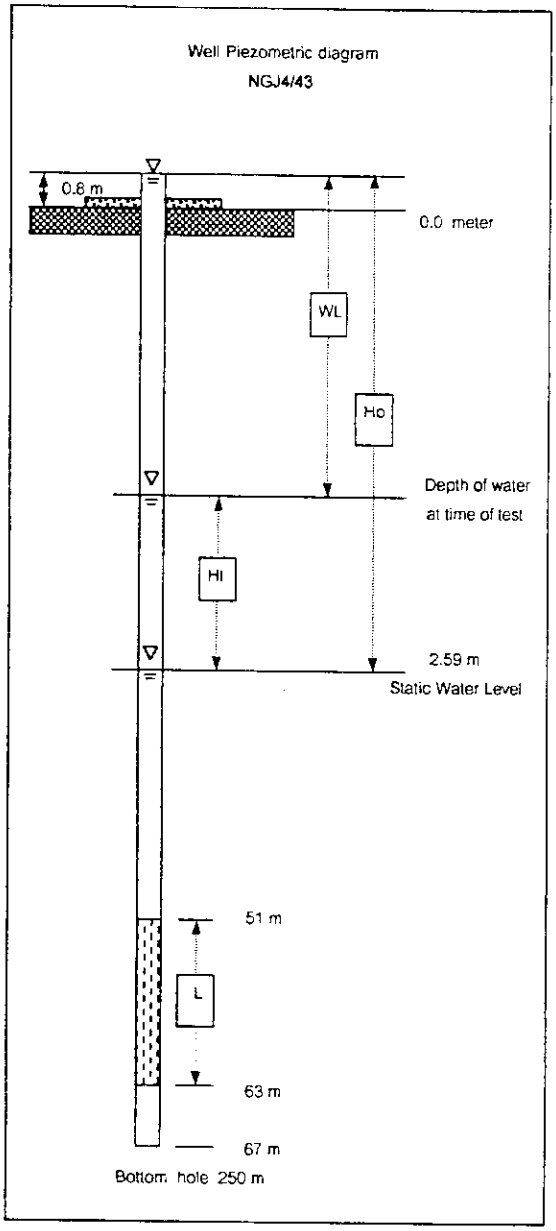
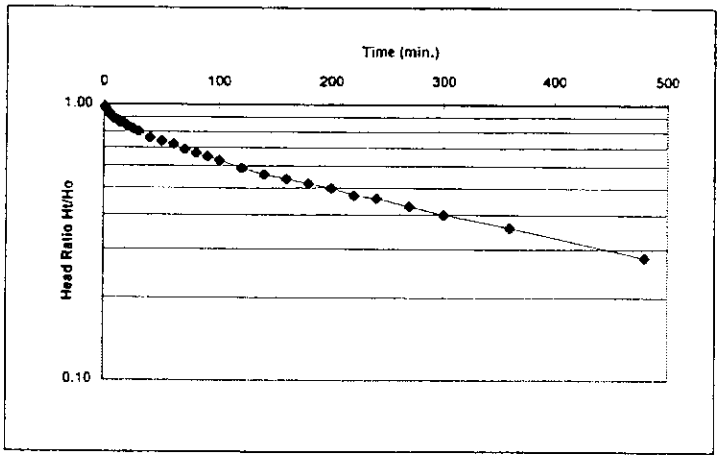
４．湧水圧測定記録

GEOTECHNICAL INVESTIGATION HOLE

Location	NGAO BASIN	NGAO BASIN	Ground Elevation 303.804m
Northing	2075209.378		Depth from Standpipe to SWL(Ho)=2.59m
Easting	609818.571		Dia. of Pipe 0.0254 m.
Hole No.	NGJ 4/43		Tested & Analyzed by

Date/Time	Elapsed Time (min.)	Water Level (WLt) below standpipe(m.)	Water Level (Ht) Ht = SWL-WLt (m.)	Ht/Ho
29-Jan-01	1	0.05	2.54	0.980
	2	0.09	2.50	0.965
	3	0.13	2.46	0.950
	4	0.15	2.44	0.940
	5	0.19	2.40	0.920
	6	0.20	2.39	0.920
	7	0.23	2.36	0.910
	8	0.25	2.34	0.900
	9	0.28	2.31	0.890
	10	0.28	2.31	0.890
	12	0.31	2.29	0.880
	14	0.34	2.25	0.860
	16	0.37	2.23	0.860
	18	0.39	2.21	0.850
	20	0.42	2.18	0.840
	25	0.46	2.14	0.820
	30	0.52	2.08	0.800
	40	0.60	1.99	0.760
	50	0.67	1.93	0.740
	60	0.72	1.87	0.720
	70	0.79	1.80	0.690
	80	0.84	1.75	0.670
	90	0.90	1.69	0.650
	100	0.95	1.64	0.630
	120	1.04	1.55	0.590
	140	1.13	1.47	0.560
	160	1.17	1.42	0.540
	180	1.24	1.35	0.520
	200	1.29	1.30	0.500
	220	1.35	1.24	0.470
	240	1.39	1.20	0.460
	270	1.47	1.12	0.430
	300	1.54	1.05	0.400
	360	1.65	0.94	0.360
	480	1.86	0.73	0.280





$$F = \frac{2\pi L}{\ln(L/R)} \qquad A = \pi r^2$$

$$K = \frac{A}{F(T2-T1)} \ln\frac{(H1)}{(H2)}$$

$$K = \frac{r^2}{2L} \ln(L/R) \frac{\{\ln(H1/H2)\}}{(T2-T1)}$$

F= Shape Factor of intake point
L= Length of test section, (cm)
A= Standpipe area (cm^2)
R= Radius of standingpippe, (cm)
K= Mean permeability, (cm/sec)
H1= Water table at time of beginning of test, (cm)
Ho= Water table of standing Goundwater, (cm)
H2= Water table at time of finish of test, (cm)
T1,T2= Elapsd time, (sec)

Ln (H1/H2) and (T2-T1) are oblain from plot of observation.

Fig. 29 Result of Permeability Test of NGJ4/43

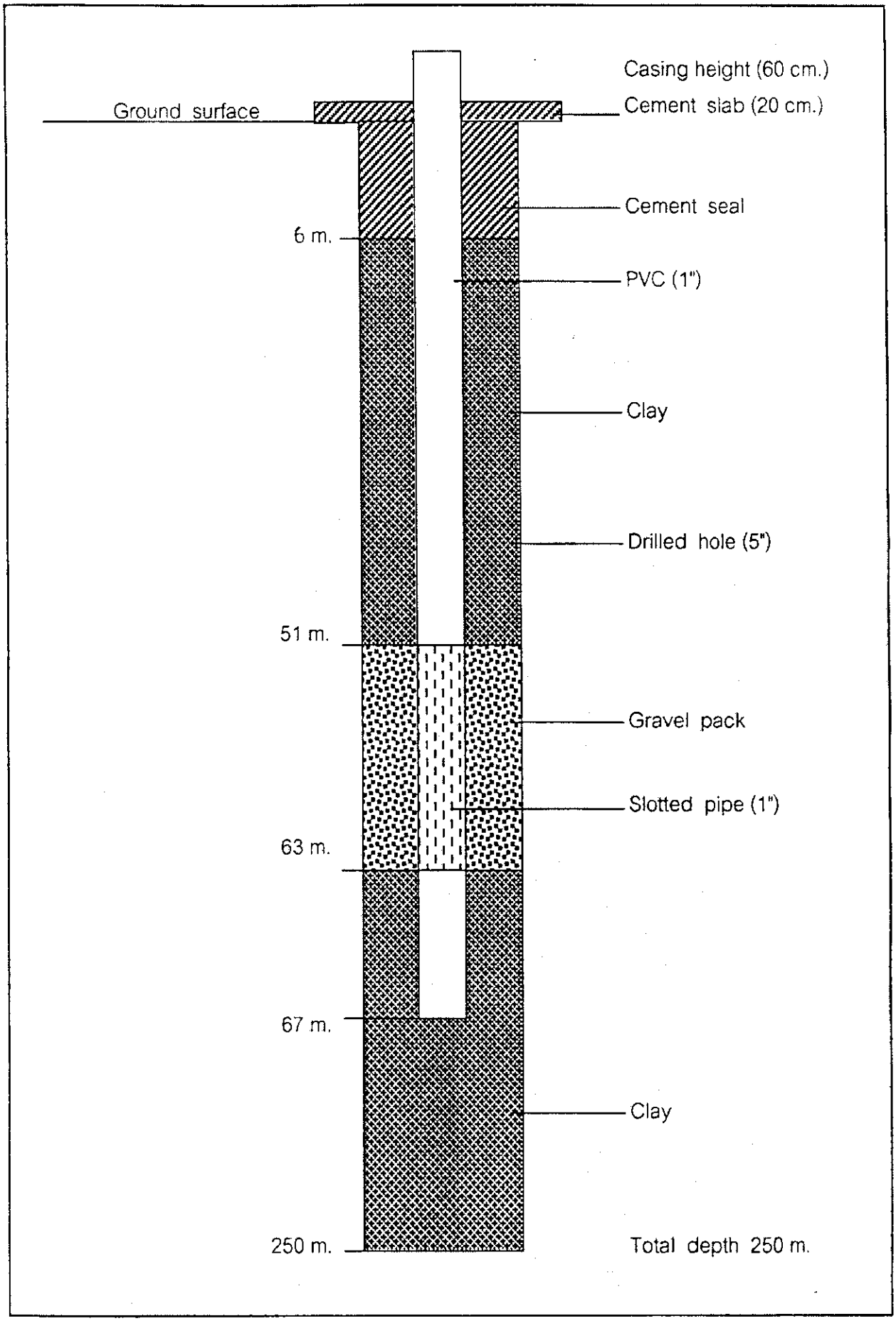
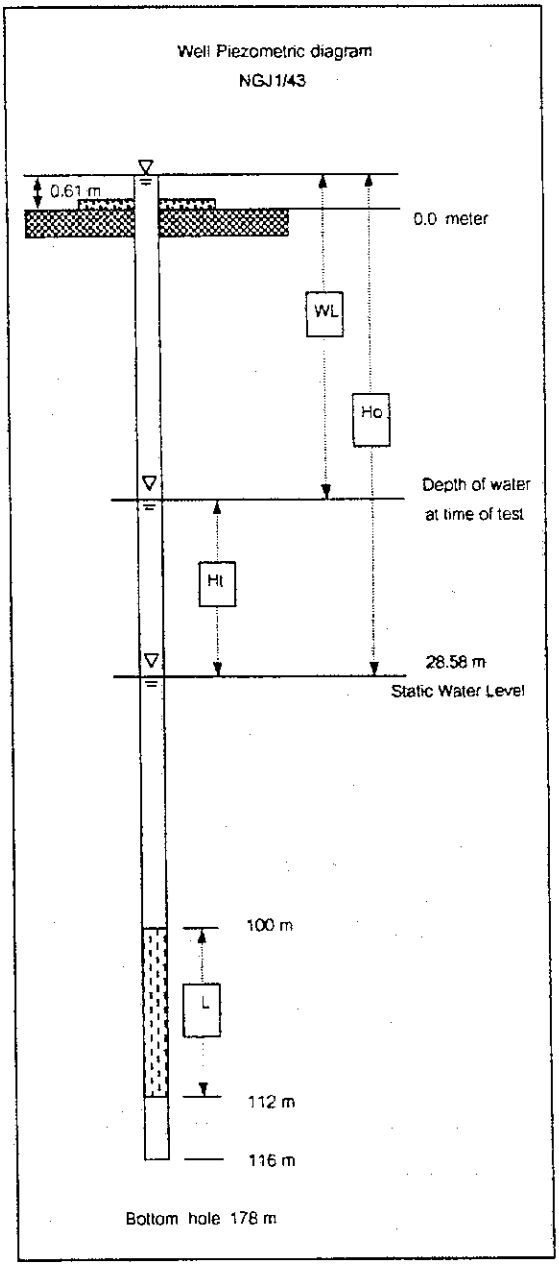


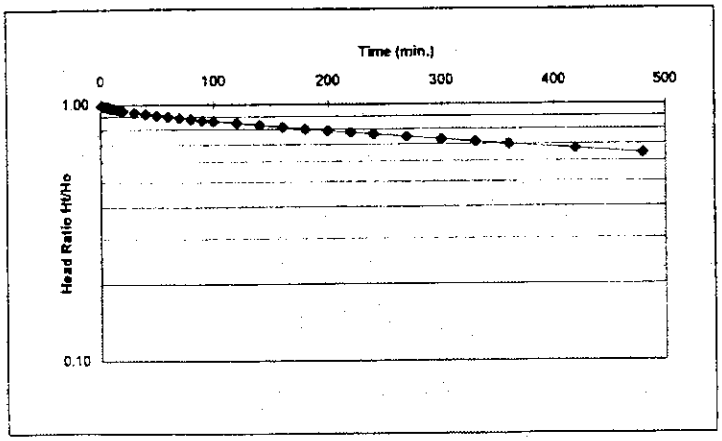
Fig. 30 Cross Section of Piezometric Well NGJ4/43

GEOTECHNICAL INVESTIGATION HOLE

Location	NGAO BASIN	NGAO BASIN	Ground Elevation 316.456m
Northing	2078914.891		Depth from Standpipe to SWL(Ho)=25.58m
Easting	606531.336		Dia. of Pipe 0.0254 m.
Hole No.	NGJ 1/43		Tested & Analyzed by

Date/Time	Elapsed Time (min.)	Water Level (WLt) below standpipe(m.)	Water Level (Ht) Ht = SWL-WLt (m.)	Ht/Ho
12-Feb-01	1	0.16	28.42	0.994
	2	0.30	28.28	0.989
	3	0.38	28.20	0.986
	4	0.47	28.11	0.983
	5	0.54	28.04	0.981
	6	0.61	27.97	0.987
	7	0.68	27.90	0.976
	8	0.75	27.83	0.973
	9	0.81	27.77	0.971
	10	0.87	27.71	0.969
	12	0.98	27.60	0.965
	14	1.08	27.50	0.962
	16	1.18	27.40	0.958
	18	1.28	27.30	0.955
	20	1.38	27.20	0.951
	30	1.81	26.77	0.936
	40	2.18	26.40	0.923
	50	2.53	26.05	0.911
	60	2.84	25.74	0.900
	70	3.15	25.43	0.889
	80	3.41	25.17	0.880
	90	3.74	24.84	0.869
	100	3.91	24.67	0.863
	120	4.37	24.21	0.847
	140	4.82	23.76	0.831
	160	5.25	23.33	0.816
	180	5.66	22.92	0.801
	200	6.00	22.58	0.790
	220	6.36	22.22	0.777
	240	6.70	21.88	0.765
	270	7.21	21.37	0.747
	300	7.69	20.89	0.730
	330	8.17	20.41	0.714
	360	8.59	19.99	0.699
	420	9.42	19.16	0.670
	480	10.22	18.36	0.642





$$F = \frac{2\pi L}{\ln(L/R)} \qquad A = \pi r^2$$

$$K = \frac{A}{F(T2-T1)} \ln \frac{(H1)}{(H2)}$$

$$K = \frac{r^2}{2L} \ln(L/R) \frac{\{\ln(H1/H2)\}}{(T2-T1)}$$

F= Shape Factor of intake point
L= Length of test section, (cm)
A= Standpipe area (cm^2)
R= Radius of standingpippe, (cm)
K= Mean permeability, (cm/sec)
H1= Water table at time of beginning of test, (cm)
Ho= Water table of standing Goundwater, (cm)
H2= Water table at time of finish of test, (cm)
T1,T2= Elapsd time, (sec)

Ln (H1/H2) and (T2-T1) are obtain from plot of observation.

Fig. 31 Result of Permeability Test of NGJ1/43

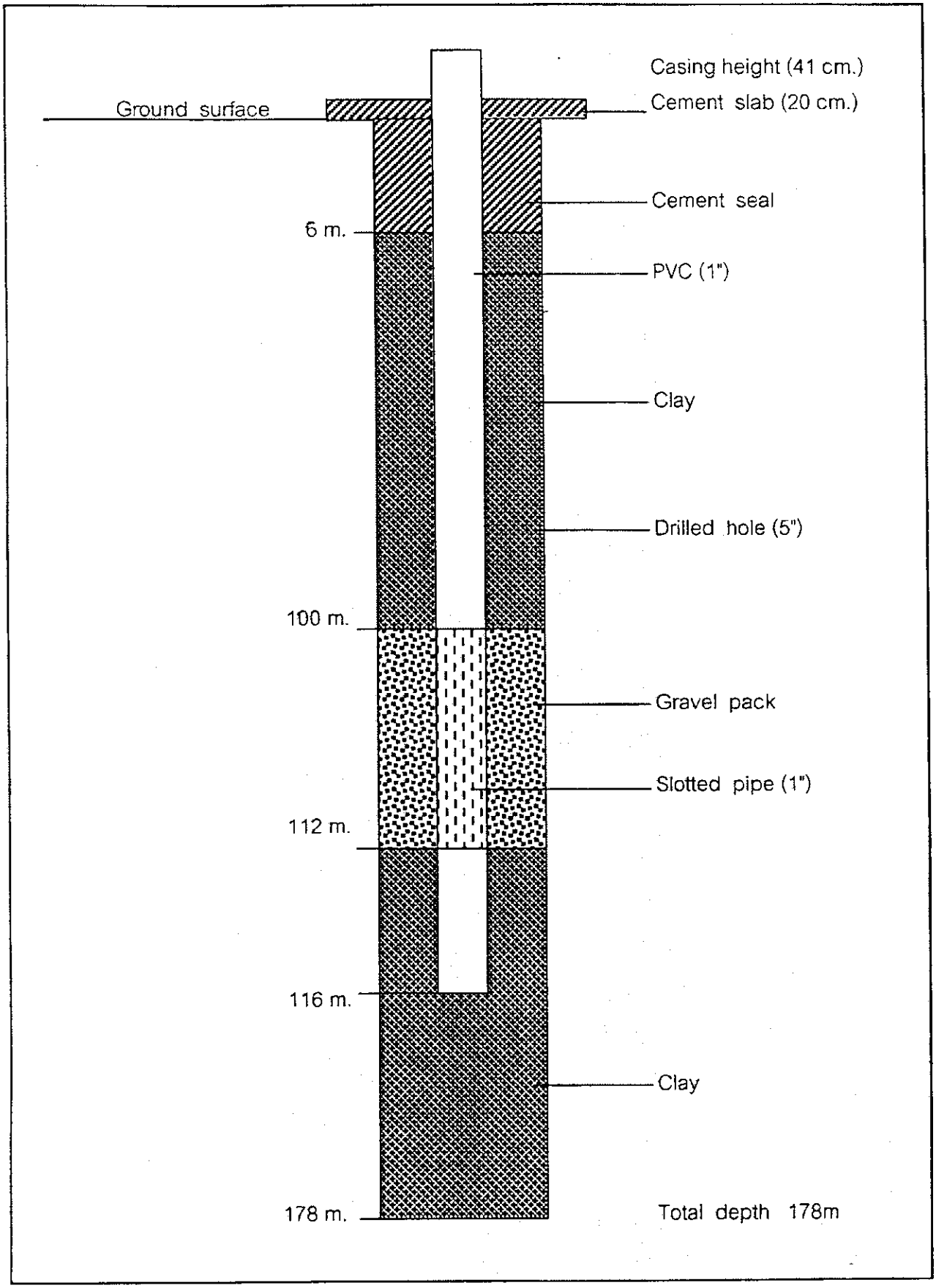


Fig. 32 Cross Section of Piezometric Well NGJ1/43

５．バルク及びコアサンプルの分級・浮沈試験結果

PARTICLE SIZE ANALYSIS

Total weight : 630 Kg.

DATE	Size Fraction	Weight	Mass	Cumulative Mass (%)	
04/12/2000	(mm.)	(Kg.)	(%)	Retained	Passed
	+50.0	68.0	11.21	11.21	88.79
	-50.0+25.0	245.2	40.44	51.65	48.35
	-25.0+10.0	125.0	20.61	72.26	27.74
	-10.0+3.0	85.5	14.1	86.36	13.64
	-3.0+0.5	53.8	8.86	95.22	4.78
	-0.5	28.9	4.78	100	-

Float and Sink Data

Sample Name	Relative Density	Weight	Mass	Ash	Sulphur
	Fraction Float-Sink	(g.)	(%)	(%)	(%)
: STANDARD COAL	< 1.30	1,615.60	56.54	10.78	3.95
	1.35	464.70	16.26	20.86	4.95
	1.40	311.00	10.88	20.13	4.32
	1.45	4.60	0.16	17.25	4.19
	1.50	49.10	1.72	28.94	3.93
	1.55	67.50	2.36	20.15	3.96
	1.60	144.90	5.07	19.34	3.85
	1.70	138.00	4.83	21.29	4.28
	1.80	37.70	1.32	35.40	4.62
	>1.80	24.50	0.86		

Sample Name	Relative Density	Weight	Mass	Ash	Sulphur
	Fraction Float-Sink	(g.)	(%)	(%)	(%)
: + 50.0 mm.	<1.30	17,345.90	77.07	13.39	3.98
	1.35	2,679.30	11.90	18.83	4.25
	1.40	1,266.30	5.63	28.13	4.85
	1.50	813.40	3.62	31.32	6.85
	1.60	401.60	1.78	42.47	8.16

Sample Name	Relative Density	Weight	Mass	Ash	Sulphur
	Fraction Float-Sink	(g.)	(%)	(%)	(%)
- 50.0mm.+25.0mm.	<1.30	15,733.50	67.66	13.40	4.16
	1.35	1,666.90	7.17	20.78	4.70
	1.40	2,057.40	8.85	27.29	5.12
	1.50	1,418.60	6.10	32.36	6.14
	1.60	1,718.40	7.39	42.19	5.16
	1.70	409.44	1.76	54.95	3.28
	1.80	249.20	1.07	66.98	2.78

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
: -25.0mm.+10.0mm.	<1.30	14,682.60	66.21	23.40	4.28
	1.35	1,259.90	5.68	23.96	5.17
	1.40	1,764.00	7.95	29.83	5.48
	1.50	1,754.60	7.91	32.34	5.76
	1.60	1,178.60	5.31	40.51	6.41
	1.70	625.80	2.82	51.83	5.15
	1.80	427.10	1.93	55.87	4.19
	>1.80	464.00	2.19	57.50	3.03

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
: -10.0mm.+3.0mm.	<1.30	3,550.20	46.37	15.57	5.19
	1.35	268.80	3.51	22.34	5.80
	1.40	500.90	6.54	24.23	4.63
	1.50	1,435.10	18.75	23.20	4.28
	1.60	647.30	8.45	30.84	4.72
	1.70	575.00	7.51	38.36	5.43
	1.80	335.90	4.39	47.35	5.27
	>1.80	342.80	4.48	56.54	4.52

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
: -3.0mm.+0.5mm.	<1.30	32.70	0.91	15.46	4.94
	1.35	48.85	1.36	14.73	4.78
	1.40	21.44	0.60	16.70	4.21
	1.50	169.40	4.72	14.31	3.63
	1.60	1,122.84	31.31	14.33	3.60
	1.70	1,308.64	36.49	14.69	3.59
	1.80	541.10	15.09	30.50	5.72
	>1.80	341.32	9.52	43.58	5.85

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
: - 0.5mm.	<1.30	1.90	1.12	20.74	4.48
	1.35	4.80	2.84	21.43	4.81
	1.40	6.40	3.79	22.11	3.88
	1.50	24.20	14.33	20.97	4.32
	1.60	47.90	28.39	19.71	3.95
	1.70	32.20	19.08	23.57	4.38
	1.80	41.10	24.35	28.48	4.40
	>1.80	10.30	6.10	38.84	7.32

PARTICLE SIZE ANALYSIS

Total weight : 7.4 Kg.

MARK	Size Fraction (mm.)	Weight (g.)	Mass	Cumulative Mass (%)	
				Retained	Passed
P3	+10.0	4827.0	67.02	67.02	32.98
Depth : 5.60 m.-8.82 m.	-10.0+0.5	2073.0	28.78	95.80	4.20
	-0.5	302.3	4.20	100.00	-

PARTICLE SIZE ANALYSIS

Total weight : 10 Kg.

MARK	Size Fraction (mm.)	Weight (g.)	Mass	Cumulative Mass (%)	
				Retained	Passed
N.3-4	+10.0	7373.0	74.59	74.59	25.41
Depth : 158.5m.-162.73m.	-10.0+0.5	2228.0	22.54	97.13	2.87
	-0.5	283.6	2.87	100.00	-

PARTICLE SIZE ANALYSIS

Total weight : 15 Kg.

MARK	Size Fraction (mm.)	Weight (g.)	Mass	Cumulative Mass (%)	
				Retained	Passed
N.3-6	+10.0	10610.0	71.67	71.67	28.33
Depth : 172.0m.-178.55m.	-10.0+0.5	3690.0	24.93	96.60	3.40
	-0.5	503.7	3.40	100.00	-

Float and Sink Data

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
P3	<1.30	1,426.20	40.90	14.07	4.41
: + 10.0 mm.	1.35	154.40	4.43	23.03	5.42
	1.40	272.70	7.82	26.76	5.26
	1.50	564.90	16.20	29.25	5.11
	1.60	427.60	12.26	38.37	4.60
	1.80	421.80	12.10	54.97	3.63
	>1.80	219.70	6.30	68.65	1.95

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
P3	<1.30	340.80	25.56	15.74	5.15
	1.35	127.80	9.59	21.48	5.26
: - 10.0 mm.+0.5 mm.	1.40	85.80	6.44	24.09	4.70
	1.50	174.10	13.06	27.98	5.11
	1.60	172.80	12.96	32.89	4.97
	1.80	296.30	22.22	42.12	4.51
	>1.80	135.70	10.18	59.03	3.59

Float and Sink Data

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
N.3-4 : + 10.0 mm.	<1.30	49.10	0.79	17.57	4.79
	1.35	824.40	13.30	22.60	4.65
	1.40	324.90	5.24	19.75	4.74
	1.50	1,250.40	20.17	28.68	5.47
	1.60	999.70	16.13	36.76	6.10
	1.80	989.50	15.96	46.06	5.29
	>1.80	1,760.00	28.40	73.70	6.29

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
N.3-4 : - 10.0 mm.+0.5 mm.	<1.30	218.50	14.00	20.85	4.66
	1.35	164.10	10.51	21.70	4.90
	1.40	163.60	10.48	25.17	5.15
	1.50	134.80	8.64	27.52	5.07
	1.60	236.10	15.13	33.04	5.69
	1.80	294.80	18.89	42.50	6.33
	>1.80	348.90	22.35	72.06	7.78

Float and Sink Data

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
N.3-6 : + 10.0 mm.	<1.30	898.30	11.31	19.00	4.27
	1.35	273.30	3.44	21.99	4.74
	1.40	593.80	7.48	21.74	4.13
	1.50	981.90	12.36	25.68	4.47
	1.60	1,699.50	21.40	34.48	4.92
	1.80	1,683.80	21.20	49.58	4.33
	>1.80	1,810.50	22.80	69.27	2.68

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
N.3-6 : - 10.0 mm.+0.5 mm.	<1.30	172.90	6.96	18.23	4.58
	1.35	156.80	6.31	19.42	4.70
	1.40	144.50	5.81	20.60	4.22
	1.50	355.50	14.31	25.93	4.66
	1.60	312.20	12.56	31.05	4.71
	1.80	840.10	33.81	37.35	4.45
	>1.80	503.10	20.24	73.70	5.03

Sample Name	Size	Ash (%)	Sulphur (%)
P3	- 0.5 mm.	46.33	6.72
N.3-4	- 0.5 mm.	52.58	6.45
N.3-6	- 0.5 mm.	50.17	5.87

PARTICLE SIZE ANALYSIS

Total weight : 1.8 kg

MARK	Size Fraction (mm.)	Weight (g.)	Mass (%)	Cumulative Mass (%)	
				Retained	Passed
N. 1-3	+10.0	1240.40	72.79	72.79	27.21
Depth : 98.43 m. - 99.15 m.	-10.0+0.5	430.20	25.24	98.03	1.97
	-0.5	33.50	1.97	100.00	-

Float and Sink Data

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
N.1-3	<1.30	38.20	3.95	13.94	5.29
	1.35	422.90	43.76	18.25	4.41
+ 10.0 MM	1.40	252.90	26.17	22.31	7.40
	1.50	119.20	12.34	29.92	8.15
	1.60	46.10	4.77	42.29	5.93
	1.80	71.50	7.40	53.17	6.73
	>1.80	15.50	1.60	66.57	4.63

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
N.1-3	<1.30	13.80	4.43	15.67	5.04
	1.35	71.10	22.83	18.69	6.01
10.0 mm. + 0.5 m	1.40	66.20	21.25	22.73	6.73
	1.50	41.30	13.26	25.29	6.89
	1.60	73.00	23.43	29.52	7.34
	1.80	35.00	11.24	43.15	7.05
	>1.80	11.10	3.56	61.71	8.99

Sample Name	Size	Ash (%)	Sulphur (%)
N.1-3	-0.5 mm.	35.53	6.60

PARTICLE SIZE ANALYSIS

Total weight : 4.2 Kg.

MARK	Size Fraction (mm.)	Weight (g.)	Mass	Cummulative Mass (%)	
				Retained	Passed
N5-1 S	+10.0	2,900.00	69.97	69.97	30.03
Depth : 93.20 m. - 95.40 m.	-10.0+0.5	1,131.80	27.31	97.28	2.72
	-0.5	112.60	2.72	100.00	-
		4144.4			

PARTICLE SIZE ANALYSIS

Total weight : 3.8 Kg.

MARK	Size Fraction (mm.)	Weight (g.)	Mass	Cummulative Mass (%)	
				Retained	Passed
N.5-13 S	+10.0	2,600.00	74.87	74.87	25.13
Depth : 164.85 m.-166.95 m.	-10.0+0.5	744.40	21.44	96.31	3.69
	-0.5	128.10	3.69	100.00	-

Float and Sink Data

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
N.5-1 S	<1.30	410.30	19.39	15.30	2.06
	1.35	446.10	21.08	19.62	2.34
: + 10.0 mm.	1.40	473.10	22.35	24.91	3.02
	1.50	216.50	10.23	32.07	4.02
	1.60	183.90	8.69	35.63	4.31
	1.80	286.30	13.53	44.74	3.80
	>1.80	100.20	4.73	52.51	10.36
		2,116.40	100.00		

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
N.5-1 S	<1.30	102.80	12.16	17.27	2.36
	1.35	48.30	5.72	18.54	2.30
: - 10.0 mm.+0.5 mm.	1.40	143.40	16.97	22.30	2.59
	1.50	102.80	12.16	24.48	2.61
	1.60	194.00	22.96	26.38	2.82
	1.80	159.40	18.86	33.78	3.20
	>1.80	94.40	11.17	53.86	10.26
		845.10	100.00		

Sample Name	Size	Ash (%)	Sulphur (%)
N.5-1 S	- 0.5 mm.	34.74	5.70

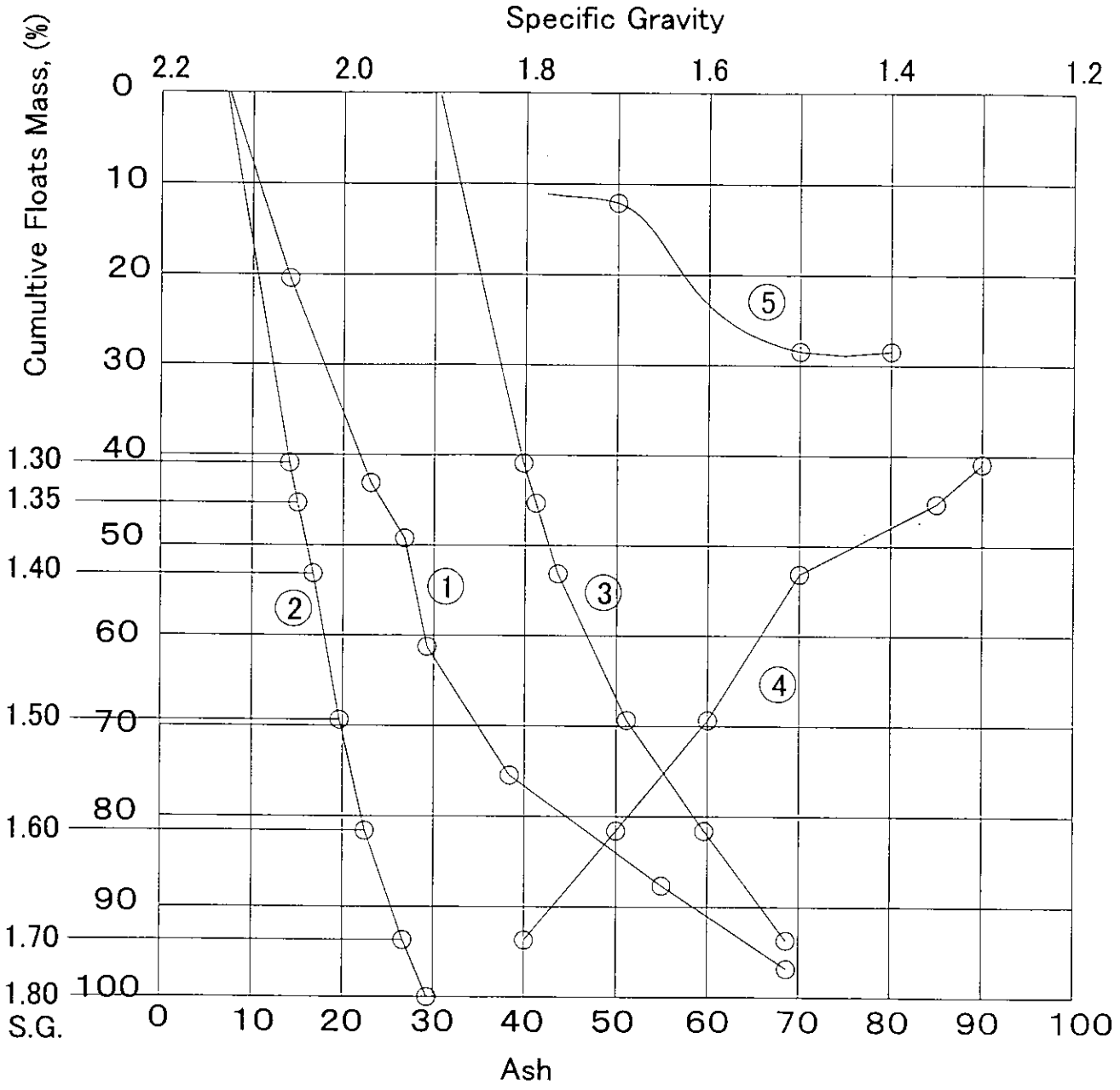
Float and Sink Data

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
N.5-13 S	<1.30	290.40	17.04	19.69	4.97
	1.35	105.10	6.17	23.73	5.19
: + 10.0 mm.	1.40	176.00	10.33	28.95	5.38
	1.50	160.50	9.42	34.63	5.73
	1.60	191.80	11.26	39.65	4.80
	1.80	547.60	32.13	52.31	4.22
	>1.80	232.70	13.65	67.43	2.54
		1,704.10	99.995		

Sample Name	Relative Density Fraction Float-Sink	Weight (g.)	Mass (%)	Ash (%)	Sulphur (%)
N.5-13 S	<1.30	100.40	22.09	20.65	5.00
	1.35	15.20	3.34	22.30	5.02
: - 10.0 mm.+0.5 mm.	1.40	43.60	9.59	25.50	5.06
	1.50	58.90	12.96	28.76	4.89
	1.60	66.10	14.54	32.92	4.48
	1.80	125.20	27.55	44.05	5.15
	>1.80	45.10	9.92	55.99	8.60
		454.50	100.000		

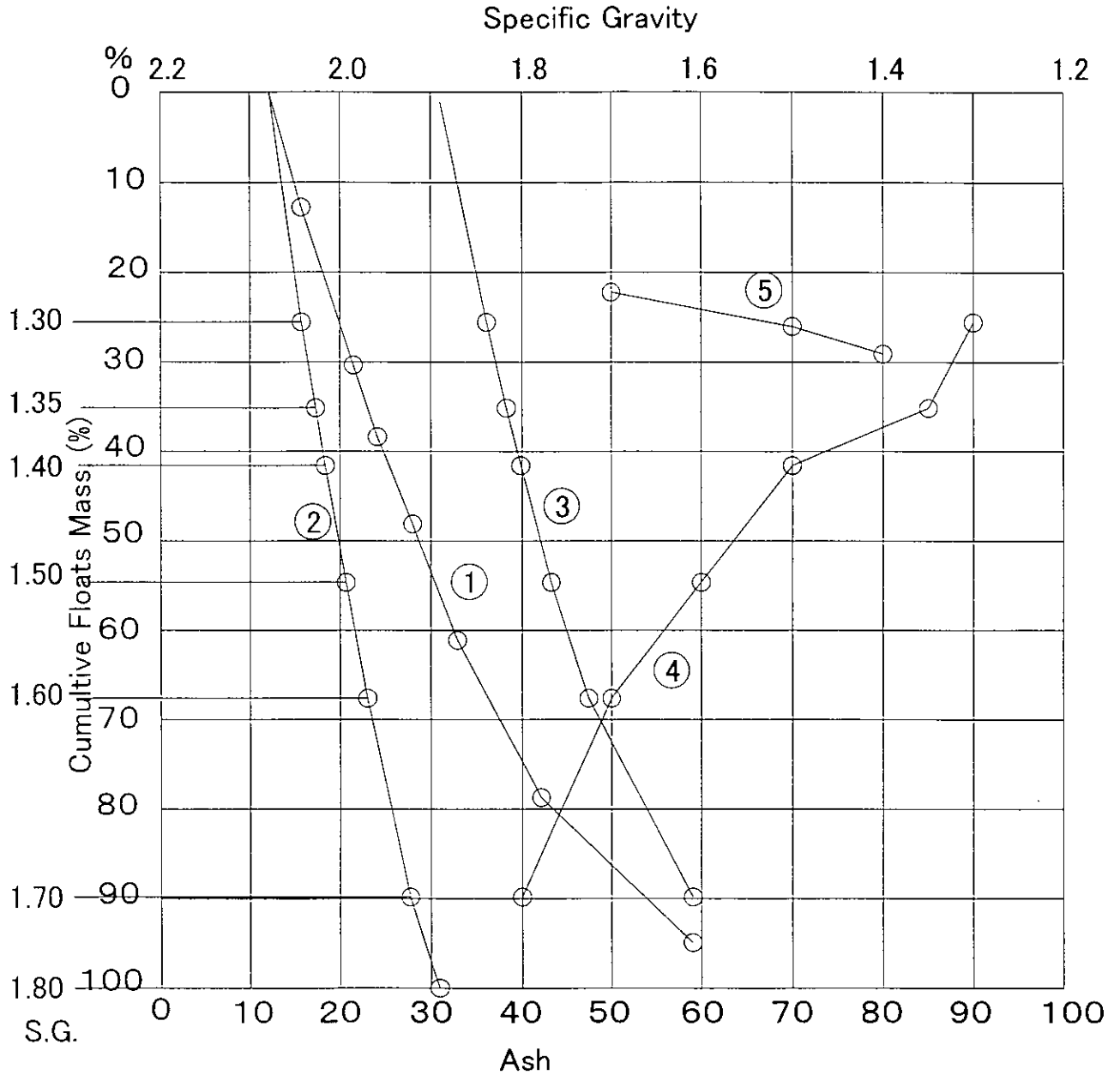
Sample Name	Size	Ash (%)	Sulphur (%)
N.5-13 S	- 0.5 mm.	37.83	6.69

６．バルク及びコアサンプルの洗炭可洗性曲線



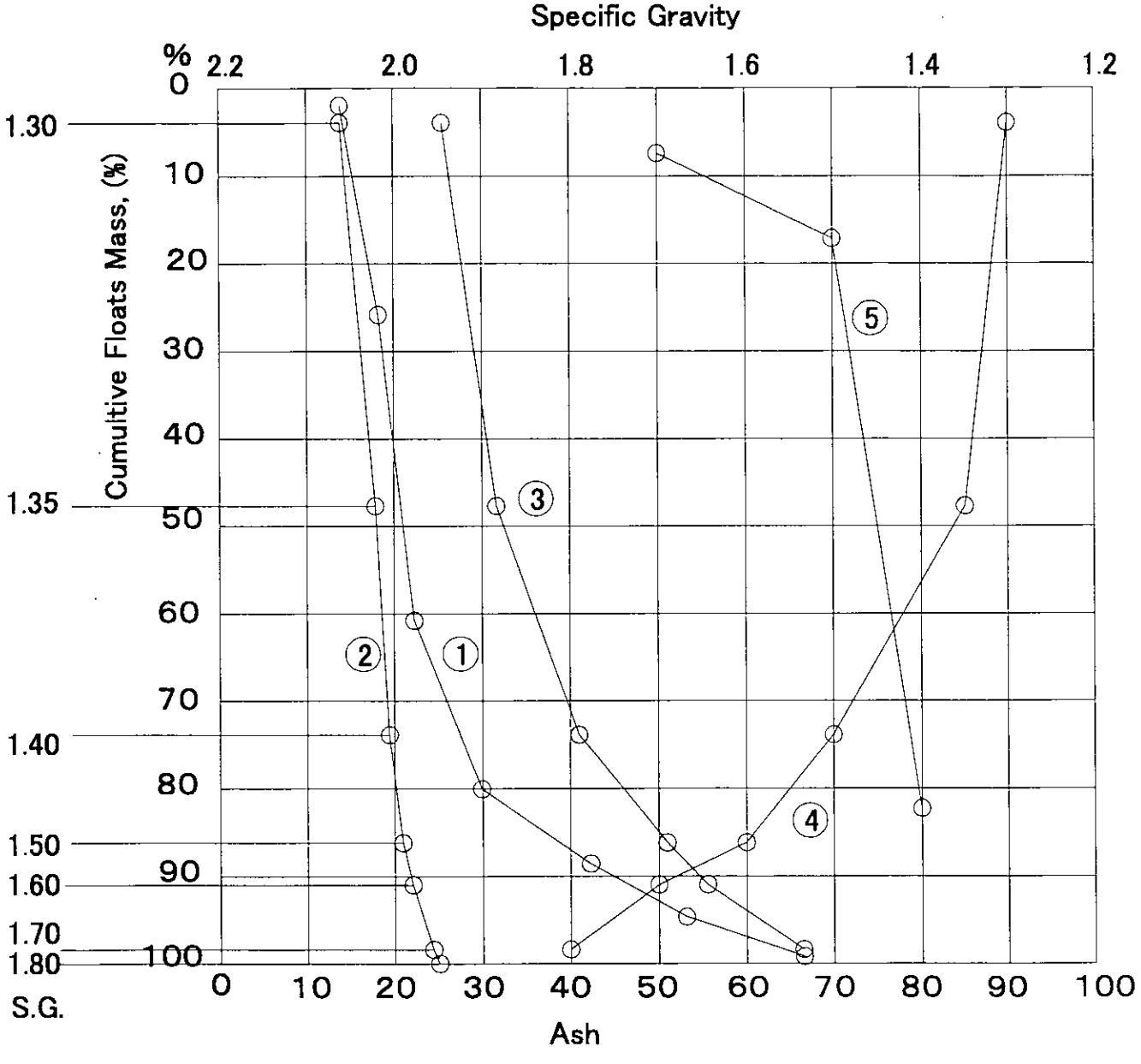
① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve

Washability Curve PH3 [+10mm]



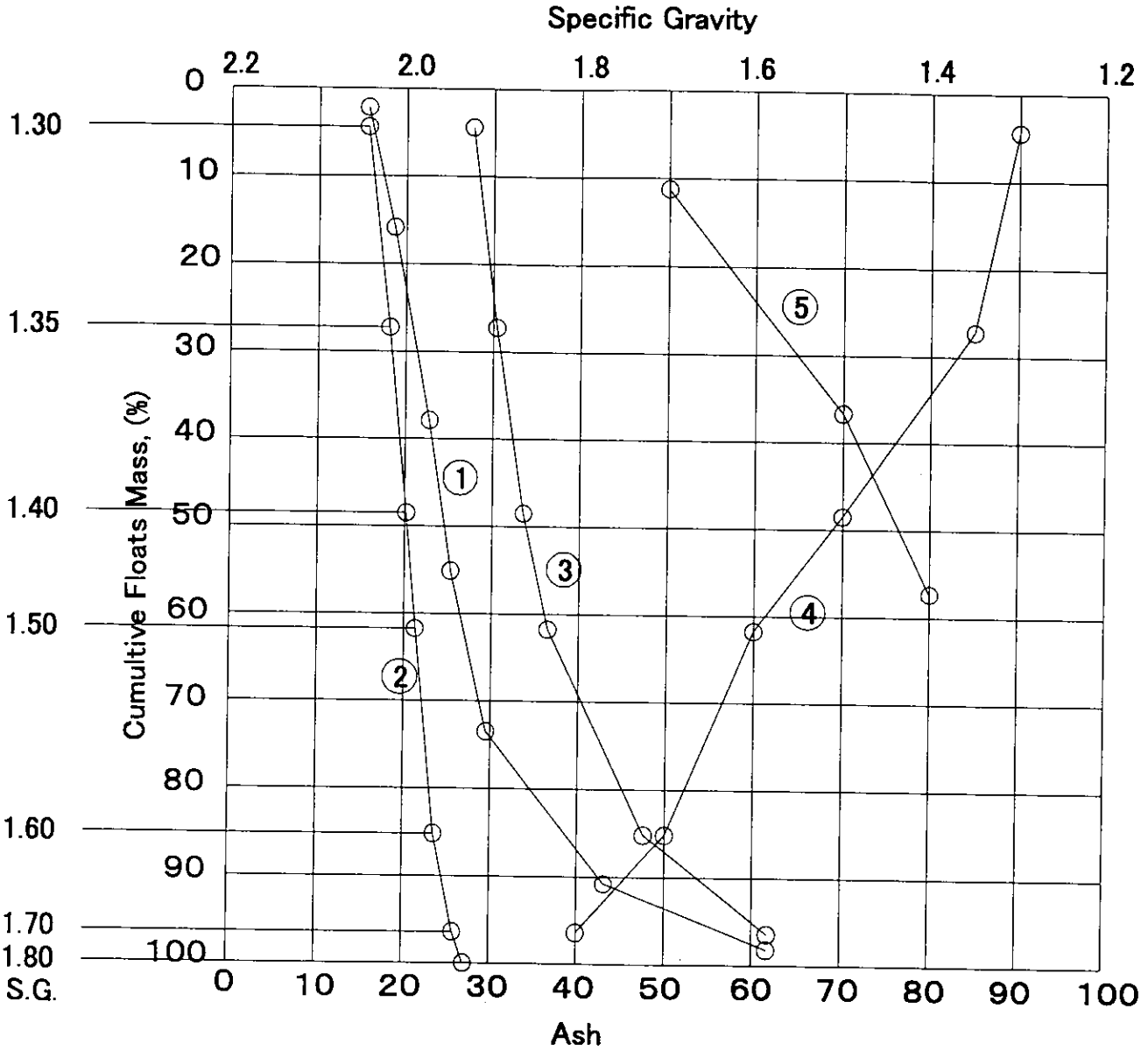
Washability Curve PH3 [-10mm - +5mm]

① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve



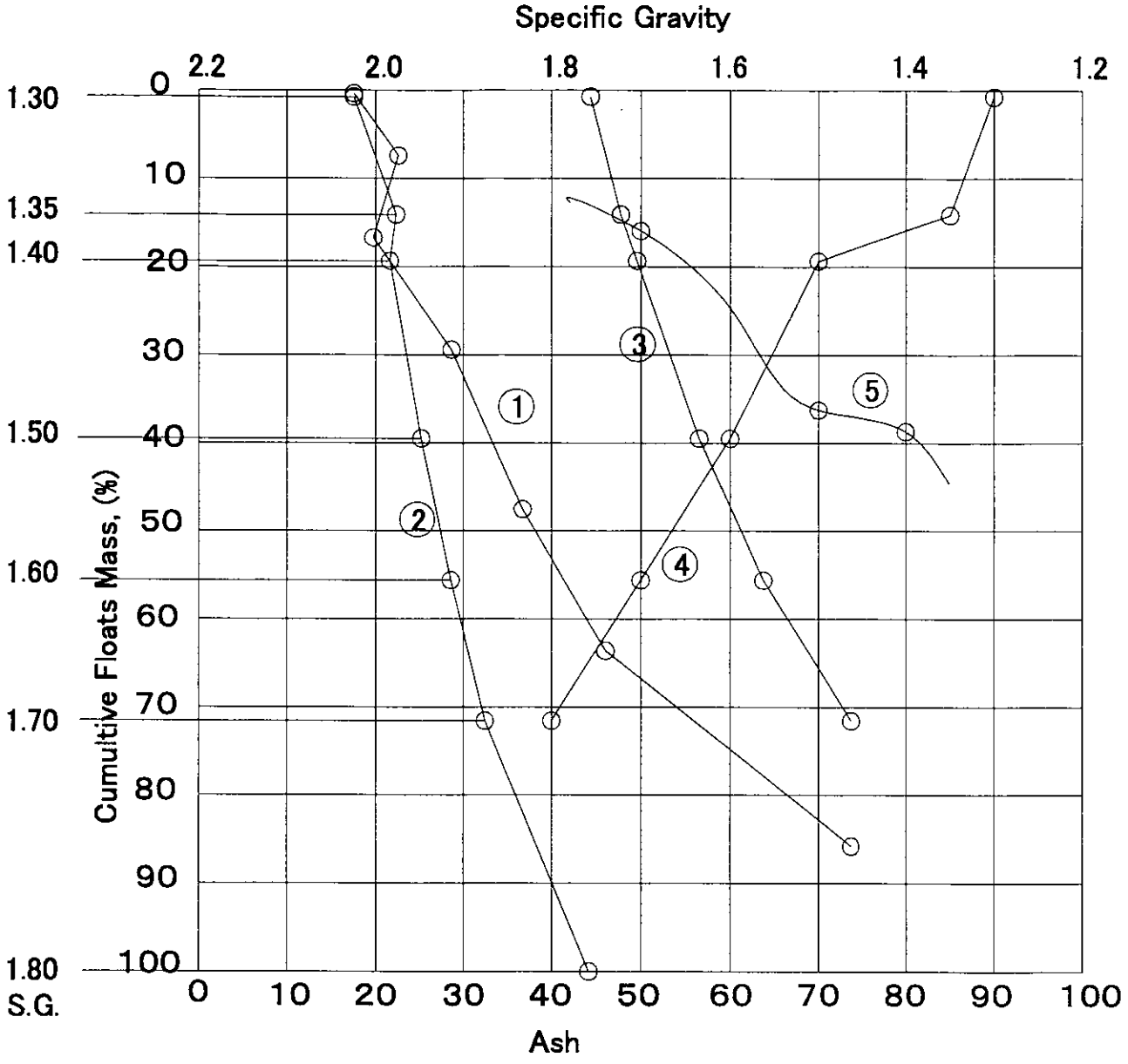
① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve

Washability Curve N1-3 [+10mm]



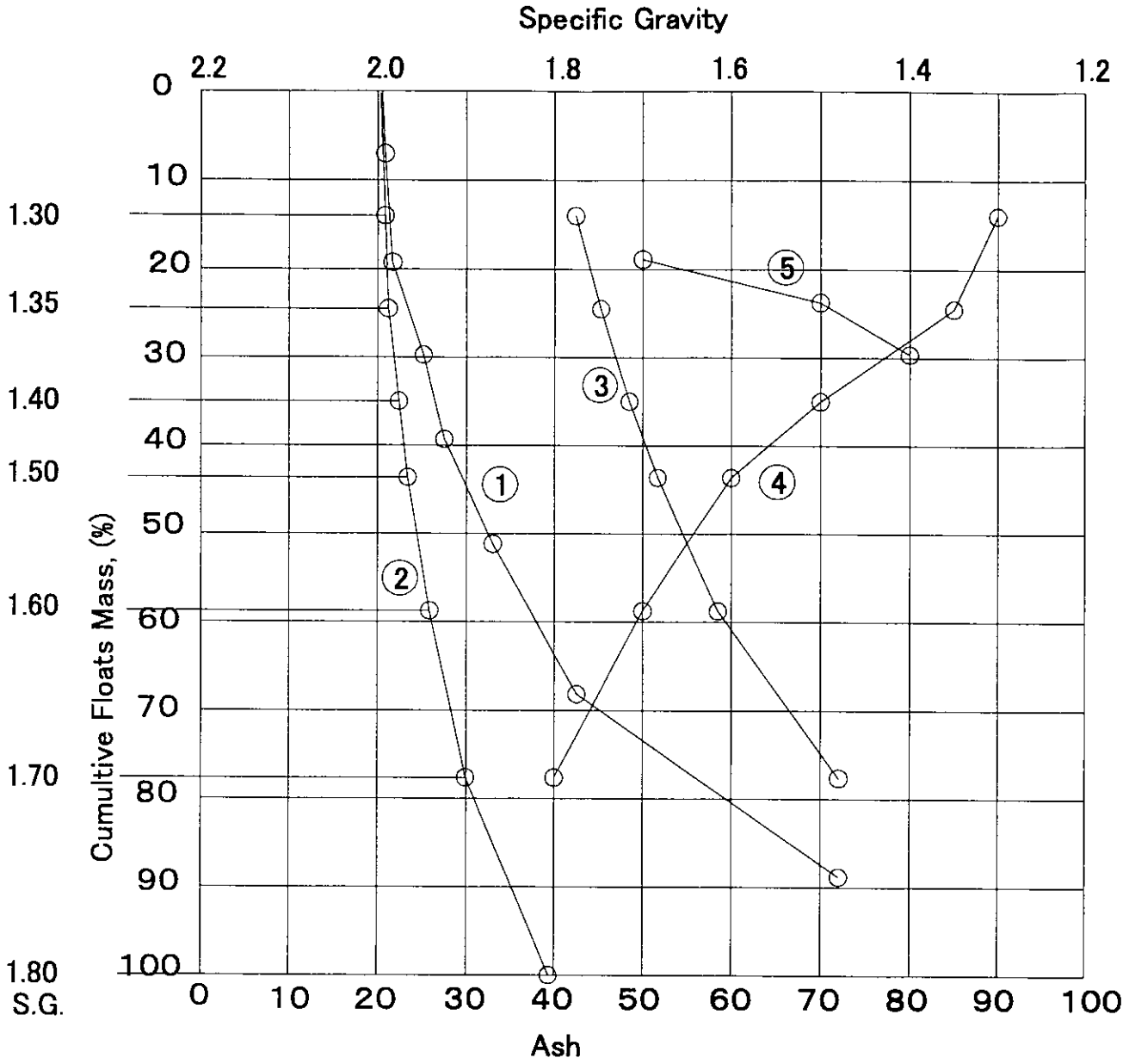
Washability Curve N1-3 [-10mm - +5mm]

① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve



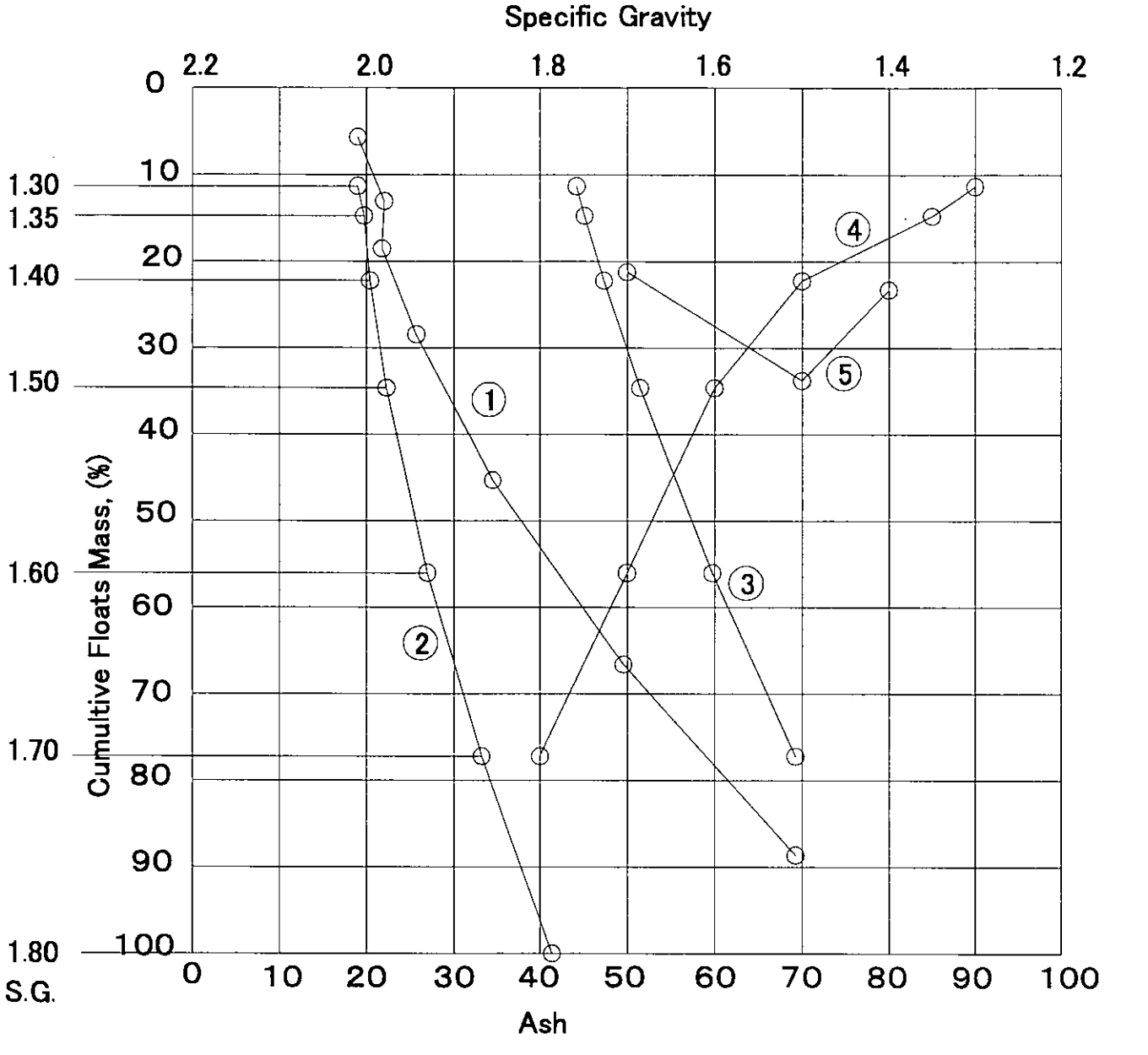
Washability Curve N3-4 [+10mm]

① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve



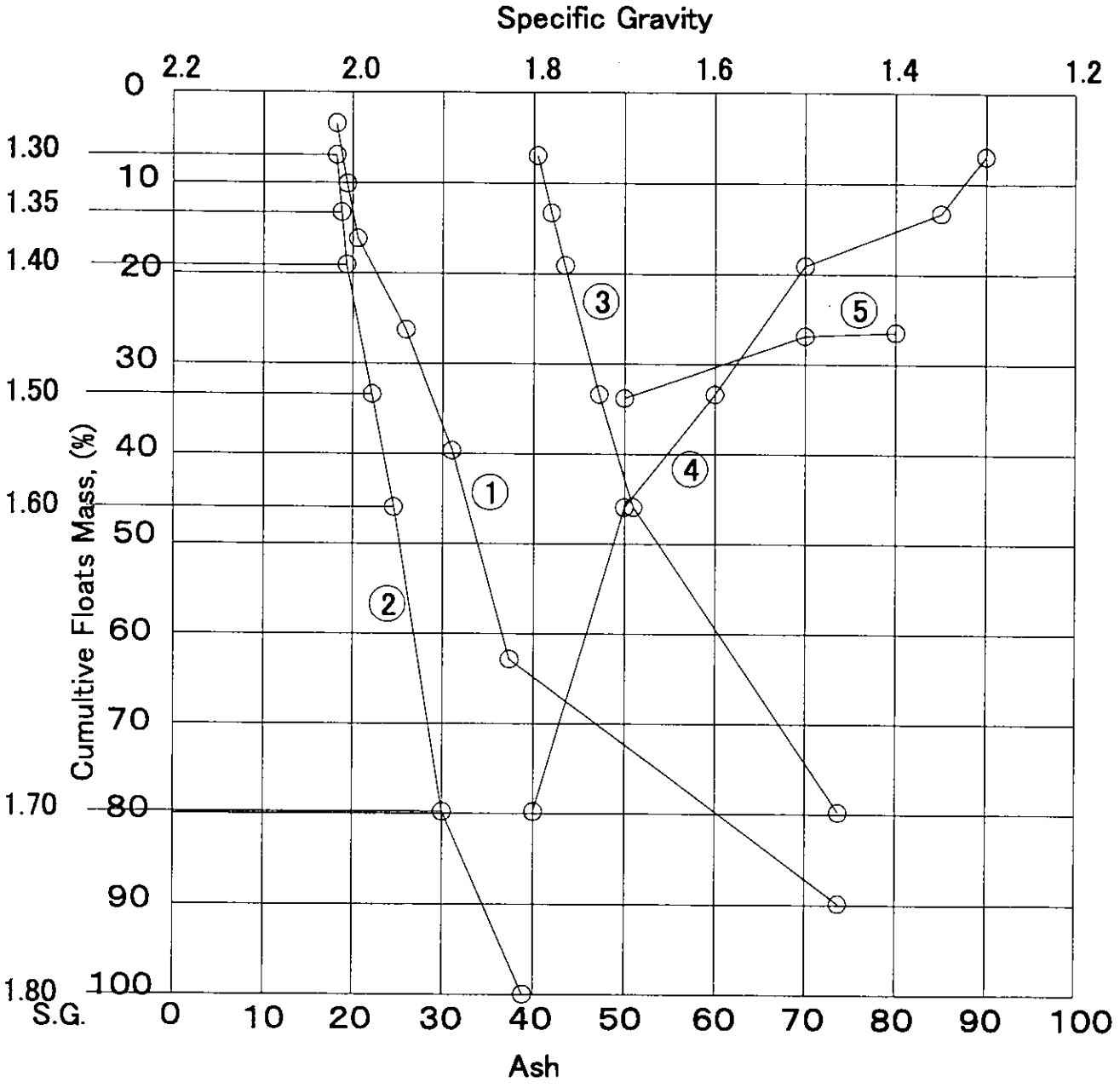
Washability Curve N3-4 [-10mm - +5mm]

① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve



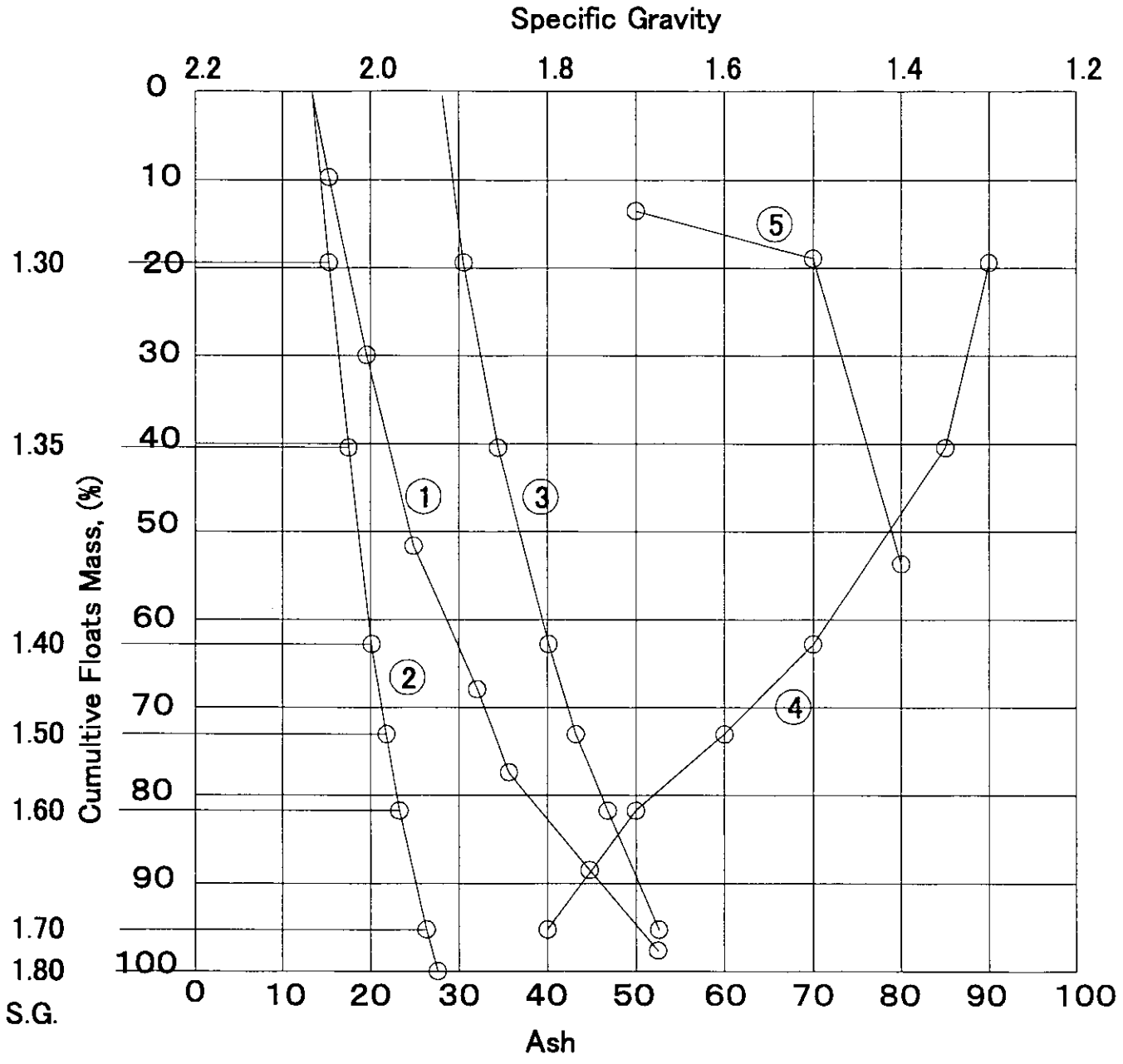
① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve

Washability Curve N3-6 [+10mm]



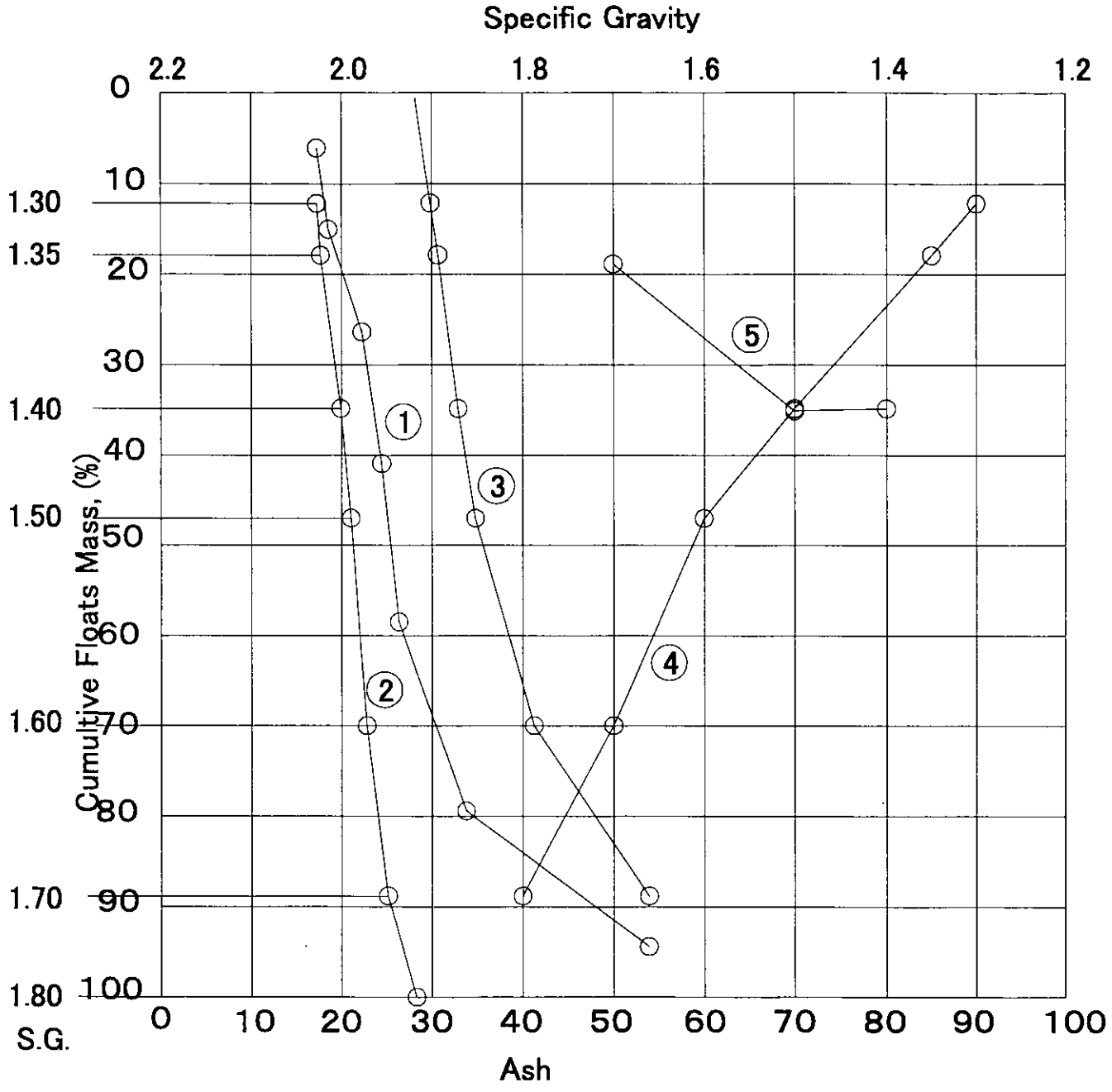
Washability Curve N3-6 [-10mm - +5mm]

① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve



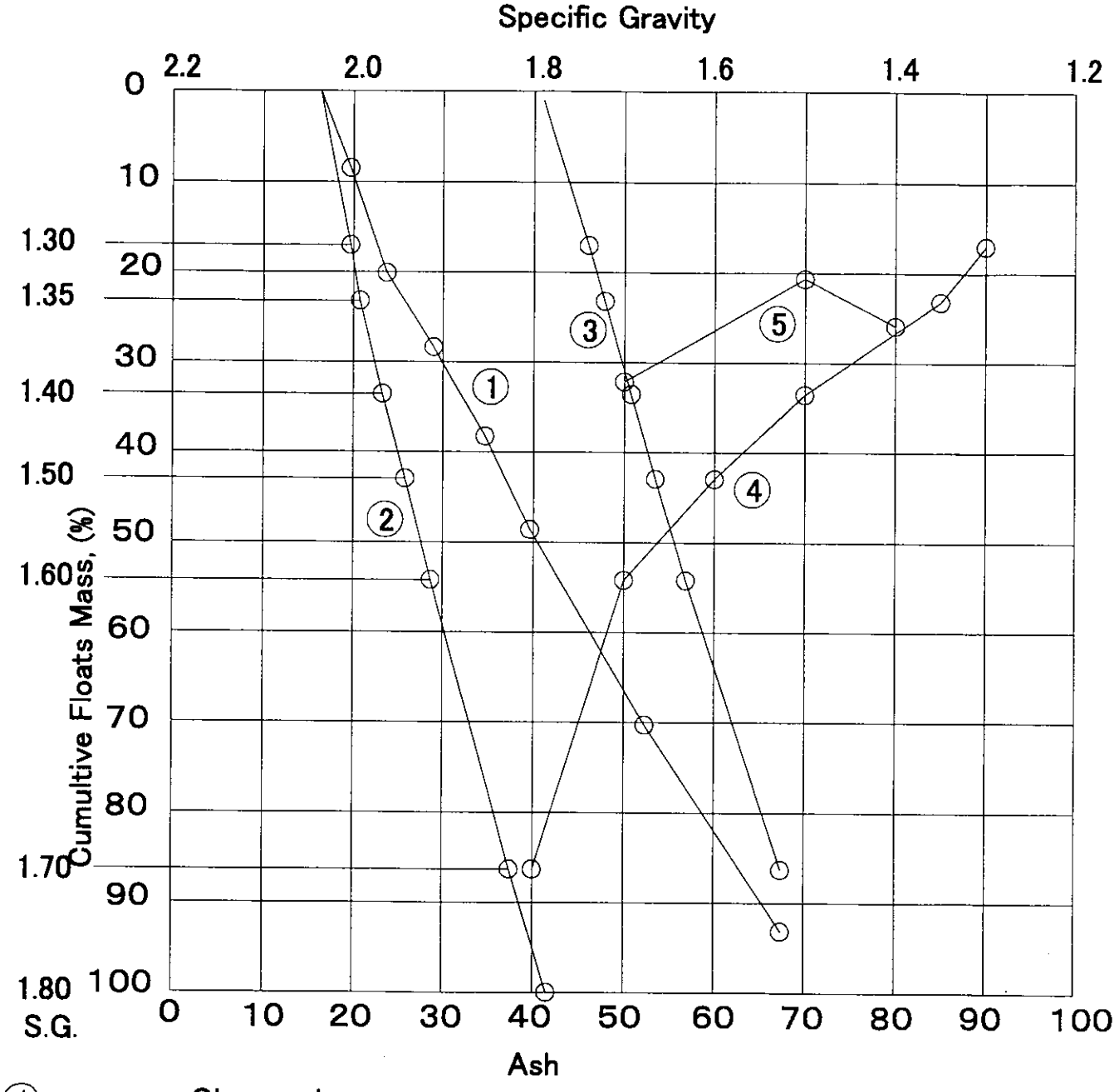
① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve

Washability Curve N5-1 [+10mm]



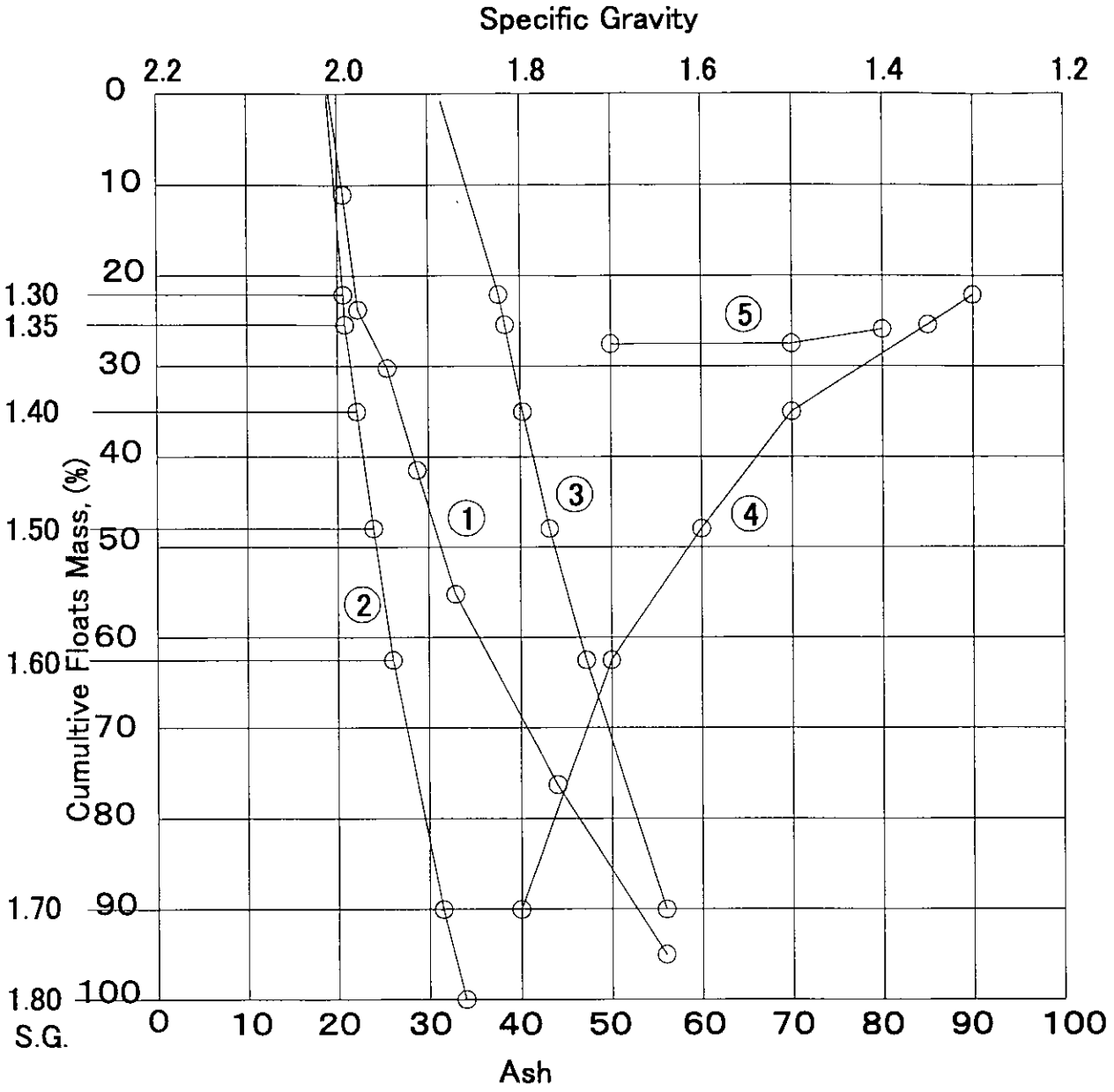
Washability Curve N5-1 [-10mm - +5mm]

① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve



① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve

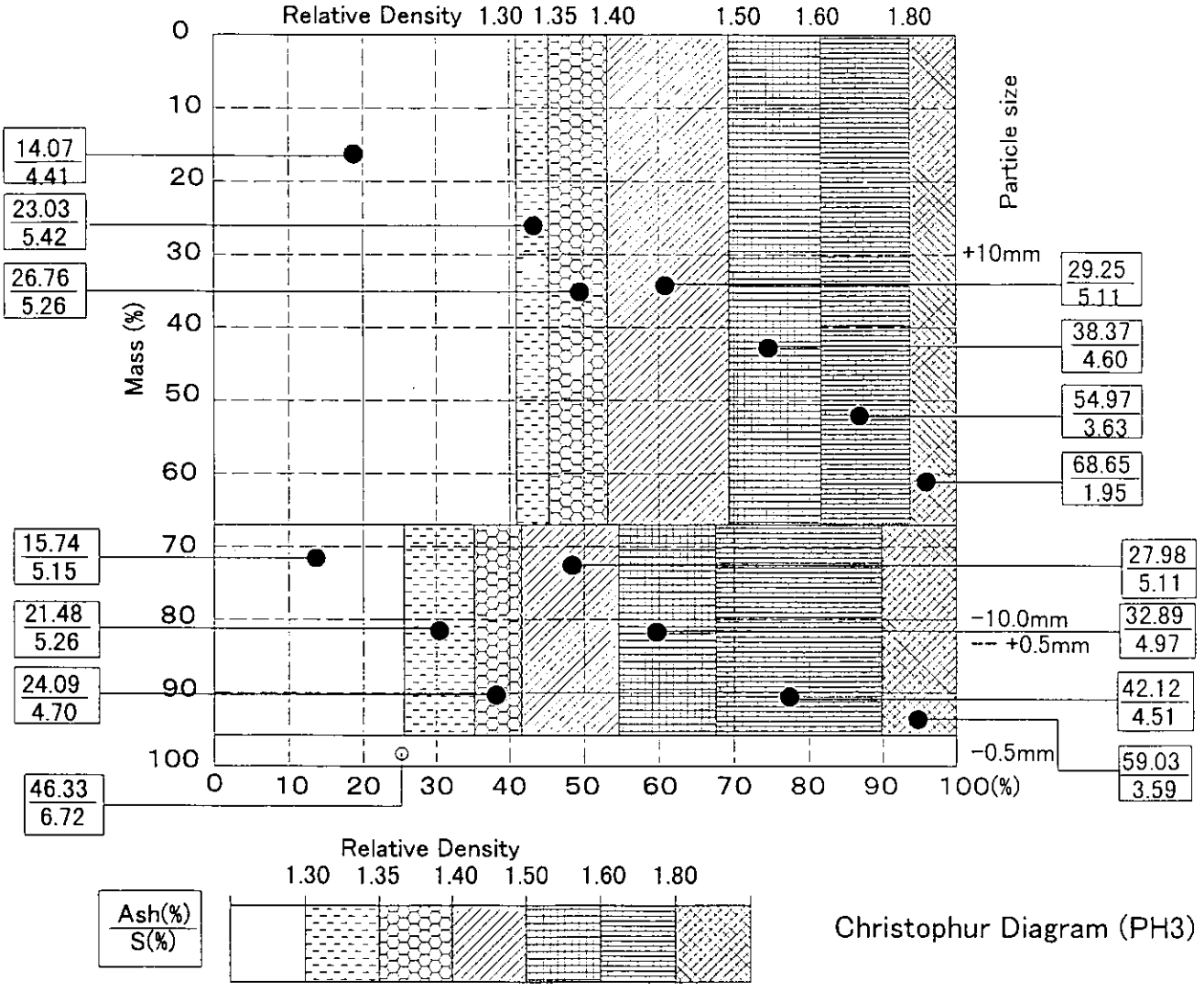
Washability Curve N5-13 [+10mm]



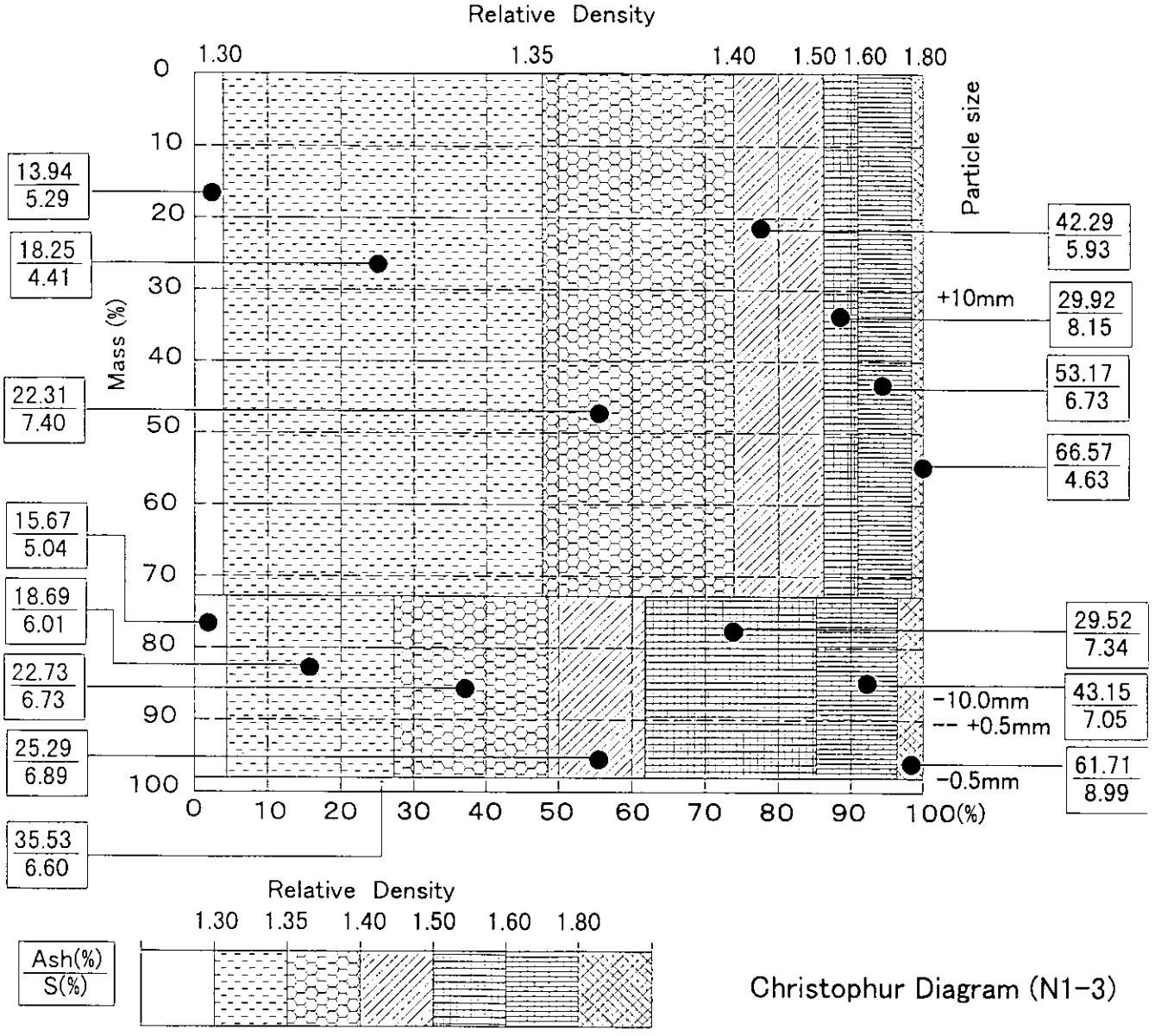
Washability Curve N5-13 [-10mm - +5mm]

① Observed curve
② Floating curve
③ Sinking curve
④ Specific Gravity curve
⑤ Difficulty curve

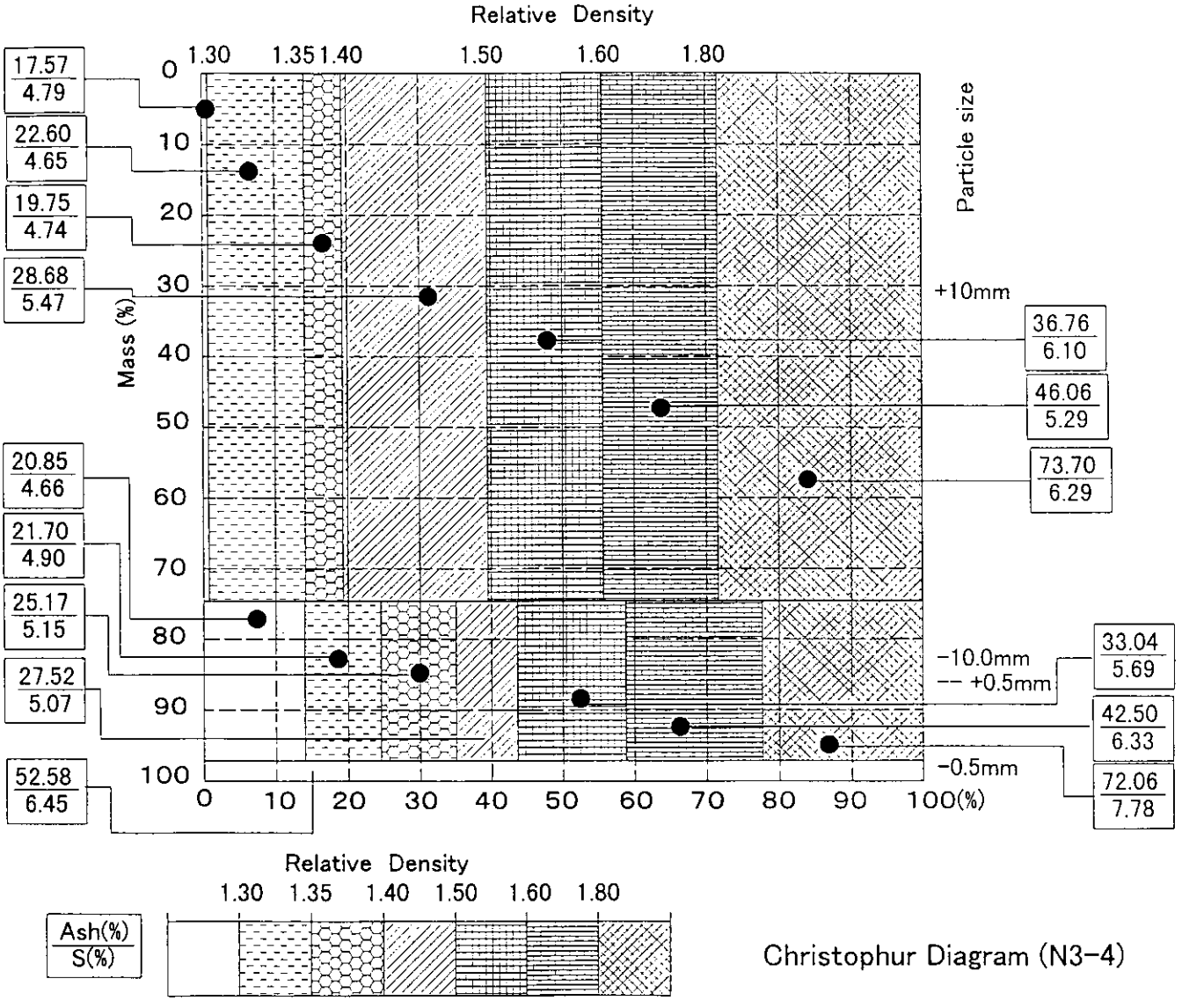
７．バルク及びコアサンプルのクリストファーダイヤグラム



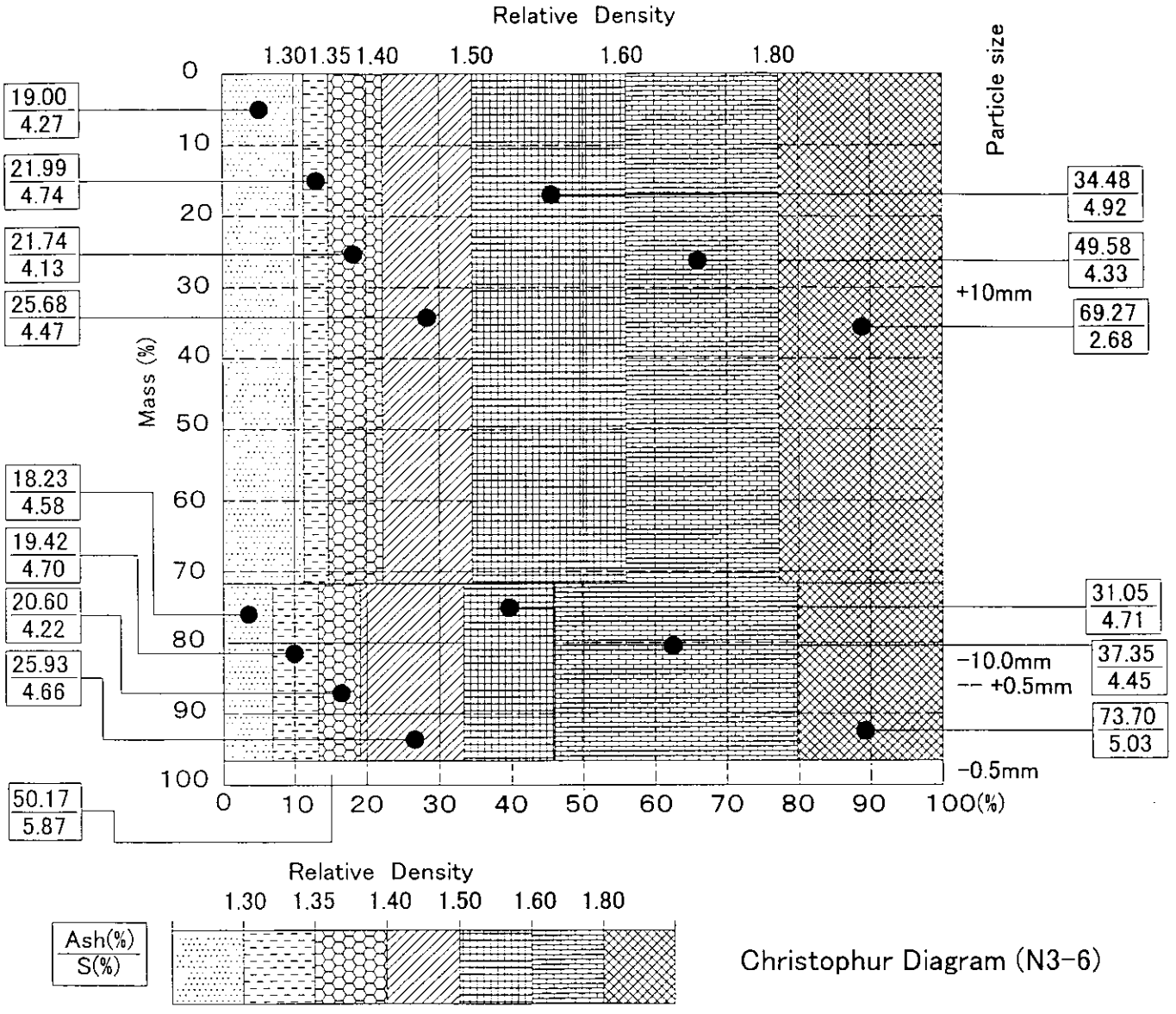
Christophur Diagram (PH3)



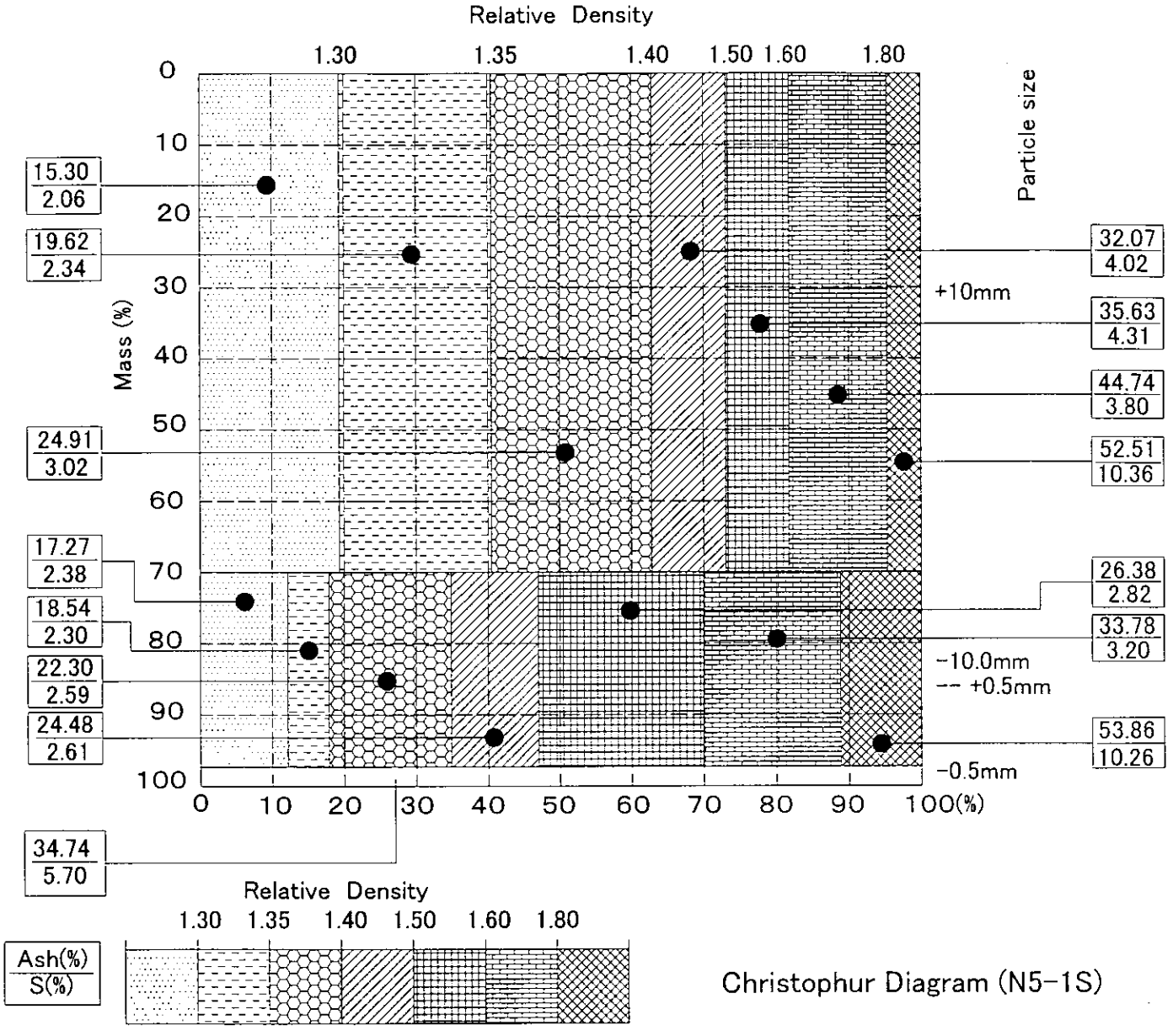
Christophur Diagram (N1-3)



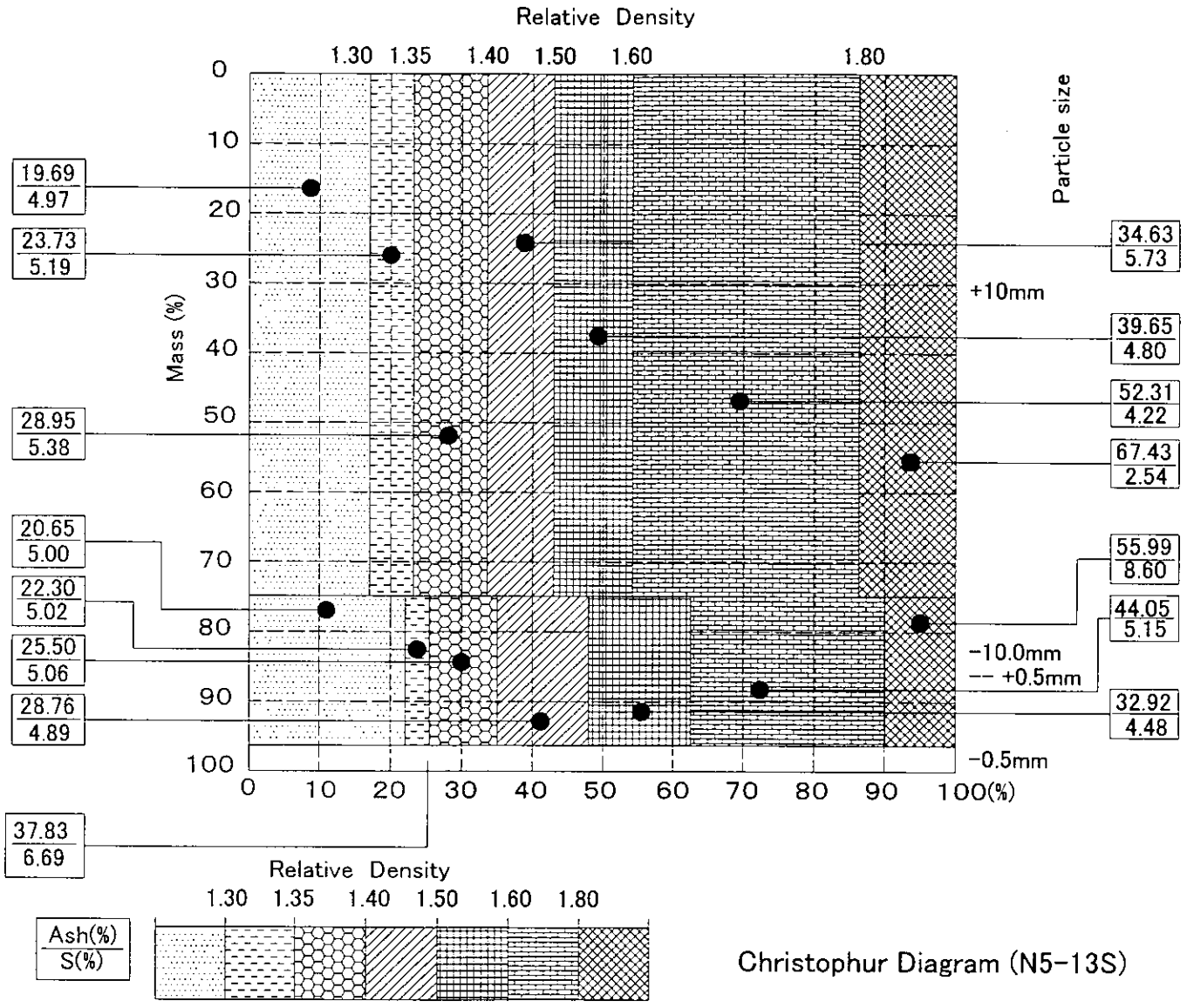
Christophur Diagram (N3-4)



Christophur Diagram (N3-6)



Christophur Diagram (N5-1S)



Christophur Diagram (N5-13S)

８．バルクサンプルの形態別硫黄分析結果

SOURCE : Mitsubishi Materials Natural Resources Development Corp. (TOKYO, JAPAN)
BORE NO : B: Size 3.0 ~ 10.0 mm.
CHEMIST: .....

	LAB NO.		01-CE84	01-CE85	01-CE86	01-CE87
	SAMPLE NAME.		B:3.0~10.0 mm, 1.80S	B:3.0~10.0 mm, 1.30F	B:3.0~10.0 mm, 1.35F	B:3.0~10.0 mm, 1.40F
	DATE OF RECEIVED		2001/12/9	2001/2/2	2001/2/2	2001/2/2
	DATE OF ANALYSIS		2001/12/11	2001/2/6	2001/2/6	2001/2/6
	FORMS OF SULPHUR					
AS ANALYSED BASIS	INHERENT MOISTURE	(%)	-	-	-	-
	TOTAL SULPHUR	(%)	-	-	-	-
	SULPHATE SULPHUR	(%)	0.55	0.23	0.14	0.22
	PYRITIC SULPHUR	(%)	2.48	1.65	2.17	2.17
	ORGANIC SULPHUR	(%)	2.63	4.66	4.39	3.98
DRY BASIS	TOTAL SULPHUR	(%)	-	-	-	-
	SULPHATE SULPHUR	(%)	-	-	-	-
	PYRITIC SULPHUR	(%)	-	-	-	-
	ORGANIC SULPHUR	(%)	-	-	-	-

Remark : The results relate only to the sample(S) tested. This document shall no be reproduced except in full.
* Organic= Total Sulpiur - (Sulphate + Py

SOURCE : Mitsubishi Materials Natural Resources Development Corp. (TOKYO, JAPAN)
BORE NO : B: Size 3.0 ~ 10.0 mm.
CHEMIST: .....

	LAB NO.		01-CE88	01-CE89	01-CE90	01-CE91
	SAMPLE NAME.		B:3.0~10.0 mm, 1.50F	B:3.0~10.0 mm, 1.60F	B:3.0~10.0 mm, 1.70F	B:3.0~10.0 mm, 1.80F
	DATE OF RECEIVED		2001/12/9	2001/2/2	2001/12/9	2001/2/2
	DATE OF ANALYSIS		2001/12/11	2001/2/6	2001/12/11	2001/2/6
	FORMS OF SULPHUR					
AS ANALYSED BASIS	INHERENT MOISTURE	(%)	-	-	-	-
	TOTAL SULPHUR	(%)	-	-	-	-
	SULPHATE SULPHUR	(%)	0.32	0.29	0.21	0.24
	PYRITIC SULPHUR	(%)	1.83	2.51	3.18	3.30
	ORGANIC SULPHUR	(%)	3.49	3.52	3.97	3.49
DRY BASIS	TOTAL SULPHUR	(%)	-	-	-	-
	SULPHATE SULPHUR	(%)	-	-	-	-
	PYRITIC SULPHUR	(%)	-	-	-	-
	ORGANIC SULPHUR	(%)	-	-	-	-

Remark : The results relate only to the sample(S) tested. This document shall no be reproduced except in full.
* Organic= Total Sulphur - (Sulphate + Pyritic

SOURCE : Mitsubishi Materials Natural Resources Development Corp. (TOKYO, JAPAN)
BORE NO : B: Size 25.0 ~ 50.0 mm.
CHEMIST: .....

	LAB NO.		01-CE100	01-CE101	01-CE102
	SAMPLE NAME.		B:25.0~50.0mm. 1.30F	B:25.0~50.0mm. 1.35F	B:25.0~50.0mm. 1.40F
	DATE OF RECEIVED		2001/12/9	2001/12/9	2001/12/9
	DATE OF ANALYSIS		2001/12/11	2001/12/11	2001/12/11
AS ANALYSED BASIS	FORMS OF SULPHUR				
	INHERENT MOISTURE	(%)	-	-	-
	TOTAL SULPHUR	(%)	-	-	-
	SULPHATE SULPHUR	(%)	0.26	0.23	0.30
	PYRITIC SULPHUR	(%)	1.49	2.32	2.60
	ORGANIC SULPHUR	(%)	3.66	3.71	3.54
DRY BASIS	TOTAL SULPHUR	(%)	-	-	-
	SULPHATE SULPHUR	(%)	-	-	-
	PYRITIC SULPHUR	(%)	-	-	-
	ORGANIC SULPHUR	(%)	-	-	-

Remark : The results relate only to the sample(S) tested. This document shall no be reproduced except in full.
* Organic= Total Sulphur - (Sulphate + Pyritic)

SOURCE : Mitsubishi Materials Natural Resources Development Corp. (TOKYO, JAPAN)
BORE NO : B: Size 25.0 ~ 50.0 mm.
CHEMIST: .....

	LAB NO.		01-CE104	01-CE105	01-CE106
	SAMPLE NAME.		B:25.0~50.0mm. 1.60F	B:25.0~50.0mm 1.70F	B:25.0~50.0mm. 1.80F
	DATE OF RECEIVED		2001/12/9	2001/12/9	2001/12/9
	DATE OF ANALYSIS		2001/12/11	2001/12/11	2001/12/11
AS ANALYSED BASIS	FORMS OF SULPHUR				
	INHERENT MOISTURE	(%)	-	-	-
	TOTAL SULPHUR	(%)	-	-	-
	SULPHATE SULPHUR	(%)	0.74	0.18	0.14
	PYRITIC SULPHUR	(%)	3.09	1.97	1.79
	ORGANIC SULPHUR	(%)	2.24	1.84	1.33
DRY BASIS	TOTAL SULPHUR	(%)	-	-	-
	SULPHATE SULPHUR	(%)	-	-	-
	PYRITIC SULPHUR	(%)	-	-	-
	ORGANIC SULPHUR	(%)	-	-	-

Remark : The results relate only to the sample(S) tested. This document shall no be reproduced except in full.
* Organic= Total Sulphur - (Sulphate + Pyritic)

SOURCE : Mitsubishi Materials Natural Resources Development Corp. (TOKYO, JAPAN)
BORE NO : B: Size 0.5 ~ 3.0 mm.
CHEMIST: ....

	LAB NO.		01-CE82	01-CE83
	SAMPLE NAME.		B:0.5 ~3.0 mm, 1.70F	B:0.5 ~3.0 mm, 1.80F
	DATE OF RECEIVED		2001/12/9	2001/12/9
	DATE OF ANALYSIS		2001/12/11	2001/12/11
AS ANALYSED BASIS	FORMS OF SULPHUR			
	INHERENT MOISTURE	(%)	-	-
	TOTAL SULPHUR	(%)	-	-
	SULPHATE SULPHUR	(%)	0.03	0.20
	PYRITIC SULPHUR	(%)	1.19	2.65
	ORGANIC SULPHUR	(%)	3.26	4.21
DRY BASIS	TOTAL SULPHUR	(%)	-	-
	SULPHATE SULPHUR	(%)	-	-
	PYRITIC SULPHUR	(%)	-	-
	ORGANIC SULPHUR	(%)	-	-

Remark : The results relate only to the sample(S) tested. This document shall no be reproduced except in full.
* Organic= Total Sulphur - (Sulphate + Pyritic

SOURCE : Mitsubishi Materials Natural Resources Development Corp. (TOKYO, JAPAN)
BORE NO : B Series
CHEMIST: ....

	LAB NO.		01-CE96	01-CE97	01-CE98
	SAMPLE NAME.		B:10.0~25.0 mm 1.50F	B:10.0~25.0 mm. 1.60F	B:10.0~25.0 mm. 1.70F
	DATE OF RECEIVED		2001/12/9	2001/12/9	2001/12/9
	DATE OF ANALYSIS		2001/12/11	2001/12/11	2001/12/11
AS ANALYSED BASIS	FORMS OF SULPHUR				
	INHERENT MOISTURE	(%)	-	-	-
	TOTAL SULPHUR	(%)	-	-	-
	SULPHATE SULPHUR	(%)	0.43	0.40	0.19
	PYRITIC SULPHUR	(%)	2.97	3.57	3.02
	ORGANIC SULPHUR	(%)	3.80	3.87	2.94
DRY BASIS	TOTAL SULPHUR	(%)	-	-	-
	SULPHATE SULPHUR	(%)	-	-	-
	PYRITIC SULPHUR	(%)	-	-	-
	ORGANIC SULPHUR	(%)	-	-	-

Remark : The results relate only to the sample(S) tested. This document shall no be reproduced except in full.
* Organic= Total Sulphur - (Sulphate + Pyritic)

SOURCE : Mitsubishi Materials Natural Resources Development Corp. (TOKYO, JAPAN)
BORE NO : B: Size 0.5 ~ 3.0 mm.
CHEMIST: .....

	LAB NO.		01-CE78	01-CE79	01-CE80
	SAMPLE NAME.		B:0.5 ~3.0 mm, 1.80S	B:0.5 ~3.0 mm, 1.35F	B:0.5 ~3.0 mm, 1.50F
	DATE OF RECEIVED		2001/12/9	2001/12/9	2001/12/9
	DATE OF ANALYSIS		2001/12/11	2001/12/11	2001/12/11
	FORMS OF SULPHUR				
AS ANALYSED BASIS	INHERENT MOISTURE	(%)	-	-	-
	TOTAL SULPHUR	(%)	-	-	-
	SULPHATE SULPHUR	(%)	0.74	0.08	0.50
	PYRITIC SULPHUR	(%)	3.59	1.11	0.95
	ORGANIC SULPHUR	(%)	3.39	4.55	3.10
DRY BASIS	TOTAL SULPHUR	(%)	-	-	-
	SULPHATE SULPHUR	(%)	-	-	-
	PYRITIC SULPHUR	(%)	-	-	-
	ORGANIC SULPHUR	(%)	-	-	-

Remark : The results relate only to the sample(S) tested. This document shall no be reproduced except in full.
* Organic= Total Sulphur - (Sulphate + Pyritic)

SOURCE : Mitsubishi Materials Natural Resources Development Corp. (TOKYO, JAPAN)
BORE NO : B: Size 10.0 ~ 25.0 mm.
CHEMIST: .....

	LAB NO.		01-CE92	01-CE93	01-CE94	01-CE95
	SAMPLE NAME.		B:10.0~25.0 mm 1.80S	B:10.0~25.0 mm 1.30F	B:10.0~25.0 mm. 1.35F	B:10.0~25.0 mm. 1.40F
	DATE OF RECEIVED		2001/12/9	2001/12/9	2001/12/9	2001/12/9
	DATE OF ANALYSIS		2001/12/11	2001/12/11	2001/12/11	2001/12/11
	FORMS OF SULPHUR					
AS ANALYSED BASIS	INHERENT MOISTURE	(%)	-	-	-	-
	TOTAL SULPHUR	(%)	-	-	-	-
	SULPHATE SULPHUR	(%)	0.43	0.28	0.30	0.25
	PYRITIC SULPHUR	(%)	1.79	1.41	2.13	2.60
	ORGANIC SULPHUR	(%)	1.62	3.83	4.42	4.08
DRY BASIS	TOTAL SULPHUR	(%)	-	-	-	-
	SULPHATE SULPHUR	(%)	-	-	-	-
	PYRITIC SULPHUR	(%)	-	-	-	-
	ORGANIC SULPHUR	(%)	-	-	-	-

Remark : The results relate only to the sample(S) tested. This document shall no be reproduced except in full.
* Organic= Total Sulphur - (Sulphate + Pyritic)

９．改質コスト試算

改質コスト試算

	米国ベース	タイ国ベース	タイ国ベース
原料処理量 (t/D)	5,000	3,226	1,613
(1000 t/Y)	1,550	1,000	500
操業日数 (D/Y)	310	310	310
固体製品収率	50 %	50 %	50 %
液体製品収率	10 %	10 %	10 %
プラント償却	10年	10年	10年
金利	5 %	5 %	5 %

		米国ベース		Scale Facter 0.736	タイ国換算係数 0.7	Scale Factor 0.453	タイ国換算係数 0.7
		M. $	M. Baht	M. Baht	M. Baht	M. Baht	M. Baht
資本コスト							
	設備費	125	5,625	4,146	2,902	2,548	1,784
	金利	37	1,665	1,227	859	754	528
	計	162	7,290	5,373	3,761	3,302	2,312
年間コスト		16.2	729	537	376	330	231
運転コスト		5	225	166	116	102	71
総処理コスト	合計	21.2	954	703	492	432	303

液体製品控除

	液体製品量	0.155	M.t	0.100	M.t	0.050	M.t
	単価 : (16$/BLL)	100	$/t	4,500	B/t	4,500	B/t
	総額	15.5	M.$/y	450	M.B/y	225	M.B/y
控除後の総処理コスト		5.7	M.$/y	42	M.B/y	78	M.B/y
	固体製品量	0.775	M.t	0.500	M.t	0.250	M.t
控除後の製品トン当たり処理コスト		7.4	$/t	84	B/t	310	B/t

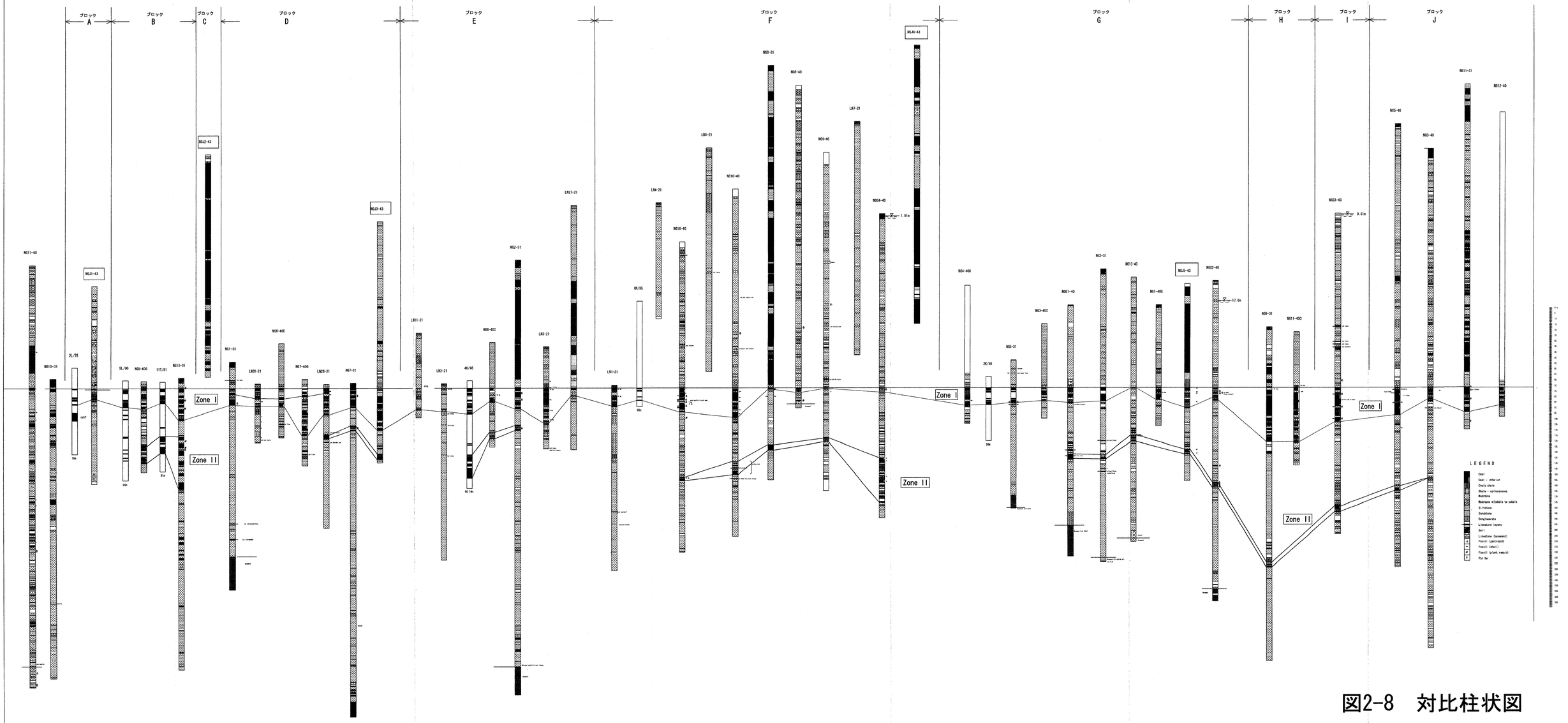

ブロック A
ブロック B
ブロック C
ブロック D
ブロック E
ブロック F
ブロック G
ブロック H
ブロック I
ブロック J
NG11-40
NG10-31
NG21-43
ZL/78
coal?
NG5-40G
SL/90
NG13-31
117/81
NG12-43
NG1-31
LN29-21
NG6-40G
NG7-40G
LN26-21
NG7-31
NG23-43
LN11-21
LN2-21
BK/95
LN4-21
LN1-21
NG16-40
LN5-21
NG8-40C
NG2-31
LN3-21
LN27-21
NG8-21
NG10-40
NG9-40
LN7-21
NG44-43
NG64-40
1.91m
NG4-40C
2K/58
NG5-31
NG63-40C
NG61-40
NG3-31
NG13-40
NG1-40G
NG35-43
NG12-40
17.8m
NG33-31
NG11-40C
NG23-40
0.91m
NG5-40
NG3-40
NG11-31
NG12-40
Zone I
Zone II
LEGEND
Coal
Coal - inferior
Clayey shale
Shale - carbonaceous
Mudstone
Mudstone w/pebble to cobble
Siltstone
Sandstone
Conglomerate
Limestone layers
Dolt
Limestone (basement)
Fossil (gastropod)
Fossil (shell)
Fossil (plant remains)
Pyrite

図2-8　対比柱状図