2.5 Coal Resources and Reserves

Estimation of coal resources depends on a category of the resources. Table 2-3 shows a classification system made by United Nation, "United Nation International Framework Classification for Reserves / Resources - Solid Fuels and Mineral commodities". DMR follows basically the classification.

Table 2-3 UN International Framework Classification for Reserves/Resources Solid Fuels and Mineral Commodities

<table>
<tr><td>UN International Framework</td><td>Detailed Exploration</td><td>General Exploration</td><td>Prospecting</td><td>Reconnaissance</td></tr>
<tr><td rowspan="2">Feasibility Study and/or Mining Report</td><td>Proved Mineral Reserve(111)</td><td rowspan="2">Usually</td><td rowspan="4" colspan="2">Not Relevant</td></tr>
<tr><td>Feasibility Mineral Reserve(211)</td></tr>
<tr><td rowspan="2">Pre-feasibility Study</td><td colspan="2">Probable Mineral Reserve (121) (122)</td></tr>
<tr><td colspan="2">Pre-feasibility Mineral Resource (221) (222)</td></tr>
<tr><td>Geological Study</td><td>Measured Mineral Resource (331)</td><td>Indicated Mineral Resource (332)</td><td>Inferred Mineral Resource (333)</td><td>Reconnaissance Resource (334)</td></tr>
</table>

"Coal Resources", estimated at the present exploration, is classified as "Measured Mineral Resources (331)" and "Indicated Mineral Resources (332)". "Coal Reserves for Mining" comes under "Pre-feasibility Mineral Resources (221) (222)".

2.5.1 Coal Resources

This quantity shows the magnitude of coal potential in the exploration area. The estimation was made basically in accordance with the DMR's standard. The following are the criteria adopted for coal resources estimation in the present study.

- Mining coal thickness: ≥ 20cm
- Specific gravity: 1.50 (estimated from results of Float – Sink Test)
- Area: divided by Polygon method
- Area by geologic assurance

  Measured area: Radius≤ 200m from observation point

  Indicated area: Between the radius of 200m and 400m

  Demonstrated area = Measured area + Indicated area

Coal Resources = Area x accumulated coal thickness of each borehole ×Specific gravity (1.50)

The calculation result is summarized in Table 2-4. Figure 2-10 shows the influence area of individual boreholes. The quantity by elevations is considered in the coal reserves for mining.

2.5.2 Coal Reserves for Mining

Coal Reserves for Mining were estimated with a geologic structure contour map of the bottom of mining sections and an isopach map of accumulated coal thickness of the individual coal sections. Figure 2-8 shows a structure contour map of the bottom of mining sections (Zone I). Figure 2-11 shows isothickness map of mining section and Figure 2-12 shows isothickness map of accumulated coal thickness in the mining section.

The following are the criteria adopted for coal reserves estimation.

Table 2-4 Coal Resources

S.G.= 1.50

	Total coal thickness	Measured		Indicated		Demonstrated
		Area(1,000m2)	(1,000t)	Total (1,000m2)	(1,000t)	(1,000t)
NG11/40	11.46	125.6	2,159.1	315.4	5,421.7	7,580.8
NG10/31	10.85	125.6	2,044.1	315.4	5,133.1	7,177.2
NGJ1/43	2.69	125.6	506.8	303.9	1,226.2	1,733.0
NG1/31	7.60	90.8	1,035.1	156.9	1,788.7	2,823.8
NG5/40G	13.24	83.0	1,648.4	31.4	623.6	2,272.0
LN28/21	6.68	71.7	718.4	56.7	568.2	1,286.6
NG13/31	41.17	124.5	7,688.5	213.0	13,153.8	20,842.3
NG6/40G	3.05	86.6	396.2	29.2	133.6	529.8
NG7/40G	13.99	98.5	2,067.0	102.6	2,153.1	4,220.1
LN26/21	11.11	64.8	1,079.9	25.7	428.3	1,508.2
NG7/31	12.31	75.4	1,392.3	90.4	1,669.2	3,061.5
LN11/21	0.93	99.3	138.5	46.4	64.7	203.2
LN2/21	0.30	90.3	40.6	81.6	36.7	77.3
NGJ3/43	18.07	125.6	3,404.4	200.2	5,426.4	8,830.8
NG2/31	14.31	98.3	2,110.0	70.4	1,511.1	3,621.1
NG8/40C	4.58	64.4	442.4	2.6	17.9	460.3
LN1/21	6.00	114.9	1,034.1	194.7	1,752.3	2,786.4
LN3/21	15.09	81.0	1,833.4	38.6	873.7	2,707.1
LN27/21	2.11	125.6	397.5	241.6	764.7	1,162.2
NG16/40	12.97	125.7	2,445.5	216.7	4,215.9	6,661.4
NG10/40	9.95	125.5	1,873.1	219.6	3,277.5	5,150.6
NG8/31	5.20	125.5	978.9	267.2	2,084.2	3,063.1
NG8/40	0.24	125.6	45.2	376.8	135.6	180.8
NG9/40	0.80	125.6	150.7	371.5	445.8	596.5
NGG4/40	8.55	112.4	1,441.5	235.8	3,024.1	4,465.6
NG5/31	4.05	122.7	745.4	239.9	1,457.4	2,202.8
NG4/40C	8.35	109.7	1,374.0	52.6	658.8	2,032.8
NG3/40C	3.48	93.4	487.5	21.0	109.6	597.1
NGG1/40	8.45	92.1	1,167.4	58.0	735.2	1,902.6
NG3/31	9.12	122.9	1,681.3	140.4	1,920.7	3,602.0
NGJ5/43	7.46	93.0	1,040.7	40.4	452.1	1,492.8
NG13/40	1.72	107.9	278.4	172.6	445.3	723.7
NG1/40G	3.72	69.0	385.0	0.9	5.0	390.0
NGG2/40	2.05	88.6	272.4	57.4	176.5	448.9
NG9/31	39.37	56.9	3,360.2	42.6	2,515.7	5,875.9
NG11/40C	25.67	64.6	2,487.4	87.2	3,357.6	5,845.0
NGG3/40	19.68	120.5	3,557.2	195.6	5,774.1	9,331.3
NG5/40	19.92	125.6	3,752.9	307.4	9,185.1	12,938.0
NG3/40	3.23	125.6	608.5	337.7	1,636.2	2,244.7
NG11/31	12.31	106.2	1,961.0	232.2	4,287.6	6,248.6
NG12/40	6.17	106.2	982.9	232.2	2,149.0	3,131.9
Total		4,216.7	61,213.8	6,422.4	90,796.0	152,009.8

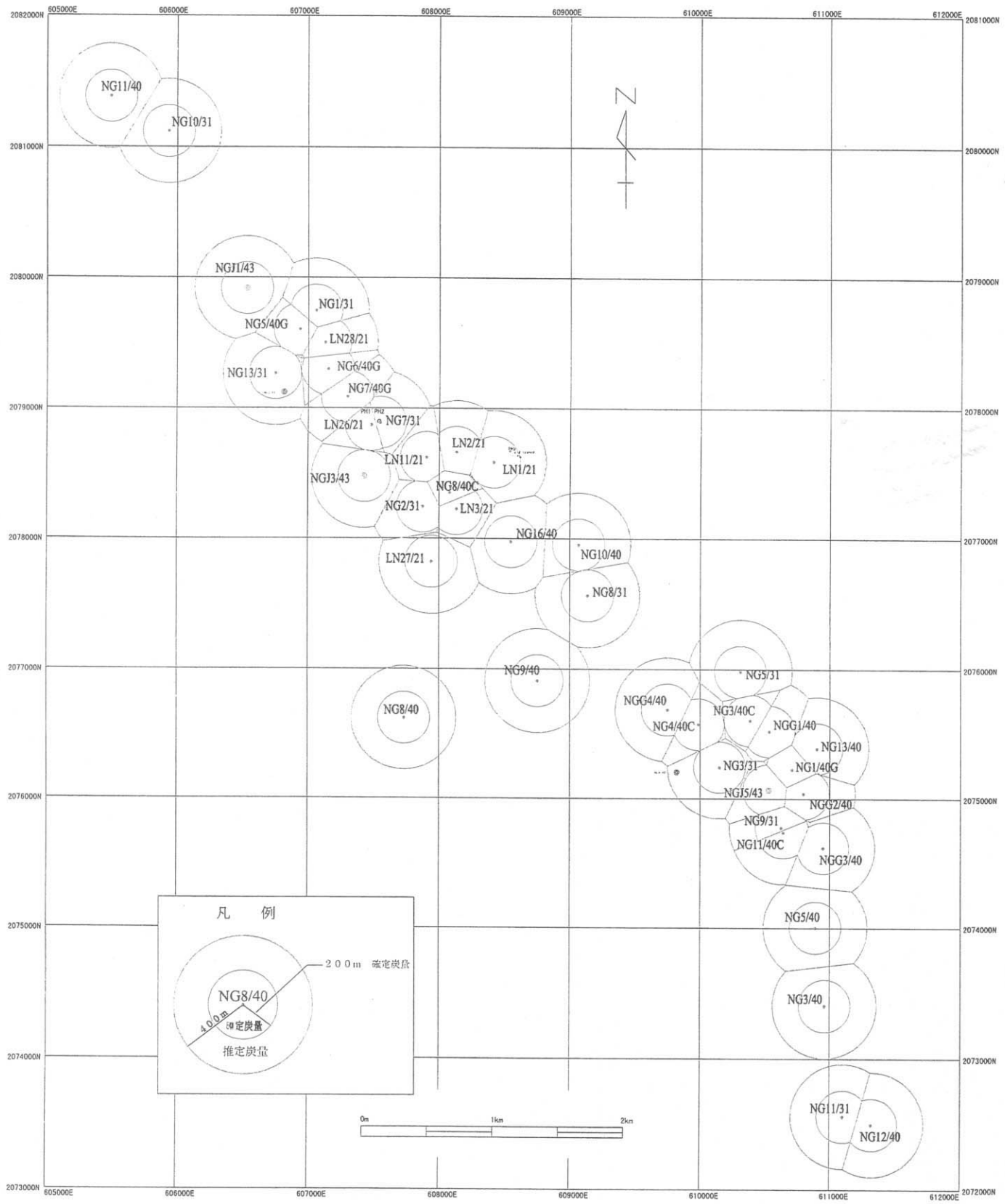

Figure 2-10　Calculation Map of Coal Resources

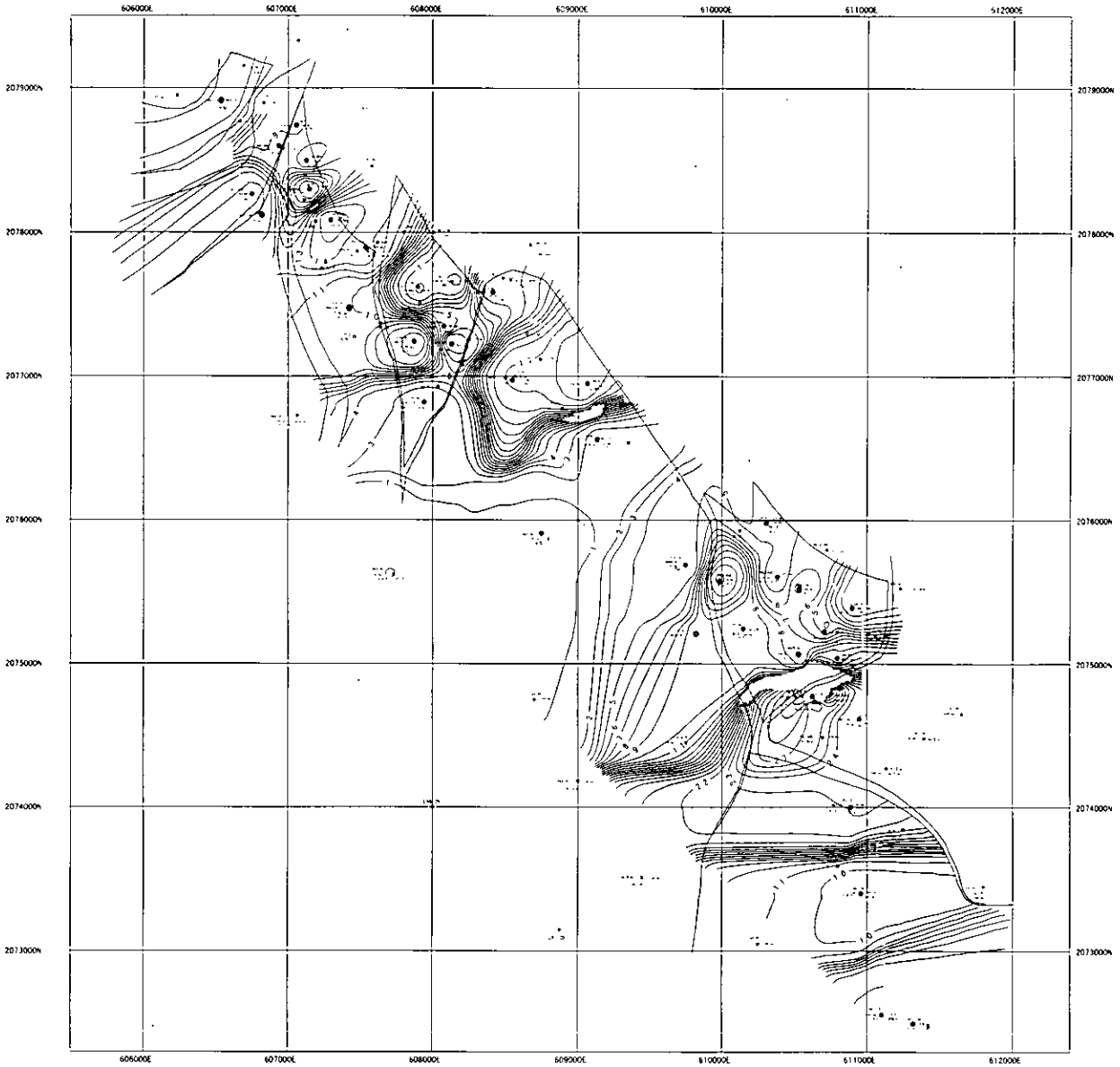

Figure2-11 Iso-thickness Contour Map in Mining Section

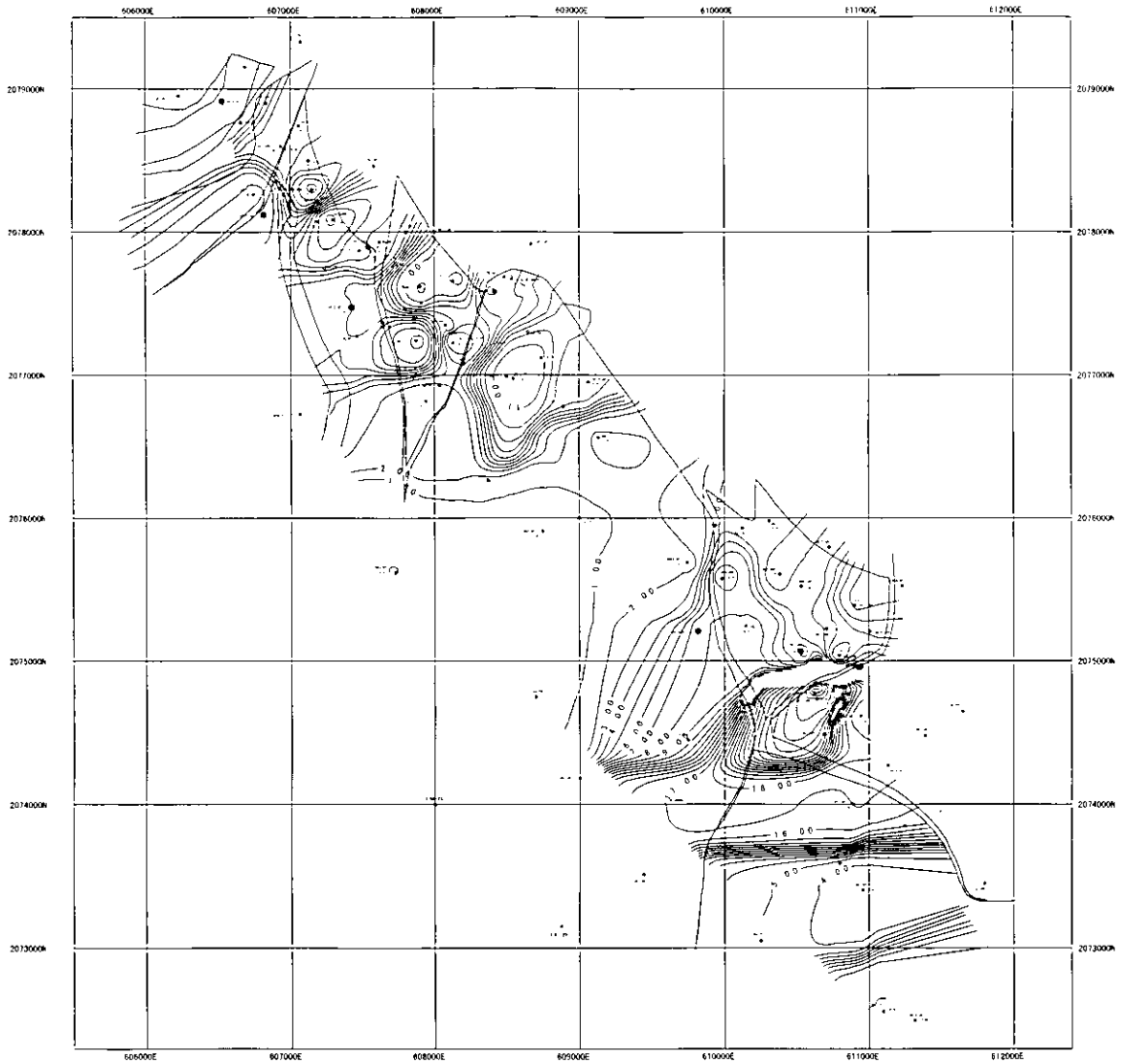

Figure2-12 Iso-thickness Contour Map on Accumulated Coal Thickness in Mining Section

- Reserves for open pit mining are calculated down to the depth of 250m from the surface. The surface elevation in the potential area is 300m above sea level, so that the depth 250m means 50m above sea level
- Coal seam in Zone I, having 30cm or more in thickness, are the target part for mining.
- Specific gravity: 1.50 (estimated from results of Float – Sink Test)
- Coal thickness: the average thickness between the two neighboring isopach lines.(for example: average coal thickness is 3m in a area between 2m and 4m lines)
- Area: each area was divided with the line of 50m-vertical-interval and isopach lines at 2m-interval of accumulated coal thickness in the mining section.

Coal Reserves = Area × Coal thickness × Specific gravity (1.50)

Reserves calculation map is shown in Figure 2-13. Summary of the reserves is shown in Table 2-5.

Table 2－5 **Coal Reserves for Mining**

(MSL)	Area ($1000m^2$)	Average coal thickness(m)	S.G	Tonnage (1,000t)
～＋250m	1,499. 3	6. 2	1.50	13,992
＋250m～＋200m	1,326. 2	6. 8	1.50	13,400
＋200m～＋150m	1,910. 7	7. 2	1.50	23,156
＋150m～＋100m	1,554. 7	7. 1	1.50	13,904
＋100m～＋50m	2,627. 9	3. 3	1.50	13,013
Total	8,918. 8	5. 8	1.50	77,465

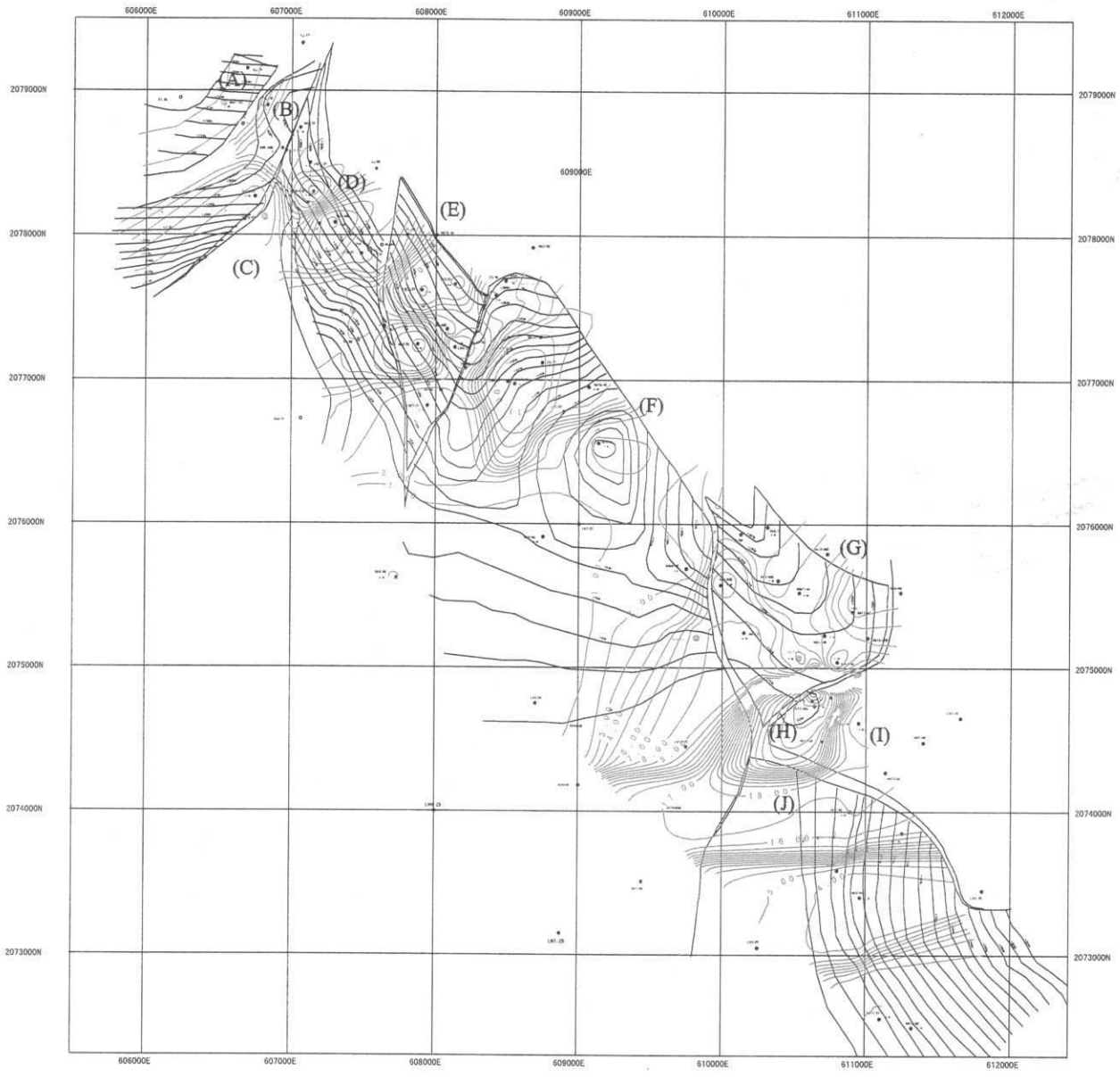

Figure2-13　Calculation Map on Coal Reserves for Mining

3. Coal Quality

3.1 Tests on Bulk Sample

3.1.1 Crushing and Screening

Coal in the bulk sample was crushed to smaller pieces than 100 mm by the use of a Jaw Crusher. After weighing the whole sample, it was screened with the size of 50 mm, 25 mm, 10 mm, 3 mm and 0.5 mm.

The channel sample taken from the face of the trench was crushed to less than 25 mm.

The procedure of crushing, screening and float-sink test on the bulk sample and the laboratories are seen in Ph-7, 8.

3.1.2 Float-Sink Test

Float-sink test was conducted on the channel sample at the specific gravity of 1.3, 1.35, 1.40, 1.45, 1.50, 1.55, 1.60, 1.70 and 1.80.

Regarding the bulk sample, about 20 kg of samples were taken from each screened product of +50 mm, 25-50 mm, 10-25 mm, 3-10 mm and 5 kg from 0.5-3 mm after reduction with dividing apparatus. Those samples are provided for float-sink test in Thailand. The screened sample smaller than 0.5 mm was brought to Japan because there is no equipment of float-sink test on such fine coal in Thailand.

The following specific gravity was used for separation in float-sink test based on the result of the preparatory test; 1.30, 1.35, 1.40, 1.50, 1.60, 1.70 and 1.80. The results of float-sink test of each screened sizes are seen in Ph-9.

3.1.3 Analysis of Coal Quality

Ash and total sulfur was analyzed on each product of float and sink test.

Twenty-nine (29) samples from the product of 25-50mm in size and under 1.3 in specific gravity were sent to the laboratory at EGAT's Mae Moh mine. They were analyzed on forms of sulfur.

3.2 Coal Analysis and Tests on Drill Core Samples

Analysis and tests of coal sample from boreholes were conducted at the laboratories of Lanna Lignite Public Company and EGAT depending on the analytical items.

3.2.1 Preparation of Sample

(1) Main Coal Beds

Six samples (PH3, N1-3, N3-4, N3-6, N5-1, N5-13) were sent to the laboratory of Lanna Lignite Company at Li and crushed to smaller than one inches. The three quarters of each sample were used for float-sink test at Lanna's laboratory and the remains were sent to Mae Moh's laboratory of EGAT for various quality analyses.

(2) Other Coal Beds

Other coal samples from the boreholes were sent EGAT for various quality analyses except float-sink test.

3.2.2 Analysis and Tests

(1) Main Coal Beds

After screening with the mesh of 10 mm and 0.5 mm, products of 0.5-1 0mm and +10 mm were used for float-sink test. Separation density used in the test was 1.35, 1.40, 1.50, 1.60 and 1.80, taking account of the test result of bulk sample.

Each portion separated by density and products of under 0.5 mm were analyzed on total sulfur content at Lanna's laboratory and then, 25g each of them were sent to EGAT's laboratory for coal quality analyses. Analytical items were proximate analysis, calorific value, ultimate analysis, ash analysis, hardgrove grindability index (HGI) and forms of sulfur.

A part of the results of coal analysis and tests conducted in EGAT's laboratory were shown on Table 3-2.

(2) Other Coal Beds

The following analyses were conducted by EGAT; proximate analysis, calorific value, ultimate analysis, ash analysis, forms of sulfur and specific gravity.

The result is shown also on table 3-2.

3.3 Coal Quality

The quality of Ngao coal is variable place by place. There are two main causes; (1) Peat deposition might be occurred in each sub-basin separately. (2) Those peat swamps were presumed as "planar peat" (Cecil, et al, 1985).

Coal analytical data from twenty-one (21) boreholes are available for this study, although 113 boreholes including five holes done during this exploration period have been conducted in Ngao Coal basin. The numbers of data (21 holes) is sparse

for this large area. A preconception about Ngao coal as very high sulfur contents was so intense. There was no chemical analysis data on the form of sulfur in Ngao basin.

The previous coal analysis data and the analysis result this time are shown in Table 3-1 and Table 3-2 respectively. Iso-value map on ash content, calorific value and total sulfur content on dry basis are illustrated in Figure 3-1 to Figure 3-3. Coal quality in Ngao area is outlined based on the coal analysis data taken from 21 boreholes in this chapter.

As mentioned before, two coal zones (Zone I and Zone II) are recognized in Ngao area. There is not much difference in the proximate analysis between Zone I and Zone II as shown in Table 3-3. The following descriptions are about Zone I, because the mining plan was carried out on Zone I.

3.3.1 Moisture

The moisture content on as received basis (total moisture) is 20% to 34% and its average is 30%. The moisture content on air-dried basis (inherent moisture) is reported about 20%, two thirds of the total moisture. This means that one thirds of the total moisture of Ngao coal is surface moisture. Removing surface moisture is one of the effective quality upgrade technologies.

3.3.2 Ash

According to the iso-value contour map of ash on dry basis (Figure 3-1), the weighed average of ash content in the whole Ngao area is calculated as 44.8%. This is converted into 31.4% on as received basis and 35.4% on air-dried basis.

Table 3-1　Previous data on Coal Quality

	From	To	Thickness (m)	Moisture (ar) %	Ash (ar) %	V.M. (ar) %	F.C. (ar) %	H.V. (ar) kcal/kg	S (ar) %	SG
NG 16/40	131.55	132.55	1.00	27.61	28.12	29.01	15.26	2,473	5.29	1.476
	132.55	133.55	1.00	25.98	28.21	31.08	14.73	2,499	6.29	1.452
	133.55	134.55	1.00	26.97	23.88	32.49	16.66	2,445	7.99	1.534
	134.55	136.00	1.45	23.86	40.21	31.80	4.13	2,077	6.57	1.522
	136.00	136.80	0.80	26.64	35.12	28.29	9.95	1,830	7.02	1.554
	136.80	137.80	1.00	31.04	23.35	30.10	15.51	2,685	5.39	1.466
	137.80	138.40	0.60	27.57	30.97	33.16	8.30	2,491	5.72	1.302
	138.75	139.65	0.90	31.79	22.74	29.29	16.18	2,772	4.29	1.303
	141.15	141.95	0.80	29.48	26.27	31.88	12.37	2,270	6.54	1.301
	145.00	146.00	1.00	28.89	30.96	27.84	12.31	2,211	5.04	1.367
	146.00	146.30	0.30	26.56	39.68	25.42	8.34	1,553	5.06	1.476
	147.35	147.65	0.30	31.51	26.51	28.58	13.40	2,462	4.80	1.321
	148.05	148.40	0.35	31.59	22.67	29.87	15.87	2,525	5.12	1.278
	149.05	150.00	0.95	26.32	34.23	28.15	11.30	2,027	5.68	1.448
	150.40	150.80	0.40	26.83	34.64	28.28	10.25	2,118	5.24	1.485
	152.55	153.00	0.45	23.74	33.30	31.06	11.90	1,946	8.81	1.608
	211.35	212.00	0.65	33.43	24.06	29.33	13.18	2,627	4.44	1.402
	213.40	213.85	0.45	27.40	33.99	28.15	10.46	2,008	5.48	1.504
NG 3/40	216.90	217.20	0.30	20.33	38.76	31.95	8.96	1,577	8.11	1.747
	217.30	217.74	0.44	18.37	45.82	33.17	2.64	1,576	8.35	1.702
	218.65	218.95	0.30	27.02	33.24	30.81	8.93	1,952	5.51	1.529
	220.55	220.95	0.40	26.94	31.54	32.92	8.60	1,975	6.40	1.459
	222.27	222.60	0.33	25.54	32.63	31.46	10.37	2,198	4.74	1.456
	225.70	226.00	0.30	21.32	43.06	31.96	3.66	1,734	7.39	1.611
NG 4/40	236.76	237.30	0.54	20.70	41.34	29.84	8.12	1,815	4.09	1.565
	239.17	240.17	1.00	20.81	33.38	31.98	13.83	2,212	4.34	1.511
	240.17	241.05	0.88	32.10	17.14	31.00	19.76	3,207	2.97	1.336
	242.60	243.60	1.00	28.60	27.96	28.66	14.78	2,485	2.94	1.447
	243.60	243.97	0.37	24.00	36.96	28.24	10.80	2,057	6.18	1.571
	244.00	245.00	1.00	22.23	42.88	27.52	7.37	1,763	4.08	1.620
	245.00	246.00	1.00	22.85	34.75	29.99	12.41	2,155	5.53	1.551
	246.00	247.00	1.00	28.86	26.99	29.04	15.11	2,784	2.60	1.437
	247.00	248.00	1.00	31.48	19.25	29.67	19.60	3,118	2.41	1.363
	248.00	248.30	0.30	22.59	52.87	18.96	5.58	1,180	1.36	1.723
	248.58	249.58	1.00	23.97	37.59	28.27	10.17	1,886	5.21	1.565
	249.58	249.95	0.37	26.04	27.93	31.66	14.37	2,632	4.46	1.419
	251.00	252.00	1.00	22.05	42.25	26.48	9.22	1,878	2.97	1.630
	253.86	254.26	0.40	21.19	48.19	23.29	7.33	1,606	2.29	1.719
	254.47	255.50	1.03	24.74	29.78	31.62	13.86	2,494	3.93	1.492
	256.19	257.19	1.00	21.44	38.19	30.42	9.95	1,967	5.24	1.561
	258.95	259.76	0.81	26.18	28.92	31.11	13.79	2,390	5.11	1.471
	260.00	260.75	0.75	22.37	43.09	26.92	7.62	1,846	3.86	1.682
	261.07	262.58	1.51	24.83	32.92	29.27	12.98	1,330	5.01	1.614
	327.08	328.08	1.00	22.32	37.27	30.25	10.16	2,303	4.01	1.567
	328.08	329.08	1.00	21.22	36.29	31.07	11.42	2,393	4.71	1.531
	329.08	329.73	0.65	20.04	50.14	22.74	7.08	1,464	3.11	1.710
NG 10/40	179.75	180.15	0.40	9.62	41.29	34.33	14.76	2,502	11.45	1.921
	180.15	181.15	1.00	12.98	50.98	35.51	0.53	2,105	8.11	1.740
	181.15	181.55	0.40	14.47	26.60	35.97	22.96	3,358	4.84	1.516
	182.85	183.15	0.30	10.48	49.71	31.89	7.92	2,294	5.02	1.752
	184.50	185.00	0.50	16.71	40.88	32.64	9.77	2,384	6.60	1.558
	185.90	186.35	0.45	16.70	36.59	33.93	12.78	2,296	8.76	1.539
	186.60	187.15	0.55	27.98	22.39	32.27	17.36	2,887	6.56	1.382
	187.40	188.00	0.60	26.18	26.98	32.02	14.82	2,621	6.23	1.415
	189.90	190.30	0.40	26.31	29.69	30.63	13.37	2,371	6.21	1.377
	192.00	192.50	0.50	27.52	29.80	30.36	12.32	2,457	7.16	1.381
	193.90	194.30	0.40	19.54	30.08	34.58	15.80	2,333	10.56	1.472
	195.35	196.40	1.05	22.56	28.93	32.26	16.25	2,445	7.75	1.418
	197.50	198.20	0.70	25.69	27.71	33.75	12.85	2,898	5.42	1.357
	200.75	201.40	0.65	32.04	22.43	28.77	16.76	2,603	5.17	1.314
NG 12/40	247.15	248.15	1.00	23.68	36.92	27.84	11.56	2,201	5.16	1.602
	248.15	249.15	1.00	26.03	33.07	26.85	14.05	2,297	4.53	1.545
	249.15	250.20	1.05	20.66	42.44	25.50	11.40	2,040	3.62	1.608
	251.70	252.10	0.40	17.86	38.36	29.53	14.25	2,600	2.60	1.602
	255.30	255.65	0.35	8.65	54.78	26.22	10.35	2,029	4.29	1.918
	256.05	257.00	0.95	8.04	54.16	26.93	10.87	2,155	2.79	1.932
	260.40	261.40	1.00	16.30	44.86	28.74	10.10	2,128	4.28	1.721
	262.72	263.40	0.68	20.40	39.93	26.79	12.88	2,116	4.42	1.597
NGG 1/40	74.30	75.15	0.85	21.98	33.08	33.29	11.65	2,050	8.04	1.525
	75.40	76.25	0.85	28.41	22.07	31.99	17.53	2,638	5.48	1.449
	77.00	78.00	1.00	29.48	22.23	31.30	16.99	2,665	5.66	1.381
	79.95	80.00	0.05	29.91	25.68	29.76	14.65	2,424	4.42	1.443
	81.35	81.85	0.50	27.73	27.05	30.97	14.25	2,530	3.46	1.436
	82.60	83.35	0.75	26.66	26.80	31.41	15.13	2,481	4.59	1.414
	134.30	135.70	1.40	27.48	27.60	29.50	15.42	2,513	3.36	1.459
	134.30	135.70	1.40	24.92	28.40	30.44	16.24	2,563	3.32	1.482
	135.90	136.85	0.95	19.26	36.99	37.83	5.92	2,358	8.00	1.473
	137.15	138.35	1.20	23.88	28.74	30.82	16.56	2,545	3.82	1.427
NGG 2/40	96.80	97.20	0.40	27.03	26.95	33.79	12.23	2,152	7.84	1.464
	100.80	101.35	0.55	26.93	25.00	34.53	13.54	2,189	9.19	1.488
	104.75	105.20	0.45	24.57	34.26	30.54	10.63	2,127	5.20	1.570
	181.30	181.70	0.40	25.42	30.37	33.39	10.82	2,549	6.19	1.460
NGG 3/40	156.60	157.10	0.50	21.39	34.88	31.47	12.26	2,058	7.11	1.558
	157.55	158.32	0.77	23.96	35.18	30.34	10.52	2,144	3.59	1.480
	160.90	161.90	1.00	29.87	27.34	29.27	13.52	2,624	2.25	1.388
	161.90	162.20	0.30	31.91	16.42	30.78	20.89	3,261	2.28	1.326
	162.20	162.95	0.75	33.10	11.75	30.97	24.18	3,533	2.04	1.353
	162.95	164.95	2.00	30.96	27.40	28.56	13.08	2,545	2.46	1.454
	164.95	165.95	1.00	29.97	26.45	28.76	14.82	2,616	2.68	1.460
	165.95	166.95	1.00	29.24	25.67	29.07	16.02	2,758	3.21	1.446
	166.95	167.95	1.00	25.96	34.16	28.66	11.22	2,248	3.86	1.583
	167.95	168.95	1.00	22.58	37.49	30.36	9.57	1,842	6.79	1.656
	168.95	169.95	1.00	29.38	22.78	31.07	16.77	2,916	3.50	1.413
	169.95	170.70	0.75	32.67	18.42	29.78	19.13	3,073	1.99	1.396
	171.30	172.30	1.00	23.35	39.36	29.33	7.96	1,711	6.06	1.669
	172.30	172.80	0.50	28.06	26.03	31.97	13.94	2,324	5.30	1.513
	172.95	173.25	0.30	25.58	20.89	34.21	19.32	2,772	7.15	1.413
	175.27	175.75	0.48	27.36	37.96	24.51	10.17	1,763	1.53	1.590
	176.63	177.70	1.07	26.12	35.96	28.23	9.69	1,956	4.37	1.600
	178.90	179.60	0.70	24.14	27.36	32.91	15.59	2,831	4.24	1.470
	180.00	180.90	0.90	20.45	32.91	34.99	11.65	2,338	7.02	1.500
	262.90	263.70	0.80	22.63	27.76	35.11	14.50	2,848	5.77	1.399
	263.80	264.85	1.05	23.25	33.75	30.54	12.46	2,524	4.28	1.491
NGG 4/40	156.30	157.25	0.95	23.81	28.35	31.99	15.85	2,568	6.68	1.868
	158.35	158.80	0.45	22.36	37.24	35.70	4.70	2,261	5.62	1.818
	160.00	160.40	0.40	30.04	18.45	30.89	20.62	3,266	4.05	1.970
	219.55	222.05	2.50	18.94	37.93	31.29	11.84	2,181	6.23	2.140
	223.25	223.95	0.70	22.30	31.84	34.96	10.90	2,380	5.90	1.526

	From	To	Thickness (m)	Moisture (ar) %	Ash (ar) %	V.M. (ar) %	F.C. (ar) %	H.V. (ar) kcal/kg	S (ar) %	SG*
LN 1/21	3.71	4.36	0.65	36.80	25.20	25.60	12.40	2,035	2.59	1.41
	5.18	5.60	0.42	34.90	24.40	27.10	13.60	2,428	2.51	1.40
	9.57	10.10	0.53	34.20	33.20	24.00	8.60	1,721	1.31	1.52
	10.69	10.98	0.29	40.60	19.70	25.10	14.60	2,427	2.60	1.34
	11.88	13.18	1.30	33.40	27.00	25.20	14.40	2,214	3.54	1.44
	15.04	15.59	0.55	29.60	29.80	28.40	12.20	2,337	2.49	1.48
	16.09	16.24	0.15	29.60	39.00	22.70	8.70	1,596	1.47	1.60
	17.59	19.09	1.50	33.10	34.60	24.00	8.30	1,961	1.99	1.54
LN 3/21	36.97	37.50	0.53	35.50	31.10	23.30	10.20	1,881	1.31	1.49
	37.50	38.00	0.50	35.10	31.30	25.10	8.50	1,885	1.51	1.49
	38.00	38.50	0.50	44.10	17.00	26.30	12.60	2,114	2.84	1.31
	38.50	39.00	0.50	43.70	15.90	26.40	14.00	2,396	2.33	1.29
	39.00	39.50	0.50	42.10	14.30	27.30	15.80	2,651	2.55	1.27
	39.50	39.94	0.44	40.90	17.10	28.50	13.50	2,596	2.76	1.31
	41.00	41.50	0.50	36.90	29.70	25.60	7.80	2,033	1.55	1.47
	41.50	42.00	0.50	38.40	23.70	27.00	10.90	2,624	1.97	1.39
	42.00	42.50	0.50	38.00	26.40	26.20	9.40	2,047	1.89	1.43
	42.50	43.00	0.50	41.90	18.40	27.10	12.60	2,268	3.00	1.32
	43.00	43.50	0.50	41.00	25.30	25.70	8.00	1,924	1.76	1.42
	43.50	44.00	0.50	43.40	22.70	23.30	10.60	2,007	1.46	1.38
	44.00	44.58	0.58	38.60	27.90	25.30	8.20	2,020	1.86	1.45
	45.42	45.67	0.25	37.50	28.60	24.60	9.30	2,071	1.43	1.46
	46.00	46.75	0.75	37.50	30.90	27.50	4.10	1,927	1.84	1.49
	47.00	47.52	0.52	43.60	20.50	25.00	10.90	2,313	1.86	1.35
	47.67	48.00	0.33	44.60	18.20	23.60	13.90	2,319	1.77	1.32
	48.00	48.50	0.50	44.70	17.10	25.50	12.70	2,346	2.57	1.31
	48.50	49.15	0.65	43.90	24.00	24.70	11.00	2,348	2.43	1.40
	49.55	50.15	0.60	44.20	19.60	25.30	10.90	2,267	2.00	1.34
	50.80	51.18	0.38	43.60	18.70	25.10	12.60	2,221	1.86	1.33
	51.56	52.00	0.44	34.40	35.90	22.20	7.50	1,425	2.48	1.56
	56.06	57.00	0.94	37.60	27.20	25.20	10.00	2,064	1.16	1.44
	57.00	57.29	0.29	34.00	33.40	23.30	9.30	1,683	1.59	1.52
	57.60	58.02	0.42	32.80	35.00	23.90	8.30	1,611	2.40	1.54
	58.39	58.93	0.54	34.80	35.60	23.30	6.30	1,568	1.66	1.55
	60.03	60.40	0.37	35.60	25.40	26.50	12.50	2,084	1.94	1.42
	62.20	62.75	0.55	43.60	19.30	24.60	12.50	2,185	2.43	1.34
	63.83	64.01	0.18	39.60	25.60	28.00	6.80	2,148	2.29	1.42
	66.42	67.27	0.85	36.40	30.20	26.00	7.40	1,973	1.35	1.48
	68.18	68.59	0.41	40.00	23.80	23.50	12.70	2,158	1.09	1.40
	68.50	70.03	1.53	38.30	25.10	26.30	10.30	1,977	1.48	1.41
	70.03	70.26	0.23	36.20	25.00	24.90	13.90	2,278	1.78	1.41
	75.00	76.68	1.68	32.50	31.60	23.30	12.60	2,106	2.00	1.50
LN 11/21	52.78	53.26	0.48	32.80	27.40	27.60	12.20	2,080	1.82	1.44
	56.53	56.98	0.45	27.60	27.50	28.60	16.30	2,310	6.14	1.44
	68.76	69.20	0.44	30.00	35.60	24.01	10.30	1,945	1.70	1.55
LN 26/21	3.71	4.66	0.95	30.80	28.60	28.00	12.60	2,316	1.62	1.46
	4.76	5.06	0.30	30.30	23.40	31.90	14.40	2,580	4.08	1.39
	5.63	6.29	0.66	31.70	26.80	30.50	11.00	2,497	2.20	1.44
	6.93	7.99	1.06	40.20	30.90	23.30	5.60	1,548	2.37	1.49
	8.14	8.51	0.37	30.30	28.30	28.20	13.20	2,301	2.65	1.46
	10.75	11.05	0.30	31.50	30.00	27.70	10.80	2,039	1.58	1.48
	12.41	12.71	0.30	28.20	36.80	27.80	7.20	1,826	1.79	1.57
	24.02	24.62	0.60	30.00	28.00	30.10	11.90	2,410	1.86	1.45
	46.11	48.23	2.12	32.70	24.30	29.50	13.50	2,446	3.13	1.40
	48.37	49.03	0.66	28.70	28.40	33.40	9.50	2,542	4.67	1.46
LN 27/21	164.10	165.61	1.51	18.30	53.70	20.10	7.90	1,212	3.86	1.79
	170.81	171.41	0.60	24.10	49.90	21.80	4.20	1,324	2.43	1.74
LN 28/21	3.96	4.82	0.86	39.30	21.70	28.30	10.70	2,455	2.57	1.37
	5.22	6.85	1.63	37.30	20.80	26.30	15.60	2,566	2.88	1.36
	7.01	7.90	0.89	29.60	29.80	30.80	9.80	2,457	2.38	1.48
	8.53	9.53	1.00	24.90	30.50	30.30	14.30	2,653	2.70	1.48
	10.53	12.28	1.75	35.70	24.10	27.60	12.60	2,541	2.83	1.40
	13.05	13.19	0.14	37.00	20.00	28.80	14.20	2,660	4.14	1.35
	17.47	18.28	0.81	32.40	27.40	25.70	14.50	2,408	3.46	1.44
	19.47	20.07	0.60	33.40	30.30	26.30	10.00	2,111	2.09	1.48
NG 3/31	106.63	106.75	0.12	9.42	51.24	27.17	12.17	1,715	4.77	1.76
	107.60	107.70	0.10	9.27	53.70	26.71	10.32	2,082	2.93	1.79
	109.40	109.50	0.10	5.29	69.06	23.97	1.68	1,292	4.03	1.99
	112.50	112.60	0.10	10.30	62.16	20.54	7.00	1,405	2.63	1.90
	113.50	113.60	0.10	11.95	57.84	22.12	8.09	1,464	3.30	1.85
	114.50	114.60	0.10	14.31	36.52	32.10	17.07	2,647	7.37	1.56
	115.50	115.60	0.10	16.19	32.28	37.07	14.46	3,033	5.94	1.51
	116.85	116.95	0.10	23.35	31.61	32.55	12.49	2,979	4.11	1.50
	117.50	117.60	0.10	15.21	46.25	27.93	10.61	2,403	3.15	1.69
	118.80	118.90	0.10	13.39	61.10	19.44	6.07	1,310	1.22	1.89
	121.40	121.50	0.10	10.62	52.19	25.73	11.46	2,025	3.14	1.77
	124.50	124.60	0.10	13.01	46.90	24.78	15.31	2,161	3.82	1.70
	125.60	125.70	0.10	14.11	37.88	31.10	16.91	2,106	5.96	1.58
	163.90	164.00	0.10	11.29	61.55	21.42	5.74	1,391	3.46	1.89
	167.00	167.10	0.10	13.28	49.16	25.80	11.76	1,270	4.48	1.73
	169.50	169.60	0.10	15.48	37.05	31.97	15.50	2,863	4.53	1.57
	170.50	170.60	0.10	13.67	46.74	26.57	13.02	2,328	3.76	1.70
	172.40	172.50	0.10	12.87	38.74	31.22	17.17	2,846	5.10	1.59
NG 7/31	6.00	6.10	0.10	18.17	32.17	33.18	16.48	3,010	5.23	1.51
	7.20	7.30	0.10	19.48	30.14	35.33	15.05	2,655	7.16	1.48
	8.10	8.20	0.10	20.78	37.52	38.32	3.38	2,715	7.20	1.58
	8.95	9.05	0.10	22.92	26.90	34.58	15.60	2,531	6.73	1.44
	11.00	11.10	0.10	19.04	37.58	30.06	13.32	1,692	6.70	1.58
	11.70	11.80	0.10	23.06	19.26	34.96	22.72	3,896	3.05	1.34
	14.90	15.00	0.10	19.19	35.61	30.22	14.98	2,603	8.31	1.55
	15.90	16.00	0.10	17.68	40.26	32.49	9.57	2,142	5.41	1.61
	16.70	16.80	0.10	17.86	38.90	34.28	8.96	2,113	8.03	1.60
	18.15	18.25	0.10	13.48	50.61	24.56	11.35	1,661	5.95	1.75
	19.40	19.50	0.10	15.22	48.29	26.80	9.69	1,711	5.06	1.72
	19.95	20.05	0.10	12.62	45.46	16.35	25.57	981	2.56	1.68
	21.00	21.10	0.10	14.82	48.30	29.40	7.48	1,824	3.14	1.72
	22.40	22.50	0.10	13.73	41.52	33.73	11.02	2,184	4.54	1.63
	39.10	39.20	0.10	15.54	48.34	26.80	9.32	1,854	4.35	1.72
	42.00	42.10	0.10	13.58	54.09	25.02	7.31	1,727	3.85	1.80
	42.90	43.00	0.10	16.50	40.60	31.10	11.80	2,914	4.55	1.62
	46.75	46.85	0.10	15.17	53.51	23.40	7.92	998	4.62	1.79
NG 9/31	54.50	54.60	0.10	21.46	42.79	29.59	6.16	1,998	4.56	1.65
	57.00	57.10	0.10	17.86	58.04	20.37	3.73	1,279	0.90	1.85
	60.10	60.20	0.10	28.42	8.90	33.08	29.60	3,972	1.48	1.20
	60.30	60.40	0.10	18.72	25.73	33.30	22.25	3,417	2.48	1.42
	68.20	68.30	0.10	23.58	43.42	28.40	4.60	1,818	3.30	1.65
	72.35	72.45	0.10	27.74	37.39	26.62	8.25	2,118	3.91	1.58
	77.55	77.65	0.10	21.73	57.74	20.25	0.28	982	3.18	1.84
	83.40	83.50	0.10	19.36	52.10	21.63	6.91	1,734	1.69	1.77
	90.90	91.00	0.10	29.69	21.00	33.16	16.15	3,317	1.50	1.36
	93.95	94.05	0.10	23.54	37.53	32.11	6.82	2,138	6.29	1.58
	97.90	98.00	0.10	25.92	26.53	31.78	15.77	2,763	4.28	1.43
	100.70	100.80	0.10	24.91	29.93	32.16	13.00	2,302	6.09	1.48
	105.90	106.00	0.10	18.88	53.12	21.64	6.36	1,490	1.25	1.78
	113.00	113.10	0.10	24.40	41.49	25.25	8.86	2,008	2.76	1.63
	196.50	196.60	0.10	20.38	57.23	19.33	3.06	1,257	2.11	1.84
	213.40	213.50	0.10	17.75	42.91	26.30	13.04	2,101	3.76	1.65

SG*: /40シリーズの灰分と比重の相関より算出した。

Table 3-2 Coal Analysis Results

Lab. No.	Sample Name	Analysis type	From	To	Thickness (m)	S.G. Air dry a.d	Inferent Moisture a.d %	Proximate Analysis (a.r.) Moisture %	Ash %	V. M. %	F. C. %	G.C.V. (a.r.) kcal/kg	T.Sulfur (a.r.) %	Proximate Analysis (a.d.) Moisture %	Ash %	V. M. %	F. C. %	G.C.V. (a.d.) kcal/kg	T.Sulfur (a.d.) %	S.G. dry base	oximate(d. Ash %	G.C.V. (d.b.) kcal/kg
01-CE215	N1-1	Standard	91.85	92.50	0.65	1.79	10.03	31.96	30.63	27.66	9.75	2,354	5.66	10.03	39.23	35.43	15.31	3,015	7.25	1.96	45.02	3,460
01-CE219	N1-2	Csh	96.80	97.56	0.76	2.14	4.54	25.92	49.70	17.65	6.73	1,219	4.10	4.54	63.22	22.45	9.79	1,551	5.21	2.26	67.09	1,646
01-CE221	N1-3S	F-S	98.43	99.15	0.72	1.63	13.45	32.07	19.51	28.18	20.24	3,148	5.27	13.45	23.97	34.63	27.95	3,868	6.48	1.81	28.72	4,634
01-CE216	N1-4	Standard	100.45	100.85	0.40	1.75	10.86	30.68	25.86	26.12	17.34	2,641	5.81	10.86	32.25	32.58	24.31	3,294	7.25	1.93	37.31	3,810
01-CE217	N1-5	Standard	101.73	102.00	0.27	1.77	8.58	32.57	25.90	26.05	15.48	2,564	6.83	8.58	34.07	34.27	23.08	3,373	8.99	1.91	38.41	3,802
01-CE218	N1-6	Standard	103.40	103.87	0.47	1.73	9.53	33.50	25.56	24.34	16.60	2,488	4.23	9.53	33.62	32.01	24.84	3,272	5.56	1.87	38.44	3,741
01-CE220	N1-7	Csh	111.55	112.85	1.30	2.13	5.66	27.67	49.41	16.98	5.94	1,087	3.50	5.66	63.35	21.77	9.22	1,394	4.49	2.28	68.31	1,503
01-CE155	N3-1	Standard	149.75	150.47	0.72	1.91	6.91	25.77	41.68	21.37	11.18	1,759	5.47	6.91	51.37	26.34	15.38	2,168	6.74	2.05	56.15	2,370
01-CE156	N3-2	Standard	151.05	151.60	0.55	1.76	10.02	30.35	28.38	24.85	16.42	2,483	7.13	10.02	35.62	31.19	23.17	3,117	8.95	1.92	40.75	3,565
01-CE157	N3-3	Standard	157.23	157.55	0.32	2.00	7.10	25.56	39.06	22.09	13.29	1,886	8.65	7.10	47.90	27.09	17.91	2,313	10.61	2.17	52.47	2,534
01-CE166	N3-14	Csh	158.00	158.50	0.50	2.18	5.73	20.55	55.47	17.31	6.67	1,054	4.50	5.73	65.12	20.32	8.83	1,237	5.28	2.35	69.82	1,327
01-CE123	N3-4S	F-S	158.50	162.73	4.23	1.91	9.64	24.68	37.25	27.98	10.09	2,199	6.53	9.64	43.84	32.93	13.59	2,588	7.69	2.12	49.46	2,920
01-CE158	N3-5	Standard	164.06	167.55	3.49	1.98	6.55	24.66	45.17	21.71	8.46	1,649	4.58	6.55	55.16	26.51	11.78	2,014	5.59	2.13	59.95	2,189
01-CE167	N3-15	Csh	167.55	168.60	1.05	1.83	9.61	29.60	40.65	20.22	9.53	1,644	4.03	9.61	50.81	25.27	14.31	2,055	5.04	2.01	57.74	2,335
01-CE168	N3-16	Csh	170.40	171.05	0.65	1.70	11.98	33.35	28.79	23.34	14.52	2,294	3.96	11.98	36.61	29.68	21.73	2,917	5.04	1.88	43.20	3,442
01-CE169	N3-17	Csh	171.40	172.00	0.60	1.85	10.04	28.69	38.60	21.72	10.99	1,831	5.22	10.04	47.45	26.70	15.81	2,251	6.42	2.04	54.13	2,568
01-CE139	N3-6S	F-S	172.00	178.55	6.55	1.85	11.53	25.95	37.56	24.72	11.77	2,060	4.49	11.53	43.89	28.89	15.69	2,407	5.25	2.08	50.72	2,782
01-CE159	N3-7	Standard	180.80	181.62	0.82	1.67	11.54	33.68	26.37	26.09	13.86	2,550	3.13	11.54	33.87	33.51	21.08	3,275	4.02	1.83	39.76	3,845
01-CE160	N3-8	Standard	182.30	183.30	1.00	1.69	10.81	30.21	26.86	25.44	17.49	2,655	4.36	10.81	33.33	31.56	24.30	3,294	5.41	1.84	38.49	3,804
01-CE161	N3-9	Standard	185.70	187.60	1.90	1.85	7.80	25.75	39.74	22.47	12.04	2,005	4.17	7.80	48.43	27.39	16.38	2,444	5.08	1.99	53.52	2,700
01-CE162	N3-10	Standard	191.60	191.85	0.25	1.83	8.05	27.21	38.69	21.88	12.22	2,005	4.81	8.05	47.86	27.07	17.02	2,480	5.95	1.97	53.15	2,754
01-CE170	N3-18	Csh	201.24	201.95	0.71	2.08	6.81	21.40	56.34	16.75	5.51	946	3.16	6.81	65.96	19.61	7.62	1,108	3.70	2.26	71.68	1,204
01-CE163	N3-11	Standard	203.60	204.30	0.70	1.84	9.08	30.59	40.05	19.81	9.55	1,635	5.82	9.08	51.03	25.24	14.65	2,083	7.41	2.01	57.70	2,356
01-CE164	N3-12	Standard	209.80	210.15	0.35	1.90	7.61	22.92	47.79	20.09	9.20	1,558	4.15	7.61	56.43	23.72	12.24	1,840	4.90	2.05	62.00	2,021
01-CE165	N3-13	Standard	211.10	214.17	3.07	1.66	9.45	24.56	37.93	35.70	1.81	2,292	4.40	9.45	44.68	42.05	3.82	2,700	5.18	1.78	50.28	3,038
01-CE171	N5-1S	F-S	93.20	95.40	2.20	1.73	11.12	31.43	23.64	26.24	18.69	2,765	1.69	11.12	29.66	32.93	26.29	3,470	2.12	1.90	34.48	4,032
01-CE209	N5-2	Csh	95.40	96.50	1.10	1.89	9.25	27.74	47.19	17.83	7.24	1,207	2.90	9.25	57.89	21.87	10.99	1,481	3.56	2.08	65.31	1,670
01-CE203	N5-3	Standard	98.35	101.20	2.85	1.79	10.16	29.46	42.04	19.37	9.13	1,530	2.74	10.16	52.09	24.00	13.75	1,896	3.40	1.97	59.60	2,169
01-CE210	N5-4	Csh	101.20	102.50	1.30	1.82	8.74	29.08	46.19	17.62	7.11	1,214	1.88	8.74	57.98	22.12	11.16	1,524	2.36	1.98	65.13	1,712
01-CE204	N5-5	Standard	104.18	104.70	0.52	1.68	10.88	34.34	30.11	21.96	13.59	2,137	2.67	10.88	39.34	28.69	21.09	2,792	3.49	1.83	45.86	3,255
01-CE205	N5-6	Standard	105.35	106.55	1.20	1.68	9.66	31.79	34.82	24.43	8.96	2,003	3.27	9.66	44.72	31.37	14.25	2,572	4.20	1.81	51.05	2,937
01-CE211	N5-7	Csh	108.15	109.00	0.85	1.80	9.21	28.84	42.70	19.72	8.74	1,532	3.65	9.21	53.13	24.54	13.12	1,906	4.54	1.96	60.01	2,153
01-CE206	N5-8	Standard	110.75	111.25	0.50	1.64	12.86	33.65	25.12	24.87	16.36	2,524	4.24	12.86	31.71	31.40	24.03	3,186	5.35	1.81	37.86	3,804
01-CE212	N5-9	Csh	149.60	150.20	0.60	2.01	6.72	28.15	53.77	14.32	3.76	703	2.67	6.72	68.44	18.23	6.61	895	3.40	2.17	74.84	978
01-CE213	N5-10	Csh	151.39	152.05	0.66	1.84	7.69	28.77	42.92	17.91	10.40	1,164	2.57	7.69	54.38	22.69	15.24	1,475	3.26	1.98	60.26	1,634
01-CE214	N5-11	Csh	160.45	161.20	0.75	2.08	6.68	24.83	57.25	15.04	2.88	664	4.04	6.68	69.95	18.38	4.99	811	4.94	2.25	76.16	883
01-CE207	N5-12	Standard	163.20	163.57	0.37	1.85	8.49	27.83	44.48	18.46	9.23	1,472	4.50	8.49	55.15	22.89	13.47	1,825	5.58	2.01	61.63	2,040
01-CE187	N5-13S	F-S	164.85	166.95	2.10	1.79	8.81	30.73	31.84	24.33	13.10	2,285	4.48	8.81	40.78	31.16	19.25	2,926	5.74	1.94	45.97	3,299
01-CE208	N5-14	Standard	168.30	169.10	0.80	1.65	10.52	33.45	31.35	22.66	12.54	2,173	3.73	10.52	40.68	29.40	19.40	2,820	4.84	1.79	47.11	3,265
01-CE107	P3S	F-S	5.60	8.82	3.22	1.76		35.39	25.47	24.83	14.31	3,327	6.23	0.00	39.42	38.43	22.15	5,149	9.64	1.76	39.42	5,149

Lab. No.	Sample Name	Ultimate Analysis (d.a.f.) C %	H %	N %	TS %	O+loss %	HGI	Moist.Mm -freeBtu	Coal Rank (ASTM)	Ash Composition (dry) SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	CaO (%)	MgO (%)	K_2O (%)	Na_2O (%)	SO_3 (%)	TiO_2 (%)	Mn_3O_4 (%)	Form of Sulpur (d.b.) T.S %	Sul S (%)	Pyr S (%)	Org S (%)
01-CE215	N1-1	72.34	3.92	2.89	15.12	5.72	93	6,197	ligB														
01-CE219	N1-2							4,514	ligB														
01-CE221	N1-3S	66.30	4.47	1.78	10.28	27.44	51	7,106	ligA	28.45	18.97	25.21	9.01	3.45	1.99	1.94	7.88	0.52	0.04	7.33	0.10	3.57	3.65
01-CE216	N1-4	69.46	4.13	1.86	13.37	11.18	58	6,480	ligA														
01-CE217	N1-5	70.18	4.10	1.94	16.45	7.34	66	6,260	ligB														
01-CE218	N1-6	68.94	4.63	1.80	10.33	14.31	63	6,090	ligB														
01-CE220	N1-7							3,985	ligB														
01-CE155	N3-1	66.61	10.61	1.67	16.81	4.31	96	5,565	ligB														
01-CE156	N3-2	71.13	8.10	1.71	17.28	1.78	65	6,286	ligB														
01-CE157	N3-3	64.35	9.76	1.43	24.46	0.00	>100	5,583	ligB														
01-CE166	N3-14							4,445	ligB														
01-CE123	N3-4S	69.45	5.23	1.69	14.30	9.33	70	6,465	ligA	34.20	19.27	16.39	12.82	1.59	1.70	1.17	11.67	0.52	0.08	8.67	0.40	3.92	4.35
01-CE158	N3-5	66.76	5.50	1.58	15.17	10.98	99	5,625	ligB														
01-CE167	N3-15							5,118	ligB														
01-CE168	N3-16							5,891	ligB														
01-CE169	N3-17							5,474	ligB														
01-CE139	N3-6S	66.00	4.06	1.77	???	???		6,115	ligB	40.97	23.05	12.55	9.06	1.88	2.21	1.21	5.21	0.63	0.05	6.07	0.41	2.40	3.27
01-CE159	N3-7	70.44	5.61	2.08	7.84	14.02	62	6,352	ligA														
01-CE160	N3-8	69.72	5.34	1.88	10.15	12.91	67	6,649	ligA														
01-CE161	N3-9	68.33	6.16	2.29	12.09	11.13	88	6,207	ligB														
01-CE162	N3-10	68.08	6.43	1.86	14.12	9.52	83	6,062	ligB														
01-CE170	N3-18							4,129	ligB														
01-CE163	N3-11	65.63	4.66	1.59	19.85	8.27	88	4,953	ligB														
01-CE164	N3-12	61.63	7.69	1.25	14.16	15.27	97	5,633	ligB														
01-CE165	N3-13	67.04	7.66	1.33	11.73	12.24	77	6,898	ligA														
01-CE171	N5-1S	62.43	4.48	1.92	3.76	27.40	46	6,653	ligA	37.44	22.14	18.85	7.08	4.76	2.26	1.24	4.86	0.67	0.03	2.46	0.12	0.74	1.60
01-CE209	N5-2							4,274	ligB														
01-CE203	N5-3	61.93	1.35	1.79	9.61	25.32	66	4,929	ligB														
01-CE210	N5-4							4,261	ligB														
01-CE204	N5-5	44.97	0.99	1.82	7.52	44.68	62	5,625	ligB														
01-CE205	N5-6	54.36	1.11	1.81	9.79	32.93	72	5,680	ligB														
01-CE211	N5-7							4,964	ligB														
01-CE206	N5-8	68.40	3.43	1.63	10.29	16.25	47	6,140	ligB														
01-CE212	N5-9							2,798	ligB														
01-CE213	N5-10							3,765	ligB														
01-CE214	N5-11							2,763	ligB														
01-CE207	N5-12	62.89	3.30	1.37	16.23	16.21	95	4,900	ligB														
01-CE187	N5-13S	68.16	4.83	1.36	11.97	13.68	72	6,158	ligB	41.62	26.02	11.60	7.01	2.72	2.88	0.83	4.78	0.88	0.04	6.47	0.26	1.97	4.23
01-CE208	N5-14	67.67	4.02	1.56	10.59	16.17	81	5,812	ligB														
01-CE107	P3S	67.37	4.47	1.75	11.47	14.95	62	8,220	ligA	38.55	23.94	13.87	9.61	2.03	2.28	0.20	7.37	0.63	0.06	6.95	0.71	1.91	4.33

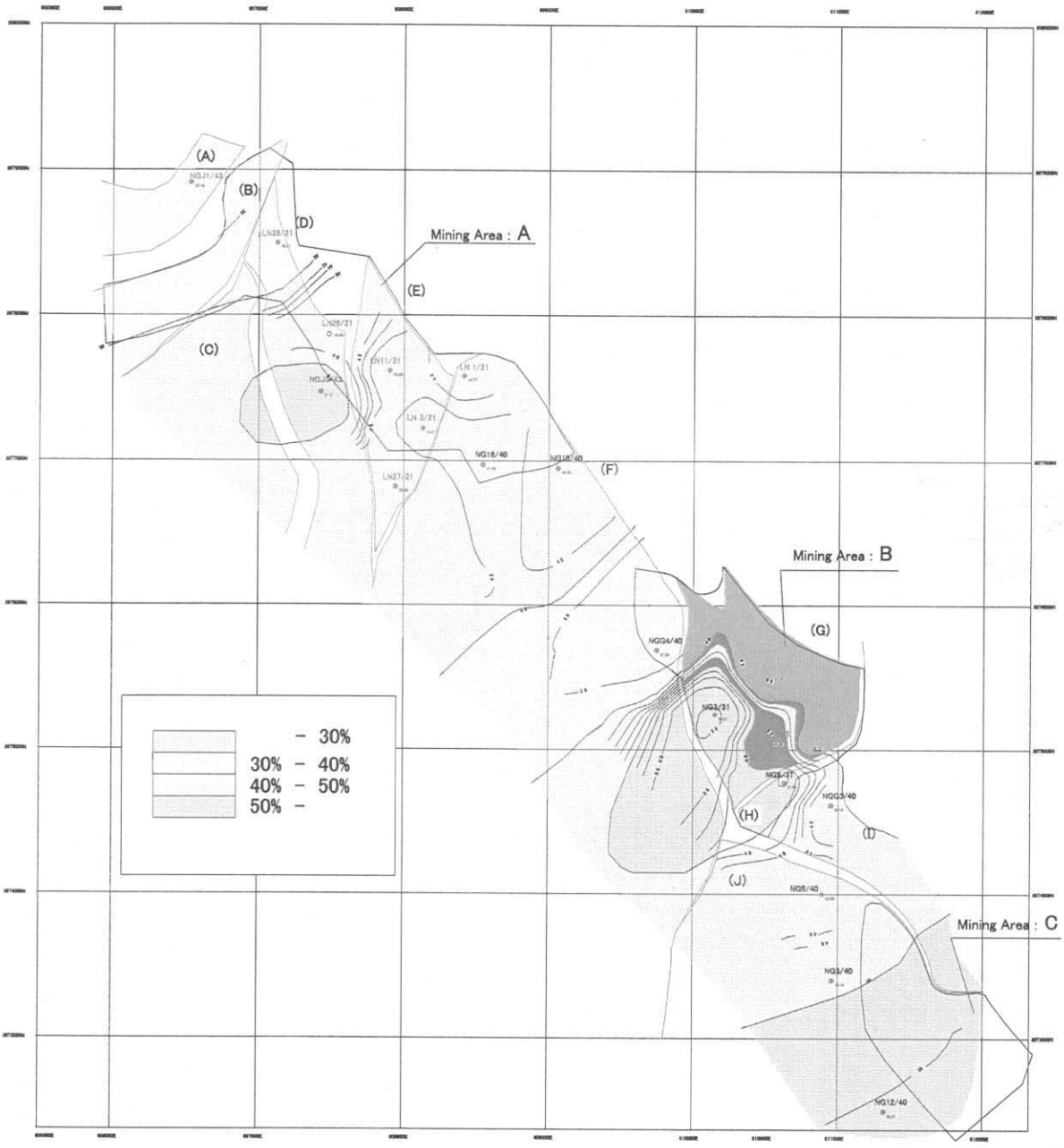

Figure3-1 Iso-value Contour Map on Ash Content(%.dry)

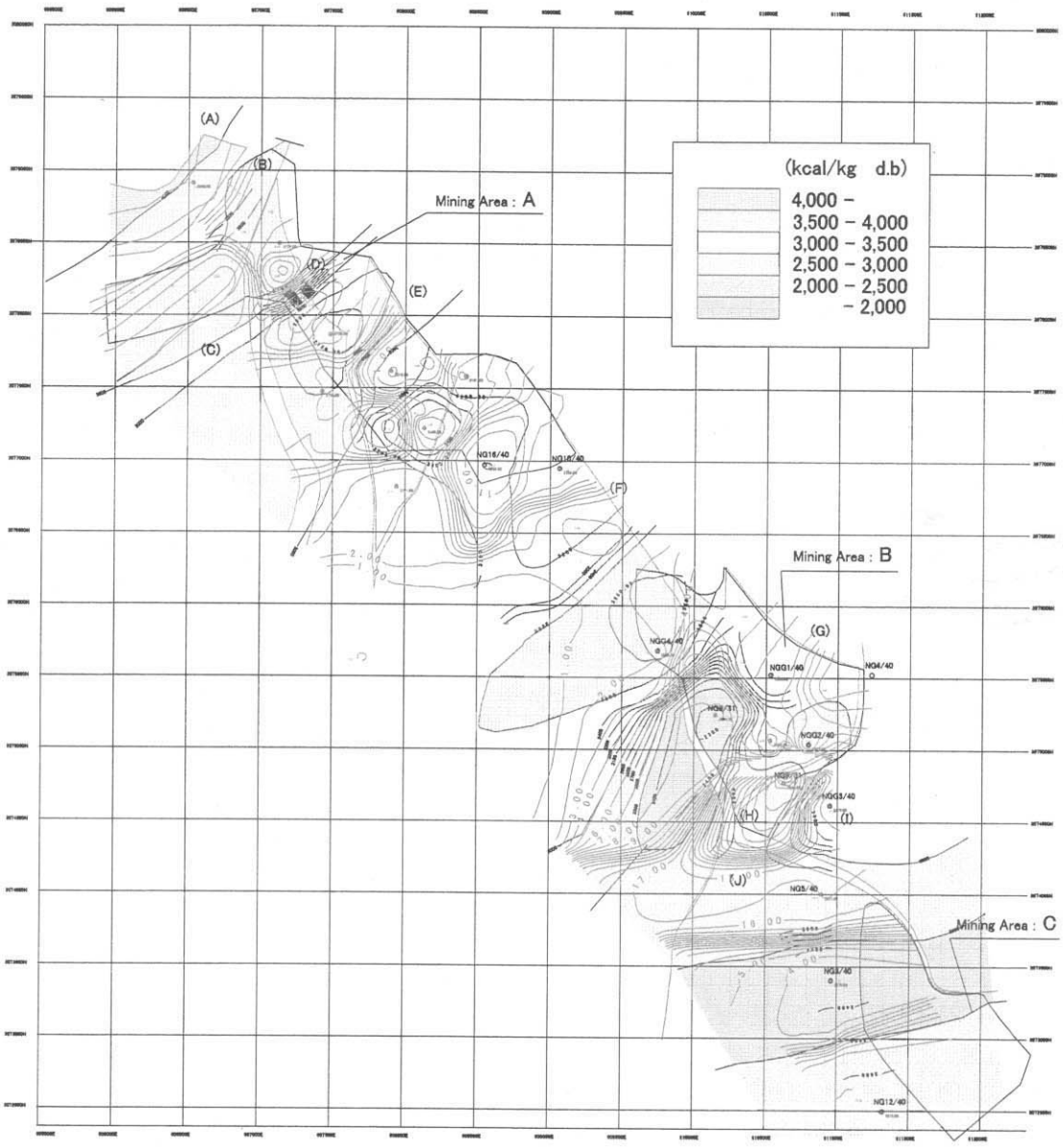

Figure3-2 Iso-value Contour Map on Heating Value (kcal/kg,dry)

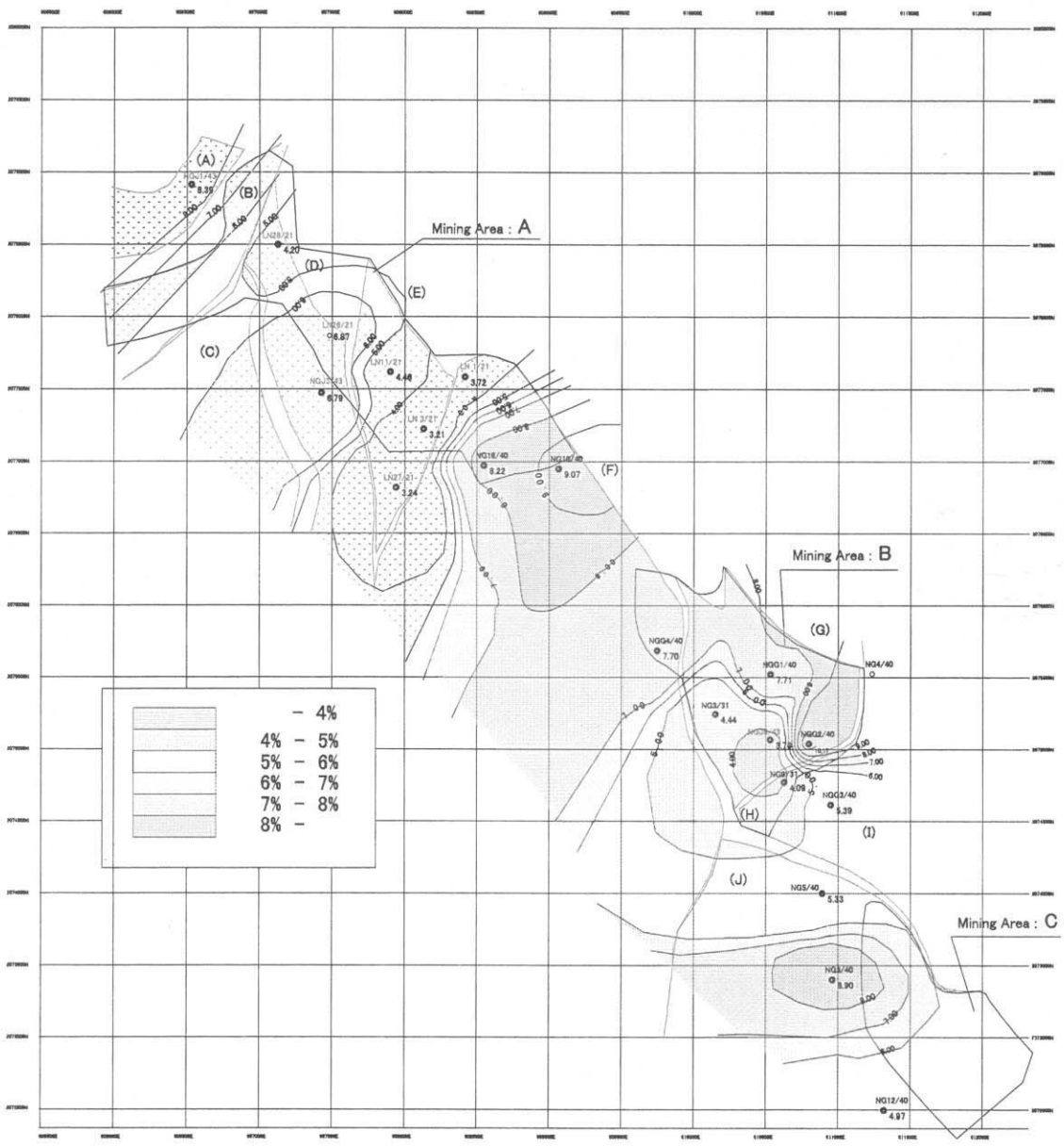

Figure3-3 Iso-value Contour Map on Total Sulphur Content(%.dry)