

**STANDARD  
CALCULATION  
SHEET**

SUBJECT: Settlement of Final stack

CALC NO.: FPGKIFFESCD  
X00030020050044

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

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2. EVALUATION OF SETTLEMENT  $S_{max}$

A review of the exploratory borings and CPT probes along Sect. AA (See Fig's 1 and 3), representing a worse typical subsurface condition, shows that subgrade soil below the stack is primarily silty clay. At Point A below the crest the subsurface condition for the settlement evaluation can be conservatively simplified (see Fig. 3) as follows:

- Natural - Elev. 720' - --- Silty clay to clayey silt, ave. SPT N = 10
- Below Elev. 720' --- v. hard Residuum or Weathered Dolomite bedrock
- Natural GS @ Elev.  $\leq 760'$  - (6' below Subbase Surface)
- GWL @ Elev.  $\leq 750'$  - (Seasonal High @ Elev. 749')

Since the compressible subsoil @ Point A & along south side of Sect. AA (Fig's 1 & 3) is silty clay, Terzaghi's theory of consolidation (Ref 5) is used for the settlement evaluation. Thus,

$$S = \sum \frac{H_i}{1+e_{oi}} \left( C_{ci} \log \frac{P_{ci}}{P_{oi}} + C_{ei} \log \frac{\bar{P}_o + \Delta \sigma_c}{P_{ci}} \right)$$