# Appendix 7 Operational results of drill hole

Decrease in Length   0.30   Length   46.40   m   %   %   %   %   %   %   %   %   %	process.		n 200 a Si Calabi Cama and misera e e e e e e e e e e e e e e e e e e									
Preparation		. 1		Period		of ·	Wo	orking	Day (	off 1	Number	οf
Removing   23rd Spt. '87v25th Spt. '87   3   2.5   - 44	eriod	Preparation				4		4			64	
Total		Drilling					:					
Total	lorki	Removing				-		-	-			
Planned   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100	ıs	Total				11		10	-		202	
Length   So.00   burden   Of Hole   Section   Total		Dept	h of Dril	ling		Core Rec	ove	ry for	each 1	00 п	section	n
Decrease in Length   Decreas	ength	I	1		m	of		Sect	ion		Total	
Drilling 32°00'H 53.3 Z 24.3 m Z Z  Out Drilling 28°00' 46.7 21.2 m Z  Regain of Accident Efficiency of Drilling  Total 60°00' 100 45.5 50.30 m/Working Period 4.57 m/day  Construct 18°00' 13.6 50.30 m/Working Days 5.03 m/day  take to pieces 9°00' 6.8 50.30 m/Drilling Period 16.76 m/day  Moving of water 50.30 m/Net Drilling Days 20.12 m/day  G · Total 132°00' 100 Total workers/ 50.30 m 4.01 Man/m  Pipe Size & Inserted Length Recovery of Drilling Workers/50.30 m 0.87	00	Decrease in				0 ∿ 50.30		100			100	% %
Drilling   32°00'   46.7   21.2   m   %   %   %   %   %   %   %   %   %	Drill		50.30 Recov		ľ							%
Regain of Accident	-	Drilling	32°00' <sup>H</sup>	53.3	24.3							7.
Accident		Out Drilling	28°00'	46.7	21.2		m		. %			78
Construct   18'00'   13.6   50.30 m/Working Days   5.03 m/day   5.03 m/day   5.03 m/day   5.03 m/Drilling Period   16.76 m/day   50.30 m/Net Drilling Days   20.12 m/day   6.8   6.8   50.30 m/Net Drilling Days   20.12 m/day   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6		Regain of Accident	_	· · · -	-	Ef	fic	iency o	f Dril	ling		
Construct   18'00'   13.6   50.30 m/Working Days   5.03 m/day   5.03 m/day   5.03 m/day   5.03 m/Drilling Period   16.76 m/day   50.30 m/Net Drilling Days   20.12 m/day   6.8   6.8   50.30 m/Net Drilling Days   20.12 m/day   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6.7   6	ime	Total	60°00'	100	45.5	50.30 m/Wo	orki	ing Peri	lod	4.5	7 m/da	ay
Road · others 45°00' 34.1 Total workers/ 50.30 m 4.01 Man/m  G · Total 132°00' 100 Total  Pipe Size & Length Recovery of Drilling Workers/50.30 m 0.87 Man/m		Construct			13.6	50.30 m/W	orki	ng Days	3	5.0	3 m/da	ау
Road · others 45°00' 34.1 Total workers/ 50.30 m 4.01 Man/m  G · Total 132°00' 100 Total  Pipe Size & Length Recovery of Drilling Workers/50.30 m 0.87 Man/m	iż.		<del></del>		6.8	50.30 m/Di	rill	ing Per	riod	16.7	6 m/d	ay
Road · others 45°00' 34.1  G · Total 132°00' 100 Total workers/ 50.30 m 4.01 Man/m  Pipe Size & Length Recovery of Drilling Workers/50.30 m 0.87	Wo				-	50.30 m/Ne	et D	rilling	g Days	20.1	2 m/da	ay
G. Total 132°00' 100  Inserted Total Total Pipe Size & Length Recovery of Drilling Workers/50.30 m 0.87		Road • others	45°00'		34.1	<b></b>						
Pipe Size & Length Recovery of Drilling Workers/50.30 m 0.87		G · Total	132°00'		100	Total wor	ker	s/ 50.	30 m	4.0	l Man,	/m
Length Drilling of Size	pa	-	Inserted Length o	, Red		1	Worl	kers/50	.30 m	0.8	7 Man	/m
	ert		Length				Dri	illing o	of Size	<u> </u>		
		BW-CP 3.90 m	7.75	7.	100 %	Bit síze		BW	56-	-Т		
m % % Drilling 3.90 m 46.40 m	ipe	m		7.	7.	Drilling		3.90	m 46	.40 TR		
		m	m 2		7.	Core Leng	th	0.00	46	.40		
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		I	Period	1 :		Number of Days	Wor	tual tking ays	Day O	ff Numbe Work	r of
Period	Preparation	23rd Spt.	'87∿2	5th	Spt. '87	3		3	-	71	
	Drilling	26th Spt.	187∿2	8th	Spt. '87	3	:	2.5		104	
Working	Removing					_				_	
3	Total	23rd Spt.	'87∿2	8th	Spt. '87	6		5.5		: 17,5	~ 0
harreson d	Dep	th of Dril	ling	22/41		Core Rec	over	y for e	each 10	0 m sect	ion
Length	Planned Length	m 50.00	Over- burde		m	Depth of Hole		Secti	ion	Tota	1
	Increase or	m	Core		m	0 ∿ 50.30	m	100	7.	100	7,
Drilling	Decrease in Length	0.30	Lengt	h	49.40		m		2		7.
111	Length	m	Core		7.		m	,	7.		7.
Dr	Drilled	50.30	Recov	very	100	1.	m		7.		%
	Drilling	36°00' <sup>H</sup>	60	.0 %	41.4		m		7,		7.
	Out Drilling	24°00'	40	.0	27.6		m		7.		7.
	Regain of Accident			-	-	E f	fici	ency o	f Dril	ling	
Time	Total	60°00'	100	0 :	69.0	50.30 m/W	orki	ng Peri	od	8.38 m	/day
	Construct	10°00'			11.5	50.30 m/W	orki	ng Days	3	9.14 m	/day
Ž.	take to pieces	8°00'			9.2	50.30 m/D	rill	ing Per	iod	16.76 ™	/day
Working	Moving of wate	r _	1		-	50.30 m/N	et D	rilling	Days	20.12 m	/day
	Road others	9°00'			10.3			-			. ,
	G · Total	87°00'			100	Total wor	kers	s/ 50 	.30 m	3.48 M	lan/m
q	Pipe Size &	Inserte Length Drillin	7		overy of ing Pipe	Total Drilling	Worl	kers/50	0.30 m	2.06	lan/m
nserted		Length					Dri	illing	of Siz	e	
Inse	BW-CP 1.80 m	3.6	78	,	100 %	Bit size		BW	56	-т	
Pipe		-	2		Z	Drilling		1.80	) <sup>m</sup> 48	. 50 <sup>m</sup>	
1.50			7.		7.	Core Len	gth	0.90	48	.50	
Casing											
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11			Perio	d		Number of Days	Wo	tual rking Days	Day C	ff Nu	otal mber orker	
Period	Preparation	28th Spt.	187∿	3rd	Oct. 187	6		5.5	•		144	
	Drilling	3rd Oct.	187∿	5th	Oct. '87	3		2.5			46	
Working	Removing				1	-		-	<b>4-</b>		_	
K	Total	28th Spt.	'87∿	5th	Oct. '87	9		8			190	
OS PARTY	Dept	h of Dril	ling			Core Rec	ovei	ry for	each 1	00 m se	ection	n
Length	Planned Length	m 50.00	Over burd	. 1	m	Depth of Hole		Sect	ion	To	otal	
rilling Le	Increase or Decrease in Length	0.30	Core Leng		m 50.30	0 ∿ 50.30	m m	10	00 % %		100	% %
Drill	Length Drilled	50.30 m	Core Reco	very	7 100		m m		. <u>7</u>			7 7
	Drilling	36°00'H	- 60	.0 %	31.6		m		7,			%
	Out Drilling	24°00'	40	.0	21.1		m		%			%
	Regain of Accident	-		_	_	Ef	fic	iency c	f Dril	ling		
Time	Total	60°00'	10	0	52.7	50.30 m/W	orki	ing Per	iod	5.58	m/d.	ay
	Construct	12°00'			10.5	50.30 m/W	orki	ing Day	s	6.28	m/d	ay
Working	take to pieces	18°00'			15.8	50.30 m/D	ril	ling Pe	riod	16.76	m/d	ау
Wor	Moving of water	_			-	50.30 m/N	et I	Orillin	g Days	20.12	m/d	ay
	Road · others	24°00'			21.0					ļ		
	G · Total	114°00'			100	Total wor	ker	s/ 50	.30 m	3.77	Man	/m
P	Pipe Size &	Inserte Length Drillin	9		overy of ing Pipe	Total Drilling	Wor	kers/	50.30 m	0.91	Man	/m
Inserted		Length		i			Dr	illing	of Siz	e		
Ins	BW-CP 1.80 m	3.6	78		100 %	Bit size		BW	56	-Т		
pe	, m		%		7.	Drilling		1.80	) <sup>m</sup> 48	.50 <sup>m</sup>		
g Pi	m	<u> </u>	7.		%	Core Leng	gth	1.80	) 48	.50		
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יט י			Perio	od			Number of Days	Wo	tual rking Days	Day (	)ff	Num	tal ber rkei	
Period	Preparation	24th Spt.	'87∿	28th	Spt. 18	7	5	*	4.5	<b>-</b>		1	40	
	Drilling Drilling	28th Spt.	'87∿	30th	Spt. 18	7	3		2.5			1	10	
Working	Removing						-	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					_	
[3	Total	24th Spt.	'87∿	30th	Spt. 18	7	8		7	_		2	50	
	Dept	h of Dril	ling				Core Rec	ove	ry for e	each 1	00 m	sec	tio	n
Length	Planned Length	m 50.00	Over burd			m	Depth of Hole		Secti	lon		Tot	al	
	Increase or Decrease in Length	0.30	Core Leng		47.90	m	0 ∿ 50.30	m m	98.2	<u> </u>		98	. 2	% %
Drilling	Length Drilled	50.30 m	Core Reco	very	98.2	%	a sage	m m		7 7				7.
	Drilling	31°00'H	51	.7 %	29.6	7		m		7.				7.
	Out Drilling	29°00'		.3	27.6	TOTAL DESIGNATION OF THE PERSON OF THE PERSO		m		7.				7,
	Regain of Accident	-		<del>-</del>	· · ·		Ef	fic	iency of	Dril	ling	DOCUMENT.		
Time	Total	60°00'	10	0	57.2		50.30 m/W	rki	ng Peri	od	6.2	28	m/d.	ay
	Construct	13°00'			12.4	-	50.30 m/We	orki	ng Days		7.	18	m/d	ay
Norking	take to pieces	14°00'			13.3		50.30 m/Di	cill	ing Per	iod	16.7	76	m/d	ay
Wor	Moving of water	_			-		50.30 m/No	et D	rilling	Days	20.	12	m/d	ay
	Road · others	18°00'			17.1						1		<del></del>	
	G • Total	105°00'			100		Total wor	ker	50	.30 m	4.9	97	Man	/m
סי	Pipe Size & Meterage	Inserte Length Drillin	7		overy of ing Pipe	- 13	Total Drilling	Worl	kers/50	.30 m	2.	18	Man	/m
Inserted		Length	6				i .	Dr	illing o	of Siz	e			
Ins	BW-CP 4.0 m	8.0	7.		100	7.	Bit size		BW	56	-T			
Pipe	m	m %				%	Drilling		1.80	m 48	.50 <sup>tt</sup>			
00	m		7,			7	Core Leng	th	0.30	47	.60			
Casing				,		a and a second								
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Series Comme						-			
יטי			Period		Number of Days	Actual Working Days	Day 0	off Num	otal ober of orkers
Period	Preparation	27th Spt.	'87∿30th	Spt. 187	4	4	-		87
	Drilling	lst Oct.	'87∿ 3rd	Oct. 187	3	2.5	-		99
Working	Removing				_	_	-		-
W	Total	27th Oct.	'87∿ 3rd	Oct. '87	7	6.5	_	1	86
	Dep	th of Dril	ling		Core Rec	overy for	each 10	00 m se	ction
Length	Planned Length	m 50.00	Over- burden	m	Depth of Hole	Sec	tion	То	tal
	Increase or Decrease in Length	0.30	Core Length	m 49.00	0 ∿ 50.30	m 99.	4 % %	99	7.4 % %
Drilling	Length Drilled	50.30 m	Core Recovery	% 99.4		m	7,		%
	Drilling	36°00',R	60.0 %	37.5		m m	% %	<u> </u>	% %
	Out Drilling	24°00'	40.0	25.0	:	m	7.		Z
	Regain of Accident		-	-	Ef	ficiency		ling	:
Time	Total	60°00'	100	62.5	50.30 m/W	orking Per	iod	7.18	m/day
	Construct	13°00'		13.5	50.30 m/W		····	7.73	m/day
Jorking	take to pieces	9°00'		9.4	50.30 m/D	rilling Pe	eriod	16.76	m/day
Wor	Moving of wate	r _		_	50.30 m/N	et Drillin	ng Days	20,12	m/day
	Road · others	14°00'		14.6	Total wor		0.30 m	3.69	Man/m
	G · Total	96°00'		100					
m	Pipe Size & Meterage	Inserte Length Drillin	Rec	overy of ing Pipe	Total Drilling	Workers/5	0.30 m	1.96	Man/m
Inserted	neterage	Length	g Cas	ing lipe		Drilling	of Siz	e	
Ins	BW-CP 1.80 m	3.6	%	100 %	Bit size	BW	56	-т	:
Pipe	m		7.	7.	Drilling	1.8	0 <sup>m</sup> 48	.50 <sup>m</sup>	
00	m		%	7.	Core Leng	th 0.5	0 48	. 50	:
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res			Perio	d		Number of Days	Wo	etual orking Days	Day O	ff	Total Number Worker	
Period	Preparation	4th Oct.	87∿5	th Oc	t 187	2		2	-		81	
1 1	Drilling	6th Oct.	'87∿8	th Oc	t. '87	3		2.5	_		61	
Working	Removing					-		-				
We	Total	4th Oct.	'87∿8	th Oc	t. '87	5		4.5			142	
III CONT	Dept	h of Dril	ling			Core Rec	ove	ry for e	each 10	00 m	sectio	n
Length	Planned Length	m 50.00	Over burd		m	Depth of Hole		Secti	ion		Total	
	Increase or Decrease in Length	0.40	Core Leng	. 1	m 49.00	0 ∿ 50.40	m m	99.	6 % %		99.6	<u>ጸ</u> ጸ
Drilling	Length Drilled	m 50.40	Core Reco	i	% 99.6		m		% %			% %
-	Drilling	38°00'H	63	.3 %	48.7		m		7.			7,
	Out Drilling	22°00'	36	.7	28.2		m		78			%
	Regain of Accident	<del>-</del>		_		Ef	fic	iency o	f Dril	ling		
Time	Total	60°00'	10	0	76.9	50.40 m/W	ork:	ing Peri	lod	10.0	)8 m/d	ay
	Construct	5°00'			6.4	50.40 m/W	ork:	ing Days	;	11.3	20 m/d	ay
Working	take to pieces	13°00'			16.7	50.40 m/D	ril	ling Per	riod	16.8	30 m/d	ay
Wor	Moving of water	<u> </u>				50.40 m/N	et l	Orilling	g Days	20.	16 m/d	ay
	Road others	<u>-</u>			-	J						
	G Total	78°00'			100	Total wor	ker	s/ 50	).40 m	2.8	31. Man	:/m
70	Pipe Size & Meterage	Inserted Length 7		overy of ing Pipe	Total Drilling	Wor	kers/50	).40 m	1.3	Man	ı/m	
Inserced	neceruge	Length	6	^ Casi	*"6 11PC		Dr	illing o	of Siz	2		
Ins	BW-CP 1.80 m	BW-CP 1.80 m 3.6 %			100 %	Bit size		BW	56	-T		
Pipe	m 7			٦.	Drilling		1.80	) <sup>m</sup> 48	.60 m			
00	m		7,		7.	Core Leng	gth	0.60	) 48	40		-
Casin												
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JMT-7

יטי	A STATE OF THE STA		Period	~ nove	AND THE STREET,	Number of Days	Wo	ctual orking Days	Day 0	ff	Total Number Worker	
Period	Preparation	lst Nov.	'87∿3rd	l No	ov. 187	-3		2.5	_		86	
	Drilling .	3rd Nov.	¹87∿5th	No	ov. <sup>1</sup> 87	3		2.5			43	
Working	Removing		3 <del>,71 - 20 t - 21.0 ( - 1</del>	Arak Profession P								
3	Total	lst Nov.	'87∿5th	No	v. ¹87	6		5	_		129	
	Dept	h of Dril	ling			Core Rec	ove	ry for e	ach 10	)0 m	section	n
Length	Planned Length	50.00	Over- burden		m	Depth of Hole		Secti	.on		Total	
	Increase or Decrease in Length	m 0.20	Core Length		47.00	0 ∿ 50.20	m m	99.	2 % %		99.2	7. 7.
Drilling	Length Drilled	50.20	Core Recove	гу	99.2		m		7 7	· · ·		7 7
	Drilling	33°00' <sup>H</sup>	55.0	7	37.9		m		7.		· · · · · · · · · · · · · · · · · · ·	Z
	Out Drilling	27°00'	45.0		31.0		m					7,
	Regain of Accident		-	_	-	Ef	fic	iency of	Dril	ling		
Time	Total	60°00'	100		68.9	50.20 m/W	orki	ng Peri	od	8.	36 m/da	ay
g T	Construct	21°00'			24.1	50.20 m/W	orki	ng Days		ļ <u>-</u>	04 m/da	
Working	take to pieces	6°00¹			7.0	50.20 m/D	ri11	ing Per	iod	16.	73 m/da	ay
Wor	Moving of water		<b></b>			50.20 m/N	et I	rilling	Davs	20	08 m/da	av
	Road · others	- '			-	30.20,				20.	,,,,,,	
	G · Total	87°00'	:		100	Total wor	ker	s/ 50.	20 m	2.	66 Man	/m
ď	Pipe Size & Meterage	Inserted Length Drilling	Z R		very of	Total Drilling	Wor	kers/50	.20 m	0.	10 Man	/m
Inserted	-100011060	Length			.ng ripe		Dr	illing o	f Size	2		.
	В₩-СР 2.80 ш	5.6	78	1	00 %	Bit size		BW	56-	-T		$\neg$
Pipe	m		78		7.	Drilling		2.80	m 47.	40 n		$\exists$
	m	:	7.		%	Core Leng	th	0	47.	00		$\exists$
Casing								J			<del>1</del>	
						<u> </u>						

JMT-8

ъ		BANK AÇ (ŞIN) A ŞING BANK BANK BUTTA AZI	Perio	od			Number of Days	W.	ctual orking Days	D.	ay C	off	Num	tal ber rker	
Period	Preparation	29th Oct.	<b>'</b> 871	lst :	Nov. 187		4		3.5		_			80	-
	Drilling	1st Nov.	¹87 <sup>^</sup>	3rd	Nov. '87		3		2.5			<del> </del>		53	
Working	Removing						4-							-	
3	Total	29th Oct.	¹87 <sup>^</sup>	3rd 1	Nov. '87		. 7		.6				1	33	
	Dept	h of Dril	ling				Core Rec	ove	ry for	eac	h 10	00 m	sec	tion	i I
Length	Planned Length	50.00	Over burd			m	Depth of Hole		Sect	ion			Tot	al	
	Increase or Decrease in Length	0.20	Core Leng		48.10	m	0 ∿ 50.20	m	98	3.4	% %		98	.4	7 7
Drilling	Length Drilled	m 50.20	Core Reco	very	98.4	%	. :	m			% %				7 7
	Drilling	31°00' <sup>H</sup>	56	.4 %	25.2	%		m		<del></del>	7,			<del></del>	78
	Out Drilling	24°00'	43	. 6	19.5			m			78				72
	Regain of Accident	-		_	. –		Ef	fic	iency o	f D	rill	ling	••••		ᅱ
Time	Total	55°00'	10	0	44.7		50.20 m/Wo	rki	ng Peri	od		7.	17	m/da	$\downarrow$
	Construct	32°00'			26.0		50.20 m/Wo	rki	ng Days					m/da	
Vorking	take to pieces						50.20 m/Dr	i11	ing Per	iod	ì			m/da	
Wo1	Moving of water	_			-		50.20 m/Ne	t E	rilline	n Da	ivs			m/da	
	Road · others	36°00'			29.3		30.20				-, 0.	20.1		in j G a	긤
	G ·Total	123°00'			100		Total wor	cer	s/ 50	.20	m	2.0	54	Man/	m
red	Pipe Size & Meterage	Inserted Length Drilling	9		overy of ng Pipe		Total Drilling V		·			1.(	)5	Man/	m
nserted		Length		:				Dr:	illing	of S	Size	:			
1 1 1	BW-CP 2.10 m	4.2	78		100 %	2	Bit size		BW		56~				
Pipe	m		7.		7	7	Drilling		2.10	m	48.	10 m			]
1 t	m		%		2	7	Core Lengt	h	0.80		47.3	30			
Casing					-, <b>.</b>										

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79		1960 milandadeadhaupun er e gire , <u>e y</u>	Period		Number of Days	Actual Working Days	Day	Off	Total Number of Workers
Period	Preparation	11th Oct.	187 <sup>0</sup> 14th	Oct. 187	4	3.5	-		98
	Drilling	14th Oct.	¹87∿16th	Oct. 187	3	2	_		54
Working	Removing				_		-		_
	Total	lith Oct.	'87∿16th	Oct. '87	7	5.5	-		152
	Dept	h of Dril	ling		Core Rec	overy for	each 1	00 m	section
Length	Planned Length	m 50.00	Over- burden	ın		Sect			Total
60	Increase or Decrease in Length	0.10	Core Length	48.10	0 ∿ 50.10	m 98	.6 % %		98.6 %
Drillin	Length Drilled	m 50.10	Core Recovery	98.6		m	. %		Z
<u> </u>	Drilling	29°00'H	60.4 %	34.5		m	7 7		7 7
	Out Drilling	19°00'	39.6	22.6		m	%		
	Regain of Accident	-	7	-	Ef.	ficiency o		ling	/6
Time	Total	48°00'	100	57.1	50.10 m/Wo				15 m/day
	Construct	14°00'		16.7	50.10 m/Wo				0 m/day
Working	take to pieces	9°00'		10.7	50.10 m/Dr				0 m/day
Wor	Moving of water	-		_	50.10 m/Ne	t Drillin	Dave	ļ. —	5 m/day
	Road · others	13°00'		15.5				23.0	/3 m/day
	G ·Total	84°00'		100	Total worl	kers/ 50.	10 m	3.0	3 Man/m
Pi	Pipe Size & Meterage	Inserted Length Drilling	Rece	overy of ing Pipe	Total Drilling V	Vorkers/ 5	0.10 m	1.0	Man/m
Inserted		Length	,	ing ripe		Drilling o	of Size	2	
Ins	BW-CP 1.80 m	3.6	, %	100 %	Bit size	BW	56-	·T	
Pipe	m		7.	7.	Drilling	1.80	m 48	. 30 <sup>m</sup>	
1 00	m		Z	7.	Core Lengt	h 0.50	47	.60	
Casing							<del></del>		
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JMT-10

	×			-									
70			Perio	od			Number of Days	Wo	tual rking ays	Day (	Off 1	Total Number Worke	of
Period	Preparation	13th Oct.	<b>'</b> 87^	16th	Oct. '87	7	4		3.5	من		88	
60	Drilling	l6th Oct.	<b>'</b> 871	18th	Oct. '87	7	3		2.5	· <u>-</u>		57	
Workin	Removing						-		-				
ß	Total	13th Oct	<b>'</b> 871	18th	Oct. '87	7	7		6	-		145	
10 Table	Dept	h of Dril	ling				Core Rec	over	y for e	ach 1	00 m	sectio	on
Length	Planned Length	m 50.00	Over burd		I	m	Depth of Hole		Secti	on		Total	:
00	Increase or Decrease in Length	0.10	Core		48.40	m	0 ∿ 50.10	m m	99.6	% %	9	99.6	7. 7.
Drillin	Length Drilled	m 50.10	Core Reco	very	·	78		m m		% %			%
	Drilling	36°00' <sup>H</sup>	60	7.0	34.3	7		m		%			7
	Out Drilling	24°00'	40	.0	22.9			m		78			%
	Regain of Accident		:	-	-		Ef	fici	ency of	Dril	ling		
Time	Total	60°00'	10	0	57.2		50.10 m/W	orki	ng Perio	od	7.	15 m/c	lay
66	Construct	16°00'			15.2		50.10 m/W	orki	ng Days		8.3	35 m/c	lay
Workin	take to pieces	9°00'			8.6		50.10 m/D	rill	ing Peri	od	16.	0 m/c	day
Wor	Moving of water	-			. <del>-</del>	_	50.10 m/Ne	et D	rilling	Days	20.0	)4 m/c	day
	Road others	20°00'			19.0							:	
	G - Total	105°00'			100		Total wor	kers	50.1	0 п	2.8	39 Mai	n/m
pa	Pipe Size & Meterage	Inserted Length Drillin	9		overy of ing Pipe		Total Drilling	Work	ers/ 50	). 10 m	1.	Mai 13	n/m
Inserted		Length			i i		·	Dri	lling o	f Siz	e		
Ins	BW-CP 1.80 m	3.6	7		100	7.	Bit size		BW		-T		
Pipe	m m		%		,	7.	Drilling		1.80	<sup>m</sup> 48.	30 m		1
0.3	m Z		,	78	Core Leng	th	0.30	48.	10				
Casin													•

JMT-11

T.			Perio	od			Number of Days	Wo	tual rking )ays	Day (	Off	Total Number Worke	of
Period	Preparation	9th Oct.	1877	√12th	Oct.	187	4		3.5			125	: :
	Drilling	12th Oct.	1871	v14 th	Oct.	'87	3		2	•		52	
Working	Removing						-		_	-			
1 .	Total	9th Oct.	871	√14th	Oct.	'87	7		5.5			177	
	Dept	h of Dril	ling				Core Rec	over	y for e	ach 1	00 m	sectio	n n
1 1	Planned Length	m 50.00	Over burd			m	Depth of Hole	:	Secti	on		Total	
	Increase or Decrease in	m	Core			m	0 ∿ 50.20	m	99	.2 %		99.2	%
	Length	0.20	Leng	gth	48.80			m		%	ļ <u></u>		%
ril	Length	m				%		m		7.			%
	Drilled	50.20	Keco	very	99.2			m		. %			7,
	Drilling	25°30' <sup>H</sup>	53	1.1	19.3	%		m		7.		:	%
	Out Drilling	22°30'	46	. 9	17.1			п		7,	<u> </u>		7,
	Regain of Accident	-		-			Ef	fici	ency of	Dril	ling		
Time	Total	48°00'	10	0	36.4		50.20 m/Wo	rki	ng Peri	ođ	7.	17 m/d	lay
	Construct	15°00'	<u> </u>		11.4		50.20 m/Wo	rki	ng Days		9.	12 m/d	lay
Working	take to pieces	9°00'			6.8		50.20 m/Di	i11	ing Per	iod	16.7	73 m/d	lay
Wo	Moving of water	·					50.20 m/Ne	t D	rilling	Davs	25.	m/d	lav
	Road · others	60°00'			45.4						23.	· · · · · · · · · · · · · · · · · · ·	
	G · Total	132°00'			100		Total worl	kers	50	.20 m	3.5	2 Mar	1/m
rg.	Pipe Size & Meterage	Inserted Length Drilling	7		overy o		Total Drilling V	work	kers/ 50	).20 m	1.0	Mar )3	1/m
erte		Length	5		:	<i>)</i> .c		Dri	lling o	f Siz	e		.
Ins	BW-CP 1.80 m	3.6	78		100	7.	Bit size		BW	56	-T		
. De	m		7.			7.	Drilling		1.80	m 48	.40 m		$\neg$
1 1	·m		7.			7.	Core Leng	t h	0.80		.00		
sing									<u> </u>			·	
S													
Casing Pipe Inserted	BW-CP 1.80 m	Length	ng Casi			7 7	Drilling		BW 1.80	56 m 48	-Т		

JMT-12

The Cartes			Period	rykolonymine jy illien ila kan assamusel musemilikele me fi ilder re	Number of	Wo	tual rking	Day C	ef	Total Number	of
Period	Preparation	5th Oct.	1070 044	0-107	Days 4	<del> </del>	ays			Worker 106	rs
Per		oun occ.	- 87 ° 8th	OCE. 87	4	ļ	3.5	<del>-</del>		106	
	Drilling	8th Oct.	¹87∿10th	Oct. '87	3		2	· -		37	
Working	Removing				-						
1.5	Total	5th Oct.	'87∿10th	Oct. 187	7		5.5	-		143	-
	Dept	h of Dril	ling		Core Rec	over	y for e	ach 10	)O m	sectio	n
Length	Planned Length	m 50.00	Over- burden	מ	Depth of Hole		Secti	on		Total	
	Increase or Decrease in	m	Core	π	0 ∿ 50.20	m	100	0 %		100	7,
Drilling	Length	0.20	Length	47.00		m		78			78
ci I	Length	1	Core	7.		m		%			%
ļ	Drilled	50.20	Recovery	/ 100		m		%	_		7.
	Drilling	26°00' <sup>H</sup>	54.2	31.0		m		7.			Z
	Out Drilling	22°00'	45.8	26.2		m		7.			%
:	Regain of Accident	-	_	-	Ef	fici	ency of	Dril	ling		
Time	Total	48°00'	100	57.2	50.20 m/W	orki	ng Peri	od	7.	17 m/d	ay
	Construct	9°00'	1.7	10.7	50.20 m/W	orki	ng Days	<del></del>		12 m/d	
Vorking	take to pieces	18°00'		21.4	50.20 m/D	rill	ing Per	iod	16.	73 m/d	ay
Wor	Moving of water	-			50.20 m/N	et D	rilling	Dave	25	10 m/d	217
	Road · others	9°00'		10.7	30.20 11,11		TTTTING		23.	10 IN/G	ay
	G ∙Total	84°00¹		100	Total wor	kers	50.2	20 m	2.8	84 Man	/m
ed	Pipe Size & Meterage	Inserted Length Drilling	" Rec	covery of sing Pipe	Total Drilling	Work	ers/ 50	0.20 m	0.	73 Man	/m
Inserted	*** *	Length				Dri	lling o	f Size	2		:
	BW-CP 4.40 m	8.8	%	100 %	Bit size		BW	56-	Т.		
Pipe	ın		%	. 7	Drilling		3.80	m 46	.40 m		
60	m		7.	7	Core Leng	th	0.60		.40		
Casin											
ဒ				****							
		<del></del>		<del></del>	. E						

				-								
		Period	d			Number of Days	W	orking	Day (	Off	Tota Numbe Work	r of
Preparation	8th Oct.	187∿	10th	Oct. '	87	3		2.5	_		65	
Drilling	10th Oct.	¹87∿:	12th	Oct. '	87	3		2			50	
Removing						_			_			
Total	8th Oct.	'87∿1	12th	Oct.	87	6		4.5	-		115	
Dept	h of Dril	ling			*****	Core Rec	ove	ry for e	each 1	00 m	secti	on
Planned Length	m 50.00	4			m	Depth of Hole		Secti	on		Total	- 1
Increase or Decrease in Length	m 0.30	Core Lengt	h	49.00	m	0 ∿ 50.30	m m	100	% %		100	% %
Length Drilled	m 50.30		ery	100	%		m		% %			7 7
Drilling	27°00' <sup>H</sup>	56.	3 %	29.0	7		m		7.	<u></u>		78
Out Drilling	21°001	43.	7	22.5			m	<del></del>	%		<del></del>	7
Regain of Accident	-					Ef	fic	iency of	Dril	ling		
Total	48°00'	100		51.5		50.30 m/Wo	rki	ng Peri	od	8	38 m/c	120
Construct	18°00'			19.4							<del></del>	
take to pieces	9°00'			9.7		50.30 m/Dr	i11	ing Per	iod			
	-					50.30 m/Ne	-t D	rilline	Dave	L		
Road · others	18°00'			19.4					Days		15 m/c	lay
G • Total	93°00'			100		Total work	cers	5/ 50	.30 m	2.	28 Mar	ո/ո
Pipe Size & Meterage	Length	9 1				Total Drilling V	lorl	kers/50	.30 m	0.	99 <sup>Mar</sup>	n/m
	Length						Dri	lling o	f Size	<u>:</u>		
BW-CP 1.80 m	3.6	7.		100	78	Bit size		BW	56-	Т	[	
m		%			%	Drilling		1.80	m 48.	50 m		
m		%			Z	Core Lengt	h	0.50	48.	50		$\neg \uparrow$
					_	ı						
	Drilling Removing Total  Dept Planned Length Increase or Decrease in Length Length Drilled Drilling Out Drilling Regain of Accident Total Construct take to pieces Moving of water Road · others G · Total  Pipe Size & Meterage  BW-CP 1.80 m m	Drilling 10th Oct.  Removing  Total 8th Oct.  Depth of Dril  Planned	Preparation 8th Oct. '87\[ Drilling 10th Oct. '87\[ Removing 10th Oct. '87\[ Total 8th Oct. '87\[ Depth of Drilling 10th Oct. '87\[ Depth of D	Drilling   10th Oct. '87∿12th  Removing    Total   8th Oct. '87∿12th  Depth of Drilling    Planned   m Over—burden    Increase or   m Core Length    Length   m Core Length    Length   50.30    Prilling   27°00¹   56.3    Out Drilling   21°00¹   43.7    Regain of Accident      Total   48°00¹   100    Construct   18°00¹    take to pieces   9°00¹    Moving of water   -    Road · others   18°00¹    Pipe Size & Meterage   Inserted Length Drilling Length    BW-CP   1.80 m   3.6   Z    m   Z	Preparation         8th Oct. '87∿10th Oct. '           Drilling         10th Oct. '87∿12th Oct. '           Removing         Total           Bath Oct. '87∿12th Oct. '           Depth of Drilling           Planned Length         50.00 burden           Length         0.30 core Length           Length         49.00           Length         Mark Core Recovery           Drilling         27°00' secovery           Regain of Accident	Preparation       8th Oct. '87~10th Oct. '87         Drilling       10th Oct. '87~12th Oct. '87         Removing	Period	Preparation	Period	Period	Period	Period

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- <del>-</del> -			Perio	d		Number of Days	W.	ctual orking Days	Day (	off N	Total lumber Worke	of
Period	Ereparation	4th Nov.	¹87∿5	th N	ov. 187	2		2	-		59	
	Trilling	6th Nov.	'87∿7	th N	ov. '87	2		2			32	
Working	<u>semoving</u>					-			-			
	Istal	4th Nov.	'87∿7	th N	ov. '87	4		4 .	-		91	
	Dep	th of Dril	ling			Core Re	cove	ry for	each 10	00 m :	section	on
ength	Flanned Length	50.00	Over- burd		m	Depth of Hole		Sect	ion	7	otal	
	Increase or Decrease in	0.20	Core		m 49.90	0 ∿ 50.20	m	99.4	<b>4</b> %	. 9	9.4	78
15	Length	ļ					m		7.			Z
Dri	Length Crilled	50.20	Core Recov		% 99.4		m		7. 7.		<del> </del>	7 7
	Orilling	28°00' <sup>H</sup>	- 58	.3 %	37.8		m		<u>"</u> 7		<del></del>	<u>ہ</u> 7
;	Out Drilling	20°00'	41	.7	27.1		m		7.			7,
	Regain of Accident	-	-			E	ffic	iency o	f Dril	ling		
Time	Total	48°00'	100	0	64.9	50.20 m/k	orki	ng Peri	iod	12.5	5 m/d	lay
[ S	Construct	12°00'			16.2	50.20 m/k	orki	ng Days	<del></del>	12.5	5 m/d	lay
ķir	Construct  Take to pieces  Moving of water	10°00'			13.5	50.20 m/E	rill	ing Per	riod	25.1	0 m/d	lay
					-	50.20 m/N	et l'	rilling	Dave	25 1	0 m/d	lav
	Road · others	4°00'			5.4	30.20				23.1	0 11170	
	G ·Total	74°00'			100	Total wo	ker	s/ 50	).20 m	1.8	) Mar	ւ/ա
eđ	Pipe Size & Meterage	Inserted Length Drilling	2		very of ng Pipe	Total Drilling	Wor	kers/50	).20 m	0.6	3 Mar	1/m
nserted		Length					Dr:	illing	of Size	È	-	
1	EW-CP 1.60 m	3.2	2		00 %	Bit size		BW	56-	-Т		
Pipe	m		%		7.	Drilling		1.60	<sup>m</sup> 48.	60 <sup>re</sup>		
	m		%		7	Core Leng	gth	1.60	48.	30		$\neg$
Casing												
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						<del></del>						

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ਹਾ			Perio	od			Number of Days	Wo	tual rking Days	Day	off I	Tota Vumbe: Work	r of
Period	Preparation	27th Oct.	¹87n	29th	Oct. 18	37	3	·	3	-		92	
	Drilling	30th Oct.	1870	31st	Oct. '8	37	2		2			34	
Working	Removing	- Nada-13-ada-Fasharak dari		<del></del>						-		-	-,
3	Total	27th Oct.	¹87 <sup>^</sup>	31th	Oct. 18	37	5		5	_		126	
	Dept	h of Dril	ling				Core Rec	ovei	y for	each 1	00 m	secti	on
Length	Planned Length	m 50.00	Over burd			m	Depth of Hole		Sect	ion		[otal	
Drilling Le	Increase or Decrease in Length	0.20	Core Leng		50.20	m	0 ∿ 50.20	m	100	) <u>%</u> %		100	% %
ri 11	Length	m		ecovery		%		ın		7.			7
Ö	Drilled	50.20	Reco		100			m		%			8
	Drilling	29°00' <sup>H</sup>	60	.4 %	34.5	%		m		7.			%
	Out Drilling	19°00'	39	.6	22.6			m		7.			%
	Regain of Accident	i. –	·	-			Ef	fici	ency o	f Dril	ling		
Time	Total	48°00'	10	0	57.1		50.20 m/Wo	rki	ng Peri	iod	10.0	04 m/	day
	Construct	13°00'			15.5		50.20 m/₩c	rki	ng Days	5	10.0	04 m/	day
Working	take to pieces	14 °00 °			16.7		50.20 m/Dr	i11	ing Per	riod	25.1	0 m/	day
Woi	Moving of water	_			-		50.20 m/Ne	t D	rilling	2 Davs	25.1	0 m/	dav
	Road · others	9°00'			10.7								
	G ∙Total	84°00'			100		Total wor	kers	50.	.20 m	2.5	0 Ma	n/m
þa	Pipe Size & Meterage	Inserted Length Drilling	2		very of		Total Drilling V	lork	ers/50	).20 m	0.6	7 <sup>Ma</sup>	n/m
Inserted	- 1	Length		Casıı	_, <u>"</u>	200000000000000000000000000000000000000	·	Dri	lling o	of Siz	е		
1 1	ВW-СР 1.90 m	3.8	%		100	%	Bit size		BW	56	-Т		
Pipe	. m		7,			%	Drilling		1.90	m 48	.30 m		
	m		7.	-	· · · · · · · · · · · · · · · · · · ·	7,	Core Leng	t h	1.90		. 30		
Casing		III A											

				-										
- P			Period				Number of Days	Wo	tual rking Days	Dε	ay O	ff 1	Tota Numbe Work	r of
Period	Preparation	22nd Oct.	187∿2	4th	Oct.	87	3		3		_		102	
1	Drilling	25th Oct.	187∿2	7th	Oct.	87	3		2.5		_		47	
Working	Removing						-		_		-			
3	Total	22nd Oct.	'87∿2	7th	Oct. '	87	6		5.5		-		149	
	Dept	h of Dril	ling				Core Rec	ovei	y for	eac	h 10	)O na	sect	ion
Length	Planned Length	m 50.00	Over- burde			m	Depth of Hole	:	Sect	ion			Tota	L
•	Increase or Decrease in Length	0.10	Core Lengt	h	49.10	m	0 ∿ 50.10	m	100	0	7 7		100	7 %
Drilling	Length Drilled	50.10	Core Recov	ery	100	7.		n m			% %			7 7
-	Drilling	34°00¹ <sup>H</sup>	56.	7 %	29.8	%		m			7,		<u>· · · · · · · · · · · · · · · · · · · </u>	78
	Out Drilling	26°00'	43.	3	22.8			m	٠.		%			78
	Regain of Accident	_	_				Ef	fic	iency o	f D	rill	ling	*******	
Time	Total	60°00'	100		52.6		50.10 m/Wo	orki	ng Per	iod		8.3	35 m.	/day
	Construct	14°00'			12.3		50.10 m/Wo	orki	ng Day	s		9.	lO m	/day
Working	take to pieces	13°00'			11.4		50.10 m/Di	cill	ing Pe	rio	i	16.	70 m	/day
Wor	Moving of water	-					50.10 m/Ne	et D	rillin	g Da	ays	20.0	)4 m	/day
	Road others	27°00'			23.7		:.	-					. 7 - 7 - 7	
-	G ·Total	114°00'			100		Total wor	ker	s/ 50	0.10	) m	2.9	97 M	an/m
sd be	Pipe Size & Meterage	Inserte Length Drillin	,,		overy o		Total Drilling	Worl	kers/50	0.10	) m	0.9	93 <sup>M</sup>	an/ni
Inserted		Length						Dri	illing	of	Size	2		
1	BW-CP 1.80 m	3.6	7.		100	7,	Bit size		BW		56-	-T		
ipe	m		%			%	Drilling		1.80	o <sup>m</sup>	48.	30 <sup>m</sup>		
g Pi	m		78			7.	Core Leng	th	0.80	0	48.	30		:
Casing														
L		<u> L</u>	LL											

Aurona												
קי		mak mijo pada sa	Perio	od	MAN HISTORICA SILATANI AND SILATANI	Number of Days	We	ctual Orking Days	Day (	off	Tota Numbe Work	r of
Period	Preparation	İlth Oct.	1871	•19th	Oct. '87	9		9			149	
1	Drilling	20th Oct.	'87 <sup>^</sup>	√22nd	Oct. 187	3		2.5	-		48	. :
Working	Removing								•			
-	Total	llth Oct.	. ¹87 <sub>1</sub>	22nd	Oct. 187	12		11.5	-		197	
	Dept	h of Dril	ling			Core Rec	ove	ry for	each 1	00 m	secti	on
Length	Planned Length	m 50.00	Over burd		m	Depth of Hole		Sect	ion		Total	
Orilling L	Increase or Decrease in Length	0.10	Core Leng		47.40	0 ∿ 50.10	m m	9	7.7 %		97.7	% %
Dri1	Length Drilled	m 50.10	Core Reco	very	% 97.7		in m		% %			7 7
	Drilling	33°00',H	55	.0 %	16.9		m		7.			78
	Out Drilling	27°00'	45	.0	13.8		m		7			7.
	Regain of Accident				-	Ef	fic:	iency o	f Dril	ling		
Time	Total	60°00'	10	0	30.7	50.10 m/Wo	rki	ng Peri	od	4.	17 m/	day
18 T	Construct	14°00'			7.2	50.10 m/Wo	 rki	ng Days		<b>!</b>	35 m/	
Working	take to pieces	17°00'	-		8.7	50.10 m/Dr	i11	ing Per	iod	l	70 m/	
Woj	Moving of water				-	50.10 m/Ne	t D	rilling	Davs	20	04 m/	day
	Road - others	104°00'			53.4				,,	20.	<u> </u>	,
	G ·Total	195°00'			100	Total work	kers	50.	10 m	3.	93 Ma	n/m
Inserted	Pipe Size & Meterage	Inserted Length Drilling Length	7		overy of ng Pipe	Total Drilling V	<del></del>	ers/ 5		L	Ма 96	n/m
กรеา	THE OF L. CO. T.		97		67	<b>D</b>		т	<del> γ</del> -		T	
	BW-CP 1.80 m	3.6	7,		100 %	Bit size		BW	56-	***	ļ	
Pipe	m		%			Drilling		1.80		30	<b>]</b>	
1	. <b>m</b>		%	· <del>-</del> · · · · ·	%	Core Lengi	h	0.20	47.:	20	<u> </u>	
Casing												

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		Peri	od		Number of Days	W	orking	Day	Off	Total Number o Workers
Preparation	19th Oct.	187	∿21st	Oct. 187	3		3	-		85
Drilling	22nd Oct.	'87 <sup>,</sup>	∿24 th	Oct. '87	3		2.5	_		48
Removing							-	-		
Total	19th Oct.	'87 <sub>'</sub>	∿24th	Oct. '87	6		5.5	_		133
Dept	h of Dril	ling			Core Rec	ove	ry for	each 1	00 m	section
Planned Length	50.00	1		m	Depth of Hole		Sect	ion		Total
Increase or Decrease in Length	0.10		_	m 49.80	0 ∿ 50.10	m	99.	.8 % %		99.8 %
Length Drilled	m 50.10		-	% 99.8		m m		% %		7
Drilling	35°00' <sup>H</sup>	58	3.3 %	33.0 %		m		7,		7
Out Drilling	25°00¹	4 ]	1.7	23.6		m		7,		7/
Regain of : Accident	-			_	Ef	fic	iency o	f Dril	ling	
Total	60°00'	10	00	56.6	50.10 m/W	orki	ng Peri	od	8.	35 m/day
Construct	15°00!		-	14.2	50.10 m/W	orki	ng Days	;	9.	10 m/day
take to pieces	13°00'	··		12.3	50.10 m/D	rill	ing Per	iod	16.	70 m/day
	_			<u>.</u>	50.10 m/N	et D	rilling	Days	20.	04 m/day
Road - others	18°00'			16.9	ļ					
G ∙Total	106°00'	0 = 7 · · · · · ·		100	Total wor	ker	50.	10 m	2.	65 Man/m
Pipe Size & Meterage	Length				Total Drilling	Worl	cers/ 5	0.10 m	0.	95 Man/m
	Length					Dri	lling o	of Size	9	
BW-CP 1.90 m	3.8	%		100 %	Bit size		BW	56-	-T	
m		7.		7.	Drilling		1.90	m 48.	20 T	
m		%		7	Core Leng	th	1			
-							<del></del>	<del></del>		<del></del>
	Drilling Removing Total  Dept Planned Length Increase or Decrease in Length Length Drilled Drilling Out Drilling Regain of Accident Total Construct take to pieces Moving of water Road others G. Total  Pipe Size & Meterage  BW-CP 1.90 m m	Preparation 19th Oct.  Drilling 22nd Oct.  Removing  Total 19th Oct.  Depth of Dril  Planned moderase or moderease in Length 50.00  Increase or Decrease in Length Morilled 50.10  Drilling 35°00' Morilling 25°00' Regain of Accident — Total 60°00' Construct 15°00' take to pieces 13°00' Moving of water — Road - others 18°00' Construct 106°00' Construct 10	Preparation 19th Oct. '87  Drilling 22nd Oct. '87  Removing   Total 19th Oct. '87  Depth of Drilling 50.00 burd 100 burd	Drilling 22nd Oct. '87\24th  Removing   Total 19th Oct. '87\24th  Depth of Drilling  Planned	Preparation 19th Oct. '87√21st Oct. '87  Drilling 22nd Oct. '87√24th Oct. '87  Removing   Total 19th Oct. '87√24th Oct. '87  Depth of Drilling   Planned Length 50.00 burden   Increase or Decrease in Length 49.80  Length 50.10 Recovery 99.8  Drilling 35°00'H 58.3 ¾ 33.0 ¾  Dut Drilling 25°00' 41.7 23.6  Regain of Accident — — — — — — — — — — — — — — — — — — —	Preparation 19th Oct. '87√21st Oct. '87 3  Drilling 22nd Oct. '87√24th Oct. '87 3  Removing ————————————————————————————————————	Period	Period         of Days         Working Days           Preparation         19th Oct. '87∿21st Oct. '87         3         3           Drilling         22nd Oct. '87∿24th Oct. '87         3         2.5           Removing         —         —         —           Total         19th Oct. '87∿24th Oct. '87         6         5.5           Depth of Drilling         Core Recovery for           Planned         50.00         m         Depth of Drilling         Core Recovery for           Planned         50.00         m         Depth of Drilling         Sect Mole           Length         50.10         Core         m         Depth of Brilling         Depth of Drilling         Sect Mole           Length         50.00         Mover- burden         m         Depth of Brilling         Depth of Sect Mole           Length         50.00         Mover- burden         m         Depth of Brilling         Sect Mole           Length         50.10         Mover- burden         m         Depth of Brilling         Sect Mole           Length         49.80         m         m         Depth of Brilling         Depth of Brilling         Depth of Brilling           D	Period	Period

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<u> </u>	e description of the A. B. Indiana was assessed a consequence of the state of the	****	****								*********	
			Period			Number of Days	Wo	ctual orking Days	Day	Off	Num	tal ber o: rkers
Period	Preparation	25th Oct. 6th Nov.				3 2		5		-		70
	Drilling	28th Oct. 8th Nov.	'87∿	5th	Nov. 187	9		13		<del>.</del>	]	20
Working	Removing							_		_		_
.5	Total	25th Oct.	'87∿1	lth	Nov. '87	18		18	-	-	2	90
	Dept	h of Dril	ling			Core Rec	ove	ry for	each	100 п	sec	ction
Length	Planned Length	m 50.00	Over- burder	n	m	Depth of Hole		Sect	ion		Tot	al
	Increase or Decrease in Length	0.10	Core Lengt	h	m 38.90	0 ∿ 50.10	m m	83		7.	83	1 %
Drilling	Length Drilled	m 50.10	Core Recove	ery	% 83.1		m			ζ .		7.
	Drilling	84°30' <sup>H</sup>	39.	5 %	32.2		m		<del></del>	8		7.
	Out Drilling	69°30'	. 32.	5	26.4		m			7		7
	Regain of Accident	60°00'	28.0		22.8	Ef	fic	iency o	f Dri	lling		1
Time	Total	214°00'	100		81.4	50.10 m/Wo	rki	ing Peri	od	2	78	m/day
18 T	Construct	18°00'			6.8	50.10 m/Wo	rki	ng Days	3	2	.78	m/day
Working	take to pieces	27°00'			10.3	50.10 m/Di	:i1	ling Per	ciod	3	85	m/day
Wor	Moving of water	-				50.10 m/Ne	et I	rilling	Davs	5 3	85	m/day
	Road · others	4°001			1.5	3000						
	G · Total	263°00'			100	Total wor	ker	s/ 50	. 10	m 5.	78	Man/m
pa	Pipe Size & Meterage	Inscrted Length Drilling	9		overy of ing Pipe	Total Drilling	Vor	kers/ 5	0.10	m 2.	39	Man/m
erte		Length				;	Dr	illing (	of Si	ze		
Inserted	BW-CP 11.30m	22.6	%	1	00 %	Bit size		BW	5	6-Т	T	
Pipe	m	:	%		7.	Drilling		3.30	m 46	.80	m	
18 P	m		7,		7.	Core Leng	t h	0.00	38	.90		
Casing											-	
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	to Name of the Control of the Contro	THE REAL PROPERTY AND THE PROPERTY AND T	Period	1	***************************************	- Fanon, rian	Number of		ctual	PARA ALABAMANA			tal	
٠,	:		rerioo	1			Days		orking Days	Day	Off		ber rkei	
Period	Preparation	19th Nov.	'87∿2	21st	Nov.	187	3		2.5	<del></del>		~ <del></del>	68	
	There's 1.1.	21st Nov.	187∿2	3th	Nov.	'87	3		2.5				56	·
Working	Removing	22nd Nov.	'87∿3	0th	Nov.	187	9		9					
	Total	19th Nov.	'87∿3	0th	Nov.	187	15		14	<del></del>		1	24	
	Dept	h of Dril	ling	<del>С</del> .			Core Rec	ove:	ry for e	each 1	00 m	sec	tion	n
Length	Planned Length	m 50.00	Over- burde			m	Depth of Hole		Secti			Tot	·	-
	Increase or Decrease in Length	0.20	Core Lengt	h	48.2	m O	0 ∿ 50.20	m	99.			99	. 2	7
Drilling	Length		Core	-				m		<u> </u>			· ·	73
Dr	Drilled	50.20	Recove	ery	99.2			m		7 7				7 7
	Drilling	34°00'H	56.	7 <sup>%</sup>	39.1	Z		m	<del></del>	7.			:	76 78
	Out Drilling	26°00'	43.		29.9			m		78	<u> </u>			7
	Regain of Accident	-					Èfi	ici	ency of		ling			-~
Time	Total	60°00'	100		69.0		50.20 m/Wo					34 [	n /d n	$\exists$
w	Construct	18°00'			20.7		50.20 m/Wo					58 r		
Workin	take to pieces	9°00'			10.3		50.20 m/Dr			iod	ļ	73 1		ᅴ
Wor	Moving of water	_					50.20 m/Ne							-
	Road • others				_		30.20 M/MC		riting	Days	20.	08 п	n/aa	У
and the	G •Total	87°00'			100		Total work	ers	/ 50.	20 m	2.	47 ì	ian/	m
ed	Pipe Size & Meterage	Inserted Length Drilling	z R		very o		Total Drilling W	ork	ers/ 50	).20 m	1.	11 1	ian/	m
nserted		Length			•		:	Dri	lling of	f Size				
	ви-ср 1.90 m	3.8	78		100	7,	Bit size		BW	56-	T	Ī		$\exists$
Pipe	m		%			2	Drilling		1.90 I	n 48.	30 m	<u> </u>		
	III.		7			2	Core Lengt	h	0.30;	47.9	90	<u> </u>		7
Casing	•.				~ · · · · ·					<del></del>		I		
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-	The state of the s									
<u>م</u>			Period		Number of Days	Wor	ual king nys	Day (	eff	Total Number of Workers
Period	Preparation	17th Nov.	¹87∿19th	Nov. '87	3	2	. 5			76
	Drilling	19th Nov.	¹87∿21st	Nov. '87	3		2	_		44
Working	Removing				_		-	<u></u>		
155	Total	17th Nov.	'87∿2lst	Nov. '87	6	4	.5	· _		120
	Dept	h of Dril	ling		Core Rec	overy	for e	ach 10	00 in	section
Length	Planned Length	50.00	Over- burden	· m	Depth of Hole		Secti	on		Total
	Increase or Decrease in Length	0.10	Core Length	49.30	0 ∿ 50.10	m m	98.4	4 % %		98.4 %
Drilling	Length Drilled	50.10	Core Recovery	98.4		m		% %		% %
	Drilling	27°30'H	57.3 %	32.7		m		%		%
	Out Drilling	20°30'	42.7	24.4		m		%		7.
	Regain of Accident	_		-	Ef	ficie	ncy of	Dril	ling	
Time	Total	48°00'	100	57.1	50.10 m/Wo	orkin	g Perio	od	8	35 m/day
	Construct	18°00'	· .	21.5	50.10 m/W	orkin	g Days		11.	13 m/day
Working	take to pieces	9°00'		10.7	50.10 m/D	rilli	ng Per	iod	16.	76 m/day
Woj	Moving of water	_			50.10 m/Ne	et Dr	illing	Davs	25.0	O5 m/day
	Road others	9°00'		10.7						
	G ·Total	84°00'		100	Total wor	kers/	50	.10 m	2.	39 Man/m
ed	Pipe Size & Meterage	Inserted Length Drilling	Rec	overy of ing Pipe	Total Drilling	Worke	rs/ 50	).10m	1.	13 Man/m
serted	·	Length				Dri1	ling o	f Size	2	
Ins	BW-CP 2.00 m	4,00	%	100 %	Bit size		BW	56-	-T	
Pipe	· m		%	%	Drilling		2.00	m 48.	10 <sup>m</sup>	
	m		78	7.	Core Leng	th	2.00	47.	30	
Casing										
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סי		:	Perio	od		Number of Days	Wo	ctual orking Days	Day (	Off 1	Total lumber Worke	of
Period	Preparation	8th Nov.	1871	-llth	Nov. '87	4		3	1		70	
1 1	Drilling	12th Nov.	'87 <sub>^</sub>	·14th	Nov. '87	3 .		2.5			45	
Working	Removing					-			-		_	
3	Total	8th Nov.	<b>'</b> 87^	-14th	Nov. '87	7		5.5	. 1		115	
*********	Dep	h of Dril	ling			Core Rec	ove	ry for	each 1	00 m	section	on
Length	Planned Length	50.00	Over burd		m	Depth of Hole	;	Sect	ion		lotal .	
rilling Le	Increase or Decrease in Length	0.20 m	Core		41.80	0 ∿ 50.20	m m	86	.4 % %		86.4	% %
Drill	Length Drilled	m 50.20	Core	very	% 86.4		m		% %			7 7
	Drilling	35°30'H	59	.2 <sup>%</sup>	45.5		m		%			%
	Out Drilling	24°30'	40	0.8	31.4		m		%			%
	Regain of Accident			-	-	Ef	fic	iency o	f Dril	ling	:	
Time	Total	60°00'	10	00	76.9	50.20 m/W	orki	ng Per	iod	7.	7 m/c	day
	Construct	12°00'			15.4	50.20 m/W	orki	ng Day	5	9.	2 m/c	day
Working	take to pieces	6°00'			7.7	50.20 m/D	rill	ling Pe	riod	16.7	3 m/c	day
Wor	Moving of water	-			-	50.20 m/N	et I	rillin	g Days	20.0	8 m/c	day
	Road · others							· · · · · · · · · · · · · · · · · · ·		<u> </u>		
	G · Total	78°00'			100	Total wor	ker	s / 5	0.20 m	2.2	9 Mai	n/m
pa	Pipe Size & Meterage	Inserte Length Drillin	nserted Reco	overy of ing Pipe	Total Drilling	Wor	kers/5	0.20 m	0.8	9 Mai	n/m	
Inserted	Length					Dr	illing	of Siz	e	:		
Ins	BW-CP 2.80 m	5.6	7.		100 %	Bit size		BW	56	-Т		
Pipe	m		7.		%	Drilling		2.00	<sup>th</sup> 48	.20 <sup>m</sup>		
	m		7,		7.	Core Leng	th	0.20	41	.60		
Casing									,			
Ľ		<u> </u>		L								

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70		THE SHEET MATERIAL AS CONCERNANCES AS	Peri	od			Number of Days	Wo	ctual orking Days	Day	Off	Total Number Worke	of
Period	Preparation	15th Nov.	187	∿l6th	Nov. 18	37	2		2	_		83	
1	Drilling	17th Nov.	!87	∿19th	Nov. 18	37	3		2.5.			55	
Working	Removing						_		EB-	•			
325	Total	15th Nov.	187	∿19th	Nov. 18	37	5		4.5	_		138	:
	Dept	h of Dril	ling				Core Rec	ove	ry for	each	100 m	section	n
Length	Planned Length	50.00	Over bure			m	Depth of Hole		Sect	ion		Total	
	Increase or Decrease in Length	0.20	Core		45.70	m	0 ∿ 50.20	m	95	.4 % %	<del></del>	95.4	% %
Drilling	Length Drilled	50.20	Core	e overy	95.4	7		m					7 7
	Drilling	33°30' <sup>H</sup>	5:	55.8 %	38.5	%		m	<del></del>		<del></del>	····	- <del>^</del>
	Out Drilling	26°30'		4.2	30.5			m		%			72
	Regain of Accident			_	-		Ef	fic	iency o	f Dri	ling	17 7 am.e.	
Time	Total	60°00'	10	00	69.0		50.20 m/Wc	rki	ng Peri	lod	10.	04 m/d	lav
E4 69	Construct	11°00'		1	12.6		50.20 m/Wc	rki	ng Days	 }		15 m/d	
Working	take to pieces	7°00'			8.1		50.20 m/Dr					73 m/d	
Wor	Moving of water	_			_		50.20 m/Ne	t D	rilling	n Dave	+	08 π/d	
	Road · others	9°00'			10.3		50,20 14,110			5 5473	20.	00 11174	ay
	G • Total	87°00'			100		Total wor	kers	5/ 5	50.20 n	2.	74 Man	ı/m
Pi	Pipe Size & Meterage	Inserted Length Drilling	9		overy of ing Pipe		Total Drilling V	lorl	ers/50	).20 B	1.	Man	ı/m
Inserted		Length		Casi			,	Dri	lling o	of Siz	e		
	BW-CP 2.30 m	4.6	%		100	%	Bit size		BW	5€	ъ-Т		
Pipe	m		%	7		%	Drilling		2.30	m 47	.90 II		
1 60	m		7.			%	Core Lengt	t h	0.00	45	.70		
Casing													

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טי			Perio	od			Number of Days	W	ctual orking Days	Day (	Off	Num	tal ber of rkers
Period	Preparation	12th Nov.	¹87 <sup>\</sup>	v14th	Nov.	187	3		2.5	. 44			34
	Drilling	14th Nov.	1871	-16th	Nov.	187	3		2.5	***			54
Working	Removing					<del></del>	_		-				•
W	Total	12th Nov.	'87 <sub>\</sub>	·16th	Nov.	'87	6		5.0			-13	38
-	Dep	th of Dril	ling			*********	Core Rec	ove	ry for	each 1	00 m	sec	tion
Length	Planned Length	50.00	Over burd	•		m	Depth of Hole		Sect	ion		Tot	al
rilling Lo	Increase or Decrease in Length	0.10	Core		44.7	O . ·	0 ∿ 50.10	m m	91.	6 % %		91.6	7. 7.
Dril.	Length Drilled	m 50.10	Core Reco	very	91.6	7.		m		% %			% %
	Drilling	31°30¹H	52	.5 %	36.2	%		m		7.			73
	Out Drilling	28°30'	47	.5	32.8			m		. %			. %
	Regain of Accident	-			-		Ef	fic	iency o	f Dril	ling		
Time	Total	60°00'	10	0	69.0		50.10 m/Wo	rki	ng Peri	od	8.	35 1	m/day
89 E	Construct	18°00'			20.7		50.10 m/Wo	rki	ng Days		+		m/day
Working	take to pieces	9°00'			10.3		50.10 m/Di	ill	ing Per	iod	16.	70 i	n/day
Wo	Moving of water	r			-		50.10 m/Ne	t I	rilling	Days	20	04 1	m/day
	Road • others				-							·	
	G · Total	87°00'			100		Total wor	ker:	s/ 50.	10 m	2.	75 1	Man/m
Inserted	Pipe Size & Meterage	Inserted Length Drilling Length	9		overy ing Pi		Total Drilling V	_	kers/ 5	<del></del>	<u> </u>	07	Man/m
Inse	BW-CP 1.80 m	3.6	7.		100	7.	Bit size	•	BW	56-	-T	-	
9	m	1	%			78	Drilling		1.80	m 48.	π		
E.	· m		%			7.	Core Leng	h	0.50	44.			
Casing							:		1		<del></del>	<b>1</b>	

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<b></b>	7			<b></b>	Contract of the Contract of	مورمست	CHECK ELECTRONICAL PROPERTY.	****					
						2	Number		ctual			Tota	1
			Perio	od			of	ı	rking	Day	0ff	Numbe:	r of
- <del>'</del> ' '							Days		Days			Work	ers
Period	Preparation	6th Aug	. !87′	√12th	Aug. '8	7	7		7			236	
	Drilling	13th Aug.	. '87	√16th	Aug. 18	7	4		4	_		43	
Working	Removing	17th Aug.	. 187	√17th	Aug. 18	7	1		1	-		16	
13	Total	6th Aug.	187	v17th	Aug. '8	7	12		12			295	
	Dept	h of Dril	ling				Core Rec	ove	ry for	each 1	—— 00 m	secti	on
	Planned		Over		1	. 1	Depth				Ţ		
Length	Length	50.00	burd				of Hole		Sect	ion		Total	
	Increase or	ш	Core		Γ	n	0 ∿ 50.45	m	97.	8 %	<del>                                     </del>	07 0	
Drilling	Decrease in Length	0.45	Leng		48.95	f	0 - 30.43	m		0 <u>%</u> %	-	97.8	2 %
ΙΞ.	Length	m	Core		9	2		m			<del>                                     </del>		
E	Drilled	50.45		very	97.8	" ⊨	<del></del>	tri		7.	↓		78
				VC1)	27.10	-		m		78			7.
	Drilling	35°00 H	68.	6 %	23.5			m		7.		:	%
1.	Out Drilling	16°00'	31.	4	10.7			· m		%	1		78
	Regain of Accident	-	-				Ef	fici	ency o	f Dril	l ling		
Time	Total	51°00'	100	)	34.2		50.45 m/Wo	rki	ng Peri	od	4	.20 m/c	lay
	Construct	18°001	_	. 17	12.1	╽	50.45 m/Wo	rki	ng Days	<del></del>	4	.20 m/c	lay
Working	take to pieces	4°00'			2.7		50.45 m/Dr	ill	ing Per	riod	<del> </del>	.61 m/c	
<u>S</u>	Moving of water	- <u>-</u>		.	-	-					+		
	Road · others	76°00'	_		51.0	_	50.45 m/Ne	t D	rilling	Days	12	.61 m/c	lay
	G ∙Total	149°00'	_		100		Total work	cers	/ 50	0.45 m	5.8	84 <sup>Mai</sup>	1/m
	Pipe Size &	Inserted	i	<u>-</u>			Total					Mai	1/m
73	Meterage	Length Drilling	. %		very of	1	Drilling V	lork	ers/ 50	).45 m	0.8	35	
Inserted	Meterage	Length	5	Casi	ng Pipe			Dri	lling o	of Size	2		
	BW-CP 1.80 m	3.6	7.	1	00 %		Bit size		BW	56	-T		
Pipe	m		%	<del></del>	7.		Drilling		1.80	m 48.	65	n	
	п		%		7.		Core Lengt	h	1.40	47.		1	
sing						T	***************************************		•				
Cag		<del></del>				-						•	ĺ
				_									

à			Perio	d			Number of Days	Wo	ctual orking Days	Day (		Total umber Worke	
Period	Preparation	13th Aug.	¹87^	16th	Aug. 187	7	4		4	-		100	
	Drilling	17th Aug.	1871	22nd	Aug. '8	7	6		5			126	
Working	Removing									-		· -	
<u> </u>	Total	13th Ago.	¹87∿	.22nd	Aug. '87	7	10		9			226	
- Statement	Dept	h of Dril	ling				Core Rec	ove	ry for e	each 1	00 m s	ectio	ຖ
Length	Planned Length	m 50.00	Over burd		I	m	Depth of Hole		Sect:	ion	7	Cotal	:
	Increase or Decrease in Length	0.10	Core Leng		47.50	R.	0 ∿ 50.10	m m	97.5	% %		97.5	7 7
Drilling	Length Drilled	50.10	Core Reco	very		7		m		% %			7.
	Drilling	51°00' <sup>H</sup>	42.	5 %	29.3	7		ш		ጼ			7.
1.,	Out Drilling	69°00'	57.	5	39.7			m		7,		1	78
	Regain of Accident	- <u>-</u>	_				Ef	fic	iency of	f Dril	ling		
Time	Total	120°00'	100		69.0		50.10 m/Wo	rki	ng Peri	od	5.0	l m/d	ay
	Construct	9"00"	-		5.2		50.10 m/Wo	rki	ng Days		5.5	6 m/d	ay
Working	take to pieces	18°00'	-		10.3	_	50.10 m/Dx	<b>i</b> 11	ing Per	iod	8.3	5 m/d	ay
Wor	Moving of water		~	-		_	50.10 m/Ne	t E	rilling	Days	10.0	2 m/d	ay
	Road • others	27°00'	-	•	15.5	┛							
	G ∙Total	174°00'	-		100		Total work	ker:	s/ 50	.10 m	4.5	) Man	/m
pa	Pipe Size & Meterage	Inserte Length Drillin	9		overy of ing Pipe		Total Drilling	Vor	kers/50	.10 m	2.5	1 Man	/m
Inserted		Length			÷	-		Dr	illing o	of Size	e	<del> <u>-</u></del>	
Ins	BW-CP 12.90 m	25.7	7.		100	7	Bit size		BW	56	-T		
Pipe	m		%			7.	Drilling		1.90	m 48	. 20 TA		
	m		%		7	7.	Core Leng	th.	0.50	47	.00		
Casing						_		•	•				
L						$\perp$	····						

Preparation		0170 3											
Drilling   23rd Aug. '87~26th Aug. '87   4   4   -   82	d.		]	Perio	d		of	Wo	rking	Day	Off	Nun	ber of
Drilling   23rd Aug. '87~26th Aug. '87   4   4   -   82	erio	Preparation	17th Aug.	¹87 <sup>1</sup>	20th	Aug. 187	4		4		_		99
Total		Drilling	23rd Aug.	¹87∿	26th	Aug. '87	4		4		***		82
Total	orki	Removing	27th Aug.	'87∿	27th	Aug. '87	I		1				11
Planned   Length   So.00   Depth   Of Hole   Section   Total	158	Total	17th Aug. 23rd Aug.	'87∿ '87∿	20th 27th	Aug. '87 Aug. '87	9		9		_	1	92
Total   Section   Total   To		Dept	h of Dril	ling			Core Rec	ovei	y for	each	100	m se	ction
Decrease in Length   So.00   Length   So.90   m   Z   Z	ngth					m	of		Sect	ion		To	tal
Drilling	60	Decrease in					0 ∿ 58.00		99		-	99	
Drilling	Drill											:	
Regain of Accident		Drilling Drilling	48°00¹ <sup>H</sup>	50.	0 %	35.3		m			%		%
Regain of Accident		Out Drilling	48°001	50.	0	35.3		m			78		. %
Construct   15°00'   -   11.0   58.00 m/Working Days   6.44 m/day		Regain of	_	-		-	Ef	fic	iency o	f Dri	llin	g	r <del>evus. x ? *</del>
Construct   15°00'   -   11.0   58.00 m/Working Days   6.44 m/day	ime	Total	96°00'	100	·	70.6	58.00 m/W	orki	ng Per	iod	6	.44	m/day
Road - others   9°00'   -   6.6		Construct	15°001			11.0	58.00 m/Wo	orki	ng Days	3	.6	.44	m/day
Road - others   9°00'   -   6.6	ķi	take to pieces	16°00'			11.8	58.00 m/D	rill	ing Per	riod	14	.50	m/day
G · Total   136°00'   -   100   Total workers   58.00 m   3.31 Man/m	Wor	Moving of water					58.00 m/N	et E	rilling	g Day	s 14	.50	m/day
G · Total   136 ° 00		Road • others	9°00'	_		6.6					_		
Pipe Size &   Length   Drilling   Zasing Pipe     Drilling   Workers   58.00 m   1.41   Mail/m		G · Total	136°00'			100	Total wor	ker:	s/ 58	3.00 	m 3		Man/m
Length   Drilling of Size   BW-CP 16.20 m 27.9 % 100 % Bit size   BW   56-T	đ	I	Length	7				Wor	kers/58	3.00	m 1	.41	Man/m
m % % Drilling 2.90 m 55.10 m	erte					3 1		Dr	illing	of Si	ze		
m     %     %     Drilling     2.90 m     55.10 m       m     %     %     Core Length     1.00     54.90	Ins	BW-CP 16.20 m	27.9	%		100 %	Bit size		BW		56-T		
m 7 % Core Length 1.00 54.90	De	m		2	:	78	Drilling		2.90	m	55.10	) TR	
Casin	9 P	m		7.	* <del>-</del> **	7.	Core Leng	th	1.00		54.90	)	
Ö	sing												
	ပြိ												

	310 4										
70		eggagger i en	Period		Number of Days	Wo	tual rking Days	Day C	ff	Tota Number Worke	rof
Period	Preparation	30th Aug.	'87∿3rd	Sep. 187	. 5	1	4.5			143	
	Drilling	3rd Sep.	¹87∿5th	Sep. 187	3		2.5	-		64	
Working	Removing				-			••			
is.	Total	30th Aug.	'87∿5th	Sep. '87	8		7	-		207	
3.7	Dept	h of Dril	ling		Core Red	over	y for e	ach 10	)0 m	secti	on
Length	Planned Length	m 50.00	Over- burden	Г	Depth of Hole		Secti	on		Total	
69	Increase or Decrease in Length	3.30	Core Length	50.80	0 ∿ 53.30	m	95.7	7 Z %	9	5.7	% %
Drillin	Length Drilled	53.30 m	Core Recovery	95.7		m m	· · · · · · · · · · · · · · · · · · ·	7 7			7 7
	Drilling	37°00'H	51.4 %	34.3		m	<u> </u>	7.	· · · · ·		7.
	Out Drilling	35°00'	48.6	32.4		m		%			7.
	Regain of Accident	-		. –	E	fici	ency of	Dri1	ling		
Time	Total	72°00'	100	66.7	53.30 m/W	orki	ng Peri	od	6.	66 m/	day
	Construct	14°00'	-	13.0	53.30 m/W	orki	ng Days		<del> </del>	61 m/	
Working	take to pieces	22°00'	_	20.3	53.30 m/D	rill	ing Per	iod	17.	76 m/	day
Wor	Moving of water	~	-	-	53.30 m/N	et D	rilling	Days	21.	32 m/	day
	Road • others	-	<u>.</u>	-		·				:	
	G · Total	108°00'	_	100	Total wor	kers	s/ 53.	30 m	3.	88 Ma	n/m
pa:	Pipe Size & Meterage	Inserted Length Drilling	7 Rec	overy of ing Pipe	Total Drilling				L	20 Ma	n/m
nserted		Length			:	Dri	lling o	f Size	: 		
11	BW-CP 1.80 m	3.4	7.	100 %	Bit size		BW	56			
Pipe	m		2	: %	Drilling	<del></del>	1.80	m 51	. 50 m		
1 1	m		. %	7.	Core Leng	gth	1.60	49	20		
Casing											
L	· · · · · · · · · · · · · · · · · · ·	<u> </u>					<del></del>				

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-	dy Miller (with the control of the Samuel Address of the Samuel Ad	Charles and the control of the contr		+ 50-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4					
Jq.			Period		Number of Days	Actual Working Days	Day	Off	Total Number of Workers
eriod	Preparation	21st Aug.	¹87∿24 t	h Aug. 187	4	4	-		137
H Su	Drilling	27th Aug.	'87∿29t	h Ago. '87	3	3			63
Working	Removing					-	-		
3	Total	21st Aug. 27th Aug.		h Aug. '87 h Aug. '87	7	7	_		200
	Dept	h of Dril	ling		Core Rec	overy for	each 1	00 m	section
Length	Planned Length	50.00	Over- burden	m	Depth of Hole	Sec	tion		Total
•	Increase or Decrease in Length	3.20	Core Length	51.30	0 ∿ 53.20	) m 10	00 <u>%</u> %		100 z
Drilling	Length Drilled	53.20 m	Core Recover	y 100		m m	% · %		7 %
	Drilling	32°00' <sup>H</sup>	44.4	7 18.7 %		m	%		- % %
	Out Drilling	40°001	55.6	23.4		m	7.		%
	Regain of Accident		_		Ef.	ficiency	of Dril	ling	
Time	Total	72°00'	100	42.1	53.20 m/Wo	rking Per	iod	7	.60 m/day
	Construct	27°00'	-	15.8	53.20 m/Wo	orking Day	'S	7	.60 m/day
Working	take to pieces	9°00'	~	5.3	53.20 m/Dr	illing Pe	riod	17	.73 m/day
8	Moving of water	<del></del>	<del>-</del>	-	53.20 m/Ne	t Drillin	g Days	17	.73 m/day
	Road · others G · Total	63°00'	-	36.8	Total worl	kers/ 53	.20 m	3	. 75 Man/m
Ď	Pipe Size &	Inserted Length Drilling	<sub>7</sub> Re	covery of sing Pipe	Total Drilling V	Vorkers/5	3.20 m	1.	. !8 <sup>Man/m</sup>
Inserted		Length		22.6 1270		Drilling	of Size	2	·
1 1	BW-CP 2.10 m	3.9	%	100 %	Bit size	BW	56-	-T	:
Pipe	m		. %	7.	Drilling	1.9	m 51	. 30 m	
00	m		7.	7.	Core Lengt	h 0.0	0 51	.30	
Casing		·.							
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יט			Period	O COMPANY STORES	Number of Days	Actual Working Days	Day 0	ff Number of
Period	Preparation	24th Aug.	'87∿29th	Ago. 187	. 6	6		190
	Drilling	30th Aug.	'87∿ 2nd	Sep. '87	4	3.5	-	109.5
Working	Removing	2nd Sep.	¹87∿ 2nd	Sep. '87	1	0.5	_	10.5
3.5	Total	24th Aug.	'87∿ 2nd	Sep. '87	11	10	-	310
	Dept	h of Dril	ling		Core Rec	overy for	each 10	0 m section
Length	Planned Length	m 50.00	Over- burden	m	Depth of Hole	Sect	ion	Total
	Increase or Decrease in Length	0.10	Core Length	m 43.20	0 ∿ 50.10	m 97	.1 %	97.1 %
Drilling	Length Drilled	10 50.10	Core Recovery	97.1		m m	7. 7.	7. 7.
	Drilling	42°00' <sup>H</sup>	46.7 %	28.6	<del> </del>	m	7, 7	78
	Out Drilling	48°00'	53.3	32.7	:	m	7.	78
	Regain of Accident		-	_	Ef	ficiency o	f Drill	ing
Тіте	Total	90°00'	100	61.3	50.10 m/Wc	rking Peri	iod	4.55 m/day
	Construct	14°00'	_	9.5	1	rking Days	<del></del>	5.01 m/day
Working	take to pieces	16°00!	<del>-</del>	10.9	50.10 m/Dr	illing Per	ciod	12.52 m/day
Wol	Moving of water		_	_	50.10 m/Ne	t Drilling	Dave	14.31 m/day
	Road · others	27°00'	_	18.3		.c Blilling	Days	14.51 m/day
	G · Total	147°00'	<del>-</del>	100	Total worl	kers/ 50	. 10 m	6.18 Man/m
Inserted	Pipe Size & Meterage	Inserted Length Drilling Length	Reco	overy of ing Pipe	Total Drilling V	Vorkers/50		2.18 Man/m
lnse	BW-CP 5.60 m	11.2	78	100 %	Bit size	BW	56-1	r
Pipe 1	m	11.2	7.	700 %	Drilling		m	m
	m	:	2	Z	Core Lengt	5.60 h 0.00		
Casing				76	oore neilke	0.00	43.	20
Cas								

P								Sentration .				1	
pc		· · · · · · · · · · · · · · · · · · ·	Peri	od			Number of Days	W	ctual orking Days	Day (	Off	Tota Number Worke	r of
Period	Preparation	lith Sep.	'87°	∿l3th	Sep.	187	3		3	-		78	
	Drilling	14th Sep.	'87	V16th	Sep.	'87	3		3			76	
Working	Removing			. :			_						<del></del> -
At Acres of	Total	llth Sep.	'87↑	∿16th	Sep.	187	6		6			154	
	Dept	h of Dril	ling		:	·	Core Rec	ove	ry for e	ach 1	00 m	section	on
Length	Planned Length	m 50.00	Over burd			m	Depth of Hole		Secti	.on		Total	
	Increase or Decrease in Length	0.10	Core		40.9	m 0	0.~ 50.10	m	84.3	7. 7.		84.3	% %
Drilling	Length Drilled	50.10 m		very	84.3	7.		m m		7 7			% %
	Drilling	33°00' <sup>H</sup>	45	.8 %	25.5	7,		m		78			7.
	Out Drilling	39°00'	54	. 2	30.2			m		78			78
	Regain of Accident	-			_		Ef	fic	ency of	Dril	ling	<del></del>	
Time	Total	72°00'.	10	0	55.7	·	50.10 m/Wo	rki	ng Peri	od	8.	35 m/d	lav
	Construct	21°00'			16.3		50.10 m/Wa	rki	ng Days		8 :		
Working	take to pieces	18°00'			14 0		50.10 m/Dr	ill	ing Per	iod	16.7	70 m/d	lay
WO	Moving of water	-			_		50.10 m/Ne		rilling	Dave	16.7	70 m/d	
	Road : others	18°00!		-	14.0		30110, 210			24,3	10.7	0 11170	ay
	G ·Total	129°00'		-	100		Total work	cers	50.1	0 m	3.0	)7 Man	1/m
Inserted	Pipe Size & Meterage	Inserted Length Drilling Length	9		very .ng Pi		Total Drilling L		ers/50.			Man	1/m
nse	BW-CP 2.00 m	4.0	78	<u>- · </u>	100	7.	Bit size		BW	56-		<del></del>	_
a	m		78	<del></del> -	100	7.	Drilling		l	m	m		
g Pip	m		%			%	Core Lengt	h.	0.40	48.		:	$\dashv$
sin		<del></del>							1	1 70.		<u> </u>	$\dashv$
Cas				<del></del>	·								
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	JH3-0						A-4			
		F	eriod		Number of Days	Wor	ual king ays	Day 0:	f Nu	otal mber of orkers
Period	Preparation	8th Sep.	¹87∿11th	Sep. '87	4	3	.5	-		121
60	Drilling	llth Sep.	¹87∿13th	Sep. '87	3	2	.5			79
Workin	Removing				_		_			
ž	Total	8th Sep.	¹87∿13th	Sep. '87	7		6	<u></u>		200
CROWNERS CO.	Dept	h of Dril	ling		Core Rec	over	y for e	ach 10	0 m s	ection
Length	Planned Length	m 50.00	Over- burden	m	Depth of Hole		Secti	on	T	otal
	I THULE GOOD OF	7.80	Core Length	m 38.35	0 ∿ 42.20	m m	94.5	% %	9/	1.5 % %
Drilling	Length Drilled	m 42.20	Core Recovery	% 94.5		m m		% %	<u> </u>	7. 7.
-	Drilling	26°00' <sup>H</sup>	43.3	27.1		m		7.		7.
	Out Drilling	34°00'	56.7	35 4		m.		. %		7,
	Regain of Accident	-	<del></del>	-	E	ffici	ency of	Dri1		
Time	Total	60°001	100	62.5	42.20 m/W	orki	ng Peri	od	6.0	2 m/day
۲. ۲.	Construct	17°00'	-	17.7	42.20 m/W		· · · · · · · · · · · · · · · · · · ·		7.0	3 m/day
K:	take to pieces	10°00'	-	10.4	42.20 m/D	rill	ing Per	iod	14.0	6 m/day
Workin	Moving of wate		-		42.20 m/N	let D	rilling	Days	16.8	8 m/day
	Road · others	9°00'		9.4	Total wo	rkers	./ 4	2.20 m	4.7	3 Man/m
	G · Total	96°00'	-	100						
	Pipe Size &	Inserte Length Drillir	y Red	covery of sing Pipe	Total Drilling	Work	kers/ 4	2.20 m	1.8	7 Man/m
red	Meterage	Length	ig Ca.	orne Tree		Dri	lling	of Siz	e ;	
7 0 0	BW-CP 2.00 II	4.7	7.	100 %	Bit size		BW	58	-T	
9	·	1	%	%	Drilling		2.00	m 41	). 20 π	
μ	·   п	1	78	7.	Core Len	gth	0.30	3	3.05	·
, i	100									٠
Š									<u>.</u>	
L					<del> </del>					

77			Period		Number of Days	Wor	ual king ays	Day 0	ff N	Total umber Worker	
Period	Preparation	2nd Sep.	¹87∿ 5th	Sep. '87	4		4	-	-   :	108	
	Drilling	6th Sep.	'87∿ 8th	Sep. '87	3		3			105	
Working	Removing	······································			-		1446	***		_	
:35	Total	2nd Sep.	'87∿ 8th	Sep. '87	7		7	-		213	
	Dept	h of Dril	ling		Core Rec	overy	y for	each 10	00 m s	ection	n
Length	Planned Length	m 50.00	Over- burden	m	Depth of Hole		Sect	ion	7	otal	
	Increase or Decrease in Length	m 0.20	Core Length	m 44.30	0 ∿ 50.20	m	90.	0 % %		90.0	7 7
Drilling	Length Drilled	m 50.20	Core Recovery	% 90.0		m		% %			% %
	Drilling	32°00' <sup>H</sup>	44.4 %	25.4 %		m		78			72
	Out Drilling	40°00'	55.6	31.8		m		78			7.
	Regain of Accident	· . <del>-</del>		-	Ef	fici	ency o	f Dril	ling		/
Time	Total	72°00'	100	57.2	50.20 m/W	orkir	ng Peri	iod	7.1	7 m/d.	ay
	Construct	14°00'		11.1	50.20 m/W	orkir	ng Days	3	7.1	7 m/d	ay
Working	take to pieces	13°00'	_	10.3	50.20 m/D	rilli	ng Per	riod	16.7	3 m/d	ay
Wor	Moving of water	. –	-		50.20 m/N	et Dr	illing	g Days	16.7	3 m/d	ay
	Road · others	27°00'	<del>-</del>	21.4		<del></del>					_
	G · Total	126°00'		100	Total wor	kers	/ 50.	.20 m	4.2	3 Man	/m
eđ	Pipe Size & Meterage	Inserte Length Drillin	Rec	overy of ing Pipe	Total Drilling				L	9 Man	/m
Inserted		Length				Dri	lling	of Size	<u>-</u>		,
	BW-CP 1.80 m	3.6	2	100 %	Bit size		BW	56-	-Т		
Pipe	m		%	7.	Drilling		1.80	m 48.	40 m		
na l	m		78	7.	Core Leng	th	0.80	) 43.	50		
sin											
Ca										-	

JMS-10

					Number	Ac	tual			Total
		Period	i 		of Days		rking ays	Day (	off N	lumber of Workers
paration	5th Sep.	187∿	8th	Sep. 187	4	:	4			127
lling	9th Sep.	187∿1	llth	Sep. 187	3		3			32
oving							_	**		
al	5th Sep.	'87∿I	lith	Sep. '87	7		7			159
Deptl	of Dril	ling			Core Rec	over	y for	each 1	00 m	section
nned gth	m 50.00			m	Depth of Hole		Sect	ion		Total .
rease or rease in gth	m 1.00	Core Lengt	.h	m 47.10	0 ∿ 51.00	m	91.	9 % %	9	11.9 % %
gth lled	m 51.00	Core Recov	very	% 91.9		m m		% %		% %
lling	40°00' <sup>H</sup>	55.	.6 %	34.2		m		7.		7.
Drilling		44.	4	27.4		m		7.		. %
ain of ident	<del>-</del>			:	Ef	fici	ency o	f Dril	ling	<del></del>
al	72°00'	100	)	61.6	51.00 m/W	orki	ng Peri	boi	7.2	8 m/day
struct	15°00'	-		12.8	51.00 m/W	orki	ng Days	3	7 2	8 m/day
e to pieces	9°001	-	- -	7.7	51.00 m/D	rill	ing Per	riod	17.0	00 m/day
ing of water		-	-	_	51.00 m/N	et D	rilling	g Days	17.0	00 m/day
d · others	21°00'	-	-	17.9	E 1		. / 61			] Man/m
G · Total	117°00'	-	_	100	lotal wor	кег			J	
pe Size &	Length	7		•	Total Drilling	Worl	kers/51	.00 m	0.6	Man/m
·	Length	6	Odo.	ang vipo		Dri	lling	of Siz	е	
-CP 2.80 m	.5.5	%		100 %	Bit size		BW	. 58	-Т	
m		7,		7,	Drilling		2.80	m 48	3.20 m	
m		7.		7.	Core Leng	gth	0.50	) 4(	5.60	
	Depth med tth rease or rease in tth led ling Drilling min of dent al struct to pieces ng of water to others G. Total ce Size & erage  CP 2.80 m m	Depth of Dril  med m 50.00  rease or rease in 1.00  th 51.00  ling 40°00'  Brilling 32°00'  min of dent 72°00'  struct 15°00'  to pieces 9°00'  mag of water -  1 others 21°00'  G Total 117°00'  Rease in 1.00  Inserte Length Drillin Length  CP 2.80 m 5.5	## Sep. '87%    Depth of Drilling   Depth of Drilling   Drilling	## Sep. '87%   1th   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200	## Sep. '87°Ilth Sep. '87    Sth Sep. '87°Ilth Sep. '87    Depth of Drilling   Depth o	## Sep. '87v11th Sep. '87   ## Sep. '87v11th Sep. '87   ## Depth of Drilling	Sth Sep. '87\lambda   Sth Sep. '87\lambda	Sth Sep. '87\link Sep. '87   3   3   3   3   3   3   3   3   3	String	Sth Sep. '87vllth Sep. '87   3   3

#### Operational Results by Drill Hole

JMS-11

						galantee (Control de la Control de la Co						
FD .		]	Period	l		Number of Days	Wo	tual rking Days	Day O	ff Nw	otal mber orker	- 1
Period	Preparation	13th Sep.	187∿1	6th	Sep. 187	4		4			85	
	Drilling	17th Sep.	'87∿1	9th	Sep. '87	3		3			73	
Working	Removing	17th Sep. 20th Sep.	'87∿1 '87∿2			5		5	-		141	
3		13th Sep.	¹87∿2	lst	Sep. 187	12		12	-		299	
	Dept	h of Dril	ling			Core Rec	ove	ry for ea	ach 10	)0 m se	ction	n
Length	Planned Length	m 50.00	Over- burde		m	Depth of Hole		Section	on	То	tal	
illing Le	Increase or Decrease in Length	0.20	Core Lengt	.h	m 42.40	0 ∿ 50.20	m m	85.7	7 7	8.	5.7	7. 7.
Drill	Length Drilled	m 50.20	Core Recov	ery	85.7		m	- '	7 7			7 7
	Drilling	29°00'H	40.	3 %	26.8		m		7.			%
	Out Drilling	43°00'	59.	7	39.8		m		7.			%
	Regain of Accident			_	Ef	fic	iency of	Dril:	ling			
Time	Total	72°001	100	)	66.6	50.20 m/W	orki	ng Perio	od	4.18	m/d.	ay
I S	Construct	18°00'			16.7	50.20 m/Wo	orki	ng Days		4.18	m/d	ay
Working	take to pieces	18°00'			16.7	50.20 m/D	ri 11	ling Peri	od	10.04	m/d	ay
Woy	Moving of water	-	-		-	50.20 m/N	et I	rilling	Days	10.04	m/d	ay
	Road · others	108°00'	-		100	Total wor	ker	s/. 50.	20 m	5.95	Man	/m
ed .	G · Total  Pipe Size &  Meterage	Inserte Length Drillin	d 7	Rec Cas	overy of ing Pipe	Total Drilling				1	Man	/m
Inserted		Length					Dr 	illing o				
1	BW-CP 5.30 m	10.0			100 %	Bit size		BW	56	-T		
Pipe	m		%			Drilling		1.80	48.	40 "	<del></del>	
	m	•	%		%	Core Leng	th	1.10	41.	30		
Casing												

#### Appendix 8

List of the used equipments for drilling

List of the Used Equipments for Drilling

Item	Mode1	Quantity	Capacity, Type, and Specification
Drilling Machine	YBM-05DA	2	Capacity 56mm 55m Inner Diameter of Spindle 42mm
Engine for Drill	DY-41B	2	Diesel Engine 7.5PS/1800rpm
Pump	MG-5A	1	Piston Ø68mm Capacity 35∿42 l/min.
Engine for Drill	nfa-70	1	Diesel Engine
Generator	XG 38L	l	3.4KVA, 220V, 50 c/s
Engine for Generator	EY27-2D	1	Gasoline Engine 7.0PS/1800rpm
Pump	TAA600K	2	Capacity 42.8 L/min. Pressure 40 kg/cm <sup>2</sup>
Engine for Pump	L60SSNT	2	Diesel Engine 6.0PS/1800rpm
Derrick			·
Rod Holder	RH-45	1	Hand Type
Drill Rods	40.5	25	3.00 M/pc
	40.5	25	1.50 M/pc
Casing Pipes	ви	5	1.5 M/pc
	11	5	1.0 M/pc
	11	5	0.5 M/pc
	11	5	0.3 М/рс
Double Core Barrel	56-T	2	3.00 M/pc
	11	3	1.50 M/pc
Inner Tube	56-T	1	3.00 M/pc
	11	1	1.50 M/pc

# Appendix 9 Articles of consumption and drilling parts

Articles of Consumption and Drilling Parts

				Quantit	V	**************************************
Description	Specification	Unit	JMS Songue	JMT Thundulu	JMT Natach	Total
Light Oil	40#	l	54	35	22	111
Mobil Oil	30#	l	58	28	38	124
Hydraulic Oil	90#	l	65	30	60	155
Solblu	EM	l	160	73	372	461
TK-60		kg	77.6	26.5	36.7	140.8
Cement		kg	200		280	480
Casing Metal Shoe		рс	6	1	2	9
Double Core Barrel Assy	56mm×3.00m	set	1	1		2
Double Core Barrel Assy	56mm×1.50m	set	1	1	1	3
Inner Tube	56mmx3.00m	set			]	1
Inner Tube	56mmx1.50m	set			1	1
Extension Tube		рc	4	5	5	14
Core Lifter		рс	5	5	6	16
Core Lifter Case		рс	3	4	6	13
Drill Rod	40.5mmx3.00m	рс	4	6	6 -	16
Drill Rod	40.5mmx1.50m	рс	3	7	8	18
Drill Rod Coupling	40.5mm	рс		3	.5	8
Casing Pipe	BWx1.50m	pc	1	1	1	3
Casing Pipe	BWxi.00m	pc	1	1	1	3
Casing Pipe	BWx0.50m	рс	1	1	1	3
Casing Pipe	BWx0.30m	рс	1	1	2	4
Core Box		pc	107	110	126	343
Wire	9mmx	kg	1			1
Wire Rope	9mmx100m	rol1		ı	1	2
Manila Rope	12mmx100m	<b>?</b> 1	1		1	. 2
Vinyl Rope	10mm×200m	pc	1		1	2
Piston Rod	MG-5A	рс	ĺ	. 1	į.	1
Piston Rubber	68mmø	pc			2	2
V-Packing	MG-5A	pc		8	8	16
Steel ball	MG-5A I-1/2	pc			4	4

				Quantit	у У	
Description	Specification	Unit	JMS Songue	JMT Thundulu	JMT Natach	Total
Spark Plug		рс	3	3	4	10
Air Element		рe			1	1
Brush		рс		3	3	6
Steel Ball	•	рс			4	4
V-Packing	DY-41B	рс	·	7	7	14
Water Swivel Packing	40.5mm	рс		2	2	4
Water Swivel Oil Seal	40.5mm	pc		. 1	1	2
Water Swivel Felt Ring		pc.		1	: · 1	2
V-Belt	та-600к				/ <b>1</b>	

# Appendix 10 Drilling meterage of diamond bits

Drilling Meterage of Diamond Bits

F &	T	Bit No.	JMT	JMT	illing JMT	JMT	JMT	JMT	JMT	JMT	JMT	JMT	JMT	Total
геш	Type	BIL NO.	1	2	. 3	4	5	6	9	10	11	12	13	
	56T	E-177356	22.60					11.10		=				33.7
		E-177357	23.80							:			7.35	31.1
		E-177358		24.05						·				24.0
		C-177359		24.45					1					24.4
		C-177360			23.80				ļ					23.8
		C-177361			24.70									24.7
		C-177362			1	22.60		13.20						35.8
		C-177363				25.90						+ 1		25.9
		C-177364					23.80					14.10		37.9
		C-177365					24.70	:	11.35					36.0
		C-177366						24.30				9.10		33.4
Bit		C-177367							24.15	5.20				29.3
		s530							12.80	21.00				33.8
		S531								22.10			5.50	27.6
		\$532									23.80		6.00	29.8
		S533			1					,	24.60		5.30	299
		S534									ļ	23.20		23.2
		\$535 .											24.35	24.3
														]
:														
						1								
								1						
		<u> </u>												
		]						1	1					,
						-								
					1.								1	
		Total	<del> </del>	48.50	ļ	<del> </del> -		<del> </del>	<del>                                     </del>	<del> </del>			10.50	528.9

#### Drilling Meterage of Diamond Bits

JMS Songwe

				Di	illing	Meter	age by	Drill	Hole,	Unit	Meter			
Item	Туре	Bit No.	JMS 1	JMS 2	JMS 3	JMS 4	JMS 5	JMS 6	JMS 7	JMS 8	JMS 9	JMS 10	JMS 11	Total
	56T	E-177336	23.50		×								•	23.50
		E-177337	25.15	:										25.15
		E-177338		17.10										17.10
	:	E-177339		15.80		•				:				15.80
		E-177340		15.30			· :							15.30
		E-177341			17.20									17.20
		E-177342			18.70									18.70
		E-177343			19.20									19.20
		E-177344				26.30								26.30
		E-177345				25.20								25.20
		E-177346					25.90							25.90
Bit		E-177347				:	25.40		] .					25.40
		E-177348						23.50						23.50
	1	E-177349						21.00						21.00
		E-177350							24.10					24.10
		E-177351							24.00					24.00
		E-177352								19.70				19.70
		E-177353	·	1					:	20.50				20.50
		E-177354									23.90			23.90
		E-177355									24.50			24.50
		C-177372										24.00		24.00
		C-177373		-			•					24.20		24.20
		C-177374			ļ								22.40	22.40
		C-177375					ļ						26.00	26.00
											1			
		-:		]					1					
								[						
		Total	48.65	48.20	55.10	51.50	51.30	44.50	48.10	40.20	48.40	48.20	48.40	532.5

#### Drilling Meterage of Diamond Bits

JMT Tundule(Nathace)

				·····		rillin									· · · · · ·	1
Item	Туре	Bit No.	JMT 7	JMT 8	JMT 14	JMT 15	JHT 16	JМТ 17	JMT  8	JMT 19	JMT 20	JMT 21	JHT 22	JMT 23	JMT 24	Total
	56T	S536	23.70			9.30										33.0
		\$537		24.30		9.70									Ì	34.0
		\$538		23.80				7.20								31.0
		5539	1		25.10			10.00								35.1
		\$540				29.30			12.40							41.7
		S541					26.10	,	7.60							33.7
		\$542						31.10		ĺ	9.60					40.7
		8543							28.20		6.40			İ		34.6
		S544										7.10		10.40	11.50	29.0
		S\$45								19.40		7.60				27.0
		C-177368									32.30		10.50			42.8
		C-177369								27.40		4.10				31.5
it		C-177370											29.70		10.70	40.4
		C-277730										29.30		16.10	26.10	71.5
		E-177358	8.30													8.3
		C-177359	6.10													6.1
		C~177360	9.30													9.3
		C-177361			12.10											12.1
į		C-177363			11.40											11.4
		S-534					12.20									12.2
		S-535					10.00									10.0
		E-177342												21.40		21.4
	İ	E-177340										·	8.00			8.0
	-													***	i	
İ	ŀ				·											
					j			1								
	ļ											- 1				
		-														
ł											+1	İ				
ļ					j							ļ				
				j				ŀ								
l	ſ	Total	47.40	48.10	48.60	48.30	48,30	48.30	48,20	46.80	48,30	48, 10	48,20	47.90	48.30	624.8

PL. 7

COOPERATIVE MINERAL EXPLORATION

IN

THE CHILWA ALKALINE AREA,

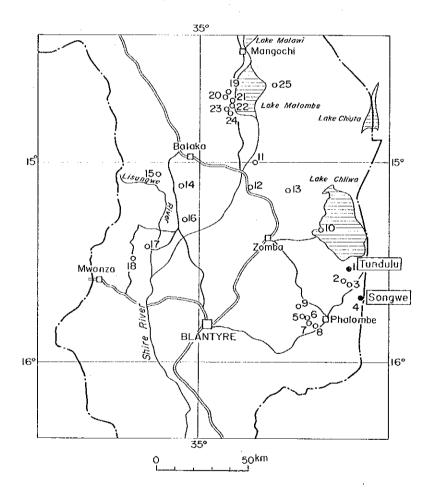
REPUBLIC OF MALAWI

(PHASE I)

国際協力事業団 17686 図書資料室蔵書

# GEOLOGICAL DRILL LOG (1/200)

T.N.



JAPAN INTERNATIONAL COOPERATION AGENCY

METAL MINING AGENCY OF JAPAN

FEBRUARY 1988

	ion		Assay (ppm)											· • • • • • • • • • • • • • • • • • • •	
Depth (m	Geology (ifigure)	Description	Sample No.	Depth	Thick- ness (m)	La	Ce	Nd	Sm	Eu	Тb	Νb	Sr	Υ	Р
0.40 1.80 3.20 3.80 4.30	Cocb 4 3 0 A A	Pinkish brown 30%Carbonatite bearing feldspathic breccia Mn oxide bearing feld, breccia 10%Carbonatite bearing feld br. Pinkish brown to grey, 10%cb bearing					• •								
7.00 7.30	A A A	aagglomelate(phonolite, feld.br.) with Mn vein (width Icm ) br.) Pinkish brown agglomelate(phonolite,feld.												:	
9.4 9.60	A A GOJE A	Ankeritic cb.(dark brown)		10 00											
11.40 11.50	30°	60% cb bearing feld br. Agglomerate with Mn oxide lOcm grey sövite ankeritic cb Mn oxide bearing fissure lcm Mn oxid.1-2cm	SO 101		3.90	1316	2761	942	156.0	41.0	15.0	637	1556	202	3154
13.90 14.30 14.8	) <del>                                     </del>	Feld br. bearing grey cb Feld br. bearing grey cb	SO 102	13 90	3.20	1395	2934	1176	182.1	52.4	16.0	1612	4550	295	4185
17.10 17.90 18.30 18.90 19.00	A F A 60°	Cal v. 2 cm Feld br. Ankeritic cb bearing IOcm cb. Mn oxide bearing aggl.(phonolite,feld.br.)	SO 103	17.10	2.80	810	1628	656	151.1	38.6	12.8	890	1653	168	2153
20 19 90		Feldspathic breccia bearing ankelitic cb	so 104	19 90	2.00	2743	5345	2038	306.8	78.9	17.5	1111	2054	395	2298
4		Mn oxide bearing feld breccia Fng grey calc silicate rock	SO 105		1	2366	İ	4, 4	262.1		⟨0.1	1757	1639		1191
23.7 24.9 24.9		Feld. br. bearing cb.	SO 106 SO 107	24.00 24.90	0.90	2402 6365	4667	1603 4139	263.8 686.7	64.7 157.8	14.3 22.9		5928 3062	325 475	2546 1914
25.9 26.70	M n	Yellowish brown Mn oxide(weathered) Feldspathic br bearing cb	SO 107	26.70	1.10	1177	2595	1036	143.6	40.0			3368	331	8729
27.8 29.00	<b>1</b>	5% Cb bearing feld br	SO 109	27.80	1.20	1370	2819	1063	199.4	51.1	5.0	2893	1823	251	2594
30	60	60% Cb bearing feldbreccia	SO 110		2.90	2256	4324	1442	228.1	57.6	13.9	914	2009	274	3014
3190	7/7/25/7/2	Dark brown ankeritic cb Mn oxide veinlet bearing cb	SO 11 1		1.70	1190	2617	1227	232.2	584	(0.1	690	2268	370	6085
33.20 33.60	F 🚳 F	60% ankeritic cb with feld.br. 30% Cb bearing feld.br.	SO 112	33 60	3.00	1084	2192	840	172.5	46.0	144	657	1853	442	7804
36.60	(8)	Feldspathic breccia bearing	SO 113	36.60	1.50	1761	3724	1469	2384	63.6	29.9	821	2328	362	4117
38.10 39.80 40.40	(i) F	Mn oxide bearing feld br.  Feld br bearing cb.  Mn oxide with cal veinlet bearing feld	SO 114	38 IO 40 90		18 14	3800	1855	357.9	90.4	36.3	396	1855	673	8571
40.90	F A	br Mn vein Icm Cal veinlet, fissure		140 90								·			
43.80 44.00	Cal	Cal breccia zone  Drusy calcite crystal in 1.15 <sup>m</sup> cave	S0 115	44 00	3.80	19	39	7	⟨0.1	2.9	⟨0.1	7	475	<b>(10</b>	43
47.8	80°	Drusy calcite with feldspathic br		47.80											
48.8 50	54	Ankelitic cb bearing feld br		-											
504										<u></u>				and Action to the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Con	

## GEOLOGIC DRILL LOG DDH JMS-I

Elevation 788.1 <sup>m</sup>
Total Depth 50.45 <sup>m</sup>
Inclination -90°

1:200

#### LEGEND

Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate - Silicate rock
F:Feldspathic breccia, A:Agglomerate
x x x x X Syenite
X X X X Nepheline syenite
·
Dykes
T — Trachyte
P —Phonotite S —Sölvsbergite
D — Dolerite
A—Aplite

Joint, Fissure

60 % of carbonatite content

Mn Manganese oxide

HM Hematite

.....

cal Calcite

Depth   Caclogy   S     Description   Sampo No Double   Test   La   Ce   Nd   Sm   Eu   Tb   No   Sr   Y   P		, c		Assay (ppm)												
1-10			Description	Sample No.	Depth	Thick- ness (m)	La	Се	Nd	Sm	Eu	Tb	Nb	Sr	Υ	Р
1700	1.40 3.70 5.30 7.10 7.30 8.40	A A A A A A A A A A A A A A A A A A A	feldspathic rock)  Weathered crushed aggl. with Mn oxide.  Aggl. (nepheline syenite, feldspathic rock with Mn oxide) partly core crushed black Mn mineral.  8.40-9.40 CR60%)  Limonitic feldspathic dyke, very weathere  Mn rich feldspathic breccia with cal													
22.30 Mn Ankeritic cb IO% bearing feld. br. 10% ankeritic cb IO% bearing feld. br. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 10% ankeritic cb. 1	17.80 18.70	A F A		SO 201		2.90	2694	5061	1655	278.2				. * *		
Ankeritic cb   10% bearing feld. br.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% ankeritic cb.   10% a		.Mn	Black Mn ore (massive)	SO 202	2230										-	· 
10% ankeritic cb.   S0 204   2630   A   A   A   A   A   A   A   A   A	24.40	F A	Ankeritic cb 10% bearing feld br.		2440									<u> </u>		
29.00 30  P P P P P P P P P P P P P P P P P	25.00 25.50 26.10 26.50	A(IO) F	10% ankeritic cb.		26.10		1				-				528	10070
P Pink altered phonolitic dyke feldspar phenocryst 0.3-05cm Grey fing cb breccia Mm bearing aggl.  33.760  AAA  AAA  AAA  AAA  AAA  AAA  AAA	1	AA			29.00											
Mn bearing agg1.  So 206  So 206  So 206  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 207  So 208  So 207  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 208  So 2	33.20 33.50 33.70	P	Pink altered phonolitic dyke feldspar phenocryst 0.3-05cm Grey fng cb breccia													
Mn  Mn  SO 207  A3 90 A Mn		A A A	Mn bearing aggl	SO 206		1	5042	9243	3159	514.0	130 C	63.3	863	3847	556	11545
43.90 44.40  F Small amount of Mn bearing Pinkish brown feldspathic breccia (44.40 Pinkish brown feldspathic breccia (44.40 Pinkish brown feldspathic breccia (50.207  44.40  F A A A A A A A A A A A A A A A A A A	40	F *	Feld br bearing black Mn ore	-	4060	) 					603	17.6	660	2060	162	
F   Small amount of Mn bearing   Pinkish brown feldspathic breccia   (44.40 <sup>m</sup> 45.90 CR 80%)   49.40   Mp. rich feldspathic breccia   SO 208   5010 0.70 1056 1846   541   93.4   22.2   15.5   478   2294   134   5357	43.90 44.00 44.40	S S S S S S S S S S S S S S S S S S S	10cm cal v.	SO 207			2411	4344	1410	2.00.3						
49.40   Mp. rich foldsnathic breccia   SO 208   5010 0.70 10.56 1846   541   93.4   22.2   13.3   1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50		F A	Pinkish brown feldspathic breccia (44.40 <sup>M</sup> 45.90 <sup>C</sup> R 80%)		494					07.4	00.0	15.5	478	2294	134	5357
			Mn rich feldspathic breccia	SO 208	50.0	0.70	1056	1846	541	93.4	22.2	13.3				

(PHASE II)

## GEOLOGIC DRILL LOG DDH JMS-2

Elevation 823.9 m Total Depth 50.1 m Inclination -90 °

1:200

#### LEGEND

∼ ∼ Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia, A:Agglomerate
Ÿ <sub>x</sub> X <sub>x</sub> X Syenite
$(x_x, x_x, x_y)$ Nepheline syenite
Dykes
T — Trachyte P — Phonolite
S — Sölvsbergite D — Dolerite
A—Aplite
Joint, Fissure

% of carbonatite content

Mn Manganese oxide

HM Hematite

<u>cal</u> Calcite

A SECTION OF THE SECTION OF		eation		Assay (ppm)												gangaldus ad to Disabilishes
Depth (m)	Geology	Linea	Description	Sample No.	Depth	Thick- ness (m)	La	Се	Nd	Sm	Eu	Tb	Nb	Sr	Υ	Р
1.90 3.10 3.30 3.50 3.70 5.40 5.90	× × Mn× × × × × × Mn × × ×	80°	Weathered altered micro syenite Micro nepheline syenite Black Mr oxide (20cm) Black Mr oxide (20cm) Light pinkish brown nep syenite Black Mn oxide Light pinkish brown altered micro nep syenite fissure	\$ 0301 \$ 0302	3.10 3,70	0.60	2298 6300							9376		6702 1504
13.50 14.00 14.90 15.00 1640	Mn × × × ×	45°	Nepheline syenite breccia bearing Mn oxide Mn bearing nep syenite Carbonatized Mn bearing nep syenite Reddish brown carbonatized Mn bearingnep Grey carbonatite syenite Carbonatized Mn oxide bearing feld. br	S 0303 S 0304 =S 0305 S 0306		2.40 -0.20	3822 3509 1980 9108	5838 <b>3724</b>	1734 <del>1150</del>	233.7 184.6	65.1 <del>53.7</del>	21.4 36.0	2823 1307 703 1667	11312 7814	367 -567	8554 12018 <del>31670</del> 12466
20 20.80 23.1 23.3 25.0	A A	45° 45° 45°	Clay bearing fissure Weathered carbonatized Mn bearing feld.br. (crushed) (crushed) Weathered carbonatized Mn bearing nep syen	ite	20 80										,	
2900 30 3140	× × × × × × × × × × × × × × × × × × ×	50° 45°	Mn bearing fissure 2cm  Wealhered cb - Mn bearing nep syenite  Yellowish brown feldspathic breccia	S 0307	29 00 31.40		1315	2620	867	165.0	39.2	7.1	824	991	96	2003
3690 37.70 3790 3900 4050 41.70	× × × × ×	50°	Altered nep syenite Mn oxide with quartz druse Altered nep syenite Carboratized nep-syenite, cb patch Micro nep syenite carbonatized nep syenite	\$ 0308	3900 4050	1.50	1997	3502	996	170.9	446	10.6	726	2 162	247	4408
4320 4380 4460 4910	× × × × × ×		Micro nepheline syenite carbonatized nep syenite Fluorite bearing carbonatized nep syenite grey Pyrite bearing  Carbonatite breccia (Ø 5cm) bearing carbonatized nepheline syenite	S 0309	4910	2.10	1375	2694	920	157.4	48.4	14.0	537 to	7332 be c	377 ontinue	<u>8990</u>

## GEOLOGIC DRILL LOG DDH JMS-3(I)

Elevation 810.5<sup>m</sup>
Total Depth 58.0<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

·
Composite Drift
•
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia, A: Agglomerate
<sup>▼</sup> x <sup>X</sup> x <sup>X</sup> Syenite
x <sub>x</sub> x <sub>x</sub> x Nepheline syenite
Dykes  T — Trachyte P — Phonolite S — Sölvsbergite D — Dolerite A — Aplite
Joint, Fissure
60 % of carbonatite content
Mn Manganese oxide
HM Hematite
cal Calcite
Ap Apatite

paramenta pagingan da kab	34000	- raid##	neation	Michigan (1973) (1973) Ann ann an Aire ann ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann ann an Aire ann an Aire ann an Aire ann an Aire ann an Aire ann ann ann an Aire ann ann an Aire ann ann ann ann an Aire ann ann ann ann ann ann ann ann ann an	A STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STA					4ss(	ју	(	ppm	1)			
Depth (m)	)	Į		Description	Sample No.	Depth (m)	Thick- ness (m)	La	Се	Nd	Sm	Eu	Тb	Nb	Sr	Υ	Р
51.20 51.80 53.10	× (0	) v		Carbonatite breacia bearing nep syenite  Cb breccia bearing calc, silicate rock  Cb breccia bearing calc, silicate rock(py rich)	C 0310	51.20 53.10		1061	2046	646	105.9	33.1	2.5	741	6644	238	6063
54.30 54.80 55.00 56.00	× ((0		50° 60°	Carbonatized nep. syenite  Cb breacia bearing calc. silicate rock Carbonatized nepheline syenite pyrite bearing Reddish brown to grey carbonatized nepheline syenite with pyrite	\$ 0311 \$ 0312	54.30 54.80 56.00	0.50 1.20		2659 1764	885 573	1544 105-3	46.5 30.9	14.6 8.7	690 555	8147 5916		1208 2721
58.00 IO ——																	
														·			
						· .											
20																	
					·								·	·			
30															·		
											-						
40								·									
50							OF THE STREET								<i>w</i>		

## GEOLOGIC DRILL LOG DDH JMS-3 (2)

Elevation 810.5 <sup>m</sup>
Total Depth 58.0 <sup>m</sup>
Inclination -90°

1:200

#### LEGEND

<mark>∼∼</mark> Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia, A: Agglomera
x x x X Syenite
[X x X x X] Nepheline syenite
Dykes  T — Trachyte P — Phonotite S — Sölvsbergite D — Dolerite A — Aplite
Joint, Fissure
60 % of carbonatite content
Mn Manganese oxide
HM Hematite
cal Calcite
Ap Apatite

Spine to the same	Geology						**************************************	Ass	ay	<del>Description (State Property of State Property o</del>	(ppr	ກ)	<del>essa de la comoción de la comoción de la comoción de la comoción de la comoción de la comoción de la comoción de</del>		
(m)		Description	Sample No.	Depth	Thick ness (m)	La	Се	Nd	Sm	Eu	Tb	Nb	Sr	Υ	. P
0.20 0.50 1.80	* x x x x x x x x x x x x x x x x x x x	Silicified carbonatite Carbonatite bearing Mnrich nepheline syenit Grey fine grained nepheline syenite dyke	é								Carriotala anarrio				
4.20 5.10 6.40	<b>^6</b> 0 <b>F ^</b>	Carbonatized feld br. with cb. Feld br. bearing cb	\$ 0401	5.10	1.30	1922	4264	1748	3 373.	7 110.4	46.	6 69	4563	43	1938
8.30 9.00 10 10.80	45 50	2cm calv. Carbonatized feld. br. with Mn Manganiferous cb (fng)	\$0402	9.00	1.80	1983	4910	2365	551.5	158.5	89.8	3 35	10311	603	4253
12.50 12.70	Mn 22272 (©) 2272 Mn	Black Mn ore Manganiferous cb													
	Mn	Black∼dark brown Mn oxide													
20	Мо														
	Mn 45°	Carbonatized Mn oxide with calcite veinlet										:			
26.80 27.80	Mn Mn	Limonitized Mn oxide		2780									·		
30-		Dark brown purple manganiferous carbonatite	S 0403	30.40		2020	4884	2416	493.8	132.3	79.5	25	4055	477	1454
33,00			S 0404	33.00		2688	6097	3046	738.4	205.6	80.6	25	9445	695	3075
34.80 35.00 35.90	Mn Mn A F A	Carbonatized Mn oxide Mn oxide Mn oxide bearing feld breccia Drusy	\$0405	35.00	2.00	4519	8327	3279	5199	107.9	33 9	28	2034	333	1566
37.40 38.10	Ā F ▲ 70°	Carbon afized feld br. Limonitized ankeritic cb with little Mr Mn vein 0.5cm	S 0406	38.10	3.10	3650	7266	2763	449.6	108.4	79.5	1574	2471	769	10265
	(00) 85°	dark brown ankeritic cb calv.lcm (43m-44.3m crushed)	S 0407	41.20	3.00	3434	6681	2408	366.7	968	75.8	1468	2511	648	7404
4720		Car V. Fem. (45m - 44.5m Crushed)	S 04 08	4420 4720	3.00	3033	6841	2778	430.9	116.0	70 1	1897	2551	859	6553
		Mn rich ankeritic cb	\$0409		3. 20	10017	13245	2969	436.0	90.0	49.8	648	24293	412	3223
50 5040	45°	Flow structure Grey ankeritic cb. pyrite bearing	\$0410	50.40 5 3.30	2.90	5550	808 I	2102	301.0	74.4	33.0	1967	19154	510	12283

# GEOLOGIC DRILL LOG DDH JMS-4

Elevation 868.9<sup>m</sup>
Total Depth 53.3<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

~~ Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F: Feldspathic breccia, A: Agglomerate
x x x x Syenite
$\frac{x_{X} \times x_{X}}{x_{X}}$ Nepheline syenite
Dykes  T — Trachyte P — Phonotite S — Sölvsbergite D — Dolerite A — Aplite
Joint, Fissure
60 % of carbonatite content
Mn Manganese oxide
HM Hematite

<u>cal</u> Calcite

311111111111111111111111111111111111111							***************************************	Ass	ay	- Mality - Area and and	(ppr	n)	P. T. S. A. S. SERVICE CO., T. S. S. S. S. S. S. S. S. S. S. S. S. S.	and the second second second second	than mentangan ang ang ang ang ang ang ang ang an
Depth (m)	Geology :	Description	Sample No	. Depth	Thick ness	La	Се	Nd	Sm	Eu	Tb	Nb	Sr	Y	Р
1.90 2.70 3.70	A F S	Drift Pinkish brown feldspathic breccia with Mn oxide fissure Very weathered feld breccia with Mn oxide													от в от от от от от от от от от от от от от
5.20		Pinkish brown carbonatized feld br with Mn oxide (weathered)													:
9.00	F F	Pinkish brown carbonatized feld.br.													
10 -10.30	A cb A A (O) A Mn	10% Carbonatite breccia bearing aggl.													
11.50 12.40 13.20	M A F ///33///	Dark brown carbonatized Mn oxide Carbonatized Mn oxide with feld brecci Very weathered limontized feld br Feld breccia bearing cb(ankeritic)	SO 501	13. 20	0.70	2111	4520	1855	351.2	98.9	04.6	0.416	7750	070	
13. 90	A F F A	Mn bearing Carbonatized feld breccia	30 301				4323	1655	331.2	96.9	84.8	2418	3756	670	15040
16.10 17.80		Feld. br.bearing ankeritic cb Carbonatized feld.br.	SO 502	17.80	1.70	3197	6539	2414	395.5	86.1	1 38.5	1070	2773	276	4701
20	45	cal v.0.3 cm Feld br. bearing cb (ankeritic)	S 0 50 3	18.60	1.	2527	4967	1933	314.3	78.0	54.1	1065	3120	395	10053
21.00 21.60 22.20		Mn oxide bearing feld breccia		21.60 21.60											
24.90 25.30		Grey~pinkish brown feld br. bearing cb (ankeritic) Carbonatized feld br.	SO 50 4		4.30	2078	3954	1506	263.8	70.4	43.8	1375	7266	264	6115
25.30 25.90 26.50 28.10	A 70	Ankeritic cb Limonitized feld br Reddish pink feld dyke (aptitic)		25.90											
29.10 30 <u>30.20</u> 30.80	(//62///	Mn oxide bearing feld br Feld spathized cb.(pinkish.fng)	and the all the late of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control	29.10				:							
30.80 31.90 33.50	ノンわのノンス	5 cm limonitized zone Mn oxide, feld. br bearing (ankeritic) Grey fng, to purplish grey fng	SO 505		. [	2310	4653	1863	299.6	77.4	70.8	1272	7834	408	15398
35.00	P P 70°	Reddish pink feldspathized phonolite Mn. cal veinlet(0.5cm)		33.50 35.00		: .						-			
		Grey to purplish grey ankeritic cb with Mn oxide, feld br.	SO 506		5.00	2352	4541	1839	287.0	81.7	84.4	1887	4678	438	10620
40-41.10	500	Foliation		40.00											
	150//100	oxide Feld br bearing ankeritic cb with 20%Mn	SO 507	43.70	3.70	2234	4308	1809	290.0	73.2	52.6	1214	2674	351	7601
45.40 46.20	F ⊗ F 7/289///	Purplish greyankeritic cb with feld br.	SO 508	46.20	2.50	1575	3256	1518	246.0	65.8	57.1	1943	2694	239	5760
48.20 48.80	F @ F 77289777 40	Limonitized ankeritic cb with 20% Mn	SO 50 9		450	3365	6156	2396	3815	102.4	69.3	1463	5836	403	13653
5070 52.00		feld. br.		50. 70 52 00	1.30	1447	2953	1325	211.2	69.7	67.1	274	11071	809	96676
53.20	<u> </u>	Pink feld br.													

## GEOLOGIC DRILL LOG DDH JMS-5

(PHASE II)

Elevation 867.1<sup>m</sup>
Total Depth 53.2<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

Composite Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia,A:Agglomerate
\$\overline{\mathbb{r}_x \overline{\mathbb{r}_x \overline{\mathbb{r}}}\$     \$\overline{\mathbb{r}_x \overline{\mathbb{r}_x \overline{\mathbb{r}}}\$     \$\overline{\mathbb{r}_x \overline{\mathbb{r}_x \overline{\mathbb{r}}}\$     \$\overline{\mathbb{r}_x \overline{\mathbb{r}_x \overline{\mathbb{r}}}\$     \$\overline{\mathbb{r}_x \overline{\mathbb{r}_x \mathbb{
x <sub>x</sub> x <sub>x</sub> x Nepheline syenite

Dykes

T — Trachyte
P — Phonotite
S — Sölvsbergite
D — Dolerite
A — Aplite

Joint, Fissure

60 % of carbonatite content

Mn Manganese oxide

HM Hematite

cal Calcite

			general de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la company			Assay (ppm)									
Depth (m)	Geology	Description	Sample No.	Depth	Thick- ness (m)	La	Се	Nd	Sm	Eu	Тb	Nb	Sr	Υ	Р
	3 3 3	Drift													
5.60 6.20 6.30	AFA	75 Yellowish brown weathered feldspathic breccia Mn oxide vein (IOcm) Manganiferous feld br. with 20% cb	\$0601	6.30	$\mathbf{I}$	2081	4416	2083	3167	90.7	55.8	33 69	2178	317	374
		Feld, br. bearing carbonatite (ankeritic) with fluorite	50602	9.30	£ .	l	l.:	1426	l	L	50.6	İ	3849	330	3539
9.30 10.20	▲ ØF ▲	Cb bearing manganiferous feld br	\$0603	10.20	0.90	864	1674	750	1415	42.4	31,9	473	1840	262	6901
	89	Feld br. bearing ankeritic cb	\$0604	17.50		1402		1184		73.4		465	2670	631	9631
13.50	Mn	70° Black Mn oxide dyke calcite vein	s0605	- 13.50 - 14.60	11.10	1305	3670	2146	4778	106.3	111.4	. (1	1320	121	86
14.60	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Pink feld. br. bearing cb	S0606	16.60	2.00	973	2243	1248	298.3	87.4	54.4	684	2595	517	6999
16.60 17.50	AFA	Cb. Mn oxide bearing feld br.  Carbonatized feld br.		10.00	<b>,</b>										
19.20 19.90	F	Feld. br. bearing cb	S0607	19. 20 19.90	0.70	771	1700	865	205.6	74.3	71.2	882	2350	55 <u>5</u>	11534
20	A F A	Carbonafized feld br			.									i	
23.30 23.90 24.20	▲ F	Manganiferous feld br. Mn, feld br. bearing cb.	00000	23.90	1.70	1432	3121	1470	324.1	93.9	35.7	426	1711	291	1112
24.60 25.20 25.80	////95///// F ▲ F	Limonitized ankeritic cb. Crushed feld, br. with cal. vein	50608	25.20	1.50	1432	3121	1470	02 1.1			-741			
	F A	Crushed. feld br. (light pink)													
30 30.60	AF A	Feld br cal fissure													
31.90 32.50	F 7///60}////	(cavity ) Carbonatized feld br.	S0609	32.50 33.00	0.50	10.3.1	2343	1300	309.1	92.4	284	597	1331	312 -	710
33.00 34.00	A F A	Cal vein 2 cm.										,			
	_ F _ ▲ ▲	Dark brown manganiferous feld br. with cal. v.													
38.10	F <b>A</b>	50° Feld.br.bearing cb	\$ 0610	38.10	Ł	1798	3897	1853	432.4	118.8	61.6	520	2107	468	3881
40 39.90 40.70 40.70 41.40	<del>- 132</del> -	Mn oxide bearing carbonatized feld b Manganiferous feld br	<u> </u>	39.90											
41.80	A F	Feld. br. bearing Mn  Manganiferous feld br.													
4420 44.30 44.40		50° Mn vein (2cm) Cb IOcm 40° Pinkish micro nepheline syenite dyk	e												
4680	x x	with calcite vein (2cm) Carbonatized manganiferous feld br with cb patch									;		·		
50 <sub>50.10</sub>	* F						<u> </u>							-	

## GEOLOGIC DRILL LOG DDH JMS-6

Elevation 908.3 m

Total Depth 50.1 m

Inclination -90°

1:200

#### LEGEND

LEGEND
<u>~~</u> Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F. Feldspathic breccia, A: Agglomerate
∇ <sub>x</sub> ∇ <sub>x</sub> X Syenite
[X x X x X] Nepheline syenite
Dykes  T — Trachyte P — Phonolite S — Sölvsbergite D — Dolerite A — Aplite
Joint, Fissure
60 % of carbonatite content
Mn Manganese oxide
HM Hematite

cal Calcite

			A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A CARREST AND A	Marie de La Companya de La Companya de La Companya de La Companya de La Companya de La Companya de La Companya	er a merce Company has the same	MINISTER PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND THE PROPERTY AND T	rica anni an <del>d mayorri a</del> riran i	Asso	ay T	(	ppm	1)	добродици <u>водини до села на 1864.</u>	The second second second second second second second second second second second second second second second se	en i kalanci kulpak (diri kiri kiri
Depth (m)	Geology	Description	Sample No.	Depth (m)	Thick- ness (m)	La	Се	Nd	Sm	Eu	Тb	Nb	Sr	Υ	Р
1 60 3 90 4 23	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	Pinkish feldspathic breccia	_\$-0701	3.90 4.20		1763	3551	_1361	2526	64.7	23.2	3270	2303	285	1389
600	· · · · · ·	Grey to brown with ankeritic cb	\$ 0702	6.00 8.00	2.00	2265	4776	2045	319.2	88.2	41.9	800	12637	476	6120
8.60 8.80 IO 9.80 II.35	F A F	Manganiferous cb Drusy	\$ 0703	9.80	1.80	1570	3376	1436	236.0	65.2	53.6	8058	6814	468	19790
14.80 15.40		Drusy  None core  Drusy (small fragment of feld br)													3
20	F A F F F	Pinkish feld. br. (crushed)				-									
25.10 26.60	F A F	Limonitized feld.br. (crushed) Pinkish	·												
30 <u>30.00</u> 31.70		Limonitized		31.70											
33.80	P	Phonolitic dyke (weathered)	\$ 0704	33.80	2.10	455	775	237	64.1	20.2	11. 6	725	737	161	7578
	Т	Pinkish trachyte with syenite xenolith	\$0705	3580	2.00	285	701	335	960	27.8	9.4	596	674	221	5349
37.0		I Limonite vein													
40	T T	Pinkish trachyte with syenite xenolith													
43.70	F	Weathered plinkish feld br.													
E.O.	F A				·				ļ						
50 <sub>50.10</sub>															

## GEOLOGIC DRILL LOG DDH JMS-7

Elevation 888.0<sup>m</sup>
Total Depth 50.1<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

ELOLIND
~~ Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia, A: Agglomerate
x x x x     Syenite
$(x_x, x_x, x_y)$ Nepheline syenite
Dykes  T — Trachyte P — Phonolite S — Sölvsbergite D — Dolerite A — Aplite
Joint, Fissure
60 % of carbonatite content
Mn Manganese oxide
HM Hematite

cal Calcite

	3			mi, designification of pro-			,	Asso	ју	(	ppm	1)			
Depth (m)	Geology	Description	Sample No.	Dep!h	Thick- ness (m)	La	Се	Nd	Sm	Eu	Tb	Nb	Sr	Υ	Р
1.70 2.00 2.60	~ ~	White sövite White grey carbonate silicate rock Sövite with pyrite	S 0801 S 0802	1.70 2.60		1783 1679				58.5 60.1	36.9 46.2		10947 9918	566 670	
430 435	60	Manganiferous cb Drusy	3 0802	4 30		1019	3360	1436	206.5		40.2	690	9916		
6.00 8.20	ec	Manganiferous cb Fissure	S 0803	6.00 8.20		1625	3297	1550	289.9	85.9	42.1	1562	2675	765	5365
10	A A A A 4.	20% cb bearing agglamerate	S 0804	10.80	2.60	820	1675	630	156.4	47.0	6.2	733	1468	301	1901
12.70 13.10		Agg I bearing ankeritic cb Feldspathic br.	\$ 0805	12 70	1.90		1864	662	130.7 98.1	37.6 32.4	14.9 12.5	1225 1504	1951 1663		2619 6119
14 30	<i>(11)</i> \$9///2	Feld. br. bearing ankeritic cb Cal v. 0.5 c Limonitized ,feldspathised syenite	S 0806 S 0807	14 30	2.00	1263	1507 1748	538 366		29.8		295	786		2329
	x x	(Crushed)		16 30											
20 <del>19 70</del>	<u>x</u> <u>x</u> ν	Pyroxene hybrid rock Darls green to brown	S 0808	19.70	2.00	574	775	150	508	17.0	39.5	445	608	73	1081
	v			21.10											
26.70											!				
30	x	Brecciated feldspathised mdg syenite (crushed)													
	X														
	X X														
40	X X													·	
42 20 -															
50							•								

## GEOLOGIC DRILL LOG DDH JMS-8

Elevation 941.0<sup>m</sup>
Total Depth 42.2<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

<u>~</u> ∼ Drift	
Sideri	tic carbonatite
Ankeri	itic Sövite
Sövite	
Carbo	nate – Silicate rock
FFAAA F:Feld	Ispathic breccia, A: Agglomerat
Σ <sub>χ</sub> λ χ X Syenit	
xxxx Nephe	line syenite
Dykes	T — Trachyte P — Phonolite S — Sölvsbergite D — Dolerite A — Aplite
Joint, F	Fissure
60 % of	carbonatite content
Mn Man	ganese oxide
HM Hem	natite
cal Calc	cite
[Др] Ара	tite

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Depth (m)	Geology	Linea	Description	Sample No.	Depth	Thick- ness (m)	La	Се	Nd	Sm	Eu	Тb	Nb	Sr	Υ	Р
1.00 2.20 2.60	~ ~ ~		Carbonatized manganiferous feld.br. black manganiferous cb	and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s												·
4.00 4.50	11/17/5/1/1	50°	Reddish brown carbonatized br. ankeritic cb	S0901	4.00 5.30	1.30	1662	3699	1725	335.7	91.6	35.2	793	1756	347	1156
5.30	A _	50°	Cal.v.lcm drusy													
	A F A		Reddish brown canbonatized feld.br.													
10 -900 1010 1060 1100	7/17/2 <mark>9</mark> /1/1/2	70° 70°	Cb	S0902	9.80	1.20	2197	4012	1595	2801	79.6	51.7	426	1937	453	3391
12.80 13.50 14.00		/ 55°	Trachitic dyke pink													
16.40	▲	/ 80°	Contact cal.v. (crushed) Reddish brown					;			4.				:	
19.30	F A		carbon atized. Mn feld.br.												;·	
20 20.60	l Mn	8ď	Mn with cal.v. (black) Carbonatized Mn feld.br.												·	
2230 2260	F &		Crushed													
25.00	·		Drusy													
2500	▲ F															
2070	♣ F		Crushed weathered carbonatized Mn feld, br.													
30 <sup>29.70</sup>	A A		Carbonatized agglomerate(pink to grey) syenitic fragment Ø1-3cm													
33.01 34.60	FA A		Carbonatized (slightly ankeritic) Mn feld br.		- 34.60								1000	1784	434	5866
37.10	F ▲ (©) ▲ F		IO% carbonatite bearing carbonatized feld.br.	S0903	37.10	2.50	2087	4148	1686	3034	76.0	32.7	1296	1704	434	3000
38.90	F A A F	-							;							
40	A F F:A		Caronatized manganiferous feld.br.		4110			A 7/4 C	1075	2470	873	62.8	119	2858	689	7609
41.0 4160 4190 4240 43.40	////80//// Mn APA		Ankeritic cb cal.v. crushed Mn feld.br. bleck massive Mn	S0904	41.10 41.60	0.50	1_2 <u>3</u> 87.	4/46	1955_	34.60	_ 0.1					
4380 4480	Mn ///89///	45°	Black massive Mn Mn bearing ankeritic cb.	S0905	44.80	1.00	2148	4204	1946	396.0	126.1	145.9	514	3827	1867	28993
4580 4720	A F A	1	min boating cincernic out		4580	1.40										
4910			Mn.feld.br.bering ankeritic cb	S0906	49.60	2.40	2564	5207	2123	332.1	81.3	26 6	683	2105	352	1033
50 <del>-5020</del>	AFA					ļ	<del>-</del>									
		1		)	I		<del>,</del>	A	Total Control			and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t				

## GEOLOGIC DRILL LOG DDH JMS-9

Elevation 913.0 m

Total Depth 50.2 m

Inclination -90°

1:200

#### LEGEND

Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia, A:Agglomerate
x x x x Syenite
x x x x Nepheline syenite
Dykes  T — Trachyte P — Phonolite S — Sölvsbergite D — Dolerite A — Aplite
Joint, Fissure  % of carbonatite content
Mn Manganese oxide
HM Hematite

cal Calcite

	CO							Asso	ау	(	ppn	٦)		And construction to const	and the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of th
Depth (m)	Geology 5	Description	Sample No.	Depth	Thick- riess (m)	La	Се	Nd	Sm	Eu	Тb	Nb	Sr	Υ	Р
2.20 2.80 3.40	1/160//1	Weathered brown porous cb  Weathered brown porous manganiferous													
6.70 8.90	F A	carbonatized feld.br.  Mn ankeritic cb. (brown~dark brown) pyrite bearing	\$1001	6.70 8.90	1	2776	5313	2354	298.9	84.4	63.1	2838	2482	510	1094
10	A F	Carbonatized mangani ferous feld. br. pink.							:						
11.80 13.00 14.30		Ankeritic cb (manganiferous) Silicified rock (grey to pink) pyrte	\$1002 \$1003	11.80 13.00 14.30	1.20		·		327.4 390.3	81.7 97.3	671 523	66I 235	33711 18024		15539 18599
16.90 17.10	50	foliation Feld.br., Mn bearing ankeritic cb Feld.br.	\$1004		3.60	2704	5709	2298	403.8	105.2	192.0	966	15019	1082	33256
17.90 18.90	///39//// <sub>50°</sub>	Feld.br. Mn bearing ankeritic cb reddish brown phonolite dyke		17.90 18.90		:									
20.80 21.10 21.40 22.20 22.60	######################################	Silicified ob Trachyte feld ØO.3 cm Mn ankeritic ob Mn carbonatite (dark brown)	\$1005			2773	5977	2370	345.0	89.3	145.9	2328	11252	674	11558
23.50 25.40 25.70	99 Turtun	White silicate rock bearing sövite pyrite bearing	\$ 100 6	23.50 25.40 25.70	1.90	1816	3556	1584	232.1	66.7	81.8	544	12903	580	7693
26.70		Mn silicate bearing white sövite  Pyroxene sövite (white csg) foliation	S 1007		3.70	1759	3630	1440	2057	59.3	66.9	963	13864	522	7988
29.40 30 29.90 30.60 31.00 31.50 32.20	7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.	Dark brown Mn ankerite IOcm ankeritic cb ankeritic cb Sovite	\$1008	29:40	3.40	2954	4710	1490	229.6	60.8	66.5	1854	8376	559	9532
32.80	7776 <b>3</b> 7777 50°	Foliation White grey sovite	\$1009	32.80	3.00	3175	4424	1217	171.4	467	39.4	603	14527	464	7255
35.80 36.50 37.00		Manganiferous ankeritic cb	\$1010		3.00	2883	3704	1539	224.5	672	93.9	1573	7796	535	10425
38.60 38.80 40 40.90 41.90	89 50 450	Aankeritic sövite Manganiferous ob	SIOII	38.80		77 12	9 4 5 4	2266	305.7	71.1	110.8	1032	4513	583	122 15
42.40 42.90	45°	Manganiferous cb  White sovite	51012	42.90		1629	2777	906	142.6	43.7	72.5	256	9460	495	12678
45.30 45.50 45.90 46.60	11/50/1/// • (10)F* 60°	Feld br. bearing ankeritic cb Cb bearing feld br.	\$1013	45.30 46.60	1.30	1725			182.1	497	35.8	795 1239	10527		7358 8143
	(S)	Pyroxene sövite	\$1014	48. 50		1523			175.5	36.8 52.8			12917		10915
51.00		Feld.br. bearing sövite		51.00								atom, provident			

### GEOLOGIC DRILL LOG DDH JMS-IO

Elevation 873.4<sup>m</sup>
Total Depth 51.0<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

Drift

Sideritic carbonatite

Ankeritic Sövite

Sövite

Carbonate – Silicate rock

F:Feldspathic breccia, A: Agglomerate

\[ \frac{x}{x} \frac{x}{x} \frac{x}{x} \]

Syenite

\[ \frac{x}{x} \frac{x}{x} \frac{x}{x} \]

Nepheline syenite

Dykes

T — Trachyte
P — Phonolite
S — Sölvsbergite
D — Dolerite

A—Aplite

Joint, Fissure

60 % of carbonatite content

Manganese oxide

HM Hematite

cal Calcite

			taan tarahada saasaan kalaba dark adalah da saka da saka da saka da saka da saka da saka da saka da saka da sa	en no encolored	(gogy) roky z odkytlete (ECC)	ennemental ancida established (A) (A)	CONTROL OF STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STR	Ass	ау	(	ppn	٦)			
Depth (m)	Geology	Description	Sample No.	Depth (m)	Thick- ness (m)	La	Се	Nd	Sm	Eu	Tb	Nb	Sr	Υ	Р
0.70		Manganiferous		0.70								ļ <u>.</u>		<u> </u>	
0.30		Buff colored fng ankeritic cb with hematite of Flowstracture	SHOL			1398	2848	1134	139.8	32.5	23.2	2789	1509	139	7638
4.30 4.50 4.80	1//60////	g White csg calcite with cb breccia	2 m	4 30											
5.40 6.30 7.00		Mn oxide bearing ankeritic cb Syenite breccia bearing aggl.	S 1102	700		2506	5888	2371	221.0	73.8	32.3	455	2698	451	3254
9.00 9.20 10 1040	777277714	Mn oxide bearing ankeritic cb Black Mn oxide	S 1103		4.00	1793	4579	2041	300.5	67.3	16.7	295	1212	209	1413
IO 10.40 +1.00	// <u>1</u> 9///4	Car vein bearing with oxide		11.00			<u> </u>								
12.50 13.10 13.50 14.00	1///50////	Buff colored fng ankeritic cb Cal veinlet bearing cb Mn oxide bearing	\$ 1104	14.00		2224	4662	1894	244.1	56.8	32.2	2503	1401	373	10356
14.00		purplish brown to buff ankeritic cb with hematite	S 1105	14 00	3.00	665	1465	558	84.1	23.7	25.3	4422	1309	220	15188
	//////////////////////////////////////	Mn oxide vein 5cm		17.00	·						****	:.			
20 20.00		Cal veinlet bearing ankeritic cb	\$ 1106	20.00		2289	5162	2248	292.6	712	22.7	558	1036	325	3246
22.70		Hematite, Mn oxide bearing ankeritic cb concentrict texture	S 11 0 7			2205	4504	1782	235.3	56.9	24.0	2400	1365	306	6860
23.80		Feldspar patch bearing cb  Purplish brown to buff colored	S 1108	23 00		2552	5104	1964	236.0	55.9	22.1	793	22 12	254	6310
		Hematite, pyrite, Mn oxide bearing cb		2600											
		(feldspar patch Ø 0.1 — 0.3 cm)	\$1109	20.00	3.00	2344	5205	2069	281.1	75.2	33.1	660	3827	425	5018
30				2900											
31.30 31.80		Drusy Feld br. bearing cb	S 1110		4.40	2351	5156	2118	276.2	71.6	37.9	2677	2346	348	6310
33.40	× ×	Pinkish brown weathered (crushed) nepheline syenite		33.40											
	×	(core rec. 34.4m — 39.4m , 25%)													
	× ×													į	
40	×			·										;	
41.50	× ×	Light brown nepheline syenite Limonitized (crushed)						:							
44.30		Pink feld.br. bearing cb	SIIII	44 30	3.00	1247	2829	1193	183.0	48.3	28.4	1711	1724	296	13211
47.30	////// * *	Brown nepheline syenite		47.30					:						
50 <sub>5020</sub>	×	Camonifized Columns /													
5020															
			COLUMN TO THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PART												

## GEOLOGIC DRILL LOG DDH JMS-II

Elevation 734.0<sup>m</sup>
Total Depth 50.2<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Composite Compos
Sideritic carbonatite
Ankeritic Sövite
Sövițe
Carbonate – Silicate rock
F.Feldspathic breccia, A:Agglomerate
Xx X x X Syenite
$\begin{bmatrix} x & x & x \end{bmatrix}$ Nepheline syenite
Dykes

Dykes

T — Trachyte P — Phonolite

S—Sölvsbergite

D — Dolerite A — Aplite

Joint, Fissure

% of carbonatite content

Mn Manganese oxide

HM Hematite

cal Calcite

Ap Apotite

nice (more example and		tion	оверя в местося и можем в мостеровет поточно общения в точе сонистементам било и неуго учений и место по место	A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANTON CONTRACTOR AND A SANT		and decoloring and their		CONTRACTOR OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF	Ass	ау	(	ppn	٦)			
Depth (m)	Geology )	Lineati	Description	Sample No.	Depth	Thick- ness (m)	La	Се	Nd	Sm	Eu	Тb	Nb	Sr	Υ	Р
	<b>&gt;</b>		Sludge													
3.90	()		Pink feldspathic breccia (\$2-4cm), biotite pyroxine and magnetite bearing sövite	TOIOI	3.90	3.00	427	770	202	32.5	5.0	(0.1	353	12229	55	5779
6.90 8.00 8.70 9.00	^ 500^ ^ 500^		Feld.br., biotite. bearing sövite Feld. breccia.biotite. pyroxene	T0102	6.90	3.00	519	1043	336	12.7	9.2	12.2	1037	13717	70	7295
IO	4 40 F		(cementing material carbonatite)	T0103	9.90	3.00	472	873	254	32.1	6.6	- 17.1	342	7351	53	4656
	. A A F	50°	lOcmmanganiferous cb Magnetite, pyrite bearing feld. br matrix carbonatite	T 0104		5.00	408	736	188	29.7	6.1	66	449	2 968	55	5233
20-	100		Pink feld breccia(Ø 2-5cm) biotite, pyroxene, magnetite bearing sövite	Т0105	17.90	3.20	470	877	252	36.9	6.9	8.7	762	9966	61	6224
21.10 2260	~ ~ ~ 60		White to grey biotite, magnetite carbonate silicate rock with feldspar Patch	T0106	21.10	1.50	577	1137	335	45.3	10.4	(0.1	304	10907	. 71	7383
2360 2430	F <u>^</u> 39 <u>^</u> F		Altered syenite, biotite, pyroxene, magnetite bearing white sövite	T0107	2560	3.00	547	1012	290	39.2	7. 8	1.4	250	7810	60	8332
1 20.401	▲ 30 <b>▲</b> F	·°	syenite breccia (Ø 10cm) Sõvite	T 0108	28.60	3.00	465	880	238	34.1	7.4	4.1	240	6550	52	5370
30 <sup>29,50</sup>	69		Limmitized feld. br.  Pink feld br., pyroxene, biotite and	T0109	31.60	i	1305	2450	756	104.1	22.8	(0.1	166	4342	77	2514
34.60	\$ 		pyrite bearing white sövite	T 0110	3460	3.00	477	860	221	35.1	6.6	(0.1	186	7348	57	6090
3520	▲ F(30)* 50		Feldspathic breccia (\$2-5cm), pyrite, pyroxere, magretite, chlorite, hematite bearing sovite	TOILI	37.60	3.00	594	1134	311	40.4	8.4	(0.1	208	6839	62	7423
40				T0112	40.60	3.00	444	868	264	36.2	7.3	(0.1	176	11961	63	5651
	60			T0113		3.70	547	986	304	35.1	8.4	33.1	101	12382	67	7683
44.30	<b>⊚</b>			TO 114	44 30	4.30	478	859	228	34.7	7.1	25.9	304	9913	55	4926
48.60 50 5030	60			TOII5	48.60 50.30	1.70	425	795	240	33.4	7.5	280	414	11315	59	5748

## GEOLOGIC DRILL LOG DDH JMT-I

(PHASE II)

Elevation 690.0<sup>m</sup> 50.3<sup>m</sup> Total Depth Inclination -90°

1:200

#### LEGEND

mm Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia, A: Agglomerate
x   x   x     X   X   X     Syenite
x x x x Nepheline syenite

Dykes

T — Trachyte P — Phonotite

S—Sölvsbergite

D — Dolerite A — Aplite

Joint, Fissure

% of carbonatite content

Mn Manganese oxide

HM Hematite

cal Calcite

David		noite							Ass	ау	ortonnes mesaret	ppn	ገ)			
Depth (m	Geolog )	ڌ	Description	Sample No.	Depth (m)	Thick- ness (m)	La	Се	Nd	Sm	Eu	Тb	Nb	Sr	Υ	Р
0.20 1 10	1		Drusy Hematite , limonite patch bearing grey		1.10			ļ								
			mdg sövite with feldspar (Ø O.1cm)	T 0201		3,00	4 14	720	249	19.5	4.4	7.9	374	3459	24	15265
	( <b>®</b>				4.10											
		45°	Foliation of pyroxene	T 0202	7.10	3.00	698	1444	493	60.6	15.4	3.4	722	4550	86	16361
			Pyrite, hematite bearing grey sövite	T 0203		3.00	762	1590	537	68.7	17.1	5.4	217	7193	97	19925
10	<b>⊗</b>	90°	(partly magnetite)		10.10											
		60°	Foliation Foliation	T 0204	13.10	3,00	710	1538	532	65.4	16 4	22.8	245	4412	99	16203
13.90 15.00 15.50	1 (QA1) 1 (QA1)	တ <sub>ိ</sub>	Pinkish brown agglomerate Foliation pyrite magnetite Purplish brown agglomerate (syenite feld.	Т 0205	16-10	3.00	994	1966	652	87.2	19.9	3.7	623	2989	90	8715
18.70	@		br.) bearing magnetite pyroxene sövite	T 0206		3.00	813	1640	566	72.9	16.7	36.4	567	4447	97	26319
18.70 20 <sup>19.50</sup>	▲ (10) A (30)		Aggl , pyrite , magnetite, pyroxene bearing mdg grey sövite	T 0207	19 10	3.00	893	1823	647	84.4	19.6	10.3	459	7451	116	31727
22.10 23.90	A @ A		Phonolite, feldspathic rock, carbonatite bearing agglomerate		22.10											
24 90			Chloritized aggl.													
27.90 28.50 28.80 29.10 29.50	(00) A 4(00)		White csg sovite Biotite rock (weathered chloritized) phonolite breccia		27 90											
30-80 31-20	^ (ii) A^ _ (iii) A^ _ (iii)		Phonolite, feld. rock, cb, aggl.	T 0208	31.20	3.30	561	1064	338	42.4	9.7	11.8	76	19205	37	2455
32.60 33.20	4-7	60°														
	A (4) A		Reddish brown to green, grey phonolitie aggl with cb													
36.80 37.30	<b>(70</b>		AggI bearing cb										·			
10	(3) A		Reddish brown to green phonotite, gneiss bearing agglomerate			j						-				
40	A 30 A				37100000		٠.	:								:
42.50	<b>8</b>		Reddish brown aggl bearing sövite with magnetite	T 0200	42.50	7.00	077	1010	650	70.0	20.2	51	420	8431	101	72007
44.30	®	-  -	Magnetite rich sövite (white)	Т 0209	45.50	3.00	973	1819	652	79.0	20.2	J.I	420	1640	101	32087
46.70	6		Magnetite hematite rich buff colored sövife	f		3.00	745	1347	464	59.9	14.6	219	261	4347	85	14542
4850 50 <sub>50,30</sub>	F (5)	70	Limonite bearing fissare Cb bearing feldspathic breccia		48.50											
50.50																

THE COOPERATIVE MINERAL EXPLORATION IN

THE CHILWA ALKALINE AREA REPUBLIC OF MALAWI (PHASE II)

## GEOLOGIC DRILL LOG DDH JMT-2

720.0<sup>m</sup> Elevation Total Depth 50.3<sup>m</sup> Inclination -90°

1:200

#### LEGEND

∼ ~ Drift Sideritic carbonatite Ankeritic Sövite Sövite Carbonate - Silicate rock F:Feldspathic breccia, A:Agglomerate

XXXX Syenite

 $[\frac{x_x x_y}{x_x}]$  Nepheline syenite

Dykes

T — Trachyte P —Phonolite S—Sölvsbergite

D — Dolerite A-Aplite

Joint, Fissure

% of carbonatite content

Manganese oxide

HM Hematite

cal Calcite

Million Int. State Cales Cales (1997) Alex			a Palaman Tayun selipa di Sayin da maka gida da ga Bakat	·		C.E. WOOT, SETERATE	ANTES A MINISTER PARTY AND A STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE ST	Asso	αу	(	ppm	٦)		·	
Depth (m)	Geology 5	Description	Sample No.	Depth	Thick- ness (m)	La	Сe	Nd	Sm	Eu	Тb	Nb	Sr	Υ	P
0.50		White sövite Feldspar patch bearing magnetite pyrite biotite, silicate carbonatite	T0301	0.00	3.00		1064	386	425	12.6	5.8	1399	15321	79	18020
		white to grey color	T0302	3.00	1.90	738	1412	501	67.8	16.8	63.4	3814	14581	74	41502
4.90 6.40 6.90	▼			4.90		-									
	'(5 <sup>'</sup>	Fissure with clay 0.5cm									į.				
10	V	Melanocratic carbonate silicate rock					, ,	1							
12.80 13.30 14.70	`v&v	Feldspathic breccia Melanocratic carbonate silicate rock	*	14.70				:							
15.40	∨ ⊗ <sub>∨</sub>	Feld.br. bearing sövite Melanocratic corb. silicate rock	T0303	1	2.00	592	1080	387	53.1	12.4	55.7	1280	12010	86	19794
1670		Feld.br., magnetite, biotite bearing cb		16.70		: -		<u> </u>						. :	
18.80 19.10 20 20.80	70	Trachytic breccia (reddish brown) Feld br. mgt. biotite bearing cb	T0304	20:80	4.10	541	1060	255	42.1	10.0	(0.1	889	8828	78	13563
22.30 22.70	F ( ) A	Magnetite hematite bearing feld br Pyrite, biotite, carbonate silicate rock													
25.00	F	Carbonatized magnetite, hematite bearing feld. br.													
25.00 27.00	T T 80°	Reddish brown trachyte dyke													
30 29.60	<b>A A</b>			29.60			<u> </u>								
	60 40°	Feld br , pyrite , magnatite , biotite bearing silicate carbonatite (flow stracture)	T0305	32 .60	3.00	511	1007	295	47.3	10.1	39.0	998	7509	69	16802
74.70	0		T 0306	·	2.10	550	1173	382	60.5	II. 5	66.2	753	5205	64	30437
34.70 35.30	P P 45°	Weathered phonolite  Pyrite magnetite feldspar patch		34.70											
	v v	bearing carbonate silicate rock ( weathered )													
39.20 40	v v v	Gradualy greenish carbonate silieate rock	į										·		
42.10 43.20	v v	Melanocratic carbonate silicate rock		42.10											
44.60-	v v	Feld.br. bearing	ТОЗО7		4.20	400	687	198	34.9	50	2.0	553	4564	35	4390
46.30	V V	Melanocratic		46.30				:							
48.20-	<u> </u>	altered silicate rock with pyrite  Carbonatized silicate rock	, s												
50 <u>49.90</u> 50.30	V • F <b>A</b> : 4	Feld. br. bearing carbonatite (altered) with fluorite						,							

## GEOLOGIC DRILL LOG DDH JMT-3

Elevation 737.5<sup>m</sup>
Total Depth 50.3<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia, A:Agglomerate
Fx Fx X     Syenite
x x x x Nepheline syenite
Dykes
T — Trachyte P — Phonotite
S — Sölvsbergite
D — Dolerite A — Aplite
Joint, Fissure

% of carbonatite content

Mn Manganese oxide

HM Hematite

cal Calcite

The second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of th	Geology 5		en gender en ennerge volksproch stekkelt blende vid til til Stekkelt blende vid til Stekkelt blende vid til St		eraje kiljuti, kilo i kila	<del>an an</del> n deannachd de	<u> </u>	Asso	ЗУ	(	ppn	٦)			
Depth (m)	Geology 5	Description	Sample No.	Depth	Thick- ness (m)	L.a	Се	Nd	Sm	Eu	Tb	Nb	Sr	Υ	Р
I.50 2.00	% % 	Feldspathic breccia bearing sövite	T 040I	1.50	3.50	459	814	282	34.1	6.9	(0.1	190	2170	42	4604
5.00 5.20 5.70	P P	Feld. br.		5.00 5.70	]										11.
7.80	©		T 04 02	7.80	2.10	179	379	104	21.7	2.8	<b>(0.1</b>	505	937	18	3086
10 -1050	.T. 60	Cal druse (fissure) feld,breccia bearing	T 0403	9,50 H.70	2.20	509	923	351	52.6	9.4	18.9	256	3403	64	8328
13.00 14.00	© F co1	Cal druse (fissure) limonitized feld br bear Pinkish brown hematite bearing feldspathic breccia with cb	ing												
18.00 19.00 19.80 20.00	80 1 30 1 F 1 60 F	Feld. br. bearing white csg sövite	T 0404	20.00	2.00	511	864	312	42.5	7.8	3.9	89	9785	42	4317
22.60 23.60	F A F A A A A A A A A A A A A A A A A A			23.60							·	:		· ·	
	79		T 0405		3.80	443	982	373	550	9.5	19.0	459	3225	64	7371
30 <del>3040</del>	<u>^ 80 </u> ₄ o •	Dark brown altered phonolite Feld breccia bearing white sovite Ankeritic cb	T 0406	27.40	2.70	627	1244	414	56.2	10.9	37.1	489	5392	71	8123
33.10 33.20 35.00 35.50	\$\frac{1}{20} \cdot \frac{1}{20} \cdot \frac{1}{70} \cdot \frac{1}{69} \tag{70}	Feld breccia and partly magnetite bearing white sövite	Т 0407	31.70 33.20		867	1614	603	826	17.0	10.2	263	7750	92	9942
38.30 38.80	F 20 F 30°	5cm phonolite Foliation		3 6.40 38.30											
4041.30	F OF		T0408	41.30	3.00	636	1294	422	54.8	11.6	6.8	122	5955	66	7068
	F (5) A A > F (0) A		T 0409	45.00	1. 70	598	12 77	423	55.3	11. 9	8.4	333	4440	77	8892
46.70 47.10 47.40		Drusy Magnetite, carbonatite		46.70								-			: .
49.90	<b>A A</b> × × ×	Altered nepheline syenite			:										
							·								/'

# GEOLOGIC DRILL LOG DDH JMT-4

Elevation 7840<sup>m</sup>
Total Depth 50.3 m
Inclination -90°

1:200

#### LEGEND

<u>~~</u> Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia, A:Agglomera
<sup>⟨x x x x  </sup> Syenite
$[\frac{X_{X}X_{X}}{X}]$ Nepheline syenite
Dykes  T — Trachyte P — Phonolite S — Sölvsbergite D — Dolerite A — Aplite
Joint, Fissure
% of carbonatite content
Mn Manganese oxide
HM Hematite
cal Calcite
Ap Apatite

Depth		Hion							Ass	ay		(ppn	ገ)			
Depth (m)	Geology	Line	Description	Sample No.	Depth (m)	Thick ness (m)	La	Се	Nd	Sm	Eu	ТЬ	Nb	Sr	Υ	P
1.30 2.90	A (0) A A A A A A		IO% black manganiferous cb bearing aggl. brownish yellow weathered aggl.													
4.80	5 A A	45°	manganiferous cb bearing aggl. Foliation													
11.30	A (5)		Limonite bearing cb	T 0501	11.30	0.80	1207	2595	892	143.9	21.8	48.9	351	1682	189	16872
13.60	A (0) A	45°	Black manganiferous cb bearing	T 0502		3.30	1752	3198	933	121.5	17.5	⟨0.1	160	1159	128	9641
1540 16.00	<b>A</b> A		Aggl. (syenite) bearing greenish grey		15.40											
20	A A		Buff colored weathered aggl				·				·			;		
22.60 23.60	///8///	400	Sövite bearing ankeritic cb Pinkish dolomitic csg sövite	T 0503	22.60 23.60	1.00	1326	2524	663	93.9	12.4	0.3	143	1742	44	3057
	⊗		in the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of th	T 0504 T 0505	26.00	2.40 2.40	295 56	499 57	97 8	5.2 (0.1	8.0	(0.1	20	1177	(10	756 119
28.40 30 30.40	<b>6</b> 0	60°	Syenite breccia bearing  10cm calcite bearing fissure  Ankeritic cb vein (1cm) bearing	. 0000	28.40					10-1						
31.30	<b>.</b>	15°	Limonifized manganiferous	T 0506	30.40 31.30	0.90	2406	4508	1436	208.5	35.3	103.3	459	735	99	5285
40	A A A A A A A A A A A A A A A A A A A		Manganese and diopside (manganese vein) bearing aggl.													
	A .								. :							
46.00 47.70	€0 ▲ A ▲	50°	Agglomerate bearing manganiferous cb  Manganese bearing agglomerate	T 0507	46.00 47.70	1.70	4485	7988	2260	334.9	57.4	9.2	470	912	251	9744
50 <sub>5030</sub>	<b>A A</b>															

## GEOLOGIC DRILL LOG DDH JMT-5

Elevation 813.0<sup>m</sup>
Total Depth 50.3<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

Drift

Sideritic carbonatite

Ankeritic Sövite

Sövite

Carbonate – Silicate rock

F:Feldspathic breccia, A: Agglomerate

X X X X

Nepheline syenite

Dykes

T — Trachyte
P — Phonotite
S — Sölvsbergite
D — Dolerite
A — Aplite

Joint, Fissure

% of carbonatite content

Manganese oxide

HM Hematite

cal Calcite

Donth		50		***************************************		annia (organizationomica	erretaria de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de l	Ass	ay	OME STATE	(ppn	n)		***************************************	
(m)		Description	Sample No	Dept	Thick ness (m)	La	Се	Nd	Sm	Eu	Ть	Nb	Sr	Υ	Р
1.20 2.40	(00)	Partly limonitized sövite with pyrite and magne Melanocratic biotite, pyroxene, magnetite and pyrite bearing sövite with feldspathic rock		1.20	300	596	1245	450	60.3	13.1	(O.1	515	11252	69	14122
7.20 7.40		Foliation  Carbonatized feld br	T 0602	420	3.00	742	1563	582	76.5	17.2	0.8	1155	19003	87	17355
7.40 8.20 8.80 10 10.40	* 60 60	Intermediate biotite, pyroxene, magnetite and pyrite bearing sövite  Melanocratic	T 0603	7.20	3.20	620	1286	432	61.6	12.4	(0.1	739	14721	66	12016
	F A	Reddish brown carbonatized feld br. with limonite		10.40											
13.60 15.60 16.30	(0) A F A	Melanocratic sövite with feld br. Carbonatized.	T0604	13.60	3.90	489	974	333	47.1	9.6	.10.4	591	7757	57	8818
1750 - 1940 -	P P	Light grey altered phonolite dyke with pyrite		17.50											
20 <del>2040</del> 2110 2160	P P P P P P P P P P P P P P P P P P P	Carbonatite bearing altered feld. br.													
25.90 -	F (0) A (10) A	Weathered carbonatized agglomerate												٠	
30	A														
3370 3490	F A F	Melonocratic . Carbonatized													
	<b>@</b>	Melanocratic biotite mgt and pyrite bearing carbon atite with feld br.	T0605	36.40 39.40	3.00	432	831	266	48.1	7.1	(0.1	609	7820	46	7642
4160 4200 4250	60 7777777	Ankeritic cb Sövite	Т 0 6 0 6		3.10	445	842	269	48.4	7.4	63	422	8355	40	5264
44.80	60	Carbonatized melanocratic rock Siliceous carbonatite with pyrrhotite	T 0607	44.80	2.30	397	715	227	493	6.9	11.8		4554		6140
<b>A</b>	60 A A SA	Carbonatized agglomerate (phonolite, feld rock)	T 0 6 0 9	46.80	3.60	441	782 818	236	39.1	7.9	(0.1	582 486	6289		6330 5939
5040 -	A 🚳 A			50.40											

## GEOLOGIC DRILL LOG DDH JMT-6

Elevation 675.5<sup>m</sup> 50.4 <sup>m</sup> Total Depth Inclination -90°

1:200

#### LEGEND

[∼~ ← Drift Sideritic carbonatite Ankeritic Sövite Sövite Carbonate – Silicate rock F:Feldspathic breccia, A:Agglomerate 🗓 x x x X Syenite X X X X Nepheline syenite

Dykes

T — Trachyte P — Phonotite S — Sölvsbergite

D — Dolerite A — Aplite

Joint, Fissure

% of carbonatite content

Mn Manganese oxide

HM Hematite

cal Calcite

THE RESIDENCE AND ADDRESS OF TAXABLE PARTY.		tion			<u> </u>	en Burker and an open			Asso	αу	(	ppm	))			<u>ECCEPCAL PORTÓ (PRINCIPINA)</u>
Depth (m)	Geology	Lineat	Description	Sample No.	Depth	Thick- ness (m)	La	Се	Nd	Sm	Eu	Тb	Nb	Sr	Υ	Р
20.00	~ ~ .				2.00											
3.00 3.40	Ap S S		Pinish white apatite rock wit Mn oxide Pinkish brown fng	T 0701	2.00 3.00 3.40	1.00	2663	5802	1307	346.2	111.1	60.4	2048	4541	1478	131976
	Ар		Pinkish white apatite rock with guartz and Limonite	Т 0 7 0 2		3.80	2837	6232	1300	327.7	100.0	55.3	2659	8482	1304	140952
7.20	Ар		Strongly limonitized brown apatite rock	T 0703	7.20	1.80	3131	6648	1368	348.0	102.8	63.6	3257	4630	1349	110890
9.00	Ар	/ 45°	Siderite bearing apatite rock Foliation	т 0704	9.00	2.60	1794	3220	690	123.3	35.0	(0.1	546	9675	726	66347
II.60 I4 20	× × × .		Weathered altered brown to green Nepheline syenite, partly biotite rich	т 0705	11.60	2.60	212	397	123	22.1	2.9	⟨0.1	267	3129	48	7281
H 20	Ар		Apatite bearing sideritic carbonatite	T 0706	14.20	3.60	5109	7303	922	214.8	55.6	28.6	746	23229	495	34290
			Black sideritic carbonatite with bastnaesite and apatite		1780											
20,60 20,60 20,90 22,40		50°	Limonitized calc. silicate rock Apatite, bastnaesite bearing sideritic cb	T 0707		4.60	7471	10122	1079	189.3	24.2	(0.1	390	38635	104	5157
23.20 23.50 24.50	P P 	45°	Reddish browntopale green carbonatized altered phonolite dyke Weathered altered phonolite		22.40					-		: .				
26.20 27.20	Y Y	45°	Hematite biotite bearing browntodark green altered carbonatized rock	T0708	26.20	1.70	125	237	66	15.5	1.8	(0.1	251	2411	28	4999
27.40 27.40	РР		Limonitized porphyritic phonolite Party apatite bearing cb													
30 <sup>30.00</sup>	Р		Greyish green biotite pyroxene bearing													
	Р		calc. silicate rock with pyrite carbonatized, we at hered (original phonolite)			·	=					:				
	Ρ							:								
	P			·											:	
40.00	~		Feldspathized , apatite bearing		40.00	<u>-</u>										
43.00	~		pinkish brown calc. silicote rock with pyroxene	Т 0709	43.20	300	409	658	225	52.1	11.0	8.01	266	2325	135	12144
43.20 - 44.90	P P		Dark green phonolite Feldspathic altered phonolite (white)		43.20											
45.30	Р		Pyrite bearing dark green porphyritic					.								
	P		phonolite													
50 <sub>50 20</sub>	-	-		·			•									
L																

## GEOLOGIC DRILL LOG DDH JMT-7

Elevation 758.7<sup>m</sup>
Total Depth 50.2<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

_ = =
Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia,A:Agglomerate
x x x X Syenite
X X X X Nepheline syenite
Dykes
T — Trachyte
P-Phonotite
S —Sölvsbergite
D — Dolerite
A—Aplite
Joint, Fissure
60 % of carbonatite content

Mn Manganese oxide

Calcite

HM Hematite

Ap Apatite

cal

<u> </u>	0	THE RESIDENCE OF THE WORK OF THE WAS AND AN ADVANCED BY A STATE OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF THE WORK OF		-	enemente et er s			Asso	ЗУ	(	ppn	٦)	ericaleur en de la la la la esperada	#46-COO ANY ARRAMENTAL	QUOTING TO COMPAND
Depth (m)	Geology 5	Description	Sample No.	Depth	Thick- ness (m)	La	Се	Nd	Sm	Eu	ТЬ	Nb	Sr	Υ	Р
1.30	~ ~ ~ A A A A A A A A A A A A A A A A A	Weathered limonitized silicified agglomerate (feld. br. rich)					1								
6.60	A (////////////////////////////////////	Feld. br. bearing ankeritic cb		6.60		- · · · · · · -									
8.00 820		Sideritic cb Light brown ankeritic cb with feld rock	T 0801	9.60	3.00	702	1130	278	42.0	6.6	(0.1	210	855	66	2368
1280			T 0802	10.00	3.20	665	989	207	12.5	5.7	⟨0.1	269	507	54	1377
14.20		Carbonatized pinkish feld. br. Light pinkish feld rock bearing dark brown ankeritic cb	Т 0803	1280	4.20	724	1124	232	39.6	6.6	(01	244	448	64	1669
1960 20 2060		Limonitized feld br .	Т 0804		5.00	557	854	175	25.7	4.0	(01	274	473	56	1864
22.00 22.20 23.80 24.70 25.90 26.30 26.80	//69/// A Ø <b>A</b>	Trachitic dyke (altered) Dark brown sideritic part bearing brown ankeritic cb with agglomerate  Dark brown manganiferous ankeritic cb with aggl.	Т 0805	2200	4.30	617	966	191	30.9	5.8	(0.1	213	1128	74	3119
30————————————————————————————————————		Trachyte breccia Silicified quartz druse bearing ankeritic cb with dark brown sideritic part and agglomerate (pyrochlore like black mineral)	Т 0806	31.20	4.40	587	843	175	26.6	3.2	⟨0.1	147	5716	38	527
3220	~ ((0) • 1		T 0807		3.60	410	652	111	0.0	3.2	(0.1	182	869	50	1538
34.80 35.70	T T	Reddish brown trachitic dyke with Mn oxide vein		34.80 35.70							•				
10-		Sövite, trachite syenite, feld. rock bearing agglomerate and ankeritic cb	T 0808		4.90	481	672	184	26.6	3.9	(0.1	181	8677	43	309
	E0	Dark brown sideritic cb	T 0809	40.60	4.30	706	1023	264	40.6	7.4	(0.1	251	4045	65	671
44.50 44.90 50 5020		Sideritic parts bearing ankeritic cb with agglomerate (49.10m-49.20m sideritic cb with bastnaesite)	т 0810	44.90 50.20	5, 30	711	1041	227	28.6	6.1	(0.1	191	1094	52	1263
50.20															AL-141-14

### GEOLOGIC DRILL LOG DDH JMT-8

Elevation 860.1<sup>m</sup>
Total Depth 50.2<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

Drift

Sideritic carbonatite

Ankeritic Sövite

Sövite

Carbonate - Silicate rock

F:Feldspathic breccia, A:Agglomerate

XXXXXX

Nepheline syenite

Dykes

T — Trachyte
P — Phonolite
S — Sölvsbergite
D — Dolerite

A—Aplite

Joint, Fissure

60 % of carbonatite content

Mn Manganese oxide

HM Hematite

cal Calcite

S. C. C. C. C. C. C. C. C. C. C. C. C. C.	00			D. Section Co.				Ass	ау	(	ppn	ገ)		Pannera ven	
Depth (m)	Geology 5	Description	Sample No.	Depth (m)	Thick- ness (m)	La	Се	Nd	Sm	Eu	Tb	Nb	Sr	Υ	Р
1.30	~ ~ 60	Brown weathered carbonatized feld.br. bearing carbonatite Limonitized	Т 0901	1.30	3.00		734	263	46.4	13.1	⟨0.1	465	1006	66	51913
5.40		Strongly limonitized weathered with clay	Т 0902	770	3.00	388	774	324	42.8	12.2	30.6	440	938	79	5434
9.30	60 	Carbonatite agglomerate (phonolite)  Limonitized carbonatized feldspathic	Т 0903	7.30	3.00	399	791	317	48.4	9.0	(0.1	447	1239	67	5355
		rock with carbonatite	Т 0904	13.30	3.00	288	591	203	44.8	7.9	(0.1	444	933	42	4399
15.10	F 60 × ×	Carbonatized biotite rich altered nepheline syenite	Т 0905	15.10	1.80	254	488	181	29.8	6.4	(0.1	667	995	57	6133
17.20	* & F	Light brown carbanatized, limonitized feldspathic rock strongly weathered													
20-20.40	F 20 F 20 } F	Melanocratic carbonatized feldspathic rock													
2510	30 F F F (0) F	Brown to buff carbonatized feld rock				:									
2000	F (0) F	Melanocratic carbonatized feld rock								•					
30- 30- 31.00 31.80	F 20 F	Brown limonitized carbonatized feld rock with cb breccia Weathered phonolite with pyrite													
	FF 80 FF	Melanocratic carbonatized feldspothic rock with cb breccia		75.00											·
	F TØ F F	Buff color strongly carbonatized feld rock	T 0906	35.00	3.90	367	807	318	 48.I	9.6	⟨0,1	417	1351	74	6734
3890 40	F © F	Pinkish brown to purplish brown carbonatized feld rich with cb breccia	т 0907	38.90		382	809	306	53.6	11.7	<b>(0.</b> l	379	1733	80	5242
1 1	F (70 F	Buff color	Т 0908	41.90 43.90	2.00	369	753	242	48.5	8.5	⟨0.1	473	2003	53	4115
	F ⊗ F	Melanocratic carbonatized feldsparthic rock with grey carbonatite breccia										:			
50 <sub>50.10</sub>	F														

## GEOLOGIC DRILL LOG DDH JMT-9

Elevation 776.6<sup>m</sup>
Total Depth 50.1<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

	1 (4) (4) (4)
~~	Drift
	Sideritic carbonatite
	Ankeritic Sövite
	Sövite
~,~,~	Carbonate - Silicate rock
4 F A A A	F:Feldspathic breccia,A:Agglomerate
$\frac{X}{X}$ $\frac{X}{X}$ $\frac{X}{X}$	Syenite
X X X X	Nepheline syenite

Dykes

T — Trachyte
P — Phonolite
S — Sölvsbergite
D — Dolerite
A — Aplite

Joint, Fissure

60) % of carbonatite content

Mn Manganese oxide

HM Hematite

cal Calcite

	Loit				Anna Main in in	Y.C.; I Concentration of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the St	<del>elle ance personne</del>	Ass	ау	(	ppn	٦)		ang and kindra de beningk ang aftan kapak.	<u> </u>
Depth (m)	Geology	Description	Sample No.	Depth (m)	Thick- ness (m)	La	Се	Nd	Sm	Eu	Тb	Nb	Sr	Υ	Р
t. 50	ΛΛ • F	Pinkish brown mangoniferous feld.br.													
3.60 3.90 5.30	* F	Mn oxide (black) Pinkish browntodark brown Mn. feld. br.													
7.10	F	Ditto (core crushed)													
	F 🛕	Reddish brown limonifized feld br.													
10	F													- -	
1280	A F. A	Pinkish brown to dark, brown Mn feld br						[		•					
14.30 15.80 16.80	l & F . I	Carbonatized feld br. with cb.	T 1001	14.30 16.80	2.50	499	1122	507	92.1	21.1	9.0	250	511	101	5360
18.10 18.40 19.10	[ <u>//</u> 6]///	Carbonatized feld, br. bearing manganiferous Ankeritic cb	T 1002	19.50	2.70	2623	6616	2656	3948	68.1	139.1	96	664	124	3770
20		Carbonatized feld. br. bearing manganiferous cb	T 1003		4.30	2519	6188	2750	421.3	67.3	42.6	220	664	.107	4069
23.80	Mn 50°	Black Mn ore		23.80						<del></del>					
24.80 2520	///50/// 70°	Black Mn ore	T 1004		4.10	1004	2200	754	114.0	20.4	205.9	61	768	62	556
27.90 30 2980		Carbonatized feld br. Mn oxide bearing buff colored ankeritic cb	T 1005	27.90 29.80	1.90	2539	6260	2064	273.4	45.6	2.9	63	635	61	170
	Min	Black Mn ore	T 1006	70.00		701	1318	332	60.5	10.5	362.0	31	848	43	74
32.20		Carbonatized feld br. , Mn oxide bearing ankeritic cb	Т 1007	32.20		1582	3866	1406	185.5	31.2	(0.1	365	636	59	98
			Т 1008	36.20	4.00	1121	2662	1020	128.8	22.4	(0.1	446	518	37	53
40 4020 4088		Carbonatized feld br. with Mn oxide	T 1009		2.80	1022	2284	815	110.0	19.4	<b>⟨</b> 0.1	511	456	38	135
43.00 <sup>2</sup> 45.50 <sub>7</sub>	**************************************		T 1010	43.00 45.50	1	1117	2769	1062	150.2	25.9	(0.1	491	512	44	579
45.50		Pinkish white to dark brown carbonatized feld br bearing ankeritic cb with oxide	ΤΙΟΙΙ	5010	4.60	1314	3446	1179	156.0	28.7	<b>(</b> 0.1	214	577	51	475
50 <sub>50.10</sub>				33.0											

## GEOLOGIC DRILL LOG DDH JMT-10

Elevation 858.5<sup>m</sup>
Total Depth 50.1<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

<u>~</u> → Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia, A:Agglomerate
Tx Tx X     Syenite
x x x x Nepheline syenite
Dykes  T — Trachyte P — Phonolite S — Sölvsbergite D — Dolerite

A-Aplite

Joint, Fissure

60 % of carbonatite content

Manganese oxide

HM Hematite

cal Calcite

	Geology 3							Asso	ју	(	ppn	1)			QBL CO. COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLO
Depth (m)	Geology 5	Description	Sample No.	(m)	Thick- ness (m)	La	Се	Nd	Sm	Eu	Тb	Nb	Sr	Υ	Р
3.00 3.30		Reddish brown carbonatized feld rock bearing ankeritic cb Altered phonolite	T 1 101	3 00	3.00	566	1213	408	73.8	12.0	5.7	420	773	41	4575
4.50	<b>▲ ▲</b> ♂	Ankeritic cb bearing reddish brown carbonatized feldspathic breccia	T 1 102	4, 50 7,50	3.00	790	1782	555	95 7	17.4	3.1	1045	1194	63	10057
IO	F (5)			11.20											
	89	Dark brown ankeritic cb with feld breccia and feldspar patch	T 1103	15.10	3.90	1577	3878	1758	266.4	60.3	14.8	1023	1022	133	4079
18. 90			T 1104	18 90	3.80	1291	3161	1460	248.5	61.7	6.1	981	1021	152	4236
20 20 20	(a) F (b) (a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	Carbonatized feld br.  Feld br bearing dark brown mdg ankeritic cb (massive)	T I 105	20 20		1510	3717	1661	2589	62.5	6.5	942	931	77	695
24 80		Ankeritic cb bearing feld br		24 80										. :	
26.80 27.80 28.20 28.20		Drusy Csg cal (vein)	T 1 1 0 6	26.80 29.20		822	2073	734	144.3	34.0	7.9	462	888	53	428
30.90 31.40	### ##################################	Ankeritic cb bearing feld br.  Ankeritic cb bearing carbonatized	T 1 107			1320	3419	1405	2434	54.2	18.6	863	641	123	3150
34.10 34.60		feld br. Feld br bearing ankeritic cb	T 1108	33.50 36.70	3.20	913	2263	846	141.9	29.5	18.5	656	803	120	6368
36.70 <sup>2</sup> 39.20 <sub>2</sub> 39.20 40	F 🔺	Carbonatized reddish brown feld br.													
	♣ F											,			
46.30	F A	Hematite bearing carbonatized feld. br.													
50 <sub>50.20</sub>	- '									olooolina (MPC)					

## GEOLOGIC DRILL LOG DDH JMT-II

Elevation 838.9 m
Total Depth 50.2 m
Inclination -90°

1:200

#### LEGEND

<u>~</u> Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia, A: Agglomera
\$\overline{\chi_X \overline{\chi_X \overline{\chi}}}\$     \$\overline{\chi_X \overline{\chi_X \overline{\chi}}}\$     \$\overline{\chi_X \overline{\chi_X \overline{\chi}}}\$     \$\overline{\chi_X \overline{\chi_X \overline{\chi}}}\$     \$\overline{\chi_X \overline{\chi_X \overline{\chi}}}\$     \$\chi_X \overline{\chi_X \overline
x <sub>x</sub> x <sub>x</sub> x Nepheline syenite
Dykes  T — Trachyte P — Phonolite S — Sölvsbergite D — Dolerite A — Aplite
Joint, Fissure
60 % of carbonatite content
Mn Manganese oxide
HM Hematite
cal Calcite
Ap Apatite

	C	A CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR	Assay (ppm)												
Depth (m)	Geology 1	Description	Sample No.	Depth	Thick- ness (m)	La	Се	Nd	Sm	Εu	Tb	Nb	Sr	Υ	Р
3.20 3.80	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	Ocm magnetite, limonite Biotite, pyrite,magnetite sovite	T 1201	3 20	2.80		1741	603	83.5	18.9	11.4	1561	15094	89	30673
	© 20 20 30	Foliation Foliation	T 1202	6.00	3.00	682	1,314	489	640	14.8	6.8	877	18814	78	21738
10	(⊚) 45 60	Pyrrhotite (9.4 m) 10.8 m 0.8 cm pyrite bearing cal. v	T 1203	9.00	3.00	734	1381	516	67.0	16.3	8.4	1052	19327	88	22849
12.20 12.40	20 @	Cs g	T1204	15.00	3.00	856	1582	617	83.9	19.2	366	482	19069	94	32109
	<u>@</u> 20		T 1205	18 00	3.00	782	1460	550	79.4	17.3	12.4	1801	18393	88	26341
20	30	Csg magnetite rich massive white sovite	T 1206	21.00	3.00		1706		90.9	20.2		1851		· .	37038
	<b>⊗</b> .		T 1207	24.00			1556	633	82.4		11.3		19354		33883
00.70	<b>⊗</b>		T 1208	27,00	3.00		1172	437	52.2 59.1	13.0 12.2	7.9 4.3		20429 17627		15760 18268
28.70 30	⊗ <b>®</b>	Mgt bearing sovite  Csg white sovite with mgt	T 1210	30 00		651			52.4				20394	83	8821
	<ul><li>⊗</li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li><li></li></ul>	Mgt bearing sövite 15 cm pyrite bearing feldspathic breccia Feld patch bearing pinkish white sövite	T 1211	33.00	300	590	1009	361	43.9	11.1	3.2	520	17568	75	8208
3600	<b>⊚</b>	reid paten beding plintish white source	T 12 12	36.00 39.00	3.00	665	1257	449	518	13.3	77	674	21074	84	16460
40	<b>⊗</b>	Pyrite magnetite bearing white sövite	T 1213	42.00	3.00	647	12.01	457	55.0	4.  	9.1	1022	19599	81	18157
		Faliation	T 12 14 T 12 15	4500	3.00  1.50		1378 1767	496 749	68.I 90.8	21.0		1925 1775			30168 45383
46.50- 48.70-	⊚	Feld. br. bearing pyrite,magnetite, biotite sövite Magnetite,pyrite biotite rich sövite	T 1216	46.50 5 0.20	3.70	659	1172	421	72.9	14 3	7.1	2482	10464	79	31585
50 <sub>50 20</sub> -				50.20											

(PHASE I)

## GEOLOGIC DRILL LOG DDH JMT-12

Elevation 801.6<sup>m</sup>
Total Depth 50.2<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

~~	Drift
	Sideritic carbonatite
	Ankeritic Sövite
	Sövite
$\boxed{ \checkmark , \lor , \lor }$	Carbonate - Silicate rock
A F A A A	F:Feldspathic breccia, A: Agglomerate
X X X X	Syenite
$\begin{bmatrix} x & x & x & x \end{bmatrix}$	Nepheline syenite
	Dykes  T — Trachyte P — Phonolite S — Sölvsbergite D — Dolerite A — Aplite
	Joint, Fissure
60)	% of carbonatite content
Mn_	Manganese oxide
HM	Hematite
cal	Calcite

	Geology 5		Assay (ppm)												
Depth (m)	Geology 8	Description	Sample No.	Depth (m)	Thick- ness (m)	La	Се	Nd	Sm	Eu	Тb	Nb	Sr	Υ	Р
1.30 1.60 2.50 3.10	~ ~ ⊗ A • ⊗ A • ⊗ A	Grey sövite Agglomerate bearing	T 1301	1.30	2.90	318	550	169	31.2	5.8	10.9	961	1791	40	10331
4.20	A A	Weathered altered (soft) limonitized (xenolith~phonolite, feld, rock, cb)	T 1302	7.20	3.00	271	475	115	20.0	3.7	7.6	541	2258	35	3469
8.40 8.80	1 a . 🕋 l	Feld br bearing cb	T 1303	10.00	2.80	275	483	i27	20.6	3.3	9.9	498	1519	. 29	2793
12.10	€0 P P		T 1304	12.10	2.10	274	516	137	17.3	3.9	5.0	656	4117	38	4006
14.40	Р	Dark grey carbonatized phonolite  Agglomerate bearing white sövite	T 1305	14. 4C	2.80	308	545	137	21.1	4.7	1.6	1016	13244	50	3273
17.20 19.20	P /50°	Cb., pyrite bearing phonolite  Marginal facies		17.20 19.20							077		00.40	41	7410
20 <del>20.20</del>	P 50°	Dark greyish green fng phonolite  Phenocryst pyroxene biotite	T 1306	20.20	1.00	399	580	121	33.1	4.6	27.7	148	8649	41	7410
25.40	V V	with cal veinlet Limonitized  Melanocratic biotite, carbonate silicate rock			7,000										
29.50 30 <del>30.60</del>	7 × 50°			29. 50											
33.00	⊗   ∨	Phonolite bearing cb pyrite and magnetite	T 1307	33.00	3.50	211	382	109	16.3	2.9	8.1	274	11894	35	2846
	<b>⊗</b> ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨ ∨	Magnetite and sövite bearing  Biotite, pyrite, carbonate silicate rock	T 1308	36.00	3.00	233	434	125	22.6	0.7	3.9	337	8508	32	4910
	v 🕸 v														
41.00	<ul><li>∅</li><li>∨</li><li>∨</li></ul>	Fng melanocratic biotite carbonate silicate rock										:			
44.30 44.60	∨ ∨ ∨ ∨	White Fng to mdg melanocratic carbonate silicate rock with pyrite	·								·	:			
	v	Simoure rook with pyrite	T 1309	47.30 50.30	3.00	176	290	59	15.2	(0.1	20.6	240	7019	21	2882
50 <del>50.30</del> -				30.00							Ni se la socia				

## GEOLOGIC DRILL LOG DDH JMT-13

Elevation 725.9<sup>m</sup>
Total Depth 50.3<sup>m</sup>
Inclination -90°

1:200

#### LEGEND

Composition Drift
Sideritic carbonatite
Ankeritic Sövite
Sövite
Carbonate – Silicate rock
F:Feldspathic breccia, A: Agglomerate
x x x x X Syenite
X <sub>x</sub> X <sub>x</sub> X Nepheline syenite
Dykes  T — Trachyte P — Phonolite S — Sölvsbergite D — Dolerite A — Aplite
Joint, Fissure
% of carbonatite content
Mn Manganese oxide
HM Hematite
Cal Calcite