

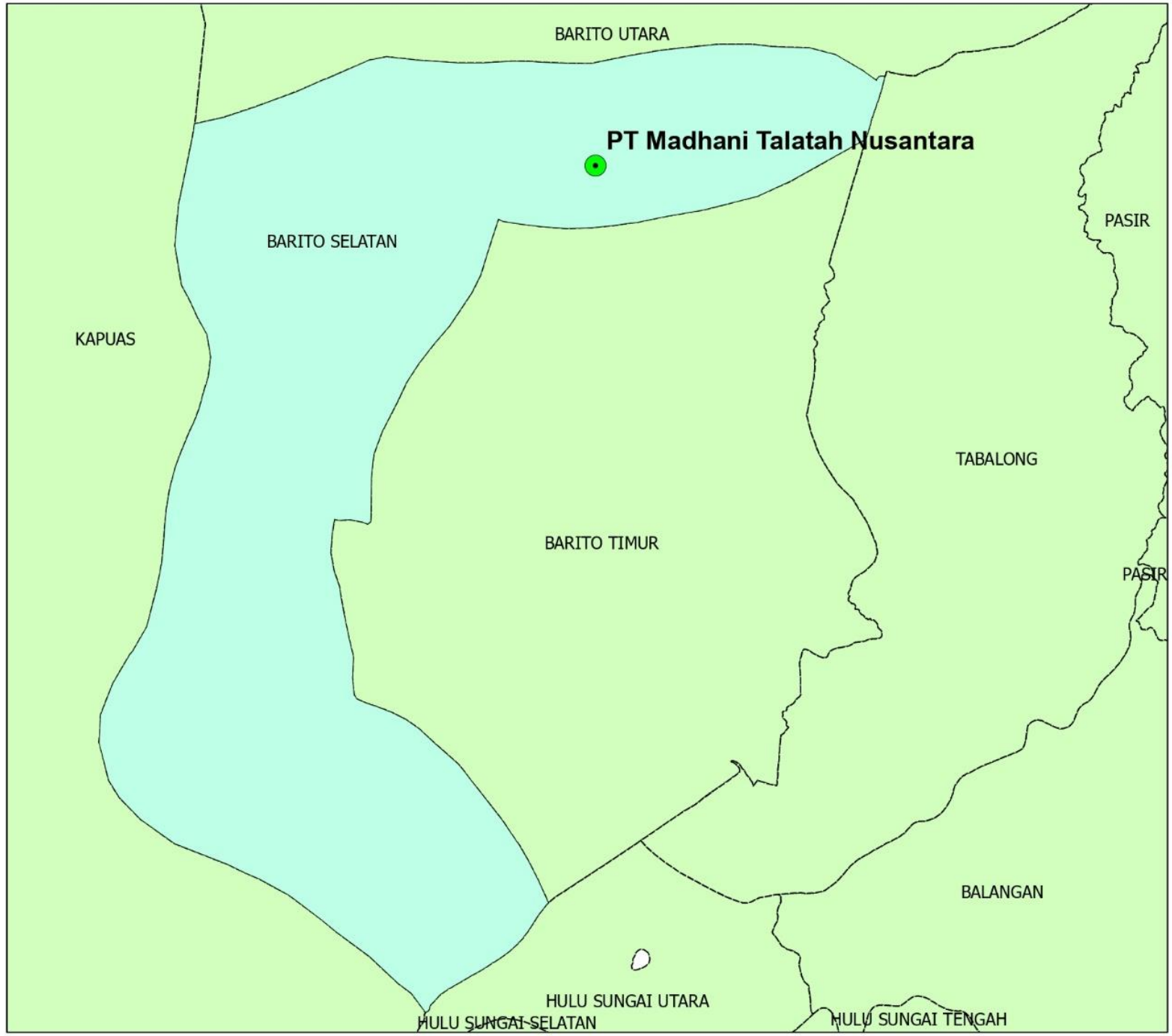
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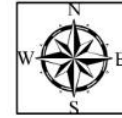
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LAMPIRAN

LAMPIRAN A
PETA LOKASI PENELITIAN

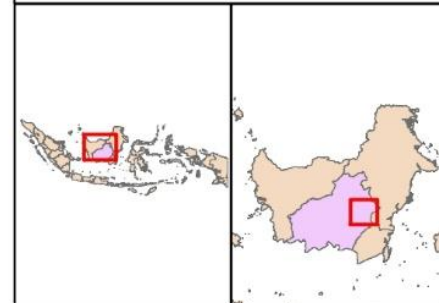


PETA LOKASI PENELITIAN



Legend

- PT Madhani Talatah Nusantara
- Batas Kabupaten
- Kabupaten Barito Selatan



DEPARTEMEN TEKNIK PERTAMBANGAN
 FAKULTAS TEKNIK
 UNIVERSITAS HASANUDDIN

SKRIPSI

ANALISIS PENGGUNAAN METODE DOUBLE
 DECK PRIMER PADA PEMBONGKARAN
 OVERBURDEN DI BLOK KANANAI
 PT MADHANI TALATAH NUSANTARA

DIGAMBAR OLEH: FIKRI
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Pembimbing

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Tahun 2022	Lampiran A	Halaman 82
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LAMPIRAN B
GEOMETRI PELEDAKAN

A. Peledakan Pertama

No	<i>Burden</i> (m)	Spasi (m)	<i>Depth</i> (m)
1	7	8	3,2
2	7	8	3,3
3	7	8	4
4	7	8	5
5	7	8	5,3
6	7	8	5,5
7	7	8	5,5
8	7	8	6
9	7	8	6,5
10	7	8	6,5
11	7	8	7
12	7	8	7,5
13	7	8	8,1
14	7	8	8,3
15	7	8	8,4
16	7	8	8,5
17	7	8	8,5
18	7	8	8,5
19	7	8	8,5
20	7	8	8,5
21	7	8	8,6
22	7	8	8,6
23	7	8	8,7
24	7	8	8,7
25	7	8	8,8
26	7	8	9
27	7	8	9

B. Peledakan Kedua

No	<i>Burden</i> (m)	Spasi (m)	<i>Depth</i> (m)
1	7	8	7
2	7	8	7,1
3	7	8	7,5
4	7	8	7,5
5	7	8	7,5
6	7	8	7,5
7	7	8	7,5
8	7	8	7,7
9	7	8	7,7
10	7	8	7,8
11	7	8	7,8
12	7	8	7,8
13	7	8	7,8
14	7	8	7,8
15	7	8	7,8
16	7	8	7,8
17	7	8	7,8
18	7	8	8
19	7	8	8
20	7	8	8
21	7	8	8
22	7	8	8
23	7	8	8

C. Peledakan Ketiga

No	<i>Burden</i> (m)	Spasi (m)	<i>Depth</i> (m)
1	7	8	6,5
2	7	8	6,5
3	7	8	7
4	7	8	7
5	7	8	7
6	7	8	7
7	7	8	7
8	7	8	7
9	7	8	7,1
10	7	8	7,5
11	7	8	7,5
12	7	8	7,6
13	7	8	7,8
14	7	8	7,8
15	7	8	8
16	7	8	8
17	7	8	8
18	7	8	8
19	7	8	8,5
20	7	8	8,5
21	7	8	8,5
22	7	8	8,5
23	7	8	8,7
24	7	8	8,7
25	7	8	8,7
26	7	8	8,8
27	7	8	8,8
28	7	8	8,8
29	7	8	8,8
30	7	8	8,8
31	7	8	8,9
32	7	8	9
33	7	8	9
34	7	8	9
35	7	8	9

D. Peledakan Keempat

No	<i>Burden</i> (m)	Spasi (m)	<i>Depth</i> (m)
1	7	8	7
2	7	8	7
3	7	8	7
4	7	8	7,1
5	7	8	7,1
6	7	8	7,1
7	7	8	7,1
8	7	8	7,2
9	7	8	7,2
10	7	8	7,2
11	7	8	7,2
12	7	8	7,2
13	7	8	7,3
14	7	8	7,3
15	7	8	7,8
16	7	8	7,8
17	7	8	7,9
18	7	8	7,9
19	7	8	7,9
20	7	8	7,9
21	7	8	7,9
22	7	8	7,9
23	7	8	7,9
24	7	8	8
25	7	8	8
26	7	8	8
27	7	8	8
28	7	8	8
29	7	8	8
30	7	8	8

31	7	8	8
32	7	8	8
33	7	8	8
34	7	8	8,1
35	7	8	8,1
36	7	8	8,5
37	7	8	8,5
38	7	8	8,5
39	7	8	8,8
40	7	8	8,8
41	7	8	8,9
42	7	8	8,9
43	7	8	8,9
44	7	8	8,9
45	7	8	9
46	7	8	9
47	7	8	9
48	7	8	9
49	7	8	9
50	7	8	9
51	7	8	9
52	7	8	9
53	7	8	9
54	7	8	9

E. Peledakan Kelima

No	<i>Burden</i> (m)	Spasi (m)	<i>Depth</i> (m)
1	7	8	6
2	7	8	6
3	7	8	6
4	7	8	6
5	7	8	6
6	7	8	6,2
7	7	8	6,2
8	7	8	6,3
9	7	8	6,6
10	7	8	6,8
11	7	8	6,8
12	7	8	6,8
13	7	8	7
14	7	8	7
15	7	8	7
16	7	8	7
17	7	8	7
18	7	8	7
19	7	8	7
20	7	8	7

LAMPIRAN C
PERHITUNGAN DISTRIBUSI FRAGMENTASI
METODE KUZ-RAM

A. Peledakan Pertama

R (% of Retain > Material Size)

$$R = e^{-(x/x_c)^n}; x = \text{Ukuran lubang saringan}$$

1. $x = 10$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(10/33,27)^{1.439}}$$

$$R = 16,24\%$$

2. $x = 20$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(20/33,27)^{1.439}}$$

$$R = 38,16\%$$

3. $x = 30$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(30/33,27)^{1.439}}$$

$$R = 57,14\%$$

4. $x = 40$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(40/33,27)^{1.439}}$$

$$R = 72,84\%$$

5. $x = 50$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(50/33,27)^{1.439}}$$

$$R = 83,42\%$$

6. $x = 60$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(60/33,27)^{1.439}}$$

$$R = 90,33\%$$

7. $x = 70$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(70/33,27)^{1.439}}$$

$$R = 94,59\%$$

8. $x = 80$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(80/33,27)^{1.439}}$$

$$R = 97,08\%$$

9. $x = 90$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(90/33,27)^{1.439}}$$

$$R = 98,48\%$$

10. $x = 100$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(100/33,27)^{1.439}}$$

$$R = 99,24\%$$

B. Peledakan Kedua

R (% of Retain > Material Size)

$$R = e^{-(x/x_c)^n}; x = \text{Ukuran lubang saringan}$$

1. $x = 10$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-\left(\frac{10}{33,51}\right)^{1.414}}$$

$$R = 16,54\%$$

2. $x = 20$

$$R = e^{-\left(\frac{x}{x_c}\right)^n}$$

$$R = 2,718^{-\left(\frac{20}{33,51}\right)^{1.414}}$$

$$R = 38,23\%$$

3. $x = 30$

$$R = e^{-\left(\frac{x}{x_c}\right)^n}$$

$$R = 2,718^{-\left(\frac{30}{33,51}\right)^{1.414}}$$

$$R = 57,47\%$$

4. $x = 40$

$$R = e^{-\left(\frac{x}{x_c}\right)^n}$$

$$R = 2,718^{-\left(\frac{40}{33,51}\right)^{1.414}}$$

$$R = 72,31\%$$

5. $x = 50$

$$R = e^{-\left(\frac{x}{x_c}\right)^n}$$

$$R = 2,718^{-\left(\frac{50}{33,51}\right)^{1.414}}$$

$$R = 82,80\%$$

6. $x = 60$

$$R = e^{-\left(\frac{x}{x_c}\right)^n}$$

$$R = 2,718^{-\left(\frac{60}{33,51}\right)^{1.414}}$$

$$R = 89,75\%$$

7. $x = 70$

$$R = e^{-\left(\frac{x}{x_c}\right)^n}$$

$$R = 2,718^{-\left(\frac{70}{33,51}\right)^{1.414}}$$

$$R = 94,12\%$$

8. $x = 80$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(80/33,51)^{1.414}}$$

$$R = 96,74\%$$

9. $x = 90$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(90/33,51)^{1.414}}$$

$$R = 98,24\%$$

10. $x = 100$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(100/33,51)^{1.414}}$$

$$R = 98,50\%$$

C. Peledakan Ketiga

R (% of Retain > Material Size)

$$R = e^{-(x/x_c)^n}; x = \text{Ukuran lubang saringan}$$

1. $x = 10$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(10/32,63)^{1.535}}$$

$$R = 15,02\%$$

2. $x = 20$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(20/32,63)^{1.535}}$$

$$R = 37,60\%$$

3. $x = 30$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(30/32,63)^{1.535}}$$

$$R = 58,48\%$$

4. $x = 40$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(40/32,63)^{1.535}}$$

$$R = 74,51\%$$

5. $x = 50$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(50/32,63)^{1.535}}$$

$$R = 85,42\%$$

6. $x = 60$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(60/32,63)^{1.535}}$$

$$R = 92,17\%$$

7. $x = 70$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(70/32,63)^{1.535}}$$

$$R = 92,17\%$$

8. $x = 80$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(80/32,63)^{1.535}}$$

$$R = 98,10\%$$

9. $x = 90$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(90/32,63)^{1,535}}$$

$$R = 99,13\%$$

10. $x = 100$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(100/32,63)^{1,535}}$$

$$R = 99,62\%$$

D. Peledakan Keempat

R (% of Retain > Material Size)

$$R = e^{-(x/x_c)^n}; x = \text{Ukuran lubang saringan}$$

1. $x = 10$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(10/32,54)^{1,559}}$$

$$R = 14,69\%$$

2. $x = 20$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(20/32,54)^{1,559}}$$

$$R = 37,38\%$$

3. $x = 30$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(30/32,54)^{1,559}}$$

$$R = 58,56\%$$

4. $x = 40$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(40/32,54)^{1,559}}$$

$$R = 74,83\%$$

5. $x = 50$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(50/32,54)^{1,559}}$$

$$R = 85,83\%$$

6. $x = 60$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(60/32,54)^{1,559}}$$

$$R = 92,54\%$$

7. $x = 70$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(70/32,54)^{1,559}}$$

$$R = 96,32\%$$

8. $x = 80$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(80/32,54)^{1,559}}$$

$$R = 98,29\%$$

9. $x = 90$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(90/32,54)^{1,559}}$$

$$R = 99,24\%$$

10. $x = 100$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(100/32,54)^{1,559}}$$

$$R = 99,68\%$$

E. Peledakan kelima

R (% of Retain > Material Size)

$$R = e^{-(x/x_c)^n}; x = \text{Ukuran lubang saringan}$$

1. $x = 10$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(10/33,27)^{1,439}}$$

$$R = 16,24\%$$

2. $x = 20$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(20/33,27)^{1,439}}$$

$$R = 38,16\%$$

3. $x = 30$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(30/33,27)^{1,439}}$$

$$R = 57,14\%$$

4. $x = 40$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-(40/33,27)^{1,439}}$$

$$R = 72,84\%$$

5. $x = 50$

$$R = e^{-(x/x_c)^n}$$

$$R = 2,718^{-\left(\frac{50}{33,27}\right)^{1.439}}$$

$$R = 83,42\%$$

6. $x = 60$

$$R = e^{-\left(\frac{x}{x_c}\right)^n}$$

$$R = 2,718^{-\left(\frac{60}{33,27}\right)^{1.439}}$$

$$R = 90,33\%$$

7. $x = 70$

$$R = e^{-\left(\frac{x}{x_c}\right)^n}$$

$$R = 2,718^{-\left(\frac{70}{33,27}\right)^{1.439}}$$

$$R = 94,59\%$$

8. $x = 80$

$$R = e^{-\left(\frac{x}{x_c}\right)^n}$$

$$R = 2,718^{-\left(\frac{80}{33,27}\right)^{1.439}}$$

$$R = 97,08\%$$

9. $x = 90$

$$R = e^{-\left(\frac{x}{x_c}\right)^n}$$

$$R = 2,718^{-\left(\frac{90}{33,27}\right)^{1.439}}$$

$$R = 98,48\%$$

10. $x = 100$

$$R = e^{-\left(\frac{x}{x_c}\right)^n}$$

$$R = 2,718^{-\left(\frac{100}{33,27}\right)^{1.439}}$$

$$R = 99,24\%$$

LAMPIRAN D
UJI VALIDASI T

Hasil Uji Validasi T

x	y	xy	x ²	y ²
0.19	83.93	15.95	0.04	7044.24
0.23	96.56	22.21	0.05	9323.83
0.22	89.01	19.58	0.05	7922.78
0.24	98.60	23.66	0.06	9721.96
0.22	96.76	21.29	0.05	9362.50

Nilai Fragmentasi yang lolos ayakan 50 cm yang ditetapkan perusahaan yaitu 80%

$$\mu_0 = 80$$

- a. Hipotesis (Ha dan Ho) dalam uraian kalimat:

Ha : Nilai fragmentasi yang lolos ayakan 50 cm dipengaruhi oleh *powder factor* **paling tinggi** 80% dari nilai fragmentasi rata-rata.

Ho : Nilai fragmentasi yang lolos ayakan 50 cm dipengaruhi oleh *powder factor* **paling rendah atau sama dengan** 80% dari nilai fragmentasi rata-rata.

- b. Hipotesis (Ha dan Ho) model statistik

$$Ha : \mu_0 < 80\%$$

$$Ho : \mu_0 \geq 80\%$$

- c. Standar deviasi (s) dan rata-rata \bar{x}

$$s = \sqrt{\frac{\sum y^2 - \frac{(\sum y)^2}{n}}{n-1}} = \sqrt{\frac{\sum 43375,32 - \frac{(\sum 464,86)^2}{5}}{5-1}} = 6,25$$

$$\bar{x} = \frac{\sum y}{n} = \frac{464,86}{5} = 92,97$$

d. Nilai t_{hitung}

$$t_{hitung} = \frac{\bar{y} - \mu_0}{\frac{s}{\sqrt{n}}} = \frac{92,97 - 80}{\frac{6,25}{\sqrt{5}}} = 4,64$$

e. Nilai t_{tabel}

Taraf signifikan yang digunakan adalah $\alpha = 0,05$, nilai db yang diperoleh adalah:

$$db = n - 1 = 5 - 1 = 4,$$

Sehingga t_{tabel} yang diperoleh adalah 2,132.

f. Kriteria pengujian

Kriteria pengujian pihak kiri adalah: *jika* $-t_{tabel} \leq t_{hitung}$, *maka* H_0 diterima dan H_a ditolak

g. Kesimpulan

Hasil yang diperoleh adalah $-t_{tabel} < t_{hitung}$, sehingga H_0 diterima dan H_a ditolak.

Hal ini menunjukkan bahwa fragmentasi dipengaruhi oleh *powder factor* paling rendah 80% dari rata-rata fragmentasi.


LAMPIRAN E
LEMBAR KONSULTASI

Lampiran B 10
Kartu Konsultasi Tugas Akhir

JUDUL:

(Konsultasi minimal 8 kali)

TANGGAL	MATERI KONSULTASI	PARAF DOSEN
11 Juni 2021	Konsultasi diagram alir penelitian	فتر
04 Juli 2021	Konsultasi untuk kurfi diagram alir penelitian	فتر
11 Nov 2021	BAB I * Tambahkan masalah pada latar belakang * perbaiki lengkapi rumusan masalah * perbaiki format penulisan.	فتر
29 Nov 2021	BAB II * urutkan sub BAB dari umum ke khusus * perbaiki format tabel * Tambahkan sub sub	فتر
02 Jun 2022	BAB III * perbaiki kalimat penulisan	فتر
21 Feb 2022	BAB IV * perbaiki penulisan * lengkapi analisis	فتر

TANGGAL	MATERI KONSULTASI	PARAF DOSEN
8 Maret 2022	<ul style="list-style-type: none"> ✓ Perbaikan BAB II Daf narz pustakaci 	
14 Maret 2022	<ul style="list-style-type: none"> ✓ Perbaikan Abstrak ↳ BAB IV 	