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LAMPIRAN

DRILL LOG

HOLE No. SI 08 **SHEET 1 OF 1**

PROJECT	BENDUNGAN PAMUKKULU			**DEPTH**	20 m	**ELEVATION**	113.504 m
SITE	SI 08 B	**COORDINATES**	**X :** 788543.104 **Y :** 9,401,880.773	**INCLINATION**	Vertical	**DRILL RIG**	TOHO
AVERAGE CORE RECOVERY	88.63 %	**DATE**	**FROM** 1 Maret 2021 **TO** 8 Maret 2021	**DRILLED**	Dg. Rate	**LOGGED**	Muh. Ichwanto

DATE	DEPTH (M)	ELEVATION (M)	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	HARDNESS	CORE SHAPE & JOINT INTERVAL	WEATHERING & ALTERATION	ROCK CLASS	BIT AND DIA.	GROUND WATER LEVEL	CORE RECOVERY % 50	R.Q.D. % 50	FIELD PERMEABILITY TEST (K in cm/sec or Lu) GRAPH P - Q 10 20 30 40 50	DEPTH
1 - 8 Maret 2021	1	132.504	BASAL		(0-1) Basalt : berwaran kecokelatan, lapuk sangat kuat, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	D			D		7.9	85	0		1
	2	129.804			(1-2.7) Basalt : Berwarna kecokelatan, lapuk kuat, *broken core* , mengandung mineral piroksen, olivin dan struktur amigdaloidal.	C	III	C	CL-CM			90	32		2
	3											96	66		3
	4	127.504			(2.7-5) Basalt : berwarna abu-abu kecokelatan, lapuk kuat-sedang, mengandung mineral piroksin, olivin dan amigdaloidal.	B	III	C	CM			94	80		4
	5											90	61		5
	6	124.504			(5-8) Basalt : Berwarna Abu-abu kecokelatan, lapuk kuat, *lose core, broken core* mengandung mineral piroksen, olivin dan struktur amigdaloidal.	C	IV	D	CL			59	30		6
	7											20	0		7
	8											70	25		8
	9	112.504			(8-20) Basalt : Berwarna Abu-abu kecokelatan, lapuk sedang, *iron oxide* , dan tekstur *vein* , mengandung mineral piroksen, olivin dan struktur amigdaloidal	B	III	C	CM			98	96		9
	10											98	87.5		10
	11											97	96		11
	12											97	98		12
	13											98	98		13
	14											99	93		14
	15											99	99		15
	16											99	90		16
	17											88	84		17
	18											98	98		18
	19											99	99		19
	20											99	93		20
	21														21
	22														22
	23														23
	24														24
	25														25
	26														26
	27														27
	28														28
	29														29
	30														30

- **R.Q.D is Rock Quality Designation, R.Q.D. = (Total length of cylindric cores longer than 10 cm) / (Total core length) x 100 %**
- **LUGEON VALUE is l/min/m under injection water pressure of 10 kg/cm^2**
- **DEPTH and Elevation are in meter**
- **DIAMETER is in millimeter**

DRILL LOG

HOLE No. SI 09 **SHEET 1 OF 1**

PROJECT	BENDUNGAN PAMUKKULU			**DEPTH**	20 m	**ELEVATION**	112.354 m
SITE	SI 09	**COORDINATES**	788581.152 **Y :** 9,401,919.121	**INCLINATION**	Vertical	**DRILL RIG**	TOHO
AVERAGE CORE RECOVERY	95.10 %	**DATE**	**FROM** 3 MARET 2021 **TO** 11 MARET 2021	**DRILLED**	Dg. Rate	**LOGGED**	Muh. Ichwanto

DATE	DEPTH (M)	ELEVATION (M)	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	HARDNESS	CORE SHAPE & JOINT INTERVAL	WEATHERING & ALTERATION	ROCK CLASS	BIT AND DIA.	GROUND WATER LEVEL	CORE RECOVERY %	R.Q.D. %	FIELD PERMEABILITY TEST (K in cm/sec or Lu) GRAPH P - Q	DEPTH
												50	50	10 20 30 40 50	
1 - 8 Maret 2021	1		BASAL		(0-1) Basalt : berwarna cokelat kebauan, lapuk kuat, *broken core*, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	C	V	C	CL		6.3	60	0		1
	2				(1-3.3) Basalt : Berwarna cokelat keabuan, lapuk sedang, *broken core* , mengandung mineral piroksen, olivin dan struktur amigdaloidal.	B	III	C	CM			100	70		2
	3											79	18		3
	4				(3.3-4.7) Basalt : Berwarna Abu-abu kecokelatan, segar, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	B	II	C	CH			95	57		4
	5				(4.7-5) Basalt : Berwarna Abu-abu kecokelatan, lapuk kuat, lose core, broken core mengandung mineral piroksen, olivin dan struktur amigdaloidal.	B	III	C	CM			98	79		5
	6				(5-9.3) Basalt : berwarna abu-abu kehitaman, segar, broken core, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	B	II	B	CH			98	97.5		6
	7											88	79		7
	8											100	97		8
	9											99.5	98		9
	10				(9.3-9.8) Basalt : Berwarna cokelat kemerahan, lapuk sedang, mengandung mineral piroksen, olivin dan struktur amigdaloidal	B	III	C	CM			96	96		10
	11				(9.8-14.7) Basalt : berwarna abu-abu kehitaman, segar, broken core, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	A	II	B	CH			96	89		11
	12											100	89		12
	13											98	90		13
	14											100	98		14
	15				~~(14.7-15.4) Basalt : berwarna abu-abu kecokelatan, pelapukan rendah~~ sedang, broken core, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	B	III	C	CL-CM			100	97		15
	16				(15.4-20) Basalt : berwarna abu-abu kehitaman, segar, broken core, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	A	1	A	CH-B			98	97		16
	17											99	99		17
	18											99	99		18
	19											100	99		19
	20											99	99		20
	21														21
	22														22
	23														23
	24														24
	25														25
	26														26
	27														27
	28														28
	29														29
	30														30

* R.Q.D is Rock Quality Designation, R.Q.D. = (Total length of cylindric cores longer than 10 cm) / (Total core length) x 100 %

* LUGEON VALUE is l/min/m under injection water pressure of 10 kg/cm^2

* DEPTH and Elevation are in meter

* DIAMETER is in millimeter

DRILL LOG

HOLE No. SI 10 **SHEET 1 OF 1**

PROJECT	BENDUNGAN PAMUKKULU			**DEPTH**	20 m	**ELEVATION**	120.585 m
SITE	SI 10	**COORDINATES**	788603.583 **Y :** 9401843.926	**INCLINATION**	Vertical	**DRILL RIG**	TOHO
AVERAGE CORE RECOVERY	96.45 %	**DATE**	**FROM** 11 MARET 2021 **TO** 14 MARET 20021	**DRILLED**	Dg. Rate	**LOGGED**	Muh. Ichwanto

DATE	DEPTH (M)	ELEVATION (M)	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	HARDNESS	CORE SHAPE & JOINT INTERVAL	WEATHERING & ALTERATION	ROCK CLASS	BIT AND DIA.	GROUND WATER LEVEL	CORE RECOVERY %	R.Q.D. %	FIELD PERMEABILITY TEST (K in cm/sec or Lu) GRAPH P - Q	DEPTH
												50	50	10 20 30 40 50	
1 - 8 Maret 2021	1		BASAL		(0-0.3) Basalt : berwarna cokelat, lapuk sangat kuat, mengandung mineral piroksen, olivin dan struktur amigdaloidal	D			D		17.6	85	14		1
	2											89	13		2
	3											98	49		3
	4											99	45.5		4
	5											96	46		5
	6				(0.3-12) Basalt : Berwarna abu-abu kecokelatan, lapuk kuat,mengandung mineral piroksen, olivin dan struktur amigdaloidal.	C	III	D	CL			98	36		6
	7											92	11		7
	8											100	26.5		8
	9											97	82		9
	10											95	48		10
	11											97	96		11
	12											99	93		12
	13				(12-15) Basalt : Berwarna abu-abu kecokelatan, segar, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	B	II	B	CH			99	99		13
	14											98.5	98.5		14
	15											96	93		15
	16				(15-19.4) Basalt : Berwarna abu-abu kecokelatan, lapuk sedang, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	B	III	C	CM			95	92.5		16
	17											99	94		17
	18											98	85.5		18
	19											98.5	70		19
	20				(19.4-20) Basalt : Berwarna abu-abu kehitaman, segar, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	B	II	B	CH			100	93		20
	21														21
	22														22
	23														23
	24														24
	25														25
	26														26
	27														27
	28														28
	29														29
	30														30

* **R.Q.D is Rock Quality Designation, R.Q.D. = (Total length of cylindric cores longer than 10 cm) / (Total core length) x 100 %**
* **LUGEON VALUE is l/min/m under injection water pressure of 10 kg/cm^2**
* **DEPTH and Elevation are in meter**
* **DIAMETER is in millimeter**

DRILL LOG

HOLE No. SI 11 **SHEET 1 OF 1**

PROJECT	BENDUNGAN PAMUKKULU			**DEPTH**	20 m	**ELEVATION**	101.054 m
SITE	SI 11	**COORDINATES**	**X :** 788562.730 **Y :** 9,401,668.983	**INCLINATION**	Vertical	**DRILL RIG**	TOHO
AVERAGE CORE RECOVERY	96.05 %	**DATE**	**FROM** 15 Maret 2021 **TO** 18 Maret 2021	**DRILLED**	Dg. Rate	**LOGGED**	Muh. Ichwanto

DATE	DEPTH (M)	ELEVATION (M)	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	HARDNESS	CORE SHAPE & JOINT INTERVAL	WEATHERING & ALTERATION	ROCK CLASS	BIT AND DIA.	GROUND WATER LEVEL	CORE RECOVERY %	R.Q.D. %	FIELD PERMEABILITY TEST (K in cm/sec or Lu) GRAPH P - Q	DEPTH
												50	50	10 20 30 40 50	
1 - 8 Maret 2021	1		BASAL		(0-1) Basalt : berwaran abu-abu kecokelatan, lapuk kuat, *broken core*, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	B	V	B	CL		5.5	81	14		1
	2				(1-2.4) Basalt : Berwarna abu-abu kehitaman, segar, mengandung mineral piroksen, olivin dan struktur vesikuler dan amigdaloidal.	B	II	B	CH			90	91		2
	3				(2.4-2.6) *Lose core*							79	65		3
	4				(2.4-8.2) Basalt : Berwarna abu-abu kehitaman, segar, mengandung mineral piroksen, olivin dan struktur amigdaloidal dan vesikuler	C	IV	D	CL			99	99		4
	5											98	98		5
	6											98	98		6
	7											99	99		7
	8											100	97		8
	9											98	88		9
	10											97	83		10
	11				(8.2-20) Basalt : Berwarna abu-abu kehitaman, segar, mengandung mineral piroksen, olivin dan struktur amigdaloidal	A	II	B	CH-B			99	99		11
	12											99	99		12
	13											98	98		13
	14											99	99		14
	15											97	87		15
	16											99	99		16
	17											98	97		17
	18											99	99		18
	19											97	97		19
	20											97	93		20
	21														21
	22														22
	23														23
	24														24
	25														25
	26														26
	27														27
	28														28
	29														29
	30														30

- **R.Q.D is Rock Quality Designation, R.Q.D. = (Total length of cylindric cores longer than 10 cm) / (Total core length) x 100 %**
- **LUGEON VALUE is l/min/m under injection water pressure of 10 kg/cm^2**
- **DEPTH and Elevation are in meter**
- **DIAMETER is in millimeter**

DRILL LOG

HOLE No. SI 12 **SHEET 1 OF 1**

PROJECT	BENDUNGAN PAMUKKULU			**DEPTH**	20 m	**ELEVATION**	119.712 m
SITE	SI 12	**COORDINATES**	**X :** 788605.860 **Y :** 9401494.799	**INCLINATION**	Vertical	**DRILL RIG**	TOHO
AVERAGE CORE RECOVERY	94.95 %	**DATE**	**FROM** 18 Maret 2021 **TO** 21 Maret 2021	**DRILLED**	Dg. Rate	**LOGGED**	Muh. Ichwanto

DATE	DEPTH (M)	ELEVATION (M)	ROCK TYPE OR FORMATION	COLUMN SECTION	DESCRIPTION	HARDNESS	CORE SHAPE & JOINT INTERVAL	WEATHERING & ALTERATION	ROCK CLASS	BIT AND DIA.	GROUND WATER LEVEL	CORE RECOVERY % (50)	R.Q.D. % (50)	FIELD PERMEABILITY TEST (K in cm/sec or Lu) GRAPH P - Q (10 20 30 40 50)	DEPTH
1 - 8 Maret 2021	1		BASAL		(0-0.3) Basalt : berwaran cokelat, lapuk sangat kuat, mengandung mineral piroksen, olivin dan struktur amigdaloidal.	C	IV	D	CL		2.1	53	49		1
	2				(1-1.6) Basalt : Berwarna abu-abu kecokelatan, lapuk kuat, mengandung mineral piroksen, olivin dan struktur amigdaloidal	B	III	C	CL-CM			85	76		2
	3											97	65		3
	4											100	98		4
	5				(2.4-8.2) Basalt : Berwarna abu-abu kehitaman, segar, mengandung mineral piroksen, olivin dan struktur amigdaloidal	B	II	B	CH			99	95		5
	6											99	62		6
	7											98	66		7
	8											100	92		8
	9				(8.2-9.2) Basalt : Berwarna abu-abu kehitaman, segar, mengandung mineral piroksen, olivin dan struktur amigdaloidal	B	III	C	CM			98	82		9
	10											96	87		10
	11				(9.2-16.3) Basalt : Berwarna abu-abu kecokelatan, segar, mengandung mineral piroksen, olivin dan struktur amigdaloidal	B	II	B	CH			98	85		11
	12											99	98		12
	13											98	71		13
	14											98	96		14
	15											96	92		15
	16											96	82		16
	17				(16.3-17.4) Basalt : Berwarna abu-abu kecokelatan, lapuk sedang, mengandung mineral piroksen, olivin dan struktur amigdaloidal	B	III	C	CM			98	85		17
	18											98	83		18
	19				(17.4-20) Basalt : Berwarna abu-abu kecokelatan, segar, tekstur *vein*, mengandung mineral piroksen, olivin dan struktur amigdaloidal	B	II	B	CH			95	93		19
	20											98	93		20
	21														21
	22														22
	23														23
	24														24
	25														25
	26														26
	27														27
	28														28
	29														29
	30														30

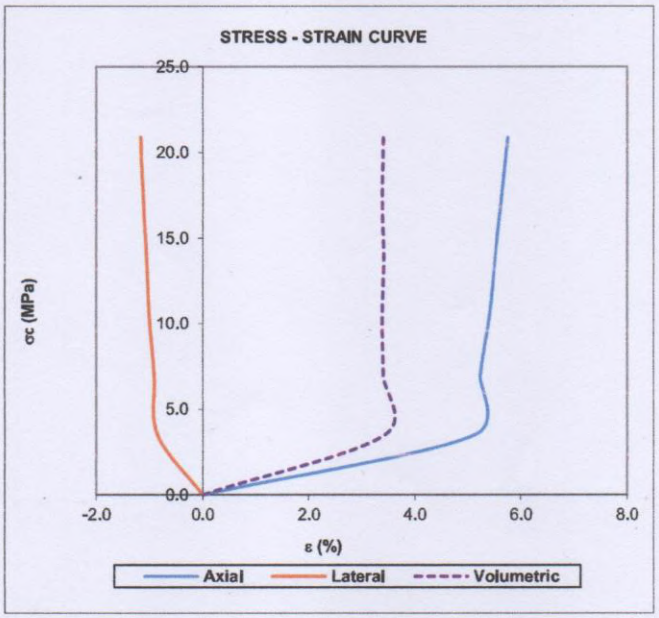
- **R.Q.D is Rock Quality Designation, R.Q.D. = (Total length of cylindric cores longer than 10 cm) / (Total core length) x 100 %**
- **LUGEON VALUE is l/min/m under injection water pressure of 10 kg/cm^2**
- **DEPTH and Elevation are in meter**
- **DIAMETER is in millimeter**

LABORATORY OF GEOMECHANICS
DEPARTMENT OF MINING ENGINEERING
FACULTY OF ENGINEERING
HASANUDDIN UNIVERSITY, MAKASSAR
Kampus II Fakultas Teknik Jl. Poros Malino Km. 6 , Gowa 92171, Indonesia.

UNCONFINED COMPRESSIVE STRENGTH TEST

Customer	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Received	:	29-Jun-21
Made on behalf of	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Test	:	29-Jun-21
Address	:	-	Date of Analysis	:	29-Jun-21
Project	:	Unconfined Compressive Strenght Test	Tested By	:	Wihdah, Irsyad, dan Tomi
Sample Code	:	KP510101	Prepared By	:	Wihdah, Irsyad, Tomi, dan Albert
Depth (m)	:	-	Checked By	:	Nirmana
Lithology	:	Basalt			
Diameter	:	42.75 mm			
Length	:	86.08 mm			

No.	σ_c (MPa)	ε Lateral (%)	ε Axial (%)	ε Volumetric (%)
1	0.00	0.000	0.000	0.000
2	3.48	-0.842	5.112	3.427
3	6.97	-0.912	5.228	3.403
4	10.45	-1.006	5.402	3.390
5	13.93	-1.053	5.518	3.413
6	17.41	-1.123	5.634	3.389
7	20.90	-1.170	5.750	3.411



σ_c (MPa)	20.90
E (MPa)	2664.71
υ	0.31

σ_c = Compressive Strength
ε = Strain
υ = Poisson's ratio

Approved by

Date : 29-Jun-21

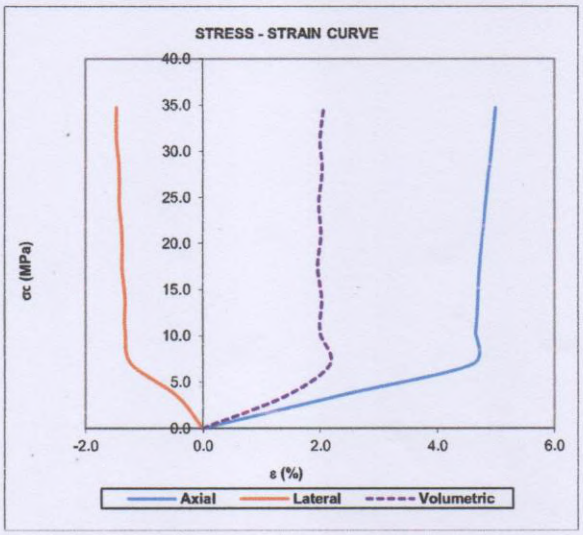
NIRMANA FIORA QAIDAHIYANI, S.T., M.T.
Secretary of Laboratory

LABORATORY OF GEOMECHANICS
DEPARTEMENT OF MINING ENGINEERING
FACULTY OF ENGINEERING
HASANUDDIN UNIVERSITY, MAKASSAR
Kampus II Fakultas Teknik Jl. Poros Malino Km. 6 , Gowa 92171, Indonesia.

UNCONFINED COMPRESSIVE STRENGTH TEST

Customer	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Received	:	29-Jun-21
Made on behalf of	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Test	:	29-Jun-21
Address	:	-	Date of Analysis	:	29-Jun-21
Project	:	Unconfined Compressive Strenght Test	Tested By	:	Wihdah, Irsyad, dan Tomi
Sample Code	:	KP510102	Prepared By	:	Wihdah, Irsyad, Tomi, dan Albert
Depth (m)	:	-	Checked By	:	Nirmana
Lithology	:	Basalt			
Diameter	:	42.80 mm			
Length	:	87.02 mm			

No.	σ_c (MPa)	ε Lateral (%)	ε Axial (%)	ε Volumetric (%)
1	0.00	0.000	0.000	0.000
2	3.47	-0.444	2.298	1.411
3	6.95	-1.215	4.597	2.167
4	10.42	-1.332	4.654	1.991
5	13.89	-1.332	4.689	2.025
6	17.37	-1.378	4.712	1.955
7	20.84	-1.378	4.769	2.012
8	24.31	-1.425	4.826	1.976
9	27.79	-1.425	4.884	2.034
10	31.26	-1.472	4.941	1.998
11	34.73	-1.472	4.999	2.055



σ_c (MPa)	34.73
E (MPa)	7052.55
υ	0.41

σ_c = Compressive Strength
ε = Strain
υ = Poisson's ratio

Approved by

Date : 29-Jun-21

NIRMAYA FIORA QAIDAHIYANI, S.T., M.T.
Secretary of Laboratory

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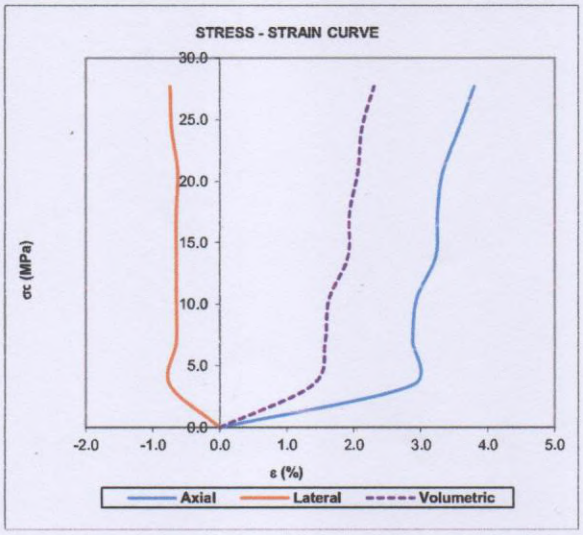
UNCONFINED COMPRESSIVE STRENGTH TEST

Customer	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Received	:	29-Jun-21
Made on behalf of	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Test	:	29-Jun-21
Address	:	-	Date of Analysis	:	29-Jun-21
Project	:	Unconfined Compressive Strenght Test	Tested By	:	Wihdah, Irsyad, dan Tomi
Sample Code	:	KP510103	Prepared By	:	Wihdah, Irsyad, Tomi, dan Albert
Depth (m)	:	-	Checked By	:	Nirmana
Lithology	:	Basalt			
Diameter	:	42.86 mm			
Length	:	86.92 mm			

No.	σ_c (MPa)	ε Lateral (%)	ε Axial (%)	ε Volumetric (%)
1	0.00	0.00	0.00	0.00
2	3.46	-0.75	2.88	1.38
3	6.93	-0.65	2.88	1.57
4	10.39	-0.65	2.93	1.63
5	13.85	-0.65	3.22	1.91
6	17.32	-0.65	3.24	1.94
7	20.78	-0.63	3.32	2.07
8	24.25	-0.72	3.57	2.12
9	27.71	-0.75	3.80	2.30



σ_c (MPa)	27.71
E (MPa)	2257.95
υ	0.10

σ_c = Compressive Strength
ε = Strain
υ = Poisson's ratio

Approved by

Date : 29-Jun-21

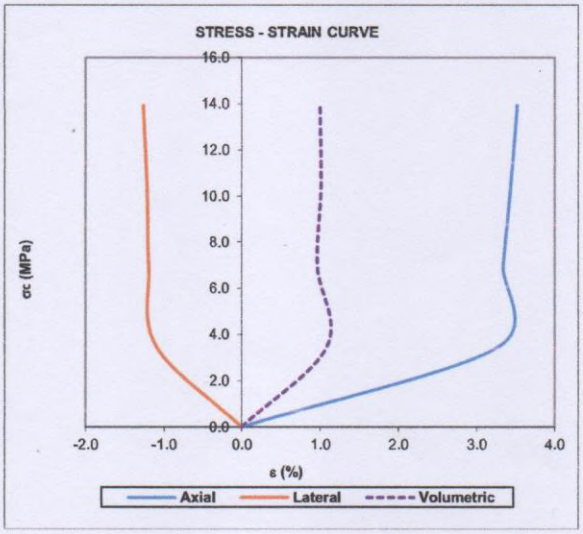
NIRMANA FIORA QAIDAHIYANI, S.T., M.T.
Secretary of Laboratory

LABORATORY OF GEOMECHANICS
DEPARTEMENT OF MINING ENGINEERING
FACULTY OF ENGINEERING
HASANUDDIN UNIVERSITY, MAKASSAR
Kampus II Fakultas Teknik Jl. Poros Malino Km. 6 , Gowa 92171, Indonesia.

UNCONFINED COMPRESSIVE STRENGTH TEST

Customer	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Received	:	29-Jun-21
Made on behalf of	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Test	:	29-Jun-21
Address	:	-	Date of Analysis	:	29-Jun-21
Project	:	Unconfined Compressive Strenght Test	Tested By	:	Wihdah, Irsyad, dan Tomi
Sample Code	:	KP510104	Prepared By	:	Wihdah, Irsyad, Tomi, dan Albert
Depth (m)	:	-	Checked By	:	Nirmana
Lithology	:	Basalt			
Diameter	:	42.76 mm			
Length	:	85.18 mm			

No.	σ_c (MPa)	ε Lateral (%)	ε Axial (%)	ε Volumetric (%)
1	0.00	0.000	0.000	0.000
2	3.48	-1.099	3.287	1.089
3	6.96	-1.193	3.346	0.960
4	10.44	-1.216	3.440	1.007
5	13.92	-1.263	3.522	0.996



σ_c (MPa)	13.92
E (MPa)	3953.58
υ	0.40

σ_c = Compressive Strength
ε = Strain
υ = Poisson's ratio

Approved by

Date : 29-Jun-21

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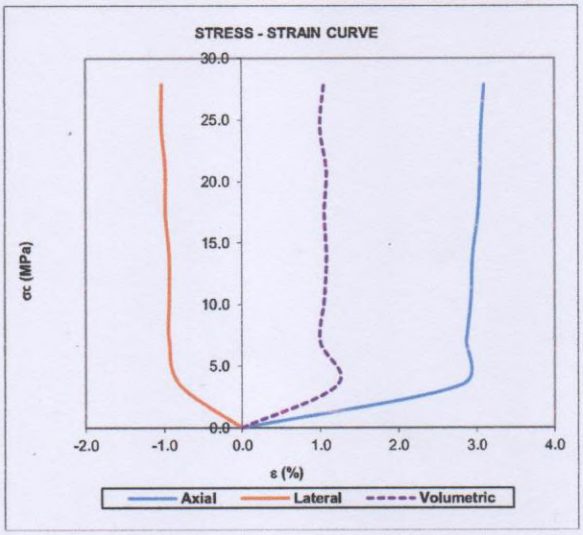
UNCONFINED COMPRESSIVE STRENGTH TEST

Customer	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Received	:	29-Jun-21
Made on behalf of	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Test	:	29-Jun-21
Address	:	-	Date of Analysis	:	29-Jun-21
Project	:	Unconfined Compressive Strenght Test	Tested By	:	Wihdah, Irsyad, dan Tomi
Sample Code	:	KP510105	Prepared By	:	Wihdah, Irsyad, Tomi, dan Albert
Depth (m)	:	-	Checked By	:	Nirmana
Lithology	:	Basalt			
Diameter	:	42.75 mm			
Length	:	85.46 mm			

No.	σ_c (MPa)	ε Lateral (%)	ε Axial (%)	ε Volumetric (%)
1	0.00	0.000	0.000	0.000
2	3.48	-0.795	2.808	1.218
3	6.97	-0.936	2.867	0.995
4	10.45	-0.936	2.925	1.054
5	13.93	-0.936	2.949	1.077
6	17.41	-0.983	3.019	1.054
7	20.90	-0.983	3.042	1.077
8	24.38	-1.029	3.054	0.995
9	27.86	-1.029	3.101	1.042



σ_c (MPa)	27.86
E (MPa)	8928.63
υ	0.40

σ_c = Compressive Strength
ε = Strain
υ = Poisson's ratio

Approved by

Date : 29-Jun-21

NIRMANA FIQRA QAIDAHIYANI, S.T., M.T.
Secretary of Laboratory

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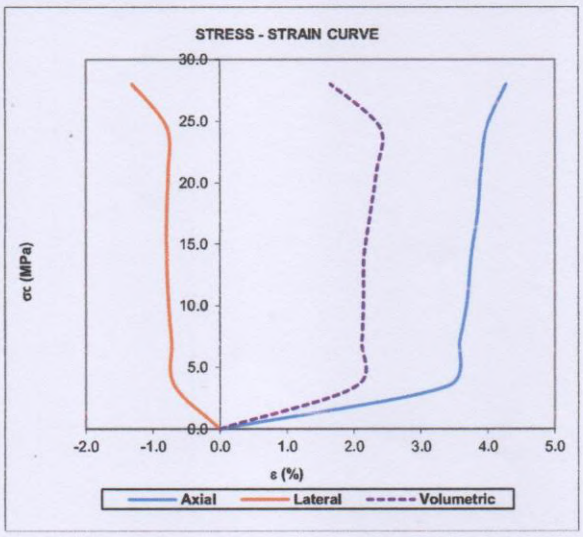
UNCONFINED COMPRESSIVE STRENGTH TEST

Customer	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Received	:	29-Jun-21
Made on behalf of	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Test	:	29-Jun-21
Address	:	-	Date of Analysis	:	29-Jun-21
Project	:	Unconfined Compressive Strenght Test	Tested By	:	Wihdah, Irsyad, dan Tomi
Sample Code	:	KP510106	Prepared By	:	Wihdah, Irsyad, Tomi, dan Albert
Depth (m)	:	-	Checked By	:	Nirmana
Lithology	:	Basalt			
Diameter	:	42.63 mm			
Length	:	85.34 mm			

No.	σ_c (MPa)	ε Lateral (%)	ε Axial (%)	ε Volumetric (%)
1	0.00	0.000	0.000	0.000
2	3.50	-0.680	3.398	2.038
3	7.00	-0.727	3.574	2.119
4	10.51	-0.774	3.691	2.143
5	14.01	-0.798	3.750	2.154
6	17.51	-0.798	3.843	2.248
7	21.01	-0.774	3.890	2.342
8	24.52	-0.798	3.984	2.389
9	28.02	-1.314	4.277	1.650



σ_c (MPa)	28.02
E (MPa)	4269.70
υ	0.17

σ_c = Compressive Strength
ε = Strain
υ = Poisson's ratio

Approved by

Date : 29-Jun-21

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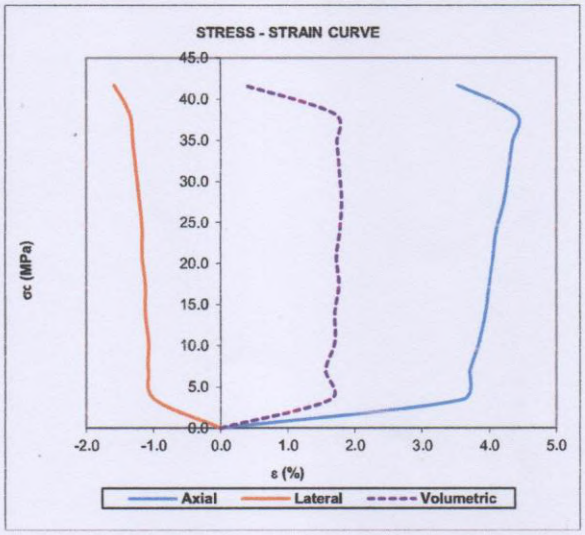
UNCONFINED COMPRESSIVE STRENGTH TEST

Customer	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Received	:	29-Jun-21
Made on behalf of	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Test	:	29-Jun-21
Address	:	-	Date of Analysis	:	29-Jun-21
Project	:	Unconfined Compressive Strenght Test	Tested By	:	Wihdah, Irsyad, dan Tomi
Sample Code	:	KP510107	Prepared By	:	Wihdah, Irsyad, Tomi, dan Albert
Depth (m)	:	-	Checked By	:	Nirmana
Lithology	:	Basalt			
Diameter	:	42.80 mm			
Length	:	86.27 mm			

No.	σ_c (MPa)	ε Lateral (%)	ε Axial (%)	ε Volumetric (%)
1	0.00	0.000	0.000	0.000
2	3.47	-0.981	3.593	1.631
3	6.95	-1.075	3.709	1.560
4	10.42	-1.075	3.848	1.699
5	13.90	-1.122	3.941	1.698
6	17.37	-1.122	3.999	1.756
7	20.85	-1.168	4.057	1.720
8	24.32	-1.168	4.115	1.778
9	27.80	-1.215	4.231	1.801
10	31.27	-1.262	4.289	1.765
11	34.74	-1.309	4.347	1.730
12	38.22	-1.355	4.405	1.694
13	41.69	-1.589	3.535	0.358



σ_c (MPa)	41.69
E (MPa)	4496.11
υ	0.40

σ_c = Compressive Strength
ε = Strain
υ = Poisson's ratio

Approved by

Date : 29-Jun-21

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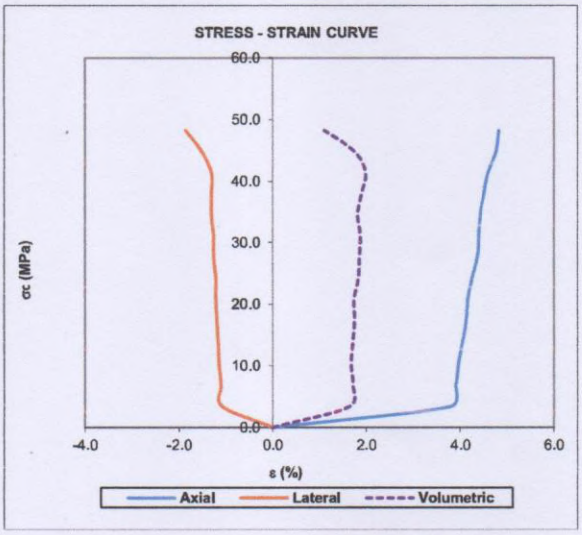
UNCONFINED COMPRESSIVE STRENGTH TEST

Customer	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Received	:	29-Jun-21
Made on behalf of	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Test	:	29-Jun-21
Address	:	-	Date of Analysis	:	29-Jun-21
Project	:	Unconfined Compressive Strenght Test	Tested By	:	Wihdah, Irsyad, dan Tomi
Sample Code	:	KP510108	Prepared By	:	Wihdah, Irsyad, Tomi, dan Albert
Depth (m)	:	-	Checked By	:	Nirmana
Lithology	:	Basalt			
Diameter	:	42.95 mm			
Length	:	87.03 mm			

No.	σ_c (MPa)	ε Lateral (%)	ε Axial (%)	ε Volumetric (%)
1	0.00	0.000	0.000	0.000
2	3.45	-1.071	3.792	1.650
3	6.90	-1.094	3.907	1.718
4	10.35	-1.141	3.964	1.682
5	13.80	-1.164	4.044	1.716
6	17.25	-1.187	4.125	1.750
7	20.69	-1.211	4.159	1.738
8	24.14	-1.211	4.251	1.830
9	27.59	-1.257	4.366	1.852
10	31.04	-1.257	4.389	1.875
11	34.49	-1.304	4.424	1.816
12	37.94	-1.304	4.504	1.897
13	41.39	-1.304	4.596	1.988
14	44.84	-1.513	4.768	1.742
15	48.29	-1.862	4.826	1.101



σ_c (MPa)	48.29
E (MPa)	5003.18
υ	0.30

σ_c = Compressive Strength
ε = Strain
υ = Poisson's ratio

Approved by

Date : 29-Jun-21

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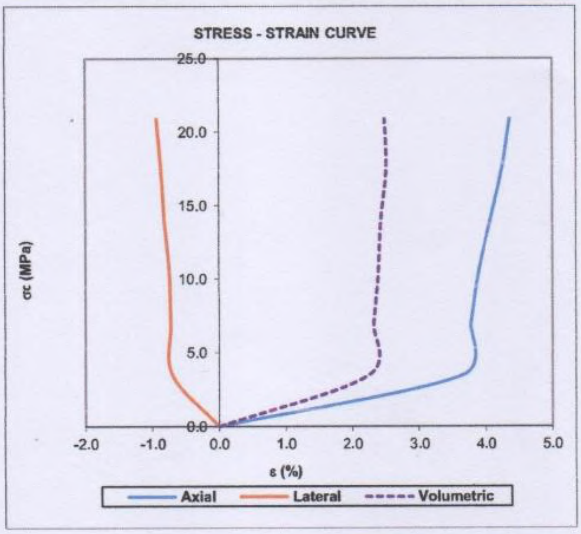
UNCONFINED COMPRESSIVE STRENGTH TEST

Customer	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Received	:	29-Jun-21
Made on behalf of	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Test	:	29-Jun-21
Address	:	-	Date of Analysis	:	29-Jun-21
Project	:	Unconfined Compressive Strenght Test	Tested By	:	Wihdah, Irsyad, dan Tomi
Sample Code	:	KP510109	Prepared By	:	Wihdah, Irsyad, Tomi, dan Albert
Depth (m)	:	-	Checked By	:	Nirmana
Lithology	:	Basalt			
Diameter	:	42.75 mm			
Length	:	84.86 mm			

No.	σ_c (MPa)	ε Lateral (%)	ε Axial (%)	ε Volumetric (%)
1	0.00	0.000	0.000	0.000
2	3.48	-0.702	3.653	2.249
3	6.97	-0.725	3.771	2.320
4	10.45	-0.749	3.889	2.391
5	13.93	-0.819	4.065	2.428
6	17.41	-0.866	4.242	2.511
7	20.90	-0.936	4.360	2.488



σ_c (MPa)	20.90
E (MPa)	2364.35
υ	0.36

σ_c = Compressive Strength
ε = Strain
υ = Poisson's ratio

Approved by

Date : 29-Jun-21

NIRMANA FIORA QAIDAHIYANI, S.T., M.T.
Secretary of Laboratory

LABORATORY OF GEOMECHANICS
DEPARTEMENT OF MINING ENGINEERING
FACULTY OF ENGINEERING
HASANUDDIN UNIVERSITY, MAKASSAR
Kampus II Fakultas Teknik Jl. Poros Malino Km. 6 , Gowa 92171, Indonesia.

SUMMARY OF UNCONFINED COMPRESSIVE STRENGTH TEST

Customer	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Received	:	29-Jun-21
Made on behalf of	:	PT. Wijaya Karya Bendungan Pamukkulu	Date of Test	:	29-Jun-21
Address	:	-	Date of Analysis	:	29-Jun-21
Project	:	Unconfined Compressive Strenght Test	Tested By	:	Wihdah, Irsyad, dan Tomi
Location	:	Kabupaten Takalar, Prov. Sulawesi Selatan	Prepared By	:	Wihdah, Irsyad, dan Tomi
Standard Method	:	ISRM 1981	Checked By	:	Nirmana

No.	Sample Code	Lithology	UCS (MPa)	Young's Modulus (MPa)	Poisson's Ratio
1	KP510101	Basalt	20.90	2,664.71	0.31
2	KP510102	Basalt	34.73	7,052.55	0.41
3	KP510103	Basalt	27.71	2,257.95	0.10
4	KP510104	Basalt	13.92	3,953.58	0.40
5	KP510105	Basalt	27.86	8,928.63	0.40
6	KP510106	Basalt	28.02	4,269.70	0.17
7	KP510107	Basalt	41.69	4,496.11	0.40
8	KP510108	Basalt	48.29	5,003.18	0.30
9	KP510109	Basalt	20.90	2,364.35	0.36

Approved by

Date : 29-Jun-21

NIRMANA FIORA QAIDAHIYANI, S.T., M.T.
Secretary of Laboratory

LABORATORIUM BAHAN JALAN DAN ASPAL
PROGRAM STUDI TEKNIK KONSTRUKSI SIPIL
POLITEKNIK NEGERI UJUNG PANDANG

STRENGTH OF ROCK CORE SAMPLE

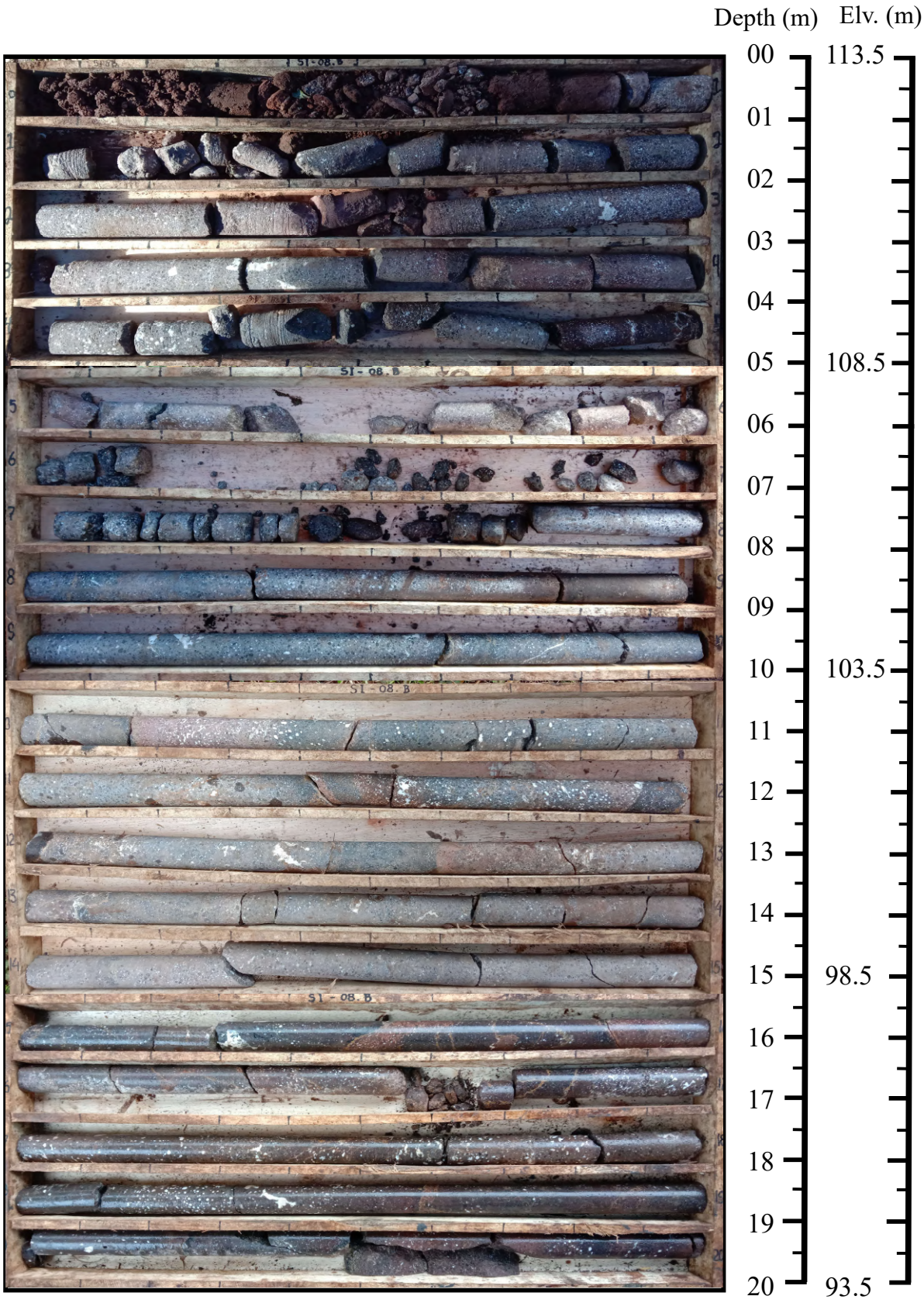
Contractor : PT. WIJAYA KARYA (PERSERO) Tbk
Sample : CORE DRILL

SAMPLE CODE	DATE		AGE (days)	SAMPLE DIAMETER (mm)	SAMPLE LENGTH (mm)	RATIO LENGTH - DIAMETER	RATIO LENGTH - DIAMETER FACTOR	MASS (Kgs)	UNIT WEIGHT (Kgs/m³)	MAX LOAD (kN)	STRESS (N/mm²)	CYLINDER STRENGTH 28 DAYS (MPa)	CUBE STRENGTH 28 DAYS (Kg/Cm2)
	MIX	TEST											
KP510201		28/06/2021		51,57	118,7	2,30	1,0000000	0,6463	1546,48	117,7	56,33	56,33	692,21
KP510205		28/06/2021		51,49	112,9	2,19	1,0000000	0,5930	1418,95	79,0	37,81	37,81	464,61
KP10206		28/06/2021		51,41	112,1	2,18	1,0000000	0,5686	1360,56	76,8	36,75	36,75	451,67
KP510207		28/06/2021		51,46	106,1	2,06	1,0000000	0,5864	1403,15	140,5	67,24	67,24	826,30
KP520203		28/06/2021		51,57	110,5	2,14	1,0000000	0,5823	1393,34	167,9	80,35	80,35	987,45
KP510202		28/06/2021		50,97	112,8	2,21	1,0000000	0,5591	1337,83	69,7	33,36	33,36	409,92
KP510203		28/06/2021		51,05	114,5	2,24	1,0000000	0,5597	1339,26	106,5	50,97	50,97	626,34
KP520201		28/06/2021		51,48	108,6	2,11	1,0000000	0,6676	1597,45	269,6	129,02	129,02	1585,56
KP520204		28/06/2021		51,41	110,8	2,16	1,0000000	0,6032	1443,35	26,9	12,87	12,87	158,20
KP520202		28/06/2021		51,62	110,2	2,13	1,0000000	0,6731	1610,61	176,4	84,42	84,42	1037,44
KP510204		28/06/2021		49,31	112,7	2,29	1,0000000	0,5099	1220,10	56,1	26,85	26,85	329,93

Makassar, 28 juni 2021
Dosen Penanggung Jawab Kegiatan
POLITEKNIK NEGERI UJUNG PANDANG

Dr. Ir. Andi Maal, MT
NIP. 19630104 199202 1 001

Project	Pamukkulu Dam _ Drilling Investigation		
Borehole No.	SI-08B	Depth of Borehole	20 m
Location	Quarry 1	Depth of Rock Core	0 ~ 20 m
Date of Drilling	1-8 Maret 2021	Total Rock Box	4



Project	Pamukkulu Dam _ Drilling Investigation		
Borehole No.	SI-09	Depth of Borehole	20 m
Location	Quarry 1	Depth of Rock Core	0 ~ 20 m
Date of Drilling	3-11 Maret 2021	Total Rock Box	4

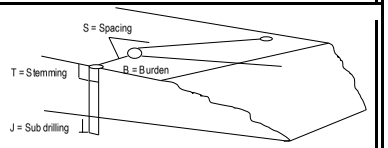
Project	Pamukkulu Dam _ Drilling Investigation		
Borehole No.	SI-10	Depth of Borehole	20 m
Location	Quarry 1	Depth of Rock Core	0 ~ 20 m
Date of Drilling	11-14 Maret 2021	Total Rock Box	4

Project	Pamukkulu Dam _ Drilling Investigation		
Borehole No.	SI-11	Depth of Borehole	20 m
Location	Quarry 1	Depth of Rock Core	0 ~ 20 m
Date of Drilling	15-18 Maret 2021	Total Rock Box	4

Project	Pamukkulu Dam _ Drilling Investigation		
Borehole No.	SI-12	Depth of Borehole	20 m
Location	Quarry 1	Depth of Rock Core	0 ~ 20 m
Date of Drilling	18-21 Maret 2021	Total Rock Box	4

BLASTING PLAN

LOCATION	**KUARI 1**	**Hole diam.**	3.5	**inc**	**BLAST DESIGN**	**B**	2.75	m	**Date :**	**21-May-21**
BLOCK / STRIP	A3	**Depth**	5.50	**m**		**S**	3.00	m		
ELEV. ACT		**Total Hole**	41	**Holes**		**T**	2	m		
ELEV. TARGET		**Total Depth**	225.50	**m**		**J**	0.2	m	**Time :**	**12 : 00 wita**
		PF	**0.5**			**Est. Volume**	1,860.38	**BCM**		



EXPLOSIVES USAGE

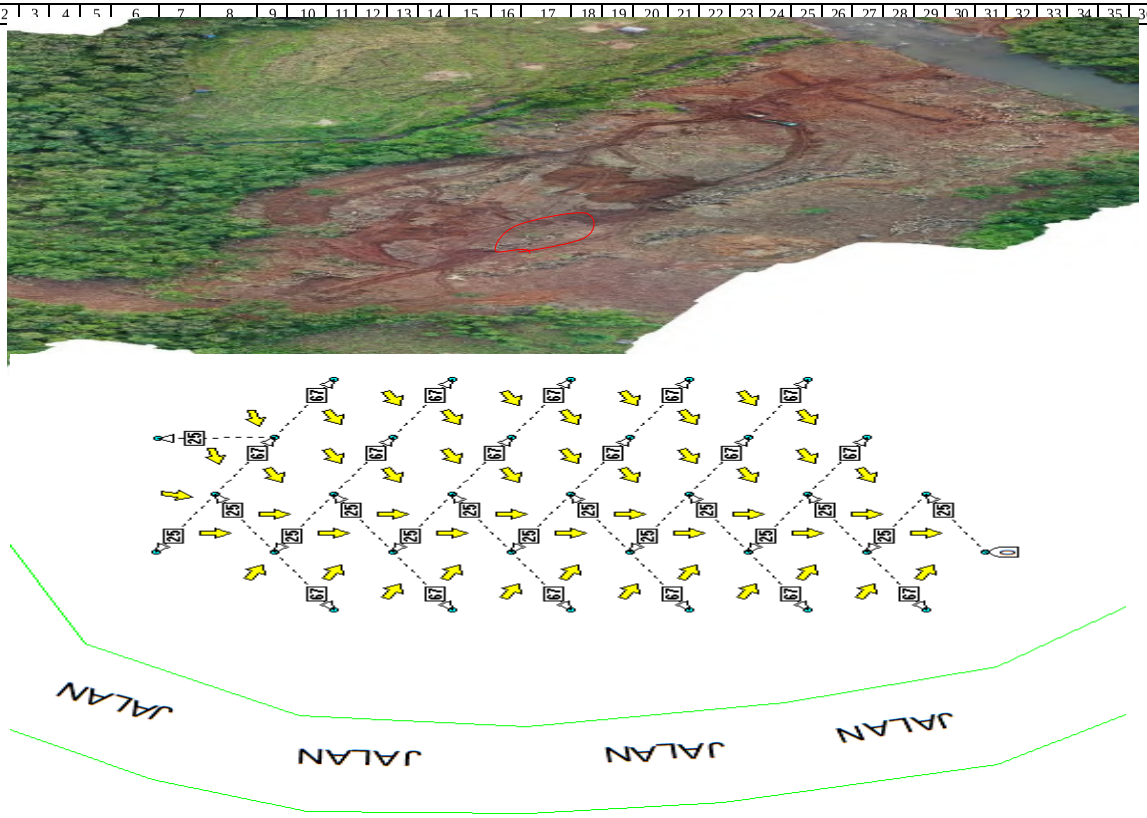
PRIMER	:	Dinamit		Kg
		Booster	**41.0**	Pcs
AN/ANFO	:		**275**	Kg
EMULSION	:		**725**	Kg

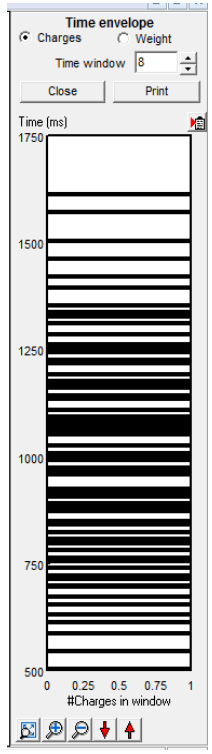
SURF. DELAY		
4.5 m 25 ms	**15**	Pcs
4.5 m 67 ms	**17**	Pcs
		Pcs
		Pcs
		Pcs

INHOLE :		
6 m 500 ms	41	Pcs
		Pcs
		Pcs
		Pcs
		Pcs

Detonator Listrik	**1**	Pcs

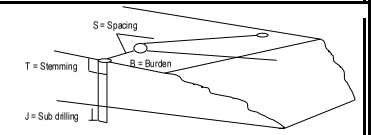
OUTPUT 3B





BLASTING PLAN

LOCATION	**QUARRY BLOK B1**	**Hole diam.**	3.50	**inc**	**BLAST DESIGN**	**B**	2.75	m	**Date :** **8-Jun-21**
STA	**Q1. 0+100 - 0+110**	**Depth**	6.00	**m**		**S**	3.00	m	
ELEV. ACT		**Total Hole**	13	**Holes**		**T**	1.8	m	
ELEV. TARGET		**Total Depth**	78.00	**m**		**J**	0.2	m	**Time :** **12 : 00 wita**
		PF				**Est. Volume**	643.50	**BCM**	



EXPLOSIVES USAGE

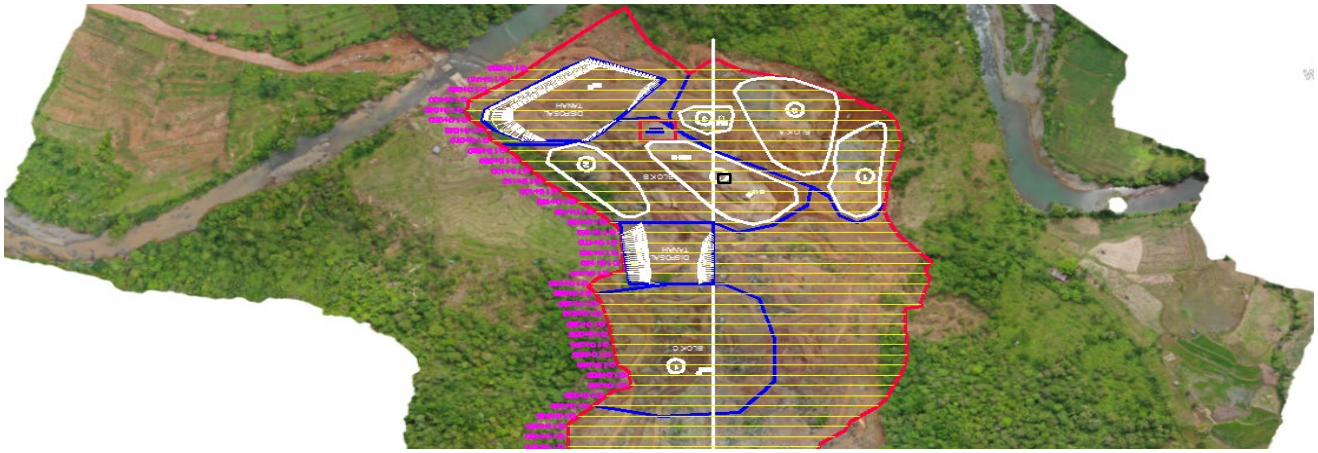
PRIMER	:	Dinamit		Kg
		Booster	13	Pcs
AN/ANFO	:		35	Kg
EMULSION	:		82	Kg

SURF. DELAY		
4.5 m 109 ms	5	Pcs
4.5 m 176 ms	7	Pcs
		Pcs
		Pcs
		Pcs

INHOLE :		
6 m 500 ms	13	Pcs
		Pcs
		Pcs
		Pcs
		Pcs

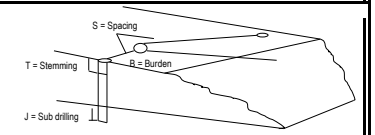
Detonator Listrik : 1 Pcs

NOTE:
- Kedalaman 6 meter batu berlapis



BLASTING PLAN

LOCATION	**QUARRY BLOK B1**	**Hole diam.**	3.50	**inc**	**BLAST DESIGN**	**B**	2.50	m	**Date :** **18-Jun-21**
STA	**Q1. 0+120 - 0+140**	**Depth**	4.50	**m**		**S**	2.75	m	
ELEV. ACT		**Total Hole**	58	**Holes**		**T**	1.8	m	
ELEV. TARGET		**Total Depth**	261.00	**m**		**J**	0.2	m	**Time :** **12 : 00 wita**
		PF				**Est. Volume**	1,794.38	**BCM**	



EXPLOSIVES USAGE

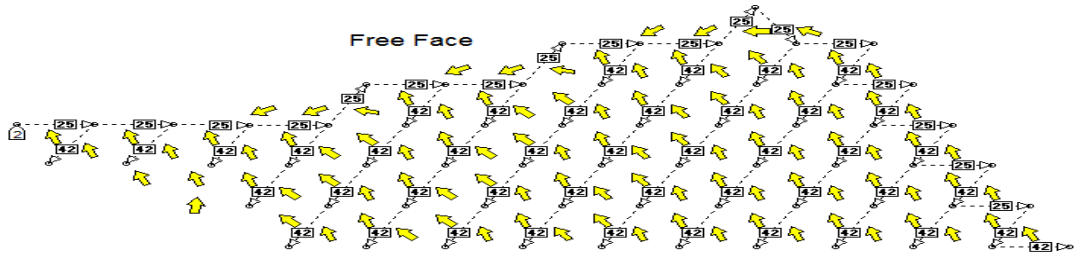
PRIMER	:	Dinamit		Kg
		Booster	58	Pcs
AN/ANFO	:		352	Kg
EMULSION	:		822	Kg

SURF. DELAY		
4.5 m 25 ms	17	Pcs
4.5 m 42 ms	40	Pcs
		Pcs
		Pcs
		Pcs

INHOLE :		
6 m 500 ms	58	Pcs
		Pcs
		Pcs
		Pcs
		Pcs

Detonator Listrik	1	Pcs

NOTE:
- Kedalaman bervariasi 3 sampai 6 meter batu berlapis



BLASTING PLAN

LOCATION	KUARI 1
BLOCK	BLOK D
ELEV. ACT	
ELEV. TARGET	

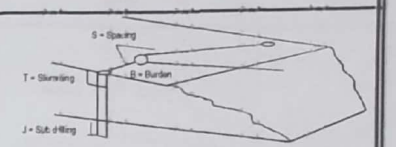
Hole diam.	3.8	inc
Depth	6.00	m
Total Hole	85	Holes
Total Depth	510.00	m
PF	0.5	

BLAST DESIGN

B	3.00	m
S	3.50	m
T	1.5	m
J	0.2	m
Est. Volume	5.355,00	BCM

Date : 30-Jul-21

Time : 12 : 00 wita



EXPLOSIVES USAGE

PRIMER	: Dinamit	17.0	Kg
	Booster		Pcs
AN/ANFO	:	803	Kg
EMULSION	:	1,874	Kg

SURF. DELAY

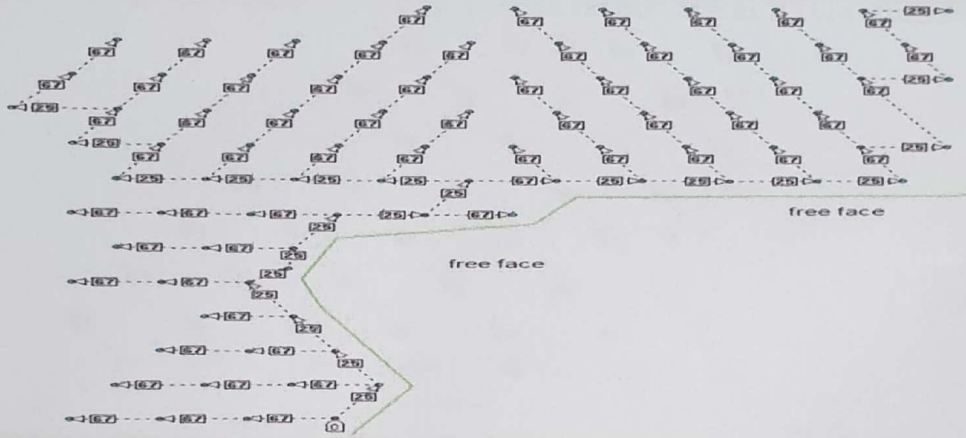
4.5 m 25 ms	21	Pcs
4.5 m 67 ms	62	Pcs
		Pcs
		Pcs
		Pcs

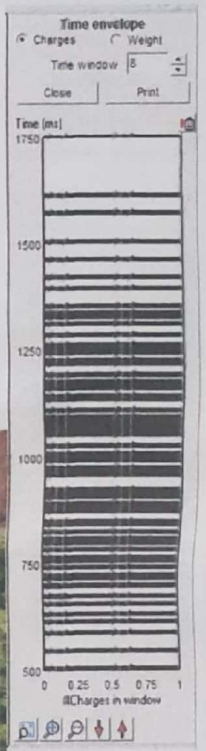
INHOLE :

6 m 500 ms	85	Pcs
		Pcs
		Pcs
		Pcs
		Pcs

Detonator Listrik : 1 Pcs

Blok D.
Output 3B.





Dibuat Oleh	Diketahui Oleh,		Disetujui Oleh
PT. Dahana (Persero)	PT. Dahana (Persero)	PT WIKA	PT WIKA
Blaster	Pengawas	Pelaksana	Kasie Teknik

BLASTING REPORT

LOCATION	KUARI 1
BLOCK / STRIP	Blok E
ELEV. ACT	
ELEV. TARGET	

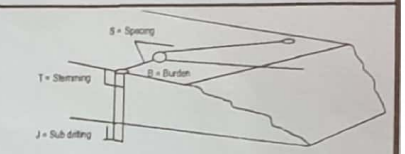
Hole diam.	3.5	inc
Depth Average	5.4	m
Total Hole	63	Holes
Total Depth	338.94	m
PF	0.6	

BLAST DESIGN

B	3.00	m
S	3.25	m
T	1.5	m
J	0.2	m
Est. Volume	3,304.67	BCM

Date : 11-Sep-21

Time : 1 : 30 wita



EXPLOSIVES USAGE

PRIMER :	Dinamit	2.8	Kg
	Booster	49	Pcs
AN/ANFO :		582	Kg
EMULSION :		1,357	Kg

SURF. DELAY

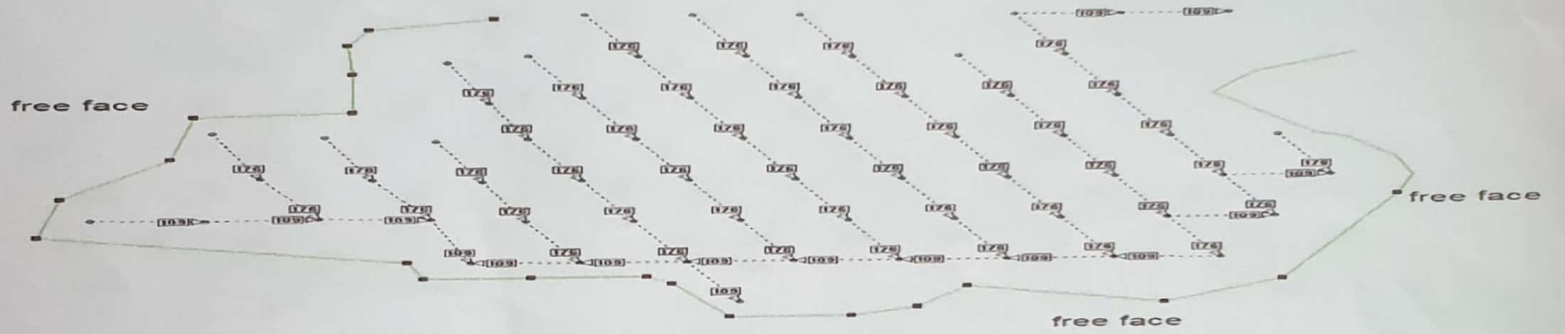
surface 25ms		Pcs
surface 42ms		Pcs
surface 176ms	46	Pcs
surface 109ms	16	Pcs
		Pcs

INHOLE :

6 m 500 ms	63	Pcs
		Pcs
		Pcs
		Pcs
		Pcs

Detonator Listrik : 1 Pcs

penambahan titik sebanyak 13 titik dari plan awal 52 titik
total lubang 63 titik
ply rock dalam radius aman



sebelum

sesudah

Dibuat Oleh
PT. Dahana (Persero)

Blaster

Diketahui Oleh,
PT. Dahana (Persero)

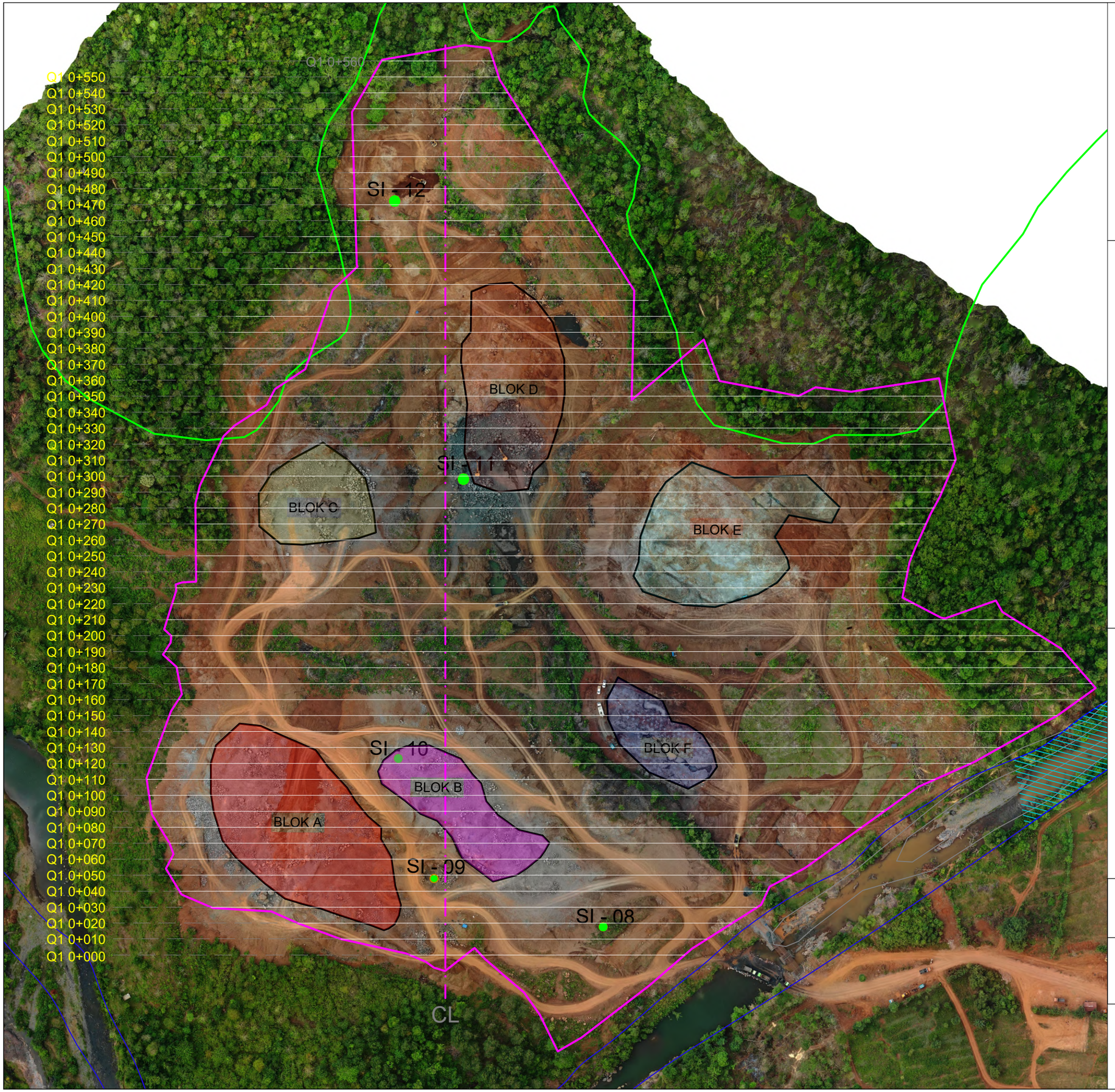
Pengawas

PT WIKA

Pelaksana

Disetujui Oleh
PT WIKA

Kasie Teknik



U

B T

S

LEGENDA

- Sungai
- Silang Koordinat
- Jalur Poligon
- Kontur
- Pemukiman
- Jembatan
- Lokasi Bor Quarry
- 356+50 — Titik Ketinggian

KOORDINAT

BOR QUARRY (SI 08)
X=788475.187
Y=9401949.390

BOR QUARRY (SI 09)
X=788581.152
Y=9401919.121

BOR QUARRY (SI 10)
X=788603.583
Y=9401843.926

BOR QUARRY (SI 11)
X=788562.730
Y=9401668.983

BOR QUARRY (SI 12)
X=788605.860
Y=9401494.799

BOR QUARRY (SI 13)
X=790148.000
Y=9402195.000

BOR QUARRY (SI 14)
X=789932.780
Y=9402327.230

BOR QUARRY (SI 17)
X=790146.000
Y=9402471.000

BOR QUARRY (SI 18)
X=790098.000
Y=9402323.000

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS HASANUDDIN
FAKULTAS TEKNIK
DEPARTEMEN TEKNIK GEOLOGI

Propinsi : SULAWESI SELATAN

Pekerjaan : PEMBANGUNAN BENDUNGAN PAMUKKULU PAKET 1

Kabupaten : TAKALAR

Kontrak :

No Lembar :

PETA QUARRY 1

OLEH :
JASMIN ELZA
D61116501

Nomor Gambar :

Nomor Referensi :

Tanggal :