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COLORADO

Eschberger - DNR, Amy &lt;amy.eschberger@state.co.us&gt;

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**Adequacy Review 2 / TR-11 / Boettcher Limestone Quarry / M1977-348**

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**Harkins, Sara** <Sara\_Harkins@golder.com>

Mon, Aug 24, 2020 at 4:19 PM

To: "Eschberger - DNR, Amy" &lt;amy.eschberger@state.co.us&gt;, "Mike Toelle (mike.toelle@lafargeholcim.com)" &lt;mike.toelle@lafargeholcim.com&gt;

Cc: "travis.bennett@lafargeholcim.com" &lt;Travis.Bennett@lafargeholcim.com&gt;, Patrick Lennberg - DNR &lt;patrick.lennberg@state.co.us&gt;, "Cunningham - DNR, Michael" &lt;michaela.cunningham@state.co.us&gt;

**NOTE:** This email chain appears to contain email from outside Golder

Hello Amy,

On behalf of Holcim, please see the attached letter pertaining to TR-11.

We thought it would be helpful to clarify/propose the edits for a few of the adequacy review comments prior to resubmittal of the TR.

Additionally, there were questions in Patrick's comments that do not result in changes to the TR, so this gave us a forum to address those questions.

Finally, this letter acts as an extension request for the decision date.

Please let us know if you have any questions.

Thanks,

Sara

**Sara Harkins, PG(WY)**

Senior Project Geologist/Geochemist



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**From:** Eschberger - DNR, Amy <[amy.eschberger@state.co.us](mailto:amy.eschberger@state.co.us)>  
**Sent:** Tuesday, August 18, 2020 12:52 PM  
**To:** Mike Toelle ([mike.toelle@lafargeholcim.com](mailto:mike.toelle@lafargeholcim.com)) <[mike.toelle@lafargeholcim.com](mailto:mike.toelle@lafargeholcim.com)>  
**Cc:** Harkins, Sara <[Sara\\_Harkins@golder.com](mailto:Sara_Harkins@golder.com)>; [travis.bennett@lafargeholcim.com](mailto:travis.bennett@lafargeholcim.com); Patrick Lennberg - DNR <[patrick.lennberg@state.co.us](mailto:patrick.lennberg@state.co.us)>; Cunningham - DNR, Michael <[michaela.cunningham@state.co.us](mailto:michaela.cunningham@state.co.us)>  
**Subject:** Adequacy Review 2 / TR-11 / Boettcher Limestone Quarry / M1977-348

## EXTERNAL EMAIL

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### 2 attachments



image001.jpg  
13K

GOLDER



20144265-3-L-0-Adequacy\_Review\_1&2\_24AUG20.pdf  
313K

August 24, 2020

Reference No. 20144265-3-L-0

**Amy Eschberger**

Colorado Division of Reclamation Mining and Safety  
Department of Natural Resources  
1313 Sherman Street, Room 215  
Denver, Colorado 80203

**RESPONSE TO ADEQUACY REVIEW #1 AND ADEQUACY REVIEW #2 FOR TECHNICAL REVISION (TR-11)  
OF PERMIT M-1977-348**

Dear Ms. Eschberger:

On behalf of Holcim (US) Inc., Golder Associates Inc. (Golder) is submitting this response to Adequacy Review #1 and Adequacy Review #2 for a Technical Revision #11 (TR-11) to permit M-1977-348 to modify the groundwater monitoring program for the Boettcher Limestone Quarry (Site) located at 3060 West County Road 56, Laporte, Colorado 80535. The response to selected comments is being provided ahead of resubmittal of the TR-11 for Adequacy Review #1 comments that need Division of Reclamation, Mining, and Safety (DRMS) clarification and/or concurrence. In the case of Adequacy Review #2, this letter provides a response to DRMS questions that do not require modifications to the TR. Clarifying statements or edits will be made to TR-11 to address those comments not discussed herein.

Additionally, this letter serves as a request to extend the decision date for TR-11 to September 18, 2020.

**Adequacy Review #1**

**Comment 3:**

*"In Section 3.2 – Evaluation of MW-8, the operator states "evaluation of parameters at MW-8 will be focused on parameters that have previously exceeded the Regulation 41 – Colorado Basic Standards for Groundwater at the existing site wells screened in the same formation – specifically MW-4, MW-6, and MW-7. These parameters include Barium, Iron, Manganese, Total Dissolved Solids (TDS), and Chloride." Please be advised, the evaluation must address all parameters that exceed the Table Value Standards set by Water Quality Control Commission's (WQCC's) Regulation No. 41, including: Barium, Boron, Chloride, Fluoride, Gross Alpha, Iron, Manganese, Nitrate as N, Nitrate + Nitrite as N, Selenium, Sulfate, TDS > 10,000 mg/L, and Uranium. Please revise Section 3.2 accordingly."*

**Response:** Boron, selenium, uranium, fluoride, sulfate, nitrate, nitrate+nitrite, and gross alpha can be added to the evaluation of MW-8 to wells screened at similar depths and lithology (MW-4, MW-6, and MW-7). However, it is noted gross alpha results have been consistently reported at low or negative concentrations with large uncertainty (e.g.,  $-50 \pm 26$  picocuries per liter [pCi/L]) and vary widely within each well and between wells. Therefore, the gross alpha results have been ineffective with regard to assessing groundwater quality and the large variability and uncertainty associated with the results would make any comparison to background well MW-8 inconclusive.

**Comments 4–6:**

*4. Please commit to providing the Division with a construction summary for well MW-8 within 60 days of completion, including GPS coordinates, elevations, well installation date, well material type, well depth, screened interval, filter pack interval, bentonite seal interval, and the interpreted screened unit. This summary should include the well construction and borehole logs. This summary need not be submitted in the form of a revision.*

*5. Please commit to submitting the field investigation summary (discussed in Section 4.0) in the form of a Technical Revision. This revision must include an analysis of the water quality data obtained at MW-8 (once sufficient data exists to evaluate the results), a comparison of this data to water quality observed at other site wells, and a discussion of whether data obtained from MW-8 indicates any of the parameters that exceed Table Value Standards at other site wells can be interpreted as representing natural groundwater conditions and not CKD-impacted groundwater. This revision must also include an explanation for whether or not well MW-9 will be installed, and if so, include an estimated timeline for construction.*

*6. In Section 4.2 – Data Evaluation and Reporting, the operator describes two scenarios in which a Technical Revision to the permit would be issued that requests site reclamation liability be released and discontinuation of the groundwater monitoring program. Please be advised, the Division's approval of TR-11 would not represent an acceptance of these terms. Firstly, a release request must be submitted on the appropriate Request for Full or Partial Release of Permit Area form and not via the Technical Revision process. Secondly, a full release of the site cannot be approved until the operator has demonstrated to the satisfaction of the Division that reclamation has been achieved so that existing and reasonably potential future uses of groundwater are protected, as required by Rule 3.1.7(8). Other applicable reclamation performance standards from Rule 3 will also be evaluated in determining if the site is eligible for release. Lastly, (as mentioned in Item #3 above) the operator must address all parameters that exceed the Table Value Standards set by Water Quality Control Commission's (WQCC's) Regulation No. 41, including at all wells in the CKD disposal areas.*

**Response:** Comments 4–6 refer to the proposed reporting. To address these comments the reporting section will be changed to the following:

## **4.0 REPORTING**

### **4.1 Field Documentation**

Following the field program and installation for MW-8, a technical memorandum summarizing the well installation will be prepared and submitted to the DRMS within 60 days of well installation and development. The memorandum will include discussion of the field activities performed and subsurface

conditions encountered or inferred. The borehole geologic logs, well installation/construction logs, and water level measurements will be presented as tables or attachments. The well installation logs will include coordinates, elevations, well installation date, well material type, well depth, screened interval, filter pack interval, bentonite seal interval, and the interpreted screened unit. The geologic logs will include depths, elevations, descriptions of subsurface materials (soil and rock) encountered, and depths to groundwater. Finally, monitoring well permit applications will be filed with the Colorado Division of Water Resources.

## 4.2 Data Evaluation and Reporting

Monitoring results from MW-8 and MW-9 (if installed) will be presented in the semi-annual monitoring reports.

Once sufficient data exist to be able to evaluate the MW-8 results by the methods described in Section 3, a field investigation summary will be prepared that present this evaluation. The field investigation summary will include an evaluation of the water quality data obtained at MW-8, a comparison of this data to water quality observed at other site wells screened at similar depths and lithology (MW-4, MW-6, and MW-7), and a discussion of whether data obtained from MW-8 indicates if concentrations of any of the parameters evaluated can be interpreted as representing natural groundwater conditions and not CKD-impacted groundwater. This evaluation will be conducted for barium, boron, chloride, fluoride, gross alpha, iron, manganese, nitrate as N, nitrate + nitrite as N, selenium, sulfate, total dissolved solids, and uranium.

If, after concentrations stabilize, a demonstration can be made that the concentrations observed in MW-4, MW-6 and MW-7 are reflective of background conditions (i.e., similar to MW-8), the field investigation summary will be submitted as a technical revision to the permit. In this case, the technical revision will specify that MW-9 will not be necessary and request MW-6 or MW-7 be classified as the point of compliance.

If a demonstration cannot be made that the concentrations observed in MW-4, MW-6 and MW-7 are reflective of background conditions, the field investigation summary will specify a timeline for installation of MW-9 as a point of compliance well. In this case, the field investigation summary will not be submitted as a technical revision because MW-9 will be installed in accordance with this technical revision. If MW-9 is installed and a demonstration can be made that the concentrations observed in MW-9 are below the BSGW or reflective of background (i.e., similar to MW-8), a technical revision to the permit will be issued to evaluate whether existing and reasonably potential future uses of groundwater are protected (on the basis that BSGW or background water quality is not being exceeded) and, if so, request the discontinuation of the groundwater monitoring program.

## Adequacy Review #2

### Comment 4:

*"Why did the Operator select the screen size, 0.01-inch slot? As far as the Division is aware silting-up of the wells onsite is not a problem and larger slot size, 0.02-inch, may assist in the wells stabilizing quicker."*

**Response:** The selection of 0.01-inch slot screen and #10-20 silica sand filter pack are consistent with the other wells screened in the same formation (MW-6 and MW-7). As noted in previous reporting, a well construction log is not available for MW-4. High turbidity is observed when sampling wells MW-6 and MW-7; therefore, an increase in screen slot and filter pack is not recommended due to an increased likelihood of silting-up of the well.

**Comment 8:**

*"Has the Operator used the relative percent difference method to evaluate MW-4, MW-6, and MW-7 showing the comparability of the wells to one another, if so what were the results?"*

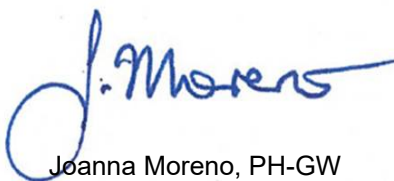
**Response:** No, this comparison has not been conducted.

If you have any questions, please call the undersigned at (303) 980-0540.

**Golder Associates Inc.**



Sara Harkins, PG (WY)  
Senior Project Geochemist



Joanna Moreno, PH-GW  
Practice Leader, Groundwater

SH/JM/af

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