

STATE OF  
COLORADO

Gagnon - DNR, Nikie &lt;nikie.gagnon@state.co.us&gt;

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**Pit 29 (Permit No M-1980-183) GW**

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**Brad Hagen** <brad@civilresources.com>

Thu, Dec 7, 2023 at 3:50 PM

To: "nikie.gagnon@state.co.us" &lt;nikie.gagnon@state.co.us&gt;

Cc: Emily Schallenkamp &lt;eSchallenkamp@brannan1.com&gt;, Fred Marvel &lt;fmarvel@brannan1.com&gt;, Alex Schatz &lt;aschatz@brannan1.com&gt;

Good afternoon Nikie. I was referred the letter from your office dated 10/26/23 regarding the rising groundwater level on the east side of Pit 29. Please review the attached response letter and maybe we can jump on a phone call to discuss if you want to discuss further.

Brad L. Hagen, P.E.

Principal Engineer

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**ltr-Pit29GWeastDec2023.pdf**

140K

December 7, 2023

Colorado Division of Reclamation, Mining & Safety  
Ms. Nikie Gagnon  
1313 Sherman Street, Room 215  
Denver, CO 80203

**RE: Groundwater Mounding East of Pit 29 (Permit M-1980-183), Adams County, Colorado**

Dear Ms. Gagnon:

Brannan Sand & Gravel (BSG) has asked Civil Resources, LLC. to review the historic and current groundwater levels to determine a reasonable action plan to mitigate adverse groundwater impacts for the Pit 29 Site and specifically the east side of the finished storage reservoirs that are currently in-place.

#### **Background**

Civil Resources has reviewed the communication record between DRMS and BSG including the two most recent DRMS letters:

- DRMS (October 6, 2023) Additional Information Required, 3<sup>rd</sup> Qtr 2023 GW
- DRMS (May 6, 2022) Groundwater Level Monitoring, Pit 29

Civil Resources has also reviewed the groundwater level monitoring reports.

#### **Results**

Two issues are identified in the latest DRMS letter dated October 6, 2023. Following are specific responses to the issues:

1. *Groundwater Rise East of Brannan 29:* The slurry wall was approved as part of the DRMS permitting process with the original submittals for the project occurring in 1980. The original slurry wall was not adequately keyed into the bedrock on the east side of the North Pit where a trough in the bedrock elevation exists and therefore groundwater flowed into the North Pit creating a drawdown of the natural groundwater level on the east side of Pit 29. Therefore, the slurry wall repair created an effective cutoff of inflow to the pit as required by Colorado water law and the State Engineer's office. Therefore, the observed rise in groundwater level would be expected to occur and does not create a new condition requiring action by Brannan.

Historically, the DRMS has not required mitigation actions until a rise that statistically exceeds the natural variability of the groundwater fluctuations is observed and is demonstrably caused by the subject project resulting in a claim of damage to neighboring property rights or a significant identifiable risk to public safety. CR does not believe this threshold has been reached for the following reasons:

- This time of year is traditionally associated with seasonally high groundwater levels and with above average precipitation received this year, these levels are expected to be even higher.
- The recently observed groundwater level has not exceeded the maximum level observed pre-project east of Pit 29. A reasonable trigger for further investigation and a mitigation plan would be if the groundwater rises to a level that is several feet higher than historic high and that level threatens existing structures and properties.

- A rise in groundwater does not appear to present a risk of damage to adjacent structures or property. This statement would still be the case even if the groundwater were to significantly exceed the historically observed high groundwater condition.
- 2. *Groundwater Model:* Based on the observed groundwater levels recorded to date being below historic levels and posing no documented risk to existing structures or property, constructing a groundwater model of the area is not necessary at this time.

It is also likely that the activities associated with backfilling the Sandy Acres parcel to the east of Pit 29 could also be the cause of any groundwater rise.

We appreciate your review. Should you have any questions, please contact us.

Sincerely,  
CIVIL RESOURCES, LLC.



Cc:  
Fred Marvel  
Alex Schatz  
Emily Schallenkamp

*Attachments:*