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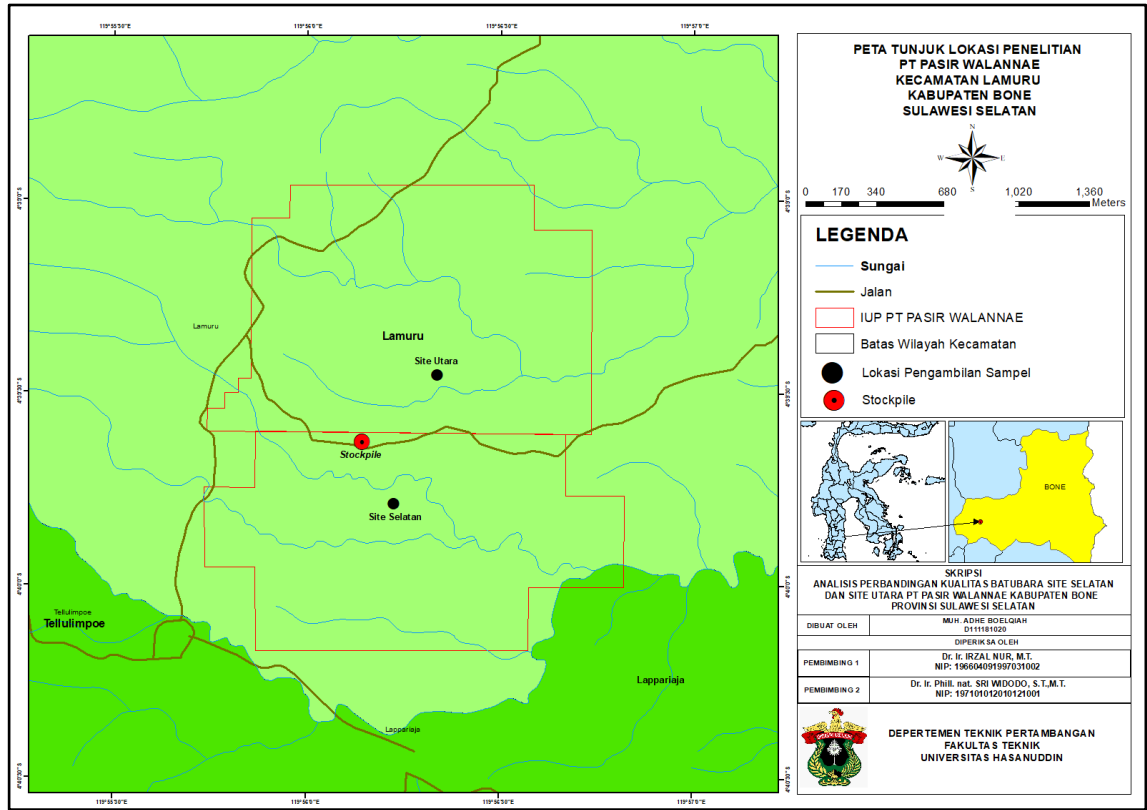
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LAMPIRAN

LAMPIRAN A
PETA LOKASI PENELITIAN

PETA LOKASI PENELITIAN DAN PENGAMBILAN SAMPEL BATUBARA



LAMPIRAN B
HASIL PERHITUNGAN ANALISIS PROKSIMAT

Hasil Perhitungan Analisis Proksimat Sampel Awal

A. Analisis kelembaban (*Inherent Moisture*)

Kode Sampel	Berat Sampel (gr)	Berat cawan + sampel (gr)	Berat cawan + sampel setelah pembakaran (gr)
Sampel <i>Site</i> Utara	1,0000	12,2905	12,2289
Sampel <i>Site</i> Selatan	1,0000	11,5813	11,4818

❖ Rumus untuk menentukan persentase kadar air:

$$IM (\%) = \frac{(B-A)-(C-A)}{B-A} \times 100$$

Keterangan:

IM = *Inherent Moisture* (%)

A = Berat cawan (gram)

B = Berat cawan + sampel (gram)

C = Berat cawan + sampel setelah pembakaran (gram)

Penyelesaian:

$$\text{Sampel } \textit{Site} \text{ Utara} = \frac{12,2905 - 12,2289}{1,0000} \times 100$$

$$= 6,16\%$$

$$\text{Sampel } \textit{Site} \text{ Selatan} = \frac{11,5813 - 11,4818}{1,0000} \times 100$$

$$= 9,95\%$$

B. Analisis Kadar Abu (*Ash Content*)

Kode Sampel	Berat sampel (gr)	Berat cawan + sampel (gr)	Berat cawan + sampel setelah pembakaran (gr)
Sampel <i>Site</i> Utara	1,0000	12,2905	11,3785
Sampel <i>Site</i> Selatan	1,0000	11,5813	10,6681

❖ Rumus untuk menentukan persentase kadar abu:

$$AC = \frac{C-A}{B-A} \times 100\%$$

Keterangan:

AC = *Ash Content* (%)

A = Berat cawan (gram)

B = Berat cawan + sampel (gram)

C = Berat cawan + sampel setelah pembakaran (gram)

Penyelesaian:

$$AC \text{ Site Utara} = \frac{11,3785 - 11,2905}{12,2905 - 11,2905} \times 100$$

$$= 8,8\%$$

$$AC \text{ Site Selatan} = \frac{10,6681 - 10,5813}{11,5813 - 10,5813} \times 100$$

$$= 8,68\%$$

C. Analisis Zat Terbang (*Volatile Matter*)

Kode Sampel	Berat cawan dan tutup (gr)	Berat cawan dan tutup + sampel (gr)	Berat cawan dan tutup + sampel setelah pembakaran (gr)
Sampel <i>Site</i> Utara	10,9111	11,9111	11,3546
Sampel <i>Site</i> Selatan	10,8037	11,8037	11,2490

❖ Rumus untuk menentukan persentase zat terbang:

$$VM (\%) = \left[\frac{(B-A)-(C-A)}{B-A} \times 100\% \right] - MC$$

Keterangan:

VM = *Volatile Matter* (%)

A = Berat cawan dan tutup (gram)

B = Berat cawan dan tutup + sampel (gram)

C = Berat cawan dan tutup + sampel setelah pembakaran (gram)

Penyelesaian:

$$\begin{aligned} VM \text{ Site Utara} &= \frac{11,9111-11,3546}{11,9111-10,9111} \times 100 - 6,16\% \\ &= 49,49\% \end{aligned}$$

$$\begin{aligned} VM \text{ Site Selatan} &= \frac{11,8037-11,2490}{11,8037-10,8037} \times 100 - 9,95\% \\ &= 45,52\% \end{aligned}$$

D. Analisis Karbon Tetap (*Fixed Carbon*)

❖ Rumus untuk menentukan persentase karbon tetap:

$$FC (\%) = 100 - (IM (\%) + AC (\%) + VM (\%))$$

Penyelesaian:

$$\begin{aligned} FC \text{ Site Utara} &= 100 - (6,16 + 8,8 + 49,49) \\ &= 35,55\% \end{aligned}$$

$$\begin{aligned} FC \text{ Site Selatan} &= 100 - (9,95 + 8,68 + 45,52) \\ &= 35,85\% \end{aligned}$$

LAMPIRAN C
HASIL ANALISIS TOTAL SULFUR



Overview

- Name: S5
- Number of Included Replicates: 1
- Analysis Date: 27/10/2022 11:15:02
- Method: BB_ADB
- Description:
- Sulfur Average: 3.66 %
- Set ID: 0000000000012F6

Replicates

Sample Mass	Comments	Sulfur	Analysis Date
0,2003 g		3.66 %	27/10/2022 11:15:02

Overview

- Name: S11
- Number of Included Replicates: 1
- Analysis Date: 27/10/2022 11:18:14
- Method: BB_ADB
- Description:
- Sulfur Average: 6.58 %
- Set ID: 0000000000012F7

Replicates

Sample Mass	Comments	Sulfur	Analysis Date
0,2004 g		6.58 %	27/10/2022 11:18:14

LAMPIRAN D
HASIL ANALISIS NILAI KALORI



**LABORATORIUM MOTOR BAKAR
DEPARTEMEN TEKNIK MESIN
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Jalan Poros Malino Km.6 Bontomarannu (92171) Gowa Sulawesi Selatan
Telp. (0411) 586015, 586162 Fax (0411) 586015

SURAT KETERANGAN HASIL ANALISIS SAMPEL

Nomor : 26/LMB-FT/UH/2022

Pengirim : Muh. Adhe Boelqiah
NIM : D111 18 1020
Parameter Uji : Nilai Kalor
Peralatan : Bomb Kalorimeter
Jenis Sampel : Batu Bara
Tanggal Uji : 16 September 2022

No.	Kode Sampel	Nilai Kalor (Kalori/Gram)
1.	Site Utara	5.766 (24.126 KJ/Kg)
2.	Site Selatan	4.828 (20.202 KJ/Kg)

Gowa, 19 September 2022

Kepala Laboratorium Motor Bakar,



[Signature]
Prof. Dr. S. Erwin Ika Patta, S.T., M.T.
NIP. 091112211990221001



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Lampiran

FOTO CAWAN HASIL PENGUJIAN



Batu bara Site Utara



Batu bara Site Selatan

LAMPIRAN E
KARTU KONSULTASI TUGAS AKHIR

(Konsultasi minimal 8 kali)

TANGGAL	MATERI KONSULTASI	PARAF DOSEN
18-07-22	<ul style="list-style-type: none">- Asistensi perbaikan Judul Penelitian- Perbaikan latar belakang	M—
02-08-22	<ul style="list-style-type: none">- Perbaikan tujuan Penelitian- Perbaikan Rumusan Masalah- Perbaikan Manfaat Penelitian	M—
17-08-22	<ul style="list-style-type: none">- Laporan Penelitian Bab I	M—
10-09-22	<ul style="list-style-type: none">- Asistensi Laporan Bab II- Perbaikan Typo Bab I	M—
19-09-22	<ul style="list-style-type: none">- perbaikan Bab II- Asistensi Peta lokasi Penelitian- Asistensi Laporan Bab III- Asistensi data sampel Batubara	M—

TANGGAL	MATERI KONSULTASI	PARAF DOSEN
24-11-22	<ul style="list-style-type: none"> - Perbaikan Bab VII - Asistensi Laporan Bab IV - Asistensi Laporan Bab V 	M —
29-11-22	<ul style="list-style-type: none"> - Perbaikan bab IV - Perbaikan bab V 	M —
12-12-22	<ul style="list-style-type: none"> - Asistensi Jurnal - Asistensi poster 	M —