

DAFTAR PUSTAKA

- Asikin, S., 1976, *Geologi Struktur Indonesia*, Departemen Teknik Geologi ITB, Bandung, 139 hal.
- Allen, G. P., and J. L. C. Chambers, 1998, Sedimentation in the modern and Miocene Mahakam Delta: Jakarta, *Indonesian Petroleum Association*, p. 57-74.
- Bustin, R. M., 1989. *Coal Resources of the Western Canada Sedimentary Basin*. Vancouver: University of British Columbia
- Biantoro, E, Muritno, B.P. and Mamuya, J.M.B., 1992. Inversion faults as the major structural control in the northern part of Kutei Basin, East Kalimantan, *Proceeding 21th annual convention of Indonesian Petroleum Association*, p. 45-68.
- Cook, A.C, 1982. *The Origin and Petrology of Organic Matter in Coals, Oil Shales, and Petroleum Source-Rock*. Geology Departement of Wollongong University. Australia.
- Cook, A.C. 1999. *Coal Geology and Coal Properties*. Australia: Keiraville consultant.
- Darman, H., dan H. Sidi. 2000. An Outline of the Geology of Indonesia. *Indonesian Geologist Association Publication*: Jakarta.
- Horne, J.C. 1979. Depositional Models in Coal Exploration and Mine Planning in Appalachian Region. Texas: *AAPG Convention SEPM Houston*.
- Komariah, W.E, 2012, *Peningkatan Kualitas Batubara Indonesia Peringkat Rendah melalui Penghilangan Moisture dengan Pemanasan Gelombang Mikro*, Tesis, Fakultas Teknik Program Studi Magister Teknik Kimia, Universitas Indonesia, Depok.
- Muchjidin, 2006, *Pengendalian Mutu Dalam Industri Batubara*. Penerbit ITB: Bandung.

- Marks, E., Sujatmiko, Samuel, L., Dhanutirto, H., Ismoyowati, T., Sidik, B.B., 1982. Cenozoic Stratigraphic Nomenclature In Kutai Basin, Kalimantan, *Proceeding of Indonesian Petroleum Association, 11th Annual Convention*, Jakarta, Indonesia.p. 75-84.
- Ott, H.L., 1987, The Kutei Basin - a unique structural history, Jakarta: *Proceedings Indonesian Petroleum Association, 16th Annual Convention and Exhibition.*, 307-316
- Pertamina BPPKA, 1997, *Petroleum Geology of Indonesian Basins*, vol XI, Kutai Basin, Jakarta. 134 p.
- Satyana, A.H., Nugroho, D., and Surantoko, I., 1999. Tectonic Controls on The Hydrocarbon Habitats of The Barito, Kutai and Tarakan Basin, Eastern Kalimantan, Indonesia; Major Dissimilarities. *Journal of Asian Earth Sciences* Special Issue Vol. 17, No. 1-2, p. 99-120.
- Sugiyanto, L. H. 1984. *Manajemen Alat-Alat Besar*. Technical Consulting Department. PT United Tractors. Jakarta.
- Supriyatna, S., Sukardi., dan Rustandi. 1995. *Peta Geologi Lembar Samarinda, Kalimantan*. Bandung: Pusat Penelitian dan Pengembangan Geologi.
- Stach, E., M, TH, Mackowsky., M, Teichmuller., G, H, Taylor., D, Chandra., and R, Teichmuller, 1982, *Coal Petrology*, Berlin: Gebrüder Borntraeger
- Speight, James G. 2005. *Handbook of Coal Analysis*. A John Wiley & Sons.Inc, Publication. USA.
- Van Bemmelen, R.W., 1949. *The Geology of Indonesia: General of Indonesia and Adjacent Archipelagoes*. Vol. IA. Ed. II. The Netherlands: the Government Printing Office, The Hague. p.124-132.
- Van de Weerd, A., and Armin R.A., 1992. *Origin and Evolution of the Tertiary Hydrocarbon Bearing Basins in Kalimantan (Borneo), Indonesia*. AAPG Bulletin, 76 (11), p. 1778-1803.

Sugiarto, W., Listyani, R. A., T., Winarti. 2023 *The Effect of Ash Content On Coal Quality in The Labanan Formationin Berau District, East Kalimantan Province*. KURVATEK, p. 1-6.

WCI., 2005. *The Coal Resource: A Comprehensive Overview of Coal*. World Coal Institute

LAMPIRAN



PT. JASA MUTU MINERAL INDONESIA
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PRELIMINARY REPORT

Job Number	: 0306/LAB/II/2022	Principle	: PT. Adiatama Energi
Date Of Received Sample	: February 17, 2022	Reference	: 005/AE-SMD/II/2022
Amount Of Sample	: 3 Samples		
Date Issued	: February 18, 2022		
Attention	: Mrs. Maisyarah		
Email	: imayborneo@ymail.com		

CODE SAMPLE	Test Method	SAMPLE SEAM 1-1				
		SS - 0277				
Basis		Air Dried	Dry	Dry Ash Free	As Received	Index
Mass as Received (kg)		6.80				
Total Moisture (% m/m)	ASTM D3302 / D3302M- 19	-	-	-	41.61	-
Moisture in the Analysis Sample (% m/m)	ASTM D3173/D3173M-17a	15.11	-	-	-	-
Ash Content (% m/m)	ASTM D3174 - 12 (2018) e1	6.90	8.23	-	4.81	-
Volatile Matter (% m/m)	ASTM D3175 - 20	44.36	52.26	56.94	30.51	-
Fixed Carbon (% m/m)	ASTM D 3172 - 13	33.54	39.51	43.06	23.07	-
Total Sulphur (% m/m)	ASTM D 4239 - 18 e1 (Method A)	0.75	1.71	1.88	1.00	-
Gross Calorific Value (kcal/kg)	ASTM D5865/D5865M - 19	5332	6399	6973	3736	-
Hardgrove Grindability Index	ASTM D400/409M-16	-	-	-	-	69

CODE SAMPLE	Test Method	SAMPLE CC - SEAM 1-2				
		SS - 0278				
Basis		Air Dried	Dry	Dry Ash Free	As Received	
Mass as Received (kg)		7.05				
Total Moisture (% m/m)	ASTM D3302 / D3302M- 19	-	-	-	39.26	
Moisture in the Analysis Sample (% m/m)	ASTM D3173/D3173M-17a	13.67	-	-	-	-
Ash Content (% m/m)	ASTM D3174 - 12 (2018) e1	8.65	10.02	-	6.89	
Volatile Matter (% m/m)	ASTM D3175 - 20	43.20	50.04	55.61	34.40	
Fixed Carbon (% m/m)	ASTM D 3172 - 13	34.48	39.94	44.39	27.45	
Total Sulphur (% m/m)	ASTM D 4239 - 18 e1 (Method A)	0.86	1.69	1.88	1.16	
Gross Calorific Value (kcal/kg)	ASTM D5865/D5865M - 19	5243	6073	6749	4175	

CODE SAMPLE	Test Method	SAMPLE RC - SEAM 4A				
		SS - 0279				
Basis		Air Dried	Dry	Dry Ash Free	As Received	
Mass as Received (kg)		7.70				
Total Moisture (% m/m)	ASTM D3302 / D3302M- 19	-	-	-	43.82	
Moisture in the Analysis Sample (% m/m)	ASTM D3173/D3173M-17a	11.50	-	-	-	-
Ash Content (% m/m)	ASTM D3174 - 12 (2018) e1	15.32	17.31	-	11.46	
Volatile Matter (% m/m)	ASTM D3175 - 20	40.43	45.88	55.25	30.23	
Fixed Carbon (% m/m)	ASTM D 3172 - 13	32.75	37.01	44.75	24.49	
Total Sulphur (% m/m)	ASTM D 4239 - 18 e1 (Method A)	1.75	1.98	2.39	1.31	
Gross Calorific Value (kcal/kg)	ASTM D5865/D5865M - 19	4920	5559	6723	3679	

Analysis according to : ASTM Method

Regards,

Erwan, A.Md
Laboratory Manager



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PRELIMINARY REPORT

Job Number	: 0763/LAB/III/2022	Principle Reference	: PT. Adiatama Energ
Date Of Received Sample	: March 24, 2022		: 012/BK-SMD/III/20:
Amount Of Sample	: 1 Samples		
Date Issued	: March 26, 2022		
Attention	: Mrs. Maisyarah		
Email	: imayborneo@ymail.com		

CODE SAMPLE	Test Method	SEAM 2 - 1			
		SS - 0613			
Basis		Air Dried	Dry	Dry Ash Free	As Received
Mass as Received (kg)		6,60			
Total Moisture (% m/m)	ASTM D3302 / D3302M- 19	-	-	-	43,16
Moisture in the Analysis Sample (% m/m)	ASTM D3173/D3173M-17a	12,13	-	-	-
Ash Content (% m/m)	ASTM D3174 - 12 (2018) e1	5,74	6,53	-	3,66
Volatile Matter (% m/m)	ASTM D 3175 - 20	43,90	49,96	53,45	28,00
Fixed Carbon (% m/m)	ASTM D 3172 - 13	38,23	43,51	46,55	24,38
Total Sulphur (% m/m)	ASTM D 4239 - 18 e1 (Method A)	0,67	1,27	1,36	0,71
Gross Calorific Value (kcal/kg)	ASTM D5865/D5865M - 19	5425	6174	6605	3460

CODE SAMPLE	Test Method	SEAM 4B-2			
		SS - 1096			
Basis		Air Dried	Dry	Dry Ash Free	As Received
Mass as Received (kg)		4.60			
Total Moisture (% m/m)	ASTM D3302 / D3302M- 17	-	-	-	43,44
Moisture in the Analysis Sample (% m/m)	ASTM D 3173/D3173M-17a	12.54	-	-	-
Ash Content (% m/m)	ASTM D 3174 - 12	9.11	10.30	-	5.00
Volatile Matter (% m/m)	ASTM D 3175 - 20	44.12	46.07	52.42	28.99
Fixed Carbon (% m/m)	ASTM D 3172 -13	30.24	35.63	47.58	26.31
Total Sulphur (% m/m)	ASTM D 4239 - 18 e1 (method A)	1.72	2.53	2.58	2.32
Gross Calorific Value (kcal/kg)	ASTM D5865 - 13	4722	5068	6517	3459

Analysis according to : ASTM Method

Regards,

Erwan, A.Md

Laboratory Manager



PRELIMINARY REPORT

Job Number	: 1123/LAB/V/2022	Principle	: PT. Aditama Energi
Date Of Received Sample	: May 01, 2022	Reference	: 015/BK-SMD/V/2021
Amount Of Sample	: 2 Samples		
Date Issued	: May 03, 2022		
Attention	: Mrs. Maisyarah		
Email	: imayborneo@ymail.com		

CODE SAMPLE	Test Method	SEAM 3 - 1			
		SS - 1096			
Basis		Air Dried	Dry	Dry Ash Free	As Received
Mass as Received (kg)		3.60			
Total Moisture (% m/m)	ASTM D3302 / D3302M- 17	-	-	-	39.70
Moisture in the Analysis Sample (% m/m)	ASTM D 3173/D3173M-17a	11.88	-	-	-
Ash Content (% m/m)	ASTM D 3174 - 12	7.31	8.30	-	5.00
Volatile Matter (% m/m)	ASTM D 3175 - 20	42.36	48.07	52.42	28.99
Fixed Carbon (% m/m)	ASTM D 3172 -13	38.45	43.63	47.58	26.31
Total Sulphur (% m/m)	ASTM D 4239 – 18 e1 (method A)	0.47	0.53	0.58	0.32
Gross Calorific Value (kcal/kg)	ASTM D5865 – 13	5347	6068	6617	3659

CODE SAMPLE	Test Method	SEAM 3 - 2			
		SS - 1097			
Basis		Air Dried	Dry	Dry Ash Free	As Received
Mass as Received (kg)		3.80			
Total Moisture (% m/m)	ASTM D3302 / D3302M- 17	-	-	-	37.51
Moisture in the Analysis Sample (% m/m)	ASTM D 3173/D3173M-17a	11.34	-	-	-
Ash Content (% m/m)	ASTM D 3174 - 12	6.25	7.05	-	4.41
Volatile Matter (% m/m)	ASTM D 3175 - 20	43.79	49.39	53.14	30.86
Fixed Carbon (% m/m)	ASTM D 3172 -13	38.62	43.56	46.86	27.22
Total Sulphur (% m/m)	ASTM D 4239 – 18 e1 (method A)	0.42	1.17	1.26	0.73
Gross Calorific Value (kcal/kg)	ASTM D5865 – 13	5511	6216	6687	3884

Analysis according to : ASTM Method

Regards,

Erwan, A.Md
 Laboratory Manager



PRELIMINARY REPORT

Job Number	: 2907/LAB/X/202	Principle : PT. Aditama Energi
Date Of Received Sample	: October 19, 2022	Reference : 036/BK-SMD/X/2021
Amount Of Sample	: 1 Sample	
Date Issued	: October 21, 2022	
Attention	: Mrs. Maisyarah	
Email	: imayborneo@ymail.com	

CODE SAMPLE	Test Method	SEAM 2 - 2			
		SS - 2768			
Basis		Air Dried	Dry	Dry Ash Free	As Received
Mass as Received (kg)		7.15			
Total Moisture (% m/m)	ASTM D3302 / D3302M- 20	-	-	-	41.57
Moisture in the Analysis Sample (% m/m)	ASTM D3173/D3173M-17a	11.31	-	-	-
Ash Content (% m/m)	ASTM D3174 - 12 (2018) e1	5.15	5.81	-	3.45
Volatile Matter (% m/m)	ASTM D3175 - 20	44.31	49.96	53.04	29.69
Fixed Carbon (% m/m)	ASTM D 3172 - 13	39.23	44.23	46.96	26.29
Total Sulphur (% m/m)	ASTM D 4239 - 18 e1 (Method A)	0.58	1.38	1.46	0.82
Gross Calorific Value (kcal/kg)	ASTM D5865/D5865M - 19	5628	6346	6737	3771

CODE SAMPLE	Test Method	SEAM 4 B-1			
		SS - 0279			
Basis		Air Dried	Dry	Dry Ash Free	As Received
Mass as Received (kg)		7.70			
Total Moisture (% m/m)	ASTM D3302 / D3302M- 19	-	-	-	42.23
Moisture in the Analysis Sample (% m/m)	ASTM D3173/D3173M-17a	13.40	-	-	-
Ash Content (% m/m)	ASTM D3174 - 12 (2018) e1	10.27	1.31	-	11.46
Volatile Matter (% m/m)	ASTM D3175 - 20	43.45	44.68	55.25	30.23
Fixed Carbon (% m/m)	ASTM D 3172 - 13	31.04	36.01	44.75	24.49
Total Sulphur (% m/m)	ASTM D 4239 - 18 e1 (Method A)	1.81	2.08	2.39	1.31
Gross Calorific Value (kcal/kg)	ASTM D5865/D5865M - 19	4698	5159	6723	3679

Analysis according to : ASTM Method

Regards,

Erwan, A.Md
Laboratory Manager