64" to 11/64" smooth bore commingled with 5 gpm flow control nozzles. Due to the variety of nozzle sizes and types, exact measurement using nozzles would be very time consuming. However, assuming equal distribution of nozzle sizes and types operating at 37 psi results in a flow of about 1200 gpm. Worn nozzles and leaks could easily account for another 15-20% above this flow rate. These measurements therefore confirm the previous measurements.

The booster pump was then turned off, and two more lines were shut down due to low pressure (one short hand line in the uppermost portion of the system, and one wheel line in the southwest end of the system). With a total of 230 nozzles, all lines were now operating adequately. The average pressure had dropped by about 10-11 psi.

Sherl and I tried to measure the overflow with the bucket and stopwatch, but the flow was too excessive, filling the bucket in under two seconds. I then set up to use the collins meter. Sherl left to attend to a another appointment.

Since there was no longer any air in the system, the collins meter measurement went much better. However, moss plugged the impact tube several times during the measurement. I cleaned the instrument as soon as the problem was observed, and continued with the measurement. Results of this measurement indicated a flow rate of 2.39 cfs, or 1074 gpm. The owners' McCrometer flow meter indicated 1160 gpm. It is likely that the collins measurement may be slightly low due to partial plugging at some stations, and I would therefore recommend that the McCrometer reading of 1160 is more accurate. In any case, these measurement are within 10% difference and should be considered acceptable.

Therefore, the system capacity with the booster pump off is:

$$\text{Flow (McCrometer)} = 2.58 \text{ cfs or } 1160 \text{ gpm}$$

$$\text{Flow (Collins)} = 2.39 \text{ cfs or } 1074 \text{ gpm}$$

MEMORANDUM

TO: WATER DISTRICT 65-B FILE

FROM: STEVE LESTER

DATE: JUNE 28, 1994

RE: FIELD INSPECTION

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I visited the district today in response to several telephone conversations with the Watermaster (WM) and per George Dovel's request per fax dated 6/22/94 (4:34 p.m.) I did not see the fax until 6/24 a.m., at which time I was trying to reach the WM by telephone. I had directed the WM on 6/23/94 to allow 24 hours for Double Diamond to fix the #4 flowmeter or the #4 headgate must be closed. Subsequent conversations revealed that the meter was not repaired and the headgate was not closed. Here is a summary of my visit.

9:15 -- Arrived and found irrigation occurring on Double Diamond lower field at south end of district (#1 & 12). Two lines were in use east of the county road (#12). A few lines were running in the north part of the large field on the west side of the road, including a line watering the north tip of the field (1 acre is #12). Also noted that the river pump at the north end of the field was in use.

-- Stopped at Jackass Creek, no overflow found & monitoring weir blade not there. Walked up to end of #1/12 ditch where pipeline begins & found flow going into pipe. Porter Creek water is being used but should not be used on #12 acres now, just on #1 acres.

-- WM & Dean (Dbl. Diamond manager) stopped by & we discussed number of items, particularly #4/15 headgate, which is still not closed according to the WM. They told me about the reasonable estimate method devised to account for amount of water going to #4 when meter stopped working. This was a method in which water was measured into #1 & then that amount reduced at #1 & delivered at #4. This sounds like a reasonable method but cannot substitute for the proper meas. device called for by Idaho Code & dept. orders.

Also, both told me that #12 acres were not being irrigated yesterday. Dean thinks this might be a language barrier with his field hands & will correct this soonest. Dean then called for all available water for #1 since cannot use at #4.

10:30 -- With WM, #4 headgate closed and locked. Dean has backhoe there & is working on meter as time allows. Dovel headgate remains closed & locked. WM left to find #2 staff to begin shutdown of #2 & delivery of all water to #1. He said there are about 110-115" inches available now.

11:00 -- I went to P/D's for #1, 2 & 5 & measured delivered flows as follows:

#1 - 3' C. weir	.16' hd.	.64 cfs	(32")	
#2 - 2' "	.39' hd.	1.63 cfs	(81")	OK since closest possible meas.
#5 - V weir	.17'hd.	.03 cfs	(1.5")	
	Total	2.30 cfs	(115")	

WM estimates & measurements are accurate. Observed minor flow (~1-2") in creek just past #5 diversion - this is so minor to be within maximum achievable level that can be reasonably expected (confirmed this conclusion with DRT upon return to office). Thus, this minor flow cannot be called by users.

11:30 -- Met with George Dovel & briefed him on situation in which all flows in process of being delivered to #1. He stated that he has a standing call for 1 or few inches for yard/garden irrigation (would be in P/U of #7 irrigation or #11 domestic). I reminded him that, at his suggestion in previous field meeting with DRT & numerous members etc. earlier this year, standing calls will not be recognized anymore. I suggested he contact the WM to discuss & told Mr. Dovel that I would pass on his request to the WM also (but user is ultimately responsible for making call). He agreed that this was a good way to handle his request.

We also discussed the J. Creek weir blade - he said he had installed it at least twice this year but someone kept damaging it. I asked him to call me when he has re-installed it to allow me to re-activate the monitoring weir.

11:50 -- Left district. WM continued to work on #1 call for water. I will follow up with WM with written instructions of items to monitor etc. as this situation progresses. I asked the WM to be sure & call me if he had any questions or any doubts about what actions to take. Discussed the visit with DRT upon return to office.

Post-It™ brand fax transmitt memo 7671		# of pages ▶ 2	
To	DAVE TUTTILL	From	SCOTT KING
Co.	DWR - Western	Co.	DWR 150
Dept.		Phone #	327-7897
Fax #		Fax #	

## MEMORANDUM

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Date: May 20, 1994

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STATE OF IDAHO

DEPARTMENT OF WATER RESOURCES

# CERTIFICATE OF APPOINTMENT

This is to certify that I have this day appointed \_\_\_\_\_

HENRY BERNITSEN

as

WATERMASTER

of PORTER CREEK WATER DIST.

for

THE 1994 IRRIGATION SEASON

or until his successor is appointed and qualified

under the provisions of Section 42-605, Idaho Code, at such rate of compensation as established by applicable law.

This certificate has been issued and the seal of the  
Director affixed at Boise, Idaho this 10th  
day of JUNE 19 94.





State of Idaho  
DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way, Boise, Idaho 83705-5082 - (208) 334-2190  
FAX (208) 334-2348

CECIL D. ANDRUS  
GOVERNOR

R. KEITH HIGGINSON  
DIRECTOR

June 10, 1994

Henry Bernsten, Watermaster  
1553 Sunset Dr.  
Emmett, ID 83617

Water District: #65A  
Stream: Porter Creek

Dear Mr. Bernsten,

Application in writing, signed by three purported waterusers in your district, requesting that you begin your duties, and your Oath of Office have been received in this office. Your Certificate of Appointment is enclosed.

You will, therefore, take charge of the waters of such district and distribute the same in accordance with the law and the decrees of the courts to the various users in such district in accordance with the terms and conditions of their respective rights, and perform such other duties as may be required by the Department of Water Resources, under the laws of the State of Idaho. You are hereby requested to assume your duties for the upcoming irrigation season and continue until the necessity therefore shall cease.

You should also note that the enclosed Certificate of Appointment authorizes delivery of natural flow and also stored water pursuant to Section 42-801, Idaho Code.

Please feel free to call upon this office whenever we can be of assistance to you.

Sincerely,

John F. Westra  
Western Region

enclosures: