

Operation and Maintenance Report

COLORADO RIVER RECOVERY PROGRAM
FY 2011 ANNUAL PROJECT REPORT

RECOVERY PROGRAM
PROJECT NUMBER 01-WC-40-7050

I. Project Title: Operation and Maintenance of the Fish Screen and Fish Passage Facility at the Grand Valley Irrigation Company Diversion in Palisade.

II. Prepared by: Charles D. Guenther
Grand Valley Irrigation Company
688 26 Road
Grand Junction, CO 81506
Phone (970) 242-2762
Email: gvic@sprynet.com

III. **Project Summary:**

The Grand Valley Irrigation Company (GVIC) diversion, located on the Colorado River (River) near Palisade, Colorado, diverts water in the GVIC Mainline Canal. A fish passage structure was constructed in the River on the downstream side of and adjacent to GVIC's diversion structure in 1998-1999 during the off water season. The fish screen was constructed in the GVIC canal below the diversion gates on the River in 2002. This fish passage and fish screen is owned by the US Fish and Wildlife Service. GVIC operates and maintains the fish screen and the fish passage through a cooperative agreement with the United States.

IV. **Study Schedule:**

GVIC makes every effort to operate the fish screen whenever diverting water in the GVIC canal from the Colorado River. Maintenance of the fish screen/passage is performed following the US Fish and Wildlife Service, the Bureau of Reclamation and GVIC complete an annual inspection and submittal and approval of an annual work plan by GVIC.

V. **Accomplishments of FY 2011 Tasks and Deliverables, Discussion of Initial Findings and shortcomings:**

The following maintenance activities were completed on the fish screen:

October, 2010

1. Brush arm #2 clogged, vacuumed air pipe out, assumed 20% capacity prior to cleaning.
2. Met with BoR, FWS on annual inspection, discussed new skids for screens, hoses, etc.

November, 2010

1. Pulled screens due to excessive River debris November 1, 2011.

2. Met with SSD for new skid plates for screen panels and baffles, assessed work needed on screens.

3. Water turned out on 11/01/10.

December, 2010

1. Met at BoR office for final wrap up meeting of fish screen.
2. Met with SSD on skids for screens and baffles.

January, 2011

1. Replaced all hoses on festoon system.
2. Adjusted hoses on festoon system.
3. Replaced brushes on brush arms.
4. Cleaned and inspected screens.
5. Repair and did maintenance on pre-cleaner fins in canal upstream of screens.

February, 2011

1. Discussed with SSD on new skids for screens and baffles
2. SSD built new skids and installed for screens and baffles.
3. Inspected new skids on screens, had SSD make adjustment of skids.

March, 2011

1. Met with Pro Powder Coating on sand blasting fish screen infrastructure and screens.
2. Met with Mark Wernke of BoR to discuss corrosion on screen slots and infrastructure.

April, 2011

1. Installed relays for fishscreen PLC, cleared sheave motor with keypad, fixed loose wire on PLC terminal.
2. Start water in canal and screens at 5:00 PM on April 2, 2011.
3. Met with FWS on whitefish descaling, netting, pumping, etc.

4. Realign hoses on festoon trolleys.
5. Lubricate trolleys on festoon system at fishscreens.

May, 2011

1. Met with Ron from Air Compressor services for service on fishscreen compressor.
2. Worked on hoses on festoon systems.
3. Employees trained on new fishscreen PLC, fixed bolt on #2 brusharm.

June, 2011

1. Lowered check gate behind screens due to high water in River to increase by-pass pipe functions.

July, 2011

1. Met with International Water Screens to possibly replace fixed screens with travelling screens to increase efficiency at fishscreen.
2. Fixed wire on sensor for brush arm function.
3. Phone contact Mark Wernke of BoR on Work Plan and travelling screens and adding additional brush arms.

August, 2011

1. Brush arm #2 trolley guide wheels on fishscreen damaged, made temporary fix to keep in operation; found manufacturer for trolley parts – Frost, Inc.
2. Order parts for brush arm trolleys.
3. Reverse brush arm trolley to buy operation time; work on air hoses festoon system.
4. Met with Brian from Mt. Peak Controls to fix problems on PLC – adjust start program on brush arms, worked on dialastat calling system.
5. Replaced brush arm trolley on #2 brush arm.
6. Rebuild used trolley for #2.
7. Discussed buying used laptop to replace old laptop that quit working for the headgate attendant to monitor screen, canal and river functions.

8. Rebuilt trolleys for #1 brush arm.
9. Discussed with steel fabricator on potentially building new additional brush arm, and talk with mobile hot galvanizing company for replacing galvanizing on screen slots and baffle slots.
10. Phone contact with Kevin Moran (BoR) on new brush arm install and about travelling screens and options.
11. Purchased newer used laptop for headgate attendant monitoring of screen and River functions.

September, 2011

1. Put drawings of brush arm out for cost estimate.
2. Met with D.W. Metalworks and Bud Mars Services for fabrications of brush arm & galvanizing screen and baffle guides.
3. Maintenance of fishscreen radiator, air compressor and clean concrete deck area of debris.
4. Repaired trolleys for all three brush arms.
5. Replaced guide roller on brush arm #3, all hanging roller and guide roller on brush arm trolleys replaced, rebuilt #3 trolley.
6. Repair #2 brush arm air hose and lead festoon trolley connection, also guide arm hook.
7. Repair #2 brusharm lead trolley, set up.

October, 2011

1. Submitted annual workplan for 2011-2012.
2. Adjusted brush arm airhoses with air charged in hoses.
3. Shut down brush arms and flushed gates 1 through 3 to remove silt behind screens.
4. Shut down canal 10/31/11 at 8:00 AM.

The fish screen was operated during the following periods:

FISHSCREEN OPERATIONS - 2011

On Date/Time	Off Date/Time	Days On	Days Off	Shutdown Reason
--------------	---------------	---------	----------	-----------------

Water on - 4/3 @ 5:00 pm				
04/3 - 5:00 pm	4/19 – 4:45 pm	17	1	Excessive River Debris Cameo Weir 7,600 cfs
4/20 – 11:30 am	5/8 – 10:30 am	18	45	Excessive River Debris/ Overtop screens Palisade Weir 8,670 cfs
6/23 – 8:30 am	6/24 – 2:00 pm	1	14	River high, By-pass pipe not drawing, Excessive River debris: Palisade Weir @ 23,700 cfs
7/7 – 9:00 am	7/8 – 5:00 pm	1	10	Lost power, generator not powering screens properly
7/18 – 9:00 am	7/19 – 11:00 am	1	9	Flash flooding, silt, brown mud Palisiade Weir 13,800 cfs
7/28 – 9:15 am	9/3 – 2:30 am	37	3	Excessive River debris, fine materials
9/6 – 9:00 am	9/8 – 10:30 pm	2	1	Excessive River debris, fine burnt debris
9/9 – 8:30 am	9/10 – 10:00 am	1	2	Excessive River debris
9/12 – 9:00 am	10/26- 9:00 am	43	1	Main headgate closed, raised screens for maintenance.
10/27-8:00 am	10/31 – 8:00 am	4	0	
Water off-	10/31	125	86	
		Days on	Days off	

Total Run 211 Days
59% on
41% off

VI. The following major maintenance activities were completed on the fish passage.

October, 2010

1. Checked air compressor problem, would not turn off when shut off pressure was achieved, control valves need repair.
2. Met with BoR and FWS on annual inspection, discussed changing Obermeyer PLC and maintenance on air compressor valves and filters.
3. Plumb in automatic drain valve on fishpassage compressor, replaced PSI gauge on tank, performed filter maintenance.

November, 2010

1. No activity.

December, 2010

1. No activity.

January, 2011

1. Change filter on Obermeyer air compressor system.
2. Get copies of Obermeyer specs and drawing to Bob Norman of the BoR.

February, 2011

1. Mountain Peaks Controls installed new PLC on Obermeyer gate to talk to new fishscreen PLC installed prior year.
2. Check operation of Obermeyer gate.
3. Clean behind Obermeyer gate with pressure washer, found faulty check valve in PLC cabinet.

March, 2011

1. Check on new fish passage PLC installation, antennas, etc.

April, 2011

1. GVIC mechanic checked Obermeyer gate. Need to re-plumb filters from fishpassage compressor to deter moisture build up in tank.

May, 2011

1. GVIC staff train on new PLC with Mountain Peaks.
2. Remove faulty valve on Obermeyer control panel.
3. Install new valve on control panel.

June, 2011

1. Remove old filter system for re-plumbing.
2. Install new filter system.
3. Install petcock valve on filter to drain.

TOTAL			13	198	
-------	--	--	----	-----	--

VII. Expenditures FY 2011:

Total fiscal period November 1, 2010 – October 31, 2011

Screen/Passage
\$60,376.27

Funds Initially provided per Work Plan
\$76,336.89

Break Down of Expenses

Labor Screens -	<u>\$29,820.71</u>
Electrical Screens -	<u>\$13,294.01</u>
Phone Screens -	<u>\$ 743.83</u>
Material Screens -	<u>\$ 9,331.46</u>
Labor Passage -	<u>\$ 2,643.64</u>
Electrical Passage -	<u>\$ 159.32</u>
Material Passage -	<u>\$ 3,870.53</u>
Administration -	<u>\$ 512.77</u>

VIII. Recommendations:

1. Add and install new brush arm, to a total of 4, to decrease brush arms travel time for cleaning screens for more efficient cleaning of screens.
2. Add new air hoses, piping, cables, festoon system for additional brush arm.
3. Replace cables for all brush arms.
4. Sand blast and replace hot galvanizing on screen and baffle slots below water surface.
5. Continue evaluating replacing of some wedgewire screens with travelling screens. Price, engineering, operations, installing, etc.
6. Video camera by-pass pipeline, have had no internal inspection on by-pass pipe since 2002.

7. Clean out first pool below Obermeyer gate to remove gravel that was deposited during high river runoff, 2011.

IX. Signed:

Charles D. Guenther

11/04/11

Date