

FIELD INSPECTION REPORT FOR LOWER SAN PITCH DISTRIBUTION SYSTEM

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Field Inspection date: May 7, 2004.

OBJECTIVE: The main objectives of the field trip were to visit the diversion points and measuring device locations on the Lower San Pitch, gather GPS location information, evaluate the existing condition of measuring devices, and determine necessary improvements in the system.

GENERAL OBSERVATION: This past year a new Water Commissioner, Mr. Roland Beck, and a Deputy Commissioner, Mr. Garth Sorenson, were appointed to serve in the system. They have expressed a great interest in making sure that water is properly measured in the system and that measuring devices or rated sections are operating correctly. The Deputy Commissioner has started to develop new or improved rating tables for all the diversion points where water measurements are recorded. In light of their efforts, it won't be necessary to send a letter of improvements for the diversions sites visited.

1. COTTONWOOD CREEK DIVERSION

There is a 20-ft wide broad crested weir like structure in this diversion. The structure is also a divider that splits the water to the Ephraim canal and the Field Ditch. There is a staff gage mounted on the right side of the concrete section. The deputy commissioner, Mr. Sorenson, is in the process of developing a rating table for this site. He has a flow probe that he is using to take weekly flow measurements. The section is in good shape and stable. A flow measurement was taken at this site using an electronic velocity meter. There was 43.83cfs of water diverted at this site. Pictures #1-3: Diversion structure

Recommendation: None.

2. EAST DRAINAGE CANAL

The Drainage District regulates the flow into the East Canal about a ¼ mile North of the Bridge where the gaging station is located. The gaging station in this canal is not in operation. There was no water flowing at the time of the visit. The water moves very slowly in this canal and thus it is very difficult to accurately measure it. Pictures #4 & 5: Canal & Gage Housing.

Recommendation: None.

3. **WEST DRAINAGE CANAL**

There is a gage housing at this site; however it does not contain electronic equipment or a recorder. A staff gage located under the bridge on the right side of the cement bank is used to record the water level in the canal. The canal section under the bridge is composed of a two 10 ft concrete sections where the water commissioner measures the flows. Picture #6: Gage housing. Pictures #7 & 8: Staff gage and measuring section.

Recommendation: None.

4. **SAN PITCH RIVER WEST OF MANTI**

This is the last measuring section on the San Pitch River before the river discharges into the Gunnison Reservoir. The water commissioner uses a staff gage and a rated section to measure the flows at this site. The commissioner indicated that this measurement is of no value and it is not needed because he can accurately determine the inflows to the reservoir by changes in the reservoir content and releases.

Recommendation: None.

5. **SIX MILE CREEK SPLIT**

This diversion structure consists of a 20-ft wide concrete section with a splitter. The splitter structure divides the water between The Gunnison and Palisade reservoirs. During high water flows it is very difficult to take current meter measurements at this diversion. It does not have a catwalk across the channel. The staff gage reading showed a water level at 0.70 feet. Pictures #13 & 14: Diversion structure.

Recommendation: A walkway should be installed across the channel for the commissioner to safely perform the duties of regulating and measuring the water in the system during high water flows.

6. **SIX MILE CREEK TO GUNNISON RESERVOIR**

A rated concrete section and staff gage is used in this diversion to measure the flows from Six Miles into Gunnison Reservoir. There is radial gate immediately downstream from this diversion. The staff gage reading indicated a level of 0.5 ft. The flows were computed to be 45.5 cfs. The

structure is in good condition and working properly. Part of the flows at this diversion could be sent to the Pettyville canal and measured at the Pettyville flume. Picture #15: Diversion structure. Picture #16: Radial gage.

Recommendation: None.

7. **PETTYVILLE DIVERSION**

This diversion has a 12-ft cutthroat flume that is level and in good condition. The staff gage indicated a level of 0.5 ft. This diversion is located below the Gunnison Reservoir and measures the releases from the Gunnison reservoir as well as water diverted from Six Mile Creek. Picture #17: Flume & waste headgate.

Recommendation: None.

8. **NINE MILE DIVERSION**

There is a 4-ft screw wheel headgate and a flume that are in fair condition. The channel in front of flume is scoured and a hole in the channel was observed. The commissioner indicated that the hole in the channel made the water slow down before it enters the flume. I could not verify this because water was not flowing at the time of the visit. The flume was checked for level and found to be level in both directions. Picture #18: Headgate. Picture #19: Parshall metal flume. Picture #20: Main diversion headgate.

Recommendation: To accurately measure the flows, it is important that the flow entering the flume is uniform across its width. If the scoured channel in front of the flume causes the flow to be turbulent and non-uniform then the hole should be filled with rocks and the channel repaired.

9. **MAYFIELD – GUNNISON SPLIT**

This split structure divides the water from Twelve Mile Creek as follows: 42% to Mayfield and 58% to Gunnison. There is a staff gage and a 25-ft rated concrete section that is used to measure the flows. To update the rating table for this diversion the commissioners' deputy is taking measurements regularly with his velocity probe. The staff gage and section are in good condition. Picture #21: End of Gunnison sedimentation pool. Picture #22: Waste gate. Pictures #23 & 24: Split structure.

Recommendation: None.

10. **HIGHLINE CANAL DIVERSION**

The water at this diversion comes from Twelve Mile Creek. This diversion has a 12-ft concrete rated section and a staff gage. The structure and measuring section is working properly. The channel was clean and well maintained. There is a small diversion ditch (Christian Bird ditch) that diverts water out of the Highland canal. Picture #25: Highline canal measuring section. Picture #26: Christian Bird Ditch headgate.

Recommendation: None.

11. **TWELVE MILE DIVERSION TO HIGHLINE CANAL**

This diversion has a series of 5 radial gates that control flows to Twelve Mile canal and to the river. The commissioner runs a maximum of 150 cfs of water through the Twelve Mile diversion. There is a 12-ft steel flume at this diversion that is operating properly. This diversion is located a few feet above the Highland Canal Diversion. Picture #27: Metal Flume. Picture #28: Diversion structure.

Recommendation: None.

12. **OLD FIELD CANAL DIVERSION**

The 6-ft flume at this diversion is level and in good condition. The approach and exit conditions are good and the channel is clean and well maintained. A couple of headgates control the flows into the canal. The commissioner indicated that this diversion has a right to divert 158 cfs of water. A gaging station with a Stevens recorder is located next to the flume. The gaging station pipe often gets plugged up. Picture #30: Headgates. Picture 31: Diversion dam. Picture #32: Flume and gaging station.

Recommendation: None.