COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

February 14, 2018

Mr. Mike Schaffner
Cripple Creek & Victor Gold Mining Company
P. O. Box 191
Victor, CO 80860

Re: Cripple Creek & Victor Mining, Co., Cresson Project, M-1980-244;
Review Comments for Concentrate Shipping Building Record of Construction Report, (TR-89)

Dear Mr. Schaffner:

The Division of Reclamation, Mining and Safety (Division) has completed the review of the Concentrate Shipping Building Record of Construction Report received February 8, 2018. Pursuant to Rule 7.3.1(5), no chemicals used in the extractive metallurgical process or toxic or acid-forming materials … shall be placed in constructed facilities until the Board or Office accepts the certification of the facility, or phase thereof, that precedes placement.

Overview: An initial review of this report identifies no less than five engineering firms involvement: 1) Samuel Engineering (Samuel), Concentrate Storage Building design; 2) NewFields (NF), stated to be the certifying engineer; 3) Amec Foster Wheeler (AMEC), both design and construction quality assurance (CQA); 4) Yeh & Associates (Yeh), concrete testing services; and 5) FLSmidth (FLS), provider of the 2013 high grade mill specifications. An in-depth review of the certification report reveals the presentation of conflicting information, errors and omissions. It is these concerns the Division requires explanations, clarifications, and/or corrections before accepting the submitted report.

1. Certifying Engineer: NewFields Record of Construction Report, page 3, section 1.2 states the certifying engineer is NewFields, Jay-Janney-Moore. If this is in fact the case, the Division would expect the Record Drawings in Appendix C.1 to be stamped and signed by Mr. Janney-Moore. However, the Record Drawings are not stamped or signed by Mr. Janney-Moore or any other engineer. Accompanying the Record Drawings is Appendix C.2, AMEC's Concentrate Processing Phase 1 As-Built Letter suggesting the Record drawings have been stamped and approved by proxy. The owner's designated certifying engineer must stamp and sign the record drawings pursuant to Rules 6.2.1(2)(b) and 7.3.2(2).

2. Technical Specifications: NewFields Record of Construction Report, page 4, section 1.4 states FLSmidth's original 2013 specifications for the high grade mill were used. Note these specifications pre-date the concentrate building design where the static and dynamic loading on the concrete slab (i.e., cyclic loading and unloading of the 3,000 CY of concentrate [ref. March 9, 2017 TR-89 request letter] and heavy equipment [i.e., frequent back and forth movement of a large front end loader filling up to 20 semi-trucks per day]) is different than the loading in the HGM. The design engineer (Samuel) for the concentrate building issued specifications in their design drawings, specifically for concrete strength. Samuel's specification states 4500 psi concrete is required for exterior concrete (Appendix A, Construction Drawings - Dwg. No. 40-647-202, paragraph 6.5.C, table) differing from FLSmidth's 2013 specifications. Furthermore, the FLS specification for cast-in-place concrete (Appendix B, Technical Specifications – Spec. No. SP-11021-C-300, page 3, paragraph 3.5.2 includes the phrase "… or as specified on the drawings." making Samuel's specifications take precedence. Finally, an errant letter (Appendix J, Minimum Concrete Strength Requirement Letter) from AMEC (not the designated certifying engineer) states "Samuels Engineering, have called-out a concrete compressive strength of 4000 psi.", which I have just pointed out as incorrect for exterior concrete. This letter also summarizes the concrete strength testing failures of five samples which did not meet the 4500 psi strength within 28 days, and three samples that did not meet the 4500 psi strength at 56 days. This conflicting information must be addressed to the Division's satisfaction prior to accepting this certification report.

3. As-Built / Record Drawings: The problems with the drawings in in Appendix C.1 are summarized in the table below. These problems must be corrected prior to the Division accepting the certification report. (*Note, it may be appropriate to include more than one engineering firm in the title/revision block*).

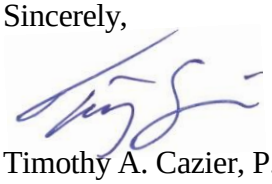
Drawing No	Is Scale Correct? [Rule 6.2.1(2)(e)]	Stamped & Signed by Colo. P.E.? [Rules 6.2.1(2)(b), 7.3.2(2)]	Issued As-Built / Record Dwg? [Rule 7.3.2(2)]	Errant North Arrow? [Rule 6.2.1(2)(e)]	All Text Legible?
20-647-10	No	No	yes	no	yes
20-647-26	No	No	No	Yes	No
20-647-27	No	No	No	Yes	No
20-647-28	No	No	No	N/A	No
20-647-85	No	No	yes	Yes	No
20-647-85-1	No	No	yes	Yes	No
20-647-86	No	No	yes	N/A	No
20-647-87	No	No	yes	N/A	yes
20-647-88	No	No	yes	N/A	No

4. Daily Reports: AMEC daily observation reports (Appendix H) show moisture content outside the 9.5% ±2% optimum moisture content for compaction per NewFields structural fill

specification (ref. 02200 Earthworks Concentrate Shipping June 21, 2017, p. 6 para. B.3). Please address the discrepancy.

If you have any questions or need further information, please contact me at (303)866-3567 x8169.

Sincerely,



Timothy A. Cazier, P.E.
Environmental Protection Specialist

ec: Tony Waldron, DRMS
Wally Erickson, DRMS
Amy Eschberger, DRMS
Elliott Russell, DRMS
DRMS file