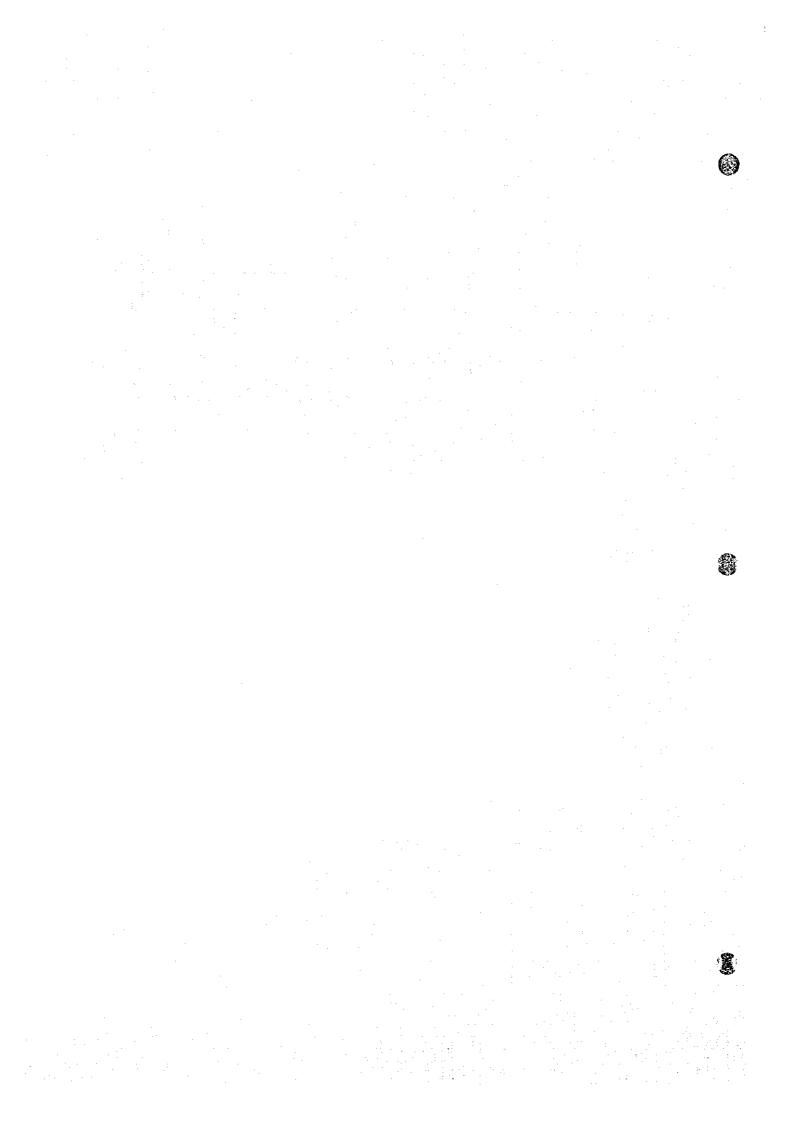
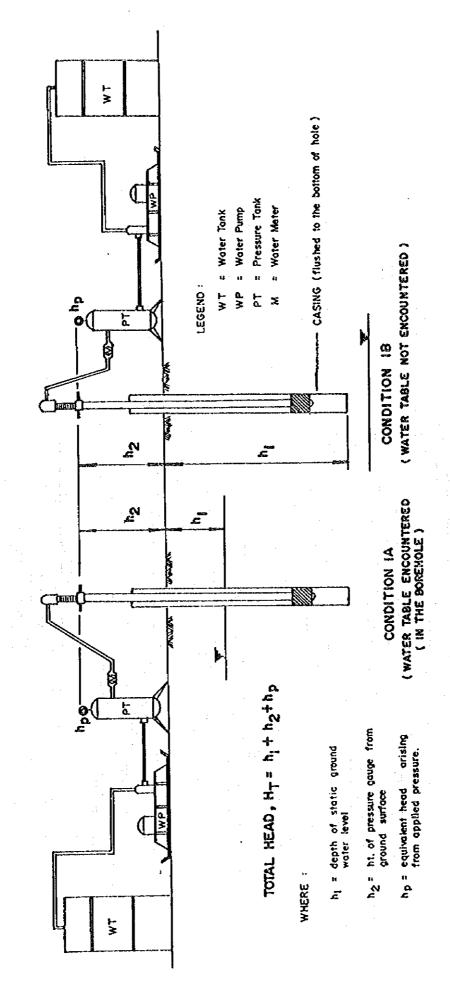
PART III

FIELD PERMEABILITY TEST RESULTS

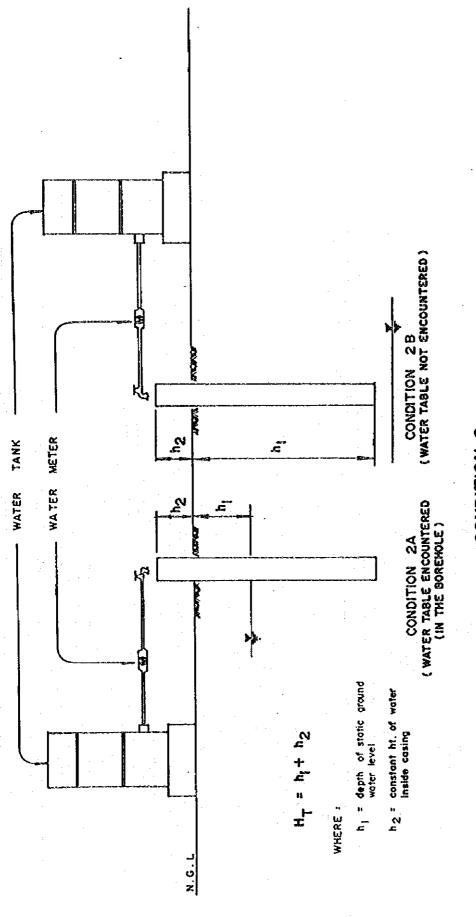




CONDITION 1

SCHEMATIC DIAGRAM OF PACKER TEST FOR FIELD PERMEABILITY

Figure C.1

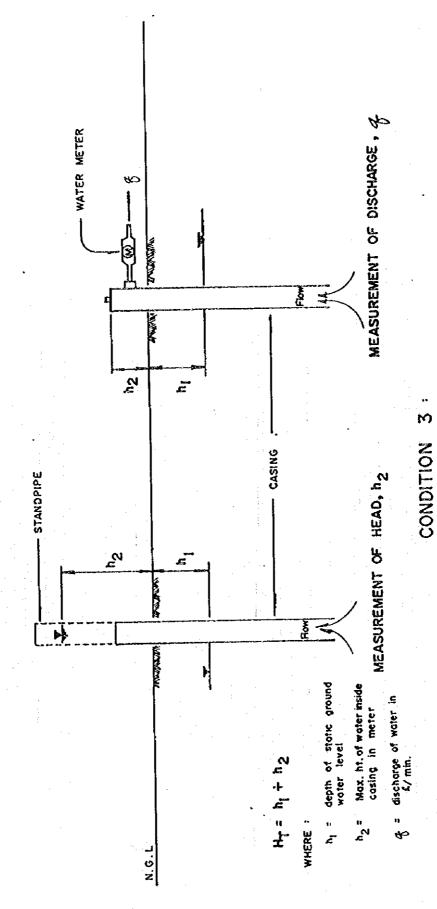


CONDITION 2

OPEN-END TEST FOR FIELD PERMEABILITY

Figure C.2

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SCHEMATIC DIAGRAM FOR FIELD PERMEABILITY TEST (ARTESIAN CONDITION)

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Figure C.3

TABLE C.1 - SUMMARY OF PERMEABILITY TEST RESULTS

ILITY TEST RESU						
BORING NO. S0 m depth 10 0 m depth 50 m depth				ST RESULTS, k in cm/sec.	LABORATORY TEST	RESULTS, k in cm/sec
BH-1 9.2 x 10 ⁴ 6.5 x 10 ⁴ 1.2 x 10 ³ BH-2 8.1 x 10 ⁴ 7.7 x 10 ⁴ 8.4 x 10 ⁴ BH-3 9.3 x 10 ⁴ 5.6 x 10 ⁴ 1.1 x 10 ⁴ BH-1 2.0 x 10 ² 2.6 x 10 ² 9.2 x 10 ⁴ BH-2 3.9 x 10 ² 4.1 x 10 ³ 5.1 x 10 ³ BH-2 2.3 x 10 ² 2.7 x 10 ² 2.8 x 10 ³ BH-2 1.5 x 10 ² 1.9 x 10 ² 3.2 x 10 ⁴ BH-2 1.2 x 10 ² 1.5 x 10 ⁴ 3.1 x 10 ⁴ BH-3 1.6 x 10 ² 1.5 x 10 ² 3.1 x 10 ⁴ BH-2 1.5 x 10 ² 9.9 x 10 ³ 3.4 x 10 ⁴ BH-3 1.5 x 10 ² 9.9 x 10 ³ 3.5 x 10 ⁴ BH-1 2.6 x 10 ² 3.9 x 10 ² 4.5 x 10 ⁴ BH-2 1.5 x 10 ² 3.9 x 10 ⁴ 4.5 x 10 ⁴ BH-2 1.5 x 10 ² 5.8 x 10 ² 3.9 x 10 ⁴ BH-3 1.5 x 10 ² 5.8 x 10 ² 5.8 x 10 ⁴ BH-1 2.5 x 10 ² 5.8 x 10 ² 5.8 x 10 ⁴ BH-2 1.5 x 10 ² 5.8 x 10 ² 5.8 x 10 ⁴ BH-2 1.5 x 10 ² 5.8 x 10 ² 5.8 x 10 ⁴ BH-2 1.5 x 10 ² 5.8 x 10 ² 5.8 x 10 ⁴ BH-2 1.5 x 10 ² 5.8 x 10 ² 5.8 x 10 ⁴ BH-2 1.5 x 10 ² 5.8 x 10 ² 5.8 x 10 ⁴ BH-2 1.5 x 10 ² 5.8 x 10 ² 5.8 x 10 ⁴ BH-2 1.5 x 10 ² 5.8 x 10 ² 5.8 x 10 ⁴ 5.1 x 10 ⁴	SITES	BORING NO.	5.0 m depth	10.0 m depth	5.0 m depth	10.0 m depth
BH-2 B.1 × 10 ⁴ 2.7 × 10 ⁴ 1.3 × 10 ³ verage B.9 × 10 ⁴ 7.7 × 10 ⁴ 8.4 × 10 ⁴ N BH-1 2.0 × 10 ² 2.6 × 10 ² 9.2 × 10 ⁴ verage 1.5 × 10 ² 2.7 × 10 ² 2.8 × 10 ⁴ verage 1.5 × 10 ² 2.7 × 10 ² 2.9 × 10 ⁴ BH-2 1.2 × 10 ² 2.7 × 10 ² 2.9 × 10 ⁴ verage 1.4 × 10 ² 6.5 × 10 ⁴ 3.1 × 10 ⁴ BH-3 1.6 × 10 ² 1.7 × 10 ² 3.0 × 10 ⁴ BH-3 1.6 × 10 ² 1.5 × 10 ² 3.0 × 10 ⁴ Nerage 1.5 × 10 ² 2.2 × 10 ² 3.4 × 10 ⁴ BH-1 1.5 × 10 ² 3.9 × 10 ² 3.5 × 10 ⁴ Nerage 1.5 × 10 ² 3.9 × 10 ² 2.5 × 10 ⁴ BH-2 1.5 × 10 ² 3.9 × 10 ² 3.5 × 10 ⁴ Nerage 1.5 × 10 ² 3.9 × 10 ² 2.5 × 10 ⁴ BH-2 1.4 × 10 ² 5.8 × 10 ² 2.9 × 10 ⁴ BH-3 1.2 × 10 ² 5.8 × 10 ²	1.WT	BH-1	9.2 × 10 ⁻⁴	6.5 × 10⁴	1.2 × 10 ⁻³	2.8 × 10 ⁴
BH-3 9.3 x 10 ⁻⁴ 7.7 x 10 ⁻⁴ 8.4 x 10 ⁻⁴ Norage 8.9 x 10 ⁻⁴ 5.6 x 10 ⁻⁴ 1.1 x 10 ⁻³ BH-1 2.0 x 10 ⁻² 2.6 x 10 ⁻² 9.2 x 10 ⁻³ Norage 1.5 x 10 ⁻² 2.7 x 10 ⁻² 2.8 x 10 ⁻³ Norage 1.5 x 10 ⁻³ 2.7 x 10 ⁻² 3.2 x 10 ⁻³ BH-2 1.2 x 10 ⁻³ 1.7 x 10 ⁻² 3.0 x 10 ⁻³ BH-3 1.6 x 10 ⁻³ 1.7 x 10 ⁻² 3.0 x 10 ⁻³ BH-3 1.6 x 10 ⁻³ 1.7 x 10 ⁻² 3.0 x 10 ⁻³ BH-3 1.6 x 10 ⁻³ 3.9 x 10 ⁻³ 3.4 x 10 ⁻⁴ Norage 1.5 x 10 ⁻³ 3.9 x 10 ⁻³ 3.4 x 10 ⁻⁴ BH-1 2.6 x 10 ⁻³ 3.9 x 10 ⁻³ 3.6 x 10 ⁻⁴ Norage 1.5 x 10 ⁻³ 3.9 x 10 ⁻³ 3.6 x 10 ⁻⁴ BH-2 1.5 x 10 ⁻³ 3.9 x 10 ⁻³ 3.6 x 10 ⁻⁴ BH-3 1.6 x 10 ⁻³ 3.9 x 10 ⁻³ 3.8 x 10 ⁻⁴ BH-3 1.2 x 10 ⁻⁴ 5.1 x 10 ⁻⁴ 5.1 x 10 ⁻⁴ Norage 1.7 x 10 ⁻⁴	Sabo Dam	BH-2	8.1 × 10 ⁴	2.7 × 10 ⁻⁴	1.3 × 10 ⁻³	2.3 × 10 ³
PRIGE 8.9 x 10 ⁴ 5.6 x 10 ⁴ 1.1 x 10 ³ BH-1 2.0 x 10 ² 2.6 x 10 ² 9.2 x 10 ⁴ BH-2 3.9 x 10 ² 2.7 x 10 ² 2.8 x 10 ³ BH-1 1.3 x 10 ³ 2.7 x 10 ² 2.9 x 10 ⁴ BH-2 1.2 x 10 ² 1.5 x 10 ⁴ 3.1 x 10 ⁴ BH-3 1.6 x 10 ² 1.7 x 10 ² 3.0 x 10 ⁴ BH-3 1.6 x 10 ² 9.9 x 10 ³ 3.4 x 10 ⁴ BH-3 1.5 x 10 ² 3.9 x 10 ³ 3.4 x 10 ⁴ BH-3 1.5 x 10 ² 3.9 x 10 ³ 3.5 x 10 ⁴ BH-3 1.5 x 10 ² 3.9 x 10 ³ 3.5 x 10 ⁴ BH-3 1.5 x 10 ² 3.9 x 10 ³ 3.5 x 10 ⁴ BH-3 1.2 x 10 ² 3.9 x 10 ³ 3.5 x 10 ⁴ BH-3 1.2 x 10 ² 3.9 x 10 ³ 3.5 x 10 ⁴ BH-3 1.2 x 10 ² 3.9 x 10 ³ 3.5 x 10 ⁴ BH-3 1.2 x 10 ² 3.9 x 10 ³ 5.8 x 10 ³ BH-3 1.5 x 10 ² 5.8 x 10 ³ 5.8 x 10 ³ <		BH-3	9.3 × 10 ⁴	7.7 × 10 ⁻⁴	8.4 × 10 ⁻⁴	1.8 × 10 ⁻³
BH-1 20×10² 26×10² 9.2×10² BH-2 3.9×10² 4.1×10³ 5.1×10³ BH-3 2.3×10² 2.7×10² 2.9×10³ BH-1 1.3×10° 2.7×10² 2.9×10³ BH-2 1.2×10² 1.5×10° 3.1×10⁴ BH-3 1.6×10² 1.7×10² 3.0×10⁴ BH-3 1.6×10² 2.2×10² 3.4×10⁴ BH-3 1.5×10² 3.9×10² 4.5×10⁴ BH-3 1.5×10² 3.9×10² 4.5×10⁴ BH-3 1.5×10² 3.9×10² 3.6×10⁴ BH-3 1.5×10² 3.9×10² 4.5×10⁴ BH-3 1.5×10² 3.9×10² 3.9×10² BH-3 1.2×10² 3.9×10² 3.9×10² BH-3 1.2×10² 5.8×10³ 5.9×10² BH-3 1.2×10² 5.8×10³ 5.1×10² BH-3 1.2×10² 5.8×10³ 5.1×10²	Ave	rage	8.9 x 10 ⁻⁴	5.6 × 10 ⁻⁴	1.1 × 10 ⁻³	1.5 x 10 ⁻³
BH-2 3.9 x 10³ 4.1 x 10³ 5.1 x 10³ srage 1.5 x 10² 2.7 x 10² 2.9 x 10³ BH-1 1.3 x 10° 2.7 x 10² 2.9 x 10³ BH-2 1.2 x 10° 2.7 x 10² 3.1 x 10³ BH-3 1.6 x 10° 6.5 x 10° 3.1 x 10³ BH-3 1.6 x 10° 5.2 x 10° 3.4 x 10³ BH-3 1.5 x 10° 3.9 x 10° 4.7 x 10³ BH-3 1.5 x 10° 3.9 x 10° 4.5 x 10° BH-3 1.6 x 10° 3.9 x 10° 4.5 x 10° BH-3 1.5 x 10° 4.5 x 10° 4.5 x 10° BH-3 1.5 x 10° 4.5 x 10° 4.5 x 10° BH-3 1.5 x 10° 4.5 x 10° 4.5 x 10° BH-3 1.2 x 10° 4.5 x 10° 4.5 x 10° BH-3 1.2 x 10° 5.8 x 10° 5.9 x 10° BH-3 1.2 x 10° 5.8 x 10° 5.1 x 10° BH-3 1.2 x 10° 5.8 x 10° 5.1 x 10° BH-3 1.2 x 10° 5.8 x 10°	Sabo Dam	BH-1	2.0×10^{-2}	2.6 × 10 ⁻²	9.2 × 10 ⁻⁴	2.0 × 10 ⁻³
EH-3 2.3 x 10² 2.7 x 10² 2.8 x 10³ Stage 1.6 x 10² 2.7 x 10² 2.9 x 10³ BH-1 1.3 x 10° 2.7 x 10² 3.2 x 10³ BH-2 1.2 x 10² 3.0 x 10² 3.0 x 10³ sage 1.4 x 10² 6.5 x 10² 3.0 x 10³ BH-2 1.5 x 10² 9.9 x 10³ 3.4 x 10³ BH-3 1.5 x 10² 9.9 x 10³ 4.5 x 10² BH-3 1.5 x 10² 3.9 x 10³ 4.5 x 10² BH-3 1.5 x 10² 3.9 x 10³ 4.5 x 10² BH-3 1.5 x 10² 3.9 x 10³ 4.5 x 10² BH-3 1.5 x 10² 3.9 x 10³ 3.6 x 10² BH-1 2.6 x 10² 3.9 x 10³ 3.5 x 10² BH-2 1.2 x 10² 5.8 x 10³ 2.9 x 10² BH-3 1.2 x 10² 5.8 x 10³ 2.9 x 10²	#	BH-2	3.9 × 10 ³	4.1 × 10 ⁻³	5.1 x 10 ⁻³	2.2×10^3
Frage 1.6 x 10² 1.9 x 10² 2.9 x 10³ BH-1 1.3 x 10° 2.7 x 10² 3.2 x 10³ BH-2 1.2 x 10² 3.0 x 10² 3.0 x 10² FBH-3 1.6 x 10² 6.5 x 10² 3.1 x 10² FBH-1 6.8 x 10³ 2.2 x 10² 4.7 x 10² FBH-2 1.5 x 10² 9.9 x 10³ 4.5 x 10² FBH-3 1.6 x 10² 3.9 x 10³ 4.5 x 10² FRH-3 1.5 x 10² 3.9 x 10³ 3.6 x 10² FRH-3 1.5 x 10² 3.9 x 10³ 4.2 x 10² FRH-3 1.2 x 10² 3.9 x 10³ 3.6 x 10² FRH-3 1.2 x 10² 3.9 x 10³ 3.6 x 10² FRH-3 1.2 x 10² 9.8 x 10³ 2.9 x 10² FRH-3 1.2 x 10² 5.8 x 10³ 5.1 x 10²		BH-3	2.3 × 10 ⁻²	2.7×10^{2}	2.8 x 10 ⁻³	8.5 × 10⁴
BH-1 1.3 x 10^6 2.7 x 10^2 3.2 x 10^4 BH-2 1.2 x 10^2 1.5 x 10^7 3.1 x 10^4 erage 1.4 x 10^2 6.5 x 10^2 3.0 x 10^4 BH-1 6.8 x 10^5 2.2 x 10^2 3.1 x 10^4 BH-2 1.5 x 10^2 9.9 x 10^3 3.4 x 10^4 erage 1.5 x 10^2 3.9 x 10^5 4.5 x 10^4 BH-3 1.6 x 10^2 3.9 x 10^3 3.6 x 10^4 BH-1 2.6 x 10^2 3.9 x 10^3 3.5 x 10^4 BH-2 1.2 x 10^2 5.8 x 10^3 8.9 x 10^4 BH-3 1.2 x 10^2 5.8 x 10^3 8.9 x 10^4 erage 1.7 x 10^2 5.5 x 10^3 5.1 x 10^4	Ave	rage	1.6 x 10 ⁻²	1.9 x 10 ⁻²	2.9 × 10 ⁻³	1.7 × 10 ⁻³
BH-2 1.2 x 10 ² 1.5 x 10 ⁻¹ 3.1 x 10 ⁻⁴ erage 1.6 x 10 ⁻² 6.5 x 10 ⁻² 3.1 x 10 ⁻⁴ erage 1.4 x 10 ⁻² 6.5 x 10 ⁻² 3.1 x 10 ⁻⁴ BH-2 1.5 x 10 ⁻² 9.9 x 10 ⁻³ 4.7 x 10 ⁻⁴ erage 1.5 x 10 ⁻² 3.9 x 10 ⁻³ 4.5 x 10 ⁻⁴ BH-3 1.6 x 10 ⁻² 3.9 x 10 ⁻³ 4.5 x 10 ⁻⁴ BH-3 1.5 x 10 ⁻² 3.9 x 10 ⁻³ 3.6 x 10 ⁻⁴ BH-3 1.2 x 10 ⁻² 5.8 x 10 ⁻³ 8.9 x 10 ⁻⁴ erage 1.7 x 10 ⁻² 6.5 x 10 ⁻³ 5.1 x 10 ⁻⁴	Sabo Dam	BH-1	1.3×10 ⁶	2.7 × 10 ⁻²	3.2 × 10 ⁻⁴	2.1 × 10 ⁻⁴
BH-3 1.6 x 10² 1.7 x 10² 3.0 x 10² erage 1.4 x 10² 6.5 x 10² 3.1 x 10² BH-1 6.8 x 10² 2.2 x 10² 4.7 x 10² BH-2 1.5 x 10² 9.9 x 10³ 3.4 x 10² erage 1.5 x 10² 1.8 x 10² 4.5 x 10² BH-1 2.6 x 10² 3.9 x 10³ 3.6 x 10² BH-2 1.2 x 10² 5.8 x 10³ 2.9 x 10² erage 1.7 x 10² 6.5 x 10³ 5.1 x 10²	6	BH-2	1.2 × 10 ⁻²	1.5 × 10 ⁻¹	3.1 × 10 ⁻⁴	2.7 × 10 ⁴
EH-1 6.8 × 10² 6.5 × 10² 3.1 × 10² EH-2 1.5 × 10² 2.2 × 10³ 3.4 × 10² EH-3 1.6 × 10² 3.9 × 10³ 4.5 × 10² erage 1.5 × 10² 1.8 × 10² 4.2 × 10² EH-1 2.6 × 10² 3.9 × 10³ 3.6 × 10² EH-2 1.4 × 10² 5.8 × 10³ 2.9 × 10² erage 1.2 × 10² 9.8 × 10³ 8.9 × 10² erage 1.7 × 10² 6.5 × 10³ 5.1 × 10²) :	BH-3	1.6 × 10 ⁻²	1.7 × 10 ⁻²	3.0 × 10 ⁻⁴	4.6 × 10 ⁴
BH-1 6.8 x 10 ⁻⁵ 2.2 x 10 ⁻² 4.7 x 10 ⁻⁴ BH-2 1.5 x 10 ⁻² 3.9 x 10 ⁻⁵ 4.5 x 10 ⁻⁴ erage 1.5 x 10 ⁻² 1.8 x 10 ⁻² 4.5 x 10 ⁻⁴ BH-1 2.6 x 10 ⁻² 3.9 x 10 ⁻³ 3.6 x 10 ⁻⁴ BH-2 1.4 x 10 ⁻² 5.8 x 10 ⁻³ 2.9 x 10 ⁻⁴ BH-3 1.2 x 10 ⁻² 9.8 x 10 ⁻³ 8.9 x 10 ⁻⁴ erage 1.7 x 10 ⁻² 6.5 x 10 ⁻³ 5.1 x 10 ⁻⁴	Ave	rage	1.4 × 10 ⁻²	6.5 x 10 ⁻²	3.1 × 10 ⁴	3.1 × 10+
BH-2 1.5 × 10² 9.9 × 10³ 3.4 × 10² erage 1.6 × 10² 3.9 × 10² 4.5 × 10² BH-1 2.6 × 10² 3.9 × 10³ 3.6 × 10² BH-2 1.4 × 10² 5.8 × 10³ 2.9 × 10² erage 1.2 × 10² 9.8 × 10³ 8.9 × 10² erage 1.7 × 10² 6.5 × 10³ 5.1 × 10²	Maskup	8H-1	6.8 × 10 ⁻⁵	2.2 × 10 ⁻²	4.7 × 10 ⁻⁴	8.2 × 10 ⁻⁴
BH-3 1.6 x 10² 3.9 x 10³ 4.5 x 10⁴ erage 1.5 x 10² 1.8 x 10² 4.2 x 10⁴ BH-1 2.6 x 10² 3.9 x 10³ 3.6 x 10⁴ BH-2 1.4 x 10² 5.8 x 10³ 2.9 x 10⁴ BH-3 1.2 x 10² 9.8 x 10³ 8.9 x 10⁴ erage 1.7 x 10² 6.5 x 10³ 5.1 x 10⁴	Sabo Dam	BH-2	1.5×10 ²	9.9 × 10 ⁻³	3,4 × 10 ⁻⁴	2.9 × 10 ⁻⁴
erage 1.5 x 10² 1.8 x 10² 4.2 x 10² BH-1 2.6 x 10² 3.9 x 10³ 3.6 x 10² BH-2 1.4 x 10² 5.8 x 10³ 2.9 x 10² BH-3 1.2 x 10² 9.8 x 10³ 8.9 x 10² erage 1.7 x 10² 6.5 x 10³ 5.1 x 10²	(site no. 4)	BH-3	1.6 × 10 ⁻²	3.9 x 10 ⁻⁵	4.5 × 10 ⁻⁴	2.4 × 10 ⁻⁴
BH-2 1.4 × 10 ⁻² 3.9 × 10 ⁻³ 3.6 × 10 ⁻⁴ BH-3 1.2 × 10 ⁻² 9.8 × 10 ⁻³ 8.9 × 10 ⁻⁴ erage 1.7 × 10 ⁻² 6.5 × 10 ⁻³ 5.1 × 10 ⁻⁴	Ave	rage	1.5 x 10 ⁻²	1.8 × 10 ⁻²	4.2 x 10 ⁻⁴	4.5 x 10*
BH-2 1.4 × 10 ⁻² 5.8 × 10 ⁻³ 2.9 × 10 ⁻⁴ BH-3 1.2 × 10 ⁻² 9.8 × 10 ⁻³ 8.9 × 10 ⁻⁴ erage 1.7 × 10 ⁻² 6.5 × 10 ⁻³ 5.1 × 10 ⁻⁴	Dolores	3H-1	2.6×10 ⁻²	3.9×10 ⁻³	3.6 × 10 ⁻⁴	5.8 x 10 ⁴
BH-3 1.2×10 ⁻² 9.8×10 ⁻³ 8.9×10 ⁻⁴ erage 1.7×10 ⁻² 6.5×10 ⁻³ 5.1×10 ⁻⁴	Sabo Dam	8H-2	1.4 × 10 ⁻²	5.8 × 10 ⁻³	2.9 × 10 ⁻⁴	7.4 × 10 ⁻²
erage 1.7 × 10-2 6.5 × 10-3 5.1 × 10-4	(site no. 5)	BH-3	1.2 × 10 ⁻²	9.8 × 10 ⁻³	8.9×10 ⁴	2.8 × 10⁴
	Ave	srage	1.7 × 10°2	6.5 x 10 ³	5.1 × 10 ⁻⁴	5.3 × 10 ⁻⁴



LOCATION: TM-1 Sabo Dam BORING NO.: 1

DEPTH: 5.00 m

DEPTH OF GWT: not encountered

DATE STARTED: July 5, 1995 DATE FINISHED: July 5, 1995

SHEET NO. 1 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h₁, h₂, h_p)

Total Head, $H_T = h_1 + h_2$, in meters

Constant Height of Water, h2 Static Water Level Depth, h (inside casing) 0.48 m not encountered

Equivalent Head, he (arising from applied pressure) Not Applicable

B DATA ON FLOW TEST

B. DATA ON										ior
TEST SECTION	PRES.		TIME		F	LOW (LIT	ERS/MIN)	ORII	
1201 02011011	GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	IG	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
DEFINING	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
5.00	, , , , , , , , , , , , , , , , , , ,	1:00	1:30	30	19817.8	19837.4	19.60	0.65	5.48	
5.00		1:30	2.00	30	19837.4	19855.1	17.70	0.59	5.48	
5.00	,	2:00	2:30	30	19855.1	19874.3	19.20	0.64	5.48	
5.00		2:30	3:00	30	19874,3	19893.6	19.30	0.64	5.48	
		<u> </u>			1			<u> </u>		<u> </u>

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		k ₁ = 9.5 x 10 ⁻⁴ cm/sec
Flow Rate, Q = total flow elapsed time	$k = C_1 \cdot \frac{Q}{h_T}$	k ₂ = 8.6 x 10 ⁻⁴ cm/sec
= <i>I I</i> min	UNITS:	k ₃ = 9.3 x 10 ⁻⁴ cm/sec
	$k = cm/sec$ $C_1 = constant$	k ₄ = 9.4 x 10 ⁻⁴ cm/sec
	= 8 x 10 ⁻³ Q = 1 / min	
	$H_T = \text{meter}$	k _(ave) = 9.2 x 10 ⁻⁴ cm/sec





PROJECT: GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

LOCATION: TM-1 Sabo Dam

BORING NO.: 1 DEPTH: 10.00 m

DEPTH OF GWT: not encountered DATE STARTED: July 5, 1995

DATE FINISHED: July 5, 1995

SHEET NO. 2 of 2

A. DATA ON WATER HEADS (h₁, h₂, h_p)

Total Head, $H_T = h_1 + h_2$, in meters

Total House His	***	
Static Water Level Depth, h ₁	Constant Height of Water, h₂	Equivalent Head, h _e
	(inside casing)	(arising from applied pressure)
not encountered	0.19 m	Not Applicable
•	·	

TEST SECTION	PRES.		TIME		F	LOW (LIT	ERS/MIN)	ORI	FICE
1201 02011011	GAUGE	START	END	ELAPSED	. W.	ATER MET	ER READIN	(G	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
10.00		8.00	8:15	15	19952.3	19966,3	14.00	0.93	10.19	
10.00		8:15	8:30	15	19966.3	19973.3	7.00	0.47	10.19	
10.00		8:30	9:00	30	19973.3	19994.3	21.00	0.70	10.19	
10.00		9.00	9:30	30	19994.3	20014.9	20.60	0.69	10.19	
10.00	,	9:30	10:00	30	19994.3	20035.7	41.40	1.38	10.19	

k _i = 7.3 x 10 ⁻⁴ cm/sec
$k_2 = 3.7 \times 10^4 \text{ cm/sec}$
k ₃ = 5.5 x 10 ⁻⁴ cm/sec
k ₄ = 5.4 x 10 ⁻⁴ cm/sec
k ₅ = 1.1 x 10 ⁻³ cm/sec
k _(ave) = 6.5 x 10 ⁻⁴ cm/sec
_





LOCATION: TM-1 Sabo Dam

BORING NO.: 2 DEPTH: 5.00 m

DEPTH OF GWT: not encountered

DATE STARTED: July 6, 1995 DATE FINISHED: July 6, 1995

SHEET NO. 1 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h₁, h₂, h_p)

Total Head, $H_T = h_1 + h_2$, in meters

Constant Height of Water, h2 Static Water Level Depth, h (inside casing)

0.48 m

Equivalent Head, h. (arising from applied pressure)

Not Applicable

B. DATA ON FLOW TEST

not encountered

TEST SECTION	PRES.		TIME		F	LOW (LI	ERS/MIN)	ORI	FICE
1EST OLUTION	GAUGE	START	END	ELAPSED	· W	ATER MET	ER READI	(G	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
DE 111(11)	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
5.00		3:30	4:00	30	20041.4	20057.9	16.50	0,55	5.48	
5.00		4:00	4:30	30	20057.9	20074.7	16.80	0.56	5.48	:
5.00		4:30	5:00	30	20074.7	20091.3	16.60	0.55	5.48	:
5.00		5:00	5:30	30	20091.3	20108.2	16.90	0.56	5.48	
		l .		<u> </u>			<u> </u>	<u> </u>	<u></u>	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		$k_1 = 8.0 \times 10^{-4} \text{ cm/sec}$
Flow Rate, Q = total flow elapsed time	k = C; Q h;	k ₂ = 8.2 x 10 ⁻⁴ cm/sec
= / / min	UNITS:	$k_3 = 8.1 \times 10^4 \text{ cm/sec}$
	$k = cm/sec$ $C_1 = constant$	k ₄ = 8.2 x 10 ⁻⁴ cm/sec
	= 8 x 10 ° Q = //min	
	H _T = meter	k _(ave) = 8.1 x 10 ⁻⁴ cm/sec



LOCATION: TM-1 Sabo Dam

BORING NO.: 2

DEPTH: 10.00 m

DEPTH OF GWT: not encountered

DATE STARTED: July 7, 1995

DATE FINISHED: July 7, 1995

SHEET NO. 2 012

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2$, in meters

Static Water Level Depth, h₁ Constant Height of Water, h₂ (inside casing)
not encountered 0.19 m

Equivalent Head, h_p
(arising from applied pressure)
Not Applicable

TEST SECTION	PRES.		TIME		F	LOW (LIT	ERS/MIN	}	ORII	FICE
	GAUGE	START	END	ELAPSEO	W	ATER MET	ER READIN	1G	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₇)	(m)
10.00		8:40	9:10	- 15	20217.7	20225.3	7.60	0.51	10.19	
10.00		9:10	9:40	15	20225.3	20231.9	6.60	0.44	10.19	
10.00		9:40	10:10	30	20231.9	20238.5	6.60	0.22	10.19	
10.00		10.10	10:40	30	20238.5	20245.1	6.60	0.22	10.19	
:						**			L	<u> </u>

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		k ₁ = 4.0 x 10 ⁻⁴ cm/sec
Flow Rate, Q = total flow elapsed time	k = C ₁ <u>Q</u> h ₇	k ₂ = 3.5 x 10 ⁻⁴ cm/sec
= 1 t min	UNITS:	k ₃ = 1.7 x 10 ⁻⁴ cm/sec
	$k = cm / sec$ $C_1 = constant$ $= 8 \times 10^{-3}$	k ₄ = 1.7 x 10 ⁻⁴ cm/sec
	Q = I I min H _T = meter	
		k _(ave) = 2.7 x 10 ⁻⁴ cm/sec





PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

LOCATION: TM-1 Sabo Dam

BORING NO.: 3 DEPTH: 5.00 m

DEPTH OF GWT: not encountered DATE STARTED: July 8, 1995

DATE FINISHED: July 8, 1995 SHEET NO. 1 of 2

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2$, in meters

Static Water Level Depth, h₁ Constant Height of Water, h₂ (inside casing)
not encountered 0.48 m

Equivalent Head, h_p
(arising from applied pressure)
Not Applicable

D. DAIA ON	,								ORII	in E
TEST SECTION	PRES.		TIME		F	LOW (LIT	EKS/MIN	<u> </u>		
1001 011011111	GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	łG		SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
DECIDAN	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
5.00		8:00	8:30	30	20304.2	20323.4	19.20	0.64	5.48	٠
5.00		8:30	9:00	30	20323.4	20342.6	19.20	0.64	5.48	
5.00	,	9:00	9:30	30	20342.6	20361.8	19.20	0.64	5.48	
5.00		9:30	10:00	30	20361.8	20381.0	19.20	0.64	5.48	
; · .		1 .		<u> </u>				<u> </u>	<u> </u>	<u> </u>

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		k ₁ = 9.3 x 10 ⁻⁴ cm/sec
Flow Rate, Q = total flow elapsed time	k = C ₁ Q h ₇	k ₂ = 9.3 x 10 ⁻⁴ cm/sec
= / / min	UNITS:	$k_3 = 9.3 \times 10^{-4} \text{ cm/sec}$
	$k = cm/sec$ $C_1 = constant$	k ₄ = 9.3 x 10 ⁴ cm/sec
	= 8 x 10 ⁻³ Q = 1 / min	
	$H_T = \text{meter}$	k _(ave) = 9.3 x 10 ⁻⁴ cm/sec
Note:		





LOCATION: TM-1 Sabo Dam

BORING NO.: <u>3</u> DEPTH: <u>10.00 m</u>

DEPTH OF GWT: not encountered

DATE STARTED: <u>July 10, 1995</u> DATE FINISHED: <u>July 10, 1995</u>

SHEET NO. 2 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2$, in meters

Static Water Level Depth, h₁ Constant Height of Water, h₂ Equivalent Head, h_p

(inside casing) (arising from applied pressure)

not encountered 0.19 m Not Applicable

TEST SECTION	PRES.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	TIME		F	LOW (LIT)	ORIFICE		
	GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	1G	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₇)	(m)
5.00		3.00	3:30	30	20395.4	20410.4	15,00	0.50	5.19	
5.00		3:30	4:00	30	20410.4	20425.4	15.00	0.50	5.19	
5.00		4:00	4:30	30	20425.4	20440.4	15.00	0.50	5.19	
5.00		4:30	5:00	30	20440.4	20455.4	15.00	0.50	5.19	
									1	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, &	VALUES OF k
		$k_1 = 7.7 \times 10^{-4} \text{ cm/sec}$
Flow Rate, Q = total flow elapsed time	k = C ₁ <u>Q</u> h ₇	$k_2 = 7.7 \times 10^{-4} \text{ cm/sec}$
= / / min	UNITS:	$k_3 = 7.7 \times 10^{-4} \text{ cm/sec}$
	k = cm/sec C ₁ = constant = 8 x 10 ³	k ₄ = 7.7 x 10 ⁻¹ cm/sec
	Q = //min H ₇ = meter	k _(ave) = 7.7 x 10 ⁻⁴ cm/sec



LOCATION: Sabo Dam #6

BORING NO.: 1 DEPTH: 5.00 m

DEPTH OF GWT: 1.80 m

DATE STARTED: <u>July 01, 1995</u> DATE FINISHED: <u>July 01, 1995</u>

SHEET NO. 1 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Static Water Level Depth, h₁ Height of Pressure Gauge, h₂ Equivalent Head, hp

(arising from applied pressure)

1.80 m

0.85 m

Note: 1 psi = 0.703 m of water

D. DAIA ON											
TEST SECTION	PRES.		TIME			FLOW (LITERS/MIN)				ORIFICE	
TEOT OLOTTO	GAUGE	START	END	ELAPSED	: W/	ATER MET	R READIN	IG .	TOTAL	SECTIO	
DEPTH (m)	READING		OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGT	
DECIDAN	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)	
5.00	10	10:52	10.57	5	14592.7	14728.4	135.70	27.14	9.69		
5.00	20	10.57	11:02	5	14746.0	14972.5	226.50	45,30	16.72		
5.00	25	11:03	11:13	10	15095.0	15486.0	391.00	39,10	20.24		
5.00	20	11:13	11:18	5	15510.3	15713.7	203.40	40,68	16.72		
5.00	10	11:19	11:24	5	15727.8	15865.2	137.40	27.48	9.69		

k = C ₁ Q h ₁	$k_1 = 2.2 \times 10^{-2} \text{ cm/sec}$
n r	$k_2 = 2.2 \times 10^{-2} \text{ cm/sec}$
UNITS: k = cm/sec	$k_3 = 1.5 \times 10^{-2} \text{ cm/sec}$ $k_4 = 1.9 \times 10^{-2} \text{ cm/sec}$
= 8 x 10 ⁻³ Q = //min	k _s = 2.3 x 10 ⁻² cm/sec
fff - meter	k _(ave) = 2.0 x 10 ⁻² cm/sec
	$k = cm / sec$ $C_{j} = constant$ $= 8 \times 10^{-3}$



LOCATION: Sabo Dam #6

BORING NO.: 1 OEPTH: 10.00 m

DEPTH OF GWT: 1.80 m

DATE STARTED: July 02, 1995 DATE FINISHED: July 02, 1995

SHEET NO. 2 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Height of Pressure Gauge, h2 Equivalent Head, h. Static Water Level Depth, h (arising from applied pressure) 0.70 m Note: 1 psi = 0.703 m of water 1.80 m

TEST SECTION	PRES.	,	TIME			LOW (LII)	ORI	FICE	
	GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	1G	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
10.00	10	1:00	1:05	5	15915.0	16109.5	194.50	38,90	9.54	:
10.00	20	1:06	1:11	5	16126.4	16384.5	258.10	51.62	16.57	:
10.00	25	1:13	1:23	10	16428.8	16839.0	410.20	41.02	20.09	i.
10.00	20	1:23	1:28	5	16850.9	17062.6	211.70	42.34	16.57	
10.00	10	1:29	1:34	5	17074.5	17278.5	204.00	40.80	9.54	<u> </u>

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		k ₁ = 3.3 x 10 ⁻² cm/sec
Flow Rate, Q = total flow elapsed time	$k = C_1 \underline{Q}$ h_T	$k_2 = 2.5 \times 10^{-2}$ cm/sec
= 1 / min	UNITS:	k ₃ = 1.6 x 10 ⁻² cm/sec
	k = cm/sec C ₁ = constant	k ₄ = 2.0 x 10 ⁻² cm/sec
	= 8 x 10 3 Q = 11 min	k _s = 3.4 x 10 ⁻² cm/sec
	H _T = meter	k _(ave) = 2.6 x 10 ⁻² cm/sec





LOCATION: Sabo Dam #6

BORING NO.: 2_DEPTH: 5.00 m

DEPTH OF GWT: underwater borehole

DATE STARTED: June 28, 1995 DATE FINISHED: June 28, 1995

SHEET NO. 1 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2$, in meters

Static Water Level Depth, h₁

Max. Height of Water, h₂

(inside casing)

0.00 m

0.57 m

Equivalent Head, h_p

(arising from applied pressure)

Not Applicable

B. DATA ON FLOW TEST

D. DATA ON	r		TIME		F	LOW (LIT	ERS/MIN)	ORI	ICE
TEST SECTION	PRES.	START	END	ELAPSED		ATER MET			TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
UEFTH (m)	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₇)	(m)
5.00		9:00	9:30	30	14543.3	14551.7	8.40	0.28	0.57	r
5.00		9:30	10:00	30	14551.7	14560.1	8.40	0.28	0.57	
5.00	,	10:00	10:30	30	14560.1	14568.5	8.40	0.28	0.57	
5.00		10:30	11:00	30	14568.5	14576.9	8.40	0,28	0.57	
			ļ .				L	<u> </u>	<u></u>	

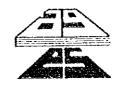
FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
·		$k_1 = 3.9 \times 10^{-3} \text{ cm/sec}$
Flow Rate, Q = total flow elapsed time	k = C ₁ Q h _T	$k_2 = 3.9 \times 10^3 \text{ cm/sec}$
≐ <i>t </i> min	UNITS:	k ₃ = 3.9 x 10 ⁻³ cm/sec
	k = cm/sec C ₁ = constant	$k_4 = 3.9 \times 10^{-3} \text{ cm/sec}$
	= 8 x 10 ⁻³ Q = 1 / min	
	H _T = meter	k _(ave) = 3.9 x 10 ⁻³ cm/sec

Note:

Artesian condition was encountered at about 3.00 m depth.

Discharge Q was measured by attaching the meter to the casing.

The head, h₁ was also measured by extending the standpipe.



FIELD PERMEABILITY TEST (CONDITION 3)

PROJECT: GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

LOCATION: Sabo Dam #6

BORING NO.: <u>2</u> DEPTH: <u>10.00 m</u>

DEPTH OF GWT: under water borehole

DATE STARTED: <u>June 30, 1995</u> DATE FINISHED: <u>June 30, 1995</u>

SHEET NO. 2 of 2

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head. $H_T = h_1 + h_2$, in meters

Total House, Til 111 11	121 111 1114 111	
Static Water Level Depth, h1	Max. Height of Water, h ₂	Equivalent Head, h _p
	(inside casing)	(arising from applied pressure)
0.00 m	0.54 m	Not Applicable
(under water)		

B. DATA ON FLOW TEST

D. DATA ON										
TEST SECTION	PRES.		TIME		FLOW (LITERS/MIN)				ORIFICE	
	GAUGE	START	END	ELAPSED	W	ATER MET	R READIN	1G	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
OLY ITTEMY	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
10.00		3:00	3:30	30	14503.4	14511.1	7.70	0.26	0.54	
10.00		3:30	4:00	30	14511.1	14520.2	9.10	0.30	0.54	:
10.00		4:00	5:00	60	14520.2	14537.0	16.80	0.28	0.54	-
										•
	,	,								

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, &	VALUES OF &
		k ₁ = 3.8 x 10 ⁻³ cm/sec
Flow Rate, Q = total flow elapsed time	k = C , <u>Q</u> h ,	k ₂ = 4.5 x 10 ⁻³ cm/sec
= / / min	นทเระ:	k ₃ = 4.1 x 10 ⁻³ cm/sec
	k = cm/sec	
	C ₁ = constant = 8 x 10 ³	
	Q = //min H _T = meter	
		k _(ave) = 4.1 x 10 ⁻³ cm/sec

Note:

Artesian condition was encountered at about 3.00 m depth. Discharge Q was measured by attaching the meter to the casing. The head, h_1 was also measured by extending the standpipe.





LOCATION: Sabo Dam #6

BORING NO.: 3 DEPTH: 5,00 m

DEPTH OF GWT: under water borehole

DATE STARTED: July 01, 1995 DATE FINISHED: July 01, 1995

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

SHEET NO. 1 of 2

A. DATA ON WATER HEADS (h₁, h₂, h_p)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Equivalent Head, h. Height of Pressure Gauge, h2 Static Water Level Depth, h (arising from applied pressure) Note: 1 psi = 0.703 m of water 1.00 m 0.00 m (under water)

D, DAIA VII										
TEST SECTION	PRES.		TIME		FLOW (LITERS/MIN)				ORIFICE	
TEST SECTION	GAUGE	START	END	ELAPSED	W	ATER MET	R READIN	G	TOTAL	SECTION
DEPTH (m)	READING	- 11	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
DECITION	DE: 11.1/1.3	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
5.00	10	stopy	watch	5	17286.0	17425.8	139.80	27.96	8.04	
5.00	20	· stop	stopwatch		17439.2	17674.2	235.00	47.00	15.07	
5.00	25	stop	stopwatch		17699.4	18101.4	402.00	40.20	18.59	1
5.00	20	stop	watch	5	18138.9	18310.9	172.00	34.40	15.07	
5.00	10	stop	watch	5	18342.6	18469.4	126.80	25,36	8.04	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		$k_1 = 2.8 \times 10^{-2}$ cm/sec
low Rate, Q = total flow elapsed time	$k = C_1 \frac{Q}{h_T}$	$k_2 = 2.5 \times 10^{-2}$ cm/sec
= 1 / min	UNITS:	$k_0 = 1.7 \times 10^{-2}$ cm/sec
	$k = cm / sec$ $C_{f} = constant$	k ₄ = 1.8 x 10 ⁻² cm/sec
	$= 8 \times 10^{-3}$ $Q = 11 \text{ min}$	k _s = 2.5 x 10 ⁻² cm/sec
	$H_T = \text{meter}$	k _(ave) = 2.3 x 10 ⁻² cm/sec



LOCATION: Sabo Dam #6

BORING NO.: <u>3</u> DEPTH: <u>10.00 m</u>

DEPTH OF GWT: at ground level

DATE STARTED: July 03, 1995 DATE FINISHED: July 03, 1995

SHEET NO. 2 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Static Water Level Depth, h₁

Height of Pressure Gauge, h₂

Equivalent Head, h_p

(arising from applied pressure)

Note: 1 psi = 0.703 m of water

(at ground level)

TEST SECTION	PRES.		TIME			LOW (LIT)	ORIFICE		
	GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	1G	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
,	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(배)	(m)
10.00	10	stop	watch	5	3208.10	3333.60	125.50	25.10	7.54	
10.00	20	stop	stopwatch		3438.50	3697.50	259.00	51.80	14.57	
10.00	25	stop	stopwatch		3746.40	4321.50	575.10	57.51	18.09	
10.00	20	stop	watch	5	4375.60	4630.40	254.80	50.96	14.57	
10.00	10	stop	watch	5	4699.30	4834.50	135.20	27.04	7.54	<u></u>

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, &	VALUES OF k
		$k_1 = 2.7 \times 10^{-2} \text{ cm/sec}$
Flow Rate, Q = total flow elapsed time	k = C ₁ Q	k ₂ = 2.8 x 10 ⁻² cm/sec
= 1 / min	UNITS:	$k_3 = 2.5 \times 10^{-2} \text{ cm/sec}$
	k = cm/sec C ₁ = constant	k ₄ = 2.8 x 10 ⁻² cm/sec
	= 8 x 10 ⁻³ Q = 1 / min	k _s = 2.9 x 10 ⁻² cm/sec
	H _T = meter	k _(ave) = 2.7 x 10 ⁻² cm/sec



LOCATION: Sabo Dam #9

BORING NO.: 1

DEPTH: 5.00 m DEPTH OF GWT: 1.05 m

DATE STARTED: June 8, 1995 DATE FINISHED: June 8, 1995

SHEET NO. 1 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS ($h_1,\,h_2,\,h_p$)

Total Head, $H_T = h_1 + h_2$, in meters

Constant Height of Water, h2 Static Water Level Depth, h (inside casing) 0.74 m 1.05 m

Equivalent Head, hp (arising from applied pressure) Not Applicable

DATA ON FLOW TEST

D. DAIRY	<i>71</i> 7 t	1.011				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					-Ior
TEST SECTION	N	PRES.		TIME		F	LOW (LI		ORI		
10702011		GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	IG	TOTAL	SECTION
DEDTU(m)	L	RÉADING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
DEPTH (m)	- 1'	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H _T)	(m)
5.00	_	(psi)		watch	60	0.000	0.004	0.0180	0.0003	1.79	· :
5.00			stop	watch	60	0.004	0.008	0.0180	0.0003	1.79	
5.00			stop	watch	120	0.008	0.016	0.0360	0.0003	1.79	
		· · · · · · · · · · · · · · · · · · ·				. !	* *** *** *** **		: .		

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		k ₁ = 1.3 x 10 ⁻⁶ cm/sec
Flow Rate, Q = total flow elapsed time	k=C ₁ Q h _T	k ₂ = 1.3 x 10 ⁶ cm/sec
= / / min	UNITS:	k ₃ = 1.3 x 10 ⁻⁶ cm/sec
	$k = cm / sec$ $C_1 = constant$ $= 8 \times 10^{-3}$	
	Q = I I min H _T = meter	k _(ave) = 1.3 x 10 ⁻⁶ cm/sec

Note:

1

Packer Test was attempted but yielded virtually insignificant flow.



LOCATION: Sabo Dam #9

BORING NO.: 1 DEPTH: 10.00 m

DEPTH OF GWT: 1.05 m

DATE STARTED: June 9, 1995 DATE FINISHED: June 9, 1995

SHEET NO. 2 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2$, in meters

Static Water Level Depth, h₁ Max. Height of Water, h₂ (inside casing)

1.05 m 0.74 m

Equivalent Head, h_p (arising from applied pressure) Not Applicable

B. DATA ON FLOW TEST

TEST SECTION	PRES.		TIME			FŁOW (LITERS/MIN)				ORIFICE	
1201 020.1011	GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	G	TOTAL	SECTION	
DEPTH (m)	READING	OF	OF ·	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD	LENGTH	
	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE	(m)	(m)	
10.00	:	9:35	9:40	5	0.00	43.30	43.30	8.66	1.79	. :	
10.00		9:40	9:45	5	43.30	67.80	24.50	4.90	1.79	; ;	
10.00		9:45	9:50	5	67.80	90.50	22.70	4.54	1.79		
						ļ !	:		+ 1		
]		44.15]	1	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY	VALUES OF k
		$k_1 = 3.9 \times 10^{-2} \text{ cm/sec}$
Flow Rate, Q = total flow elapsed time	k = C ₁ Q h _T	k ₂ = 2.2 x 10 ⁻² cm/sec
= <i>[]</i> min	טוואט:	k ₃ = 2.0 x 10 ⁻² cm/sec
	$k = cm/sec$ $C_1 = constant$	
	= 8 x 10 3 Q = 11 min	
	$h_T = \text{meter}$	k _(ave) = 2.7 x 10 ⁻² cm/sec
		K _(ave) = 2.7 X TO GHI/Sec

Note:

Artesian condition was encountered at about 9.90 m depth.

Discharge Q was measured by attaching the meter to the casing.

The head, h₁ was also measured by extending the standpipe.



PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

LOCATION: Sabo Dam #9

BORING NO.: 2 DEPTH: 5.00 m

DEPTH OF GWT: at ground level DATE STARTED: June 10, 1995 DATE FINISHED: June 10, 1995

SHEET NO. 1 012

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Static Water Level Depth, h₁

Height of Pressure Gauge, h₂

Equivalent Head, h_p

(arising from applied pressure)

Note: 1 psi = 0.703 m of water

(at ground level)

D. DAIA ON										
TEST SECTION	PRES	I	TIME		F	FLOW (LITERS/MIN)				FICE
100,000	GAUGE	START	END	ELAPSED	W.	ATER MET	ER READIA	IG.	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
32. 11.0.7	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₇)	(m)
5.00	15	stop watch		5	1093.40	1124.80	31.40	6.28	11.30	:
5.00	30	stop	stop watch		1135.30	1314.70	179.40	35.88	21.86	
5.00	35	stop	stop watch		1645.20	2018,30	373.10	37,31	25.37	
5.00	30	stop watch		5	2660.90	2945.30	284.40	56.88	21.86	
5.00	15	stop	watch	5	3089.10	3170.90	81.80	16.36	11.30	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		k ₁ = 4.4 x 10 ⁻³ cm/sec
Flow Rate, Q = total flow elapsed time	$k = C_T \cdot \frac{Q}{h_T}$	k ₂ = 1.3 x10 ⁻² cm/sec
= 1 / min	UNITS:	k ₃ = 1.2 x10 ⁻² cm/sec
	$k = cm/sec$ $C_1 = constant$	k ₄ = 2.1 x10 ⁻² cm/sec
	= 8 x 10 3 Q = 1 / min	k _s = 1.2 x10 ⁻² cm/sec
	H _r = meter	k _(ave) = 1.2 x 10 ⁻² cm/sec
Note:		



LOCATION: Sabo Dam #9

BORING NO .: 2_ DEPTH: 10.00 m

DEPTH OF GWT: at ground level DATE STARTED: June 13, 1995 DATE FINISHED: June 13, 1995

SHEET NO. 2 012

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2$, in meters

Constant Height of Water, h2 Static Water Level Depth, h (inside casing) 0.45 m 0.00 m

Equivalent Head, h. (arising from applied pressure) Not Applicable

B. DATA ON FLOW TEST

(at ground level)

D. DAIA OIL	:									
TEST SECTION	PRES.		TIME			LOW (LIT)	ORIFICE		
	GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	lG	TOTAL	SECTION
DEPTH (m)	READING	OF	OF.	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
10.00		stop watch		1	3380.60	3389.10	8.50	8.50	0.45	
10.00		stop	stop watch		3389.10	3397.60	8.50	8.50	0.45	1
10.00		stop	watch	1	3397.60	3406.10	8.50	8.50	0,45	
10.00		stop	watch	1	3406.10	3414.60	8.50	8.50	0.45	
10.00		stop	watch	1_1_	3414.60	3423.10	8.50	8.50	0.45	<u> </u>

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		k ₁ = 1.5 x 10 ⁻¹ cm/sec
Flow Rate, Q = total flow elapsed time	$k = C_1 \underline{Q}$	k ₂ = 1.5 x 10 ⁻¹ cm/sec
= 1 / min	UNITS:	k ₃ = 1.5 x 10 ⁻¹ cm/sec
	$k = cm/sec$ $C_1 = constant$	k ₄ = 1.5 x 10 ⁻¹ cm/sec
	= 8 x 10 3 Q = 1 / min	k ₅ = 1.5 x 10 ⁻¹ cm/sec
	H _T = meter	k _(ave) = 1.5 x 10 ⁻¹ cm/sec

Note:

Artesian condition was encountered at about 9.80 m depth. Discharge Q was measured by attaching the meter to the casing. The head, h, was also measured by extending the standpipe.





LOCATION: Sabo Dam #9

BORING NO.: 3 DEPTH: 5.00 m

DEPTH OF GWT: 0.84 m

DATE STARTED: <u>June 14, 1995</u> DATE FINISHED: <u>June 14, 1995</u>

SHEET NO. 1 012

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Static Water Level Depth, h₁ Height of Pressure Gauge, h₂

0.84 m

Equivalent Head, h_p
(arising from applied pressure)

(arising from applied pressure Note: 1 psi = 0.703 m of water

B. DAIA ON									ADII	HOE
TEST SECTION	PRES.		TIME		F	LOW (LIT)	ORIFICE		
TEST SECTION	GAUGE	START	END	ELAPSED	W	ATER MET	R READIN	IG	TOTAL	SECTION
DEDTILY	READING		OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
DEPTH (m)	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
5.00	15	2:12	2:17	5	3208.10	3333.60	125.50	25.10	12.24	
5.00	30	2:18	2:23	5	3438.50	3697.50	259.00	51.80	22.80	. 1
5.00	35	2:24	2:34	10	3746.40	4321.50	575.10	57.51	26.31	
5.00	30	2:35	2:45	10	4375.60	4630.40	254.80	25.48	22.80	
5.00	15	2:42	2:47	5	4699.30	4834.50	135.20	27.04	12.24	<u></u>

FLOW RATE CALCULAT	IONS	COEFFICIENT OF PERMEABILITY, &	VALUES OF k		
	:-		$k_1 = 1.6 \times 10^{-2} \text{ cm/sec}$		
w Rate, Q = total flow elapsed time		k = C ₁ Q h ₁	k ₂ = 1.8 x 10 ⁻² cm/sec		
= 1 / min		UNITS:	$k_3 = 1.7 \times 10^{-2} \text{ cm/sec}$		
		k = cm/sec C ₁ = constant	k ₄ = 8.9 x 10 ⁻³ cm/sec		
·		= 8 x 10 ⁻³ Q = 1/min	k _s = 1.8 x 10 ⁻² cm/sec		
		H _T = meter	k _(ave) = 1.6 x 10 ⁻² cm/sec		





LOCATION: Sabo Dam #9

BORING NO.: 3

DEPTH: 10.00 m

DEPTH OF GWT: 0.84 m

DATE STARTED: June 16, 1995 DATE FINISHED: June 15, 1995

SHEET NO. 2 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2$, in meters

Constant Height of Water, h2 Static Water Level Depth, h1 (inside casing) 0.84 m 2.10 m

Equivalent Head, hp (arising from applied pressure) Not Applicable

B. DATA ON FLOW TEST

TEST SECTION	PRES.		TIME		F	LOW (LIT	ERS/MIN	}	ORI	FICE
<u> </u>	GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	lG	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
10.00		1:10	1:11	1	4865.70	4872.80	7.10	7.10	2.94	• .
10.00		1:12	1:13	1.3	4872.80	4878.90	6.10	6.10	2.94	
10.00		1:13	1:14	1	4878.90	4885.00	6.10	6.10	2.94	,
10.00		1:14	1:15	1	4885.00	4891.00	6.00	6.00	2.94	. !
10.00		1:15	1:16	1	4891.00	4897.20	6.20	6.20	2.94	<u> </u>

COEFFICIENT OF PERMEABILITY, &	VALUES OF k
	$k_1 = 1.9 \times 10^{-2} \text{ cm/sec}$
$k = C_1 Q h_T$	k ₂ = 1.7 x 10 ⁻² cm/sec
UNITS:	$k_3 = 1.7 \times 10^{-2}$ cm/sec
$k = cm/sec$ $C_1 = constant$	k ₄ = 1.6 x 10 ⁻² cm/sec
Q = //min	$k_s = 1.7 \times 10^{-2}$ cm/sec
H _T = meter	k _(ave) = 1.7 x 10 ⁻² cm/sec
	$k = C_1 Q$ h_T UNITS: $k = cm/sec$ $C_1 = constant$ $= 8 \times 10^{-3}$

Note:

Artesian condition was encountered at about 9.80 m depth. Discharge Q was measured by attaching the meter to the casing. The head, h₁ was also measured by extending the standpipe.





PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

LOCATION: Maskup Consolidation Dam

BORING NO.: 1 DEPTH: 5.00 m

DEPTH OF GWT: 1.18 m

DATE STARTED: June 17, 1995 DATE FINISHED: June 17, 1995

SHEET NO. 1 of 3

A. DATA ON WATER HEADS (h₁, h₂, h_p)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Static Water Level Depth, h₁ Height of Pressure Gauge, h₂ Equivalent Head, h_p

(arising from applied pressure)

1.18 m

1.00 m

Note: 1 psi = 0.703 m of water

B. DATA ON FLOW TEST

D. D. TITTO	PRES.		TIME		F	LOW (LIT	ERS/MIN) <u>_</u>	ORII	FICE
TEST SECTION	ļ ————————————————————————————————————	START	END	ELAPSED		ATER MET			TOTAL	SECTION
DEOT(1/m)	GAUGE READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
DEPTH (m)	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(남)	(m)
5,00	15		watch	5	4095.10	4096.30	1.20	0.24	12.73	
5.00	30	stop	watch	5	4914.40	4914.80	0.40	0.08	23.29	
5.00	35	stop	watch	10	4921.80	4922.70	0.90	0.09	26.80	
	1									
						. :				<u> </u>

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, &	VALUES OF k
TEON TO THE STATE OF THE STATE		$k_1 = 1.5 \times 10^{-4} \text{ cm/sec}$
Flow Rate, Q = total flow elapsed time	$k = C_T Q h_T$	k ₂ = 2.7 x 10 ⁻⁵ cm/sec
=1/min	UNITS: k = cm/sec $C_1 = constant$ $= 8 \times 10^{-3}$ Q = I/min $H_T = meter$	k ₃ = 2.7 x 10 ⁻⁵ cm/sec
	My - niete	k _(ave) = 6.8 x 10 ⁻⁶ cm/sec





LOCATION: Maskup Consolidation Dam

BORING NO.: <u>1</u> DEPTH: <u>10.00 m</u>

DEPTH OF GWT: 1.18 m

DATE STARTED: <u>June 19, 1995</u> DATE FINISHED: <u>June 19, 1995</u>

SHEET NO. 2 of 3

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2$, in meters

Static Water Level Depth, h₁ Constant Height of Water, h₂ (inside casing)

1.18 m

0.00 m

(at ground level)

Equivalent Head, h_p (arising from applied pressure)
Not Applicable

D. DAIA ON	T		7/545			LOW (LIT	ERS/MIN	`	ORI	ICE
TEST SECTION	PRES.	START	TIME	FLAPSED		ATER MET			TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
10.00		stop	watch	5	49315	49345	30.00	6.00	1.18	
10.00		stop	stop watch		49345	49389	44.00	4.40	1.18	
10.00		stop watch		20	49389	49449	60.00	3.00	1.18	
10.00		stop	watch	30	49449	49572	123.00	4.10	1.18	
					ļ .					<u></u>

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		$k_1 = 4.1 \times 10^{-2} \text{ cm/sec}$
Flow Rate, Q = total flow elapsed time	k=C ₁ <u>Q</u> h _T	k ₂ = 3.0 x 10 ⁻² cm/sec
= <i>I I</i> min	UNITS:	k ₃ = 2.0 x 10 ⁻² cm/sec
	$k = cm/sec$ $C_1 = constant$	2.8 x 10 ⁻² cm/sec
	= 8 x 10 ⁻³ Q = 11 min	
	H _T = meter	k _(ave) = 3.0 x 10 ⁻² cm/sec
Note:		k _(ave) = 3.0 x 10 ⁻² cm/sec



LOCATION: Maskup Consolidation Dam

BORING NO.: 1 DEPTH: 10.00 m

DEPTH OF GWT: 1.18 m

DATE STARTED: June 19, 1995 DATE FINISHED: June 19, 1995

SHEET NO. 3 of 3

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Equivalent Head, he Height of Pressure Gauge, h2 Static Water Level Depth, h₁ (arising from applied pressure) Note: 1 psi = 0.703 m of water 1.10 m 1.18 m

B. DATA ON	LLCAA	I LO I					<u>i</u> -			
TEST SECTION	PRES.		TIME			FLOW (LITERS/MIN)				FICE
TEGI GEOTION	GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	IG	TOTAL	SECTION
DEPTH (m)	READING		OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
DEPTH (III)	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
10.00	15	10:57	11:02	5	4958.30	5050.30	92.00	18.40	12.83	
10.00	30	11:03	11:08	5	5062.30	5251.50	189.20	37.84	23.39	
10.00	35	11:09	11:19	10	5280.80	5683.40	402.60	40.26	26.90	
10.00	30	11:19	11:24	5	5703.20	5906.50	203.30	40.66	23.39	
10.00	15	11:25	11:30	5	5925.40	6053.60	128.20	25.64	12.83	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k		
		k ₁ = 1.1 x 10 ⁻² cm/sec		
Flow Rate, Q = total flow elapsed time	k = C ₁ Q h ₁	k ₂ = 1.3 x 10 ⁻² cm/sec		
= 1 / min	units:	k ₃ = 1.2 x 10 ⁻² cm/sec		
	k ≠ cm/sec C₁ = constant	k ₄ = 1.4 x 10 ⁻² cm/sec		
	= 8 x 10 ⁻³ Q = 1 / min	k _s = 1.6 x 10 ⁻² cm/sec		
	H _T = meter	k _(ave) = 1.3 x 10 ⁻² cm/sec		



LOCATION: Maskup Consolidation Dam

BORING NO.: 2 DEPTH: 5.00 m

DEPTH OF GWT: 4.80 m

DATE STARTED: June 20, 1995 DATE FINISHED: June 20, 1995

SHEET NO. 1 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Height of Pressure Gauge, h2 Static Water Level Depth, h

> 0.83 m 4.80 m

Equivalent Head, h. (arising from applied pressure)

Note: 1 psi = 0.703 m of water

B. DATA ON FLOW TEST

D. DATA ON	1 440 11									
TEST SECTION	PRES.		TIME			LOW (LIT		ORIFICE		
120,000,000	GAUGE	START	END	ELAPSED	W	ATER MET	R READIN	√G	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
OL: ITT(III)	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
5.00	10	11:15	11:20	5	6105.90	6233.30	127.40	25.48	12.67	
5.00	20	11:21	11:26	5	6263.30	6445.90	182.60	36.52	19.70	
5,00	25	11:27	11:37	10	6472.90	6922.70	449.80	44.98	23.22	
5.00	20	11:39	11:44	5	6954.70	7140.40	185.70	37.14	19.70	
5.00	10	11:45	11:50	5	7173.40	7300.00	126.60	25.32	12.67	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k		
		$k_1 = 1.6 \times 10^{-2} \text{ cm/sec}$		
Flow Rate, Q = total flow elapsed time	k = C ₁ Q h ₁	k ₂ = 1.5 x 10 ⁻² cm/sec		
= 1/ min	UNITS:	k ₃ = 1.5 x 10 ⁻² cm/sec		
	$k = cm/sec$ $C_1 = constant$	$k_4 = 1.5 \times 10^{-2} \text{ cm/sec}$		
	= 8 x 10 ⁻³ Q = 1 / min	k _s = 1.6 x 10 ⁻² cm/sec		
	$H_T = \text{meter}$	k _(ave) = 1.5 x 10 ⁻² cm/sec		

Note:



DEPTH: 10.00 m DEPTH OF GWT: 4.80 m

BORING NO.: 2

DATE STARTED: June 21, 1995 DATE FINISHED: June 21, 1995

LOCATION: Maskup Consolidation Dam

SHEET NO. 2 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Equivalent Head, he Height of Pressure Gauge, h2 Static Water Level Depth, h (arising from applied pressure) Note: 1 psi = 0.703 m of water 1.00 m 4.80 m

B. DATA ON	LOTT									
TEST SECTION	PRES.		TIME		F	LOW (LIT	ERS/MIN)	ORI	FICE
1201 02011011	GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	IG	TOTAL	SECTION
DEPTH (m)	READING		OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
OCF TT (III)	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₇)	(m)
10.00	15	1:49	1:54	- 5	8943.50	9034.50	91.00	18.20	16.35	1
10.00	30	1:55	2:00	5	9061.50	9239.70	178.20	35.64	26.91	
10.00	35	2:01	2:11	- 10	9271.70	9711.70	440.00	44.00	30.42	
10.00	30	2:11	2:16	5	9740.70	9922.20	181.50	36.30	26.91	
10.00	15	2:17	2:22	5	9951.20	10030.2	79.00	15.80	16.35	

FLOW RATE CALCULA		RMEABILITY, k VALUES OF k $k_1 = 8.9 \times 10^{-3} \text{ cm/sec}$
		$k_1 = 8.9 \times 10^{-3} \text{ cm/sec}$
Flow Rate Q = total f		
elapsed		
= 1 / min	UNITS:	k ₃ = 1.2 x 10 ⁻² cm/sec
	k = cm/: C, = const	tant $k_4 = 1.1 \times 10^{-2} \text{ cm/sec}$
	= 8 x 1 · Q = 1 / m	$k_s = 7.7 \times 10^{-3} \text{ cm/sec}$
	$H_T = \text{met}$	k _(ave) = 9.9 x10 ⁻³ cm/sec



LOCATION: Maskup Consolidation Dam

BORING NO.: 3 DEPTH: 5.00 m

DEPTH OF GWT: 6.40 m

DATE STARTED: June 19, 1995 DATE FINISHED: June 19, 1995

SHEET NO. 1 012

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Static Water Level Depth, h	Height of Pressure Gauge, h ₂	Equivalent Head, h _p
• • • •		(arising from applied pressure)
6.40 m	0.76 m	Note: 1 psi = 0.703 m of water
	:	

TEST SECTION	PRES.		TIME		F	FLOW (LITERS/MIN)				ORIFICE	
IEST SECTION	GAUGE	START	END	ELAPSED		ATER MET			TOTAL	SECTION	
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH	
<i>32. 77.</i> ()	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)	
5.00	15	1:35	1:40	5	7315.00	7453.20	138.20	27.64	16.31	:	
5.00	30	1:41	1:46	5	7485.20	7761.50	276.30	55.26	26.87		
5.00	35	1:47	1:57	10	7786.50	8442.50	656.00	65.60	30.38		
5.00	30	1:58	2.03	5	8471.50	8754.00	282.50	56.50	26.87		
5.00	15	2:04	2:09	5	8787.00	8924.60	137.60	27.52	16.31	<u></u>	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		$k_1 = 1.4 \times 10^{-2} \text{ cm/sec}$
Flow Rate, Q = total flow elapsed time	k = C ₁ <u>Q</u> h ₁	k ₂ = 1.6 x 10 ⁻² cm/sec
= 1 / min	UNITS:	k ₃ = 1.7 x 10 ⁻² cm/sec
	k = cm/sec C ₁ = constant	k ₄ = 1.7 x 10 ⁻² cm/sec
	= 8 x 10 ⁻³ Q = //min	k _s = 1.3 x 10 ⁻² cm/sec
	H _T = meter	k _(ave) = 1.6 x 10 ⁻² cm/sec
Note:		



LOCATION: Maskup Consolidation Dam

BORING NO.: 3 DEPTH: 10.00 m

DEPTH OF GWT: 6.40 m

DATE STARTED: June 21, 1995 DATE FINISHED: June 21, 1995

SHEET NO. 2 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h₁, h₂, h_p)

Total Head, $H_T = h_1 + h_2$, in meters

Equivalent Head, hp Static Water Level Depth, h Constant Height of Water, h2 (arising from applied pressure) (inside casing) Not Applicable 0.20 m 6.40 m

B. DATA ON FLOW TEST

B. DATA ON	1	1601	THE ST			LOW (LIT	ERS/MIN)	ORII	FICE
TEST SECTION	PRES.	START	TIME	ELAPSED		ATER MET			TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
DEFITTION	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
10.00		9:30	10:00	30	8931.00	8932.20	1.20	0.04	6.60	
10.00		10:00	11:00	60	8932.20	8933.90	1.70	0.03	6.60	•
10.00		11:00	: 12:30	90	8933.90	8936.40	2.50	0.03	6.60	
10.00		12:30	2:30	120	8936.40	8940.30	3.90	0.03	6.60	
		:	1	·	1				<u> </u>	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, K	VALUES OF k
		k ₁ = 4.8 x 10 ⁻⁵ cm/sec
Flow Rate, Q = total flow elapsed time	$k = C_1 \frac{Q}{h_T}$	k ₂ = 3.4 x 10 ⁻⁵ cm/sec
= / / min	UNITS:	k ₃ = 3.4 x 10 ⁻⁵ cm/sec
	$K = cm/sec$ $C_1 = constant$ $= 8 \times 10^{-3}$ $Q = 1 / min$	3.9 x 10 ^{.5} cm/sec
	$H_T = \text{meter}$	k _(ave) = 3.9 x 10 ⁻⁵ cm/sec





LOCATION: Dolores Consolidation Dam

BORING NO.: 1 DEPTH: 5.00 m

DEPTH OF GWT: 0.62 m

DATE STARTED: June 22, 1995 DATE FINISHED: June 22, 1995

SHEET NO. 1 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2$, in meters

Static Water Level Depth, h Constant Height of Water, h2 (inside casing) 0.00 m 0.62 m (at ground surface)

Equivalent Head, h. (arising from applied pressure) Not Applicable

D. DAIA ON										
TEST SECTION	PRES.		TIME		F	LOW (LIT	ERS/MIN)	ORI	FICE
	GAUGE	START	END	ELAPSED	W	ATER MET	ER READIN	1G	TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H _t)	(m)
5.00		8:00	8:05	5	12272.8	12282.3	9.50	1.90	0.62	
5.00		8.05	8:15	10	12282.3	12303.2	20.90	2.09	0.62	
5.00		8:15	8:30	15	12303.2	12333.2	30.00	2.00	0.62	
5.00		8:30	8:50	20	12333.2	12373.0	39.80	1.99	0.62	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k
		k ₁ = 2.5 x 10 ⁻² cm/sec
Flow Rate, Q = total flow elapsed time	$k = C_T \cdot \frac{Q}{h_T}$	$k_2 = 2.7 \times 10^2 \text{ cm/sec}$
= <i>l 1</i> min	UNITS:	$k_3 = 2.6 \times 10^{-2}$ cm/sec
	k = cm/sec C ₁ = constant = 8 x 10 ⁻³	2.6 x 10 ⁻² cm/sec
	Q = I / min H _T = meter	k _(ave) = 2.6 x 10 ⁻² cm/sec



LOCATION: Dolores Consolidation Dam

BORING NO.: <u>1</u> DEPTH: <u>10.00 m</u>

DEPTH OF GWT: 0.62 m

DATE STARTED: June 23, 1995 DATE FINISHED: June 23, 1995

SHEET NO. 2 of 2

PROJECT: GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h₁, h₂, h_p)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Static Water Level Depth, h₁

Height of Pressure Gauge, h₂

Equivalent Head, h_p

(arising from applied pressure)

Note: 1 psl = 0.703 m of water

TEAT OF OTION	PRES.		TIME		F	LOW (LIT	ERS/MIN)	ORI	ICE
TEST SECTION	GAUGE	START	END	ELAPSED		ATER MET			TOTAL	SECTION
DEPTH (m)	READING		OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
DEPTH (III)	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
10.00	10	2:13	2:18	5	11312.1	11322.7	10.60	2.12	8.68	• 1
10.00	20	2:19	2:24	5	11327.9	11372.8	44.90	8.98	15.71	
10.00	25	2:25	2:35	10	11388.1	11538.8	150.70	15.07	19.23	
10.00	20	2:35	2:40	5	11545.2	11595.2	50,00	10.00	15.71	
10.00	10	2:42	2:47	5	11619.1	11627.3	8.20	1.64	8.68	<u></u>

	ATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, &	VALUES OF k
			k ₁ = 2.0 x 10 ⁻³ cm/sec
Flow Rate, C	elapsed time	$k = C_f \cdot \frac{Q}{h_T}$	$k_2 = 4.6 \times 10^{-3} \text{ cm/sec}$
	= 1 / min	UNITS:	$k_3 = 6.3 \times 10^3 \text{ cm/sec}$
		k = cm/sec C _r = constant	k ₄ = 5.1 x 10 ⁻³ cm/sec
•		= 8 x 10 ⁻³ Q = 1/min	k _s = 1.5 x 10 ⁻³ cm/sec
	1 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	H _T = meter	k _(ave) = 3.9 x 10 ⁻³ cm/sec



LOCATION: Dolores Consolidation Dam

BORING NO.: 2 DEPTH: 5.00 m

DEPTH OF GWT: 8.70 m

DATE STARTED: June 22, 1995 DATE FINISHED: June 22, 1995

SHEET NO. 1 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_1 = h_1 + h_2 + h_p$, in meters

Static Water Level Depth, h_1 Height of Pressure Gauge, h_2 Equivalent Head, h_p (arising from applied pressure) 8.70 m 0.91 m Note: 1 psi = 0.703 m of water

TEST SECTION	PRES.		TIME		F	LOW (LIT	ERS/MIN	}	ORI	FICE
1201 GEOTION	GAUGE	START	END	ELAPSED		ATER MET			TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
5.00	10	10:20	10:25	5	10103.6	10119.5	15,90	3.18	12.95	
5.00	20	10:26	10:31	5	10130.5	10344.1	213.60	42.72	19.98	
5.00	25	10:31	10:41	10	10381.8	10922.0	540.20	54,02	23.50	
5.00	20	10:42	10:47	5 :	10956.7	11160.9	204.20	40.84	19.98	
5.00	10	10:47	10:52	5	11175.9	11310.9	135.00	27.00	12.95	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, &	VALUES OF k
		k ₁ = 2.0 x 10 ⁻³ cm/sec
Flow Rate, Q = total flow elapsed time	k = C ₁ <u>Q</u> h ₁	k ₂ = 1.7 x 10 ⁻² cm/sec
= 1/min	UNITS:	k ₃ = 1.8 x 10 ⁻² cm/sec
	k = cm/sec C ₁ = constant	k ₄ = 1.6 x 10 ⁻² cm/sec
	= 8 x 10 ° Q = 1 / mln	k _s = 1.7 x 10 ⁻² cm/sec
	H ₇ = meter	k _(ave) = 1.4 x 10 ⁻² cm/sec



LOCATION: Dolores Consolidation Dam

BORING NO.: 2 DEPTH: 10.00 m

DEPTH OF GWT: 8.70 m

DATE STARTED: June 23, 1995 DATE FINISHED: June 23, 1995

SHEET NO. 2 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Equivalent Head, he Height of Pressure Gauge, h2 Static Water Level Depth, h (arising from applied pressure) Note: 1 psi = 0.703 m of water 0.95 m 8.70 m

B. DATA ON FLOW TEST

TEST SECTION	PRES.	TIME			FLOW (LITERS/MIN)			ORIFICE		
TEST SECTION	GAUGE	START END ELAPSED						TOTAL	SECTION	
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	LATOT	FLOW	HEAD, m	LENGTH
DE THUS	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
10.00	10	3:27	3:32	5	10633.0	10654.5	21.50	4.30	16.69	
10.00	20	3:33	3:38	5	11663.3	11792.0	128.70	25.74	23.72	
10.00	25	3:39	3:49	10	11826.0	12087.2	261.20	26.12	27.24	
10.00	20	3:50	3:55	5	12128.4	12219.2	90.80	18.16	23.72	
10.00	10	3:56	4:01	5	12221.6	12269.3	47.70	9,54	16.69	<u></u>

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF k			
		k ₁ = 2.1 x 10 ⁻³ cm/sec			
Flow Rate, Q = total flow elapsed time	k = C , <u>Q</u> h _τ	k ₂ = 8.7 x 10 ⁻³ cm/sec			
= 1 / min	UNITS:	k ₃ = 7.7 x 10 ⁻³ cm/sec			
	k = cm/sec C ₁ = constant	k ₄ = 6.1 x 10 ⁻³ cm/sec			
	= 8 x 10 ⁻³ Q = //min	k _s = 4.6 x 10 ⁻³ cm/sec			
	H _T = meter	k _(ave) = 5.8 x 10 ⁻³ cm/sec			



LOCATION: Dolores Consolidation Dam

BORING NO.: 3 DEPTH: 5.00 m

DEPTH OF GWT: 3.70 m

DATE STARTED: <u>June 24, 1995</u> DATE FINISHED: <u>June 24, 1995</u>

SHEET NO. 1 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS (h1, h2, hp)

Total Head, $H_T = h_1 + h_2 + h_p$, in meters

Static Water Level Depth, h₁ Height of Pressure Gauge, h₂ Equivalent Head, h₂ (arising from applied pressure)

3.70 m

0.93 m

Note: 1 psi = 0.703 m of water

TEST SECTION	PRES.	TIME			FLOW (LITERS/MIN)				ORIFICE	
	GAUGE	START END ELAPSED WATER METER READING				TOTAL	SECTION			
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
5.00	10	10:15	10:20	5	12358.3	12375.0	16.70	3.34	11.67	
5.00	20	10:21	10:26	5	12378.0	12569.0	191.00	38.20	18.70	
5.00	25	10:27	10:37	10	12583.0	13057.3	474.30	47.43	22.22	
5.00	20	10:38	10:43	5	13139.9	13358.3	218.40	43.68	18.70	
5.00	10	10:44	10:49	5	13373.0	13408.8	35.80	7.16	11.67	

FLOW RATE CALCULATIONS	COEFFICIENT OF PERMEABILITY, k	VALUES OF &		
Flow Rate, Q = total flow elapsed time	k = C ₁ Q h _T	k ₁ = 2.3 x 10 ⁻³ cm/sec k ₂ = 1.6 x 10 ⁻² cm/sec		
= 1 / min	UNITS:	k ₃ = 1.7 x 10 ⁻² cm/sec		
	k = cm / sec C ₁ = constant = 8 x 10 ³	k ₄ = 1.9 x 10 ⁻² cm/sec		
	Q = // min	k _s = 4.9 x 10 ⁻³ cm/sec		
	H _T = meter	k _(ave) = 1.2 x 10 ⁻² cm/sec		
Note:				





FIELD PERMEABILITY TEST (CONDITION 1)

LOCATION: <u>Dolores Consolidation Dam</u> BORING NO.: 3

BORING NO.: 3 DEPTH: 10.00 m

DEPTH OF GWT: 3.70 m

DATE STARTED: <u>June 26, 1995</u> DATE FINISHED: <u>June 26, 1995</u>

SHEET NO. 2 of 2

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

A. DATA ON WATER HEADS ($h_1,\,h_2,\,h_p$)

Total Head, $H_1 = h_1 + h_2 + h_p$, in meters

Static Water Level Depth, h₁ Height of Pressure Gauge, h₂

3.70 m

1.00 m

Equivalent Head, h_p
(arising from applied pressure)
Note: 1 psi = 0.703 m of water

B. DATA ON FLOW TEST

TEAT SECTION	PRES.		TIME		F	LOW (LIT	ERS/MIN)	ORIF	ICE
TEST SECTION	GAUGE	START	END	ELAPSED			ER READIN		TOTAL	SECTION
DEPTH (m)	READING	OF	OF	TIME	INITIAL	FINAL	TOTAL	FLOW	HEAD, m	LENGTH
DEPTH (m)	(psi)	TEST	TEST	(min)	METER	METER	FLOW	RATE, Q	(H ₁)	(m)
10.00	10	2:45	2:50	5	13419.3	13446.7	27.40	5.48	11.74	
10.00	20	2:50	2:55	5	13461.7	13687.1	225.40	45.08	18.77	
10.00	25	2:56	3:06	10	13706.1	14259.1	553.00	55.30	22.29	
10.00	20	3.06	3:11	5	14271.0	14301.8	30.80	6.16	18.77	
10.00	10	3:12	3:17	5	14312.1	14337.1	25.00	5.00	11.74	<u></u>

COEFFICIENT OF PERMEABILITY, &	VALUES OF k
	$k_1 = 3.7 \times 10^{-3}$ cm/sec
k = C ₁ Q h _T	$k_2 = 1.9 \times 10^{-2} \text{ cm/sec}$
UNITS	k ₃ = 2.0 x10 ⁻² cm/sec
C ₁ = constant	k ₄ = 2.6 x 10 ⁻³ cm/sec
Q = 11 min	k ₅ = 3.4 x 10 ⁻³ cm/sec
H_T = meter	k _(ave) = 9.8 x 10 ⁻³ cm/sec
	UNITS: k = cm l sec $C_1 = \text{constant}$ $= 8 \times 10^{-3}$ Q = l l min

PART IV

LABORATORY PERMEABILITY TEST RESULTS



LOCATION: TM-1 Sabo Dam

BORING NO.: 1

DATE DRILLED: July 1, 1995

DATE FINISHED: July 2, 1995

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D. = 5.00 cm

19.63

Length, L,=

b) Permeability Test Data

1.90

Area, A, =

SAMPLE NO .: ss-5 DEPTH: 4.55 m

DATE TESTED: July 6, 1995

TESTED BY: J. Castro

Description of soil: Sandy GRAVEL (GM)

Trial	No.	Dry Density, g/cc	Temp. @ °C	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
	1	1.75	26	100.0	1800.0	1300.0	0.04	52.63	0.8694	6.1 x 10 ⁻⁴
-	2	1.65	26	100.0	1800.0	3000.0	0.08	52.63	0.8694	1.4 × 10 ⁻³
	3	1,55	26	100.0	1800.0	3550.0	0.10	52.63	0.8694	1.7 x 10 ⁻³
				AVE	RAGE	2616.7	0.07	52.6 3	0.87	1.2 x 10 ⁻³

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, =

19.63

Length, L,= b) Permeability Test Data

1.90

SAMPLE NO .: ss-9

DEPTH: 9.55 m

DATE TESTED: July 6, 1995

TESTED BY: J. Castro

Description of soil: Sandy SILT (ML)

 Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.65	26	100.0	1800.0	550.0	0.02	52.63	0.8694	2.6 x 10 ⁻⁴
2	1.55	26	100.0	1800.0	600.0	0.02	52.63	0.8694	28 × 10 ⁻¹
3	1.50	26	100.0	1800.0	650.0	0.02	52.63	0.8694	3.0 x 10 ⁻⁴
		,	AVE	RAGE	600.0	0.02	52.63	0.87	2.8 x 10 ⁻⁴





LOCATION: TM-1 Sabo Dam

BORING NO.: 2

DATE DRILLED: <u>July 1, 1995</u> DATE FINISHED: <u>July 2, 1995</u>

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, = 19.63

Lenglh,L,≃

b) Permeability Test Data

1.90

SAMPLE NO.: <u>ss-5</u>

DEPTH: 4.55 m

DATE TESTED: July 6, 1995

TESTED BY: J. Castro

Description of soil: Gray SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.76	26	100.0	1800.0	2010.0	0.06	52.63	0.8694	9.4 X 10 ⁻⁴
2	1.66	26	100.0	1800.0	2470.0	0.07	52.63	0.8694	1.2 X 10 ⁻³
3	1,60	26	100.0	1800.0	3600.0	0.10	52.63	0.8694	1.7 X 10 ⁻³
	·		AVE	RAGE	2693.3	0.08	52.63	0.87	1.3 X 10 ⁻³

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, =

b) Permeability Test Data

19.63 1.90

Length,L,≃

SAMPLE NO.; ss-9

DEPTH: 9.55 m

DATE TESTED: July 6, 1995

TESTED BY: J. Castro

Description of soil: Brown SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/AI	h/L	Viscosity correction	k,cm/s
1	1.70	26	100.0	1800.0	2510.0	0.07	52.63	0.8694	1.2 X 10 ⁻³
2	1.65	26	100.0	1800.0	3710.0	0.10	52.63	0.8694	1.7 X 10 ⁻³
3	1.60	26	100.0	1800.0	8550.0	0.24	52.63	0.8694	4.0 X 10 ⁻³
		·	AVE	RAGE	4923.3	0.14	52.63	0.87	2.3 X 10 ⁻³



LOCATION: TM-1 Sabo Dam

BORING NO.: 3

DATE DRILLED: July 3, 1995 DATE FINISHED: July 4, 1995

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D, = 5.00 cm 19.63 Area, A, =

Length, L,=

b) Permeability Test Data

1.90

SAMPLE NO.: ss-6 DEPTH: 5.55 m

DATE TESTED: July 6, 1995

TESTED BY: J. Castro

Description of soil: Gravelly SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.80	26	100.0	1800.0	900.0	0.03	52.63	0.8694	4.2 x 10 ⁻⁴
2	1.75	26	100.0	1800.0	1620.0	0.05	52.63	0.8694	7.6 x 10 ⁻¹
3	1.65	26	100.0	1800.0	2850.0	0.08	52.63	0.8694	1.3 x 10 ⁻³
			AVE	RAGE	1790.0	0.05	52.63	0.87	8.4 x 10 ⁻⁴

a) Sample Data

1

Diameter, D, = 5.00 cm

19.63 Area, A, =

b) Permeability Test Data

1.90 Length,L =

SAMPLE NO.: ss-9 DEPTH: 9.55 m

DATE TESTED: July 6, 1995

TESTED BY: J. Castro

Description of soil: Gravelly SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, I sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.75	26	100.0	1800.0	1930.0	0.05	52.63	0.8694	9.0 x 10 ⁻⁴
2	1.70	26	100.0	1800.0	3200.0	0.09	52.63	0.8694	1.5 x 10 ⁻³
3	1.65	26	100.0	1800.0	6200.0	0.18	52 63	0.8694	2.9 x 10 ⁻³
			AVE	RAGE	3776.7	0.11	52.63	0.87	1.8 x 10 ⁻³



LOCATION: Sabo Dam #6

BORING NO.: 1

DATE DRILLED: <u>June 29, 1995</u> DATE FINISHED: <u>June 30, 1995</u>

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, = 19.63

Length, L,= 1.90

b) Permeability Test Data

SAMPLE NO.: <u>ss-4</u>

DEPTH: <u>5.55 m</u>

DATE TESTED: July 3, 1995

TESTED BY: J. Castro

Description of soil: Gray SAND (SP)

<u> </u>	Dry	T	11	Elapsed				Viscosity	
Trial N		Temp. @	Head, h, cm	Time, t sec	Q, cm³	Q/At	h/L	correction	k, cm/s
1	1.95	26	100.0	1800.0	1940.0	0.05	52.63	0.8694	9.1 x 10 ⁻⁴
2	1.90	26	100.0	1800.0	1950.0	0.06	52.63	0.8694	9.1 x 10 ⁻⁴
3	1.85	26	100.0	1800.0	2000.0	0.06	52.63	0.8694	9.3 x 10 ⁻⁴
•									
			AVE	RAGE	1963.3	0.06	52.63	0.87	9.2 x 10 ⁻⁴

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, = 19.63

Length, L,= 1.90

b) Permeability Test Data

SAMPLE NO.: <u>ss-8</u> DEPTH: <u>9.55 m</u>

DATE TESTED: July 3, 1995

TESTED BY: J. Castro

Description of soil: Gravelly SAND (SP)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.95	26	100.0	1800.0	3720.0	0.11	52.63	0.8694	1.7 x10 ³
2	1.88	26	100.0	1800.0	3870.0	0.11	52.63	0.8694	1.8 x 10 ⁻³
3	1.80	26	100.0	1800.0	4950.0	0.14	52.63	0.8694	2.3 x 10 ⁻³
			AVE	RAGE	4180.0	0.12	52.63	0.87	2.0 x 10 ⁻³





LOCATION: Sabo Dam #6

BORING NO.: 2

DATE DRILLED: June 28, 1995 DATE FINISHED: June 29, 1995

PROJECT: GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

SHEET NO. 1 of 1

a) Sample Data

Diameter, D. = 5.00 cm

19.63 Area, A, =

1.90 Length, L,=

b) Permeability Test Data

SAMPLE NO.: ss-6 DEPTH: <u>5.55 m</u>

DATE TESTED: July 3, 1995

TESTED BY: J. Castro

Description of soil: Gray SAND (SP)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/A1	h/L	Viscosity correction	k, cm/s
1	1.95	26	100.0	1800.0	5850.0	0.17	52.63	0.8694	2.7 X 10 ⁻³
2	1.90	26	100.0	1800.0	10000.0	0.28	52.63	0.8694	4.7 X 10 ⁻³
3	1.80	26	100.0	1800.0	16750.0	0.47	52.63	0.8694	7.8 X 10 ⁻³
			AVE	RAGE	10866.7	0.31	52.63	0.87	5.1 X 10 ⁻³

a) Sample Data

Diameter, D, = 5.00 cm

19.63 Area, A, =

1.90 Length,L,=

b) Permeability Test Data

SAMPLE NO.: ss-9 DEPTH: 9.55 m

DATE TESTED: July 3, 1995

TESTED BY: J. Castro

Description of soil: Gray SAND (SP)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm ³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.90	26	100.0	1800.0	3180.0	0.09	52.63	0.8694	1.5 X 10 ⁻³
2	1.80	26	100.0	1800.0	4460.0	0.13	52.63	0.8694	2.1 X 10 ⁻³
3	1.70	26	100.0	1800.0	6570.0	0.19	52.63	0.8694	3.1 X 10 ⁻³
<u>L</u>		:	AVE	RAGE	4736.7	0.13	52.63	0.87	2.2 X 10 ⁻³





LOCATION: Sabo Dam #6

BORING NO.: 3

DATE DRILLED: June 29, 1995 DATE FINISHED: June 30, 1995

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D. = 5.00 cm

Area, A, = 19.63

Length,L,=

b) Permeability Test Data

1.90

SAMPLE NO.; <u>ss-3</u> DEPTH: <u>4.55 m</u>

DATE TESTED: July 3, 1995

TESTED BY: J. Castro

Description of soil: Sandy GRAVEL (GW)

							·		
Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm ³	Q/At	h/L	Viscosity correction	k cm/s
1	2.15	26	100.0	1800.0	3550.0	0.10	52.63	0.8694	1.7 X 10 ⁻³
2	2.00	26	100.0	1800.0	5000.0	0.14	52.63	0.8694	2.3 X 10 ⁻³
3	1.92	26	100.0	1800.0	9300.0	0.26	52.63	0.8694	4.3 X 10 ³
1			AVE	RAGE	5950.0	0.17	52.63	0.87	2.8 X 10 ⁻³



a) Sample Data

Diameter, D, = 5.00 cm

Area, A, = 19.63

Length L,= 1.90

b) Permeability Test Data

SAMPLE NO.: <u>ss-8</u> DEPTH: <u>9.55 m</u>

DATE TESTED: July 3, 1995

TESTED BY: J. Castro

Description of soil: Gray SAND (SM)

					•				
Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/AI	h/L	Viscosity correction	k,cm/s
1	1.85	26	100.0	1800.0	1620.0	0.05	52.63	0.8694	7.6 X 10 ⁻⁴
2	1.75	26	100.0	1800.0	1850.0	0.05	52.63	0.8694	8.6 X 10 ⁻⁴
3	1.70	26	100.0	1800.0	2000.0	0.06	52,63	0.8694	9.3 X 10 ⁻⁴
		. •	AVE	RAGE	1823.3	0.05	52.63	0.87	8.5 X 10 ⁻⁴





LOCATION: Sabo Dam #9

BORING NO.: 1

DATE DRILLED: June 8, 1995 DATE FINISHED: June 9, 1995

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

a) Sample Data

0

Diameter, D, = 5.00 cm

19.63 Area, A, = 1.90

Length, L,=

SAMPLE NO.: ss-6 DEPTH: 5.55 m

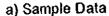
DATE TESTED: June 14, 1995

TESTED BY: J. Castro

Description of soil: Gray silty SAND (SM)

b) Permeability Test Data

Trial No.	Dry Density, g/cc	Temp. @ °C	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.80	26	100.0	1800.0	600.0	0.02	52.63	0.8694	2.8 x 10 ⁻¹
2	1.70	26	100.0	1800.0	590.0	0.02	52.63	0.8694	2.8 x 10 ⁻⁴
3	1.60	26	100.0	1800.0	880.0	0.02	52.63	0.8694	4.1 x 10 ⁻⁴
	:		AVE	RAGE	690.0	0.02	52.63	0.87	3,2 x 10 ⁻⁴



Diameter, D, = 5.00 cm

19.63 Area, A, = 1.90

b) Permeability Test Data

Length,L,=

SAMPLE NO.: ss-9 DEPTH: 9.55 m

DATE TESTED: June 14, 1995

TESTED BY: J. Castro

Description of soil: Gray silty SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @	Head, h,	Elapsed Time, t sec	Q, cm ³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.80	27	100.0	1800.0	201.0	0.01	52.63	0.8502	9.2 x 10 ⁻⁵
2	1,70	27	100.0	1800.0	760.0	0.02	52.63	0.8502	3.5 x 10 ⁻¹
3	1.60	27	100.0	1800.0	440.0	0.01	52.63	0.8502	2.0 x 10 ⁻⁴
			AVE	RAGE	467.0	0.01	52.63	0.85	2.1 x 10 ⁻⁴





LOCATION: Sabo Dam #9

BORING NO.: 2

DATE DRILLED: June 10, 1995 DATE FINISHED: June 13, 1995

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D. = 5.00 cm 19.63

Area, A, = Length,L,=

1.90

b) Permeability Test Data

SAMPLE NO.: ss-5

DEPTH: 4.65 m

DATE TESTED: June 17, 1995

TESTED BY: J. Castro

Description of soil: Gray silty SAND (SM)

Trial No.	Dry Density, g/cc	Temp @ °C	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.85	26	100.0	1800.0	650.0	0.02	52.63	0.8694	3.0 X 10 ⁻⁴
2	1.75	26	100.0	1800.0	670.0	0.02	52.63	0.8694	3.1 X 10 ⁻⁴
3	1.70	26	100.0	1800.0	680.0	0.02	52.63	0.8694	3.2 X 10 ⁻¹
			AVE	RAGE	666.7	0.02	52.63	0.87	3.1 X 10 ⁻⁴



a) Sample Data

Diameter, D, = 5.00 cm

Area, A, = 19.63

b) Permeability Test Data

Length, L,= 1.90 SAMPLE NO.: ss-9 DEPTH: 9.55 m

DATE TESTED: June 17, 1995

TESTED BY: J. Castro

Description of soil: Brown silty SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.60	26	100.0	1800.0	460.0	0.01	52.63	0.8694	2.2 X 10 ⁻⁴
2	1.55	26	100.0	1800.0	640.0	0.02	52.63	0.8694	3.0 X 10 ⁻⁴
3	1.45	26	100.0	1800.0	640.0	0.02	52.63	0.8694	3.0 X 10 ⁻¹
			AVE	RAGE	580.0	0.02	52.63	0.87	2.7 X 10 ⁻⁴





LOCATION: Sabo Dam #9

BORING NO.: 3

DATE DRILLED: June 14, 1995 DATE FINISHED: June 15, 1995

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D, = 5.00 cm Агеа, A, = 19.63

Length,L,= 1.90 SAMPLE NO.: 55-5 DEPTH: 4.55 m

DATE TESTED: June 17, 1995

TESTED BY: J. Castro

Description of soil: Brown silty SAND (SM)

b) Permeability Test Data

Elapsed Dry Viscosity Temp. @ Head, h, k, cm/s Q/At h/L Q, cm³ Time, t Density, Trial No. correction °C cm sec g/cc 2.5 X 10⁻⁴ 0.8694 0.01 52.63 530.0 1800.0 100.0 1.70 26 3.1 X 10⁻⁴ 0.8694 670.0 0.02 52.63 1800.0 100.0 1.65 26 2 3.5 X 10⁻⁴ 0.8694 750.0 0.02 52.63 1800.0 100.0 28 3 1.60 3.0 X 10⁻⁴ 0.87 52.63 650.0 0.02 **AVERAGE**

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, =

b) Permeability Test Data

19.63

Length,L,≃

1.90

SAMPLE NO : ss-9

DEPTH: 9.55 m

DATE TESTED: June 17, 1995

TESTED BY: J. Castro

Description of soil: Brown silty SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm ³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.70	26	100.0	1800.0	680.0	0.02	52.63	0.8694	3.2 X 10 ⁻¹
2	1.65	26	100.0	1800.0	920.0	0.03	52.63	0.8694	4.3 X 10 ⁻⁴
3	1.60	26	100.0	1800.0	1370.0	0.04	52.63	0.8694	6.4 X 10 ⁻⁴
			AVE	RAGE	990.0	0.03	52.63	0.87	4.6 X 10 ⁻⁴



LABORATORY PERMEABILITY TEST

LOCATION: Maskup Consolidation Dam

BORING NO.: 1

DATE DRILLED: June 17, 1995 DATE FINISHED: June 19, 1995

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D, = 5.00 cm 19.63 Area, A, =

Length, L,=

b) Permeability Test Data

1.90

SAMPLE NO .: ss-6

DEPTH: 5.55 m

DATE TESTED: June 26, 1995

TESTED BY: J. Castro

Description of soil: Gray SAND (SW-SM)

						Annual Company of the Column States of the			
Trial No.	Dry Density, g/cc	Temp. @ °C	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/AI	h/L	Viscosity correction	k, cm/s
1	1.80	26	100.0	1800.0	900.0	0.03	52.63	0.8694	4.2 X 10 ⁻⁴
2	: 1.70	26	100.0	1800.0	910.0	0.03	52.63	0.8694	4.3 X 10 ⁻⁴
3	1.60	26	100.0	1800.0	1200.0	0.03	52.63	0.8694	5.6 X 10 ⁻⁴
		. !	ļ						
			AVE	RAGE	1003.3	0.03	52.63	0.87	4.7 X 10 ⁻⁴



a) Sample Data

Diameter, D, = 5.00 cm

Area, A, =

b) Permeability Test Data

19.63

Length,L,=

1.90

SAMPLE NO.: ss-9

DEPTH: 9.55 m

DATE TESTED: June 26, 1995

TESTED BY: J. Castro

Description of soil: Gray SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, I sec	Q, cm ³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.65	26	100.0	1800.0	1600.0	0.05	52.63	0.8694	7.5 X 10 ⁻⁴
2	1.60	26	100.0	1800.0	1790.0	0.05	52.63	0.8694	8.4 X 10 ⁻⁴
3	1.50	26	100.0	1800.0	1900.0	0.05	52.63	0.8694	8.9 X 10 ⁻⁴
			AVE	RAGE	1763.3	0.05	52.63	0.87	8.2 X 10 ⁻⁴





LOCATION: Maskup Consolidation Dam

BORING NO.: 2

DATE DRILLED: June 20, 1995 DATE FINISHED: June 21, 1995

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, = 19.63 1.90

Length, L,=

b) Permeability Test Data

SAMPLE NO.: ss-5 DEPTH: <u>5.55 m</u>

DATE TESTED: June 26, 1995

TESTED BY: J. Castro

Description of soil: Brown SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.79	26	100.0	1800.0	680.0	0.02	52.63	0.8694	3.2 X 10 ⁻¹
2	1.69	26	100.0	1800.0	700.0	0.02	52.63	0.8694	3.3 X 10 ⁻⁴
3	1.60	26	100.0	1800.0	810.0	0.02	52.63	0.8694	3.8 X 10 ⁻⁴
<u> </u>						į			
			AVE	RAGE	730.0	0.02	52.63	0.87	3.4 X 10 ⁻⁴

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, = 19.63

b) Permeability Test Data

Length, L,= 1.90 SAMPLE NO.: ss-8 DEPTH: 8.55 m

DATE TESTED: June 26, 1995

TESTED BY: J. Castro

Description of soil: Brown clayey SAND (SC)

Trial No.	Dry Density, g/cc	Temp. @ °C	Head, h, cm	Elapsed Time, I sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.57	26	100.0	1800.0	450.0	0.01	52.63	0.8694	2.1 X 10 ⁻⁴
2	1.50	26	100.0	1800.0	695.0	0.02	52.63	0.8694	3.2 X 10 ⁻⁴
3	1.45	26	100.0	1800.0	730.0	0.02	52.63	0.8694	3.4 X 10 ⁻⁴
			AVE	RAGE	625.0	0.02	52.63	0.87	2.9 X 10 ⁻⁴



LOCATION: Maskup Consolidation Dam

BORING NO.: 3

DATE DRILLED: June 19, 1995 DATE FINISHED: June 21, 1995

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR

THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, = 19.63

Length,L,= 1.90

b) Permeability Test Data

SAMPLE NO.: <u>ss-5</u>

DEPTH: 4.55 m

DATE TESTED: June 26, 1995

TESTED BY: J. Castro

Description of soil: Brown SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.73	26	100.0	1800.0	550.0	0.02	52.63	0.8694	2.6 X 10 ⁻⁴
2	1.63	26	100.0	1800.0	1000.0	0.03	52.63	0.8694	4.7 X 10 ⁻⁴
3	1.53	26	100.0	1800.0	1340.0	0.04	52.63	0.8694	6.3 X 10 ⁻⁴
			AVE	RAGE	963.3	0.03	52.63	0.87	4.5 X 10 ⁻⁴

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, = 19.63

b) Permeability Test Data

Length L.= 1.90

SAMPLE NO.: <u>ss-9</u> DEPTH: <u>9.55 m</u>

DATE TESTED: June 26, 1995

TESTED BY: J. Castro

Description of soil: Brown SAND (SM)

Tnal No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/A1	h/L	Viscosity correction	k, cm/s
1	1.79	26	100.0	1800.0	470.0	0.01	52.63	0.8694	2.2 x 10 ⁻⁴
2	1.69	26	100.0	1800.0	530.0	0.01	52,63	0.8694	2.5 x 10 ⁻⁴
3	1.60	26	100.0	1800.0	570.0	0.02	52.63	0.8694	2.7 x 10 ⁻⁴
			AVE	RAGE	523.3	0.01	52.63	0.87	2.4 x 10 ⁻⁴





LOCATION: Dolores Consolidation Dam

BORING NO.: 1

DATE DRILLED: June 22, 1995 DATE FINISHED: June 23, 1995

SHEET NO. 1 011

PROJECT: GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D. = 5.00 cm Area, A, = 19.63

Length,L,=

1.90

b) Permeability Test Data

SAMPLE NO.: ss-5 DEPTH: 4.55 m

DATE TESTED: June 28, 1995

TESTED BY: J. Castro

Description of soil: Gray SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm ³	Q/AI	h/L	Viscosity correction	k, cm/s
1	1.68	26	100.0	1800.0	720.0	0.02	52.63	0.8694	3.4 X 10 ⁻⁴
2	1.58	26	100.0	1800.0	750.0	0.02	52.63	0.8694	3.5 X 10 ⁻⁴
3	1.50	26	100.0	1800.0	850.0	0.02	52.63	0.8694	4.0 X 10 ⁻⁴
	1417	: '	AVE	RAGE	773.3	0.02	52.63	0.87	3.6 X 10 ⁻⁴

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, = 19.63

b) Permeability Test Data

Length,L,= 1.90

SAMPLE NO.: ss-9 DEPTH: 9.55 m

DATE TESTED: June 28, 1995

TESTED BY: J. Castro

Description of soil: Gray SAND (SW)

Trial No.	Dry Density, g/cc	Temp. @	Head, h, cm	Elapsed Time, t sec	Q, cm ³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.85	26	100.0	1800.0	840.0	0.02	52.63	0.8694	3.9 X 10 ⁻⁴
2	1.74	26	100.0	1800.0	1380.0	0.04	52.63	0.8694	6.5 X 10 ⁻⁴
3	1.65	26	100.0	1800.0	1510.0	0.04	52.63	0.8694	7.1 X 10 ⁻⁴
			AVE	RAGE	1243.3	0.04	52.63	0.87	5.8 X 10 ⁻⁴





LOCATION: Dolores Consolidation Dam

BORING NO.: 2

DATE DRILLED: June 22, 1995 DATE FINISHED: June 23, 1995

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D, = 5.00 cm

Area, A, =

19.63

Length, L,=

1.90

b) Permeability Test Data

SAMPLE NO.: ss-6 DEPTH: <u>5.55 m</u>

DATE TESTED: June 28, 1995

TESTED BY: J. Castro

Description of soil: Gray silty SAND (SM)

Trial No.	Dry Density, g/cc	Temp. @ °C	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.72	26	100.0	1800.0	550.0	0.02	52.63	0.8694	2.6 X 10 ⁻⁴
2	1.62	26	100.0	1800.0	640.0	0.02	52.63	0.8694	3.0 X 10 ⁻⁴
3	1.52	26	100.0	1800.0	650.0	0.02	52.63	0.8694	3.0 X 10 ⁻⁴
			AVE	RAGE	613.3	0.02	52.63	0.87	2.9 X 10 ⁻⁴



a) Sample Data

Diameter, D, = 5.00 cm

Area, A, =

19.63

Length,L,=

b) Permeability Test Data

1.90

SAMPLE NO.: ss-9 DEPTH: <u>9.55 m</u>

DATE TESTED: June 28, 1995

TESTED BY: J. Castro

Description of soil: Gray SAND (SP)

Trial No.	Dry Density, g/cc	Temp. @ °C	Head, h, cm	Elapsed Time, t sec	Q, cm³	Q/AI	h/L	Viscosity correction	k, cm/s
1	1.95	26	100.0	1800.0	1380.0	0.04	52.63	0.8694	6.5 X 10 ⁻⁴
2	1.88	26	100.0	1800.0	1400.0	0.04	52.63	0.8694	6.5 X 10 ⁻¹
3	1.80	26	100.0	1800.0	1950.0	0.06	52.63	0.8694	9.1 X 10 ⁻¹
		:	AVEI	RAGE	1576.7	0.04	52.63	0.87	7.4 X 10 ⁻⁴





LOCATION: Dolores Consolidation Dam

BORING NO.: 3

DATE DRILLED: June 24, 1995 DATE FINISHED: June 26, 1995

SHEET NO. 1 of 1

PROJECT: GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

a) Sample Data

Diameter, D. = 5.00 cm

Area, A, = 19.63

Length,L,=

1.90

b) Permeability Test Data

SAMPLE NO.: <u>ss-6</u> DEPTH: <u>5.55 m</u>

DATE TESTED: June 28, 1995

TESTED BY: J. Castro

Description of soil: Brown SAND (SM)

Trial No.	Ory Density, g/cc	Temp. @	Head, h,	Elapsed Time, t sec	Q, cm³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.70	26	100.0	1800.0	1860.0	0.05	52.63	0.8694	8.7 X 10 ⁻⁴
2	1.63	26	100.0	1800.0	1880.0	0.05	52.63	0.8694	8.8 X 10 ⁻⁴
3	1.53	26	100.0	1800.0	1940.0	0.05	52.63	0.8694	9.1 X 10 ⁻¹
			AVE	RAGE	1893.3	0.05	52.63	0.87	8.9 X 10 ⁻⁴

a) Sample Data

Diameter, D, = 5.00 cm

Area, A; =

b) Permeability Test Data

19.63

Length,L,=

1.90

SAMPLE NO.: ss-9

DEPTH: 9.55 m

DATE TESTED: June 28, 1995

TESTED BY: J. Castro

Description of soil: Brown silty SAND (SM)

Trial No.	Dry Densily, g/cc	Temp. @	Head, h, cm	Elapsed Time, 1 sec	Q, cm ³	Q/At	h/L	Viscosity correction	k, cm/s
1	1.79	26	100.0	1800.0	460.0	0.01	52.63	0.8694	2.2 x 10 ⁻⁴
2	1.65	26	100.0	1800.0	570.0	0.02	52.63	0.8694	2.7 x 10 ⁻⁴
3	1.59	2.6	100.0	1800.0	740.0	0.02	52.63	0.8694	3.5 x 10 ⁻⁴
			AVE	RAGE	590.0	0.02	52.63	0.87	2.8 x 10 ⁻⁴

PART V DIRECT SHEAR TEST RESULTS

CHART E.1 - Direct Shear Test

PINATUBO Project		P. B	Jo	b No	DEPTH:	e 1 of 3 pages 5.00 M.	>
Location of ProjectT	1-1 SABO D	AM	Во	ring No	1 Same	ole No	
Description of Soil	A.M.						
Test Performed By			Da		07-03-9		
Blows/Layer	50		of Layers			mmer 349 g	
Mold dimensions: Diam.	6 X 6	Cm.	Ht2	CM.	-	72 cu.cm.	
Water Content Determin	ation				RECEIVED RELEASED		•
Sample no	1	2	3	4	5	- 7 JUL 199	5
Moisture can no.	·						
Wt. of can + wet soil					TIFI		
Wi. of can + dry soil		Pa	MENTAL INTO T		191		
Wt. of water			YCL I SER				. •
Wt. of can		 	201-		. /// / /		
Wt. of dry soil		1	UALITY ASSU	ANCE	- 13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Water content, u %			HKO BY:				
	<u> </u>						
Density Determination	XAM	IMUM DENSI	TY	•:_			
Assumed water content	-	_	-	_	<u> </u>		
Water content, w %	_		_	-	,		
Wt. of soil + mold	2,645	2,647	2,643	-			
Wt. of mold	2,514	2,514	2,514				
Wt. of soil in mold	131	133	129	_			
Wet density, g/cc	1.819	1.847	1.792				
Dry density γ, g/cc	Aver	age = 1.8	19	_			
			T T T				
					+		
3),cc	<u> </u>	ATT TO			THIS LA	BORATORY RES	PONSIBL
ರ ಕ			 			FOR TEST ONL	
ج خ را در م			#				
tal smaal &		_ _ U			 - 		
ELITA K. MORA S CIVIL ENGINEER &		- 	N _a Jaff	-			
REG. NO. 12394		%	料学		- - 		ec Lare
TY-TECHNICAL MANAG	er 🔚 🕂	TES		- -	- - - ^M	ILIO M. MORAL CIVIL ENGIN	
•	<u> </u>					PRC REG. NO.	
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_	GEOANALYTICS	COMPUTER PRATTOUT	SHEET2
0	PROJECT: PINATUBO .	J08 NO:	CAOSS REFERENCE:
	LOCATION : TM-1 SABO DAM	TESTEO BY: CAM	CHECKED 8Y:
	SAMPLE : BH-1 DEPTH : 5.00 M.	DATE TESTED: 07-03-95	DATE FINISHED: O

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	100 100 100 100 100 100 100 100 100 100	
	DIRECT SREAR TEST	
3-0-		
		Z NAXIMUM DENSITE
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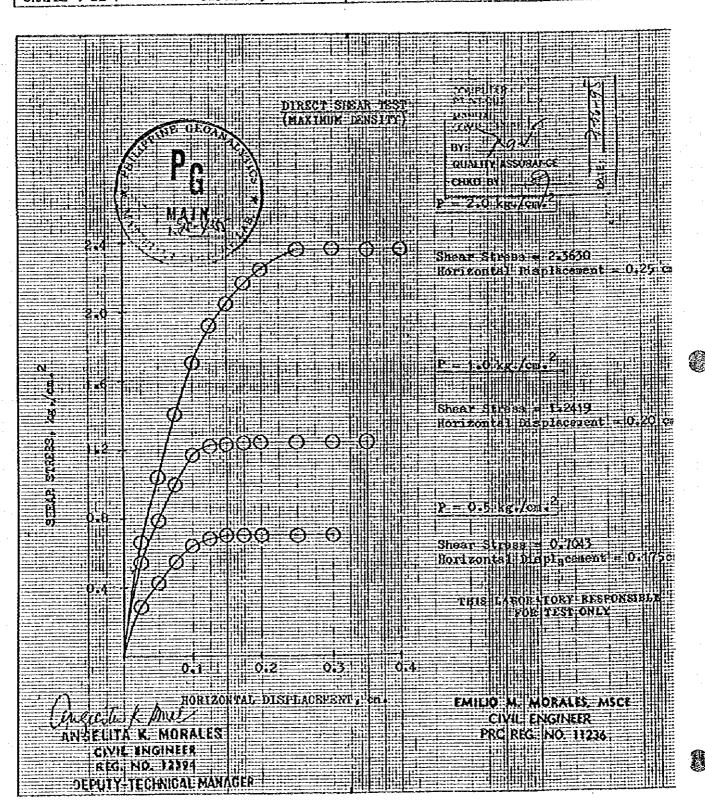
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7. 8833335 87. 1.0	PG MANO	ANGELITA K MORATES
100-	Pg	ANGELITA K MORATES
74 88 88 88 88 88 88 88 88 88 88 88 88 88	Pg	ANGELITA K MORATES
	Pg	ANGELITA K MORATES
1.0-	Pg	ANGELITA K. MORATES CIVIL ENGINETR REG. NO. 12374 DEPUTY-TECHNICAL MANAGES
100 House of the control of the cont	Pg	ANGELITA K. MORAKES CIVIL ENGINEER FEG. NO. 12374 DEPHIY-TECHNICAL MANAGES A DEPHIY-TECHNICAL MANAGES
74 SS 21 S 75 S 21 S 2	Pg	ANGELITA K. MORAKES CIVIL ENGINEER FEG. NO. 12374 DEPHIY-TECHNICAL MANAGES A DEPHIY-TECHNICAL MANAGES
7. 883500 F.O. 1.0.	Pg	ANGELITA K. MORATES CIVIL ENGINETR REG. NO. 12374 DEPUTY-TECHNICAL MANAGES
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* SSELLOS TO	PG PG	ANGELITA K. MORAKES CIVIL ENGINEER REG. NO. 17374 DEPUTY-TECHNICOL MANAGES THYS EAHORATORY RESPONSIBLE FOR TIST ONLY
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	PG PG	ANGELITA K. MORAKES CIVIL ENGINEER FEG. NO. 12374 DEPHIY-TECHNICAL MANAGES A DEPHIY-TECHNICAL MANAGES

JEV

07-03-95

GEOANALYTICS	COMPUTER PRINTOUT CONTAINS PREPARED CO	SHEET 3 of 3
PROJECT: PINATUBO.	JOS NO:	CROSS REFERENCE:
LOCATION : TM-1 SABO DAM	TESTED BY: CAM	CHECKED BA: JEA
SAMPLE : BH-1 DEPTH : 5.00 M.	DATE TESTED: 07-03-95	DATE FNISHED: 07-03-95



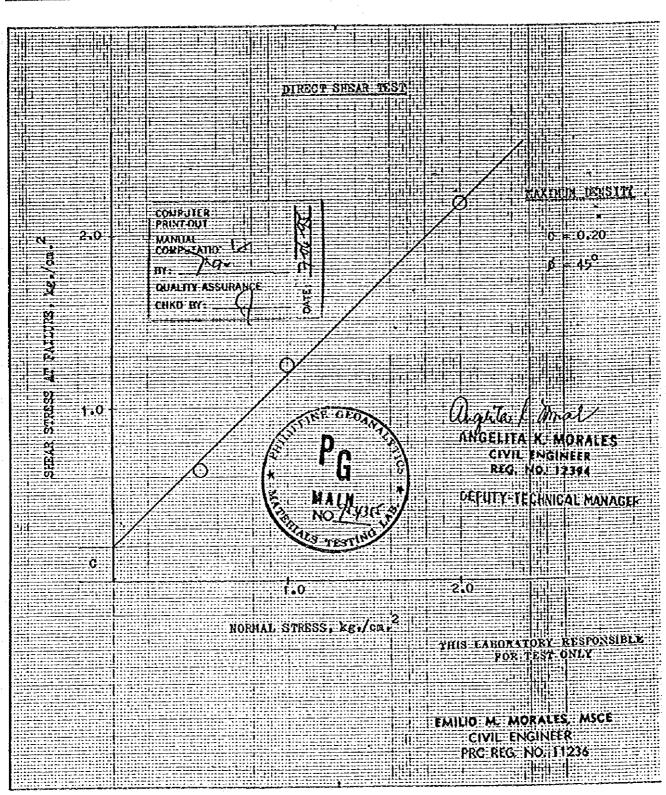


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(j	COMPACTION TEST						1 of 3 pages	
	PINATU80			Joi	h No	E: 1179		
	ProjectTM-	-1 SABO DA	M	Bo	ring No	1 Samı	ole No	
	Description of Soil							
				Da	te of Test	07-03-95		
•	Blows/Layer	50	No. o	! Layers		. Wt. of Ha	349 g.	
. '	Mold dimensions: Diam	6 X 6 0	m.	Ht2	Cm.	Vol	2cu.cm.	
					DATE R	ECEIVED	0 7 JUL 199	15
	Woter Content Determina				DATE A	1 8	6	~
	Sample no.		2	3		 		
	Moisture can no.					 		
	Wt. of can + wet soil			INER =		<u> </u>		
	Wt. of can + dry soil		COM PRINT		<u> </u>	<u> </u>		
	Wt. of water		MANU COM-	AL AL		<u> </u>		
	Wt. of can		BY:	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				
•	Wt. of dry soil		QUALI	ITY ASSURAN		<u> </u>		
	Water content, w%		CHKE	BY:	-	<u> </u>		
	Density Determination	MAX	IMUM DENSI	ΤΥ				
	Assumed water content		_	_ `	-	_		
3	Water content, w%	_	-	_				
	Wt. of soil + mold	2,639	2,642	2,640		<u> </u>		
	Wt. of mold	2,514	2,514	2,514	-	_		
	Wt. of soil in mold	125	128	126		_		
	Wet density, g/cc	1.736	1.778	1.750				
	Dry density y, g/cc	Ave	age = 1.7	55	-	-		
				7 7 7	<u> </u>	1 1		
• *		- -						•
			ATT E		 - -	THIS	PORATORY RESI	A IGISMO
	0/6				 		FOR TEST ONLY	
		- <i> </i>		4-1-19	 	 		
(alita & mouls		<u> </u>	<u> </u>				
14	OCIUTA X MILA		L MAL	100	 		•	
	CIVIL ENGINEER &		S NOW	101.3	 			
	KEG. P. J. TEST		VI S FI	TY	 	 		
DE	PUTY-TECHNICAL MANAG	ER				L_LEM!	LIO M. MORALI	
		•	Wate	er content, w	%		CIVIL ENGINE PRC REG. NO. 1	
	Optimum moisture =	'%		dry density		g/cc	 	
. જ ે	Орином повые							
				PHILIPPINE	A		hard tended (manual (7 (7) (

GEOANALYTICS	COMPUTER PRINTOUT	SNEET 2 OF 3
PROJECI: PINATUBO.	JOB NO:	CROSS REFERENCE:
LOCATION: TM-1 SABO DAM	TESTED BY: CAM	CHECKED 84: JE A
SAMPLE : BH-1 DEPTH : 10.00 M.	CATE TESTED: 07-03-95	DATE FINISHED: 07-03-95





1 KN + 100 971 Kg/ 1 HP+ - 7 214 DCT

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GEOANALYTICS	COMPUTER PRINTOUT CONTROL CONT	SHEET 3 OF 3
PROJECT: PINATUBO.	JOB NO: TESTED BY: CAM	CHOSS REFERENCE:
LOCATION: TM-1 SABO DAM SAMPLE: BH-1 DEPTH: 10.00 M.		OATE FINISHED: 07-03-95

		CONSTITUTE TO SERVICE OF THE PRINCE OF THE P
	PG DIRECTION PLANT	T SUBAR TEST HANSUR SOLD AND BYLL SOLD SUBAR TEST HANSUR SOLD AND BYLL SOLD SUBARCE
	MAIN NOXE-YAILS	P = 2.0 kg./cm. ²
	2.0	○ ○ ○ ○ Shear Stress = 2.1848 Horizontal Displacement = 0.25 cm.
		1 P = 1.0 kgs/cms 1
+	ij 1.2 / 0000 I / /	Shear Stress = 1.2476 Horisontal Displacement = 0.125 cm
		P. = 0.5 kg./cm. P. = 0.5 kg./cm. O. 6382 Horizontal Displacement = 0.175 c
	0.4	THIS LABORATORY RESPONSIBLE FOR TEST ONLY
2	d.1 0.2 A T / / / A MORIZONTAL DISPL	O.3 O.4 ACRESITA CA.
	ANGELITA K. MORA: ES CIVIL ENGINEER REG. NO. 12394 DECUTY-TECHNICAL MANAGER	EMILIO M. MORALES, MSCE CIVIL ENGINEER PRC: REG.: NO.: 11236

COMPACTION TEST PINATUSO				n	Page 1 Этн : 5.0	l of 3 page	5
Project	1-1 SABO D	M		b No)		
Location of Project			Bo	ring No	Sample	No	
Description of Soil			· · · · · · · · · · · · · · · · · · ·		07-03-95		
Test Performed By	50			te of Test		349 g.	
Blows/Layer	6 X 6 c	No. o	f Layers	Em.	Wt. of Hamr	ner	
Mold dimensions: Diam.			Ht		Vol CEIVED:	cu,cm.	
Water Content Determin	ation				LEASED:	07 111	1006
\$ámpla no.	1	2	3	4	5	6	1330
Moisture can no.							
Wt. of can + wet soil							
Wt. of can + dry soil			PRINT OU	7			
Wt. of water			COMPULAT	(2)	722		•
Wt. of can				han	7		
				SSURBACE	═╂┩╉╾		-
Wt. of dry soil			CHKU BY		- 		
Water content, w%					_ g [
Density Determination	IXAM ·	MUM DENSI	ΓY				
Assumed water content	-						
Water content, &%	-	-	- :	-	-	-	
Wt. of soil + mold	2,646	2,644	2,642	-	_	-	
Wt. of mold	2,514	2,514	2,514	- :	-		•
Wt. of soil in mold	132	130	128	-	-		
Wet density, g/cc	1.833	1.806	1.778	-	_	-	
Dry density γ, g/cc	Aver	age = 1.8	ж .		_		7 to 1
	<u></u>				-7-7		
			 				
8	<u> </u>						
9	-	Mary .	EOIA		_ _		
of the second					IS LABORA	TORY RESPO	DUSIBLE
ulita K Mnaal & GELITA K. MORA' ESE				<u> </u>	FOR	TEST ONLY	٠.
(GELITA X, MORA' ESE	. I · I · A		T			4	
CIVIL ENGINEER &		M Ag	11/201 0				
		(S) 10.	++				
UTY-TECHNICAL MANAGER		US TE					
	handani.	Wate	r content, w%	•		IO M. MOR CIVIL ENGI	NEER
Optimum moisture =	%	Maximum	dry density =		. g/cc F	RC REG. NO). 11236

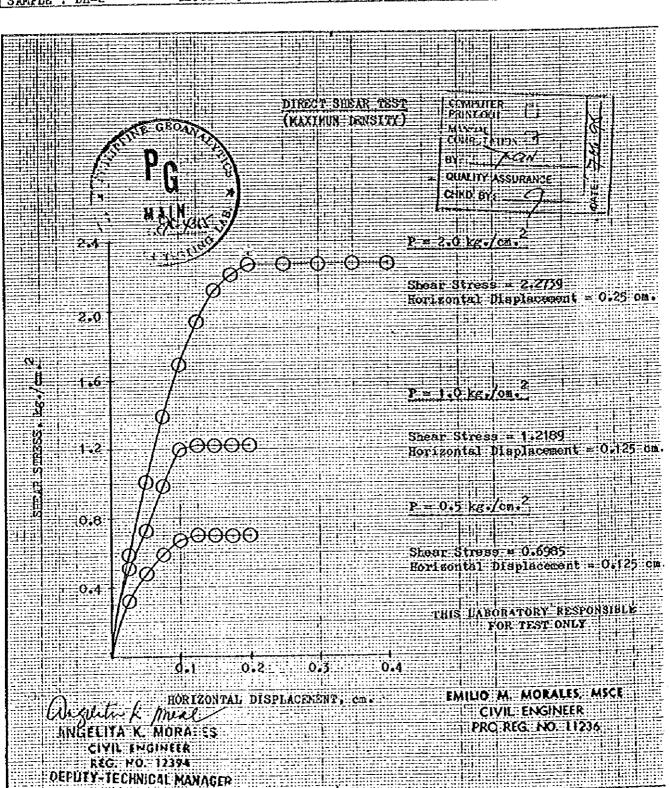
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		Name of the Control o
GEOANALYTICS	DOMPUTER PRINTOUT DETAILS PREPARED	SMEET 2 of 3
PROJECT: PINATUBO .	200.00.	CHOSS REFERENCE:
LOCATION TH-1 SABO DAM	Liegiconi. CMM	CHECKED BA: JEA
SAMPLE : BH-2 DEPTH : 5.00 M.	DATE TESTED: 07-03-95	OATE FINISHED: 07-03-95
DATEMS 1 DIST		

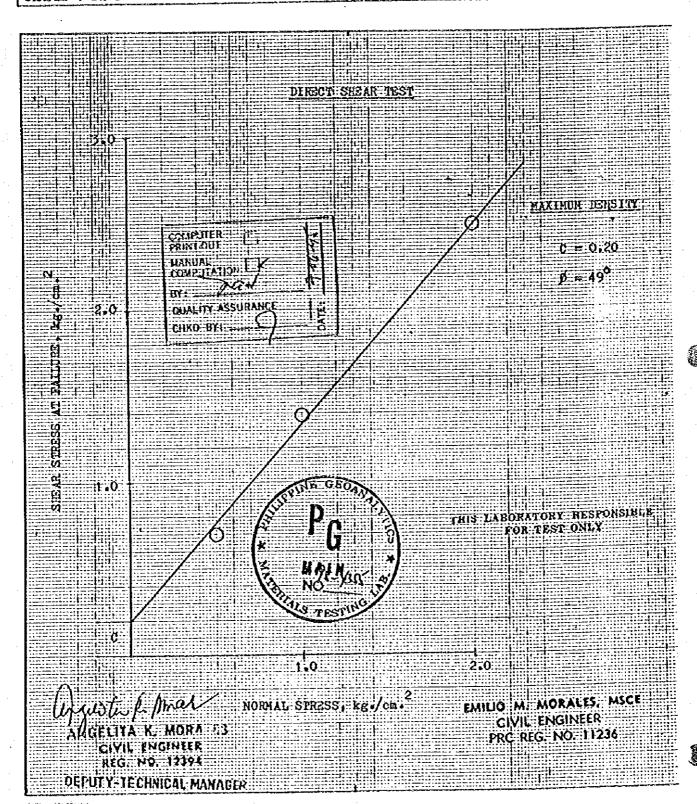
		DIRECT SHEAR TO	ST.	
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				YTIERSO NUNCOTARN
				G e 0.18
# 2.0	CONDUITES	8		g = 46°
	COMB TATA:			
G	OVALITY ASSURANCE			
	CHKD: BY:	7		
		p		
1.0		STINE OFO	% 1/4	et ka t
a de la companya de l		& Pr	A Ungil	TWA MORALES
B B		X		IYIE ENGINEER REG., NO. 12594
	/	KALUS NO.	- VEPIII	Y-TECHNICAL MANAGER
		YEST!	%	
i v				
		1.0	2.0	
	NORK)	u, strešs, kg./c	n . This Lay	ORATORY RESPONSIBLE.
			виню	M. MORALES, MSCE
	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		CI	VIL ENGINEER REG. NO. 11236

GEOANALYTICS	COMPUTER PRINTOUT	SHEET 3 OF 3
20015071	JOS NO:	CROSS REFERENCE:
LOCATION: TM-1 SABO DAM	TESTED BY: CAM	CHECKED BY: JEV
SAMPLE: BH-2 DEPTH: 5.00 H.	DATE TESTED: 07-03-95	DATE FINISHED: 07-03-95

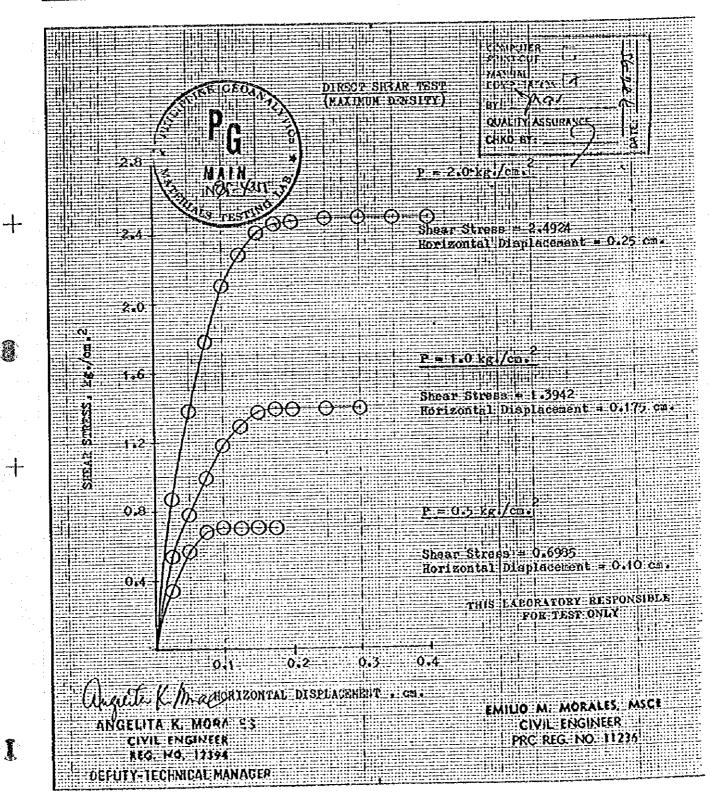


W	PINATUBO					DEPTH	nge 1 o	f 3 pages M.	
	Project	FI SABO TX	<u> </u>	Jo	b No	2 _			
	Location of Project								
	Description of Soil	A.H.				07-04-	95		
	Test Performed By	50	No.	ntlavare	2	Wt. of	Hammer	349 g.	
	Blows/Layer Mold dimensions: Diam.	6 X 6 (NO. C		CM.	Vol	77	cu.cm.	
	Moio dimensions, Diam.	,	·	· · · · · · · · · · · · · · · · · · ·		RECEIVE	D:		
	Water Content Determin	ation			DATE			JUL 1999	ס
	Sample no.	1	2	3	4	5			
	Moisture can no.								_
	Wt. of can + wet soil			COMPUTER DUD-OUT					`
	Wt. of can + dry soil			MANUAL COMPLIATE	[J]	3			•
•	Wt. of water			RY: 1	94	R			•
	Wt. of can			QUALITY AS	SURANCE	ت ا			
•	Wt. of dry soil			снко ву:	2))	გ			
	Water content, w%				1			:	•
	Density Determination	1 XAI1	IMUM DENSI	TY					
13	Assumed water content		_	_	T -			-	
	Water content, w%				_				
	Wt. of soil + mold	2,643	2,640	2,641		-			
-	Wt. of mold	2,514	2,514	2,514				_	
	Wt. of soil in mold	129	126	127					
	Wet density, g/cc	1.792	1.750	1.764					
•	Ory density y, g/cc	Aver	age = 1.7	69				_	
		rr.			1 T T				
		 		- 	 }				
	.8		E. GEAN		╂┈╂╼╏	HIS LABO	PATORY	RESPONSI	IRFE
	70	A L				T F	OR TEST	ONLI	
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ANG	CIVIL ENGINEER	7	Hall 11.	-b/	╂╼╼┨╼═╂	 -		:	
•	CIVIL ENGINEER &		NO TO	V	 - 			A. MORAL	KE MSCF
	•		9 T8: FLT	1	╂┈╂┈╂		MILIO V	IL ENGINE	ER
VEFUI	Y-TECHNICAL MANAGER	' <u> </u>			<u> </u>		PRC	REG. NO.	11236
			Wat	er content, w	%				
	Optimum moisture =	%	Maximum	dry density	== <u> </u>	g/cc			
1				A	•				•
- SE-				PHILIPPINE	The T	1 LR3 1	7, 77, 7	37675	വര
			I	(b) B (71/717	57 [p	77 77 1]GS
			v ·	- 11	U				

GEGANALYTICS	COMPUTER PRINTOUT DETAILS PREPARED DETAILS PREPARED	SHEET 2 of 3					
PADIECT: PINATUBO	JOB NO:	CROSS REFERENCE:					
LOCATION: TM-1 SABO DAM	TESTED BY: CAM	CHECKEO BY: JEV					
SAMPLE: BH-2 DEPTH: 10.00 M.	DATE TESTED: 07-04-95	DATE FINISHED: 07-04-95					



GE OANALYTICS	COMPUTER PRINTOUT [] DETAILS PREPARED []	SIEET3 OF3
PROJECT: PINATUBO .	JOS NO:	CROSS REFERENCE:
LOCATION : TM-1 SABO DAM	TESTEO BY: CAM	CHECKED 84:
SAMPLE: BH-2 DEPTH: 10.00 M.	DATE TESTED: 07-04-95 .	OATE FNISHED. 07-04-95



1 KN + 101 971 Kgt

ProjectTM-	1 SABO DA	M		Job No.		3	Samn	la No		
Location of Project					10	Sample No.				
Description of Soil C.A	.M.			Date of	Toet		04-95			
Test Performed By		No.	of Layers .	•		Ŵ	t of Ha	mmer3	49 g.	
Blows/Layer Mold dimensions: Diam	LYA	m.	HL	2 cm.		Val	7.	2	_ cu.cm.	
Moid differsions. Diam. 20			11,			RECE	IVED	:		
Water Content Determinal	lion				ATE	RELE	ASED	<u>: 07</u>		995
Sample no.	1	2	3		4	<u> </u>	5		6	
Moisture can no.										
Wt. of can + wet soil			^∵PJ ER							. •
Wt. of can + dry soil			TUTTEE							
Wt. of water		,	TAT: SKIO	10.1		B				
Wt. of can			₽ſ┊╺┈ ╽╱╸	94		. 1	1			
Wt. of dry soil			CHKIL SY:	SSURANC	1	CATE				
Water content, w%			HALLEST			3	-			
Density Determination	MAXI	MUM DENSI	ΤΥ							
Assumed water content	2 -4	~								
Water content, w%	-	_	_		_		-			
Wt. of soil + mold	2,644	2,645	2,64	7	<u>.</u>				-	
Wt. of mold	2,514	2,514	2,51	4			_			
Wt. of soil in mold	130	131	13	Z						
Wel density, g/∞	1.806	1.819	1.84	7			<u></u>	_		
Dry density γ, g/cc	Aver	age = 1.8	24				_			
			7-7-1		1.	T	_1			
	}				-	-				
9/cc		, (- (• 0)				413	LA SOS	ATORY R TEST	RESPO	NS:
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tak Amal &	1/3-1					+-				
LITA K. MURALEO	 * 	-[-1 1			+	1		•		
EG. NO. 12394	1/3-	A Addition	d &/			1			MÓRAL	
y-technical manager	To the second	- - - - - - - - - - - - -				 			ENGIN	
Y-TECHNIUME ""		184 2 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1				<u> </u>	ן נייי	KC REC	3. NO.	112

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	THE COLUMN TO SERVICE AND ADMINISTRATION AND ADMINISTRATION OF THE PROPERTY OF	COMPUTER PRINTOUT	SHEET 2 of 3				
	GEOANALYTICS	DETALS PREPARED					
	PROJECT: PINATUEO	I JOB NO.	CAOSS REFERENCE: CHECKED BY: JRV				
. !	LOCATION : TM-1 SABO DAM	LEZIEDRI: CAM	The second section of the s				
	SAMPLE: BH-3 DEPTH: 5.00 M.	DATE TESTED: 07-04-95	DATE INISHED: 07-04-95				
•	DUIT DO 1						

		DIRECT SHEAR TEST		
3.0				
	COMPUTER C)	100 M		MAXEMUM DENSITY C = 0.22
2.0 9	BYI DOW OVALITY ASSURAND CHKO BYI/			Ø ≈ 47°
Salus 1.0		PG		
		MAPAYUT *	THIS LARGE FO	r atory responsibi Or test only
Double kill	ra -	1.0	2.0	
ANGELITA K. CIVIL EN RKG. NO DEPUTY-TECHN	MURALES GINEER =12344	STRESS, kg./cm.		L MORALES, MSCE IL ENGINEER REG. NO. 11234

1