J&T Consulting, Inc.

October 22, 2013

Mr. Tyler O'Donnell
Environmental Protection Specialist
State of Colorado
Division of Reclamation, Mining, & Safety
1313 Sherman Street – Room 215
Denver, CO 80203

RE: GP Aggregates, LLC. – West Farm Pit – Technical Revision No. 2 Request
File No. M-2008-078 – Response to Preliminary Adequacy Review

Mr. O'Donnell,

We have received the Division's Technical Revision No. 2 Preliminary Adequacy Review comments relating to GP Aggregates, LLC's (GP) permit number M-2008-078. GP offers the following responses addressing the Division's comments.

1. Will there be any monitoring of the groundwater levels outside of the slurry wall?

Yes, as part of the SEO leak test monitoring wells will be installed outside the slurry wall to monitor groundwater levels during the test and in the future as mining progresses.

2. Please provide a statement clarifying how the operator will notify the Division of Reclamation, Mining and Safety (Division) of the results of the State Engineers leak test.

At the conclusion of the slurry wall passing the SEO liner leak test, GP will notify the Division in writing that the liner meets minimum SEO leakage criteria and provide a copy of the SEO certification letter to the Division.

3. Please provide a statement clarifying when and how the operator will notify the Division of their progress into a new mining phase.

GP will notify the Division in writing of their intent to open a new mining phase a minimum of 30 days prior to opening that phase.

4. No stability cross-sections, section locations, or data runs from the analysis were included in the report. It is difficult to fully understand the geometry of the section being analyzed and the subsurface characteristics being evaluated without this data. Please provide a cross section location map, cross sections, and evaluation data for this analysis.

See the response to Item 4 in the attached memorandum by Cesare, Inc. dated September 23, 2013.

5. One area of concern for analysis is the area between the two pits, both during and after mining operations. Please provide discussion regarding the potential stability issues for mining both sides of this road and utility corridor.

See the response to Item 5 in the attached memorandum by Cesare, Inc. dated September 23, 2013.

6. The trenching system being proposed for the slurry wall installation will use a one-pass trencher method to construct a slurry wall approximately 18 inches thick and a minimum of 3 feet into "unweathered bedrock". Of the seven borings drilled on the site, all but one boring indicated that slightly weathered bedrock was encountered to the total depth of the hole. Please provide the criteria for determining the surface of "unweathered bedrock" for the slurry wall anchor depth.

See the response to Item 6 in the attached memorandum by Cesare, Inc. dated September 23, 2013.

7. The water level used in the analysis is stated as being at an elevation located at the top of the gravel/sand layer" for the analysis. The borehole logs indicate the water level (August 2010) is approximately 7-15 feet below the ground surface, in some cases several feet above the top of the sand/gravel layer. This water level may also not incorporate a seasonally high water level that would be expected during spring conditions, or with adjacent irrigation. Please address the adequacy of the stability analysis to model the seasonally high water level for this site.

See the response to Item 7 in the attached memorandum by Cesare, Inc. dated September 23, 2013.

8. The material properties used during the analysis, shown in Table 3, differ somewhat from the values used during previous stability analyses done in 2009 and with those used by DRMS. Please provide the basis for why these values were modified for this analysis.

See the response to Item 8 in the attached memorandum by Cesare, Inc. dated September 23, 2013.

9. The analysis focuses on conditions during active mining, while the pits are dry. Please provide analysis regarding the post-mining scenario where the pits are flooded, particularly on the area between the two pits.

See the response to Item 9 in the attached memorandum by Cesare, Inc. dated September 23, 2013.

10. Will there be any monitoring of slope stability during operations? What will that entail?

Yes, the following procedure for monitoring of slope stability will be followed:

- A visual inspection of the excavated mining slopes will be done on a weekly basis for the duration of mining. This inspection will consist of walking the existing ground and looking for any signs of stress cracks or other potential signs of slope failure. Some minor sloughing of excavated walls is expected on any mine site. The intent of this inspection will be to locate potential major slope failures that could extend back into a structure.

- A visual inspection will be done after a major precipitation event that has saturated the ground using the same procedures. A major precipitation event would be defined as a storm that produces an intensity level reached once in 50 years on the average.

- If a visual inspection detects signs of a potential slope failure, qualified personnel will be contacted to evaluate and recommend remediation work to stabilize the area.

GP appreciates your consideration of this information in these responses to your comments, and looks forward to your reply.

Please feel free to contact me with any questions or comments.

Sincerely,

Todd Yee
J&T Consulting, Inc.

Cc: File
GP Aggregates, LLC

Attachments:
Memorandum by Cesare, Inc. dated September 23, 2013.

CESARE, INC.
Geotechnical Engineers & Construction Materials Consultants

MEMO

PROJECT NAME: West Farm Pit, DRMS File No. M-2008-078
PROJECT NO.: 11.124
FROM: Bonnie Schimmel, E.I.; Darin R. Duran, P.E. DRD
DATE: September 23, 2013
SUBJECT: Response to DRMS Comments, Preliminary Adequacy Review
West Farm Pit Seepage and Rapid Drawdown/Slope Stability Analyses

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Following is our responses to a letter from the Colorado Division of Reclamation Mining and Safety dated August 16, 2013. We have only provided responses to items related to Cesare's March 21, 2013 Memo.

Item 4: We have provided cross sections, location map and stability runs from our March 21, 2013 analysis. These are printed and attached.

Item 5: An additional cross section was analyzed between the two pits. Rapid drawdown of the reservoir was analyzed with a drawdown rate of 1 foot per day. Pore pressures were computed using transient seepage analysis. Slope stability analyses were performed during drawdown which generated a minimum factor of safety of 1.56 for the thick clay section and 1.47 for the thick gravel section. These cross sections are included.

Item 6: Unweathered bedrock is defined as the depth of penetration of the NWT or HSA casing.

Item 7: We conducted a slope stability sensitivity analysis for groundwater at depths of 0 feet and 7 feet for both the thick clay and thick gravel cross sections and at 15 feet for the clay only. Rapid drawdown of the reservoir was analyzed with a drawdown rate of 1 foot per day. Pore pressures were computed using transient seepage analysis. Slope stability analyses were performed during drawdown which generated a minimum factor of safety versus time plot. The cross sections and results for the gravel section are attached.

Table 1. Groundwater Depth versus Factor of Safety

Groundwater Depth (ft)	Minimum Factor of Safety During Rapid Drawdown	
	Thick Gravel Section	Thick Clay Section
0	1.64	1.49
7	1.66	1.54
15	--	1.57

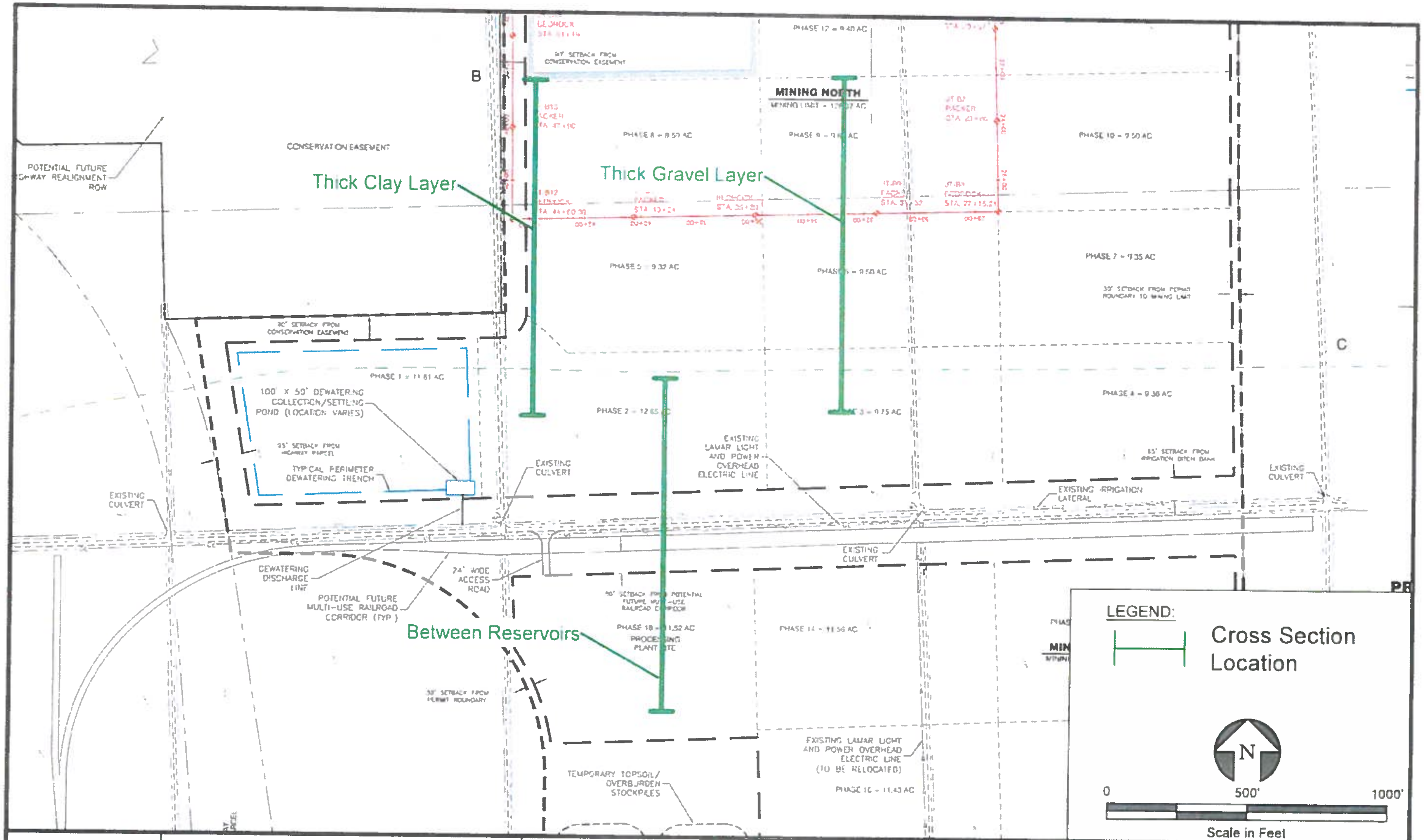
Item 8: The material properties used by J&T in the November 2008 report were presumptive values

based on assumed conditions. The values used for our stability analysis were based on laboratory testing of materials collected during the site specific study for the slurry wall. We conducted a sensitivity analysis to determine the effects of using the values assumed in the 2009 report. The factor of safety comparison is shown in Table 2.

Table 2. Friction Angle versus Factor of Safety

Material Properties	**Minimum Factor of Safety During Rapid Drawdown**	
	Thick Gravel Section	**Thick Clay Section**
2009 Properties	1.47	1.46
Cesare Φ=27	1.74	1.70
Cesare Φ=21	1.48	1.55

Item 9: Covered in Item 7 with a groundwater depth of 0'.



PROJECT NO:	11.124		
PROJECT NAME:	West Farm Pit, DRMS File No. M-2008-078		
DRAWN BY:	YES	CHECKED BY:	XXX
DWG DATE:	09.23.13	REV. DATE:	--

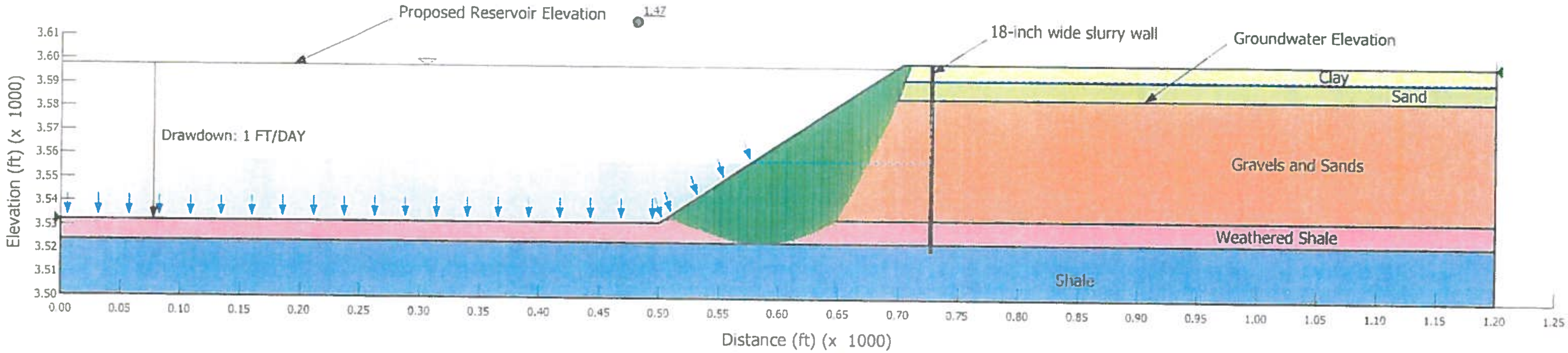
FIGURE 1

Site Plan and Cross Section Locations

CESARE, INC.

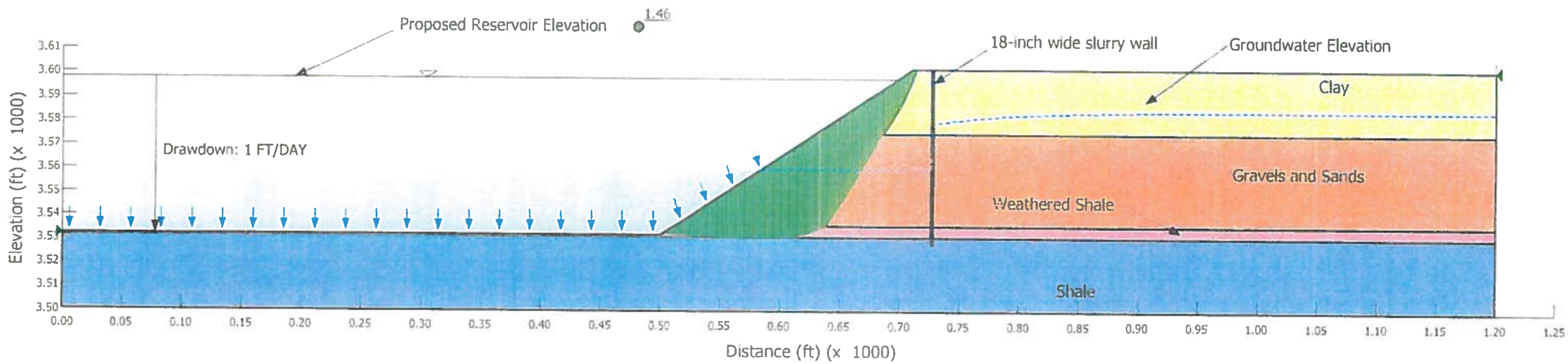
Geotechnical Engineers & Construction Materials Consultants

11.124 GP Ranches



Name: Clay Model: Mohr-Coulomb Unit Weight: 131 pcf Cohesion: 150 psf Phi: 22 ° Phi-B: 0 °
Name: Sand Model: Mohr-Coulomb Unit Weight: 131 pcf Cohesion: 0 psf Phi: 35 ° Phi-B: 0 °
Name: Gravel Model: Mohr-Coulomb Unit Weight: 131 pcf Cohesion: 0 psf Phi: 35 ° Phi-B: 0 °
Name: Shale Model: Mohr-Coulomb Unit Weight: 141 pcf Cohesion: 2000 psf Phi: 20 ° Phi-B: 0 °
Name: Slurry Wall Model: Mohr-Coulomb Unit Weight: 115 pcf Cohesion: 0 psf Phi: 30 ° Phi-B: 0 °
Name: Shale (weathered) Model: Mohr-Coulomb Unit Weight: 141 pcf Cohesion: 100 psf Phi: 18 ° Phi-B: 0 °

11.124 GP Ranches



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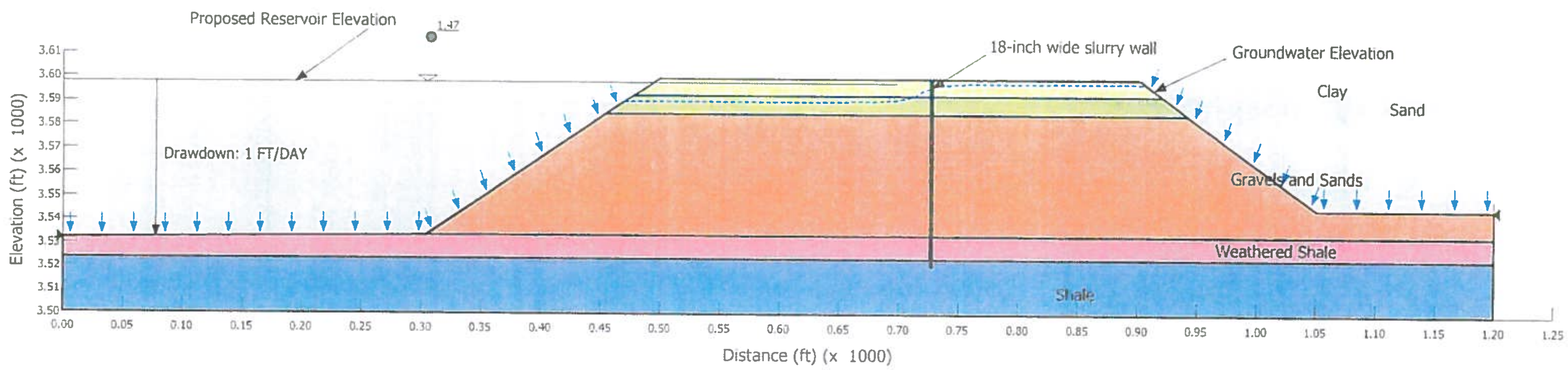
11.124 GP Ranches



Name: Clay	Model: Mohr-Coulomb	Unit Weight: 125 pcf	Cohesion: 50 psf	Phi: 26 °	Phi-B: 0 °
Name: Sand	Model: Mohr-Coulomb	Unit Weight: 125 pcf	Cohesion: 0 psf	Phi: 30 °	Phi-B: 0 °
Name: Gravel	Model: Mohr-Coulomb	Unit Weight: 135 pcf	Cohesion: 0 psf	Phi: 35 °	Phi-B: 0 °
Name: Shale	Model: Mohr-Coulomb	Unit Weight: 130 pcf	Cohesion: 500 psf	Phi: 25 °	Phi-B: 0 °
Name: Slurry Wall	Model: Mohr-Coulomb	Unit Weight: 115 pcf	Cohesion: 0 psf	Phi: 30 °	Phi-B: 0 °
Name: Shale (weathered)	Model: Mohr-Coulomb	Unit Weight: 130 pcf	Cohesion: 50 psf	Phi: 27 °	Phi-B: 0 °