



Dam Safety Section

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JUN 10 2009

WATER RESOURCES
WESTERN REGION

INTEROFFICE MEMORANDUM

COPY

TO: Dam File 67-xxxx

Reviewed: *[Signature]*

FROM: John Falk, PE

DATE: June 8, 2009

SUBJECT: Grossen Creek Impoundment

On Friday 6/5/09, I accompanied Sonny Hornbaker to verify that the referenced reservoir had been lowered from the previous day's pool level that was estimated to be one-half foot below the top of the embankment dam. The weather was mostly cloudy and dry (~70°), but the ground was damp from earlier rain showers. We introduced ourselves to Mr. Don Ray (sp?) who was operating a portable pump that was drawing water out of the reservoir and discharging into Grossen Creek. A pump was required to lower the reservoir due to the lack of either a low-level outlet pipe or a well-defined emergency spillway. The reservoir is located in Section 11, T16N, R1W, Adams County (Figure 1). It is constructed out-of-channel, and is filled via a diversion ditch from Grossen Creek. For safety purposes, the feeder ditch had been plugged with site soils yesterday; therefore, the means to fill the reservoir had been eliminated which significantly reduced the threat of dam failure by overtopping.

At the time of our arrival (~10 am), the water surface was measured by hand level/ tape measure and found to be 3.8 feet below yesterday's high water mark. Likewise, the line of seepage on the downstream slope(s) was observed to be several feet lower than evidenced from yesterday's photographs. Other measured dimensions included the embankment height (~9.5 feet) and a crest width that varied between 6 and 10-feet. The surface area of the reservoir at yesterday's maximum capacity is 1.3 acres, as measured by GIS survey. The embankment appeared to be constructed with site soils consisting of reddish-brown silty clay with variable amounts of gravel, up to and including 6" diameter sub-rounded cobbles. The downstream slope is estimated to resemble 2.5:1 steepness; the upstream slope is about 3:1. As reported by neighbors, the construction of the pond began last autumn (2008) with a D8-H dozer that pushed material up from within the confines of the reservoir into a perimeter berm (cut and fill method).

Based on our observations and site measurements, the above-ground maximum storage capacity of the existing reservoir at the top of the dam is approximately 6.5 acre-feet, based on the formula: (SA x D_{max}) multiplied by 0.5 reduction factor. Although we could not observe the bottom of the pool, an additional 2 acre-feet of reservoir capacity is estimated

to exist below the surrounding grade due to excavation of material for construction of the embankment. Prior to leaving the site, we took several photographs of the downstream area(s) where water from an overtopping/breach likely would travel. At full pool, the project is rated a Significant-hazard dam due to its location and distance relative to downstream residences and U.S. Highway 95. With the pool lowered to provide four (4) feet of freeboard, the hazard rating is reduced to Low.

During the return trip to the office, we stopped to visit with the owner, Timothy Folke, 11501 Highway 95 (PO Box 100), Payette 83661. We advised the owner that continued pumping of the reservoir could be discontinued conditional to the reservoir not being allowed to refill, and provided that no additional construction is performed on-site without prior approval from IDWR Dam Safety. Further, we stated that a letter would be forthcoming from IDWR listing the options available for obtaining a water right and approval to store water behind this dam. Mr. Folke and his wife both were agreeable to our recommendations, and indicated that they would comply fully. We returned from the field approximately 1:30 pm. The following photographs from our day's visit are included to help illustrate site observations and dimensions.



Photo 1 (6-5-09) - View looking north along the western, centerline axis of the existing embankment dam. The pool level is approximately 4 feet lower than first observed yesterday when it was within just a few inches from overtopping the dam, as indicated by dashed line. At its narrowest dimension, the dam crest is only about 6 feet wide. Construction materials were obtained from the pool area and pushed up to create the perimeter embankment. The dam was built without IDWR dam safety approval; neither was it designed by a licensed professional engineer.



Figure 2 (6-5-09) - View looking westward along the northern side of the dam, taken from near the diversion ditch. The portable pump is discharging water from the reservoir into Grossen Creek.

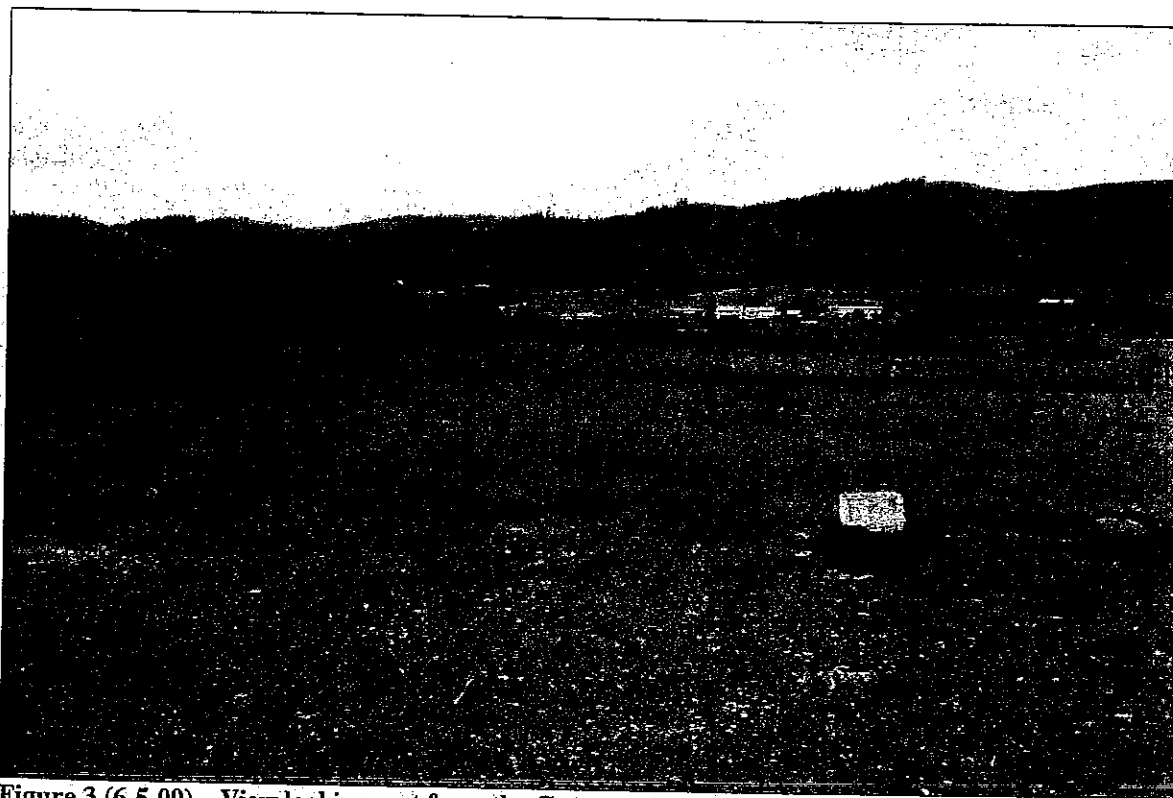


Figure 3 (6-5-09) - View looking east from the Cenex parking lot, upstream toward the existing dam. Along the distant fence-line is a 2-ft high berm that would serve to divert water resulting from a dam failure north toward Grossen Creek, or south into a smaller drainage adjacent to a subdivision.

I totally disagree that a 2ft high berm is adequate to safeguard the Cenex gas station and Highway 95 from a Dam break

Kevin G. Mader



Figure 4 (6-5-09) - View looking upstream in a north-east direction at the existing dam. The photo was taken near an existing barn located adjacent to a residential subdivision.

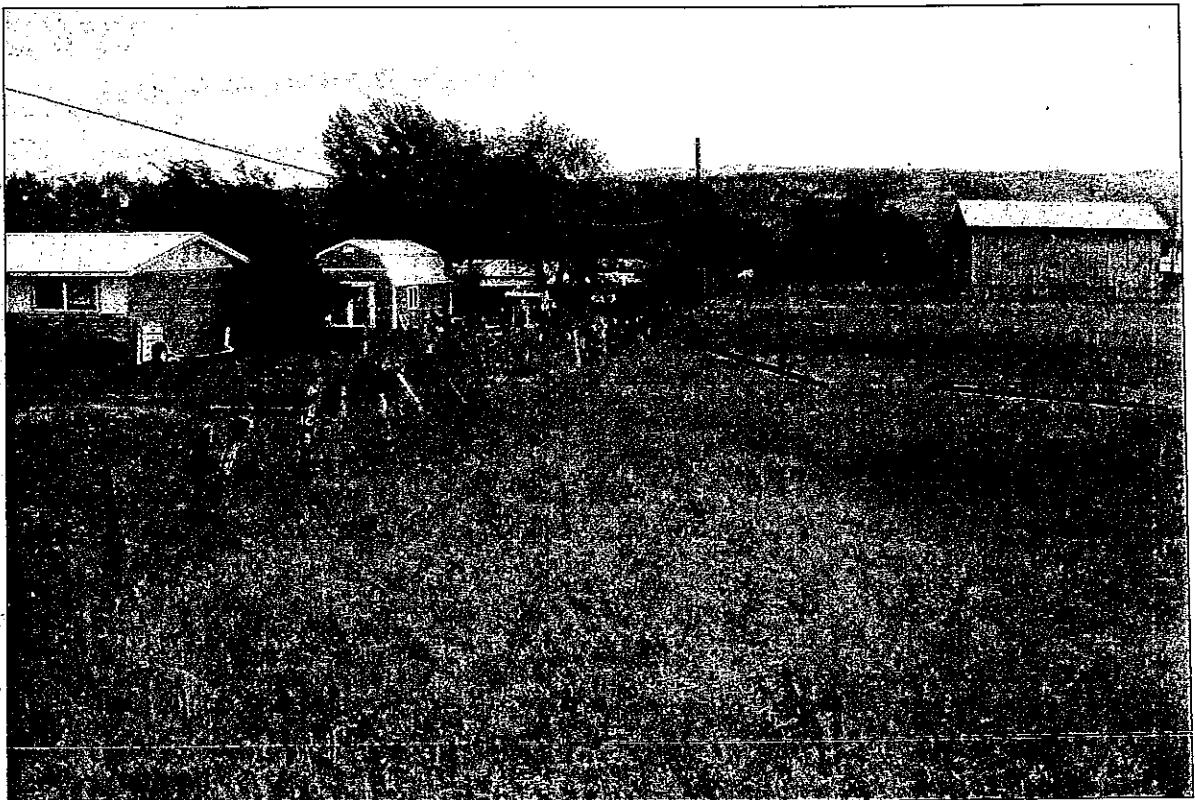


Figure 5 (6-5-09) - View looking downstream at the small drainage that would receive much of the discharge from a dam failure. Note the location of the barn and residences (mentioned above).



State of Idaho

DEPARTMENT OF WATER RESOURCES

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June 10, 2009

C. L. "BUTCH" OTTER
Governor

DAVID R. TUTHILL, JR.
Director

Timothy S. Folke, CPA
PO Box 100
Payette, ID 83661

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JUN 11 2009

RE: Grossen Creek Dam

IDWR File 67 WATER RESOURCES
WESTERN REGION

Dear Mr. Folke:

Thank you for meeting with me and Sonny Hornbaker last Friday, 6/5/09 regarding possible alternatives for mitigation of the potential hazard that the referenced project presents to downstream neighboring properties. As discussed, the existing earthen structure located in Section 11, T16N, R1W, Adams County is unsatisfactory for the impoundment of water, as determined by the Idaho Department of Water Resources (IDWR) Dam Safety program. We appreciate your efforts to promptly lower the pool and to refrain from re-filling the reservoir until such time that both 1.) A valid water right has been secured for the facility, and 2.) The dam has been determined suitable for the resumption of water storage.

Although the dam is not particularly large, it is located upstream and relatively close to several occupied residences and U.S. Highway 95. In addition, the embankment apparently was not built in accordance with dam safety standards described per Idaho Administrative Procedure Act Rule (IDAPA § 37, Title 03, Chapter 6). You indicated your intent to proceed with applying for a valid water right to divert live flow out of Grossen Creek into reservoir storage. After you have received a valid Idaho water right, you may exercise one of the following options in order to gain approval from the dam safety program to store water in the reservoir:

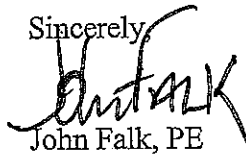
- A. Modify the embankment to a height six (6) feet or less, or limit the reservoir to store no more than 10 acre-feet of water. This may perhaps most easily be accomplished by constructing an emergency spillway to discharge water out of the reservoir via gravity flow. The spillway channel must have dimensions equal to or greater than the diversion channel that delivers water from Grossen Creek into the reservoir. The bottom of the emergency spillway (invert elevation) must be positioned to provide at least two (2) feet of freeboard as measured to the top of the dam, and it must be located in natural ground at an elevation that will restrict reservoir storage to 10 acre-foot capacity, or less. Further, we recommend the dam crest be leveled to a uniform grade, and nowhere be less than 10 feet wide.

- B. If you choose to impound more than 10 acre-feet of water in the reservoir, it will be necessary to reconstruct the dam in strict accordance with existing dam safety rules referenced above (IDAPA). Proper construction must be verified by representatives of IDWR dam safety program, or by a licensed professional engineer of your selection.

We look forward to learning your plans for proper resolution of the deficiencies identified with this dam and reservoir. Please be advised that failure to implement dam safety recommendations may result in enforcement action imposed by IDWR to drain the reservoir and breach the dam for benefit of public safety. Thank you for your cooperation.

If you have any questions, please do not hesitate to let me know.

Sincerely,



John Falk, PE
Dam Safety Manager

cc: John Westra – Western Region
Brandy Horton – District 67 Watermaster
IDWR file