



Outlet Works Construction



Outlet Valve Tower



Auxiliary Spillway



Upstream Slope of Dam

Photos show construction and completion of Walsenburg's City Lake Dam Project.

Project Description

The City of Walsenburg's City Lake dam and reservoir provides the primary water supply and storage for the City's water treatment plant located downstream of the dam. Its average annual water delivery is 730 acre-feet. The original dam was subject to a State Engineer's Office (SEO) safety compliance plan since September of 2014, and a formal storage restriction since April 2017 as a result of dam safety deficiencies including seepage, stability, and spillway capacity. The Colorado Dam Safety imposed a 1-foot storage restriction on April 1, 2017, a 2-foot storage restriction on November 15, 2017, and a 3-foot storage restriction on May 1, 2019. The City needed the full storage capacity of City Lake to adequately supply their water treatment plant and to ensure future water supplies.

Elements of the Project included dam embankment reconstruction, new outlet works, new spillway construction, riprap channel lining, and a temporary bypass conduit to route water to the water treatment plant. The Project increased storage by 120 acre-feet by raising the dam embankment three feet. Construction rehabilitation and enlargement was completed in 2019.

| P R O J E C T D A T A | | |
|---|-------------------------------|---------------------------------------|
| <i>Sponsor:</i> City of Walsenburg | <i>County:</i> Huerfano | <i>Water Source:</i> Cucharas River |
| <i>Type of Project:</i> Reservoir Rehabilitation | | <i>Board Approval Date:</i> July 2017 |
| <i>Terms of Loan:</i> 2.0% for 30 years | <i>(Original)</i> \$6,889,210 | <i>(Final)</i> \$6,889,210 |
| <i>Terms of Grant:</i> <i>(Original)</i> \$804,000 <i>(Final)</i> \$804,000 | | |
| <i>Design Engineer:</i> RJH Consultants, Inc. | | |
| <i>Contractor:</i> Kirkland Construction | | |



COLORADO
Division of Water Resources
Department of Natural Resources
Dam Safety

October 8, 2019

Mr. David Harriman
Public Works Director
City of Walsenburg
525 S. Albert Street
Walsenburg, CO 81089
via email: dharriman@cityofwalsenburg.com

When replying, please refer to:
WALSENBURG CITY LAKE DAM, DAMID 160327
Water Division 2, Water District 16
Construction File No. C-2083

SUBJECT: Removal of Storage Restriction & Temporary Approval to Store Water to WSEL 6521.5 feet

Dear Mr. Harriman,

We received a request for temporary approval to store water behind Walsenburg City Lake Dam, by Mike Graber, P.E., of RJH Consultants, your Engineer, in accordance with State Dam Safety Rule 10.4. Mr. Graber's request contains a satisfactory schedule for first filling and monitoring of the reservoir and a schedule for completion of Rule 10 construction completion documents (as-built construction plans, completion report, and a long term monitoring plan). Your Emergency Action Plan and dam breach inundation mapping are considered to be current. Finally, as required by Rule 10.4, Mr. Graber submitted a signed certification letter stating the project has been completed in substantial conformance with the approved plans, specifications, and change orders.

As you know the State Engineer issued a Storage Restriction Order for the referenced dam on April 17, 2017, due to adverse seepage conditions, numerous abandoned and improperly protected outlet conduits through the dam, and marginal embankment slope stability. The City of Walsenburg and RJH Consultants developed a sound plan for removing, replacing, and enlarging the former dam. State Engineer plan approval was issued on October 4, 2018. Kirkland Construction was awarded the construction contract by the City and a pre-construction meeting was held on January 31, 2019. Project financing was obtained with a loan from the Colorado Water Conservation Board and a grant through the Arkansas Basin Round Table. Construction proceeded throughout 2019 under the oversight of RJH Consultants. The project substantial completion inspection was held on October 2, 2019. Based on this inspection, our involvement throughout construction, and upon RJH Consultants' oversight and certification, we believe the project has satisfactorily addressed the previous seepage, stability, and outlet deficiencies. Therefore, the Storage Restriction Order is hereby rescinded. When water is legally available, you may store up to water surface elevation (WSEL) 6521.5 feet (1 foot below the crest of the service spillway weir), in accordance with this Temporary Storage Approval and RJH Consultants' first fill monitoring plan. We anticipate Final Project Acceptance and approval for full storage will be issued upon receipt of satisfactory Rule 10 construction completion documents in approximately 90 days per RJH Consultants' schedule.

The State Engineer, by this temporary approval to store water and by removing the storage restriction, does not assume responsibility for any unsafe condition of the referenced dam. The sole responsibility for the safety of the dam rests with the reservoir owner and operator. Therefore, it is in the owner's best interest to operate and maintain the facility in a manner such that the safety of the dam and the general public are not jeopardized. We are enclosing a copy of Rules 12 and 15 of the Rules and Regulations for your reference and use. These rules pertain to general maintenance items and the owner's responsibilities, respectively.



Mr. David Harriman
Walsenburg City Lake Dam - Temporary Approval for Storage Letter
DAMID 160327, C-2083
October 8, 2019
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We would like to recognize the efforts of the City of Walsenburg, RJH Consultants, Kirkland Construction, Colorado Water Conservation Board, Huerfano County Water Conservation District, and all other parties who worked to successfully complete this ambitious dam construction project.

If you have any questions, please contact Dam Safety Engineer Mark Perry at 719-542-3368 x2118. We look forward to our continued work with you toward successful completion of this project.

Sincerely,

A handwritten signature in blue ink, appearing to read 'W.T. McCormick, III'.

William T. McCormick, III, P.E., P.G.
Chief, Colorado Dam Safety

Enc. Copy of Rules 12 and 15 of the "Rules and Regulations for Dam Safety and Dam Construction"

cc: Bill Tyner, Division Engineer, Water Division 2
Doug Brgoch, WD 16 Water Commissioner
Mark Perry, Dam Safety Engineer
Jeremy Franz, Design Review Engineer
Rachel Pittinger, Colorado Water Conservation Board
Jace Kirkland, Kirkland Construction, jace@kirklandconstruction.us
Mike Graber, RJH Consultants, mgraber@rjh-consultants.com
Mark Ellis, City of Walsenburg, mellis@cityofwalsenburg.com

MEMORANDUM OF INSPECTION

DATE: 11/4/2019
DAM: Walsenburg City Lake Dam (DAMID 160327)
Subject: Final Construction Inspection (punch list verification) and First Fill Inspection

NOTES:

Following are punch list items from the 10/2/2019 Substantial Completion Inspection along with current status (strikethrough for completed items, with comments in red) based on the current inspection:

CO Dam Safety Punch list for SEO Temporary Approval to Store Water:

- ~~Complete reservoir grading to drain~~
- ~~As built survey of reservoir basin / develop stage capacity survey/ survey movement monuments~~ — ALSO need to epoxy brass cap at auxiliary spillway control structure
- ~~Flush and re-camera toe drain pipes~~
- ~~Install MH seepage weirs~~
- RJH will develop a rating table in GPM (weirs are currently calibrated in GPD) **status unknown**
- ~~Repair damaged concrete on outlet intake structure~~

Punch list for SEO Final Acceptance (see RJH punch list for contract purposes):

- ~~Lobato to replace outlet discharge flume~~
- ~~Remove by pass pipeline buried in spillway wing dike and repair wing dike~~
- City install housing, conduits, etc. for gaging / coordinate with DWR — **to be completed by Dec. 2nd**
- Seeding disturbed areas, final grading downstream of dam, repair fencing — **to be completed by beginning of Dec.**
- Submit Hydro Gate gate certification (RJH, with Rule 10 docs) **status unknown**
- Hydro Gate to replace stop nuts on two of the outlet gate stems **status unknown**
- ~~Bollards~~
- ~~Station markers on dam crest~~
- Coler ditch gate needs to be certified by Waterman / adjust wedges as needed **status unknown**
- Warranties, SOP etc submittals to City **status unknown**
- ~~Steel casing on toe drain cleanout located to right of auxiliary spillway~~
- ~~Rodent screen on toe drain outfalls (removable for cleaning)~~
- ~~Complete road base at geo web on boat access ramp~~
- ~~Clean out at Toe drain outfall #1 to allow bucket measurements~~

See attached inspection photos.



Completed reconstruction of outlet discharge channel ramp flume



Minor regrading needed along downstream toe



Excavation at water supply line to sand wash plant needs to be backfilled and reclaimed



Downstream slope near Sta. 30+00



Upstream slope near Sta 25+00



Outlet valve tower and bollards



Toe drain outfall #1 (north end) with rodent screen and excavated outfall to allow measurement



Toe drain Outfall #1 with rodent screen. Note hole in screen



Toe drain Outfall #2 at Coler Ditch pumpback control structure