PARSONS E&C

CALCULATION COVER SHEET

CLIENT	TVA
PROJECT	Kingston Plant – Gypsum Disposal - Peninsula Site
SUBJECT	**Settlement of Final Stack**
JOB NUMBER	51032301 WBS NUMBER
CALCULATION NO.:	FPGKIFFESCDX0003OOZ0050004 PAGE 1 OF 18

DESCRIPTION/PURPOSE

Evaluate settlement of the natural subgrade soil below the final stack to facilitate determination of slope of the proposed clay-liner and filter-blanket system at the bottom of the stack.

METHOD OF ANALYSIS:

Conventional, based on Terzaghi's theory of consolidation of clays (Ref. 5).

CODES AND STANDARDS: None Applicable.

INFORMATION SOURCES / REFERENCES

1. Sketch SK TA00323 04 R 0 and untitled sketches showing plan and sections through the proposed final stack (See Figures 1 through 6).
2. Project Planning Document, Phase 1B Study for the peninsula site, prepared by WorleyParsons.
3. Report of Geotechnical Exploration by Mactec, dated October 10, 2005 (including report for CPT testing by Gregg In Situ, Inc. dated May 20, 2005).
4. TVA'a Hydrogeologic Evaluation report WR2005-1-36-133, prepared by Hank Julian and J. Mark Boggs, dated October 2005.
5. Soil Mechanics in Engineering Practice by Terzaghi & Peck, 1968 edition.
6. NAVFAC Design Manual DM-7, May 1982.

ASSUMPTIONS

1. The final stack is as shown in Ref. 1 sketches.
2. Post-construction GWL in the natural soil below the crest area of the stack is at Elev. 750'.
3. Average total unit weight of materials (wet-placed gypsum below Elev. 900' and ash) constituting the stack above the clay liner is 113.4 pcf and that of the clay in the liner is 130.4 pcf; i.e., the same as those assumed in the slope stability evaluation by G. McNulty.
4. The average total unit weights of dry-placed gypsum (above Elev. 900') and subgrade soil are 100 pcf and 117.5 pcf (above and below GWL), respectively.
5. The stack material is cohesionless and its effective friction angle is 36^0.

RESULTS & CONCLUSION: See Page 12.

REV	DATE	DESCRIPTION	PAGES REVISED	PAGES ADDED	PAGES DELETED	BY/DATE	REV/DATE	LDE/DATE
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0	12-08-05	ORIGINAL ISSUE	NA	NA	NA	Y.S. Shah 12-08-05	F. Wood 12-08-05	W. Lytle 12-08-05

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