

RECLAMATION

Managing Water in the West

TR-2013-03

Travel to Davis Dam

Installation of automated straining system for turbulence mussel control research

Dates of Travel: February 25- March 1, 2013



U.S. Department of the Interior
Bureau of Reclamation
Technical Service Center
Hydraulic Investigations and Laboratory Services Group
Denver, Colorado

BUREAU OF RECLAMATION
Technical Service Center
Denver, Colorado

TRAVEL REPORT

Code: 86-68460

Date: March 19, 2013

To: Manager, Hydraulic Investigations and Laboratory Services Group

From: Josh Mortensen, Hydraulic Engineer

Subject: Travel to Davis Dam to install automated straining system for turbulence mussel control research

1. Travel period: 25 February – 1 March 2013

2. Places or offices visited: Davis Dam

3. Purpose of trip:

Install an automated self-cleaning strainer system on supply line to the pressure pumps and to perform initial shakedown testing of the turbulence generation system for mussel control research.

4. Synopsis of trip:

On Monday, February 25th Josh Mortensen and Jimmy Hastings arrived at Davis Dam, Josh by plane and Jimmy by government truck used to haul equipment. After briefly meeting with Vince Lammers they began installing an automated straining system needed to filter water going to the pressure pumps and turbulence pipe fitting (Figure 1). Tuesday the 26th and Wednesday the 27th were also spent completing the straining installation as well as trying to prevent a couple of leaks on the 4-inch test pipe that was installed in January. Pipe repair wrap was applied to the leaky sections but did not completely stop the dripping. Efforts and results to prevent the leaks were shown to Vince Lammers who indicated that the small amount of dripping was not a concern and a funnel with a hose leading to a drain was placed under leak. Jimmy left about 10:00 am on Wednesday to help on another project at Lake Mead.



Figure 1 Automated self-cleaning straining system upstream of pressure pumps.

On Wednesday and Thursday (27th & 28th) Josh installed pressure sensors at various locations on the turbulence system to monitor the system over an extended period of time. Doing so will allow prediction of key turbulence parameters to be compared with the biological results. Measurements from these sensors are logged in a Control Design 110 RTU which is also used to automate the strainer system (Figure 2). Also on Thursday Leonard Willett met with Josh in the Davis power plant to see the progression of and discuss the turbulence research.

Josh left the system (automated strainer and two pumps) running overnight Thursday night. Electrical plugs are still needed for the 10 HP pumps and one of the other pumps was hauled back to the lab in Denver for repairs. Friday (March 1st) morning the system was still running with no apparent issues and pressure data that were logged throughout the night showed that operation was constant. Josh shutdown the entire test system (strainer, pumps, and flow through test pipe) before leaving for the airport in Las Vegas early Friday afternoon.

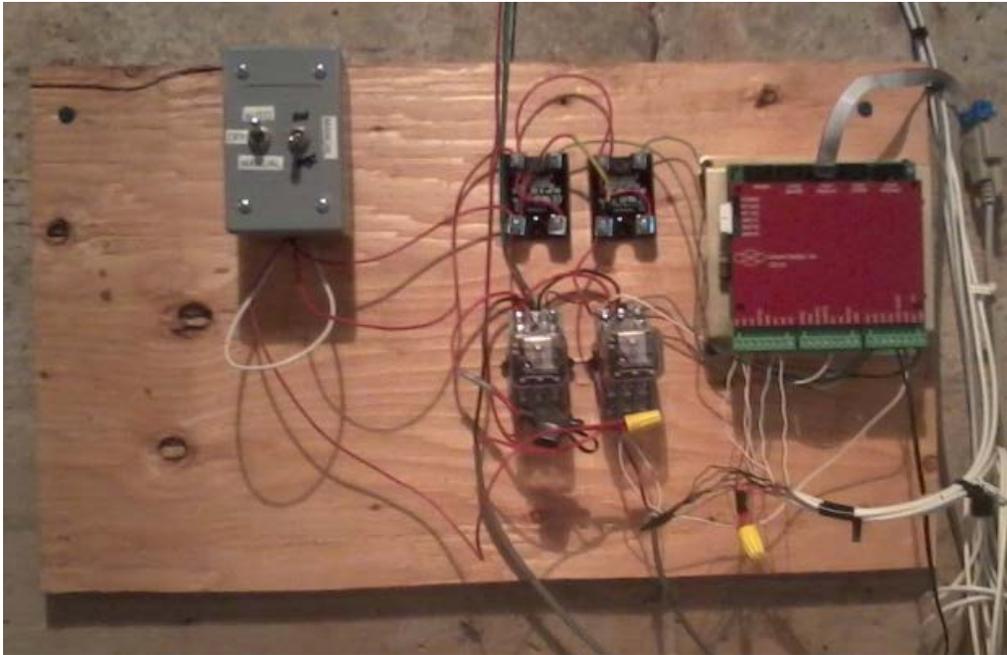


Figure 2 CD110 RTU used to log data and automate the straining system.

5. Conclusions: Drips on the 4-inch test pipe were not completely stopped but were routed to a drain without dripping on equipment or the floor. The self-cleaning straining system and two pumps ran for over 20 hours without any apparent issues. Plans for the next trip include installing 480V plugs on the two 10 HP pump electrical cords and monitoring system performance for 2-3 days to ensure that the entire system can remain operational long-term.

6. Action correspondence initiated or required: None

7. Client feedback received: Leonard Willett and Vince Lammers observed the system setup and discussed it with Josh while onsite.

cc:

Leonard Willett (LCD-8200)
Vince Lammers (LCD-D11)
Sherri Pucherelli (86-68220)
Joe Kubitschek (86-68460)
Miguel Rocha (86-69000)

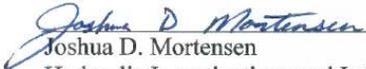
SIGNATURES AND SURNAMES FOR:

Travel to: Davis Dam, Bullhead City, AZ

Dates of Travel: Feb. 25 – March 1, 2013

Names and Codes of Travelers: Josh Mortensen, 86-68460

Travelers:


Joshua D. Mortensen 3/6/13
Hydraulic Investigations and Laboratory Services Group Date

Peer Review by:


Tom Gill 3/6/13
Hydraulic Investigations and Laboratory Services Group Date

Noted and Dated by:


Robert F. Einhellig, Manager 3/3/13
Hydraulic Investigations and Laboratory Services Group Date