

**APP. III-2**  
**RECORD OF PERMEABILITY TEST IN DRILLHOSES**



PERMEABILITY TEST IN DRILL HOLE

(SHEET 1 OF 4)

KIKULETWA DAM

PROJECT

HOLE No. K-1

LOCATION NO.1 POWER STATION

DEPTH OF HOLE 25.00 m

TEST DATE 2-3-1988

ELEVATION 828.724 m

DIAMETER OF HOLE 10.1 cm

TESTED BY C. MSABENI

COORDINATE

DRILLED DEPTH 5.00 m

DRILLED BY J. DIMBU

ANGLE FROM HORIZONTAL -90°

LEVEL OF WATER TABLE

CHECKED BY S. MARUYAMA

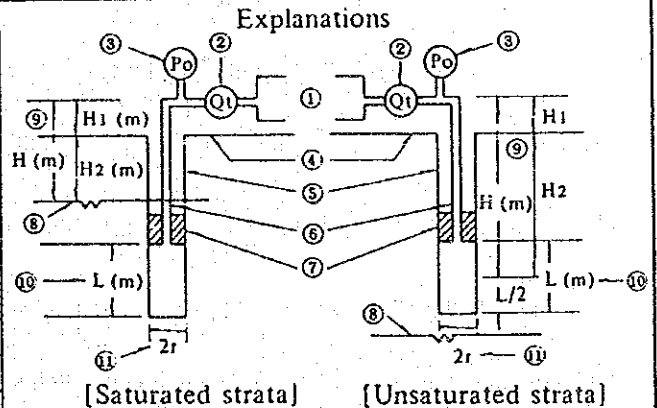
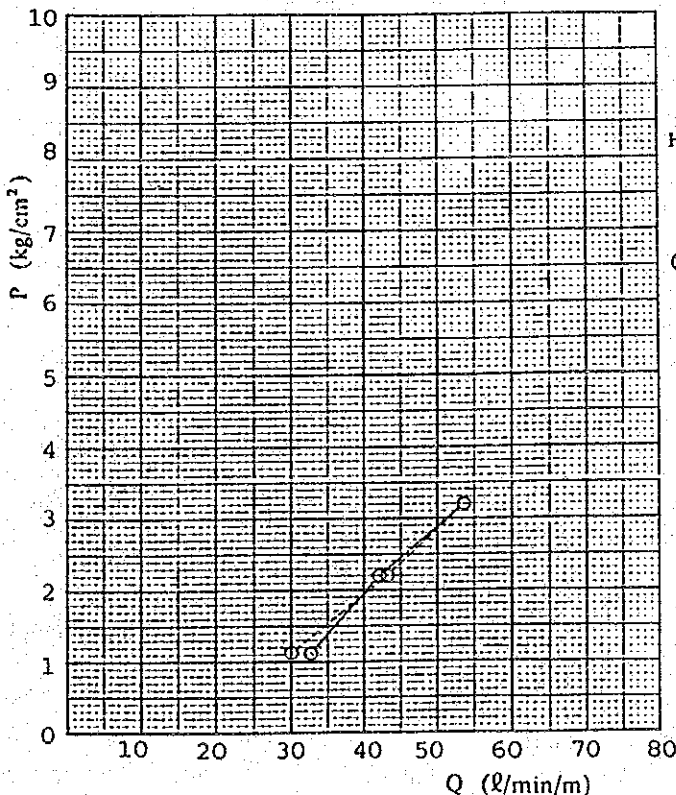
BEARING OF ANGLE HOLE

BEFORE T. 2.40 m AFTER T. 2.10 m

KONOIKE

TEST SECTION FROM 2.00 m TO 5.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
3.0	-	2.20	1.0	1.22	10	979.0	97.90	32.63	267.49	2.90x10 <sup>-3</sup>
"	"	"	2.0	2.22	10	1267.0	126.70	42.23	190.24	2.06x10 <sup>-3</sup>
"	"	"	3.0	3.22	10	1610.0	161.00	53.67	166.07	2.62x10 <sup>-3</sup>
"	"	"	2.0	2.22	10	1292.0	129.20	43.07	193.99	2.10x10 <sup>-3</sup>
"	"	"	1.0	1.22	10	904.0	90.40	30.13	246.99	2.68x10 <sup>-3</sup>

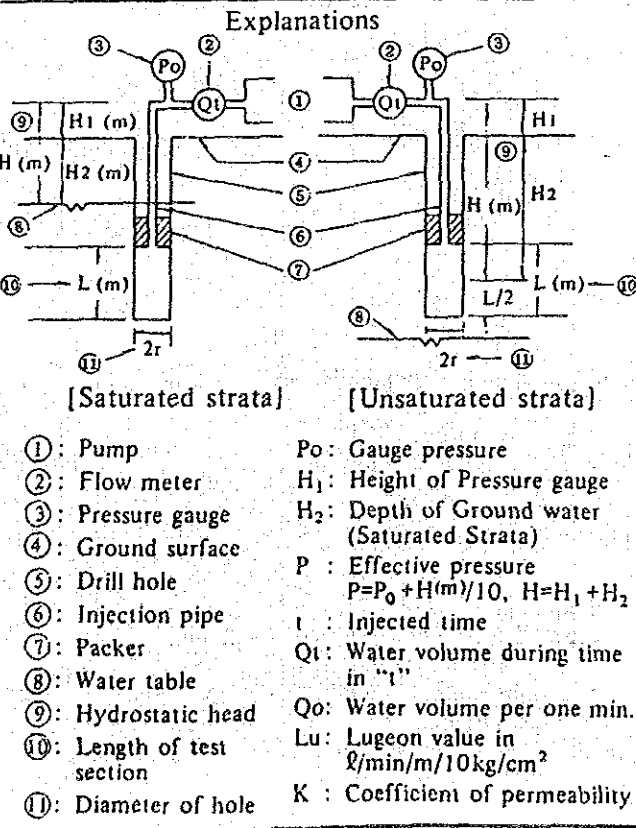
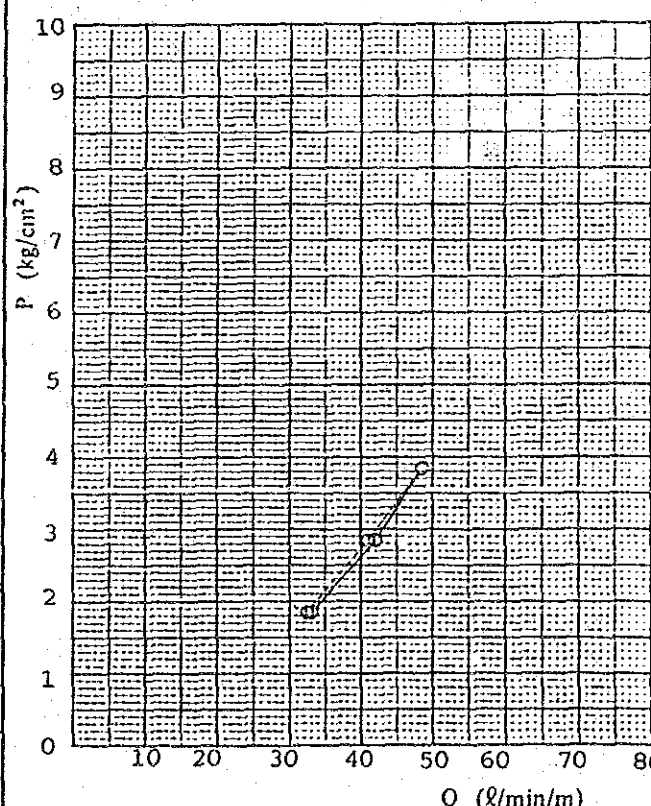


- Explanations**
- ①: Pump
  - ②: Flow meter
  - ③: Pressure gauge
  - ④: Ground surface
  - ⑤: Drill hole
  - ⑥: Injection pipe
  - ⑦: Packer
  - ⑧: Water table
  - ⑨: Hydrostatic head
  - ⑩: Length of test section
  - Ⓜ: Diameter of hole
- P<sub>0</sub>: Gauge pressure
  - H<sub>1</sub>: Height of Pressure gauge
  - H<sub>2</sub>: Depth of Ground water (Saturated Strata)
  - P: Effective pressure  
P = P<sub>0</sub> + H(m)/10, H = H<sub>1</sub> + H<sub>2</sub>
  - t: Injected time
  - Q<sub>t</sub>: Water volume during time in "t"
  - Q<sub>0</sub>: Water volume per one min.
  - Lu: Lugeon value in ℓ/min/m/10kg/cm<sup>2</sup>
  - K: Coefficient of permeability

PERMEABILITY TEST IN DRILL HOLE (SHEET 2 OF 4)

KIKULETWA DAM		PROJECT	HOLE No.	K-1	
LOCATION	NO.1 POWER STATION	DEPTH OF HOLE	25.00 m	TEST DATE	4-3-1988
ELEVATION	828.724 m	DIAMETER OF HOLE	10.1 cm	TESTED BY	C. MSABENI
COORDINATE		DRILLED DEPTH	10.00 m	DRILLED BY	J. DIMBU
ANGLE FROM HORIZONTAL	-90°	LEVEL OF WATER TABLE		CHECKED BY	
BEARING OF ANGLE HOLE		BEFORE T.	9.6 m	AFTER T.	
TEST SECTION FROM 7.30 m TO 10.00 m					

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
2.7	-	8.45	1.0	1.85	10	895.0	89.50	33.15	179.18	1.89 x 10 <sup>-3</sup>
"	"	"	2.0	2.85	10	1128.0	112.80	41.78	146.59	1.55 x 10 <sup>-3</sup>
"	"	"	3.0	3.85	10	1314.0	131.40	48.67	126.41	1.33 x 10 <sup>-3</sup>
"	"	"	2.0	2.85	10	1106.0	110.60	40.96	143.73	1.52 x 10 <sup>-3</sup>
"	"	"	1.0	1.85	10	874.0	87.40	32.37	174.97	1.85 x 10 <sup>-3</sup>

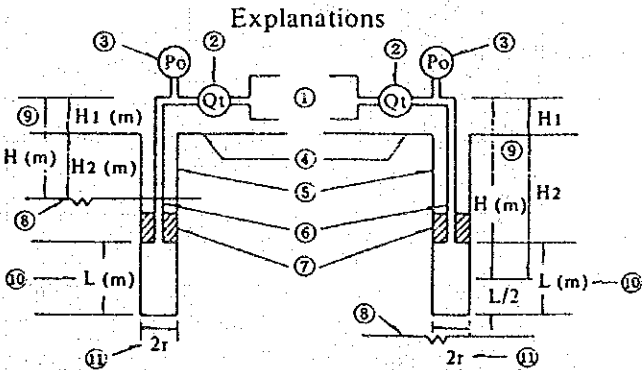
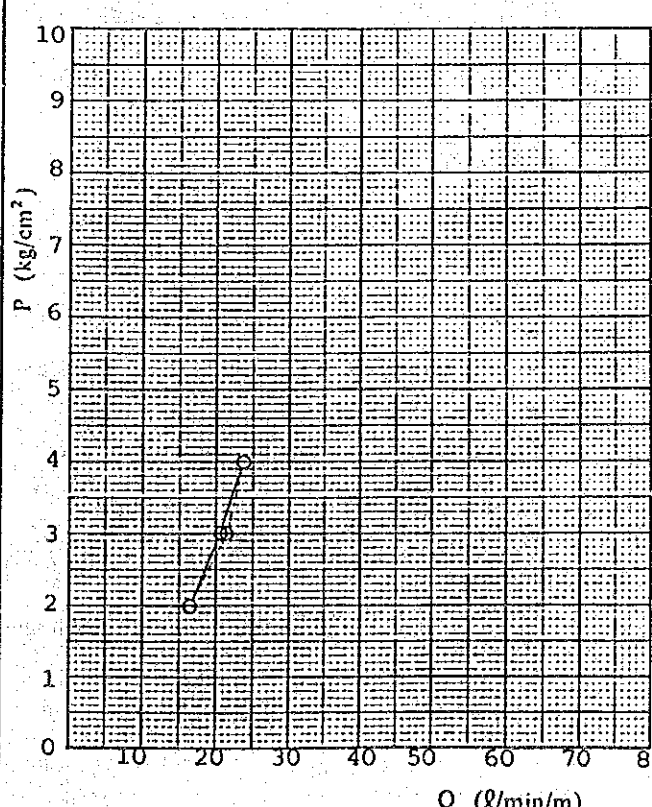


# PERMEABILITY TEST IN DRILL HOLE

( SHEET 3 OF 4 )

KIKULETWA DAM	PROJECT	HOLE No.	K-1
LOCATION NO. 1 POWER STATION	DEPTH OF HOLE	25.00 m	TEST DATE 4-3-1988
ELEVATION 828.724 m	DIAMETER OF HOLE	101 cm	TESTED BY C. MSABENI
COORDINATE _____	DRILLED DEPTH	15.00 m	DRILLED BY J. DIMBU
ANGLE FROM HORIZONTAL $-90^\circ$	LEVEL OF WATER TABLE		CHECKED BY S. MARUYAMA
BEARING OF ANGLE HOLE _____	BEFORE T. 9.95m	AFTER T. _____ m	KONOIKE
TEST SECTION FROM 10.00 m TO 15.00 m			

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	L <sub>u</sub> (Lugeon)	K (cm/sec)
5.0	-	9.95	1.0	2.00	10	819.0	81.90	16.38	81.90	$9.98 \times 10^{-4}$
"	"	"	2.0	3.00	10	1035.0	103.50	20.70	59.00	$8.41 \times 10^{-4}$
"	"	"	2.8	3.80	10	1185.0	118.50	23.70	62.37	$7.60 \times 10^{-4}$
"	"	"	2.0	3.00	10	1052.0	105.20	21.04	70.13	$8.55 \times 10^{-4}$
"	"	"	1.0	2.00	10	821.0	82.10	16.42	82.10	$1.00 \times 10^{-3}$



- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>① : Pump</li> <li>② : Flow meter</li> <li>③ : Pressure gauge</li> <li>④ : Ground surface</li> <li>⑤ : Drill hole</li> <li>⑥ : Injection pipe</li> <li>⑦ : Packer</li> <li>⑧ : Water table</li> <li>⑨ : Hydrostatic head</li> <li>⑩ : Length of test section</li> <li>⑪ : Diameter of hole</li> </ul> | <ul style="list-style-type: none"> <li>P<sub>0</sub> : Gauge pressure</li> <li>H<sub>1</sub> : Height of Pressure gauge</li> <li>H<sub>2</sub> : Depth of Ground water (Saturated Strata)</li> <li>P : Effective pressure <math>P = P_0 + H(m)/10, H = H_1 + H_2</math></li> <li>t : Injected time</li> <li>Q<sub>t</sub> : Water volume during time in "t"</li> <li>Q<sub>0</sub> : Water volume per one min.</li> <li>L<sub>u</sub> : Lugeon value in ℓ/min/m/10kg/cm<sup>2</sup></li> <li>K : Coefficient of permeability</li> </ul> |
|---|---|

**PERMEABILITY TEST IN DRILL HOLE**

( SHEET 4 OF 4 )

KIKULETWA DAM

PROJECT

HOLE No.

K-1

LOCATION NO. 1 POWER STATION

DEPTH OF HOLE 25.00 m

TEST DATE 4-3-1988

ELEVATION 828.724 m

DIAMETER OF HOLE 8.6 cm

TESTED BY C. MSABENI

COORDINATE

DRILLED DEPTH 25.30 m

DRILLED BY J. DIMBU

ANGLE FROM HORIZONTAL -90°

LEVEL OF WATER TABLE

CHECKED BY S. MARUYAMA

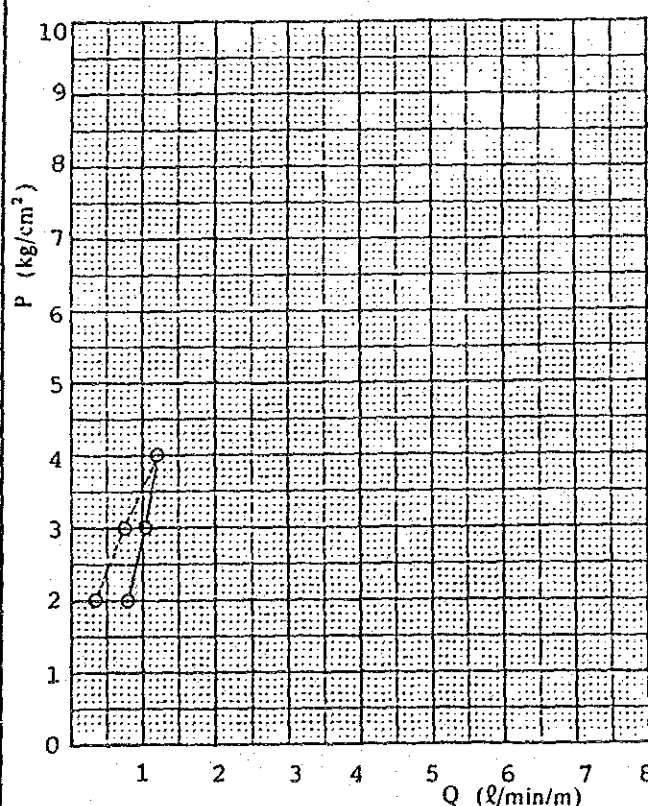
BEARING OF ANGLE HOLE

BEFORE T. 10.8m AFTER T. 10.7m

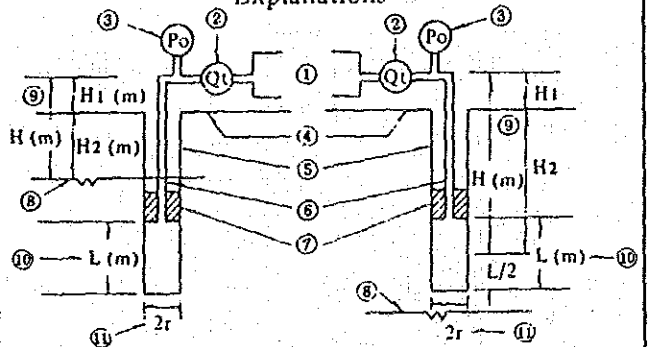
KONOIKE

TEST SECTION FROM 19.00 m TO 25.30 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	L <sub>u</sub> (Lugeon)	K (cm/sec)
6.3	-	10.80	1.0	2.08	10	50.0	5.00	0.79	3.82	5.05 x 10 <sup>-5</sup>
"	"	"	2.0	3.08	10	65.0	6.50	1.03	3.35	4.43 x 10 <sup>-5</sup>
"	"	"	3.0	4.08	10	76.0	7.60	1.21	2.96	3.91 x 10 <sup>-5</sup>
"	"	"	2.0	3.08	10	47.0	4.70	0.75	2.42	3.20 x 10 <sup>-5</sup>
"	"	"	1.0	2.08	10	22.5	2.25	0.35	1.72	2.27 x 10 <sup>-5</sup>



Explanations



[Saturated strata]

[Unsaturated strata]

- ① : Pump
  - ② : Flow meter
  - ③ : Pressure gauge
  - ④ : Ground surface
  - ⑤ : Drill hole
  - ⑥ : Injection pipe
  - ⑦ : Packer
  - ⑧ : Water table
  - ⑨ : Hydrostatic head
  - ⑩ : Length of test section
  - ⑪ : Diameter of hole
- P<sub>0</sub> : Gauge pressure
  - H<sub>1</sub> : Height of Pressure gauge
  - H<sub>2</sub> : Depth of Ground water (Saturated Strata)
  - P : Effective pressure  
 $P = P_0 + H(m)/10$ ,  $H = H_1 + H_2$
  - t : Injected time
  - Q<sub>t</sub> : Water volume during time in "t"
  - Q<sub>0</sub> : Water volume per one min.
  - L<sub>u</sub> : Lugeon value in ℓ/min/m/10 kg/cm<sup>2</sup>
  - K : Coefficient of permeability

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## PERMEABILITY TEST IN DRILL HOLE (SHEET 1 OF 4)

KIKULETWA DAM

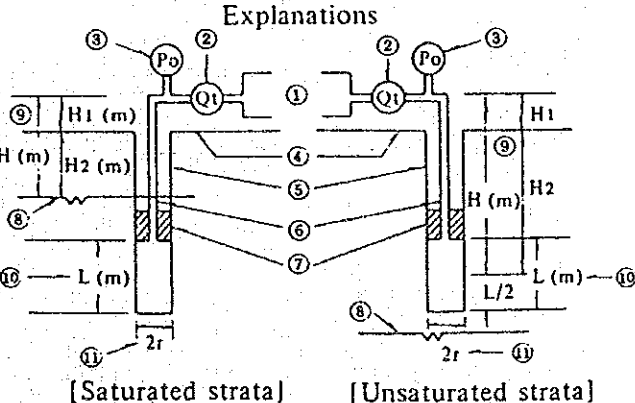
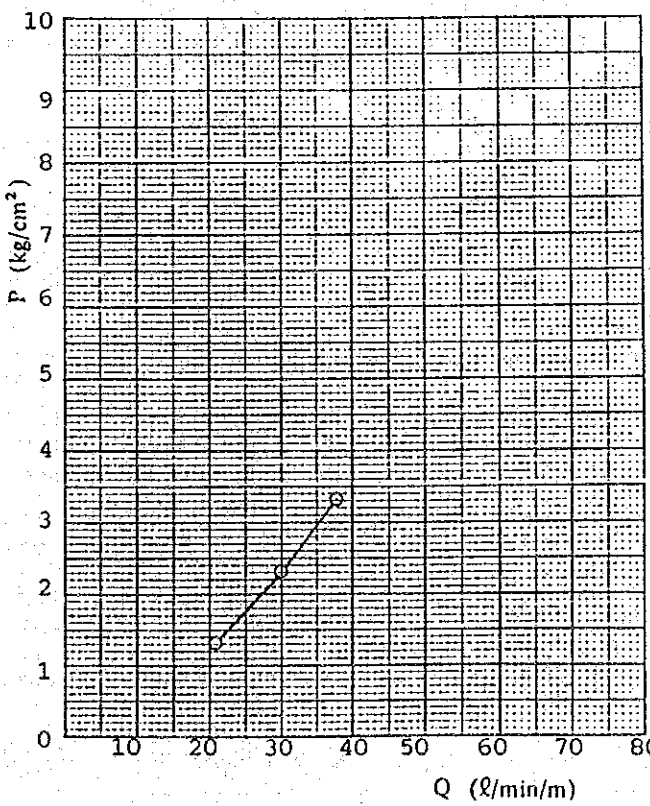
PROJECT

HOLE No.

KD-1

LOCATION <u>RIGHT BANK</u>	DEPTH OF HOLE <u>20.00 m</u>	TEST DATE <u>10-3-1988</u>
ELEVATION <u>822.386 m</u>	DIAMETER OF HOLE <u>10.1 cm</u>	TESTED BY <u>C. MSABENI</u>
COORDINATE _____	DRILLED DEPTH <u>5.00 m</u>	DRILLED BY <u>J. DIMBU</u>
ANGLE FROM HORIZONTAL <u>-90 °</u>	LEVEL OF WATER TABLE	
BEARING OF ANGLE HOLE _____	BEFORE T. <u>4.0 m</u>	AFTER T. _____ m
CHECKED BY <u>S. MARUYAMA</u> <u>KONOIKE</u>		
TEST SECTION FROM <u>2.30 m</u> TO <u>5.00 m</u>		

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Qt (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
2.7	--	3.15	1.0	1.32	10	559.0	55.90	20.70	156.85	1.65 × 10 <sup>-3</sup>
"	"	"	2.0	2.32	10	808.0	80.80	29.93	128.99	1.36 × 10 <sup>-3</sup>
"	"	"	3.0	3.32	10	1017.0	101.70	37.67	113.45	1.20 × 10 <sup>-3</sup>
"	"	"	2.0	2.32	10	809.0	80.90	29.96	129.15	1.36 × 10 <sup>-3</sup>
"	"	"	1.0	1.32	10	561.0	56.10	20.78	157.41	1.66 × 10 <sup>-3</sup>



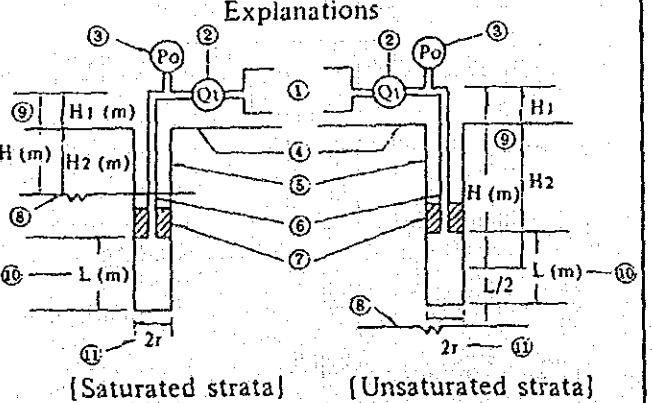
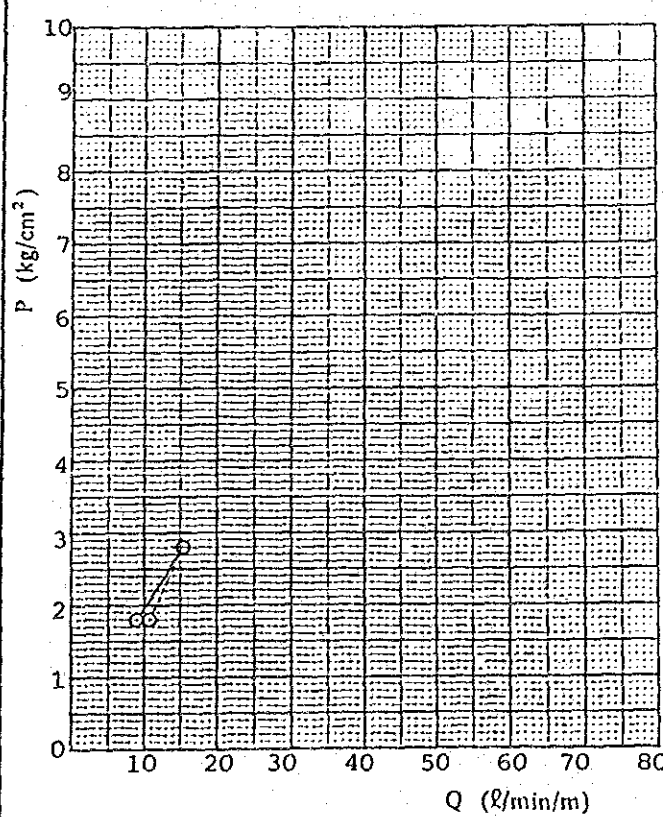
- ①: Pump
  - ②: Flow meter
  - ③: Pressure gauge
  - ④: Ground surface
  - ⑤: Drill hole
  - ⑥: Injection pipe
  - ⑦: Packer
  - ⑧: Water table
  - ⑨: Hydrostatic head
  - ⑩: Length of test section
  - Ⓐ: Diameter of hole
- P<sub>0</sub>: Gauge pressure
  - H<sub>1</sub>: Height of Pressure gauge
  - H<sub>2</sub>: Depth of Ground water (Saturated Strata)
  - P: Effective pressure  
 $P = P_0 + H(m)/10$ ,  $H = H_1 + H_2$
  - t: Injected time
  - Qt: Water volume during time in "t"
  - Q<sub>0</sub>: Water volume per one min.
  - Lu: Lugeon value in  
 $\ell/\text{min}/\text{m}/10\text{kg}/\text{cm}^2$
  - K: Coefficient of permeability

# PERMEABILITY TEST IN DRILL HOLE

(SHEET 2 OF 4)

<b>KIKULETWA DAM</b>	<b>PROJECT</b>	<b>HOLE No. KD-1</b>
<b>LOCATION</b> <u>RIGHT BANK</u>	<b>DEPTH OF HOLE</b> <u>20.00 m</u>	<b>TEST DATE</b> <u>11-3-1988</u>
<b>ELEVATION</b> <u>822.386 m</u>	<b>DIAMETER OF HOLE</b> <u>10.1 cm</u>	<b>TESTED BY</b> <u>C. MSABENI</u>
<b>COORDINATE</b> _____	<b>DRILLED DEPTH</b> <u>10.00 m</u>	<b>DRILLED BY</b> <u>J. DIMBU</u>
<b>ANGLE FROM HORIZONTAL</b> <u>-90°</u>	<b>LEVEL OF WATER TABLE</b>	<b>CHECKED BY</b> <u>S. MARUYAMA</u>
<b>BEARING OF ANGLE HOLE</b> _____	<b>BEFORE T.</b> <u>NONE</u> <b>m</b>	<b>AFTER T.</b> _____ <b>m</b>
<b>TEST SECTION</b> FROM <u>6.00</u> <b>m</b> TO <u>10.00</u> <b>m</b>		

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
4.0	-	8.0	1.0	1.80	10	360.0	36.00	9.00	50.00	5.80 × 10 <sup>-4</sup>
"	"	"	2.0	2.80	10	612.0	61.20	15.30	54.64	6.34 × 10 <sup>-4</sup>
"	"	"	1.0	1.80	10	429.0	42.90	10.73	59.58	6.91 × 10 <sup>-4</sup>



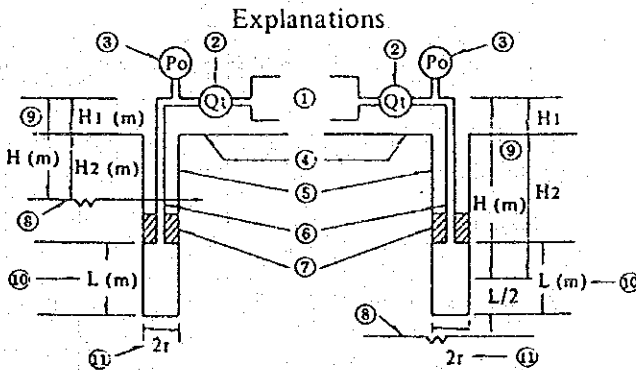
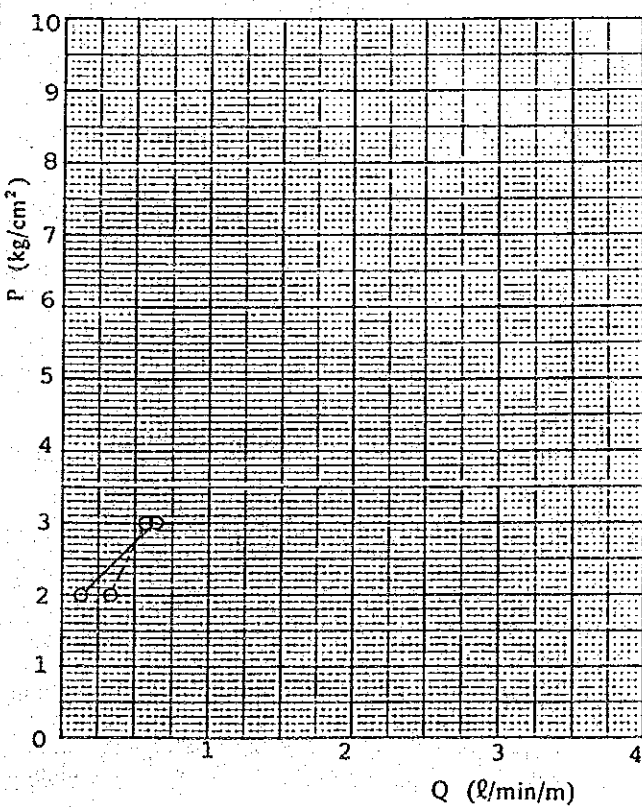
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|---------------------------|--|
| ①: Pump                   | P <sub>0</sub> : Gauge pressure                                |
| ②: Flow meter             | H <sub>1</sub> : Height of Pressure gauge                      |
| ③: Pressure gauge         | H <sub>2</sub> : Depth of Ground water (Saturated Strata)      |
| ④: Ground surface         | P: Effective pressure<br>$P = P_0 + H(m)/10$ , $H = H_1 + H_2$ |
| ⑤: Drill hole             | t: Injected time   |
| ⑥: Injection pipe         | Q <sub>t</sub> : Water volume during time in "t"               |
| ⑦: Packer                 | Q <sub>0</sub> : Water volume per one min.                     |
| ⑧: Water table            | Lu: Lugeon value in ℓ/min/m/10kg/cm <sup>2</sup>               |
| ⑨: Hydrostatic head       | K: Coefficient of permeability                                 |
| ⑩: Length of test section |  |
| ⑪: Diameter of hole       |  |



**PERMEABILITY TEST IN DRILL HOLE (SHEET 3 OF 4)**

KIKULETWA DAM		PROJECT	HOLE No.	KD-1	
LOCATION	RIGHT BANK	DEPTH OF HOLE	20.00 m	TEST DATE	12-3-1988
ELEVATION	822.386 m	DIAMETER OF HOLE	8.6 cm	TESTED BY	C. MUSABENI
COORDINATE		DRILLED DEPTH	15.00 m	DRILLED BY	A. WAMBOGO
ANGLE FROM HORIZONTAL	-90°	LEVEL OF WATER TABLE		CHECKED BY	S. MARIYAMA
BEARING OF ANGLE HOLE		BEFORE T.	9.70 m	AFTER T.	
TEST SECTION		FROM 13.50 m TO 15.00 m			

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
1.50	0.30	9.70	1.0	2.00	5	1.0	0.20	0.13	0.67	6.28 x 10 <sup>-6</sup>
"	"	"	2.0	3.00	10	9.5	0.95	0.63	2.11	1.99 x 10 <sup>-5</sup>
"	"	"	3.0	4.00		(NO FLOW)				
"	"	"	2.0	3.00	10	8.5	0.85	0.57	1.89	1.78 x 10 <sup>-5</sup>
"	"	"	1.0	2.00	10	5.0	0.50	0.33	1.67	1.57 x 10 <sup>-5</sup>



- Explanations**
- |                            |   |
|----------------------------|---|
| ① : Pump                   | P <sub>0</sub> : Gauge pressure                                   |
| ② : Flow meter             | H <sub>1</sub> : Height of Pressure gauge                         |
| ③ : Pressure gauge         | H <sub>2</sub> : Depth of Ground water (Saturated Strata)         |
| ④ : Ground surface         | P : Effective pressure  |
| ⑤ : Drill hole             | P = P <sub>0</sub> + H(m)/10, H = H <sub>1</sub> + H <sub>2</sub> |
| ⑥ : Injection pipe         | t : Injected time   |
| ⑦ : Packer                 | Q <sub>t</sub> : Water volume during time in "t"                  |
| ⑧ : Water table            | Q <sub>0</sub> : Water volume per one min.                        |
| ⑨ : Hydrostatic head       | Lu : Lugeon value in ℓ/min/m/10kg/cm <sup>2</sup>                 |
| ⑩ : Length of test section | K : Coefficient of permeability                                   |
| ⓪ : Diameter of hole       |   |

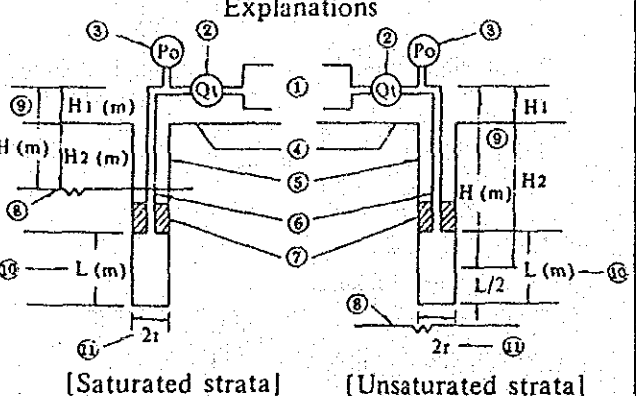
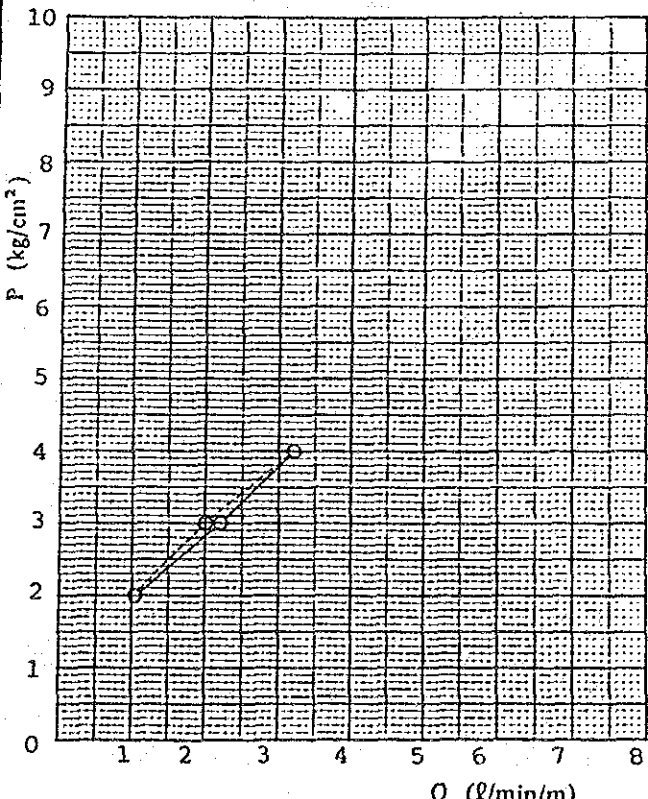
II-2  
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# PERMEABILITY TEST IN DRILL HOLE

( SHEET 4 OF 4 )

KIKULETWA DAM		PROJECT	HOLE No.	KD-1	
LOCATION	<u>RIGHT BANK</u>	DEPTH OF HOLE	<u>20.00 m</u>	TEST DATE	<u>13-3-1988</u>
ELEVATION	<u>822.386 m</u>	DIAMETER OF HOLE	<u>7.6 cm</u>	TESTED BY	<u>C. MSABENI</u>
COORDINATE		DRILLED DEPTH	<u>20.00 m</u>	DRILLED BY	<u>A. WAMBOGO</u>
ANGLE FROM HORIZONTAL	<u>-90 °</u>	LEVEL OF WATER TABLE		CHECKED BY	<u>S. MARUYAMA</u>
BEARING OF ANGLE HOLE		BEFORE T.	<u>9.60m</u>	AFTER T.	<u>m</u>
TEST SECTION		FROM	<u>15.00 m</u>	TO	<u>20.00 m</u>

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
5.0	0.30	9.60	1.0	2.0	10	50.0	5.00	1.00	5.00	6.47 x 10 <sup>-5</sup>
"	"	"	2.0	3.0	10	110.0	11.00	2.20	7.33	9.49 x 10 <sup>-5</sup>
"	"	"	3.0	4.0	10	160.0	16.00	3.20	8.00	1.04 x 10 <sup>-4</sup>
"	"	"	2.0	3.0	10	100.0	10.00	2.00	6.67	8.63 x 10 <sup>-5</sup>
"	"	"	1.0	2.0	10	51.5	5.15	1.03	5.15	6.67 x 10 <sup>-5</sup>



- Explanations**
- ① : Pump
  - ② : Flow meter
  - ③ : Pressure gauge
  - ④ : Ground surface
  - ⑤ : Drill hole
  - ⑥ : Injection pipe
  - ⑦ : Packer
  - ⑧ : Water table
  - ⑨ : Hydrostatic head
  - ⑩ : Length of test section
  - ⑪ : Diameter of hole
  - P<sub>0</sub> : Gauge pressure
  - H<sub>1</sub> : Height of Pressure gauge
  - H<sub>2</sub> : Depth of Ground water (Saturated Strata)
  - P : Effective pressure  
 $P = P_0 + H(m)/10$ ,  $H = H_1 + H_2$
  - t : Injected time
  - Q<sub>t</sub> : Water volume during time in "t"
  - Q<sub>0</sub> : Water volume per one min.
  - Lu : Lugeon value in ℓ/min/m/10kg/cm<sup>2</sup>
  - K : Coefficient of permeability

# PERMEABILITY TEST IN DRILL HOLE

(SHEET 1 OF 1)

KIKULETWA DAM

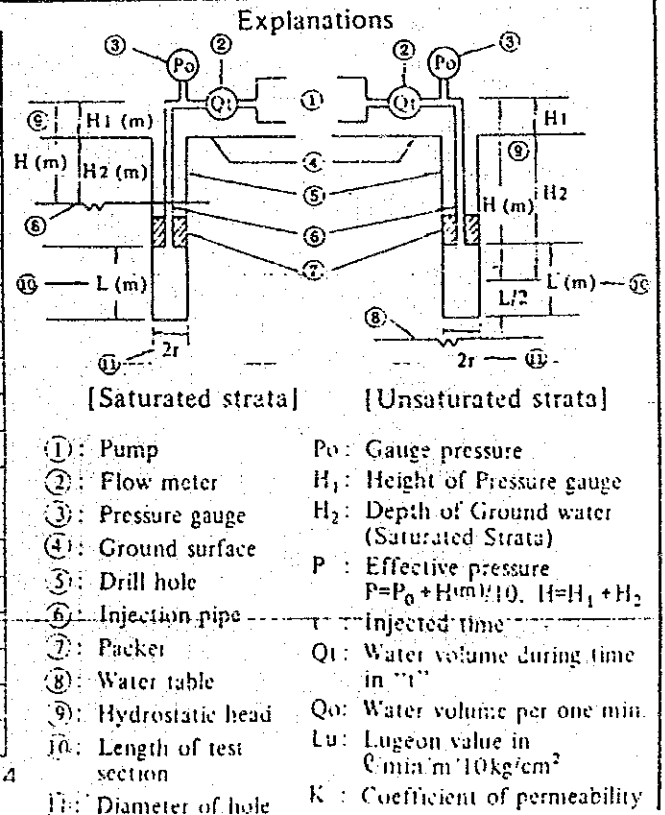
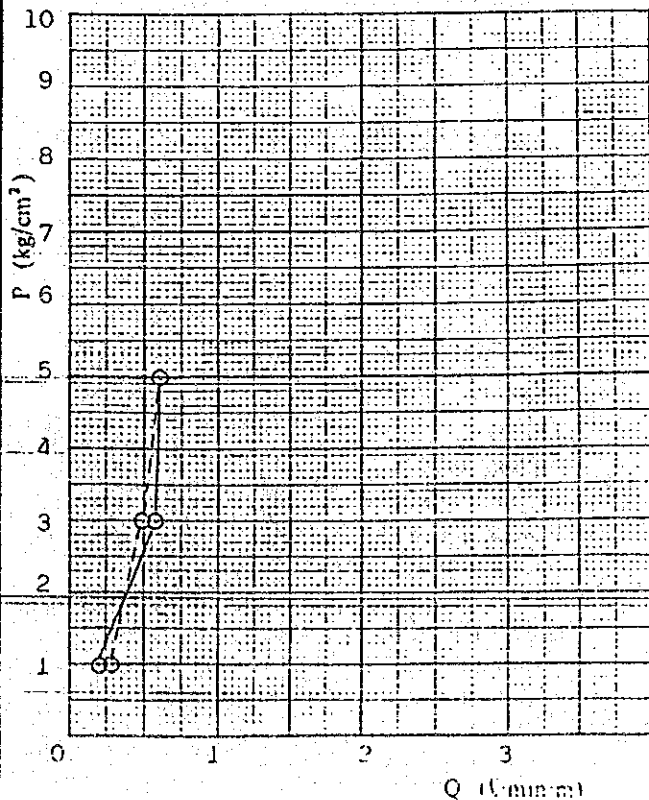
PROJECT

HOLE No. KD-2

LOCATION <u>LEFT BANK</u>	DEPTH OF HOLE <u>15.00</u> m	TEST DATE <u>18-2-1988</u>
ELEVATION <u>812.406</u> m	DIAMETER OF HOLE <u>10.1</u> cm	TESTED BY <u>C. MSABENI</u>
COORDINATE _____	DRILLED DEPTH <u>8.00</u> m	DRILLED BY <u>M. WAMEYO</u>
ANGLE FROM HORIZONTAL <u>90°</u>	LEVEL OF WATER TABLE	CHECKED BY <u>S. MARUYANA</u>
BEARING OF ANGLE HOLE _____	BEFORE T.G. I <u>m</u> AFTER T.G. I <u>m</u>	<u>KONOIKE</u>

TEST SECTION FROM 5.00 m TO 8.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	L <sub>u</sub> (Lugeon)	K (cm/sec)
3.00	-	-	1.0	1.0	10	3.0	0.60	0.20	2.00	2.17x10 <sup>-05</sup>
"	-	-	3.0	3.0	10	17.0	1.70	0.57	1.89	2.05x10 <sup>-05</sup>
"	-	-	5.0	5.0	10	18.0	1.80	0.60	1.20	1.30x10 <sup>-05</sup>
"	-	-	3.0	3.0	10	14.5	1.45	0.48	1.01	1.75x10 <sup>-05</sup>
"	-	-	1.0	1.0	10	8.5	0.85	0.28	2.83	3.07x10 <sup>-05</sup>

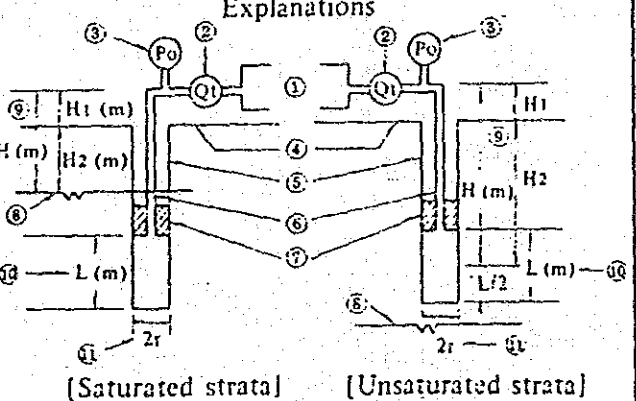
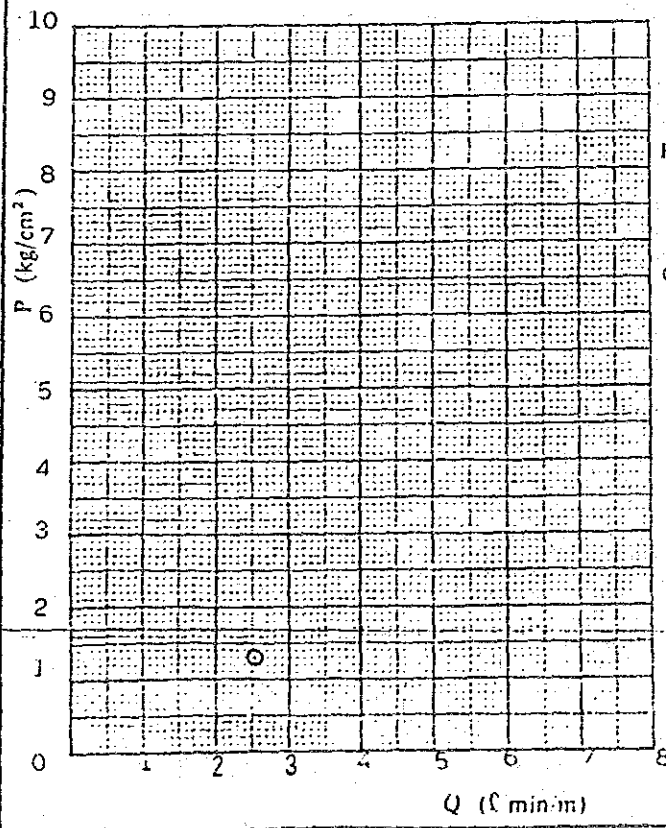


# PERMEABILITY TEST IN DRILL HOLE

(SHEET 1 OF 2)

PROJECT: KIKULETWA DAM  
 HOLE No. KD-3  
 LOCATION: LEFT BANK  
 DEPTH OF HOLE: 20.00 m  
 TEST DATE: 21-2-1988  
 ELEVATION: 817.454 m  
 DIAMETER OF HOLE: 10.1 cm  
 TESTED BY: C. MSABENI  
 COORDINATE: \_\_\_\_\_  
 DRILLED DEPTH: 5.00 m  
 DRILLED BY: M. WAHEYO  
 ANGLE FROM HORIZONTAL: -90°  
 LEVEL OF WATER TABLE: BEFORE T. 3.40m AFTER T. 3.00m  
 CHECKED BY: S. MARIYAMA  
 BEARING OF ANGLE HOLE: \_\_\_\_\_  
 TEST SECTION: FROM 2.50 m TO 5.00 m  
 KONOIKE

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
2.50	-	2.90	1.0	1.29	10	63.0	6.30	2.52	19.53	2.02x10 <sup>-04</sup>
"	-	"	1.5	1.79	(NO SCALE)					



①: Pump	P <sub>0</sub> : Gauge pressure
②: Flow meter	H <sub>1</sub> : Height of Pressure gauge
③: Pressure gauge	H <sub>2</sub> : Depth of Ground water (Saturated Strata)
④: Ground surface	P: Effective pressure
⑤: Drill hole	$P = P_0 + Hm/10$ , $H = H_1 + H_2$
⑥: Injection pipe	t: Injected time
⑦: Packer	Q <sub>t</sub> : Water volume during time in " "
⑧: Water table	Q <sub>0</sub> : Water volume per one min.
⑨: Hydrostatic head	Lu: Lugeon value in
⑩: Length of test section	ℓ min m: 10 kg cm <sup>-2</sup>
⑪: Diameter of hole	K: Coefficient of permeability

PERMEABILITY TEST IN DRILL HOLE (SHEET 2 OF 2)

KIKULETWA DAM PROJECT HOLE No. KD-3

LOCATION LEFT BANK DEPTH OF HOLE 20.00 m TEST DATE 22-2-1988

ELEVATION 817.454 m DIAMETER OF HOLE 8.6 cm TESTED BY C. MSABENI

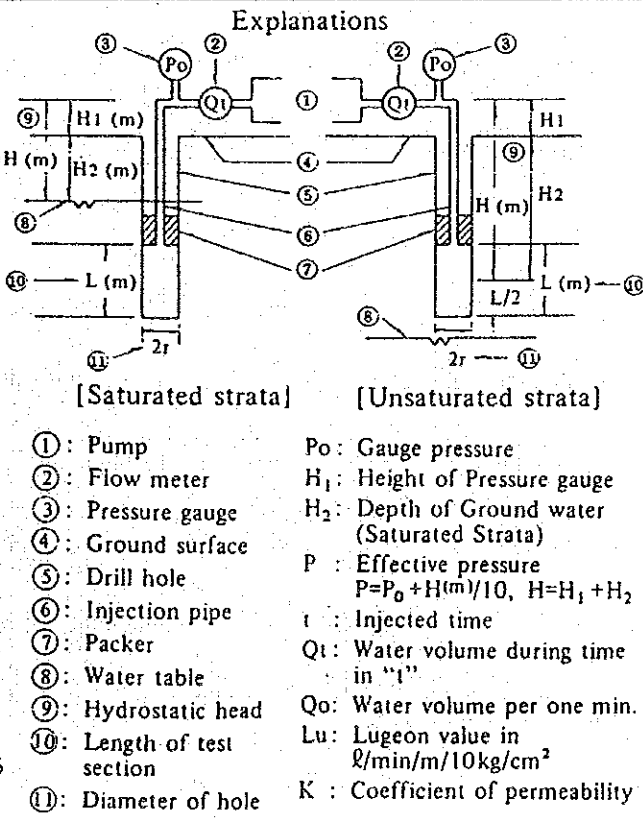
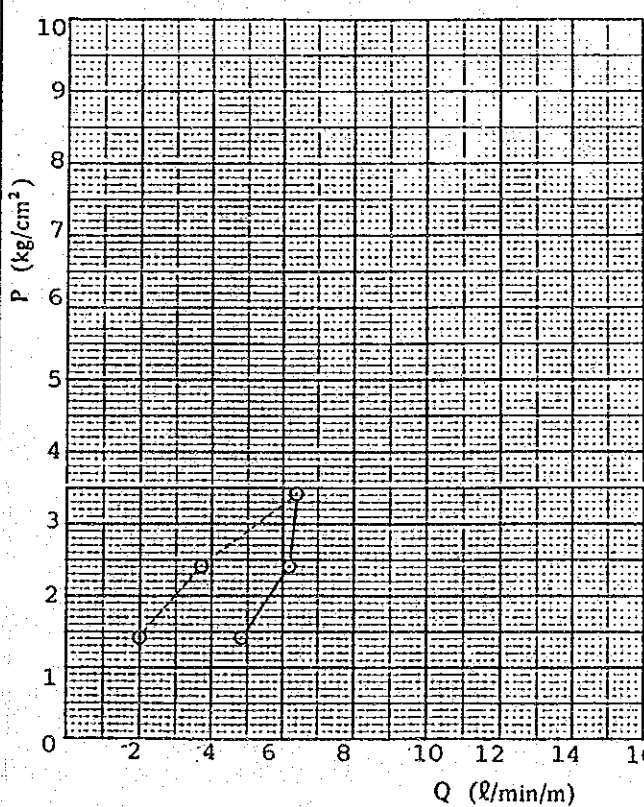
COORDINATE DRILLED DEPTH 20.00 m DRILLED BY M. WAMEYO

ANGLE FROM HORIZONTAL -90° LEVEL OF WATER TABLE CHECKED BY S. MARIYAMA

BEARING OF ANGLE HOLE BEFORE T. 4.20 m AFTER T. 4.30 m KONOIKE

TEST SECTION FROM 17.50 m TO 20.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
2.50	-	4.20	1.0	1.42	10	120.5	12.05	4.82	33.94	3.51 x 10 <sup>-4</sup>
"	"	"	2.0	2.2	10	154.5	15.45	6.18	25.54	2.64 x 10 <sup>-4</sup>
"	"	"	3.0	3.42	10	159.5	15.95	6.38	18.65	1.93 x 10 <sup>-4</sup>
"	"	"	2.0	2.42	10	92.0	9.25	3.70	15.29	1.58 x 10 <sup>-4</sup>
"	"	"	1.0	1.42	10	50.0	5.00	2.00	14.08	1.46 x 10 <sup>-4</sup>



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PERMEABILITY TEST IN DRILL HOLE

(SHEET 1 OF 2)

KIKULETWA DAM

PROJECT

HOLE No. KD-4

LOCATION HEAD RACE CANAL

DEPTH OF HOLE 20.00 m

TEST DATE 27-2-1988

ELEVATION 825.888 m

DIAMETER OF HOLE 8.6 cm

TESTED BY G. MSARETT

COORDINATE

DRILLED DEPTH 17.00 m

DRILLED BY H. WAMEYO

ANGLE FROM HORIZONTAL -90°

LEVEL OF WATER TABLE

CHECKED BY S. KARUYAMA

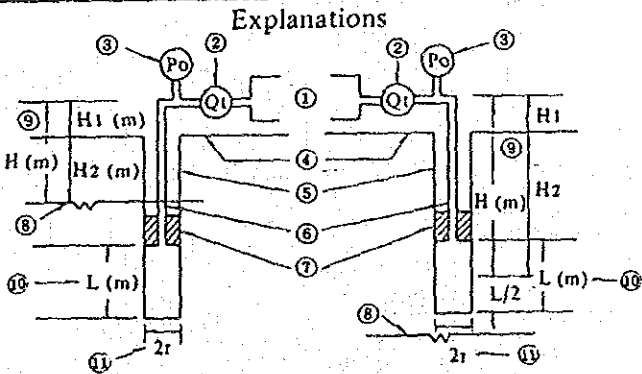
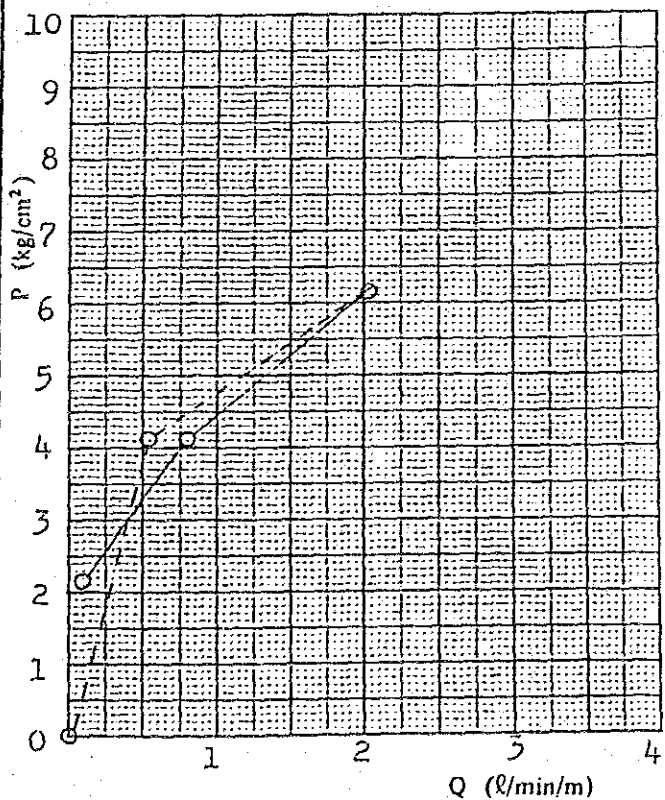
BEARING OF ANGLE HOLE

BEFORE T. 11.6 m AFTER T. 8.7 m

KONOIKE

TEST SECTION FROM 15.00 m TO 17.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
2.00	-	11.60	1.0	2.16	10	2.0	0.20	0.10	0.46	4.72x10 <sup>-6</sup>
"	-	"	3.0	4.16	10	16.0	1.60	0.80	1.92	1.96x10 <sup>-5</sup>
"	-	"	5.0	6.16	10	41.0	4.10	2.05	3.33	3.39x10 <sup>-5</sup>
"	-	"	3.0	4.16	10	10.5	1.05	0.53	1.26	1.29x10 <sup>-5</sup>
"	-	"	1.0	2.16	10	0.0	0.00	0.00	0.00	-

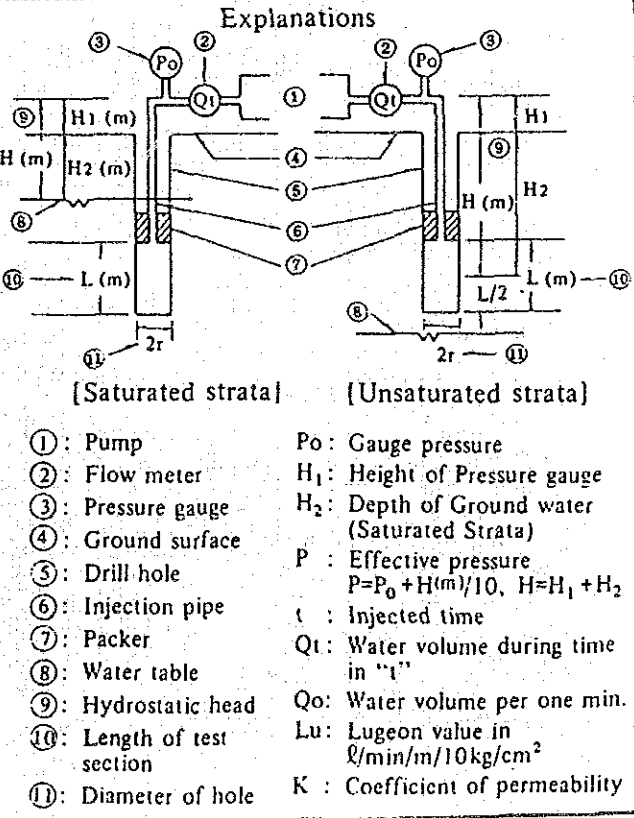
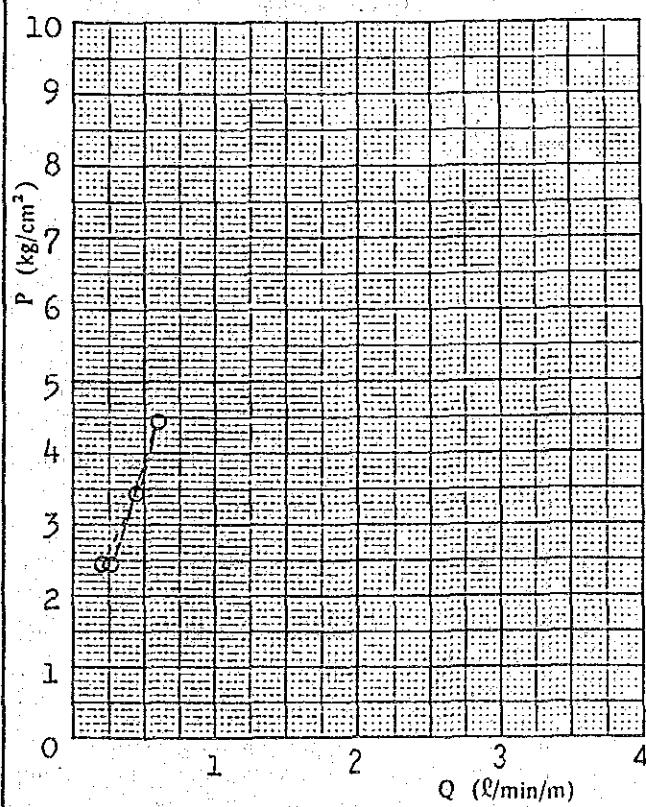


- Explanations**
- ①: Pump
  - ②: Flow meter
  - ③: Pressure gauge
  - ④: Ground surface
  - ⑤: Drill hole
  - ⑥: Injection pipe
  - ⑦: Packer
  - ⑧: Water table
  - ⑨: Hydrostatic head
  - ⑩: Length of test section
  - ⑪: Diameter of hole
- P<sub>0</sub>: Gauge pressure
  - H<sub>1</sub>: Height of Pressure gauge
  - H<sub>2</sub>: Depth of Ground water (Saturated Strata)
  - P: Effective pressure  
P = P<sub>0</sub> + H(m)/10, H = H<sub>1</sub> + H<sub>2</sub>
  - t: Injected time
  - Q<sub>t</sub>: Water volume during time in "t"
  - Q<sub>0</sub>: Water volume per one min.
  - Lu: Lugeon value in ℓ/min/m/10kg/cm<sup>2</sup>
  - K: Coefficient of permeability

**PERMEABILITY TEST IN DRILL HOLE (SHEET 2 OF 2)**

KIKULETWA DAM PROJECT			HOLE No. KD-4		
LOCATION	HEAD RACE CANAL	DEPTH OF HOLE	20.00 m	TEST DATE	28-2-1988
ELEVATION	825.888 m	DIAMETER OF HOLE	8.6 cm	TESTED BY	C. MSABENI
COORDINATE		DRILLED DEPTH	20.00 m	DRILLED BY	H. WAMEYO
ANGLE FROM HORIZONTAL	-90 °	LEVEL OF WATER TABLE		CHECKED BY	S. MABUYAMA FOROIKE
BEARING OF ANGLE HOLE	-	BEFORE	14.2 m	AFTER	9.5 m
TEST SECTION	FROM 15.00 m TO 20.00 m				

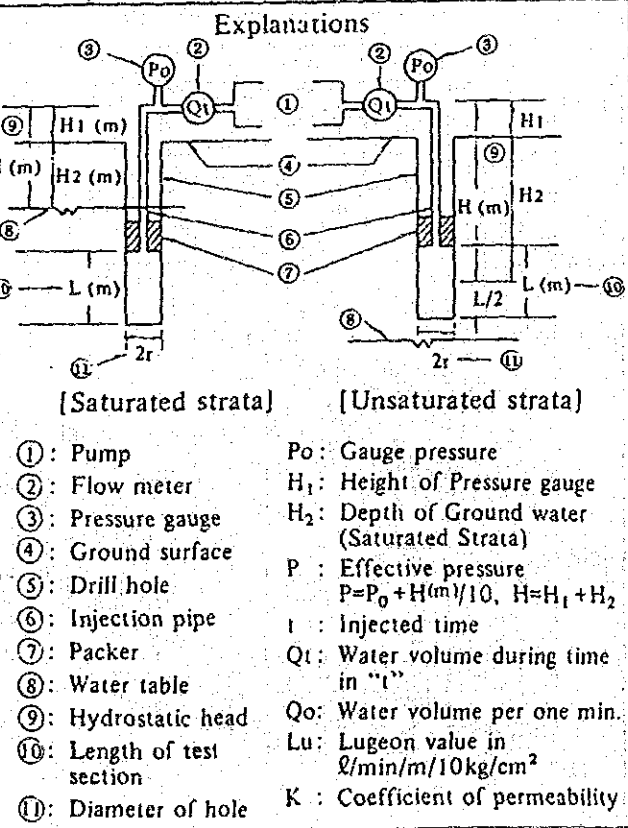
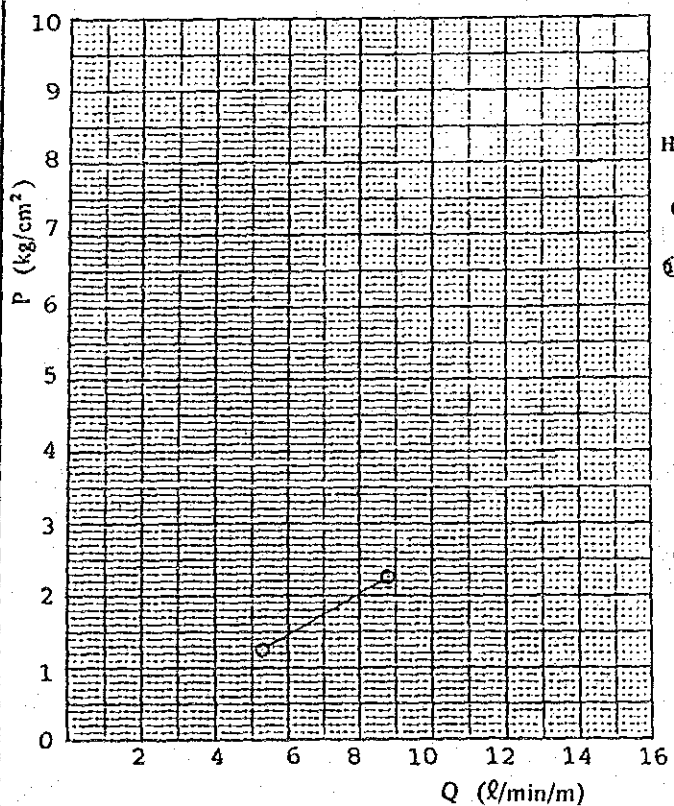
L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
5.00	-	14.20	1.0	2.42	10	13.5	1.35	0.27	1.12	1.41x10 <sup>-3</sup>
"	-	"	2.0	3.42	10	22.0	2.20	0.44	1.29	1.62x10 <sup>-3</sup>
"	-	"	3.0	4.42	10	29.5	2.95	0.59	1.33	1.68x10 <sup>-3</sup>
"	-	"	2.0	3.42	10	21.5	2.15	0.43	1.26	1.59x10 <sup>-3</sup>
"	-	"	1.0	2.42	10	10.5	1.05	0.21	0.87	1.09x10 <sup>-3</sup>



**PERMEABILITY TEST IN DRILL HOLE (SHEET 1 OF 4)**

<u>KIKULETWA DAM</u>		PROJECT	HOLE No.	KD-5
LOCATION <u>HEAD RACE CANAL</u>	DEPTH OF HOLE <u>20.00</u> m	TEST DATE <u>8-3-1988</u>		
ELEVATION <u>829.683</u> m	DIAMETER OF HOLE <u>10.1</u> cm	TESTED BY <u>C. MSABENI</u>		
COORDINATE _____	DRILLED DEPTH <u>5.30</u> m	DRILLED BY <u>M. WAMEYO</u>		
ANGLE FROM HORIZONTAL <u>-90°</u>	LEVEL OF WATER TABLE	CHECKED BY <u>S. MARUYAMA</u>		
BEARING OF ANGLE HOLE _____	BEFORE T. <u>3.10</u> m	AFTER T. _____ m	<u>KONOIKE</u>	
TEST SECTION FROM <u>2.00</u> m TO <u>5.30</u> m				

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
3.30	-	2.55	1.0	1.26	10	174.0	17.40	5.27	41.85	4.64 x 10 <sup>-4</sup>
"	"	"	2.0	2.26	10	289.5	28.95	8.77	38.82	4.30 x 10 <sup>-4</sup>
"	"	"	3.0	3.26		( NO SEAL )				

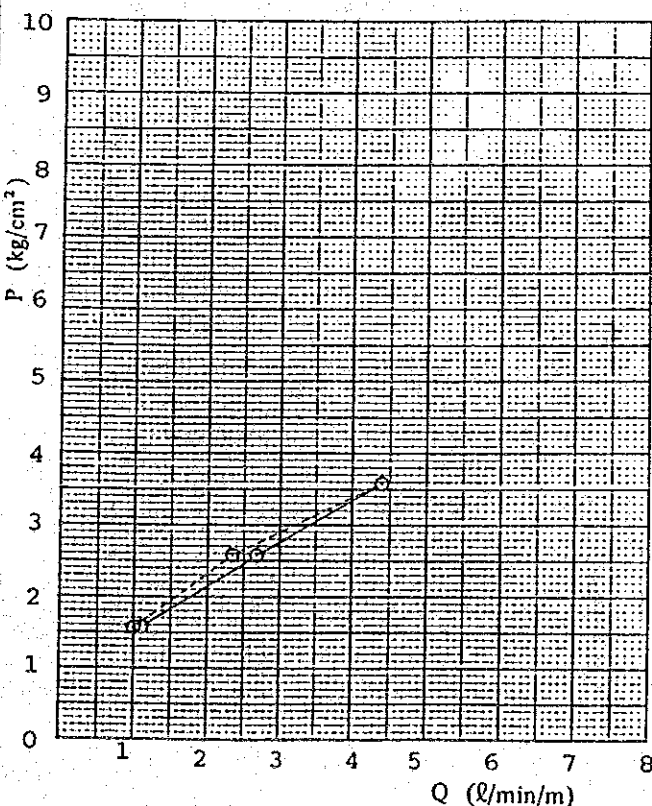




# PERMEABILITY TEST IN DRILL HOLE (SHEET 2 OF 4)

<b>KIKULETWA DAM</b>		<b>PROJECT</b>		<b>HOLE No.</b>		<b>KD-5</b>	
LOCATION	<u>HEAD RACE CANAL</u>	DEPTH OF HOLE	<u>20.00 m</u>	TEST DATE	<u>9-3-1988</u>		
ELEVATION	<u>829.680 m</u>	DIAMETER OF HOLE	<u>8.6 cm</u>	TESTED BY	<u>C. MSABENI</u>		
COORDINATE	_____	DRILLED DEPTH	<u>9.80 m</u>	DRILLED BY	<u>M. WAMEYO</u>		
ANGLE FROM HORIZONTAL	<u>-90 °</u>	LEVEL OF WATER TABLE	_____	CHECKED BY	<u>S. MARUYAMA</u>		
BEARING OF ANGLE HOLE	_____	BEFORE T.	<u>5.70 m</u>	AFTER T.	_____		
TEST SECTION		FROM	<u>5.30 m</u>	TO	<u>9.80 m</u>		

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
4.50	0.30	5.50	1.0	1.58	10	49.5	4.95	1.10	6.96	8.59 x 10 <sup>-5</sup>
"	"	"	2.0	2.58	10	120.5	12.05	2.68	10.38	1.28 x 10 <sup>-4</sup>
"	"	"	3.0	3.58	10	197.0	19.70	4.38	12.25	1.51 x 10 <sup>-4</sup>
"	"	"	2.0	2.58	10	108.0	10.50	2.33	9.30	1.12 x 10 <sup>-4</sup>
"	"	"	1.0	1.58	10	45.0	4.50	1.00	6.33	1.82 x 10 <sup>-4</sup>



### Explanations

[Saturated strata]

[Unsaturated strata]

- ① : Pump
- ② : Flow meter
- ③ : Pressure gauge
- ④ : Ground surface
- ⑤ : Drill hole
- ⑥ : Injection pipe
- ⑦ : Packer
- ⑧ : Water table
- ⑨ : Hydrostatic head
- ⑩ : Length of test section
- Ⓜ : Diameter of hole
- P<sub>0</sub> : Gauge pressure
- H<sub>1</sub> : Height of Pressure gauge
- H<sub>2</sub> : Depth of Ground water (Saturated Strata)
- P : Effective pressure  
P = P<sub>0</sub> + H(m)/10, H = H<sub>1</sub> + H<sub>2</sub>
- t : Injected time
- Q<sub>t</sub> : Water volume during time in "t"
- Q<sub>0</sub> : Water volume per one min.
- Lu : Lugeon value in ℓ/min/m/10kg/cm<sup>2</sup>
- K : Coefficient of permeability

5-2  
15

PERMEABILITY TEST IN DRILL HOLE (SHEET 3 OF 4)

KIKULETWA DAM

PROJECT

HOLE No.

KD-5

LOCATION HEAD RACE CANAL

DEPTH OF HOLE 20.00 m

TEST DATE 10-3-1988

ELEVATION 829.680 m

DIAMETER OF HOLE 7.6 cm

TESTED BY C. MSABENI

COORDINATE

DRILLED DEPTH 15.00 m

DRILLED BY M. WAMEYO

ANGLE FROM HORIZONTAL -90°

LEVEL OF WATER TABLE

CHECKED BY S. MARUYAMA

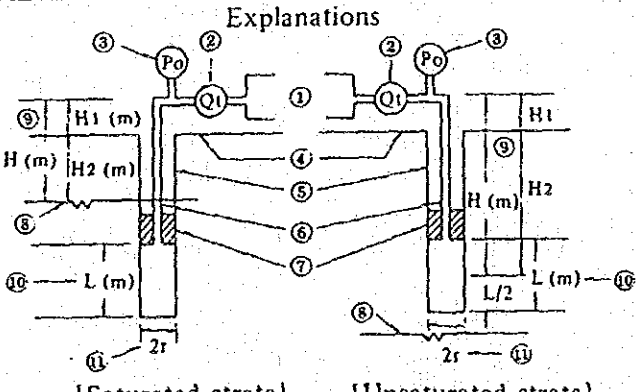
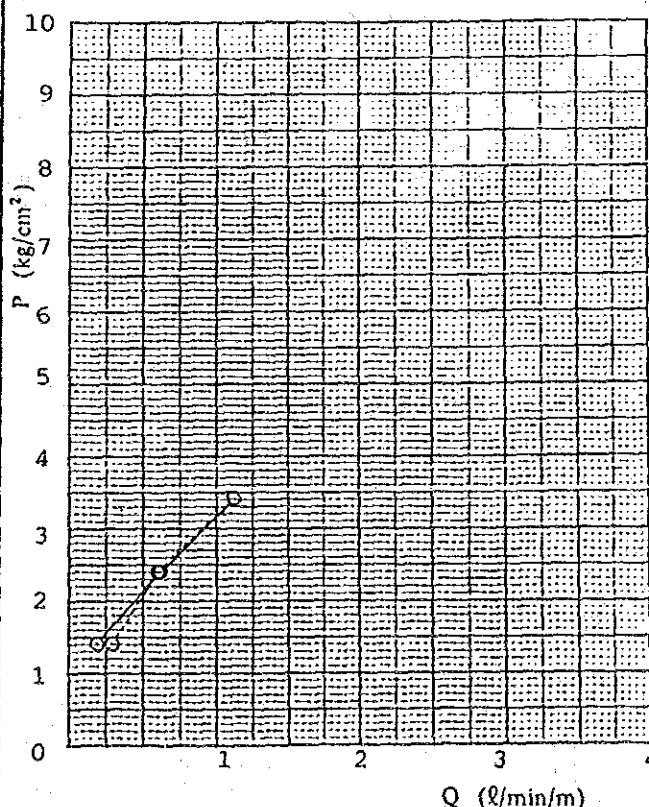
BEARING OF ANGLE HOLE

BEFORE T. 4.10m AFTER T. 4.20m

KONOIKE

TEST SECTION FROM 9.80 m TO 15.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	L <sub>u</sub> (Lugeon)	K (cm/sec)
5.20	-	4.10	1.0	1.41	10	10.0	1.00	0.19	1.36	1.78 x 10 <sup>-5</sup>
"	"	"	2.0	2.41	10	32.0	3.20	0.62	2.55	3.33 x 10 <sup>-5</sup>
"	"	"	3.0	3.41	10	58.0	5.80	1.12	3.27	4.27 x 10 <sup>-5</sup>
"	"	"	2.0	2.41	10	31.0	3.10	0.60	2.47	3.23 x 10 <sup>-5</sup>
"	"	"	1.0	1.41	10	15.0	1.50	0.29	2.05	2.67 x 10 <sup>-5</sup>



- Explanations**
- ①: Pump
  - ②: Flow meter
  - ③: Pressure gauge
  - ④: Ground surface
  - ⑤: Drill hole
  - ⑥: Injection pipe
  - ⑦: Packer
  - ⑧: Water table
  - ⑨: Hydrostatic head
  - ⑩: Length of test section
  - ⑪: Diameter of hole
- P<sub>0</sub>: Gauge pressure
  - H<sub>1</sub>: Height of Pressure gauge
  - H<sub>2</sub>: Depth of Ground water (Saturated Strata)
  - P : Effective pressure  
P = P<sub>0</sub> + H(m)/10, H = H<sub>1</sub> + H<sub>2</sub>
  - t : Injected time
  - Q<sub>t</sub>: Water volume during time in "t"
  - Q<sub>0</sub>: Water volume per one min.
  - L<sub>u</sub>: Lugeon value in ℓ/min/m/10kg/cm<sup>2</sup>
  - K : Coefficient of permeability

PERMEABILITY TEST IN DRILL HOLE (SHEET 4 OF 4)

KIKULETWA DAM PROJECT HOLE No. KD-5

LOCATION HEAD RACE CANAL DEPTH OF HOLE 20.00 m TEST DATE 11-3-1988

ELEVATION 829.680 m DIAMETER OF HOLE 7.6 cm TESTED BY C. MSABENI

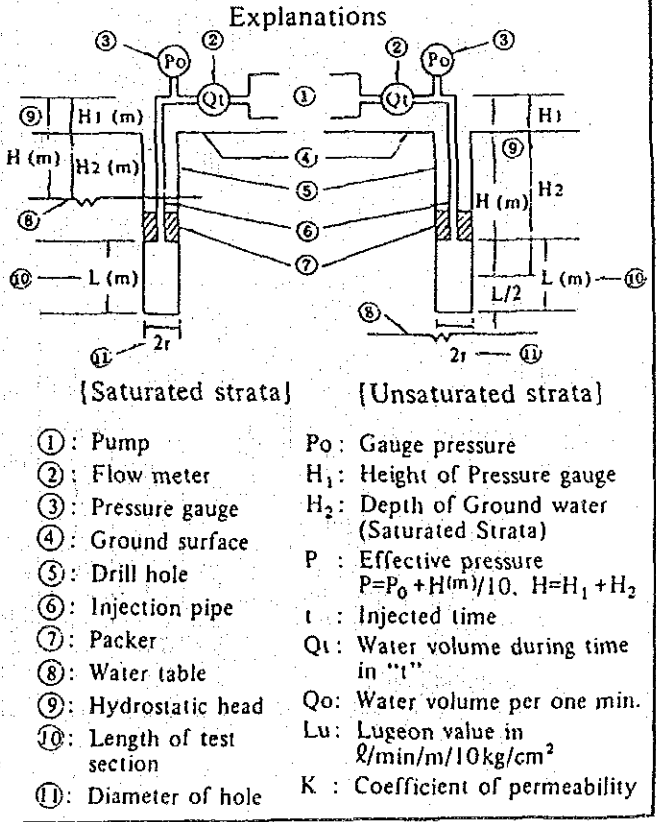
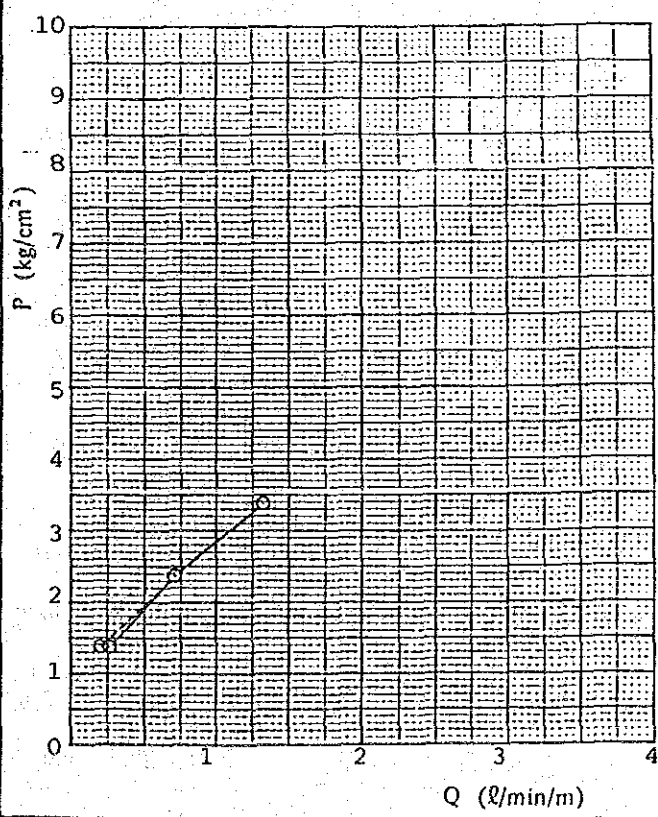
COORDINATE \_\_\_\_\_ DRILLED DEPTH 20.00 m DRILLED BY M. WAMEYO

ANGLE FROM HORIZONTAL -90° LEVEL OF WATER TABLE CHECKED BY S. MARUYAMA

BEARING OF ANGLE HOLE \_\_\_\_\_ BEFORE T. 3.75 m AFTER T. \_\_\_\_\_ m KONOIKE

TEST SECTION FROM 15.00 m TO 20.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	L <sub>u</sub> (Lugeon)	K (cm/sec)
5.00	-	3.75	1.0	1.38	5	6.5	1.30	0.26	1.88	2.44 x 10 <sup>-5</sup>
"	"	"	2.0	2.38	10	35.0	3.50	0.70	2.94	3.81 x 10 <sup>-5</sup>
"	"	"	3.0	3.38	10	66.0	6.60	1.32	3.91	5.05 x 10 <sup>-5</sup>
"	"	"	2.0	2.38	10	35.5	3.55	0.71	2.98	7.18 x 10 <sup>-5</sup>
"	"	"	1.0	1.38	5	5.0	1.00	0.20	1.45	1.88 x 10 <sup>-5</sup>

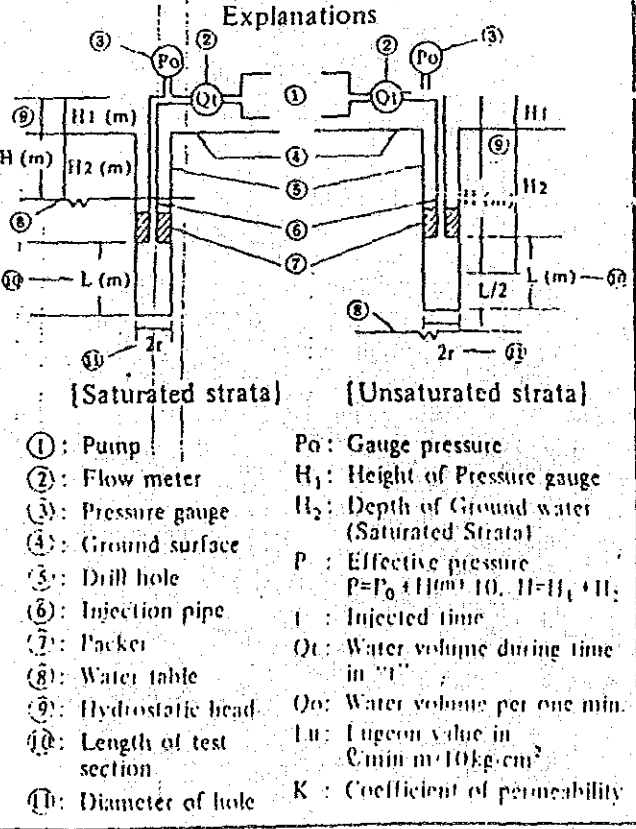
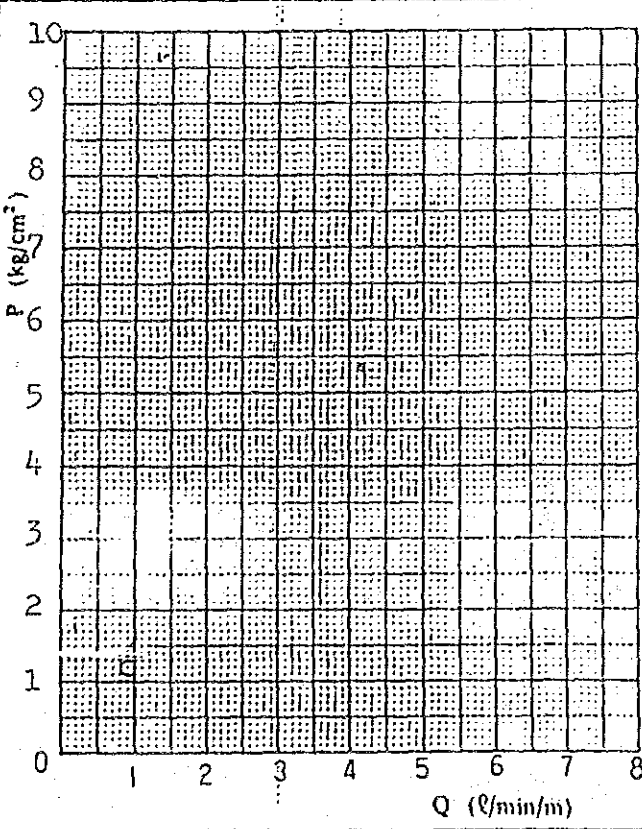


# PERMEABILITY TEST IN DRILL HOLE

(SHEET 1 OF 4)

KIKULETWA DAM		PROJECT		HOLE No. KD-6	
LOCATION	HEAD RACE CANAL	DEPTH OF HOLE	20.00 m	TEST DATE	5-3-1988
ELEVATION	811.327 m	DIAMETER OF HOLE	10.1 cm	TESTED BY	C. MSABITI
COORDINATE		DRILLED DEPTH	5.40 m	DRILLED BY	H. WANEYO
ANGLE FROM HORIZONTAL	-90°	LEVEL OF WATER TABLE		CHECKED BY	S. FARUYAMA
BEARING OF ANGLE HOLE		BEFORE T.	1.7 m	AFTER T.	
TEST SECTION		FROM	3.00 m	TO	5.40 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (l)	Q <sub>0</sub> (l/min)	Q (l/min/m)	Lu (Lugeon)	K (cm/sec)
2.4	-	1.7	1.0	1.17	10	21.5	2.15	0.90	7.66	2.84 × 10 <sup>-7</sup>
"	"	"	2.0	2.17						



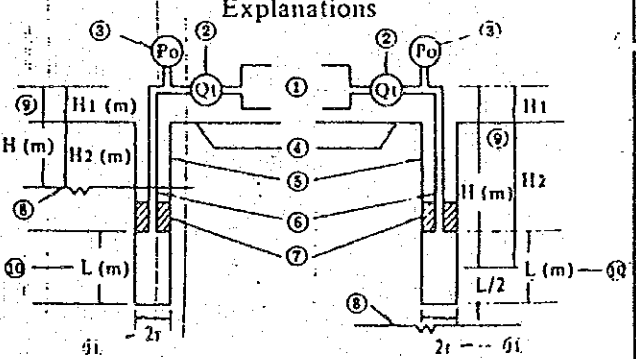
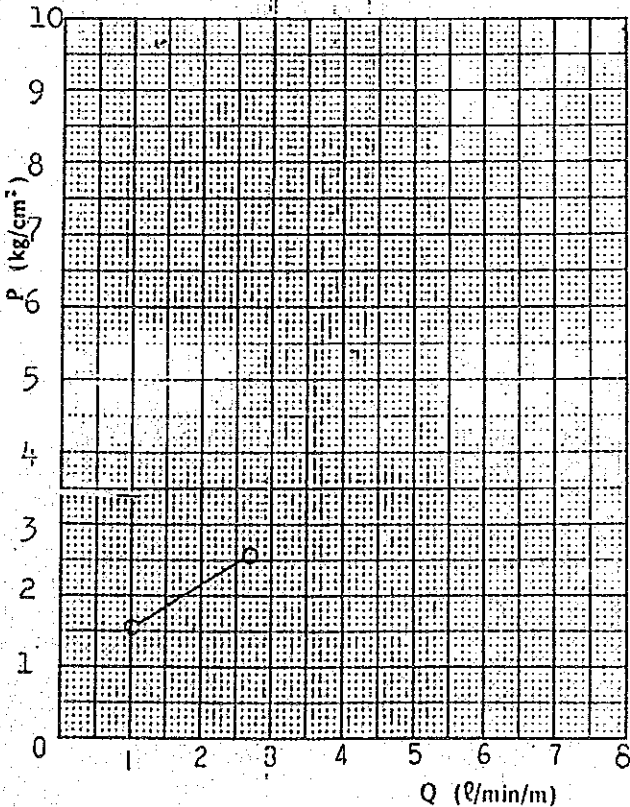
PERMEABILITY TEST IN DRILL HOLE (SHEET 2 OF 4)

NIRULEPWA DAM PROJECT HOLE No. KD-6

LOCATION	HEAD RACE CANAL	DEPTH OF HOLE	20.00 m	TEST DATE	5-5-1988
ELEVATION	811.327 m	DIAMETER OF HOLE	8.6 cm	TESTED BY	C. MSABENI
COORDINATE		DRILLED DEPTH	9.95 m	DRILLED BY	M. WANEVO
ANGLE FROM HORIZONTAL	-90°	LEVEL OF WATER TABLE		CHECKED BY	S. KARUYAM
BEARING OF ANGLE HOLE		BEFORE T	5.4 m	AFTER T	2.0 m

TEST SECTION FROM 5.75 m TO 9.95 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K
4.20	-	5.40	1.0	1.54	10	11.0	1.10	0.98	6.34	7.70x10 <sup>-5</sup>
"	"	"	2.0	2.54	10	11.0	1.10	2.71	10.69	1.30x10 <sup>-4</sup>
"	"	"	3.0	3.54			(NO SEAL)			



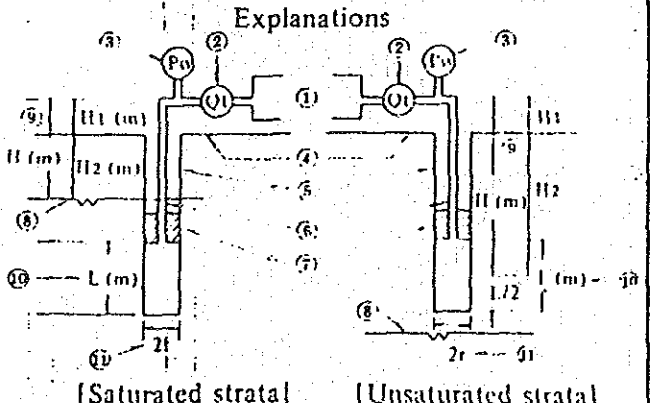
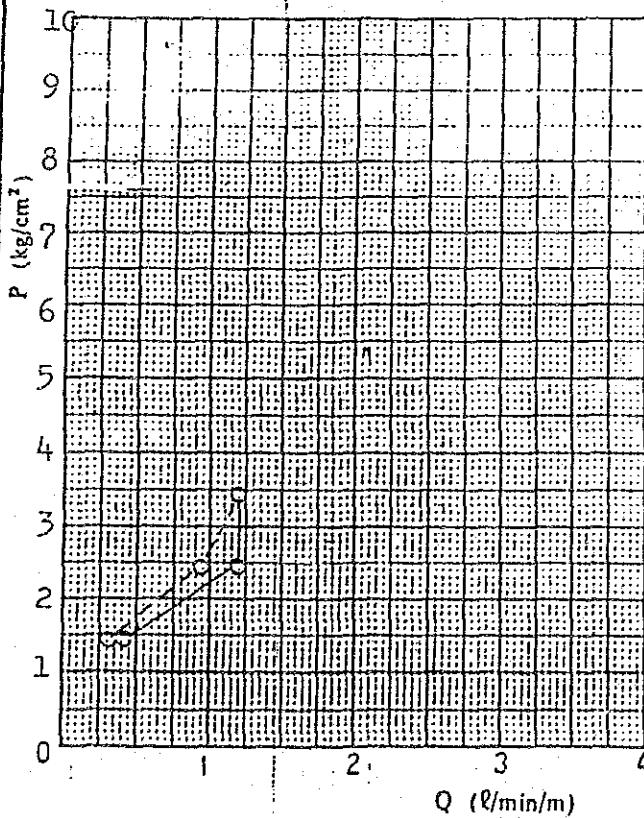
- |                           |   |
|---------------------------|---|
| ①: Pump                   | P <sub>0</sub> : Gauge pressure                           |
| ②: Flow meter             | H <sub>1</sub> : Height of Pressure gauge                 |
| ③: Pressure gauge         | H <sub>2</sub> : Depth of Ground water (Saturated Strata) |
| ④: Ground surface         | P: Effective pressure                                     |
| ⑤: Drill hole             | $P = P_0 + H \cdot \gamma_w$ , $H = H_1 + H_2$            |
| ⑥: Injection pipe         | t: Injected time  |
| ⑦: Packer                 | Q <sub>t</sub> : Water volume during time in "t"          |
| ⑧: Water table            | Q <sub>0</sub> : Water volume per one min.                |
| ⑨: Hydrostatic head       | Lu: Lugeon value in ℓ/min/m/10kg/cm <sup>2</sup>          |
| ⑩: Length of test section | K: Coefficient of permeability                            |
| ⑪: Diameter of hole       |   |

PERMEABILITY TEST IN DRILL HOLE (SHEET 3 OF 4)

KIKULETWA DAM PROJECT HOLE No. KD-6

LOCATION HEAD RACE CANAL DEPTH OF HOLE 20.00 m TEST DATE 6-3-1988  
 ELEVATION 811.327 m DIAMETER OF HOLE 8.6 cm TESTED BY C. MSABENI  
 COORDINATE \_\_\_\_\_ DRILLED DEPTH 15.00 m DRILLED BY M. WAMEYO  
 ANGLE FROM HORIZONTAL = 90° LEVEL OF WATER TABLE \_\_\_\_\_ CHECKED BY S. MARUYAMA  
 BEARING OF ANGLE HOLE \_\_\_\_\_ BEFORE T. 4.2 m AFTER T. 4.9 m KOROIKE  
 TEST SECTION FROM 10.00 m TO 15.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
5.0	-	4.20	1.0	1.42	10	19.5	1.95	0.39	2.75	3.46x10 <sup>-5</sup>
"	"	"	2.0	2.42	10	60.0	6.00	1.20	4.96	6.26x10 <sup>-5</sup>
"	"	"	3.0	3.42	10	60.0	6.00	1.20	3.51	4.43x10 <sup>-5</sup>
"	"	"	2.0	2.42	10	46.5	4.65	0.93	3.84	4.85x10 <sup>-5</sup>
"	"	"	1.0	1.42	10	15.0	1.50	0.30	2.11	2.67x10 <sup>-5</sup>



- Explanations**
- (1): Pump
  - (2): Flow meter
  - (3): Pressure gauge
  - (4): Ground surface
  - (5): Drill hole
  - (6): Injection pipe
  - (7): Packer
  - (8): Water table
  - (9): Hydrostatic head
  - (10): Length of test section
  - (11): Diameter of hole
- P<sub>0</sub>: Gauge pressure
  - H<sub>1</sub>: Height of Pressure gauge
  - H<sub>2</sub>: Depth of Ground water (Saturated Strata)
  - P: Effective pressure  
 $P = P_0 + H(m)/10$ ,  $H = H_1 + H_2$
  - t: Injected time
  - Q<sub>t</sub>: Water volume during time in "t"
  - Q<sub>0</sub>: Water volume per one min.
  - Lu: Lugeon value in ℓ/min/m/10kg/cm<sup>2</sup>
  - K: Coefficient of permeability

**PERMEABILITY TEST IN DRILL HOLE (SHEET 4 OF 4)**

KIKHLETTVA DAM PROJECT HOLE No. KD-6

LOCATION HEAD RACE CANAL DEPTH OF HOLE 20.00 m TEST DATE 6-3-1988

ELEVATION 811.327 m DIAMETER OF HOLE 7.6 cm TESTED BY C. MSABENI

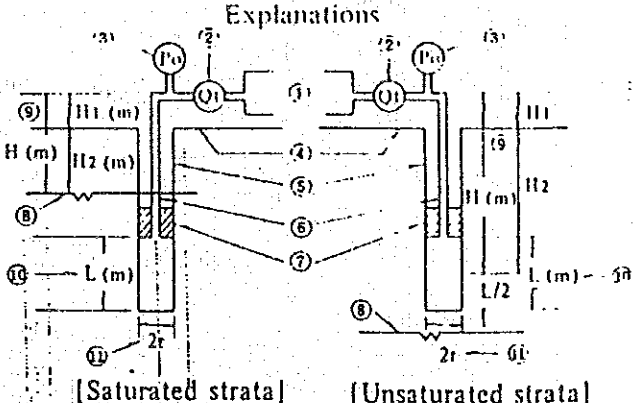
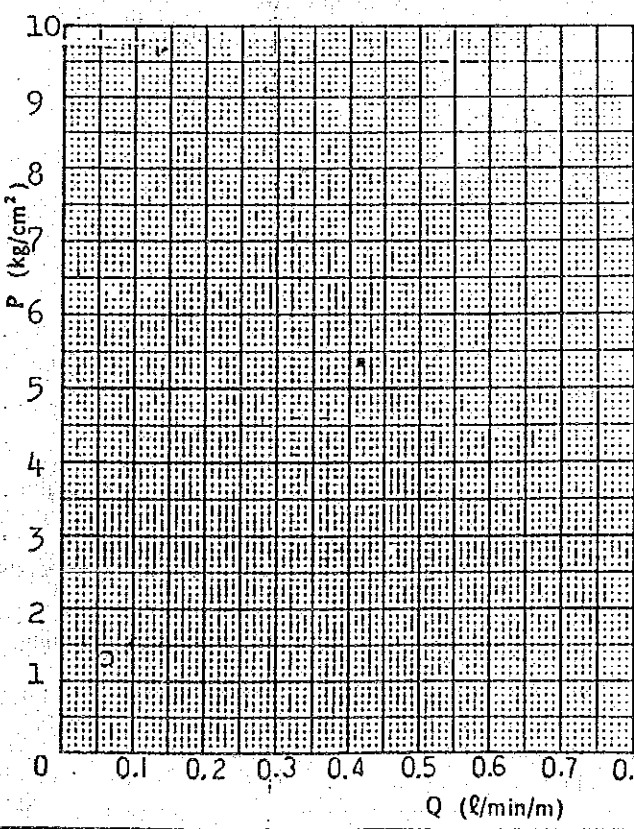
COORDINATE \_\_\_\_\_ DRILLED DEPTH 20.00 m DRILLED BY M. WAMEYO

ANGLE FROM HORIZONTAL -90° LEVEL OF WATER TABLE CHECKED BY S. MARUYAMA

BEARING OF ANGLE HOLE BEFORE T. 2.4 m AFTER T. \_\_\_\_\_ m FONGTIE

TEST SECTION FROM 15.00 m TO 20.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>1</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
5.0	-	2.40	1.0	1.24	5	1.5	0.30	0.06	0.48	6.26x10 <sup>-6</sup>
"	"	"	2.0	2.24		( BACK FLOW )				
"	"	"	3.0	3.24		( " )				
"	"	"	2.0	2.24		( " )				
"	"	"	1.0	1.24		( " )				

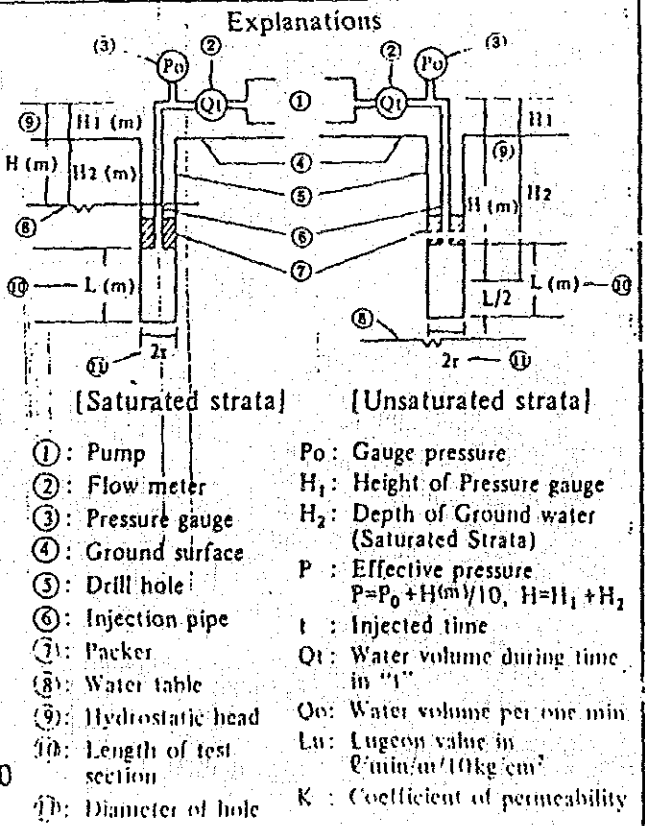
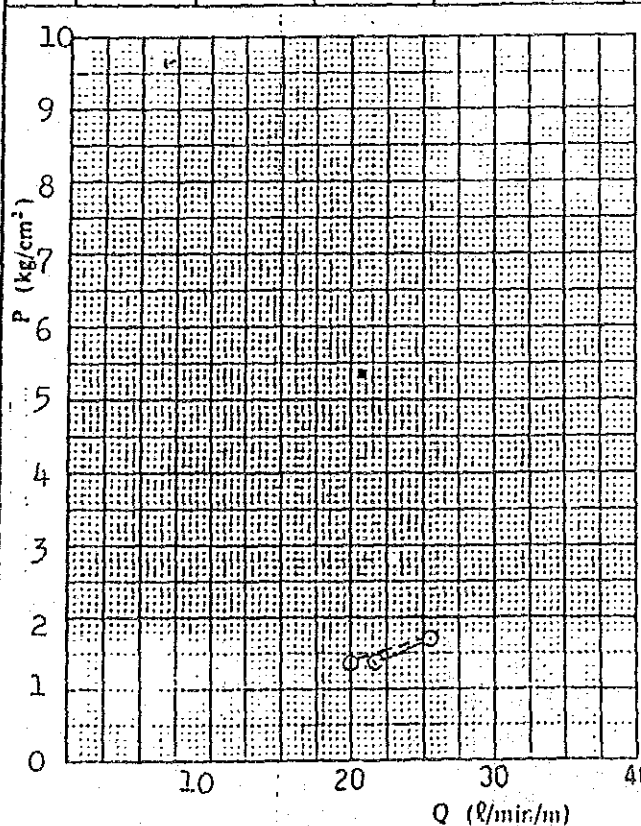


- Explanations**
- ① : Pump
  - ② : Flow meter
  - ③ : Pressure gauge
  - ④ : Ground surface
  - ⑤ : Drill hole
  - ⑥ : Injection pipe
  - ⑦ : Pack
  - ⑧ : Water table
  - ⑨ : Hydrostatic head
  - ⑩ : Length of test section
  - ⑪ : Diameter of hole
- P<sub>0</sub> : Gauge pressure
  - H<sub>1</sub> : Height of Pressure gauge
  - H<sub>2</sub> : Depth of Ground water (Saturated Strata)
  - P : Effective pressure  
P = P<sub>0</sub> + H(m)/10. H = H<sub>1</sub> + H<sub>2</sub>
  - t : Injected time
  - Q<sub>t</sub> : Water volume during time in "t"
  - Q<sub>0</sub> : Water volume per one min.
  - Lu : Lugeon value  
ℓ/min/m/10kg/cm<sup>2</sup>
  - K : Coefficient of permeability

PERMEABILITY TEST IN DRILL HOLE (SHEET 1 OF 4)

KIKULETWA DAM PROJECT HOLE No. KD-7  
 LOCATION HEAD RACE CANAL DEPTH OF HOLE 20.00 m TEST DATE 1-3-1988  
 ELEVATION 807.593 m DIAMETER OF HOLE 10.1 cm TESTED BY C. MSABENI  
 COORDINATE \_\_\_\_\_ DRILLED DEPTH 5.00 m DRILLED BY M. WAMEYO  
 ANGLE FROM HORIZONTAL -90° LEVEL OF WATER TABLE CHECKED BY S. MARUYAMA  
 BEARING OF ANGLE HOLE \_\_\_\_\_ BEFORE T. \_\_\_\_\_ m AFTER T. 3.55 m KONOIKE  
 TEST SECTION FROM 2.00 m TO 5.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
3.0	-	3.50	1.0	1.35	10	651.0	65.10	21.70	160.74	1.74x10 <sup>-2</sup>
"	"	"	1.7	2.05	10	766.0	76.60	25.53	124.55	1.35x10 <sup>-2</sup>
"	"	"	1.0	1.35	1.0	600.0	60.00	20.00	148.15	1.61x10 <sup>-2</sup>





PERMEABILITY TEST IN DRILL HOLE

(SHEET 2 OF 4)

KINULETWA DAM

PROJECT

HOLE No. KD-7

LOCATION HEAD RACE CANAL

DEPTH OF HOLE 20.00 m

TEST DATE 2-3-1988

ELEVATION 807.593 m

DIAMETER OF HOLE 10.1 cm

TESTED BY C. K. SABANI

COORDINATE

DRILLED DEPTH 10.00 m

DRILLED BY N. WAMEYO

ANGLE FROM HORIZONTAL -90°

LEVEL OF WATER TABLE

CHECKED BY S. MARUYAMA

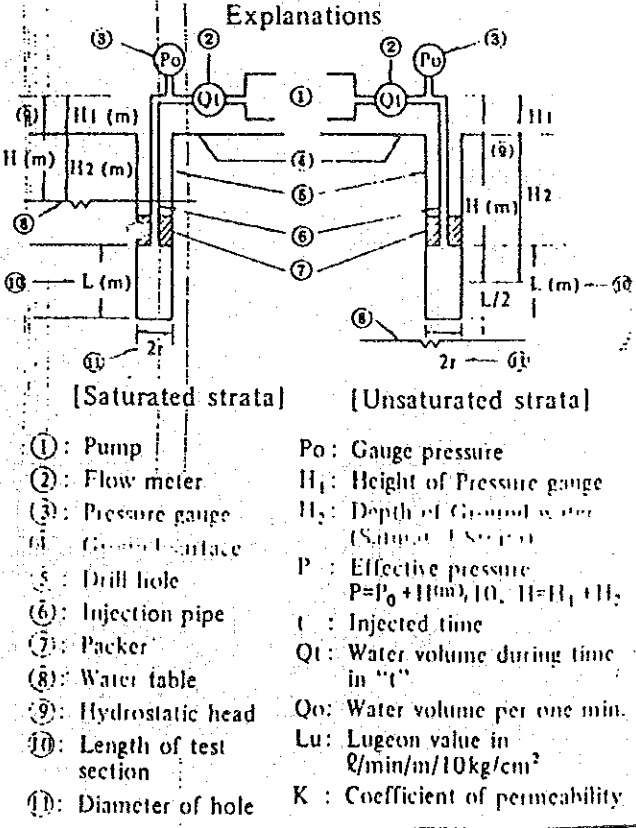
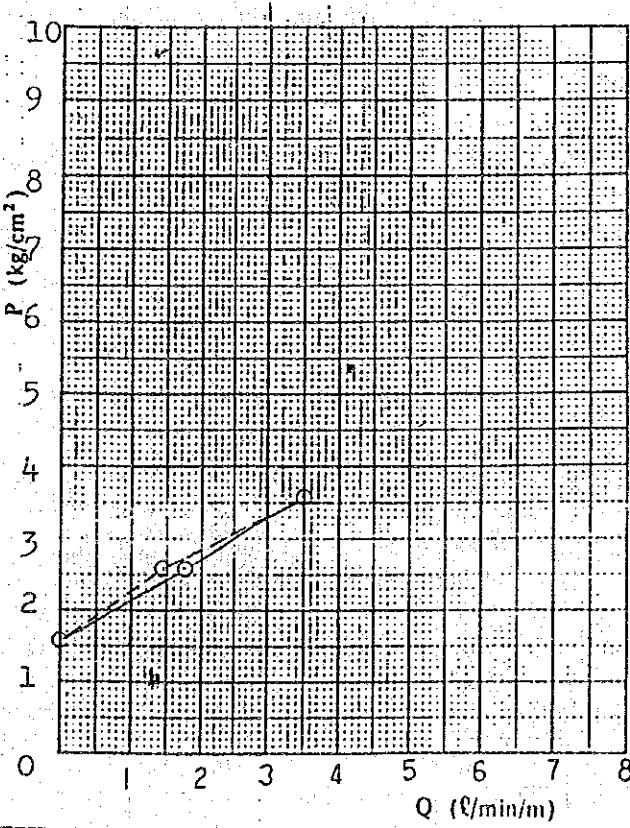
BEARING OF ANGLE HOLE

BEFORE 16.30 m AFTER 4.20 m

EGORIKE

TEST SECTION FROM 5.00 m TO 10.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	L <sub>u</sub> (Lugeon)	K (cm/sec)
5.0	-	5.70	1.0	1.57	5	0.0	0.00	0.00	0.00	0.0
"	"	"	2.0	2.57	10	87.0	8.70	1.74	6.77	8.25x10 <sup>-5</sup>
"	"	"	3.0	3.57	10	174.0	17.40	3.48	9.75	1.19x10 <sup>-4</sup>
"	"	"	2.0	2.57	10	73.0	7.30	1.46	5.68	6.92x10 <sup>-5</sup>
"	"	"	1.0	1.57	5	0.0	0.00	0.00	0.00	0.0



PERMEABILITY TEST IN DRILL HOLE

(SHEET 3 OF 4)

KIKULETWA DAM

PROJECT

HOLE No.

1D-7

LOCATION HEAD RACE CANAL

DEPTH OF HOLE 20.00 m

TEST DATE 3-3-1988

ELEVATION 807.593 m

DIAMETER OF HOLE 8.6 cm

TESTED BY C. HSABENI

COORDINATE

DRILLED DEPTH 15.10 m

DRILLED BY N. WAMEYO

ANGLE FROM HORIZONTAL -90°

LEVEL OF WATER TABLE

CHECKED BY S. MARUYAMA

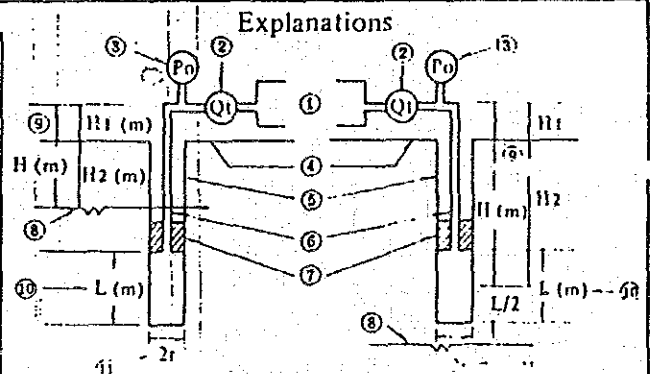
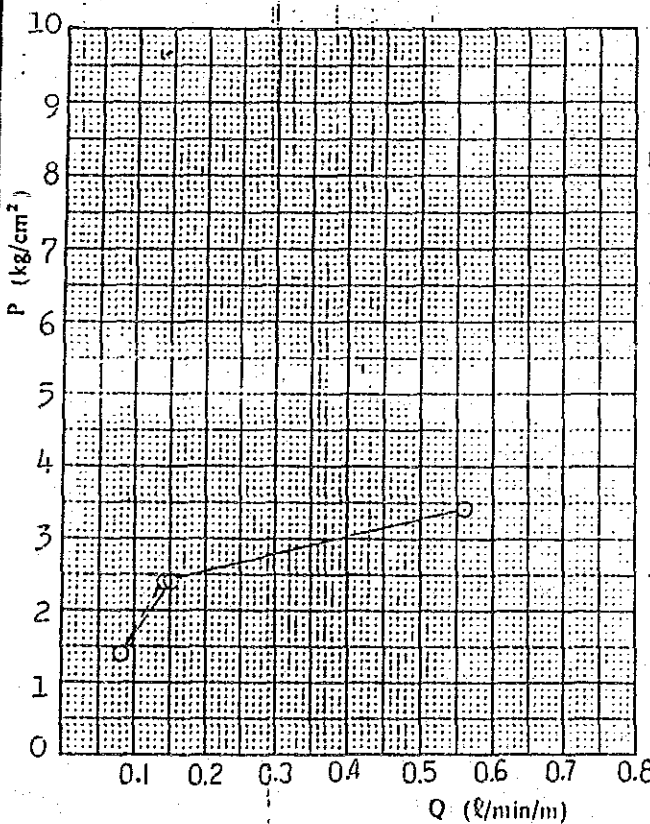
BEARING OF ANGLE HOLE

BEFORE T 4.1 m AFTER T 4.65 m

RO:CIKE

TEST SECTION FROM 10.00 m TO 15.10 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
5.0	-0.25	3.90	1.0	1.39	10	4.0	0.40	0.08	0.56	7.26x10 <sup>-6</sup>
"	"	"	2.0	2.39	10	7.5	0.75	0.15	0.61	7.92x10 <sup>-6</sup>
"	"	"	3.0	3.39	10	28.0	2.80	0.56	1.62	2.08x10 <sup>-7</sup>
"	"	"	2.0	2.39	10	7.0	0.70	0.14	0.57	7.39x10 <sup>-6</sup>
"	"	"	1.0	1.39	10	4.0	0.40	0.08	0.56	7.26x10 <sup>-6</sup>



- Explanations
- (1): Pump
  - (2): Flow meter
  - (3): Pressure gauge
  - (4): Ground surface
  - (5): Drill hole
  - (6): Injection pipe
  - (7): Packer
  - (8): Water table
  - (9): Hydrostatic head
  - (10): Length of test section
  - (11): Diameter of hole
- P<sub>0</sub>: Gauge pressure
  - H<sub>1</sub>: Height of Pressure gauge
  - H<sub>2</sub>: Depth of Ground water (Saturated Strata)
  - P: Effective pressure  
 $P = P_0 + H_1 \gamma / 10$ ,  $H = H_1 + H_2$
  - t: Injected time
  - Q<sub>t</sub>: Water volume during time in "t"
  - Q<sub>0</sub>: Water volume per one min.
  - Lu: Lugeon value in ℓ/min/m/10kg/cm<sup>2</sup>
  - K: Coefficient of permeability

PERMEABILITY TEST IN DRILL HOLE

(SHEET 4 OF 4)

KIKULETHA DAM

PROJECT

HOLE No. F.D-7

LOCATION HEAD RACE CANAL

DEPTH OF HOLE 20.00 m

TEST DATE 3-3-1988

ELEVATION 807.595 m

DIAMETER OF HOLE 8.6 cm

TESTED BY C. MSABENI

COORDINATE

DRILLED DEPTH 20.00 m

DRILLED BY E. WAMEYO

ANGLE FROM HORIZONTAL -90°

LEVEL OF WATER TABLE

CHECKED BY S. MARUYAMA

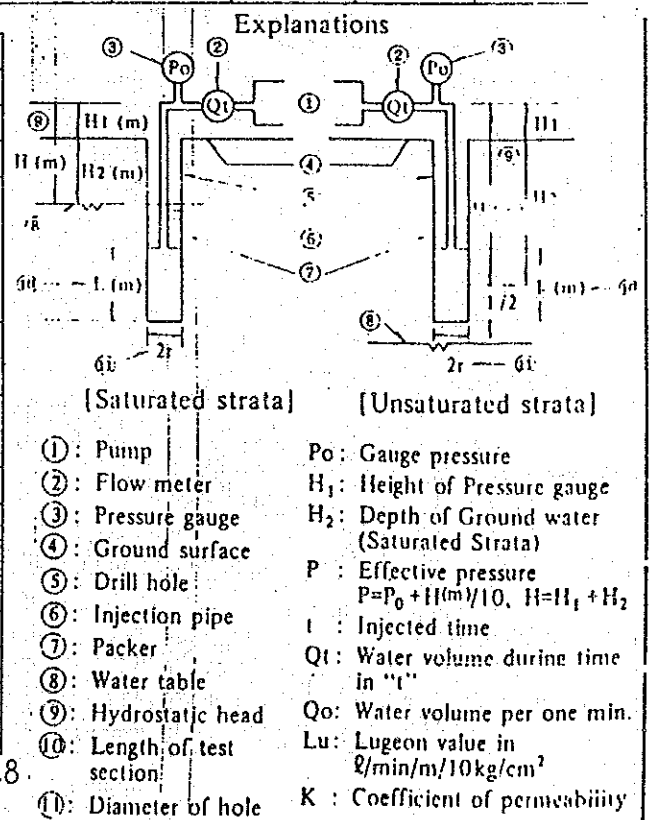
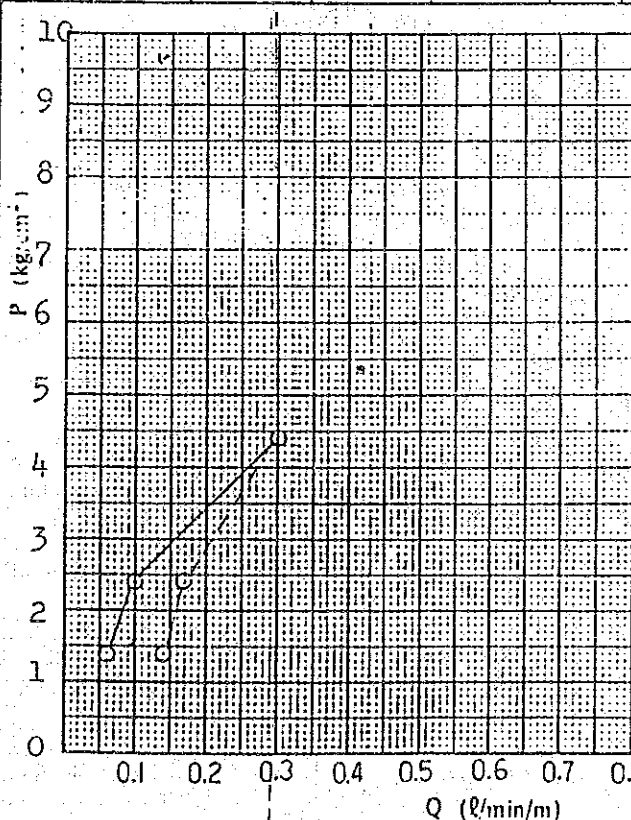
BEARING OF ANGLE HOLE

BEFORE T. 4.10m AFTER T. 4.00 m

KOMOTIE

TEST SECTION FROM 15.10 m TO 20.00 m

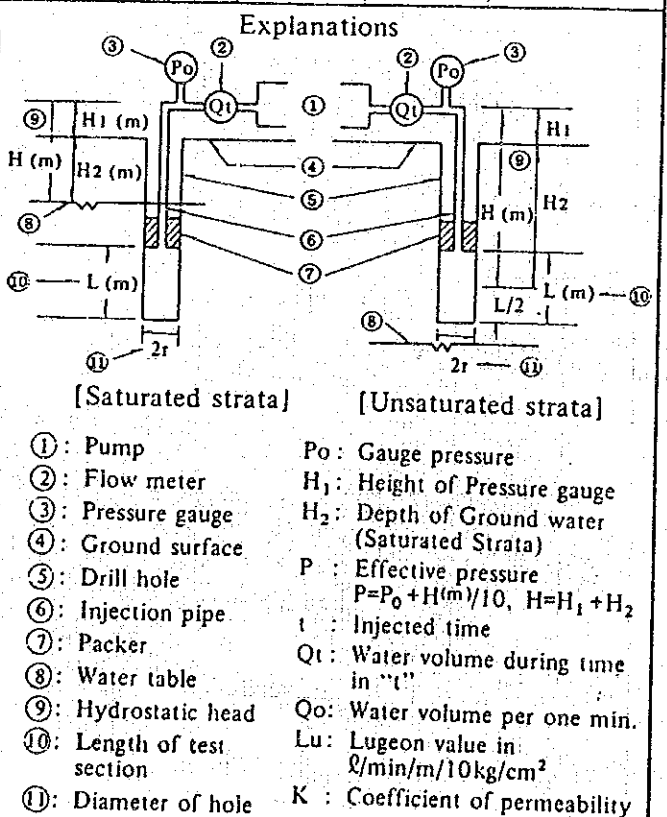
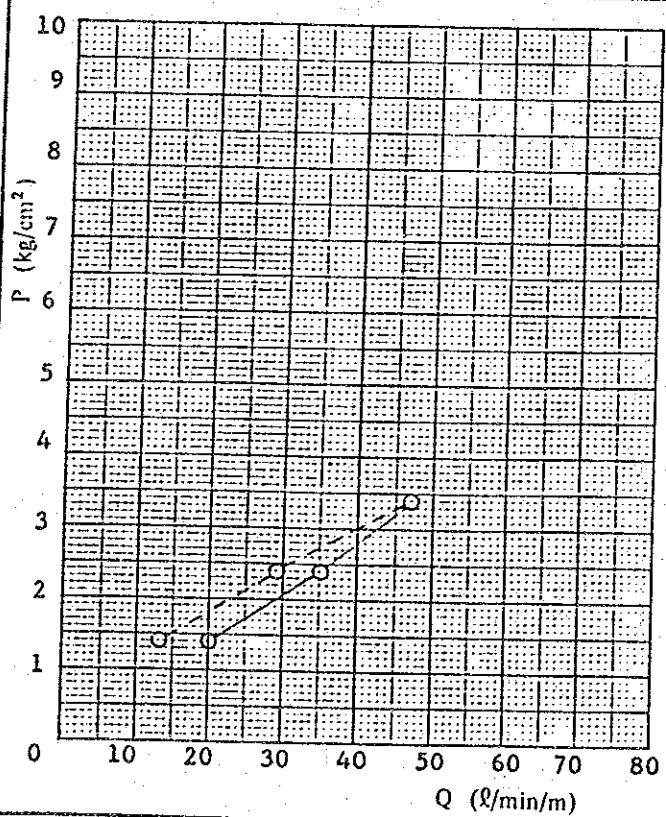
L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
4.90	-	4.00	1.0	1.40	5	1.50	0.30	0.06	0.44	5.64x10 <sup>-6</sup>
"	"	"	2.0	2.40	5	2.5	0.50	0.10	0.43	5.48x10 <sup>-6</sup>
"	"	"	4.0	4.40	10	14.50	1.45	0.30	0.67	8.67x10 <sup>-6</sup>
"	"	"	2.0	2.40	10	8.50	0.85	0.17	0.72	9.32x10 <sup>-6</sup>
"	"	"	1.0	1.40	5	3.50	0.70	0.14	1.02	1.32x10 <sup>-5</sup>



PERMEABILITY TEST IN DRILL HOLE (SHEET 1 OF 5)

KIKULETWA DAM PROJECT HOLE No. KD-8  
 LOCATION HEAD TANK DEPTH OF HOLE 30.00 m TEST DATE 18-2-1988  
 ELEVATION 779.570 m DIAMETER OF HOLE 10.1 cm TESTED BY C. MSABENI  
 COORDINATE DRILLED DEPTH 5.00 m DRILLED BY J. DIMBU  
 ANGLE FROM HORIZONTAL 90° LEVEL OF WATER TABLE CHECKED BY S. MARIYAMA  
 BEARING OF ANGLE HOLE BEFORE T. 4.62 m AFTER T. 1.50 m KONOIKE  
 TEST SECTION FROM 3.20 m TO 5.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
1.80	0.30	3.90	1.0	1.42	10	359.0	35.90	19.94	140.45	1.33x10 <sup>-3</sup>
"	"	"	2.0	2.42	10	634	63.40	35.22	145.55	1.38x10 <sup>-3</sup>
"	"	"	3.0	3.42	10	846.0	84.60	47.00	137.43	1.30x10 <sup>-3</sup>
"	"	"	2.0	2.42	10	516.0	51.60	28.67	118.46	1.12x10 <sup>-3</sup>
"	"	"	1.0	1.42	10	231.0	23.10	12.83	90.38	8.57x10 <sup>-4</sup>



PERMEABILITY TEST IN DRILL HOLE

( SHEET 2 OF 5 )

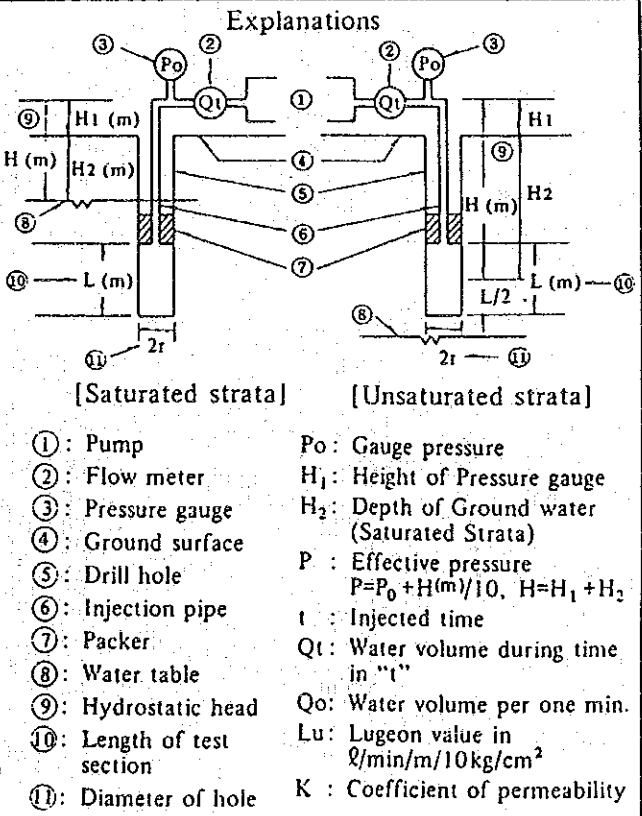
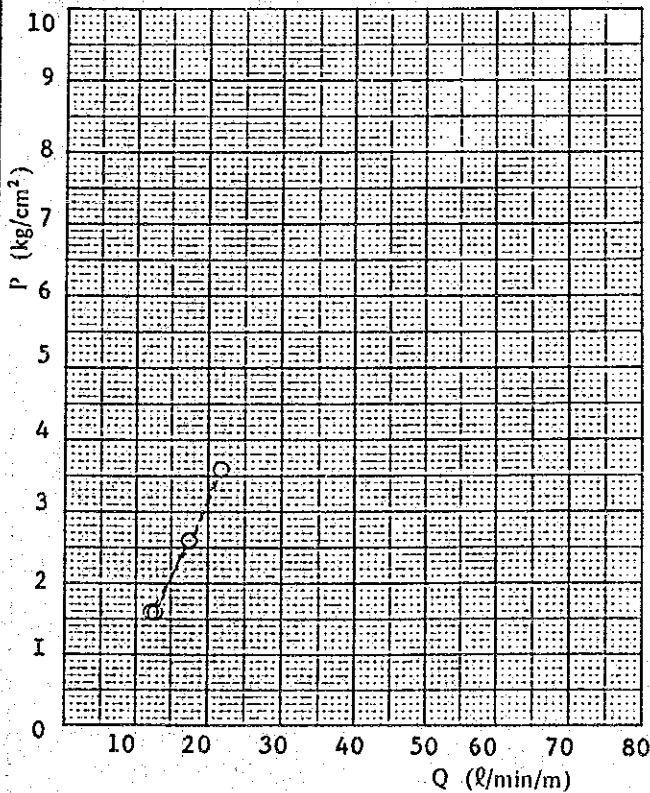
KIKULETWA DAM

PROJECT

HOLE No. KD-8

LOCATION	HEAD TANK	DEPTH OF HOLE	30.00 m	TEST DATE	19-2-1988
ELEVATION	779.570 m	DIAMETER OF HOLE	10.1 cm	TESTED BY	C. MSABENI
COORDINATE		DRILLED DEPTH	10.00 m	DRILLED BY	J. DIMBU
ANGLE FROM HORIZONTAL	90°	LEVEL OF WATER TABLE		CHECKED BY	S. MARUYAMA
BEARING OF ANGLE HOLE		BEFORE T. 6.75 m	AFTER T. 4.20m		KONOIKE
TEST SECTION	FROM 5.00 m TO 10.00 m				

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
5.00	0.30	5.90	1.0	1.62	10	624.0	62.40	12.48	77.04	9.39x10 <sup>-4</sup>
"	"	"	2.0	2.62	10	873.0	87.30	17.46	66.64	8.12x10 <sup>-4</sup>
"	"	"	3.0	3.62	7	708.0	101.14	20.23	55.88	6.81x10 <sup>-4</sup>
"	"	"	2.0	2.62	10	888.0	88.80	17.76	67.79	8.26x10 <sup>-4</sup>
"	"	"	1.0	1.62	10	609.0	60.90	12.18	75.19	9.16x10 <sup>-4</sup>



PERMEABILITY TEST IN DRILL HOLE (SHEET 3 OF 5)

KIKULETWA DAM PROJECT HOLE No. KD-8

LOCATION HEAD TANK DEPTH OF HOLE 30.00 m TEST DATE 22-2-1988

ELEVATION 779.570 m DIAMETER OF HOLE 10.1 cm TESTED BY C. MSABEMI

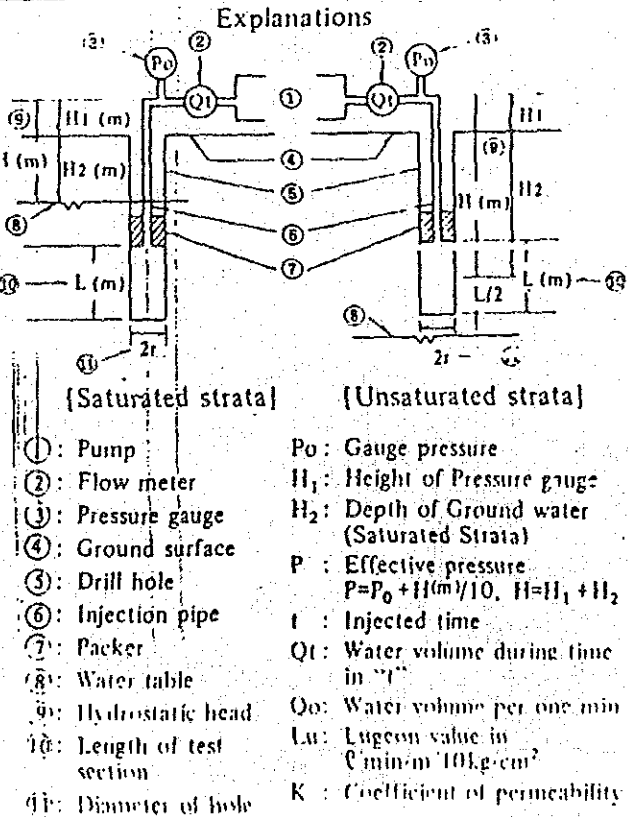
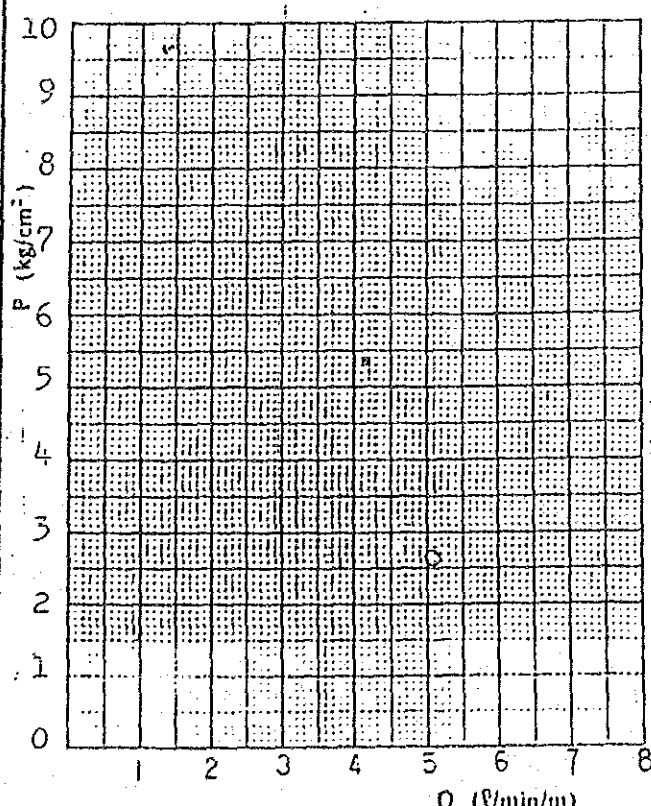
COORDINATE 1 DRILLED DEPTH 20.00 m DRILLED BY J. DIMBU

ANGLE FROM HORIZONTAL  $\approx 90^\circ$  LEVEL OF WATER TABLE CHECKED BY S. MARUYAMA

BEARING OF ANGLE HOLE BEFORE 17.5m AFTER 9.2m KONOLKE

TEST SECTION FROM 15.00 m TO 20.00 m

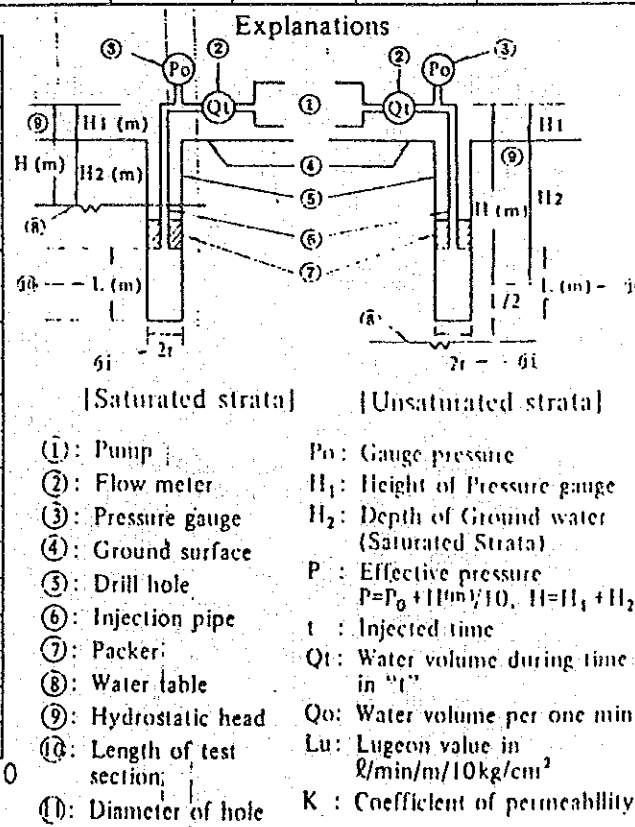
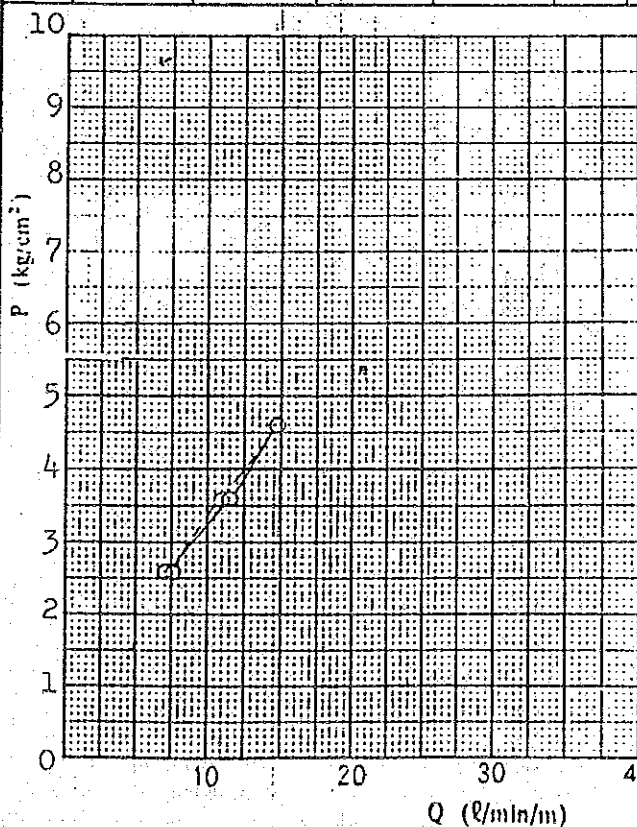
L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	L <sub>u</sub> (Lugeon)	K (cm/sec)
5.0	0.30	16.25	1.0	2.66	10	253.0	25.30	5.05	19.02	$2.32 \times 10^{-4}$
"	"	"	2.0	3.66		( NO SEAL )				



PERMEABILITY TEST IN DRILL HOLE (SHEET 4 OF 5)

KIKULETTWA DAM PROJECT HOLE No. KD-8  
 LOCATION HEAD TANK DEPTH OF HOLE 30.00 m TEST DATE 22-2-1988  
 ELEVATION 779.570 m DIAMETER OF HOLE 10.1 cm TESTED BY C. MSABERI  
 COORDINATE 1 DRILLED DEPTH 20.00 m DRILLED BY J. DIMBU  
 ANGLE FROM HORIZONTAL -90 LEVEL OF WATER TABLE CHECKED BY S. HARUYAMA  
 BEARING OF ANGLE HOLE BEFORE T. 17.5m AFTER T. 9.22m  
 TEST SECTION FROM 14.00 m TO 20.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
6.0	0.30	16.05	1.0	2.61	10	414.0	41.40	6.90	26.44	3.35x10 <sup>-2</sup>
"	"	"	2.0	3.61	10	684.0	68.40	11.40	31.58	4.00x10 <sup>-2</sup>
"	"	"	3.0	4.61	10	885.0	88.50	14.75	32.00	4.05x10 <sup>-2</sup>
"	"	"	2.0	3.61	10	645.0	64.50	10.75	29.78	3.77x10 <sup>-2</sup>
"	"	"	1.0	2.61	10	440.0	44.00	7.33	28.10	3.56x10 <sup>-2</sup>



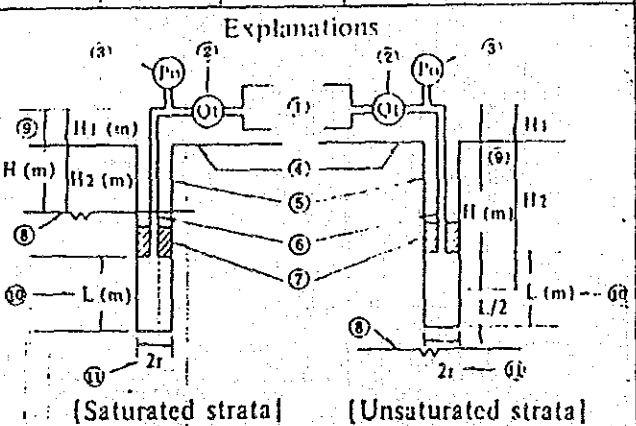
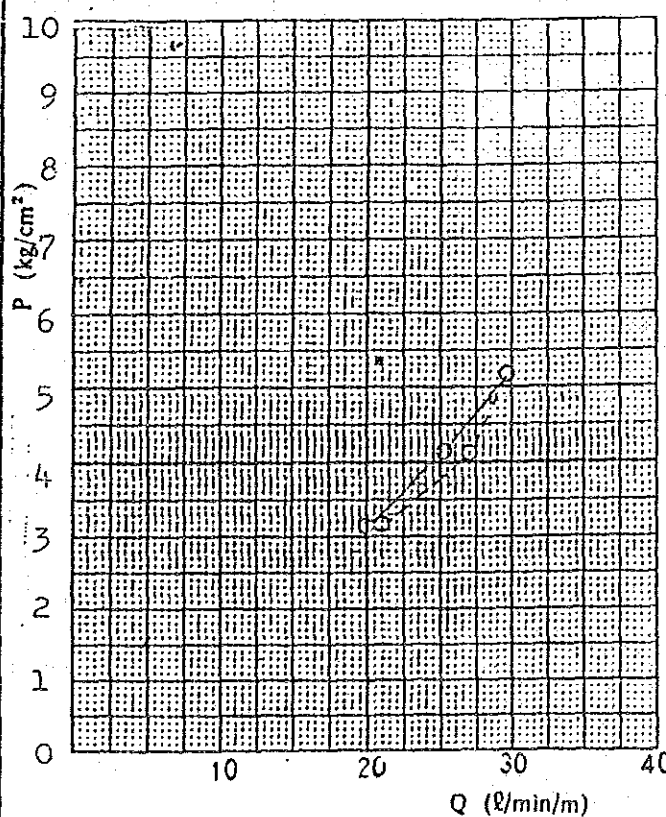
**PERMEABILITY TEST IN DRILL HOLE** (SHEET 5 OF 5)

KINULETWA DAM PROJECT HOLE No. KD-8

LOCATION HEAD TANK DEPTH OF HOLE 30.00 m TEST DATE 23-2-1988  
 ELEVATION 779.570 m DIAMETER OF HOLE 10.1 cm TESTED BY C. NSABEMI  
 COORDINATE \_\_\_\_\_ DRILLED DEPTH 25.00 m DRILLED BY J. DIMBU  
 ANGLE FROM HORIZONTAL -90° LEVEL OF WATER TABLE CHECKED BY S. MARIYAMA  
 BEARING OF ANGLE HOLE \_\_\_\_\_ BEFORE 22.5 m AFTER \_\_\_\_\_ m KOMOLKE

TEST SECTION FROM 20.00 m TO 25.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
5.0	0.30	21.28	1.0	3.16	10	989.0	98.90	19.78	62.59	$7.63 \times 10^{-4}$
"	"	"	2.0	4.16	5	631.0	126.20	25.24	60.67	$7.40 \times 10^{-4}$
"	"	"	3.0	5.16	5	733.0	146.60	29.32	56.82	$6.93 \times 10^{-4}$
"	"	"	2.0	4.16	5	624.0	134.80	26.96	64.81	$7.90 \times 10^{-4}$
"	"	"	1.0	3.16	5	524.0	105.0	21.00	66.46	$8.10 \times 10^{-4}$



- (1) Pump
  - (2) Flow meter
  - (3) Pressure gauge
  - (4) Ground surface
  - (5) Drill hole
  - (6) Injection pipe
  - (7) Packer
  - (8) Water table
  - (9) Hydrostatic head
  - (10) Length of test section
  - (11) Diameter of hole
- P<sub>0</sub>: Gauge pressure
  - H<sub>1</sub>: Height of Pressure gauge
  - H<sub>2</sub>: Depth of Ground water (Saturated Strata)
  - P: Effective pressure
  - $P = P_0 + H(m)/10$ ,  $H = H_1 + H_2$
  - t: Injected time
  - Q<sub>t</sub>: Water volume during time in "t"
  - Q<sub>0</sub>: Water volume per one min.
  - Lu: Lugeon value in ℓ/min/m/10kg/cm<sup>2</sup>
  - K: Coefficient of permeability



PERMEABILITY TEST IN DRILL HOLE

(SHEET 1 OF 3)

KIKULETWA DAM

PROJECT

HOLE No. KD-9

LOCATION POWER STATION

DEPTH OF HOLE 20.00 m

TEST DATE 27-2-1988

ELEVATION 730.741 m

DIAMETER OF HOLE 10.1 cm

TESTED BY C. MSABENI

COORDINATE

DRILLED DEPTH 10.15 m

DRILLED BY J. DIMBU

ANGLE FROM HORIZONTAL -90°

LEVEL OF WATER TABLE

CHECKED BY S. MARIYAMA

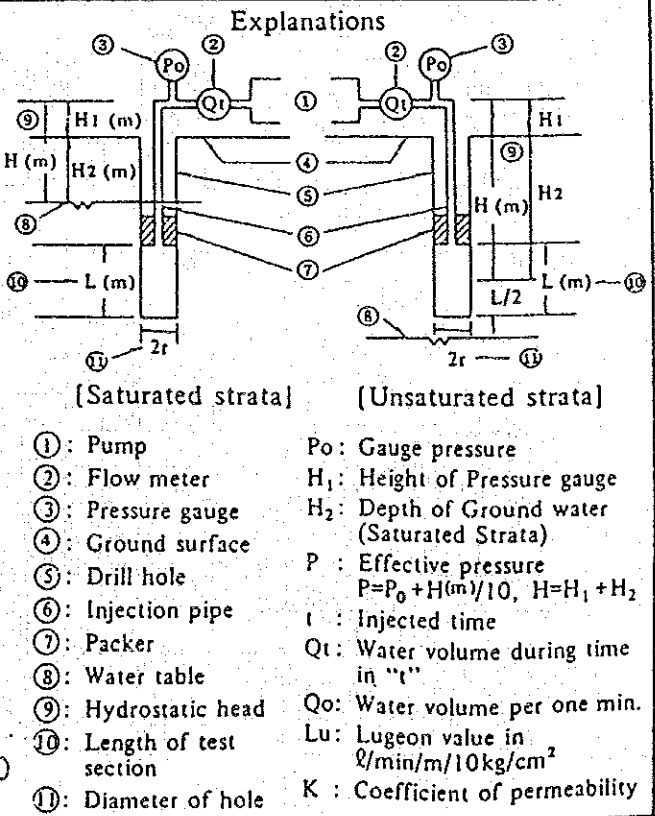
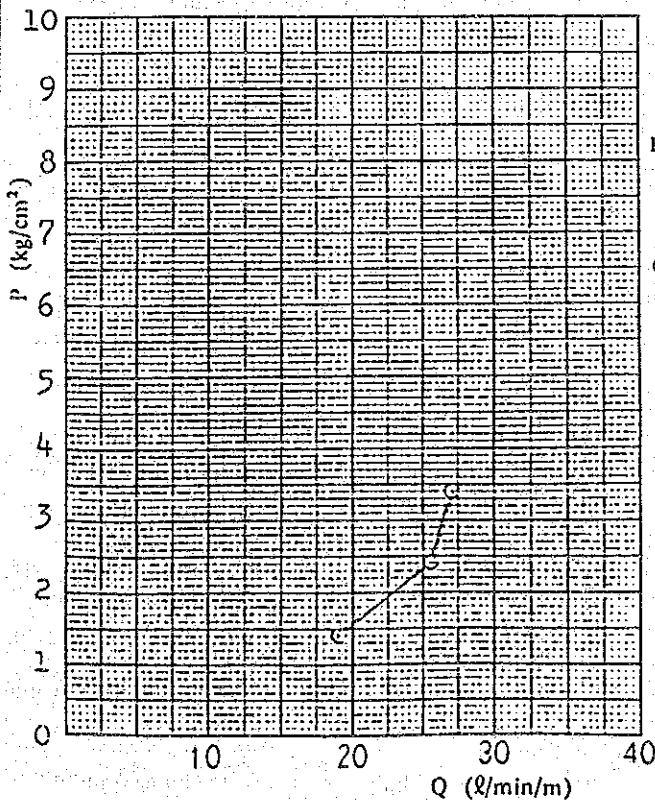
BEARING OF ANGLE HOLE

BEFORE T. 3.8 m AFTER T. 3.8 m

KONOIKE

TEST SECTION FROM 5.00 m TO 10.15 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
5.00	0.30	3.80	1.0	1.41	10	983.0	98.30	19.09	135.37	1.66x10 <sup>-3</sup>
"	"	"	2.0	2.41	10	1317.0	131.70	25.57	106.11	1.30x10 <sup>-3</sup>
"	"	"	3.0	3.41	10	1392.0	139.20	27.03	79.26	9.72x10 <sup>-4</sup>
"	"	"	2.0	2.41	10	1319.0	131.90	25.61	106.27	1.30x10 <sup>-3</sup>
"	"	"	1.0	1.41	10	969.0	96.90	18.82	133.44	1.64x10 <sup>-3</sup>



PERMEABILITY TEST IN DRILL HOLE (SHEET 2 OF 3)

KIKULETWA DAM

PROJECT

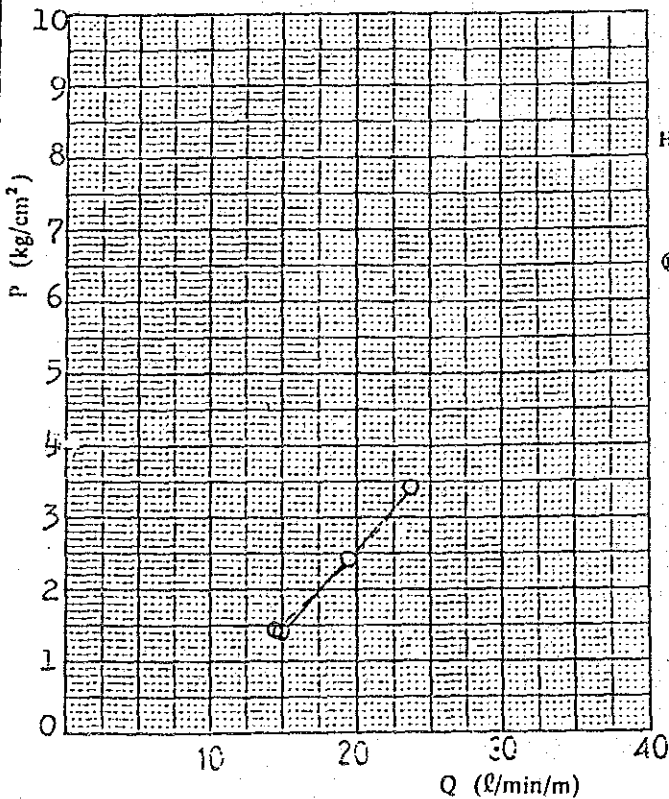
HOLE No. KD-9

LOCATION POWER STATION  
 ELEVATION 730.741 m  
 COORDINATE \_\_\_\_\_  
 ANGLE FROM HORIZONTAL -90°  
 BEARING OF ANGLE HOLE \_\_\_\_\_  
 TEST SECTION FROM 10.30 m TO 15.20 m

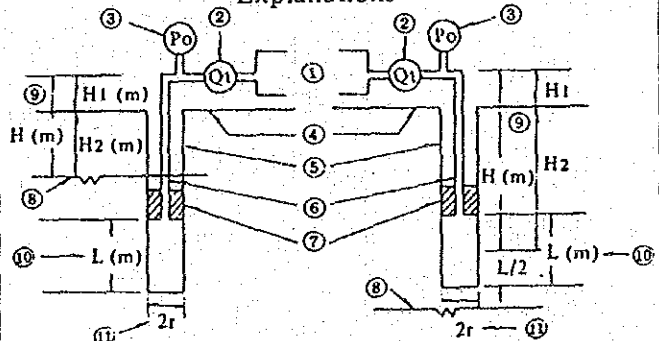
DEPTH OF HOLE 20.00 m  
 DIAMETER OF HOLE 8.6 cm  
 DRILLED DEPTH 15.20 m  
 LEVEL OF WATER TABLE  
 BEFORE T. 3.4 m AFTER T. 3.8 m

TEST DATE 28-2-1988  
 TESTED BY C. MSABENI  
 DRILLED BY J. DIMBU  
 CHECKED BY S. MARUYAMA  
 KONOYE

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
4.90	0.30	3.40	1.0	1.37	10	735.0	73.5	15.00	109.49	1.38x10 <sup>-3</sup>
"	"	"	2.0	2.37	10	964.0	96.40	19.67	83.01	1.04x10 <sup>-3</sup>
"	"	"	3.0	3.37	10	1165.0	116.50	23.78	70.55	8.86x10 <sup>-4</sup>
"	"	"	2.0	2.37	10	968.0	96.80	19.76	83.35	1.05x10 <sup>-3</sup>
"	"	"	1.0	1.37	10	711.0	71.10	14.51	105.91	1.33x10 <sup>-3</sup>



Explanations



[Saturated strata]

[Unsaturated strata]

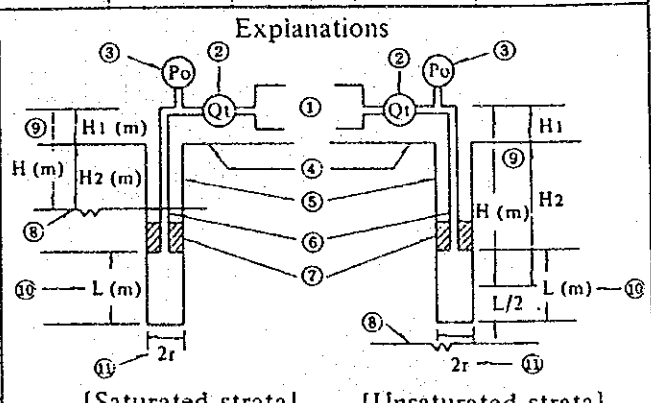
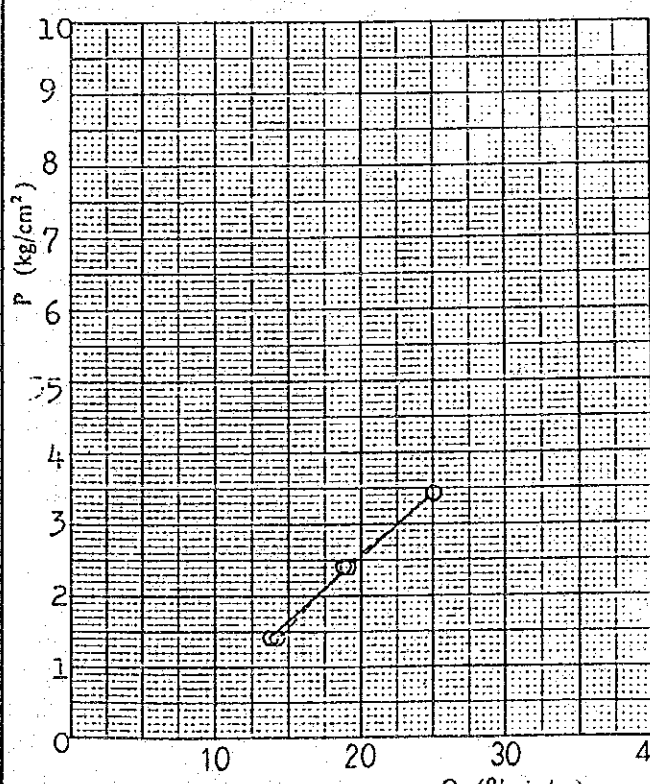
- ① : Pump
- ② : Flow meter
- ③ : Pressure gauge
- ④ : Ground surface
- ⑤ : Drill hole
- ⑥ : Injection pipe
- ⑦ : Packer
- ⑧ : Water table
- ⑨ : Hydrostatic head
- ⑩ : Length of test section
- ⑪ : Diameter of hole
- P<sub>0</sub> : Gauge pressure
- H<sub>1</sub> : Height of Pressure gauge
- H<sub>2</sub> : Depth of Ground water (Saturated Strata)
- P : Effective pressure  
P = P<sub>0</sub> + H(m)/10, H = H<sub>1</sub> + H<sub>2</sub>
- t : Injected time
- Q<sub>t</sub> : Water volume during time in "t"
- Q<sub>0</sub> : Water volume per one min.
- Lu : Lugeon value in ℓ/min/m/10kg/cm<sup>2</sup>
- K : Coefficient of permeability

PERMEABILITY TEST IN DRILL HOLE (SHEET 3 OF 3)

KIKULETWA DAM PROJECT HOLE No. KD-9

LOCATION POWER STATION DEPTH OF HOLE 20.00 m TEST DATE 29-2-1988  
 ELEVATION 730.741 m DIAMETER OF HOLE 8.6 cm TESTED BY C. MSABENI  
 COORDINATE \_\_\_\_\_ DRILLED DEPTH 20.00 m DRILLED BY J. DIMBU  
 ANGLE FROM HORIZONTAL -90° LEVEL OF WATER TABLE CHECKED BY S. MARUYAMA  
 BEARING OF ANGLE HOLE \_\_\_\_\_ BEFORE 13.80 m AFTER 3.8 m KONOIKE  
 TEST SECTION FROM 15.00 m TO 20.00 m

L (m)	H <sub>1</sub> (m)	H <sub>2</sub> (m)	P <sub>0</sub> (kg/cm <sup>2</sup> )	P (kg/cm <sup>2</sup> )	t (min)	Q <sub>t</sub> (ℓ)	Q <sub>0</sub> (ℓ/min)	Q (ℓ/min/m)	Lu (Lugeon)	K (cm/sec)
5.00	0.30	3.80	1.0	1.41	10	688.0	68.80	13.76	97.59	1.23x10 <sup>-3</sup>
"	"	"	2.0	2.41	10	957.0	95.70	19.14	79.42	1.00x10 <sup>-3</sup>
"	"	"	3.0	3.41	10	1126.0	112.60	22.52	66.04	8.33x10 <sup>-4</sup>
"	"	"	2.0	2.41	10	947.0	94.70	18.94	78.59	9.91x10 <sup>-4</sup>
"	"	"	1.0	1.41	10	701.5	70.15	14.03	99.50	1.26x10 <sup>-3</sup>



- Explanations**
- ① : Pump
  - ② : Flow meter
  - ③ : Pressure gauge
  - ④ : Ground surface
  - ⑤ : Drill hole
  - ⑥ : Injection pipe
  - ⑦ : Packer
  - ⑧ : Water table
  - ⑨ : Hydrostatic head
  - ⑩ : Length of test section
  - ⑪ : Diameter of hole
  - P<sub>0</sub> : Gauge pressure
  - H<sub>1</sub> : Height of Pressure gauge
  - H<sub>2</sub> : Depth of Ground water (Saturated Strata)
  - P : Effective pressure  
 $P = P_0 + H(m)/10$ ,  $H = H_1 + H_2$
  - t : Injected time
  - Q<sub>t</sub> : Water volume during time in "t"
  - Q<sub>0</sub> : Water volume per one min.
  - Lu : Lugeon value in ℓ/min/m/10kg/cm<sup>2</sup>
  - K : Coefficient of permeability

