

# RECLAMATION

*Managing Water in the West*

TR-2012-10

## Travel to Davis Dam

To install new straining system upstream of pressure pumps on turbulence research piping system

Dates of Travel: August 6-7, 2012



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: September 10, 2012  
To: Manager, Hydraulic Investigations and Laboratory Services Group  
From: Josh Mortensen  
Subject: Travel to Davis Dam to install new straining system upstream of pressure pumps on turbulence research piping system

Travel period: 6 August 2012 – 7 August 2012

2. Places or offices visited: Davis Dam and Lake Mead Boat Marina

3. Purpose of trip: The main purpose of this trip was to install a new strainer on the turbulence research pumping system to reduce routine maintenance (Project 9829). Previous filters were clogging within 24 – 48 hours of operation, causing the flow capacity of the jets to be reduced and eventual cavitation to occur. These maintenance issues caused continuous testing (pumps on 24 hrs/day) to be postponed while intermittent testing was performed once a week by Sherri Pucherelli. The new strainer installed on this trip should allow the pumping system to operate maintenance-free for 7 days and to resume the continuous testing plan which includes long-term mussel settlement in bio-coolers.

Secondary purposes of this trip included documenting mussel settlement and verifying operation of the fish screens on the quagga research boat in the Lake Mead Boat Marina (Project 4111).

4. Synopsis of trip: **Davis Dam (Project 9829):** On Monday August 6<sup>th</sup>, Josh met Sherri Pucherelli at Davis Dam to review intermittent testing to date and to discuss plans for continuous testing through the remainder of the fiscal year. Following their discussion Sherri returned to Boulder City with the veliger test samples collected from the test system. Josh stayed at Davis Dam and changed the oil in the pressure pumps, downloaded pipe flow data from the Controlotron flow meter, removed existing filters from the pressure pumps and installed a 1-1/2 inch 80-mesh basket strainer (consistent with other strainers used throughout the Davis Power Plant) on the wall upstream of the pressure pumps (Figure 1).

On Tuesday August 7<sup>th</sup>, the pressure pump system and basket strainer were inspected after approximately 20 hours of continuous operation. The pumps were still operating at full pressure and there was a minimal amount of algae built up on the inside of the strainer basket. Continuous testing with the bio-coolers was resumed. Before leaving Davis Dam, Josh showed the new strainer to Vince Lammers and briefly discussed maintenance assistance from Davis personnel on the pressure pump system as well as potential plans for future research at a more appropriate location within Davis's Power Plant. Potential locations include the water treatment plant and cooling system intake.

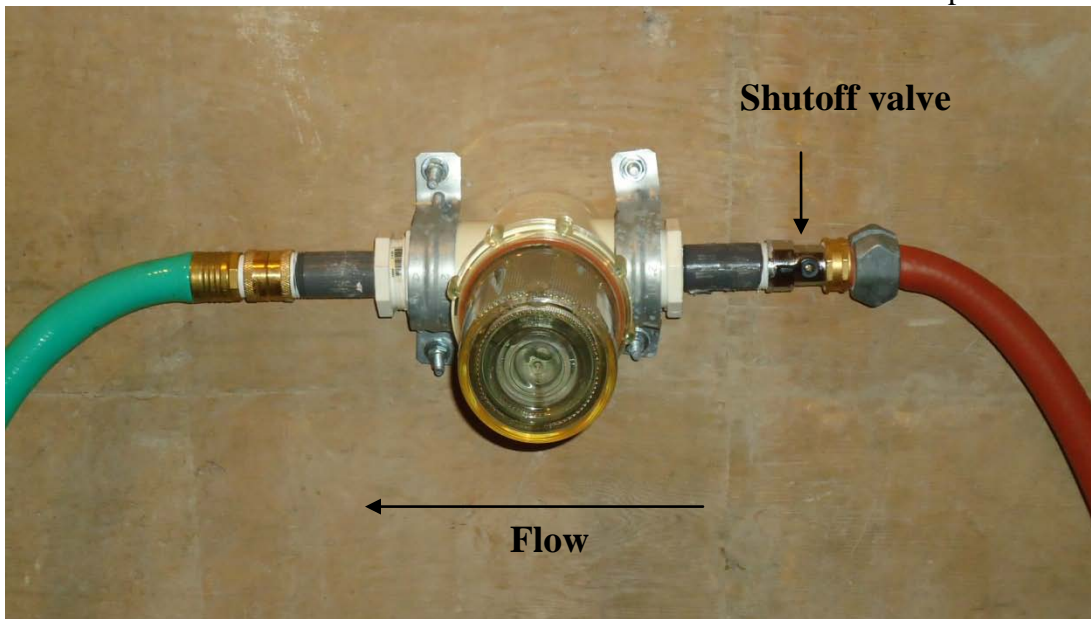


Figure 1. Newly installed basket-strainer upstream of the pressure pumps

**Lake Mead Boat Marina (Project 4111):** On Tuesday afternoon Josh took photos/video of the various fish screens on the quagga research boat. The samples tied off the side of the boat were still heavily fouled while the traveling Hydrolox screen was still free from any mussel settlement. The ISI drum screen appeared mostly free of mussel settlement but the screen was difficult to see because the entire screen was submerged. One cleaning cycle was observed. Both screening systems (Hydrolox and ISI) appeared to be running continuously without any mechanical or electrical problems. Josh then left for the Las Vegas airport to return to Denver Tuesday evening.

5. Conclusions: Continuous testing of the turbulence testing system was resumed. A new strainer was installed which will likely reduce maintenance on the pressure pump system and allow Davis personnel to quickly/easily keep the test system running by cleaning out the basket strainer on their daily walk-through if needed.

Also, mussel settlement was documented and operation verified of the fish cleaning systems on the quagga research boat. Photo/video documentation will be sent to Cathy Karp.

6. Action correspondence initiated or required: None

7. Client feedback received:

cc:

Vince Lammers (LCD-D11)  
Leonard Willett (LCD-8200)  
Cathy Karp (86-68290)  
Sherri Pucherelli (86-68220)  
Joe Kubitchek (86-68460)

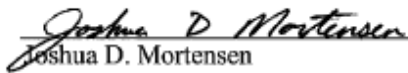
**SIGNATURES AND SURNAMES FOR:**

**Travel to:** Davis Dam, Bullhead City, AZ

**Dates of Travel:** August 6 – 7, 2012

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

**Travelers:**

  
Joshua D. Mortensen 8/8/12  
Hydraulic Investigations and Laboratory Services Group Date

**Peer Review by:**

  
Bryan J. Heiner 8/8/12  
Hydraulic Investigations and Laboratory Services Group Date

**Noted and Dated by:**

  
Robert F. Einhellig, Manager 8/8/12  
Hydraulic Investigations and Laboratory Services Group Date