



PT. Indra Karya (Persero)
Consulting Engineers

Fig. 1.1.14 DRILL LOG

HOLE No. B - 15

PROJECT		JATIRANG DAM		DEPTH		6000 M		ELEVATION		M	
SITE		DAM SITE		COORDINATE N 9222.302112 Y 927789.605		INCLINATION		VERTICAL		DRILL RIG	
CLIENT		INDONESIA		DATE 04/31/1997		DRILLED BY		KOMARUDIN		LOGGED BY	
DATE	SAMPLING	DEPTH	ELEVATION	COLUM N SECTI ON	DESCRIPTION	GROUND WATER LEVEL	ROCK GRADE	CORE		R Q D	WATER PRESSURE TEST LUGEON VALUE
								RECO VERY	%		
		1			TOP SOIL, grey, soft			100	0		
		2	183.952	VOVOV	H.W. VOLCANIC CONGLOMERATE, soft, brown		D	100	0		
		3	182.752	VOVOV	TUFF. SANDSTONE, med. grained, dense, light brown		CL-L	100	0		
		4	181.952	VOVOV	VOLCANIC CONGLOMERATE, poor cemented, brown		CL-L	100	0		
		5		VOVOV				100	0		
		6		VOVOV				100	0		
		7		VOVOV				100	0		
		8	179.152	VOVOV	CONGLTIC SANDSTONE, soft ~ dense, light brown		CL-L	100	0		
		9	177.952	VOVOV	TUFF. SANDSTONE, med. grained, dense, light brown		CL-L	100	0		
		10	176.452	VOVOV	CONGLTIC SANDSTONE, soft ~ dense, light brown		CL-L	100	0		
		11	175.952	VOVOV	TUFF. SANDSTONE, med. grained, dense, brownish grey		CL-L	100	0		
		12	175.052	VOVOV	CONGLTIC SANDSTONE, dense, brown		CL-L	100	0		
		13	174.752	VOVOV	SANDSTONE, med ~ coarse grained, dense, grey		CL-L	100	0		
		14	173.952	VOVOV	TUFF. SANDSTONE, med. grained, dense, brownish grey		CL-L	100	25		
		15	173.152	VOVOV	SANDY TUFF, dense ~ compact, grey		CL-H	100	12		
		16	172.552	VOVOV	SANDSTONE, coarse grained, dense, light grey		CL-L	100	0		
		17	171.802	VOVOV	TUFF. SANDSTONE, med ~ coarse grained, dense, grey		CL-L	100	28		
		18	170.752	VOVOV	CONGLTIC SANDSTONE, compact, light grey		CM-L	100	60		
		19	170.152	VOVOV	SANDSTONE, coarse grained, compact, light grey		CM-L	100	22		Lugeon Value = 2.05 Critical Pressure = 4.90 kg/cm ²
		20	169.952	VOVOV	CONGLTIC SANDSTONE, compact, greyish brown		CL-H	100	28		
		21	169.052	VOVOV	SANDY TUFF, coarse grained, dense ~ compact, grey		CL-H	100	14		
		22	168.052	VOVOV	VOLCANIC CONGLOMERATE, compact, greyish brown		CL-H	90	35		
		23	167.052	VOVOV	SANDY TUFF, compact, brownish grey		CL-H	90	17		
		24	166.452	VOVOV	TUFF. SANDSTONE, coarse grained, dense, brownish grey		CL-H	100	30		Lugeon Value = 6.06 Critical Pressure = 4.90 kg/cm ²
		25	165.452	VOVOV	SANDSTONE, coarse grained, compact, grey		CL-H	100			



PT. Indra Karya (Persero)
Consulting Engineers

Fig. 1.1.15 DRILL LOG

HOLE No. B - 16

PROJECT	JATIBARANG DAM			DEPTH	30.00 M	ELEVATION	126.033	M	
SITE	COORDINATE X : 9 222 186.588 Y : 428 115.560			INCLINATION	VERTICAL	DRILL RIG	TONS 10-5	M	
CLIENT	JICA	DATE	Jan 08, 1998 till Jan 24, 1998	LOGGED BY	SUMATI	LOGGED BY	DIKIPRANOWO		
SAMPLING	DEPTH	ELEVATION	COLUMN SECTION	DESCRIPTION	GROUND WATER LEVEL	ROCK GRADE	CORE RECO VERY %	R O D %	WATER PRESSURE TEST LUGEON VALUE
	1	3.06	123.053	TOP SOIL, grey, soft			100	0	
	2						100	0	
	3						100	0	
	4			CONGLUTIC SANDSTONE, soft - dense, brown		CL - L	100	0	
	5	5.20	120.853				100	0	
	6	5.70	120.353	CONGLOMERATE, poor cemented, brown		CL - L	100	0	
	7	6.40	119.253	CONGLUTIC SANDSTONE, soft - dense, brown		CL - L	100	0	
	8	7.40	118.253	SANDSTONE, coarse grained, soft - dense, brown		CL - L	100	0	
	9	8.60	117.453	CONGLOMERATE, poor cemented, brown		CL - L	100	0	
	10	9.20	116.953	TUFF SANDSTONE, c. grained, compact, light brown		CL - H	90	20	
	11			TUFF, compact, light grey		CL - L	80	0	
	12						90	20	
	13			VOLCANIC BRECCIA, compact, grey		CM - H	100	15	
	14						100	15	
	15						100	15	
	16						100	10	
	17						100	15	
	18	17.50	108.553				100	0	
	19	18.80	107.253	SANDSTONE, fine - medium grained, compact, grey		CL - H	50	0	
	20			CONGLUTIC SANDSTONE, dense, blackish grey		CL - H	100	0	
	21	20.20	105.853	CONGLOMERATE, with some gravels Ø = 1 - 5 cm, grey		CL - H	90	20	
	22	20.60	105.453	CONGLUTIC SANDSTONE, denser, blackish grey		CL - H	90	20	

[illegible]

END OF DRILLING

R. Q. D. = Rock Quality Designation = (Total Length of Cylindrical Cores longer than 10 cm) / (Total Core Length) x 100 %

LUGEON VALUE is ltr/min/mtr under injection water pressure by 10 kg/cm²

G. W. L. = Ground Water Level = Height of Spring Water



Pt. Indra Karya (Persero)
Consulting Engineers

Fig. 1.1.16 DRILL LOG

HOLE No. B - 17

PROJECT		JATIBARANG DAM		DEPTH		40.00 M		ELEVATION		131.54		M	
SITE		DAMSITE		COORDINATE X: 9222467.660 Y: 428335.838		INCLINATION		VERTICAL		DRILL RIG		TO HO	
CLIENT		JICA		DATE: Nov. 21, 1997		DRILLED BY		SUMARTONO		LOGGED BY		DIDIK PRANOWO	
DATE		ELEVATION		COLUMN SECTION		DESCRIPTION		GROUND WATER LEVEL		ROCK GRADE		CORE RECO VERY %	
SAMPLING		DEPTH		ELEVATION		DESCRIPTION		GROUND WATER LEVEL		ROCK GRADE		CORE RECO VERY %	
NOV. 21, 1997		1.30		130.154		TOP SOIL, soft, brown						100 0	
		2.08		129.404		TUFF SANDSTONE, soft ~ dense, brown		CL-L				100 0	
		3.00		128.454		CONGLTIC SANDSTONE, soft ~ dense, light brown		CL-L				100 0	
		3.20		128.254		SANDY TUFF, soft ~ dense, light brown		CL-L				100 0	
		3.60		127.854		SANDSTONE, coarse grained, dense, light brown		CL-L				100 0	
		3.80		127.654		SANDY TUFF, dense, light brown		CL-L				100 0	
		6.50		124.954		CONGLOMERATE, poor cemented, dark brown		D				100 10	
		8.16		123.354		CONGLTIC SANDSTONE, coarse grained, compact mixed with gravels Ø 6 ~ 8 cm, brown ~ light brown		CL-L				100 38	
		8.80		122.654		SANDY TUFF, fine ~ med. grained, dense, brown		CL-H				100 30	
		9.00		122.454		CONGLOMERATE, poor cemented, blackish grey		CL-L				100 0	
		9.80		121.654		SANDSTONE, medium grained, poor cemented, brown		CL-L				100 0	
		10.00		121.454		CONGLOMERATE, poor cemented, brownish grey						100 0	
		12.20		119.254		SANDSTONE, medium grained, poor cemented, brown		CL-L				100 0	
		13.70		117.754		CONGLTIC SANDSTONE, matrix sandy, soft, brown		CL-L				100 0	
NOVEMBER 25, 1997				Δ Δ Δ								100 35	
				Δ Δ Δ								100 15	
				Δ Δ Δ								100 20	
				Δ Δ Δ								100 25	
				Δ Δ Δ								100 10	
				Δ Δ Δ								100 20	
				Δ Δ Δ								100 20	
1997				Δ Δ Δ								100 20	

NOVEMBER 26, 1997		NOVEMBER 27, 1997		NOVEMBER 28, 1997		NOVEMBER 29, 1997	
19	Δ Δ Δ	31.70	99.754	Δ Δ Δ	TUFF. SANDSTONE, fine grained, compact, brown	CL - H	
20	Δ Δ Δ	32.85	98.604	Δ Δ Δ	VOLCANIC BRECCIA, compact, grey	CM - H	
21	Δ Δ Δ	33.60	97.854	Δ Δ Δ	TUFF. SANDSTONE, f - m. grained, compact, brown	CL - H	
22	Δ Δ Δ	33.90	97.003	Δ Δ Δ	TUFF, dense, greyish brown	CL - H	
23	Δ Δ Δ	34.20	96.554	Δ Δ Δ	TUFF. SANDSTONE, medium grained, dense, brown	CL - H	
24	Δ Δ Δ	34.60	95.854	Δ Δ Δ	TUFF, dense, greyish brown	CL - H	
25	Δ Δ Δ	36.80	94.654	Δ Δ Δ	CONGL. TIC SANDSTONE, with thin sandstone layer, compact, brownish grey	CM - L	
26	Δ Δ Δ	37.00	94.454	Δ Δ Δ	TUFF, compact, brownish grey	CL - H	
27	Δ Δ Δ	37.50	93.954	Δ Δ Δ	CONGLOMERATE, compact, dense, greyish brown	CL - H	
28	Δ Δ Δ			Δ Δ Δ	CONGL. TIC SANDSTONE, with thin poor cemented sandstone layer, compact, brownish grey	CM - L	
29	Δ Δ Δ	40.00	91.454	Δ Δ Δ			
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

NOVEMBER 26, 1997

NOVEMBER 27, 1997

NOVEMBER 28, 1997

NOVEMBER 29, 1997

END OF DRILLING

* R. Q. D. = Rock Quality Designation = (Total Length of Cylindric Cores longer than 10 cm) / (Total Core Length) x 100 %

* R. Q. D. = Rock Quality Designation = (Total Length of Cylindric Cores longer than 10 cm) / (Total Core Length) x 100 %
 * LUGEON VALUE is ltr/min/mr under injection water pressure by 10 kgf/cm²
 * G. W. L. = Ground Water Level = Height of Spring Water



PT. Indra Karya (Persero)
Consulting Engineers

Fig. 1.1.17 DRILL LOG

HOLE No. B - 18

PROJECT		JABARANG DAM		DEPTH		ELEVATION		WATER PRESSURE TEST	
SITE	CLIENT	COORDINATE X-Y-Z	DATE	INCLINATION	VERTICAL	DRILL RIG	LOGGED BY	LUGON VALUE	
		NOVEMBER 25, 1997							
SAMPLING	DEPTH	ELEVATION	COLUMN SECTION	DESCRIPTION	GROUND WATER LEVEL	ROCK GRADE	CORE RECO VERY %	R O D	
	0.80	135.280	X	TOP SOIL			100	0	
	2.40	133.680		SANDY TUFF, soft, brown		D	100	0	
	3.70	132.380		CONGLOMERATE, poor cemented, grey		D	100	0	
	6.50	129.580		TUFFACEOUS SAND, medium grained, soft ~ medium dense, brown		CL-L	100	0	
	7.50	128.580		CONGLOMERATE, poor cemented, grey		D	100	0	
	8.90	127.180		SANDY TUFF, dense, brown (with greyish brown tuff 7.75 ~ 7.85 & 8.65 ~ 8.80)		CL-L	100	0	
	11.80	124.280		CONGLOMERATE, poor cemented, blackish grey		CL-L	100	0	
	12.30	123.780		VOLC. BRECCIA, compact, brownish grey		CM-L	100	0	
	12.35	123.530		TUFF, compact, light grey		CL-H	90	0	
	12.75	123.340		VOLC. BRECCIA, poor cemented, brownish grey		CL-H	100	0	
	13.00	123.080		TUFF, compact, light grey		CL-H	100	0	
	13.45	122.630		VOLC. BRECCIA, compact, brownish grey		CM-L	100	0	Lugon Value = 2.14 Critical Pressure = 4.31 kg/cm²
	14.05	122.030		TUFF, STONE, med. grained, compact, grey		CL-H	100	0	
	14.30	121.780		VOLC. CONGLRATE, poor cemented, grey		CL-H	100	0	
	14.95	121.130		SANDSTONE, medium grained, soft, brown		CL-L	100	0	
	15.60	120.680		TUFF, fine, soft ~ dense, light brown		CL-L	90	10	
	16						100	0	
	17						100	0	
	18						100	40	Lugon Value = 1.02 Critical Pressure = kg/cm²
	19						100	40	
	20						100	0	
	21						100	65	

[illegible]

35.40	35.00	101.080	TUFF, S' STONE, med. grained, compact, grey	CL - H	100	90	Lugeon Value = 1.20 Critical Pressure = 9.85 kg/cm ²
35.56	35.50	100.520	TUFF, fine, brownish grey	CL - H	100	70	
35.56	35.90	100.180	SANDSTONE, medium grained with tuff fine alternation, compact, brownish grey	CL - H	100	30	
37.15	37.35	98.730	PUMICE TUFF, compact, brownish grey	CL - H	100	0	Lugeon Value = 1.38 Critical Pressure = 7.89 kg/cm ²
37.35	37.50	98.730	CONGLOMERATIC SANDSTONE, laminated, compact, blackish grey	CL - H	100	0	
38.00	38.00	97.180	SANDSTONE, med. grained, compact, dark grey	CL - H	100	25	
40.70	41.00	95.380	SANDSTONE, fine grained, compact, light grey	CL - H	100	0	Lugeon Value = 1.09 Critical Pressure = 5.94 kg/cm ²
41.00	41.30	94.780	CONGLOMERATE, compact, brownish grey	CL - H	100	10	
41.72	42.60	93.480	CONGLOMERATIC SANDSTONE, compact, brown	CL - H	100	10	
41.93	42.90	92.180	SANDSTONE, fine, brownish grey	CL - H	100	40	Lugeon Value = 2.65 Critical Pressure = 10.21 kg/cm ²
43.60	44.20	91.880	CONGLOMERATE, compact, brownish grey	CL - H	100	30	
44.20	45.50	90.580	TUFF, S' STONE, compact, brown	CL - H	100	20	
47.30	47.90	88.180	TUFF, fine, greyish white (with pumice 46.35 ~ 46.45)	CL - H	100	20	Lugeon Value = 1.09 Critical Pressure = 5.94 kg/cm ²
47.90	49.30	86.780	SANDSTONE, fine ~ coarse grained, dark grey	CL - H	100	10	
49.30	50.00	86.080	CONGLOMERATE, compact, brownish grey	CL - H	100	50	
51.20	51.20	84.880	TUFF, coarse, dense - compact, blackish grey	CL - H	100	20	Lugeon Value = 2.65 Critical Pressure = 10.21 kg/cm ²
52.00	52.00	84.880	TUFF, S' STONE, fine grained, dense ~ compact, grey (with laminated facies 50.00 ~ 50.30 & 50.95 ~ 51.15)	CL - H	100	20	
53.00	53.00	84.880	VOLCANIC BRECCIA, compact, blackish grey	CL - L	100	25	
55.60	55.60	80.480	TUFFACEOUS SANDSTONE, medium grained, dense ~ compact, grey	CL - H	100	0	Lugeon Value = 1.09 Critical Pressure = 5.94 kg/cm ²
56.00	56.00	79.580	VOLCANIC BRECCIA, poor cemented (weathered) dark grey	CL - L	100	0	
57.00	57.00	79.580		CL - L	100	0	
58.00	58.00	79.580		CL - L	100	0	Lugeon Value = 0.63 Critical Pressure = 10.21 kg/cm ²
59.00	59.00	79.580		CL - L	100	0	
60.00	60.00	79.580		CL - L	100	0	
61.00	61.00	79.580		CL - L	100	30	Lugeon Value = 0.63 Critical Pressure = 10.21 kg/cm ²
62.00	62.00	79.580		CL - L	100	20	
63.00	63.00	79.580		CL - L	100	10	

DECEMBER 02, 1997

DECEMBER 03, 1997

DECEMBER 04, 1997

DECEMBER 05, 1997

DECEMBER 06, 1997

DECEMBER 08, 1997

DATE	TIME	DEPTH (m)	REMARKS	CL - H	CL - L	CM - H	D (IV)	LOGEON VALUE	CRITICAL PRESSURE
DEC. 07, 1997	55	55.60	80.480	TUFFACEOUS SANDSTONE, medium grained, dense ~ compact, grey					
DEC. 07, 1997	56	56.60	79.580						
DEC. 07, 1997	57								
DEC. 07, 1997	58			VOLCANIC BRECCIA, poor cemented (weathered) dark grey					
DEC. 07, 1997	59	59.40	76.680						
DEC. 07, 1997	60								
DEC. 07, 1997	61								
DEC. 07, 1997	62								
DEC. 07, 1997	63								
DEC. 07, 1997	64								
DEC. 07, 1997	65								
DEC. 07, 1997	66								
DEC. 07, 1997	67								
DEC. 07, 1997	68								
DEC. 07, 1997	69								
DEC. 07, 1997	70			VOLCANIC BRECCIA, compact, good cemented, blackish grey					
DEC. 07, 1997	71								
DEC. 07, 1997	72								
DEC. 07, 1997	73								
DEC. 07, 1997	74								
DEC. 07, 1997	75								
DEC. 07, 1997	76								
DEC. 07, 1997	77								
DEC. 07, 1997	78								
DEC. 07, 1997	79								
DEC. 07, 1997	80	80.00	56.080						

END OF DRILLING

* R. Q. D. = Rock Quality Designation = (Total Length of Cylindric Cores longer than 10 cm) / (Total Core Length) x 100 %

* LOGEON VALUE is ltr/min/mtr under injection water pressure by 10 kgf/cm²

* G. W. L. = Ground Water Level = Height of Spring Water