



CLIENT NAME: TVA
PROJECT NAME: Kingston - Gypsum Disposal - Peninsula Site

JOB NO.: 51032301

STANDARD
CALCULATION
SHEET

SUBJECT: Settlement of Final stack

CALC NO.: **FPKIFFESCD**
X00030020050004

REVISION	0	1	2	3
ORIGINATOR:	Y. Shah			
REVIEWER:	F. Wood			
DATE:	12-08-05			

Page 10
Of 18

Refer to Fig. 1:

$$\begin{aligned} \text{Surface Area (shaded) @ Elev. 940'} \\ = 399,300 \text{ ft}^2 \quad \text{--- (a)} \end{aligned}$$

$$\begin{aligned} \text{Surface Area @ crest (Elev. 990')} \\ = 22,000 \text{ ft}^2 \quad \text{--- (b)} \end{aligned}$$

$$\begin{aligned} \text{Perimeter of area (shaded) @ Elev. 940'} \\ = 3,500 \text{ ft.} \quad \text{--- (c)} \end{aligned}$$

$$\begin{aligned} \therefore \text{Volume of Gypsum above Elev. 940'} \\ = \frac{(a+b)(990'-940')}{2} \\ = 210,650 \times 50 \\ = 10,532,500 \text{ cft} \end{aligned}$$

$$\begin{aligned} \& \text{ Wt. of Gypsum above Elev. 940' (all dry stacked, } \gamma_t = 100 \text{ pcf assumed)} \\ = 10,532,500 \text{ cft} \times 0.100 \text{ kcf} \\ = 1,053,250 \text{ kips} \end{aligned}$$

$$\begin{aligned} \& \text{ Wt. of stack below Elev. 940' (incl. filter blanket & liner)} \\ = \left\{ \begin{array}{l} (399,300)(940'-900') 100 \text{ pcf} = \text{ kips} \\ (\quad \quad) (900'-763') 113.4 \text{ " } = \text{ " } \\ (\quad \quad) (763'-760') 130.4 \text{ " } = \text{ " } \end{array} \right. \\ = 7,952,060 \text{ kips} \end{aligned}$$