

RECLAMATION

Managing Water in the West

TR-2014-04

Travel to Davis Dam & to Lake Mead

Travel to Davis Dam and Lake Mead Marina to continue data collection and maintenance tasks for quagga mussel research projects 4183 and 5740

Date(s) of Travel: May 27 – 29, 2014



**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: 85-846000

Date: June 9, 2014

To: Manager, Hydraulic Investigations and Laboratory Services Group
From: Josh Mortensen, Hydraulic Engineer

Subject: Travel to Davis Dam and Lake Mead Marina to continue data collection and maintenance tasks for quagga mussel research projects 4183 and 5740.

1. Travel period: 27 May – 29 May 2014
2. Places or offices visited: Davis Dam and Lake Mead Marina
3. Purpose of trip: Continue data collection and maintenance tasks for turbulence mussel control research at Davis Dam (project 4183) and fish screen mussel research at Lake Mead Marina (project 5740).
4. Synopsis of trip:

Tuesday May 27, 2014: Josh Mortensen picked up pressure pump #5 that had been left in Las Vegas for repairs from the manufacturer mechanic. He then met Sherri Pucherelli at Davis Dam to collect veliger samples from the turbulence system after pump #5 had been reinstalled and the test system was operating properly. Samples were collected at average velocities of 5 ft/s (Flow = 180 gpm) and then 3 ft/s (Flow = 106 gpm) in the 4-inch test pipe. Testing was performed at a lower pipe velocity to determine if there is greater impact to veligers from increased exposure time to the turbulence treatment.

Wednesday May 28, 2014: Josh modified the wiring and programming of RTU #2 to properly automate the emergency shutoff valve to the treatment biobox. The treatment box flow will now be shutoff if the pumps are shutdown, and reopen after they are restarted. This was done to protect the treated veliger samples in the case of an unexpected test system shutdown such as was experienced last year. The entire turbulence test system was monitored throughout the day, maintenance was performed on pumps 1-4, and data logs were downloaded. An error in RTU #2, which records pressures for pumps 1-4, resulted in no data logged from April – May. However, pump pressures were the same as when they were installed in April and all other inspections indicated that pumps 1-4 operated consistently since April. The error in RTU #2 was corrected. A large fan was left blowing over the pumps to help keep them cool. Test pipe flow was left at 106 gpm after monitoring temperatures on the generator thrust bearing for more than 24 hrs to be sure it would not overheat with the reduced cooling flow. At the end of the day Josh drove to Boulder City to stay the night.

Thursday May 29, 2014: Maintenance and inspection tasks were performed on the quagga research boat docked at the Lake Mead boat marina. All systems were operating correctly with the exception of the linear wedge-wire screen brushing system, which was accidentally left shutoff from the previous trip. Also, the south linear screen was unable to be pulled up for inspection as the cable to pull it to the surface broke. Inspection of the north screen showed that there was not much mussel growth since early May when it was last cleaned. It was replaced by a stainless steel screen with vertical wedge-wire (parallel with brush motion). All other screens, brushing systems, and control samples were inspected and photographed. Josh returned to Denver by airplane from Las Vegas.

5. Conclusions:

Project 4183: The turbulence test system at Davis Dam is now fully functioning with all 5 pressure pumps and the data acquisition and automation system is properly operating. Veliger samples were collected for damage, mortality, and behavior testing which should provide preliminary information about the system's effectiveness for mussel control. The system will continue to operate through August 2014 to obtain mussel settlement data.

Project 5740: All screens, cleaning systems, and control samples were inspected and photographed. The facility will continue to operate throughout the summer. All photographs will be provided to Cathy Karp who is the project lead.

6. Action correspondence initiated or required:

7. Client feedback received: N/A

cc:

Leonard Willett (LCD-8200)

Vince Lammers (LCD-D11)

John Sorace (LCD-D20)

Sherri Pucherelli (86-68220)

Cathy Karp (86-68290)

Joe Kubitschek (85-846000)

Miguel Rocha (08-10000)

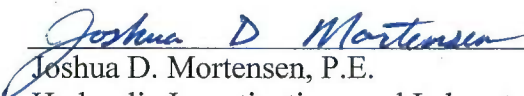
SIGNATURES AND SURNAMES FOR:

Travel to: Lake Mead, Boulder City, NV and Davis Dam, Bullhead City, AZ

Dates of Travel: 27 May – 29 May 2014


Names and Codes of Travelers: Josh Mortensen, 85-846000

Traveler:


Joshua D. Mortensen, P.E.
Hydraulic Investigations and Laboratory Services Group


6/5/14
Date

Reviewed:


Tom Gill, P.E.
Hydraulic Investigations and Laboratory Services Group

06/05/2014
Date

Noted and Dated by:


Robert F. Einhellig, P.E., Manager
Hydraulic Investigations and Laboratory Services Group

6/5/2014
Date