

DAFTAR PUSTAKA

- Akbari, Desri dan Sutrisno. 2014. *Interpretasi Data Geophysical Well Logging dan Analisis Hubungan Density Log dengan Kualitas Batubara*. Jakarta: Kelompok Keilmuan Geofisika Program Studi Fisika UIN.
- Asquith, George dan Gibson, Charles. 1982. *Basic Well Log Analysis for Geologist*. Tulsa, Oklahoma, USA: The American Association of Petroleum Geologist.
- De Coster, G.L. 1974. *The Geology of the Central and South Sumatra Basins*. Third Annual Convention: Proceeding Indonesian Petroleum Association.
- Direktorat SDEM dan Pertambangan BAPPENAS. 2018. *Kajian Ketercapaian Target DMO Batubara Sebesar 60% Produksi Nasional pada Tahun 2019*. Kementrian PPN.
- Erihartanti, Simon Sadok Siregar, dan Ibrahim Sota. 2015. *Estimasi Sumberdaya Batubara Berdasarkan Data Well Logging dengan Metode Cross Section di PT. Telen Orbit Prima Desa Buhut Kab. Kapuas Kalimantan Tengah*. Jurnal Fisika FLUX Vol.12 No.2
- Firdaus, M. Anugerah. 2016. *Kajian Mengenai Hubungan Karakteristik Batubara terhadap Kandungan Gas Metana Batubara (Coalbed Methane) dan Lingkungan Pengendapan di Daerah Ampah, Kabupaten Barito Timur Provinsi Kalimantan Tengah*. Bandung: Prodi Teknik Pertambangan, Fakultas Teknik. Universitas Islam Bandung.
- Gunara, Muhammad. 2017. *Potensi Batubara sebagai Sumber Energi Alternatif untuk Pengembangan Industri Logam*. Jakarta Timur: Program Studi Teknik Mesin, Fakultas Teknik. Universitas Muhammadiyah Prof. DR. HAMKA.
- Harsono, Adi. 1997. *Evaluasi Formasi dan Aplikasi Log*. Jakarta: Schlumberger Oilfield Services.
- Huda, Miftahul., Zulfahmi, Nendaryono Madiutomo, Bambang Yuniarto, Zulkifli Pulungan, Asep Bahtiar Purnama, Suhendar, Tri Widarti Masduki, Cipta Legawa Demokrat, Jeani Sulistyowati, Sokhwatul Aghnia, Sarif Subarna Yudha, Silti Salinita, Retno Damayanti, Bagaraja Sirait, Sri Handayani, Marsen Alimano, Hasniati Astika, Wulandari SuroSupriyatna, Hari Kurnain, Budiyono, Nandang Permana, Iis Hayati, Supriyatna Mujahidin, Wahyu Agus Setiawan, Herni Khaerunisa, Nia Rosnia, Hary Tetra Antono, M.Lutfi, Mustaram, Dudi Mulyadie. 2016. *Pengembangan Aplikasi Teknologi Underground Coal Gasification (UCG) di Indonesia Tahap III*. Bandung: Pusat Penelitian dan Pengembangan Teknologi Mineral dan Batubara.
- Yuni. 2012. *Analisis Core dan Defleksi Log untuk Mengetahui Lingkungan Pengendapan dan Menentukan Cadangan Batubara di Banko*



Barat PIT 1, Sumatera Selatan. Bandar Lampung: Skripsi Jurusan Teknik Geofisika, Fakultas Teknik. Universitas Lampung.

Julkipli, Simon Sadok Siregar, Ibrahim Sota. 2015. *Interpretasi Sebaran Batubara Berdasarkan Data Well Logging di Daerah Blok X Pulau Laut Tengah Kabupaten Kota Baru*. Jurnal Fisika FLUX, Vol 12 No.1, Februari 2015 (42 – 52).

Kamus Pertambangan. 2018. *Pengertian kata SEAM*. Melalui: <<https://kamuslengkap.com/kamus/pertambangan/arti-kata/Seam>>[15/10/18]

Kementerian ESDM. 2018. Melalui: <<https://finance.detik.com/energi/d-4194799/sumber-daya-batu-bara-ri-166-miliar-ton-cadangan-37-miliar-ton>> [5/10/18].

Nazeer, Adeel., Shabeer Ahmed Abbasi, Sarfraz Hussain Solangi. 2016. *Sedimentary facies interpretation of Gamma Ray (GR) log as basic well logs in Central and Lower Indus Basin Pakistan*. Journal of Geodesy and Geodynamics 2016, Vol 7 No.6 432-443.

Pratiwi, Ragil. 2013. *Pengaruh Struktur dan Tektonik dalam Prediksi Potensi Coalbed Methane SEAM Pangadang-A, di Lapangan "DIPA", Cekungan Sumatera Selatan, Kabupaten Musi Banyuasin, Provinsi Sumatera Selatan*. Semarang: Program Studi Teknik Geologi, Fakultas Teknik. Universitas Diponegoro.

Santoso, Binarko. 2014. *Petrologi Batubara Sumatra dan Kalimantan: Jenis, Peringkat, dan Aplikasi*. Jakarta: LIPI Press.

Schmitt, Paula., Mauricio R. Veronez. Francisco M. W. Tognoli, Viviane Todt, Ricardo C. Lopes, Carlos A. U. Silva. 2012. *Electrofacies Modelling and Lithological Classification of Coals and Mud-bearing Fine-grained Siliciclastic Rocks Based on Neural Networks*. Earth Science Research; Vol.2, No.1;2013. Published by Canadian Center of Science and Education.

Setiahadiwibowo, Ajimas P. 2016. *Analisis Karakteristik Batubara Berdasarkan Rekaman Well Logging di daerah Kabupaten Katingan Kalimantan Tengah*. Yogyakarta: Jurusan Teknik Geofisika, Fakultas Teknologi Mineral. UPN "Veteran".

Srinaiah J., Raju D., Udayalaxmi G., dan Ramadass G. 2018. *Application of Well Logging Techniques for Identification of Coal Seams: A Case Study of Jharkhand Coalfield, Latehar District, Jharkhand State, India*. Journal of Geology and Geophysics 2018, 7:1 DOI 10.4172/2381-8719.1000322.

Standar Nasional Indonesia (SNI) 5015:2011. *Pedoman Pelaporan, Sumberdaya, dan Cadangan Batubara*. Badan Standarisasi Nasional (BSN): Jakarta.



Supandi, 2011. *BAB 3 Lingkungan Pengendapan & Petrografi Batubara*. Yogyakarta: STTNAS.

Syaeful, Heri dan Adi Gunawan Muhammad. 2017. *Interpretasi Lingkungan Pengendapan Formasi Batuan Menggunakan Analisis Elektrofases di Lokasi Tapak Puspiptek Serpong*. Jakarta: Pusat Teknologi Bahan Galian Nuklir-BATAN.

World Coal Institute. 2005. *Sumber Daya Batubara – Tinjauan Lengkap Mengenai Batubara* buku ini sebelumnya dikenal sebagai *Coal – Power for Progress*. Inggris: World Coal Institute.



2. Gambar Litologi Sumur Bor UCG 15



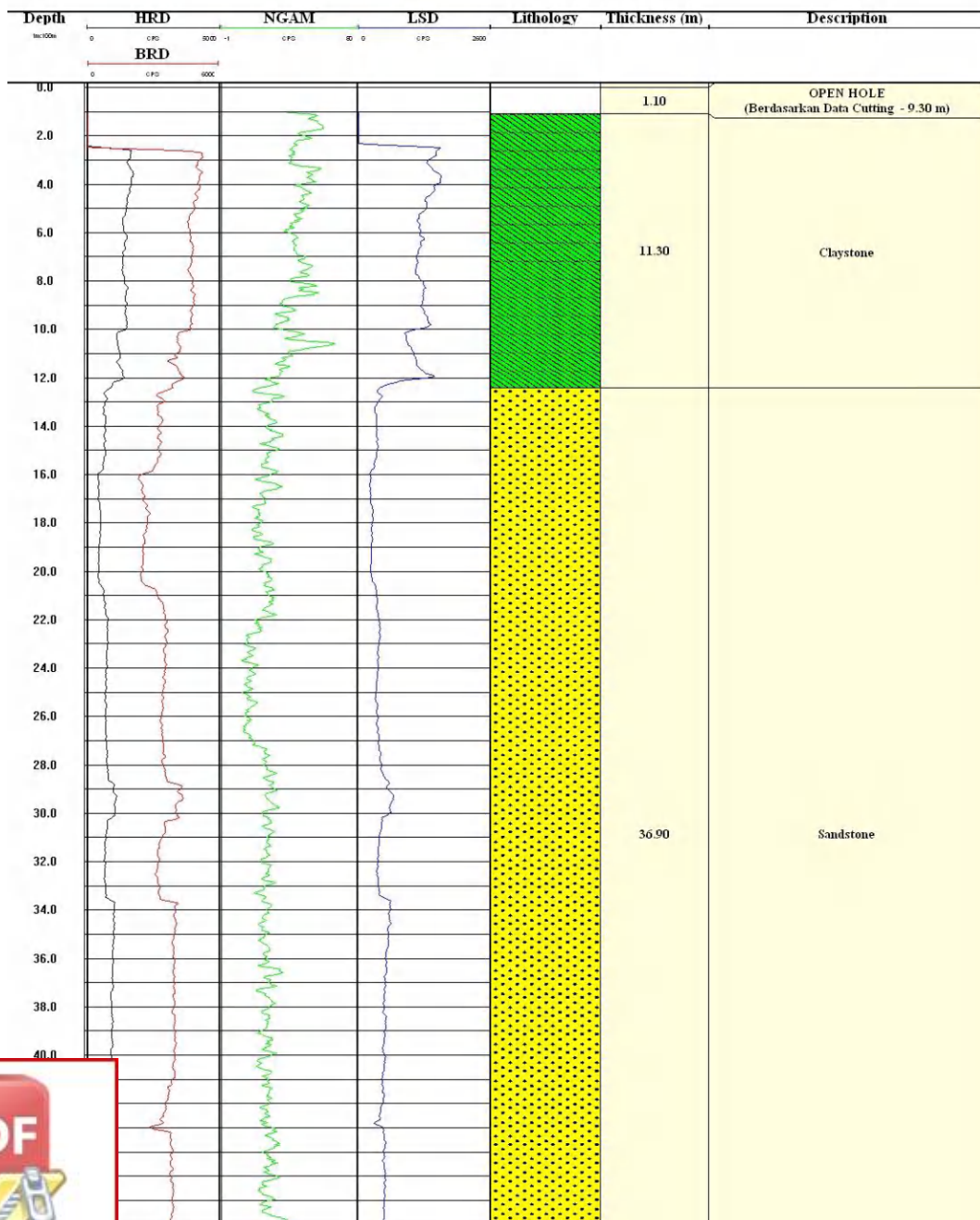
PUSAT PENELITIAN DAN PENGEMBANGAN TEKNOLOGI MINERAL DAN BATUBARA

TIM PENYIAPAN DATA PRIMER UNTUK APLIKASI

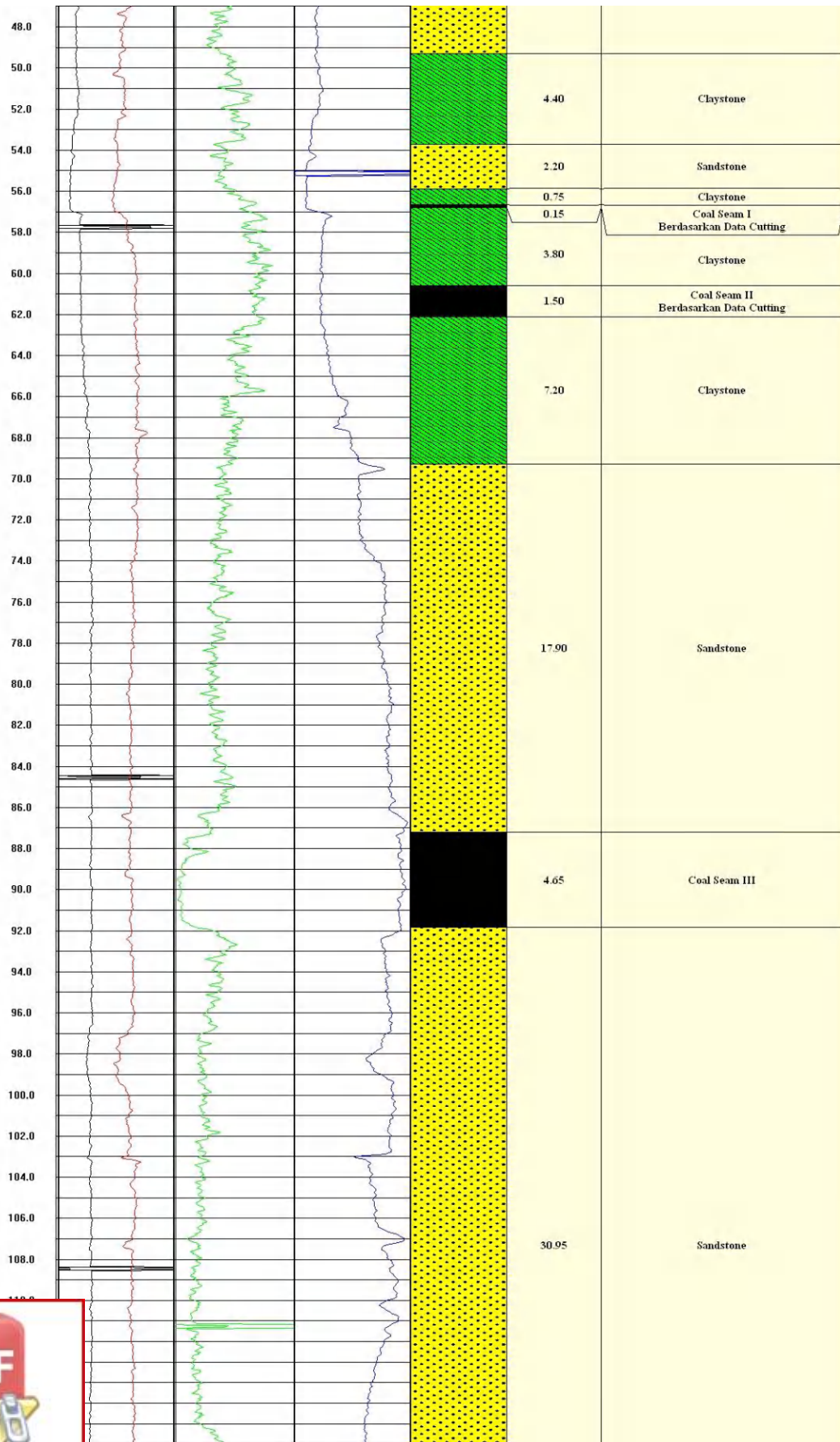
UNDERGROUND COAL GASIFICATION (UCG)

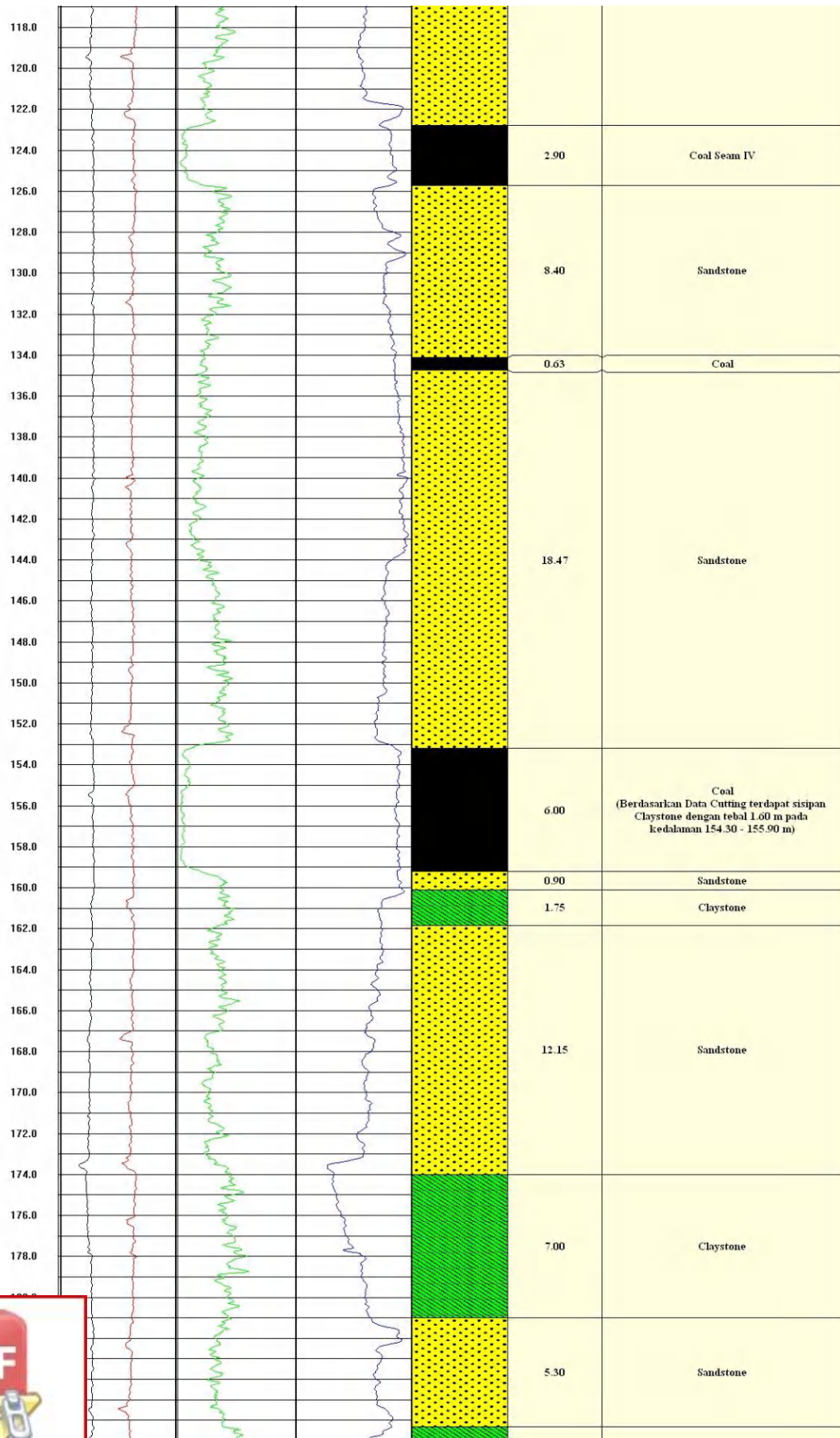
LOG BOR

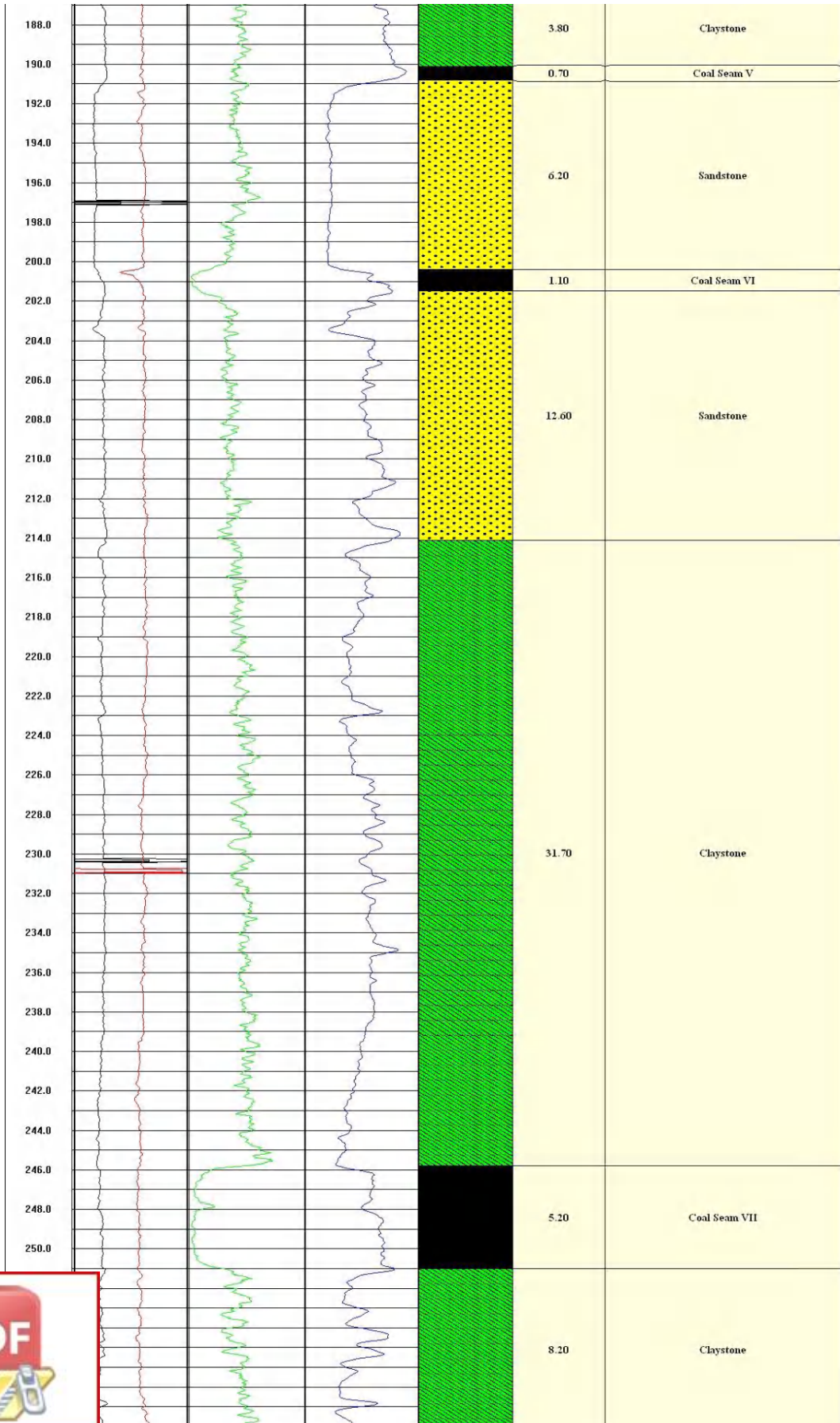
WELL:	UCG 15	DATE:	11 OKTOBER 2016	DEPTH DRILLER:	346.00
FIELD:	SANGA DESA	LATITUDE:	319.267.00	DEPTH LOGGER:	337.00
COUNTRY:	MUSI BANYUASIN	LONGITUDE:	9.713.810.00	RECORDED BY:	MARDIS
STATE:	PALEMBANG	ELEVATION:	69 m	WITNESSED BY:	NANDANG P.
COUNTY:	SOUTH SUMATERA	SCALE:	1 : 100		

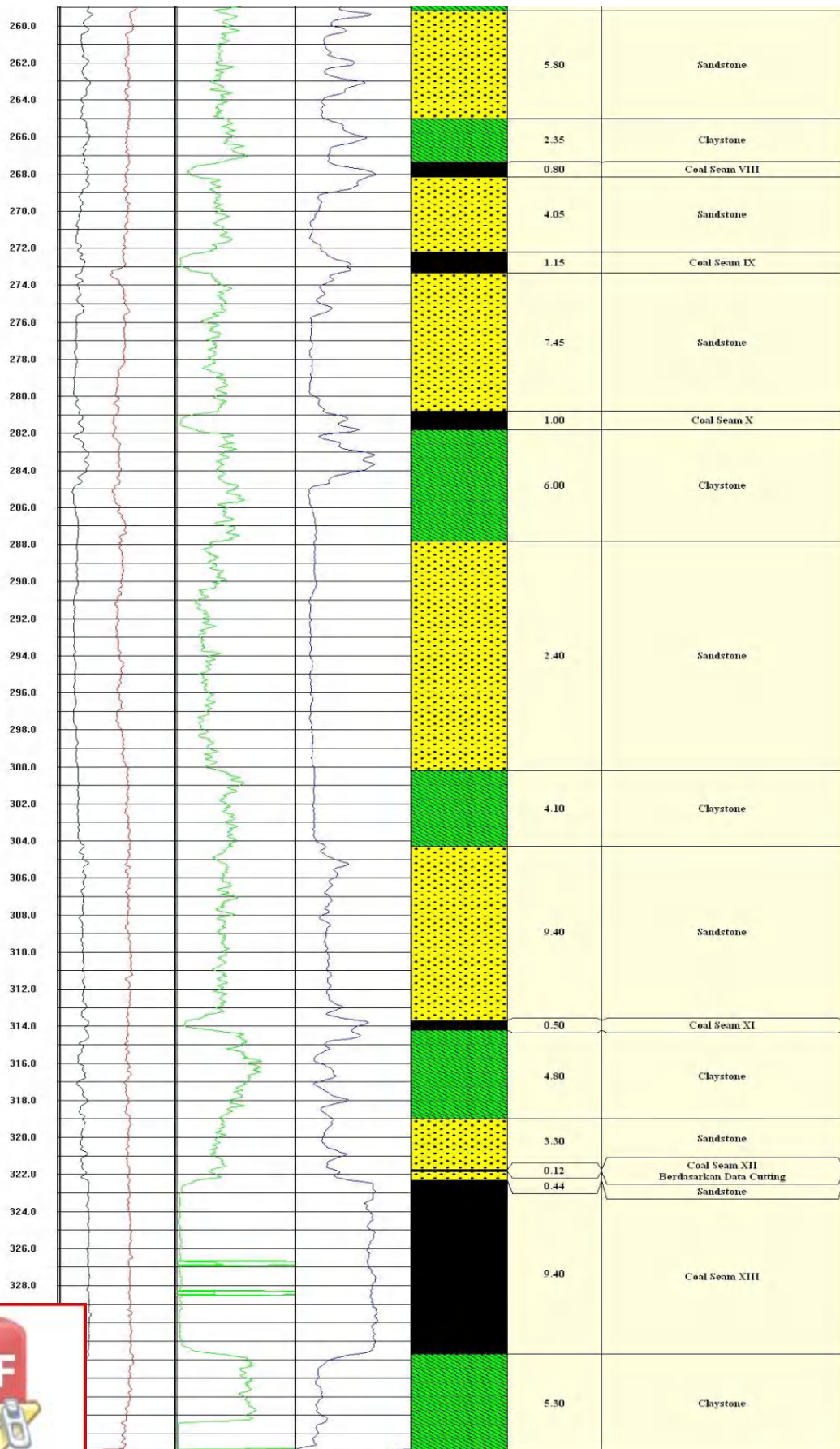


Optimization Software:
www.balesio.com

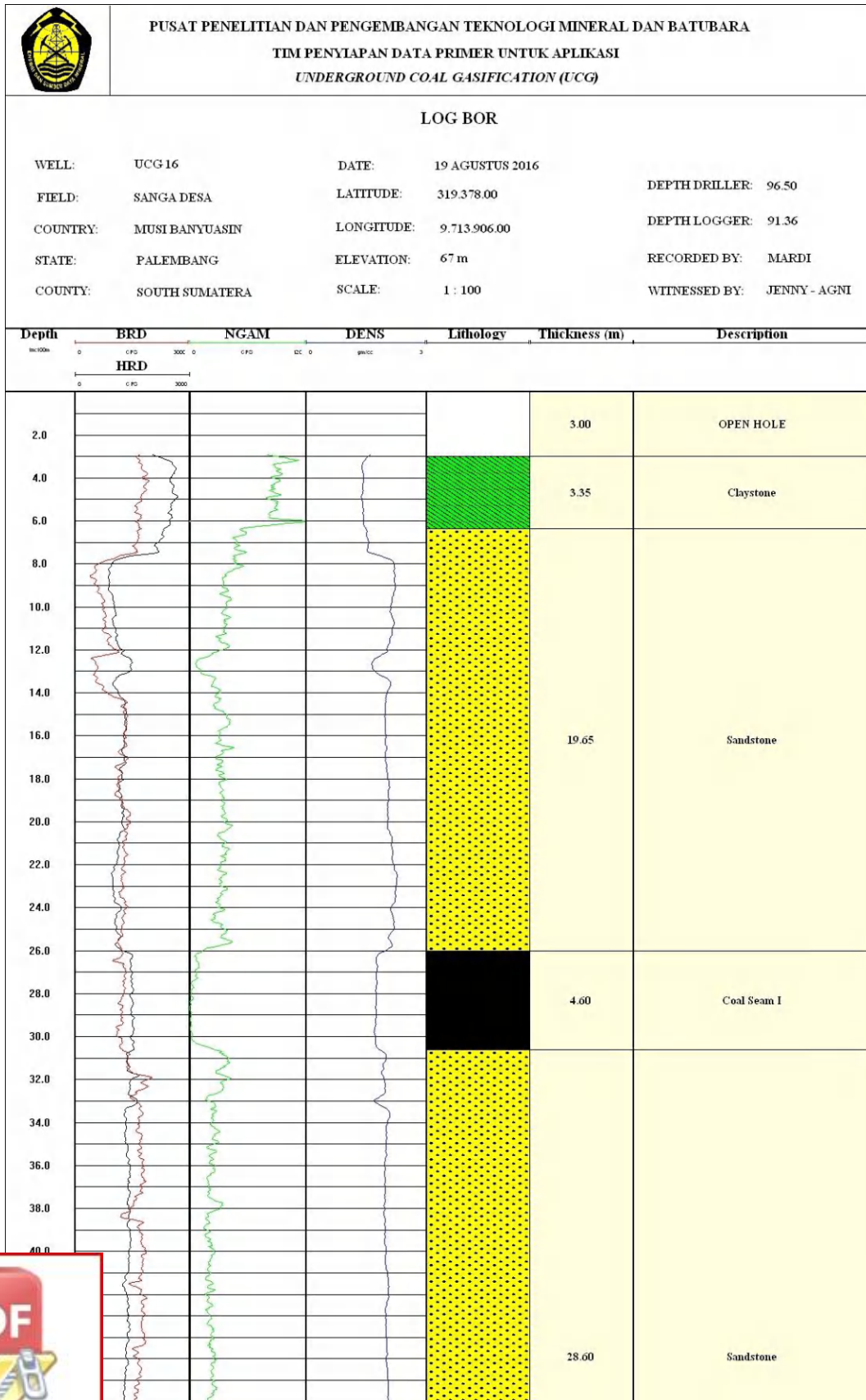


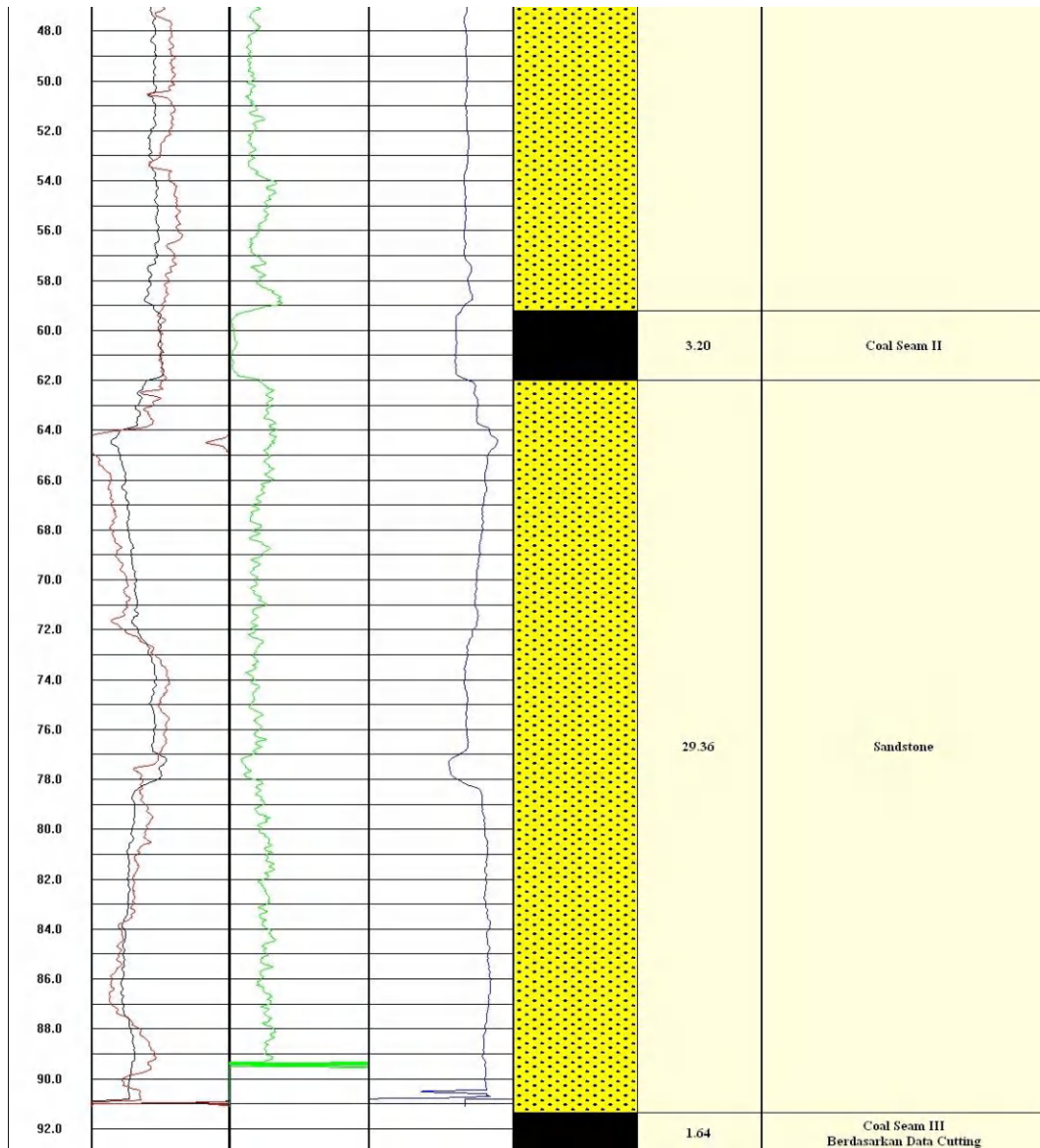




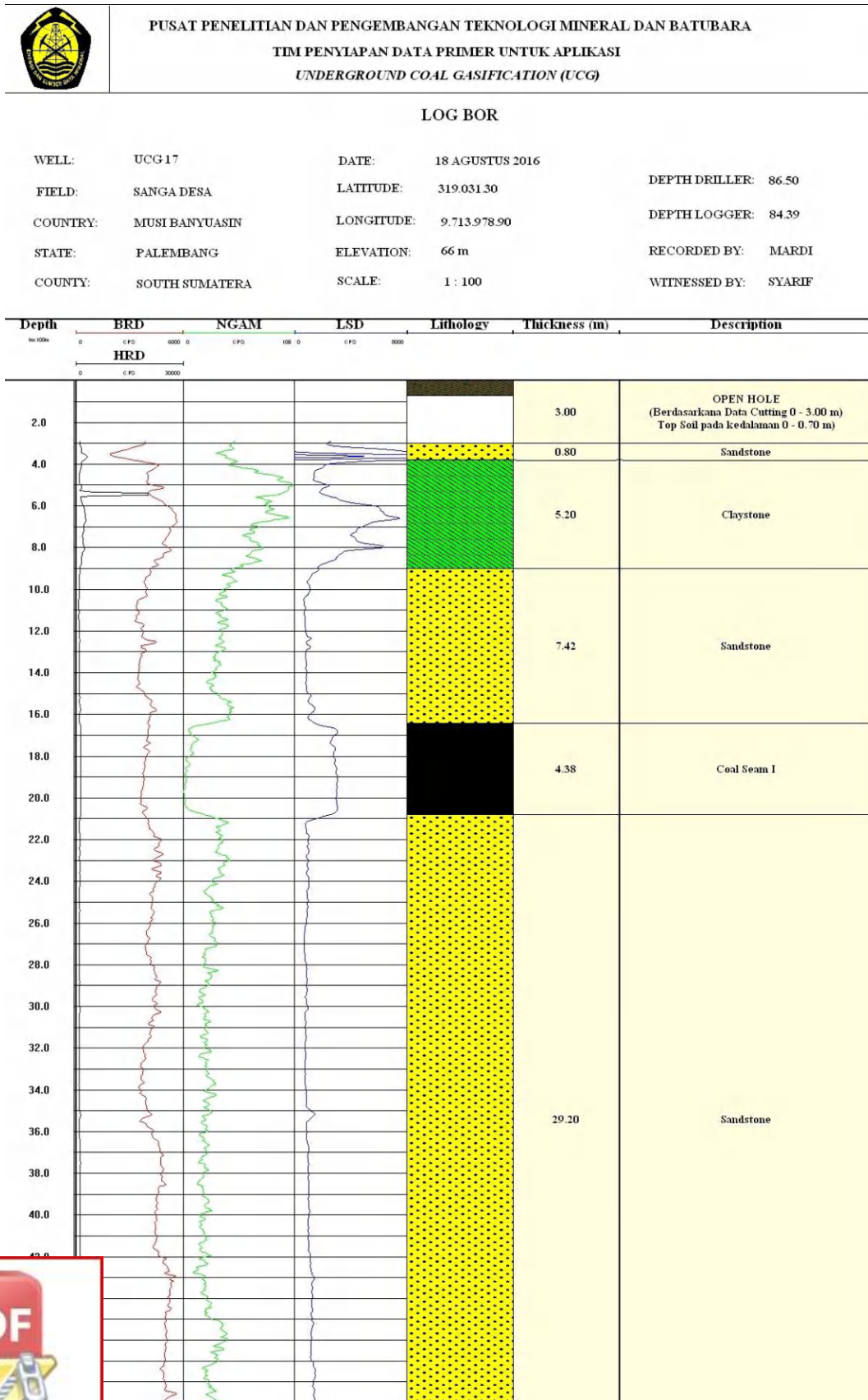


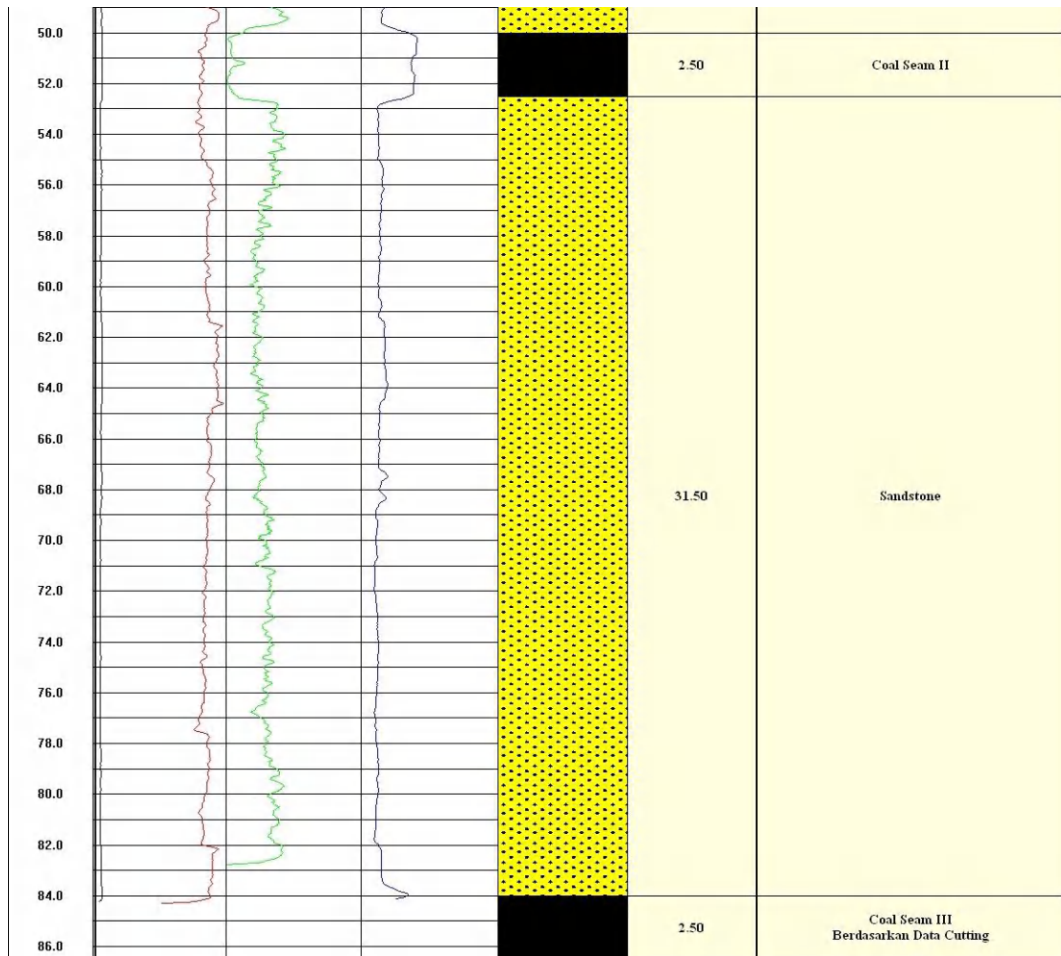
3. Gambar Litologi Sumur Bor UCG 16



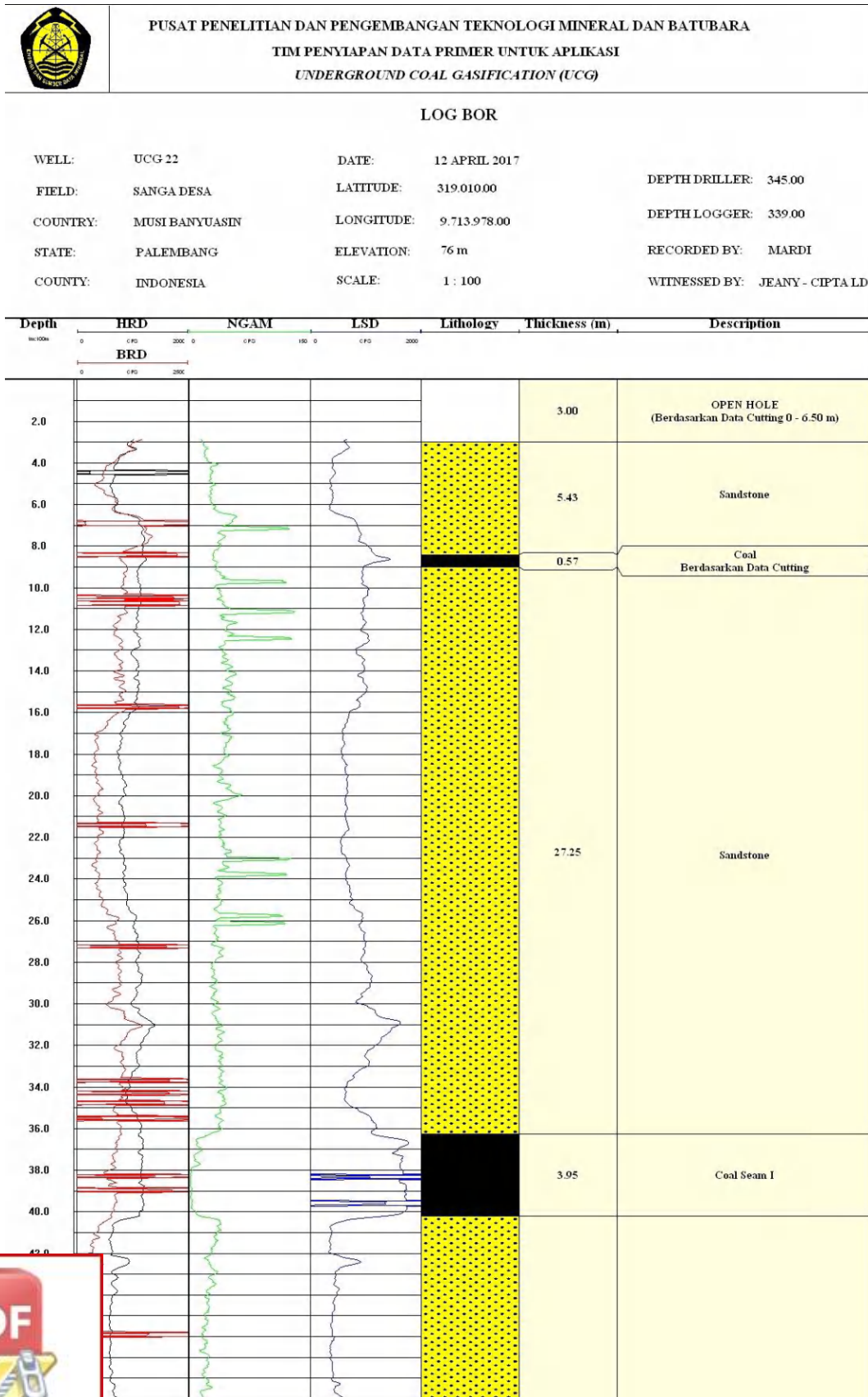


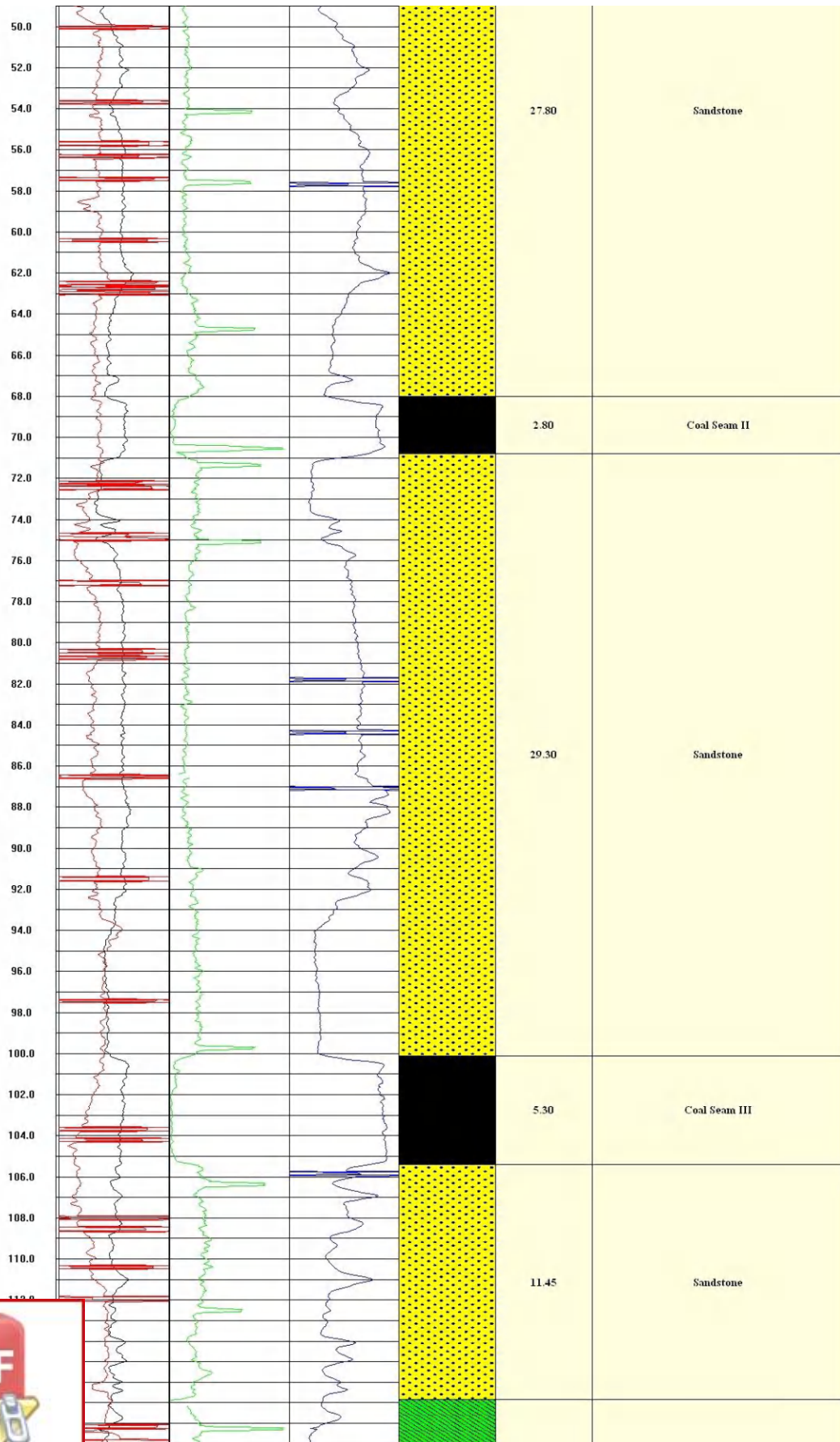
4. Gambar Litologi Sumur Bor UCG 17



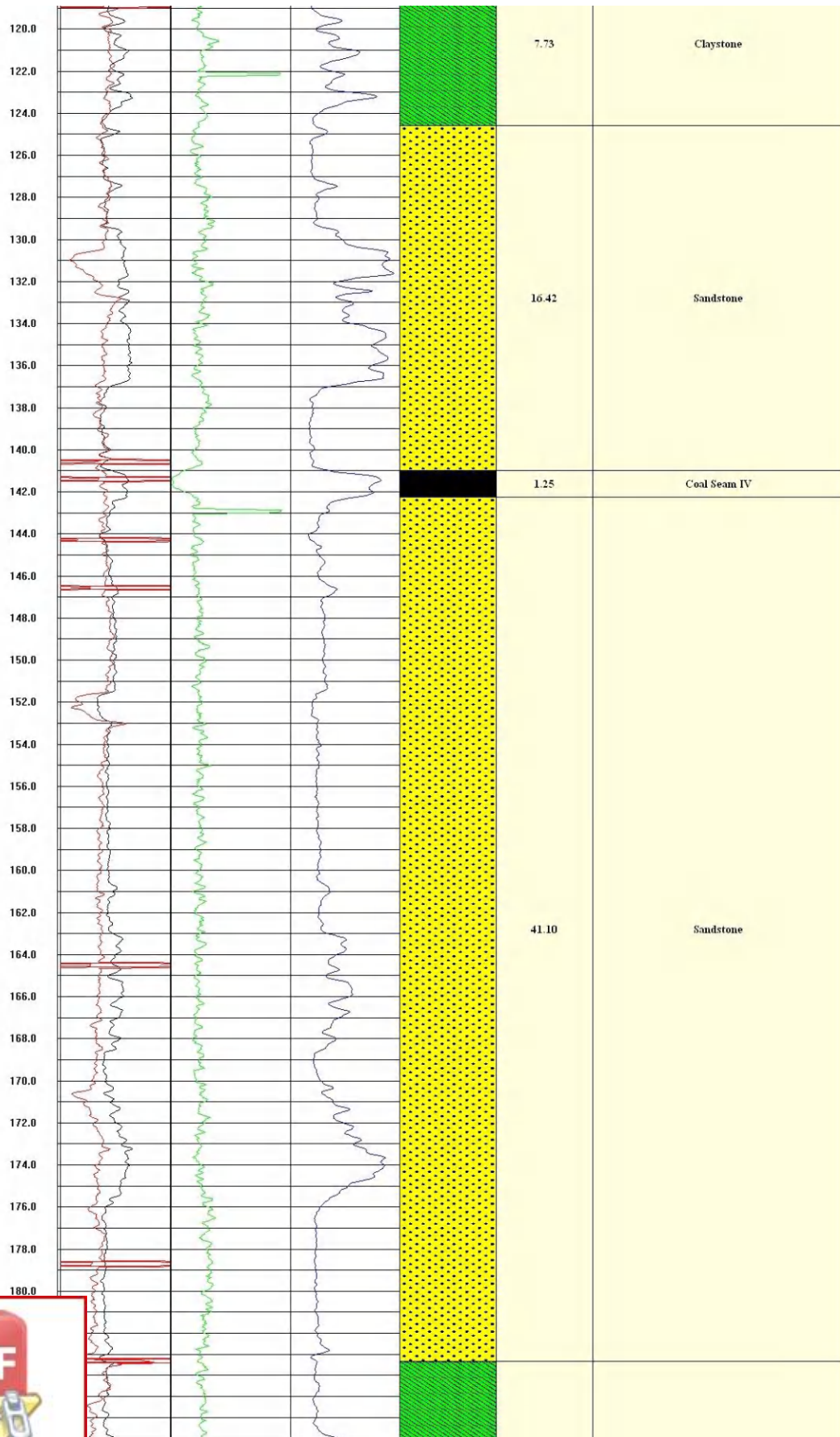


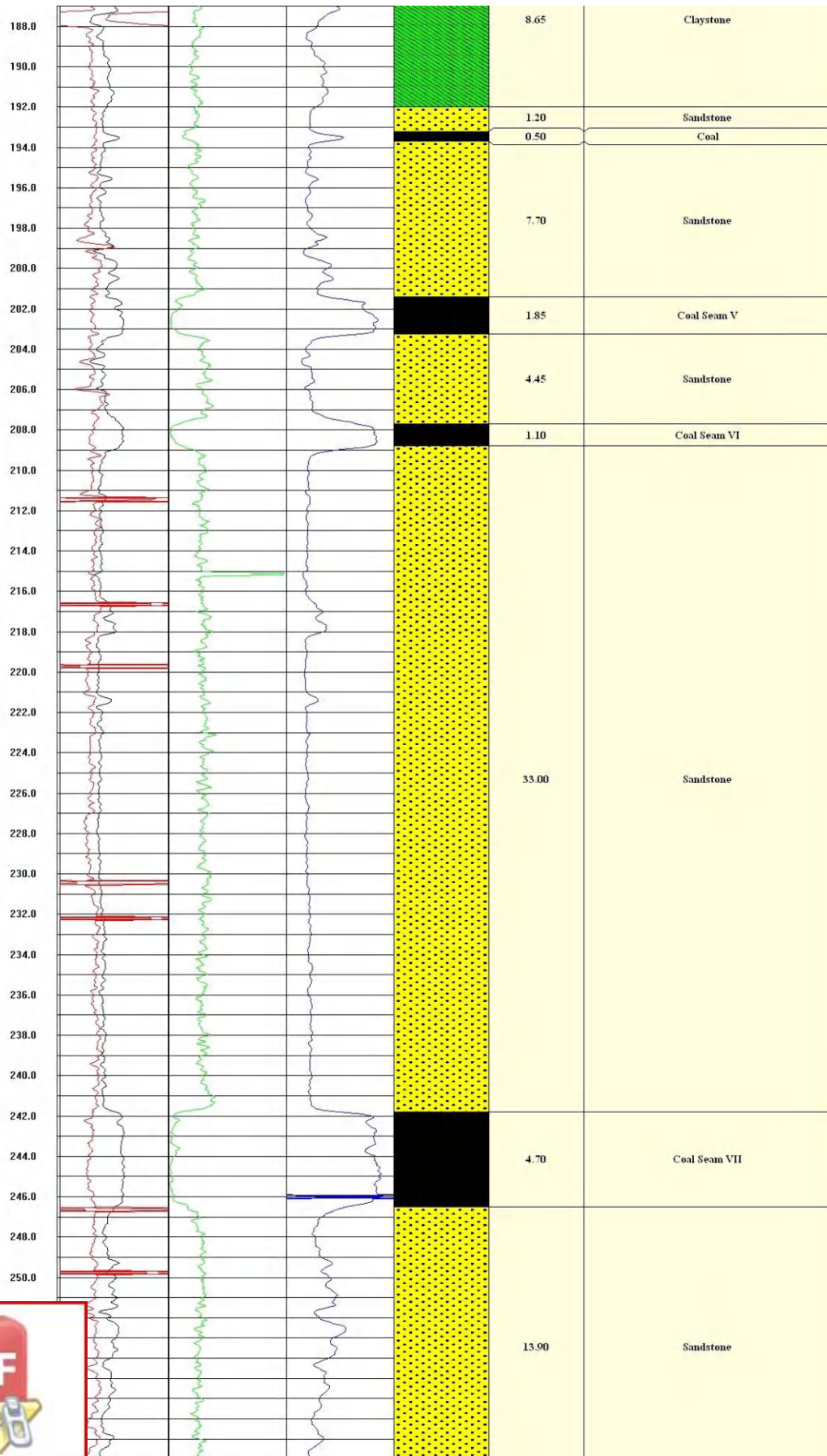
5. Gambar Litologi Sumur Bor UCG 22

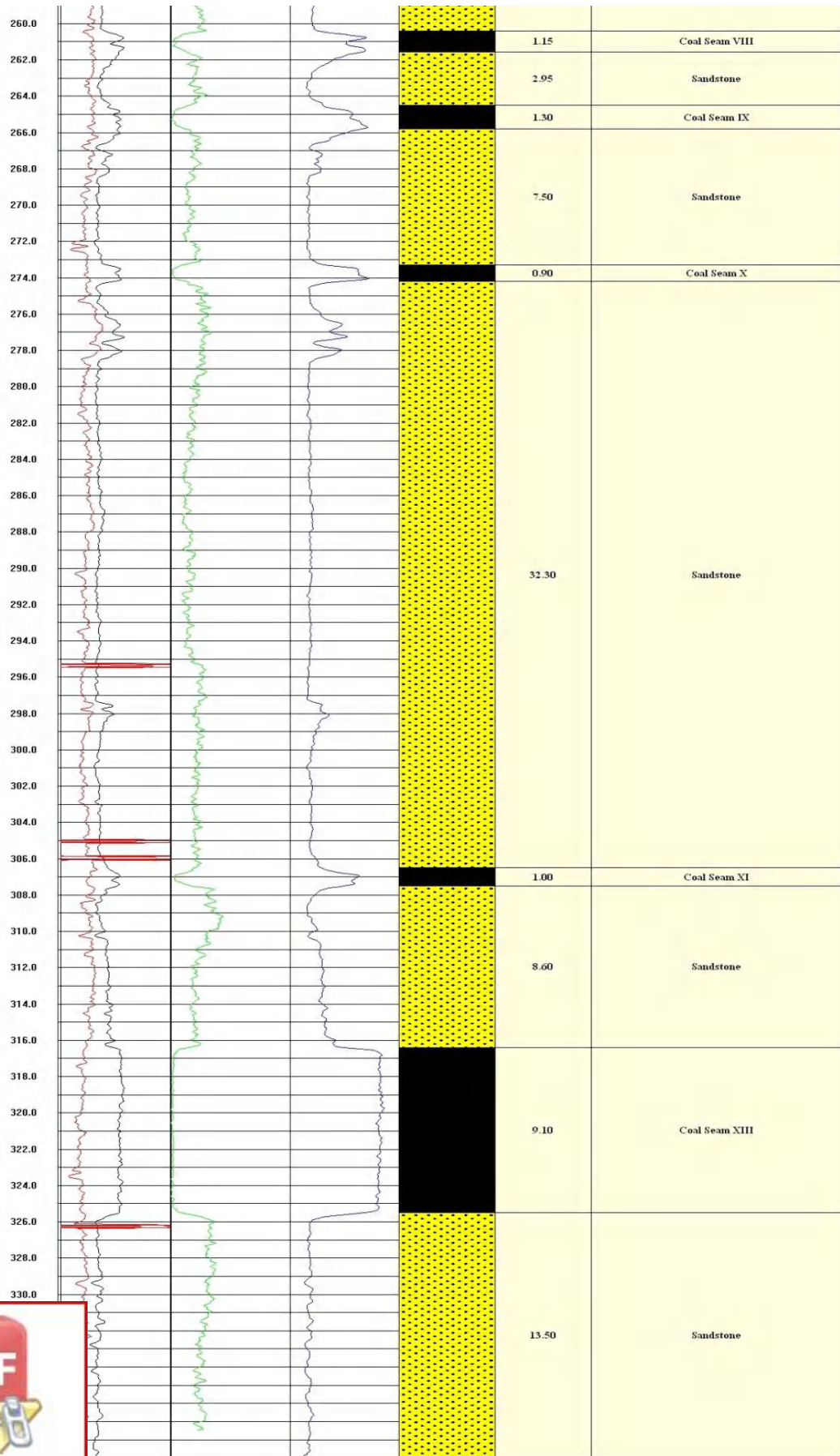




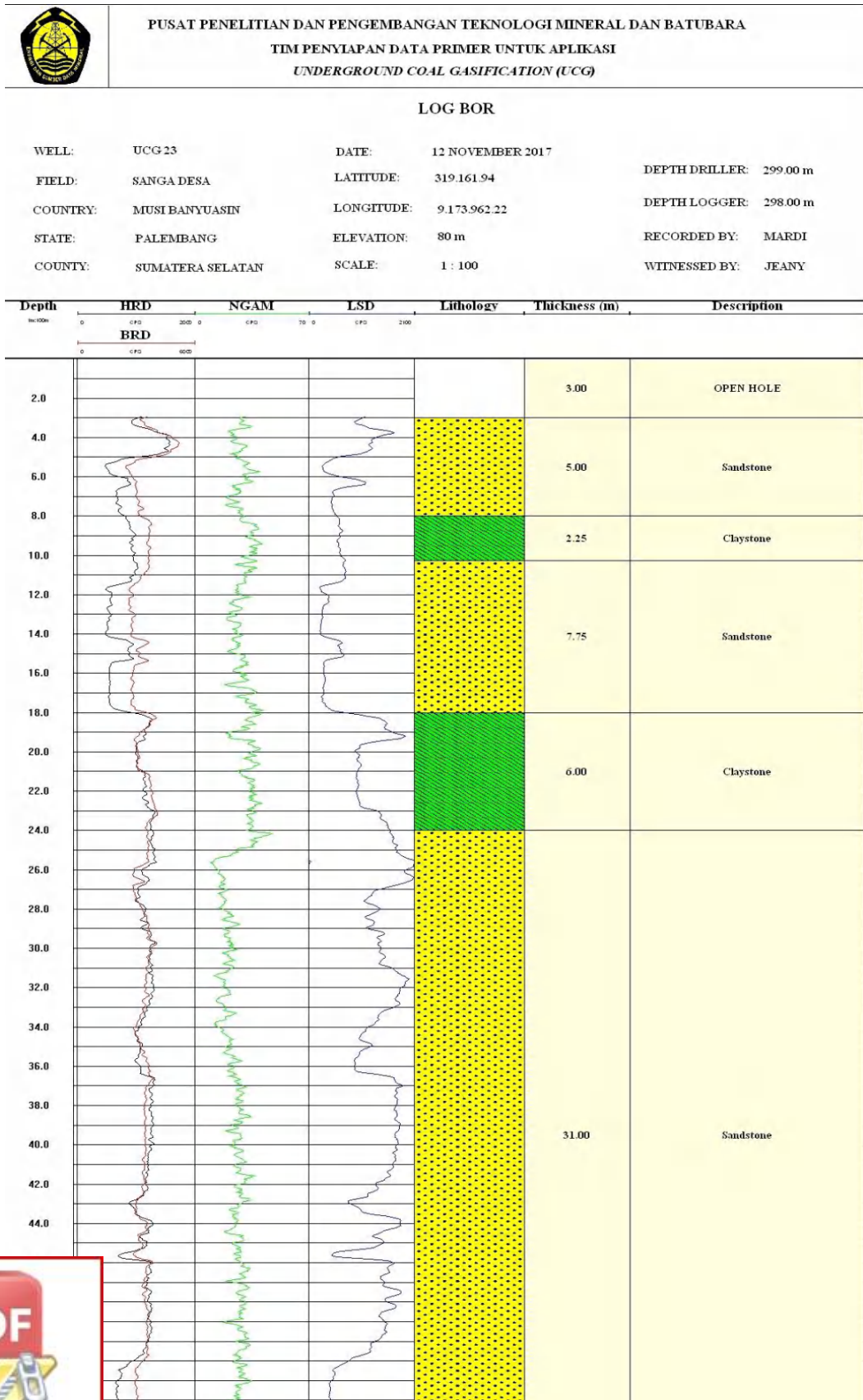

Optimization Software:
www.balesio.com

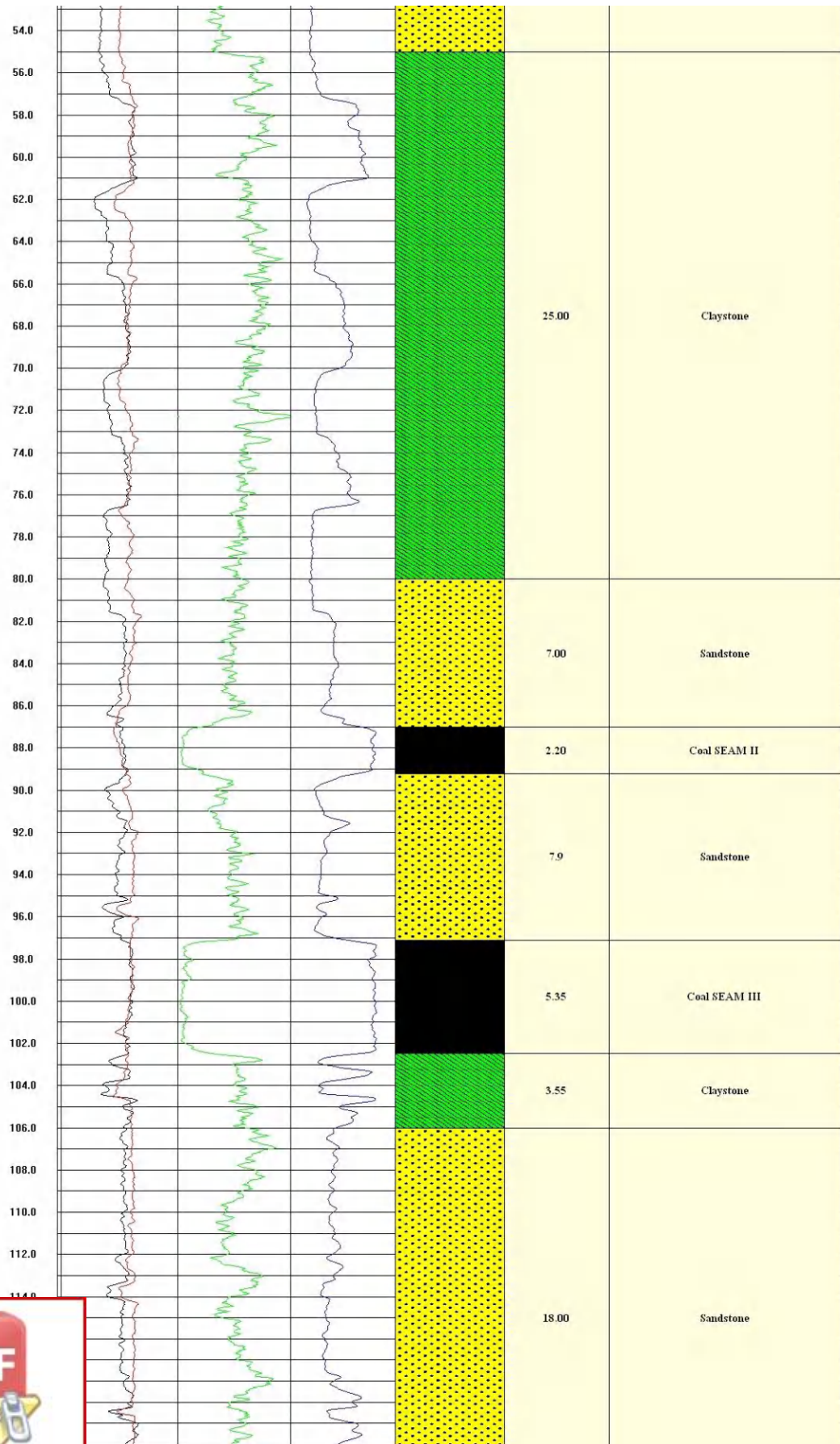


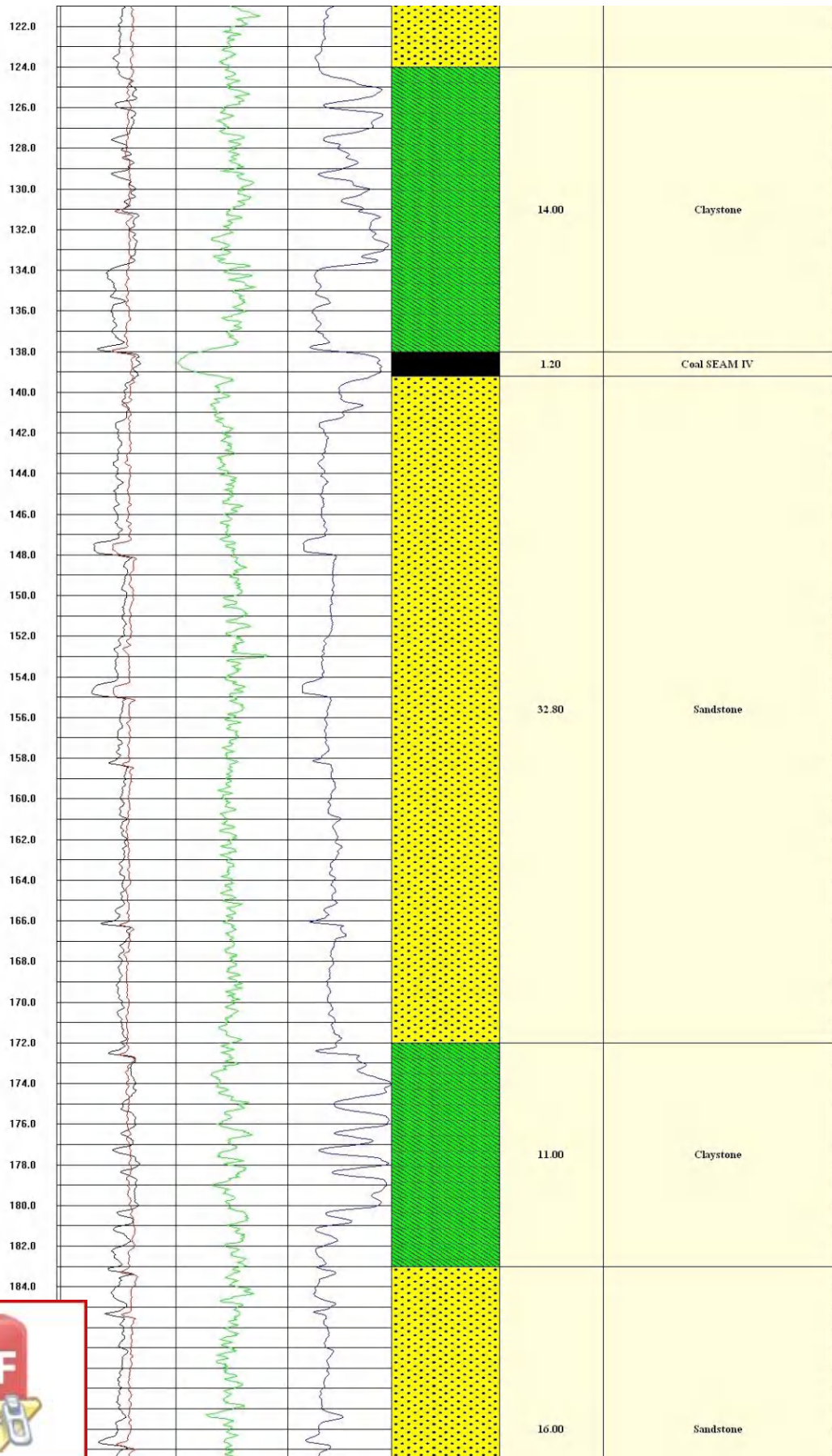


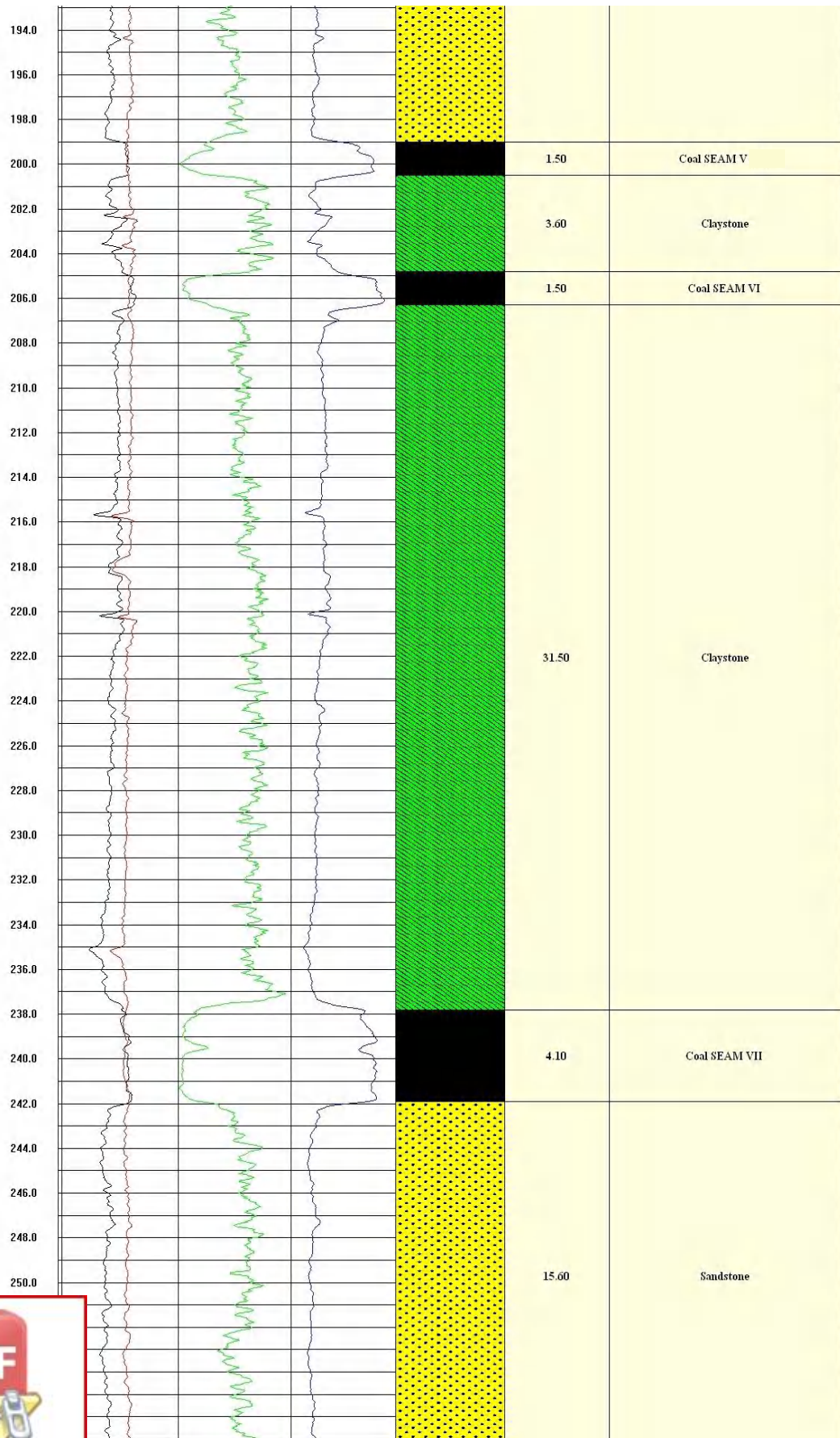


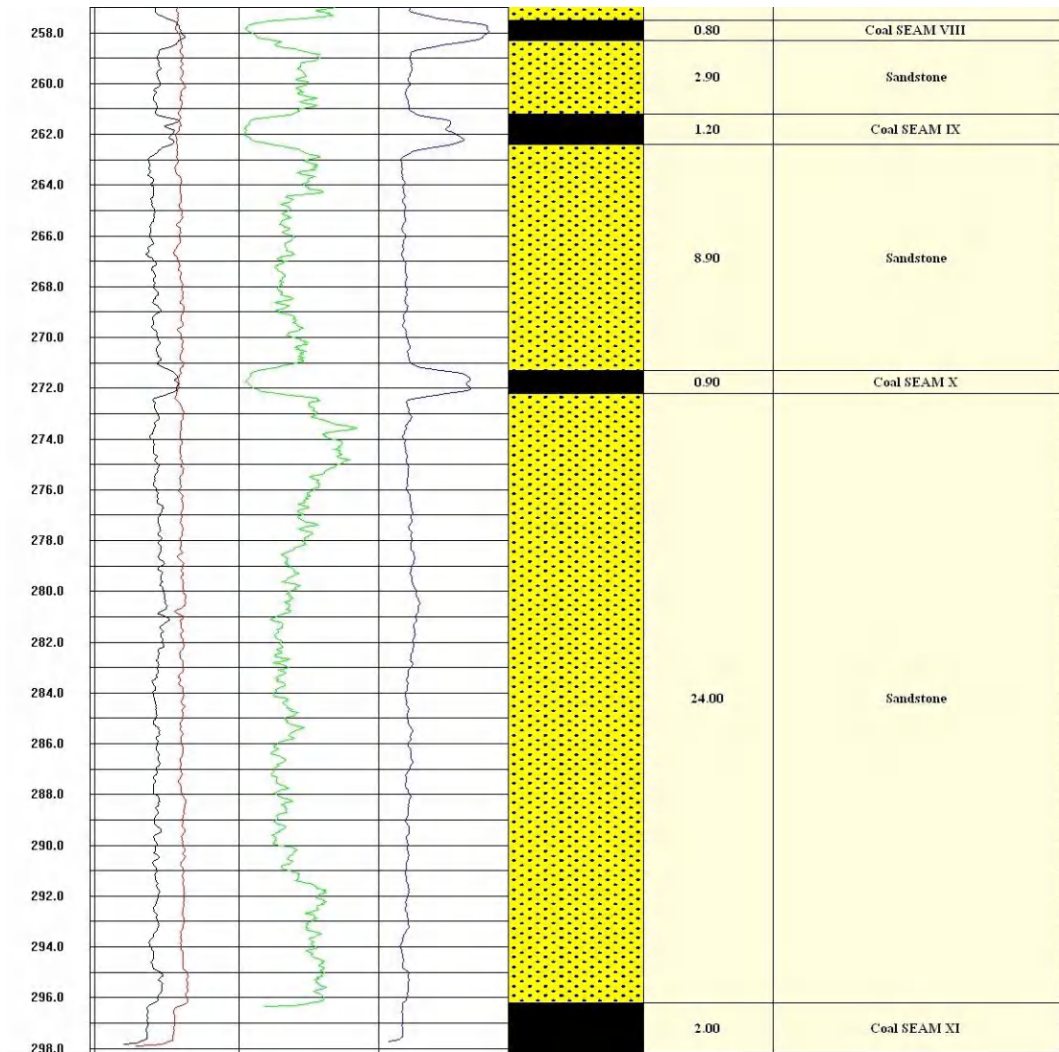
6. Gambar Litologi Sumur Bor UCG 23











7. Penghitungan Sumberdaya Batubara dengan pedoman *rule of gradual changes* menggunakan data core

ZONA	SEAM	Penampang	a (m)	ba (m)	bb (m)	t (m)	S (m2)	L (m)	Bj (ton/m3)	V (m3)	T (tonase)	TOTAL				
A	III	1	116.79	6.42	1.64	4.245	470.6637	118.79	1.3	93444.069	515671.093	775838.4095				
		2	247.22	6.42	2.5	1102.6012										
	II	1	116.79	1.5	3	262.7775										
		2	247.22	1.5	2.5	494.44										
	I	1	116.79	0.15	4.75	286.1355										
		2	247.22	0.15	3.9	500.6205										
	B	II	3	66.57	2.2	1.5	1.985			123.1545	48.46		1.3	18360.411	47379.0404	857136.5406
			4	299.34	2.74	1.5	634.6008									
III		3	66.57	5.25	6.42	388.43595										
		4	299.34	5.3	6.42	1754.1324										
IV		3	66.57	1.2	0.63	1.4325	60.91155									
		4	299.34	1	2.9	583.713										
V		3	66.57	1.5	1.21	1.375	90.20235									
		4	299.34	1.79	1	417.5793										
VI	3	66.57	2.2	1.32	1.4175	117.1632										
	4	299.34	1.58	0.57	321.7905											
VII	3	66.57	4.1	4.9	4.955	299.565										
	4	299.34	5.75	5.07	1619.4294											
VIII	3	66.57	0.8	0.67	0.675	48.92895										
	4	299.34	1.1	0.13	184.0941											
IX	3	66.57	1.2	1.12	1.15	77.2212										
	4	299.34	1.38	0.9	341.2476											
X	3	66.57	0.9	0.8	1.085	56.5845										
	4	299.34	1.04	1.6	395.1288											
XI	3	66.57	2	1.04	1.06	101.1864										
	4	299.34	1	0.2	179.604											
												1632974.95				

Penampang 1 = UCG 15 dan 16

Penampang 2 = UCG 14 dan 17

Penampang 3 = UCG 23 dan 14

Penampang 4 = UCG 22 dan 15

jarak antarpenampang (jarak tiap UCG)

jarak antarpenampang

me

se



8. Penghitungan Sumberdaya Batubara dengan pedoman *rule of gradual changes* menggunakan data log

ZONA	SEAM	Penampang	a (m)	ba (m)	bb (m)	t (m)	S (m2)	L (m)	Bt (ton/m3)	V (m3)	T (tonase)	TOTAL			
A	III	1	116.79	4.6	1.64	3.66	364.3848	118.79	1.3	83313.889	396407.48	679739.22			
		2	247.22	5.9	2.5		1038.324								
	II	1	116.79	1.5	2.8	2.2	251.0985								
		2	247.22	2	2.5		556.245								
	I	1	116.79	0.15	4.6	2.295	277.37625								
		2	247.22	0.15	4.28		547.5923								
	B	II	3	66.57	2.2	1.5	2			123.1545	48.46	1.3	18578.001	48302.803	727898.62
			4	299.34	2.8	1.5				643.581					
III		3	66.57	5.25	6.42	5.3925	388.43595								
		4	299.34	5.3	4.6		1481.733								
IV		3	66.57	1.2	0.63	0.9275	60.91155								
		4	299.34	1.25	0.63		281.3796								
V		3	66.57	1.5	1.21	1.315	90.20235								
		4	299.34	1.85	0.7		381.6585								
VI		3	66.57	2.2	1.32	1.43	117.1632								
		4	299.34	1.1	1.1		329.274								
VII		3	66.57	4.1	4.9	4.725	299.565								
	4	299.34	4.7	5.2		1481.733									
VIII	3	66.57	0.8	0.67	0.855	48.92895									
	4	299.34	1.15	0.8		291.8565									
IX	3	66.57	1.2	1.12	1.1925	77.2212									
	4	299.34	1.3	1.15		366.6915									
X	3	66.57	0.9	0.8	0.9	56.5845									
	4	299.34	0.9	1		284.373									
XI	3	66.57	2	1.04	1.135	101.1864									
	4	299.34	1	0.5		224.505									
												1407637.8			

Penampang 1 = UCG 15 dan 16

Penampang 2 = UCG 14 dan 17

Penampang 3 = UCG 23 dan 14

Penampang 4 = UCG 22 dan 15

jarak antarpenampang (jarak tiap UCG)

jarak antarpenampang

me

se



9. Penghitungan Sumberdaya Batubara dengan pedoman *rule of nearest point*

SEAM	Penampang	a (m)	ba (m)	bb (m)	t (m)	P (m2)	L (m)	Bj (ton/m3)	V (m3)	T (tonase)	TOTAL 1 & 3	TOTAL 2 & 4
III	1	116.79	6.42	1.64	4.03	470.6637	118.79	1.3	55910.141	292913.228	492476.3603	1068671.573
	2	247.22	6.42	2.5	4.46	1102.601			130978	759410.424		
II	1	116.79	1.5	3	2.25	262.7775	48.46	1.3	31215.339	91304.8672	286893.3393	1485741.268
	2	247.22	1.5	2	494.44	118.79			58734.528	152709.772		
I	1	116.79	0.15	4.75	2.45	286.1355	48.46	1.3	33990.036	108258.265	286893.3393	1485741.268
	2	247.22	0.15	3.9	2.03	500.6205			59468.709	156551.377		
II	3	66.57	2.2	1.5	1.85	123.1545	48.46	1.3	5968.0671	14353.2013	286893.3393	1485741.268
	4	299.34	2.74	1.5	2.12	634.6008			30752.755	84754.5921		
III	3	66.57	5.25	6.42	5.84	388.436	48.46	1.3	18823.606	142786.464	286893.3393	1485741.268
	4	299.34	5.3	6.42	5.86	1754.132			85005.256	647570.041		
IV	3	66.57	1.2	0.63	0.92	60.91155	48.46	1.3	2951.7737	3511.13483	286893.3393	1485741.268
	4	299.34	1	2.9	1.95	583.713			28286.732	71706.8656		
V	3	66.57	1.5	1.21	1.36	90.20235	48.46	1.3	4371.2059	7699.87916	286893.3393	1485741.268
	4	299.34	1.79	1	1.4	417.5793			20235.893	36697.7917		
VI	3	66.57	2.2	1.32	1.76	117.1632	48.46	1.3	5677.7287	12990.6432	286893.3393	1485741.268
	4	299.34	1.58	0.57	1.08	321.7905			15593.968	21792.5698		
VII	3	66.57	4.1	4.9	4.5	299.565	48.46	1.3	14516.92	84923.9814	286893.3393	1485741.268
	4	299.34	5.75	5.07	5.41	1619.429			78477.549	551932.6		
VIII	3	66.57	0.8	0.67	0.74	48.92895	48.46	1.3	2371.0969	2265.5831	286893.3393	1485741.268
	4	299.34	1.1	0.13	0.62	184.0941			8921.2001	7132.49947		
IX	3	66.57	1.2	1.12	1.16	77.2212	48.46	1.3	3742.1394	5643.14614	286893.3393	1485741.268
	4	299.34	1.38	0.9	1.14	341.2476			16536.859	24507.6246		
X	3	66.57	0.9	0.8	0.85	56.5845	48.46	1.3	2742.0849	3030.00378	286893.3393	1485741.268
	4	299.34	1.04	1.6	1.32	395.1288			19147.942	32857.8679		
XI	3	66.57	2	1.04	1.52	101.1864	48.46	1.3	4903.4929	9689.30206	286893.3393	1485741.268
	4	299.34	1	0.2	0.6	179.604			8703.6098	6788.81568		

Penampang 1 = UCG 15 dan 16

Penampang 2 = UCG 14 dan 17

Penampang 3 = UCG 23 dan 14

Penampang 4 = UCG 22 dan 15

jarak antarpenampang (jarak tiap UCG)

jarak antarpenampang

me

se

