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GRAND JUNCTION FIELD OFFICE
DIVISION OF
RECLAMATION MINING & SAFETY

RECLAMATION PLAN
COLORADO RIVER



SCALE: 1"=200'
0 100 200



AS-BUILT DRAWING
OF RECORD

 O'Connor Design Group, Inc.

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O'Connor Design Group, Inc.

June 11, 2012

Mark Gilfillan
U.S.A.C.O.E.
Sacramento District
400 Rood Avenue, Room 123
Grand Junction, CO 81501

RE: Post Construction Report SPK-2012-00125 Colorado River near Rifle

This post construction report fulfills Special Condition 5 of the Nationwide General Permit. The Nationwide Permit System (33 CFR Part 330) allows for aquatic habitat restoration, establishment and enhancement via sediment removal and the installation of dikes, current deflectors, and the placement of in-stream habitat structures. Rick Krueger of the U.S. Fish and Wildlife Service who visited the site on May 21st stated that the breached gravel pond and the bank protection structures including toe-wood benches, vanes and j-hooks provides "excellent backwater and in-stream fish habitat."

Modifications to the Reclamation Plan submitted in the Permit Application were necessary based on field observations during construction activities and the availability of materials. These field adjustments were anticipated as noted in the application and ultimately improved bank stability. As shown on the attached Post-Construction diagram, either slight location adjustments of individual structures from the application drawing (Reclamation Plan) or the addition of more bank stabilization structures were constructed at the site.

Structure 6 on the Reclamation Plan (now designated Structures 1 and 2 on "as built") consists of a rock vane and a toe wood bench with the rock vane on the upstream side. The toe wood bench consists of 20 to 30 ft logs and woody debris that is placed below the low water line up to the bank full bench elevation. Over 90 percent of the logs are buried and covered with sod mats and willows to provide additional stabilization. The submerged logs provide protective fish habitat.

Structure 5 on the Reclamation Plan originally called for a single vane, a toe wood bench, and the western edge of the side channel rip-rapped. Another rock vane was added to this area to provided additional stability. Willow transplants were placed between the rip rap rocks that followed guidance provided by the Corps during the permitting process (Special Condition 9). The new vane (Designated Structure 5) is connected with the large footer rocks supporting the rip-rap via a buried rock sill.

The J-hook (Structure 9 on "as built") was constructed and placed as shown in the permit application. Grade control is achieved at this structure by placing footer rocks at the bottom of the river bed. Large rocks are placed at 10 to 15 ft. spacing to allow small boats to pass during low water. Observations during peak flow conditions this year (Approximately 4000 cfs) show that the structure is operating as designed protecting the northern river bank and scouring a pool immediately downstream to provide additional hydraulic control on the river.

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After the river bank was sloped downstream of the J-hook, two rock sills were added to maintain additional stability. These structures are designed 7 and 8 on the as built drawing.

The river channel was excavated as proposed in the permit using track hoes and rock trucks to dig the channel and remove the rock to a nearby gravel pit. It is estimated that approximately 75,000 cubic yards of material was removed from the river. The removal process proved to be efficient, safe, and minimally evasive to the aquatic environment. Best management practices (BMPs) were implemented to minimize sediment discharge during excavation.

Photo-documentation

Special Condition 4 of the permit specifies that pre-construction photos of the project site shall be submitted and used in post-construction comparisons. Attached are before and after photos of three areas that were stabilized:

1. Downstream end of the pond (former gravel pit)
2. Yvonne Chamber's RV Park
3. Upstream J-hook

Photos show significant changes in the pre- and post-construction river banks and channels. Steep river banks were gently sloped, rock vanes and toe wood benches installed to provide bank stability, and vegetation planted to provide additional stability. The J-hook structure utilized some of the largest rocks imported for the river structure construction. Grade control for future channel maintenance is maintained by the footer rocks of the hook portion of the structure. Although the constructed channel is designed to maintain slope, the J-hook provides additional insurance against head cutting.

Future Requirements

There are still several Special Condition requirements list in the NWP that will be met prior to the end of 2012. These requirements include:

1. Cross sections at 6 locations (Special Condition 8)
2. Measurement of sediment deposition (Special Condition 8)
3. Bank Stability Surveys
4. Monitoring Report due December 2012

Due to flow conditions, we were unable to complete all 6 cross sections. During low flow conditions that are expected this year due to the prolonged drought, these cross sections will be completed. The TOPCON survey data has been received but not analyzed. This effort will be completed by the end of the year and included in the Monitoring Report.

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Using the survey data and channel construction diagrams, the amount of sediment deposited during the limited 2012 runoff will be estimated for removal in 2013.

A survey of the bank stability, including the replacement of dead vegetation (Special Condition 9), will be conducted annually.

Results of all of the requirements listed above will be reported in the Monitoring Report due December 2012.

Finally, we would like the Corps to consider of additional work to provide increased bank stability in the permit area. First, the side channel that empties into the river at Structure 5 has filled with sediment. Historically, the channel provided water to deflect flow in the main channel away from the northern bank. United would propose to remove sediment in the channel at a depth and grade to match the main channel. This would provide additional water flow in the channel and provide backwater fisheries habitat. Preliminary estimates suggest that 12,000 to 16,000 cubic yards of material will be excavated in a manner consist with the permit conditions. The channel is on United Property so there should be no landowner issues.

Second, if arrangements can be made with an adjacent landowner, United would like to remove material excavated for the diversion channel and place a small grade control structure at the channel entrance. This approach will results in minimal disturbance during future channel restoration sediment extraction operations.

Thank you for your time and cooperation on this project. I appreciate your insights into the regulatory process. If you need further information, please don't hesitate to contact me.

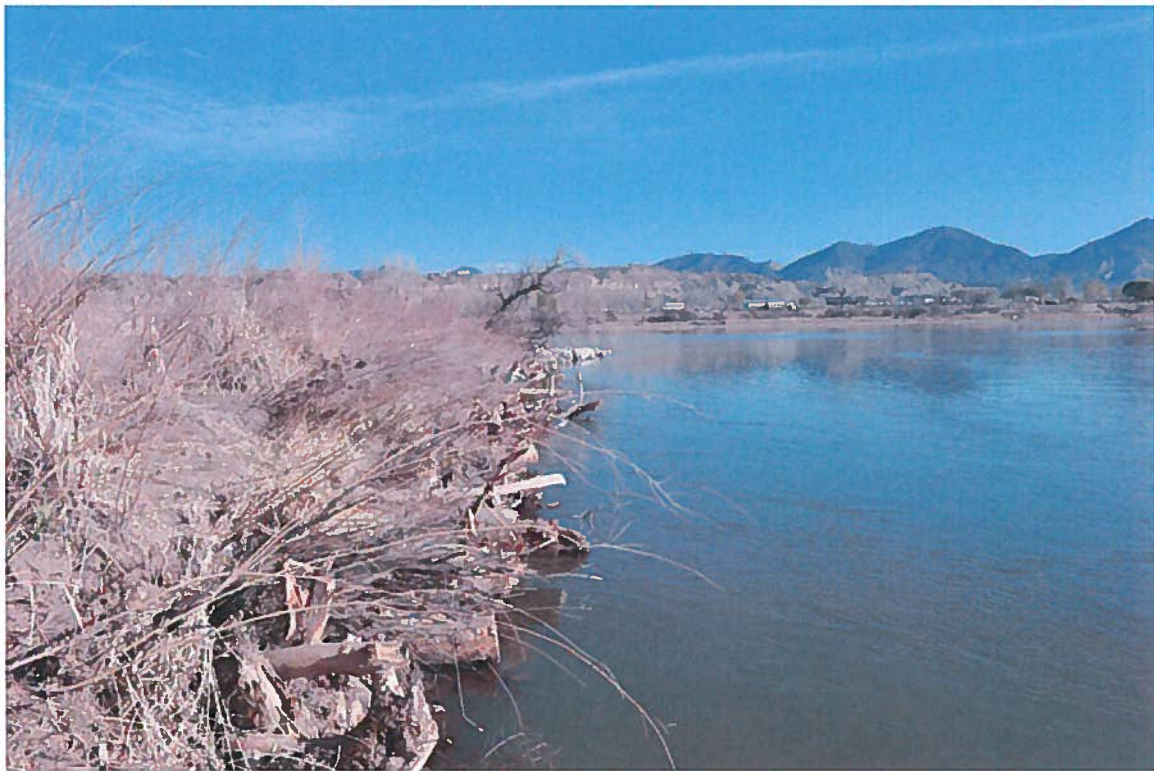
Respectfully,

Peter M. Kearl
Senior Water Scientist

Attach. (9)



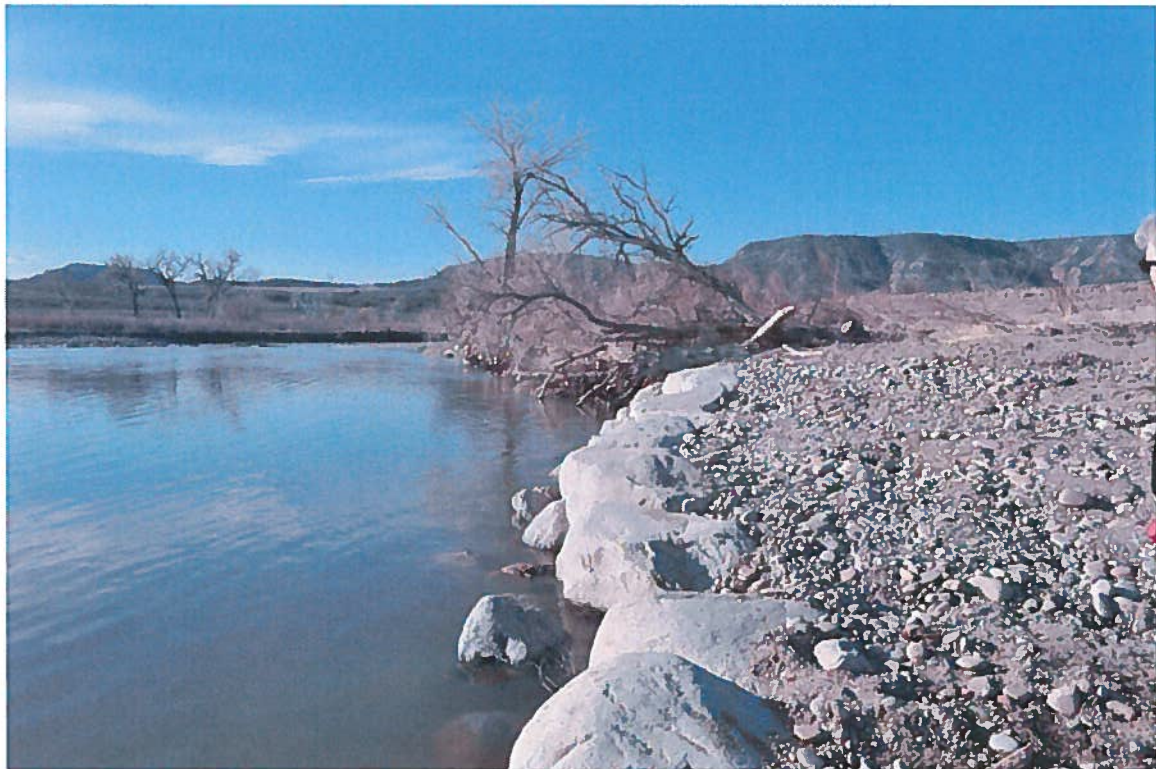
before



after



before



after



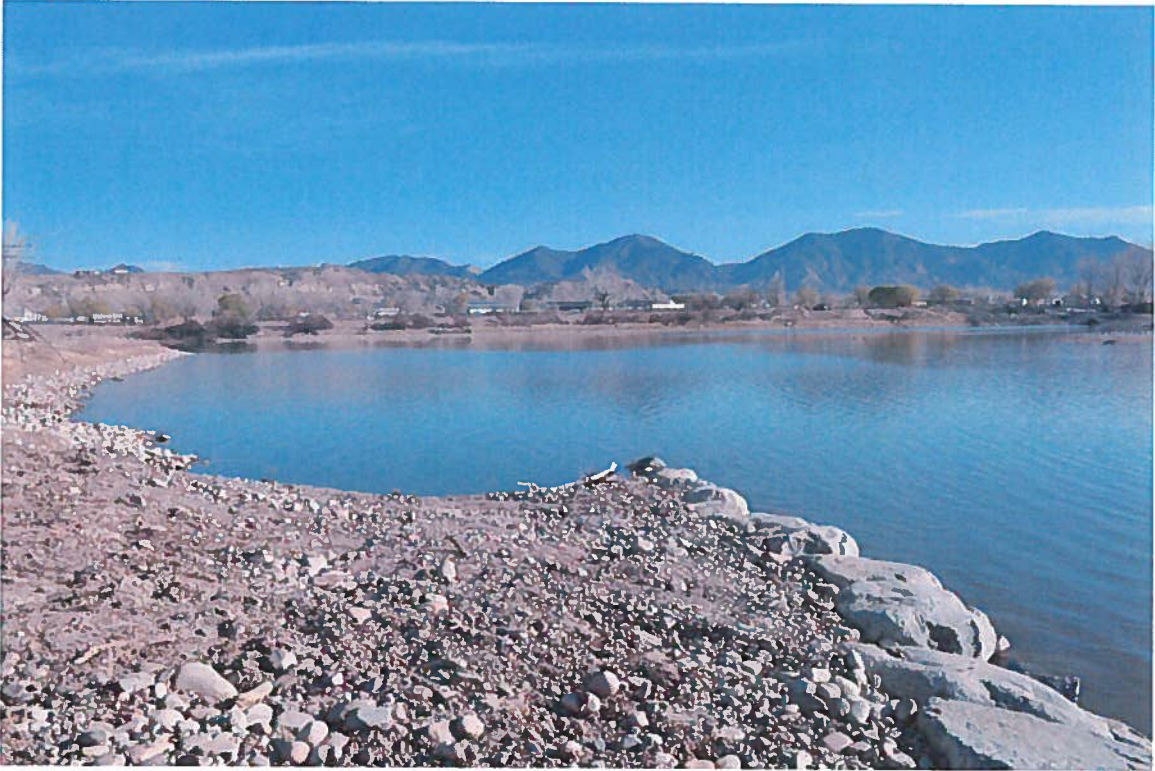
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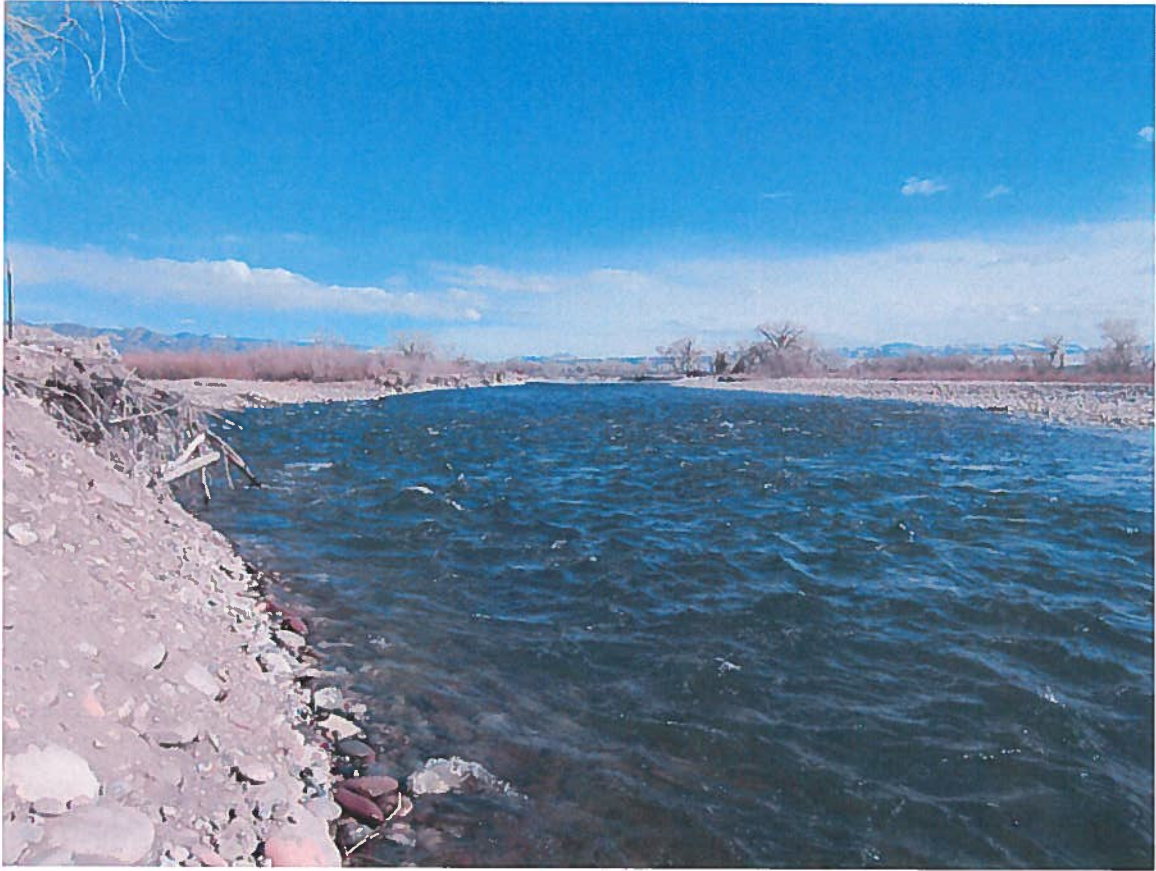
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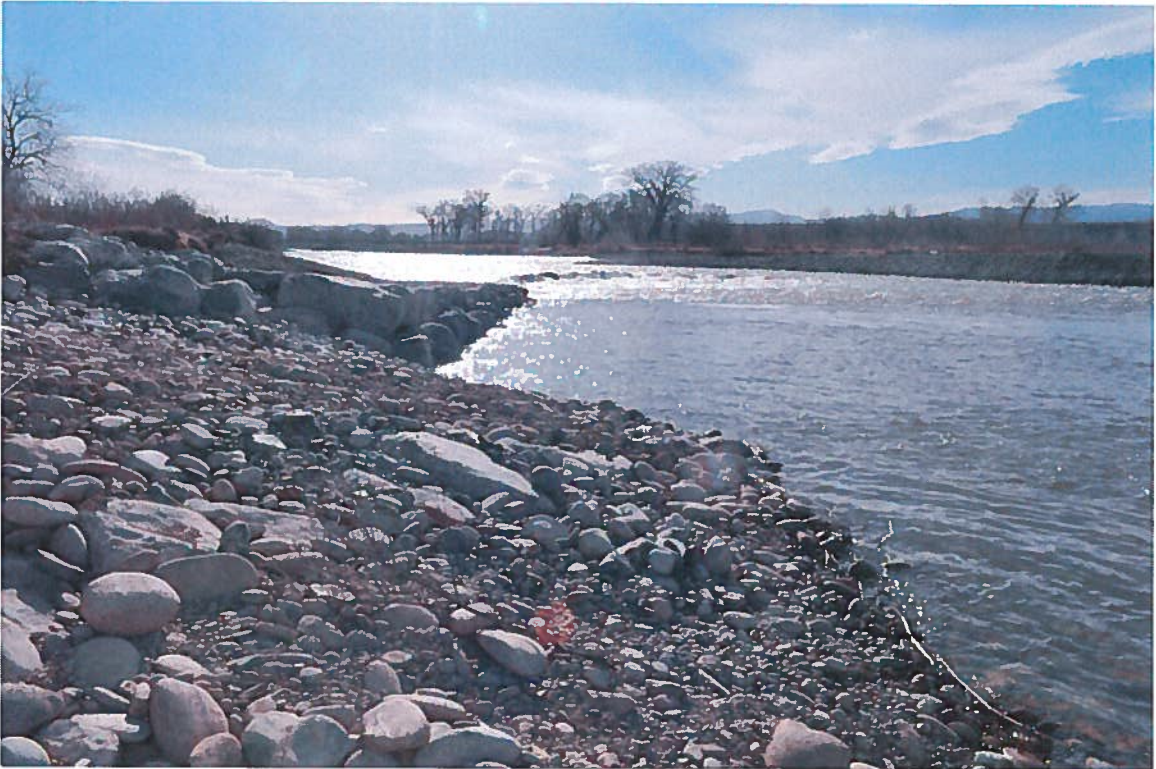
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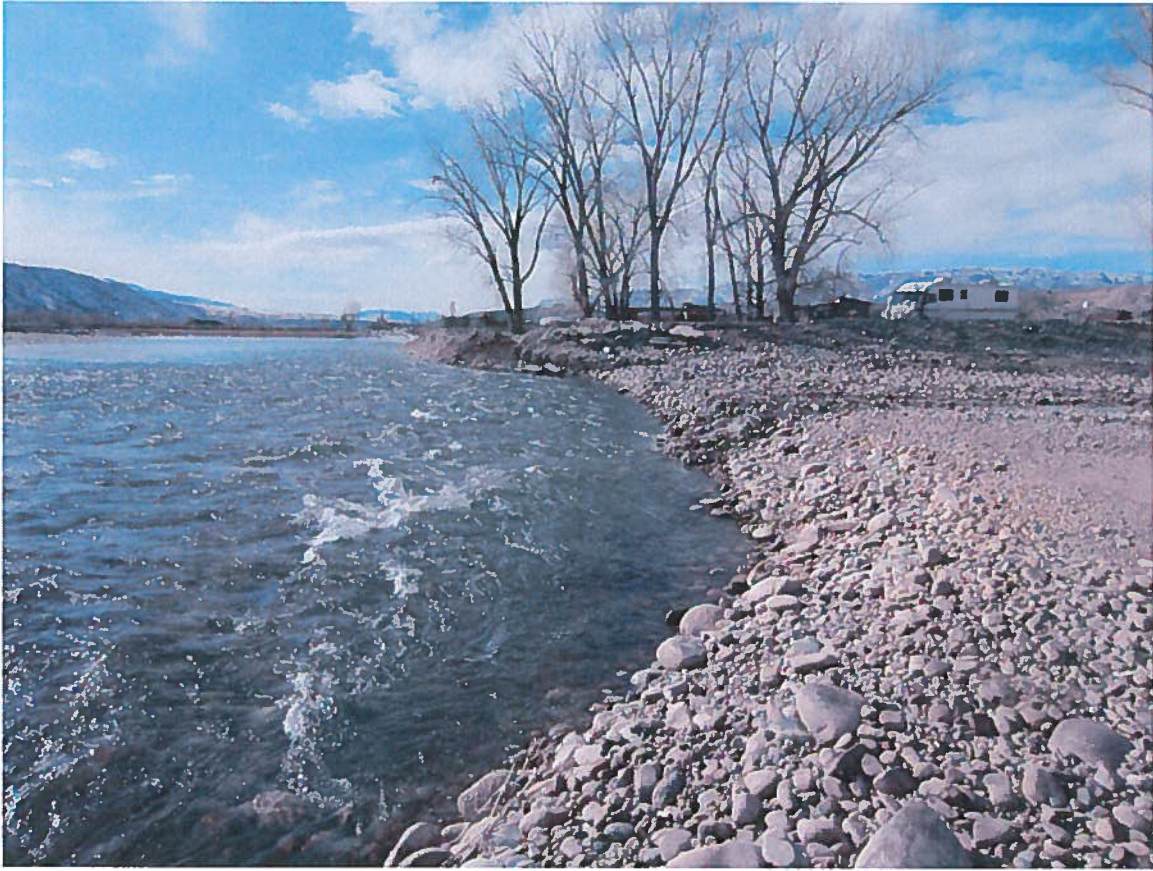
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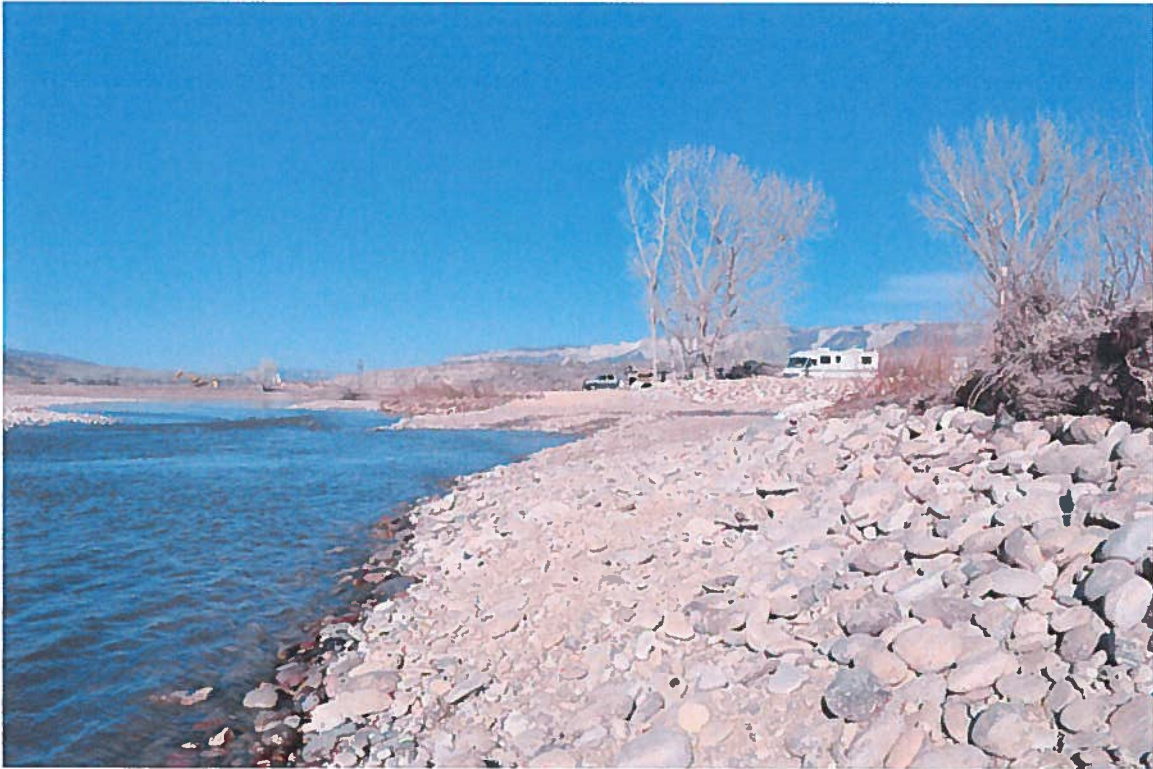
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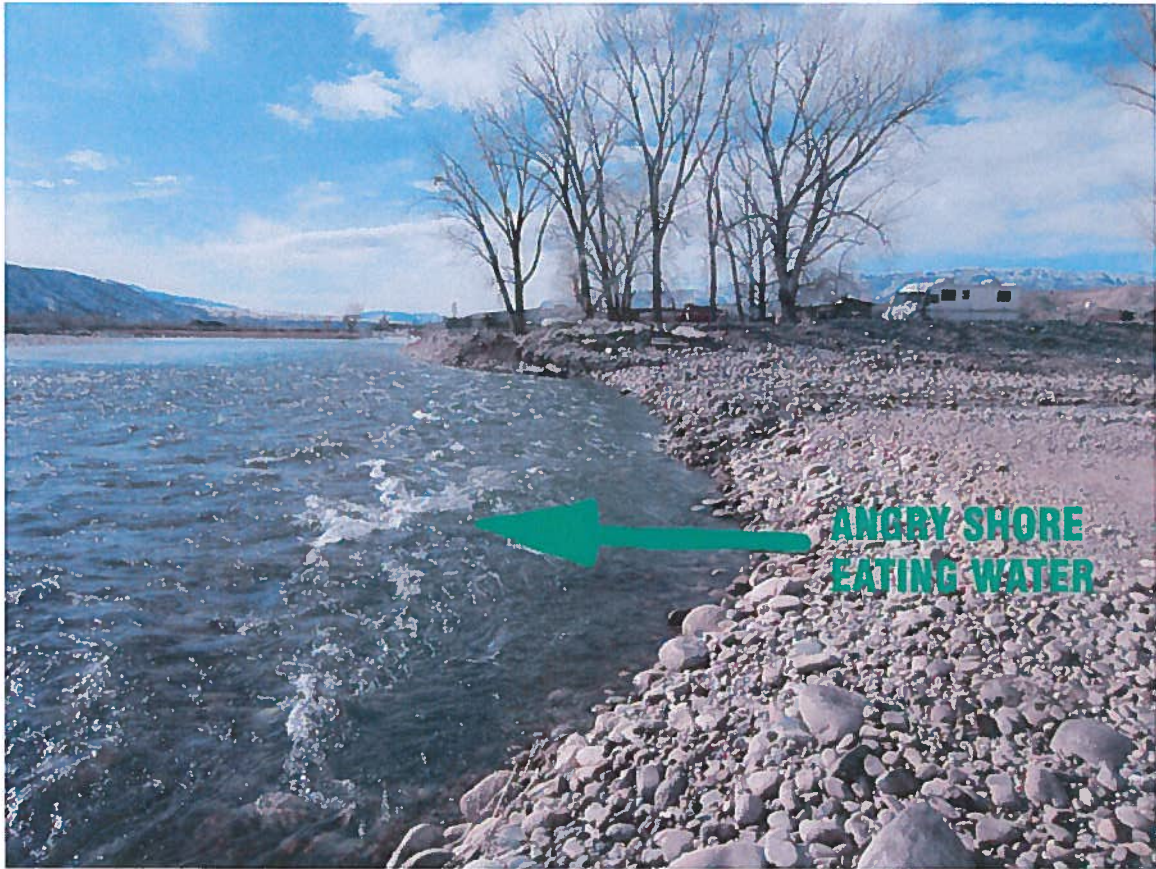
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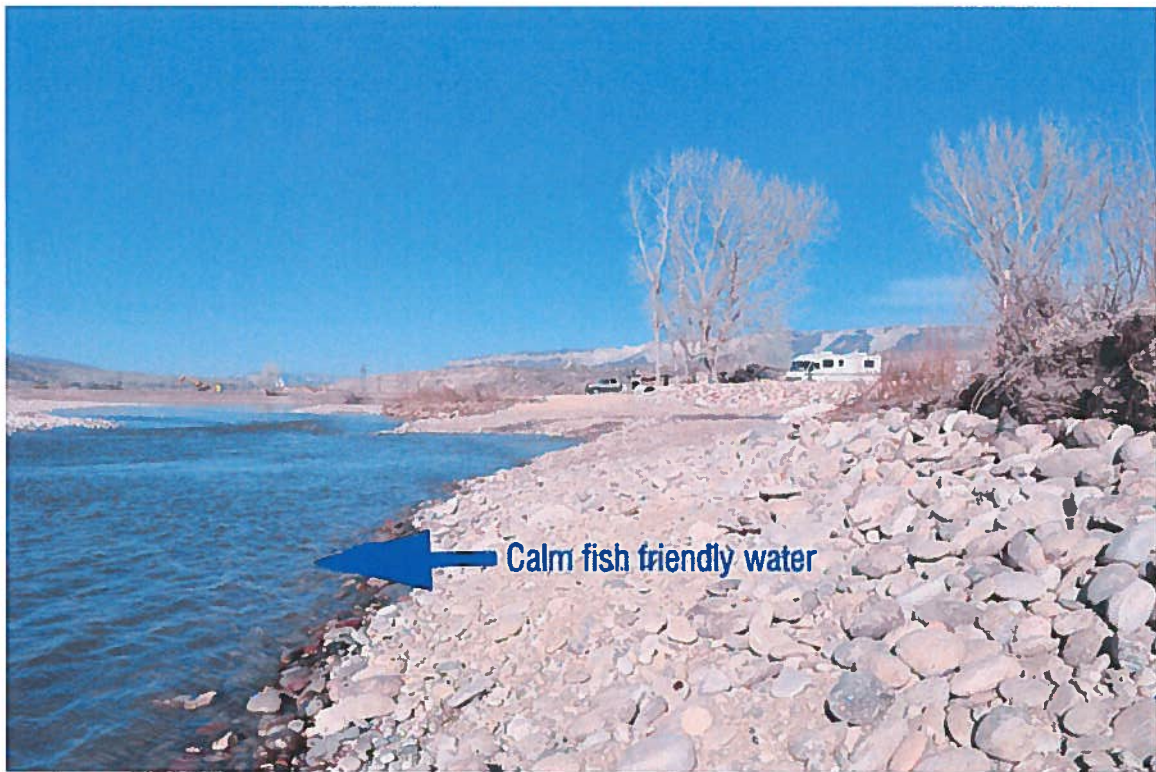
before



after



before



after

Czapla, Dustin

From: Burkey, Jason (B&B Excavating) [jason.burkey@bbexcavating.com]
Sent: Tuesday, June 12, 2012 8:04 AM
To: Czapla, Dustin
Subject: FW: Post Construction Report for Chambers River Restoration project.
Attachments: As built Rifle 2012.pdf; Post construction report.doc; rifle before and after pics[1].doc

Follow Up Flag: Follow up
Flag Status: Completed

Dustin,
See attached – Post Construction Report. Please include as part of our Technical Revision package.
Thanks,
Jason

From: Peter Kearn [mailto:peter.kearn@hotmail.com]
Sent: Monday, June 11, 2012 4:15 PM
To: Mark Gilfillan; Burkey, Jason (B&B Excavating); Pat Oconner
Subject: Post construction Report for Rifle

Mark:

Attached is the post construction report for Rifle including "as built" and pre- and post photos as required by the permit.

If you need anything else, please let me know.

Peter Kearn