

15 March 2023 620.31057.00000-L01-v1.0-20230315.docx

New Acland Coal MULDU QLD 4401

Attention: Jaymee Wicks – Senior Environmental Advisor

Dear Jaymee

NAC Groundwater Monitoring Bore Installation Drilling Program Completion Report

## 1 Background

New Acland Coal Pty Ltd (NAC) commissioned SLR Consulting Australia Pty Ltd (SLR) to provide hydrogeological support for drilling works for ten (10) new Environmental Authority (EA) groundwater monitoring bores across and adjacent to the New Acland Coal Mine.

Of the ten new bores, six are intended to replace existing bores (82Pc, 18PbR, 18PcR, 132WB, 133WB and 111PGC\_Lower) in line with commitments made by NAC during the 2021 groundwater EA Amendment. The remaining four bores in the drilling program are new EA bores, also required as a result of the 2021 groundwater EA Amendment.

Nominal groundwater bore designs for the ten new bores were prepared by SLR in July 2022, and updated in November 2022 (reference *620.30155.60100-M01-v3.0-20221118*). The bores were designed in accordance with the *Minimum Construction Requirements for Water Bores in Australia*.

The field drilling program commenced on 15<sup>th</sup> November 2022 and concluded 10<sup>th</sup> March 2023, with the results of the program documented herein.

## 2 Drilling Campaign

#### 2.1 Overview

The drilling campaign was carried out between November 2022 and March 2023 and involved the following scope of works:

- Drilling and construction of six (6) replacement groundwater bores adjacent the previous bores;
- Drilling and constructing of four (4) new groundwater bores;
- Developing the new bores using airlift techniques; and
- Documentation of the works sufficient to produce this bore completion report.

A summary of the newly drilled groundwater bores is shown in Table 1. Figure 1 presents a locality plan.

Bore ID	Replacement For	Target Aquifer	Total Hole Depth (m bgl) <sup>1</sup>	Completed Cased Bore Depth (m bgl)
LCA1	-	Lagoon Creek Alluvium	4.85	4.85
LCA2	-	Lagoon Creek Alluvium	9	6.5
BCS3	-	Balgowan Coal Sequence	111	110.3
BCS4	-	Balgowan Coal Sequence	132	130.1
82PcR	82Pc	Acland Coal Sequence	45	40
18PbR2	18PbR	Main Range Volcanics	80	71
18PcR2	18PcR	Balgowan Coal Sequence	106	101.1
132WBR	132WB	Balgowan Coal Sequence	48	46
133WBR	133WB	Balgowan Coal Sequence	87	82
111PGC_LowerR	111PGC_Lower	Acland Coal Sequence	65	60

#### Table 1Drilling Summary

<sup>1</sup>metres below ground level

## 2.2 Drilling and Bore Construction Activities

All drilling and bore construction activities were undertaken by Cziso Water Bore Drilling Pty Ltd under the supervision of Class 2 licensed water bore Driller, Alan Czislowski (Licence Number 3243). Air rotary drilling methods were used for all drill holes.

All drilling and bore construction activities carried out on site were overseen by a suitably qualified and experienced SLR hydrogeologist. The SLR hydrogeologist's duties included:

- geological logging of drill cuttings for the new boreholes;
- recording v-notch yields and water quality parameters throughout drilling;
- designing bores in conjunction with the driller and SLR's project Technical Director Hydrogeologist to meet project requirements; and
- confirming bore development was undertaken satisfactorily and that new bores were fit for purpose.

## 2.3 New Bore Location and Construction Details

Table 2 provides a summary of the location data and Table 3 the construction details for the ten (10) new groundwater bores installed throughout the drilling program. All bores were surveyed by NAC Mine Survey following the completion of the drilling program.

Typically, drilling was undertaken to a depth slightly exceeding the planned target interval. This was done to accurately determine the lithology and stratigraphy of the bore, allowing the most appropriate screened interval to be chosen in conjunction with water make information. Final drilling depths also surpassed the target intervals in order to ensure the entire geological sequence of interest has been drilled. The appropriate screened interval was chosen by the SLR site hydrogeologist based on the chip logs as well as consultation with the onsite drillers and SLR's project Technical Director Hydrogeologist.



## Table 2Bore Location Summary

Bore ID	Aquifer	Easting (AGD84 z56)	Northing (AGD84 z56)	Ground Level (mAHD) <sup>1</sup>	Top of Casing (mAHD)
LCA1	Lagoon Creek Alluvium	369590	6979223	420.06	420.81
LCA2	Lagoon Creek Alluvium	372712	6977921	433.45	434.16
BCS3	Balgowan Coal Sequence	369726	6980653	435.89	436.70
BCS4	Balgowan Coal Sequence	371454	6977533	430.05	430.88
82PcR	Acland Coal Sequence	373620	6978537	440.72	441.44
18PbR2	Main Range Volcanics	370736	6982531	459.46	460.19
18PcR2	Balgowan Coal Sequence	370717	6982536	459.34	460.10
132WBR	Balgowan Coal Sequence	369101	6984587	425.34	425.97
133WBR	Balgowan Coal Sequence	369846	6983638	438.05	438.71
111PGC_LowerR	Acland Coal Sequence	371458	6977551	430.58	431.43

<sup>1</sup>metres Australian Height Datum

#### Table 3Bore Construction Summary

Bore ID	Construction Date	Total Hole Depth (m bgl)	Bentonite (m bgl)	Gravel (m bgl)	Screened Interval (m bgl)	Casing Sump (m bgl)
LCA1	25/11/2022	5	1 – 1.25	1.25 – 4.85	1.5 – 4.5	4.5 – 4.85
LCA2	25/11/2022	9	1.3 – 2 6.9 – 9	2 – 6.9	3 – 6	6 – 6.5
BCS3	31/01/2023	111	63.8 – 66.7	66.7 – 111	77 – 86 98 – 104	104 – 110.1
BCS4	18/01/2023	132	72 – 75.6	75.6 – 132	109 – 124	124 – 130
82PcR	30/11/2022	45	20 – 24	24 – 45	27 – 39	39 – 40
18PbR2	07/12/2022	80	45 – 48 76.5 – 80	48 – 76.5	61 – 70	70 – 71
18PcR2	08/02/2023	106	80.5 – 83 97.1 – 99 103.6 – 106	83 – 97.1	89 – 95	95 – 96
132WBR	18/11/2022	48	20 – 23	23 – 48	24 – 45	45 – 46
133WBR	24/11/2022	87	47 – 50	50 – 87	63 – 81	81 – 82
111PGC_LowerR	04/01/2023	65	19.5 – 22	22 – 65	41 – 59	59 – 60

Bores BCS3, BCS4 and 18PcR2 were constructed with 52mm DN Class 60.3 Stainless Steel casing and 52mm DN Class 60.3 Stainless steel screen with a slot size of 0.5 mm. The remaining bores were constructed with 50mm DN Class 18 uPVC casing and 50mm DN Class 18 screen with a slot size of 0.5mm.



The screened intervals of the bores included a gravel filter pack of 5mm specialised sand sealed using a bentonite plug directly above the filter pack, followed by cement-bentonite grout to surface. Bores 18PbR2 and LCA2 included a bentonite plug beneath the screened interval, and 18PcR2 included a layering of cement and bentonite to seal the target formation from the underlying formation.

Appendix A presents the graphical bore log for each bore.

## 3 Bore Development

Following bore construction, the groundwater bores were developed using airlift techniques in accordance with the *Minimum Construction Requirements for Water Bores in Australia*. Development was undertaken until the water recovered was assessed to be suitably clear and free of fines, and water quality parameters had stabilised, to the satisfaction of the onsite SLR hydrogeologist. Bores LCA1 and LCA2 were unable to meet the above requirements as they were found to be dry following construction (which was anticipated pre-drilling) and could not be airlifted.

Table 4 presents the measured water quality data at the end of development.

Dere ID	Aquifor	Water Quality at the end of Airlift Development				
Bore ID	Aquifer	Flow Rate (L/s)	рН	EC (µS/cm)		
LCA1	Lagoon Creek Alluvium					
LCA2	Lagoon Creek Alluvium		DRY			
BCS3	Balgowan Coal Sequence	0.7	8.16	1344		
BCS4	Balgowan Coal Sequence	0.25	8.34	10,351		
82PcR	Acland Coal Sequence	0.2	8.14	10,699		
18PbR2	Main Range Volcanics	0.125	8.17	868		
18PcR2	Balgowan Coal Sequence	0.22	7.78	629		
132WBR	Balgowan Coal Sequence	1.0	7.95	7264		
133WBR	Balgowan Coal Sequence	0.13	7.91	666		
111PGC_LowerR	Acland Coal Sequence	not recorded	8.42	8520		

## Table 4Bore Development Summary

# 4 Groundwater Levels

All bores had groundwater levels measured by the SLR hydrogeologist using a conventional e-tape prior to development. Table 5 presents the measured pre-development groundwater levels.

Bore ID	Aquifer	Measurement Date	Depth to Water (m b ToC)1	RSWL (mAHD)
LCA1	Lagoon Creek Alluvium	18/01/2023	DI	RY
LCA2	Lagoon Creek Alluvium	18/01/2023	DI	RY
BCS3	Balgowan Coal Sequence	30/01/2023	35.60	401.11
BCS4	Balgowan Coal Sequence	19/01/2023	34.34	396.54
82PcR	Acland Coal Sequence	18/01/2023	18.69	422.75
18PbR2	Main Range Volcanics	09/12/2022	15.72	444.47
18PcR2	Balgowan Coal Sequence	10/03/2023	43.23	425.87
132WBR	Balgowan Coal Sequence	19/01/2023	4.19	421.78
133WBR	Balgowan Coal Sequence	19/01/2023	17.81	420.91
111PGC_LowerR	Acland Coal Sequence	10/01/2023	24.64	406.79

#### Table 5Pre-Development Groundwater Levels

<sup>1</sup>metres below Top of Casing

# 5 Closing

SLR considers that the six (6) replacement bores; 82PcR, 18PbR2, 18PcR2, 132WBR, 133WBR and 111PGC\_LowerR; and four (4) new bores LCA1, LCA2, BCS3 and BCS4 have been installed consistent with the pre-drilling specifications and are fit for purpose for incorporation into the NAC EA monitoring program.

I trust the information contained herein meets your requirements. Please do not hesitate to contact me with any queries.

Yours sincerely

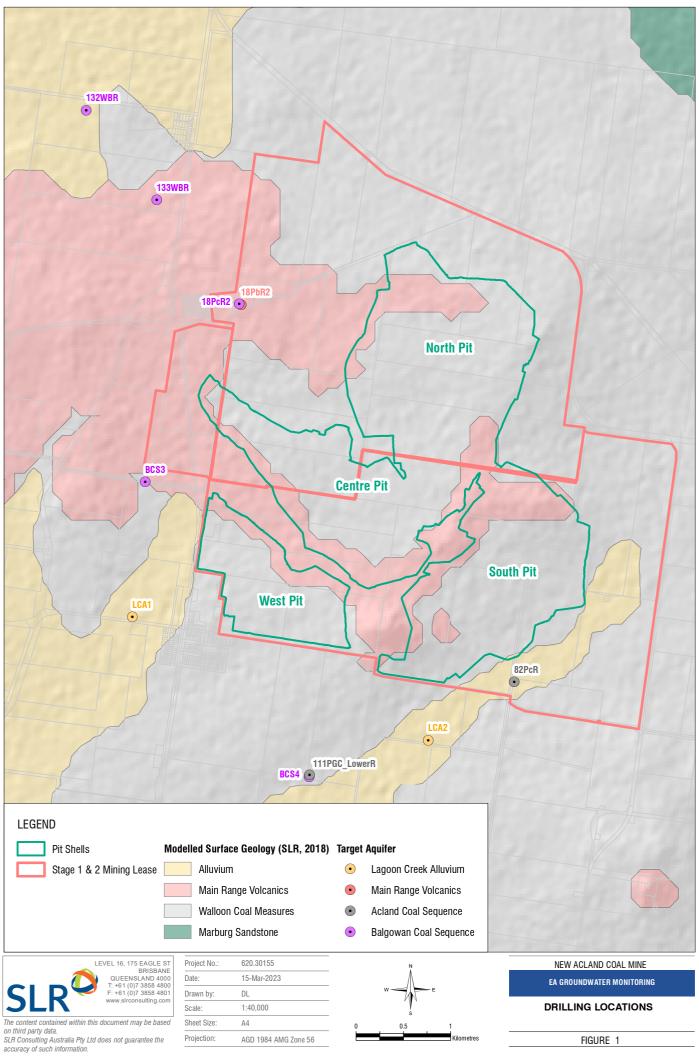
RYAN DAVIES Project Consultant

Checked/ Authorised by: DL

## 6 References

National Uniform Drillers Licensing Committee 2020, *Minimum Construction Requirements for Water Bores in Australia* 4<sup>th</sup> Edition,





Appendix A – Graphic Bore Logs

<b>SLR</b> global environment	C () Intal solution	1: S	2 Cannan S outh Towns	ILTING PTY LTD St sville, QLD, 4810 (07) 4722 8000	BO	REHOLI	E NUMBER 18PbR2 PAGE 1 OF 2
	New /	Acland	d Coal Pty L	td (NAC)	PROJECT NAME NAC	Drilling 2022	
PROJECT	T NUM	BER	620.31057	.00000		Brisbane	
				<b>COMPLETED</b> 7/12/22			DATUM MAHD
				o Drilling			
NOTES							
	Well Details	Depth (m)	Graphic Log	Material Descrip	tion	Unit	Drilling and Bore Information
mer		_	$\underline{x_1}, \underline{x_1}, x_$		,	Q/T Topsoil	Bore cased with 50mm uPVC casing and 50mm uPVC slotted screen.
165mm Hammer				Basalt (fine-very fine), with some clay, grey w aphanitic, high strength, moderate weathering Basalt (fine-very fine), aphanitic, grey with mir strength, moderate weathering Basalt (fine), with significant clay/mudstone a brown and grey, high strength, low weathering Basalt (fine), with mudstone/clay, light brown staining, high strength, moderate weathering Basalt (fine), with mudstone, grey, aphanitic, I Basalt (fine), with minor calcite, aphanitic, gre Basalt (fine), with minor calcite, aphanitic, gre Basalt (fine), with significant red-brown clay a strength, fresh Basalt (fine), with significant red-brown clay a strength, very highly weathered, Basalt is gre staining Basalt (fine), with soapstone and mudstone, s browny grey, high strength, highly weathered Basalt (fine), with brown clay, some soapston strength, moderate-high weathering Basalt (fine), with minor soapstone and calcite strength, now-moderate weathering Basalt (fine), with minor calcite, aphanitic, gre Basalt (fine), with minor calcite, aphanitic, gre Basalt (fine), with minor calcite, aphanitic, gre	aphanitic, grey, very high nd some calcite, aphanitic, g and grey, with moderate iron high strength, low weathering y, high strength, fresh mudstone, aphanitic, grey, high nd some soapstone, high y with significant browny red significant brown clay, aphanitic, e and mudstone, aphanitic, high e, aphanitic, grey, high-very high y, high-very high strength, fresh	Main Range Volcanics	→ and 50mm uPVC slotted screen. Water Sample @ 16 m bgl Airlift Yield: 0.3 ( <i>L</i> /s) / EC: 1564 (uS/cm) / pH: 8.24 / Temp: 24 (°C) Water Sample @ 28 m bgl Airlift Yield: 0.3 ( <i>L</i> /s) / EC: - (uS/cm) / pH: - / Temp: - (°C) Water Sample @ 34 m bgl Airlift Yield: 0.3 ( <i>L</i> /s) / EC: 1593 (uS/cm) / pH: 8.23 / Temp: 27.7 (°C)

obal	environm	R nental solut	ions	So		sville, QLD, 4810 (07) 4722 8000			PAGE 2 OF
CLI	IENT	Nev	/ Acla	nd	Coal Pty I	_td (NAC)	PROJECT NAME	Drilling 2022	
PR	OJEC	CT NU	MBEF	2_	620.3105	7.00000	PROJECT LOCATION	Brisbane	
)A	TE S	TARTI	ED _2	2/12	2/22	COMPLETED	R.L. SURFACE		DATUM AHD
						o Drilling			
	TES		105111	m					
Merrioa	Water	Well Details	Dep (m		Graphic Log	Material Desc	ription	Unit	Drilling and Bore Information
_		5		₿		Basalt (fine), with minor calcite, aphanitic, ( (continued)	grey, high-very high strength, fresh		
торти нате			- 1	₿	<u>R</u>	Basalt (fine), aphanitic, grey, high-very high	h strength fresh		
1100				₿			กรับอายุนา, แองเ		
		3	-	∄	-252				Grout 0 - 45 m bgl
			2	₿	-883				
				₿	***	-			Water Sample @ 46 m bgl Airlift Yield: 0.3 (L/s) / EC: 1414
			<b>.</b> -	⋬	XXX	-			(uS/cm) / pH: 8.26 / Temp: 28.1 (°C Betonite 45 - 48 m bgl
				¥					
			5	∄	£#	Basalt (fine), with calcite and soapstone, a strength, fresh	phanitic, browny grey, high		Gravel Pack 48 - 76.5 m bgl
				₹	388	strength, itesh			
				¥	-XX	Basalt (fine), with very minor calcite and sc	anatona ankanitia madium may		Water Sample @ 52 m bgl Airlift Yield: 0.3 (L/s) / EC: 1586 (uS/cm) / pH: 8.14 / Temp: 28.1 (°C
			-	₿	XX	high-very high strength, fresh Basalt (medium-fine), with soapstone and			
				₿	÷\$÷\$	moderate iron staining, very high strength, Basalt (medium-fine), with calcite and soar	fresh		
			-	₿		iron staining, very high strength, fresh Basalt (medium-fine), soapstone, aphanitic	c, grey with very minor iron		
			· -	┦	<u>}</u> }}	staining, very high strength, fresh Basalt (medium-fine), with minor calcite, a Afresh	phanitic, grey, very high strength,		
				₿		Basalt (medium-fine), with minor calite and high strength, fresh	l soapstone, aphanitic, grey, very	Main Range Volcanics	
			6 <u></u>	∄	££	Basalt (medium-fine), with calcite and soar significant iron staining, very high strength,			
			_	₿	3333	Basalt (medium-fine), with calcite and soar strength, fresh			
			•	₿					Screened Interval 61 - 70 m bgl
			-	₹	3333	-			Water Sample @ 64 m bgl
				≵	<del>XX</del>	Basalt (medium-fine), with large soapstone strength, fresh	e chunks, aphanitic, grey, very high		Airlift Yield: 0.3 (Ľ/s) / EC: 1427 (uS/cm) / pH: 8.04 / Temp: 28.2 (°C
			-	₿	333	Basalt (medium-fine), with calcite and soar strength, fresh	ostone, aphanitic, grey, very high		
			-	₿	<u>*</u>	Basalt (medium-fine), with calcite and soar	ostone.aphanitic. arev with some		
				∄	###	iron staining, very high strength, fresh Basalt (medium-fine), with calcite and soar			
				╬	<del>III</del> III	strength, fresh Basalt (medium-fine), with calcite, aphaniti			Water Sample @ 70 m bgl Airlift Yield: 0.3 (L/s) / EC: 1517
			:	₿		-			(uS/cm) / pH: 8.14 / Temp: 28.1 (°C
				₿	-883				Sump 70 - 71 m bgl
			· 	₿	XX	-			
				∜	353	Basalt (medium-fine), with calcite and soat strength, fresh	ostone, aphanitic, grey, very high		Bentonite 76.5 - 80 m bgl
			·] -	₿	<del>XX</del>	Basalt (medium-fine), with soapstone, aph	anitic, grey, very high strength,		Water Sample @ 76 m bgl Airlift Yield: 0.3 (L/s) / EC: 1318
			-	₿		Basalt (medium-fine), with significant clay a high strength, fresh	and some silt, aphanitic, grey, very		(uS/cm) / pH: 8.12 / Temp: 27.4 (°C Water Sample @ 80 m bgl
						Clay, orangey and light grey, soft	/	Walloon Coal Measures -	Airlift Yield: 0.3 (L/s) / EC: 1260 (uS/cm) / pH: 8.16 / Temp: 26.3 (°C

S	LF	<b>N</b>	ns	12 ( Sol	Cannan S ith Town	JLTING PTY LTD St sville, QLD, 4810 (07) 4722 8000	BC	REHOL	E NUMBER 18PcR
CLI	ENT	New	Acla	nd C	coal Pty l	td (NAC)	PROJECT NAME NAC	Drilling 2022	
PR	OJEC		IBEF	<b>R</b> _6	20.3105	7.00000		Brisbane	
						COMPLETED <u>8/2/23</u>			DATUM AHD
						o Drilling		7'E 6982536'N	J (AGD84 756)
						1			
Method		Well Details	Dept (m)		Graphic Log	Material Descrip	tion	Unit	Drilling and Bore Information
165mm2 <b>Ffammet</b> ammer				₹	<del>XX</del>	Basalt (fine-very fine), aphinitic, black with mo strength, moderately weathered			Bore cased with 52mm stainless stee casing and 52mm stainless steel slotted screen.
a a			-	₽	$\overline{\Delta}\overline{\Delta}$	Basalt (fine-very fine), aphinitic, black with sig			siotted screen.
Hammer			-	∄	888	Basalt (fine-very fine), with some calcite, aph low-moderate weathering	initic, black, very high strength,		
				∄	88	Basalt (fine-very fine), aphinitic, black, very hi	igh to extremely high strength,		Grout 0 - 80.5 m bgl
165	K			₽	XX	Basalt (fine-very fine), with significant clay an	d mudstone (orangev brown)		
			-	≵	##	black, aphinitic, extremely weathered Basalt (fine-very fine), with significant clay (da			
			1	Æ	XX	<ul> <li>staining, highly weathered</li> </ul>			
				₽	553	Basalt (fine-very fine), with significant clay (gr staining, moderate weathering			
			-	£	ŔŔ	Basalt (fine-very fine), with mudstone, aphinit very high strength, low-moderately weathered			
			-	₹	$\forall \forall \forall$	<ul> <li>Basalt (fine-very fine), with minor calcite, aph</li> <li>high strength, fresh</li> </ul>	initic, black, very high-extremely		
			_	₽	XX				
				₹	XX	_			Water Sample @ 16 m bgl Airlift Yield: 0.04 (L/s) / EC: 1502
			-	₽	$\Xi$	-			(uS/cm) / pH: 7.61 / Temp: 29.5 (°C)
			2	₽	88	-			
				₽	Æ¥	Basalt (fine-very fine), with bluey green muds	tone lenses, aphinitic, black,		
			-	≵	<del>FF</del>	very high strength, low-moderate weathering Basalt (fine-very fine), significant redish clay,			
			- 1	R	ÆÆ		weathering		
				₩	XX	Basalt (fine-very fine), redish brown clay, grevery high strength, moderate-high weathering			
			-	$\mathbb{R}$	88	Basalt (fine-very fine), significant brown clay, strength, moderate weathering	aphinitic, black, very high	Main Damas	
			-	⊰≿	$\Xi$	Basalt (fine-very fine), aphinitic, black with iro	n staining, very high-extremely	Main Range Volcanics	
			30	₽	RR	Basalt (fine-very fine), minor calcite, aphinitic, high strength, fresh	, black, very high to extremely		
				Ŧ	<u> </u>				
	K	1 🕅	-	⋬	XXX	Basalt (fine-very fine), aphinitic, black, very hi fresh	ign to extremely high strength,		
	- <b>▼</b>  ⊘			≵	ÉÉ	Basalt (fine-very fine), minor calcite, aphinitic,	, black, very high to extremely		
				Ł	873	high strength, fresh Basalt (fine-very fine), with extremely minor g			Water Sample @ 34 m bgl Airlift Yield: 0.04 (L/s) / EC: 1274
	K		-	₽	XX	black, very high-extremely high strength, fres	11		(uS/cm) / pH: 7.97 / Temp: 32.1 (°C)
			- 1	₹	<u> </u>				
			4(	⋬	XX	Basalt (fine-very fine), minor calcite, aphinitic, high strength, fresh	, black, very high to extremely		
			41	∄≻	XX	-			
			- 1	≵	XX	-			
				₽	XX	-			
	K		-	Ŧ	$\Xi$		tal yran birda stores attal		
			-	¥	877	Basalt (fine-very fine), minor glassy pale crys weathering to fresh			Water Sample @ 46 m bgl
			-	$\mathbb{R}$	22	Basalt (fine-very fine), very minor bluey greer very high to extremely high strength, fresh	n mudstone, aphinitic, black,		Airlift Yield: 0.04 (L/s) / EC: 1395 (uS/cm) / pH: 7.88 / Temp: 32.8 (°C)
	K			¥	XX	Basalt (fine-very fine), moderate bluey green	mudstone, aphinitic, black, very		, , , , , , , , , , , , , , , , , , , ,
			5 <u>(</u>	⋬	₩#	Basalt (fine-very fine), with silt, calcite and blu- black, very high to extremely high strength, fr			
			- 1	₽	XX	Basalt (fine-very fine), with minor calcite and	minor bluey green mudstone,		
	K	1 🕅		₽	$\Xi$	aphinitic, black, very high to extremely high s Basalt (fine-very fine), with some calcite and	<b>U</b>		
		1 🕅	-	-15-	5.FX	mudstone, aphinitic, black, very high to extrem			

S	environ		۶ الا ع	2 Cannan S South Towns	LTING PTY LTD t ville, QLD, 4810 07) 4722 8000	ВО	REHOLI	E NUMBER 18PcR2 PAGE 2 OF 2
CLI	IENT	New	Aclan	d Coal Pty Li	td (NAC)	PROJECT NAME NAC	Drilling 2022	
PR	OJE	CT NUN	IBER	620.31057	.00000	PROJECT LOCATION _B	risbane	
					COMPLETED 8/2/23			DATUM MAHD
EQ HO	UIPN LE S	MENT _	Air Ro 65mm	tary	o Drilling	HOLE LOCATION		
Method	Water	Well Details	Depth (m)	Graphic Log	Material Descrip	vtion	Unit	Drilling and Bore Information
165mm Hammer					Basalt (fine-very fine), with some calcite and black, very high to extremely high strength, fr	esh (continued)		Water Sample @ 58 m bgl Airlift Yield: 0.04 (L/s) / EC: 1319
16					Basalt (fine-very fine), aphinitic, black, very h fresh Basalt (fine-very fine), with minor calcite and aphinitic, black, very high to extremely high s	minor bluey green mudstone,		(uS/cm) / pH: 7.79 / Temp: 33.5 (°C)
					Basalt (fine-very fine), minor bluey green mu high to extremely high strength, fresh		Main Range Volcanics	
			7 <u>0</u>		Basalt (fine-very fine), with silt, calcite and blu black, very high to extremely high strength, fr Basalt (fine-very fine), with silt and bluey gree very high to extremely high strength, fresh	resh		Water Sample @ 70 m bgl Airlift Yield: 0.04 ( <i>L/s</i> ) / EC: 1195 (uS/cm) / pH: 8.02 / Temp: 32.7 (°C)
					Basalt (fine-very fine), aphinitic, black, very h fresh			Water Sample @ 76 m bgl Airlift Yield: 0.04 (L/s) / EC: 1133
					Basalt (fine-very fine), with mudstone (Brown black, very high to extremely high strength, fr Clay, with basalt and mudstone, light grey an	resh d redish brown, soft		(uS/cm) / pH: 8.11 / Temp: 33.6 (°C)
				· · · · · · · · ·	Sandy Clay, with basalt and mudstone, light Mudstone, with clay, light grey and orangey b			Betonite 80.5 - 83 m bgl
					Sandstone (very fine), with siltstone and muc medium strength, fresh Sandstone (fine-very fine), with mudstone, lic		Walloon Coal Measures - Overburden	Water Sample @ 82 m bgl Airlift Yield: 0.04 (L/s) / EC: 1223 (uS/cm) / pH: 7.93 / Temp: 30.4 (°C)
					Sandstone (fine), with mudstone and orange strength, fresh	y brown clay, grey, medium		Gravel Pack 83 - 97 m bgl
0.4.00			9 <u>0</u>		Sandstone (fine), with orangey brown mudsta strength, fresh Siltstone, with sandstone (fine), and minor or grey, medium-high strength, fresh Coal, with mudstone, black, dull, high strengt	angey brown mudstone, light		Water Sample @ 88 m bgl Airlift Yield: 0.04 (L/s) / EC: 1176 (uS/cm) / pH: 8.03 / Temp: 31.7 (°C)
					Mudstone, with coal, browny grey, medium s Coal, minor mudstone, black, lustrous, high s	strength, fresh	Walloon Coal Measures - Balgowan Sequence	Screened Interval 89 - 95 m bgl
					Sandstone (medium-fine), with coal, medium \fresh Sandstone (fine), light grey with black specks			Water Sample @ 94 m bgl Airlift Yield: 0.06 (L/s) / EC: 1128 (uS/cm) / pH: 8.12 / Temp: 31.5 (°C) Sump 95 - 96 m bgl Betonite 97 - 99 m bgl
			10 <u>0</u>		Sandy Clay, with minor sandstone, light grey	, soft	Walloon Coal Measures - Underburden	Grout 99 - 103.5 m bgl Water Sample @ 100 m bgl Airlift Yield: 0.06 (L/s) / EC: 928 (uS/cm) / pH: 8.21 / Temp: 30.1 (°C)
					Sandstone (coarse-fine), light grey and brow	n, medium strength, fresh	Durabilla Formation	Betonite 103.5 - 106 m bgl Water Sample @ 106 m bgl Airlift Yield: 1 (L/s) / EC: 728 (uS/cm) /
				<u> </u>	18PcR2 terminated at 106m bgl.			_ pH: 8.32 / Temp: 27.5 (°C)

S	L environn		lution	12 So	2 C	ann h To	an S owns	LTING PTY LTD t ville, QLD, 4810 (07) 4722 8000	В	OREHOI	LE NUMBER 82PC PAGE 1 OF
Ľ	IENT	Ne	ew A	Acland	С	oal F	Pty L	td (NAC)	PROJECT NAME NAC	Drilling 2022	
								.00000			
۵۵	TE S	TAR	тег	28/	11/	22		<b>COMPLETED</b> _ 30/11/22			
								Drilling			
									HOLE LOCATION 37362	20'E 6978537'N	(AGD84 Z56)
	TES										
Method	Water	We Deta		Depth (m)		Graphic Log		Material Descripti	on	Unit	Drilling and Bore Information
2		$\leq$	$\boxtimes$	-				Clay, black and some brown, hard, with some	silt	Q/T Topsoil	Bore cased with 50mm uPVC casing and 50mm uPVC slotted screen.
		ÿ	Ø					Clay, brown, hard, with gravel and silt. Gravel typically basalt (fine) with iron staining	is sub-angular to rounded,		
100		ÿ			U)				( <b>r</b> )		
		$\langle \langle \rangle$	$\mathbb{N}$					Clay, brown, hard, with very minor sandstone Gravel is basalt (fine, sub-angular to sub-roun	ded), extremely weathered	Alluvium	
		X	$\mathbb{X}$		[]],		[]]]]	Clay, brown, hard, with sandstone (coarse-fine (fine, sub-angular to sub-rounded), extremely	e),and gravel. Gravel is basalt weathered		Grout 0 - 20 m bgl
5		Ň	Ň		<u>///</u>	<u>///</u>	<u>////</u>	Sandstone, with sigificant clay and gravel, bro	wn and light grey. Gravel is		
			$\boxtimes$	]		-		typically basalt (fine, sub-angular to sub-round Mudstone, with sandstone (medium-very fine).	ed), extremely weathered	Walloon Coal Measures	
		X	$\bowtie$	-+				and orangey, medium weathering		Overburden	
-		Š	Š	10	2	Ē		Coal, black, lustrous, very muddy, very strong	, low weathering		-
			Ø								
		X	X								
		Š.	S		1			Coal, black, dull to lustrous, very strong, very o weathering			
			Ø			:::		Sandstone (fine-very fine), with coal, light grey weathering	, clayey, medium strength, low		
						· · · ·		Sandstone (fine-very fine), with siltstone and n clayey, low strength, low weathering	ninor calcite, light-medium grey,		Coal at 9-15 m is unsaturated
			Ø	-		· · · ·		Sandstone (fine-very fine), with coal, medium	grey, low-firm strength, fresh		
		ÿ	X					Coal, with minor mudstone, black, lustrous, ve	ry high strength, fresh		
		$\langle \langle \rangle$	$\mathbb{X}$	20				Coal, with mudstone, black, lustrous, very high	n strength, fresh		
					1			Coal, with minor mudstone, black, lustrous, ve			
				_		· · ·		Sandstone (fine), with siltstone and coal, medi	um grey, medium strength,		Betonite 20 - 24 m bgl
				4	× >	<u> </u>	× × × ×	Siltstone, with sandstone (fine), clayey, medium Sandstone (fine), with siltstone, clayey, medium		Walloon Coal Measures -	
	ŗ			-		· · · ·	· · · · ·	Sandstone (medium-fine), with coal, clayey, lig	6 J/ 6 /	Acland Coal Sequence	
				]				Sandstone (medium-fine), with coal, mudstone			Gravel Pack 24 - 45 m bgl
	:							firm, fresh Coal, with mudstone black, dull to lustrous, hig			
									,		Water Sample @ 27 m bgl
				Ŧ				Mudstone, with minor coal, medium-dark grey,	low-medium strength, fresh	]	Airlift Yield: 0.06 (L/s) / EC: 7332 (uS/cm) / pH: 8.15 / Temp: 32 (°C)
				30	× > × >	<	× × × ×	Siltstone, with sandstone 9fine), medium grey,	<b>U</b> .		
						· · · ·		Sandstone (fine), with siltstone, medium grey,	medium strength, fresh		Screened Interval 27 - 39 m bgl
					::	: : :					
								Sandstone (fine), with very minor coal stringer firm, fresh	and mudstone, medium grey,		Water Sample @ 33 m bgl Airlift Yield: 0.2 (L/s) / EC: 6833 (uS/cm) / pH: 8.04 / Temp: 28.2 (°C
								Coal black luctrous with mudatons and and	stone (fine) high strangth		
	[				$\left  \right\rangle$	< ×	××	Coal, black, lustrous, with mudstone and sand fresh	/		
				-	× >	< ×	× ×	Siltstone, with sandstone (fine) and coal, dark Sandstone (fine), with siltstone, slightly clayey,			-
						· · · ·		Sandstone (fine), with siltstone and calcite, me			Water Sample @ 39 m bgl
				4 <u>0</u> -				Mudstone, with sandstone (fine) and siltstone,	0.00		Airlift Yield: 0.28 (L/s) / EC: 6670 (uS/cm) / pH: 8.07 / Temp: 27.6 (°C
	[				× >	< ×	× × × ×	strength, fresh Siltstone, with sandstone and mudstone, medi	um to dark grey, firm to high	Walloon Coal Measures	Sump 39 - 40 m bgl
					× > × >		× × × ×	strength, fresh		Interburden	
				-	× > × >	<	× × × × × × × ×	Siltstone, with sandstone (fine), light to mediur	n grey, medium strength, fresh		Water Sample @ 45 m bgl Airlift Yield: 0.28 (L/s) / EC: 6964 (uS/cm) / pH: 8 / Temp: 29.7 (°C)

S	enviro	R	solution	12 Cannar South Tow	SULTING PTY LTD St nsville, QLD, 4810 ± (07) 4722 8000	BOREHOLE	E NUMBE	R 111Pgc_LowerR PAGE 1 OF 2
				Acland Coal Pty BER <u>620.310</u>	Ltd (NAC) 57.00000	PROJECT NAME NAC PROJECT LOCATION _E		
					COMPLETED 4/1/23			DATUM AHD
EQ HO	UIP LE \$	MEN SIZE	IT _/	Air Rotary	iso Drilling	HOLE LOCATION37145		
Method	Wottes Well Depthic For Melling Well Depthic For Melling Welling Well				Material Descr	ription	Unit	Drilling and Bore Information
ade		$\mathbb{N}$	$\mathbb{N}$		Clay, with some silt and gravel (medium), day sub-angular to sub-rounded, firm	ark brown and brown, gravel is	Q/T Topsoil	Bore cased with 50mm uPVC casing and 50mm uPVC slotted screen.
DC 180mm Blade					Clay, with minor silt and gravel (medium), m sub-angular to sub-rounded Siltstone (grey), with gravel (medium), extre very highly weathered, gravel is sub-angula Siltstone (grey), with gravel (medium), very highly weathered, gravel is sub-angular to s Siltstone (grey), with minor gravel (medium) low strength, highly weathered, gravel is sul	emely clayey (brown), low strength, ar to sub-rounded clayey (brown), low strength, sub-rounded ), very clayey (orangey brown), b-angular to sub-rounded vith significant gravel (medium)	Alluvium and clays	Grout 0 - 19.5 m bgl
162mm PDC			NANA ANA ANA		X late or any or	e-medium), clayey, medium sub-angular to sub-rounded	Walloon Coal Measures Overburden	
					<ul> <li>Coal, with minor mudstone, black, dull to lus weathering</li> <li>Coal, black, lustrous, very high strength, free</li> <li>Coal, with some mudstone, black, dull to lus</li> <li>Coal, with significant mudstone, black, dull,</li> <li>Coal, with some mudstone, black, dull to lus</li> <li>Siltstone, meidum grey, low-medium streng</li> </ul>	strous, high strength, fresh high strength, fresh strous, high strength, fresh		
					Coal, with mudstone, black, dull to lustrous,	resh , high strength, fresh		Betonite 19.5 - 22 m bgl
	<b>⊻</b>				Coal, with minor mudstone, black, dull to lus		Walloon Coal Measures - Acland Coal Sequence	Gravel Pack 22 - 65 m bgl
				30	Coal, with significant mudstone, black, dull,	high strength, fresh		Water Sample @ 27 m bgl Airlift Yield: 0.22 (L/s) / EC: 9645 (uS/cm) / pH: 7.75 / Temp: 28.8 (°C)
					x , 5 ,	ery high strength, fresh		Water Sample @ 33 m bgl Airlift Yield: 1.3 (L/s) / EC: 7602 (uS/cm) / pH: 7.72 / Temp: 24.8 (°C)

S	enviror		، الا د	12 Ca South	annan S 1 Towns	ILTING PTY LTD it ville, QLD, 4810 (07) 4722 8000	BOREHOLE	E NUMBE	ER 111Pgc_LowerR PAGE 2 OF 2
CL		T New	Aclan	d Co	al Pty L	td (NAC)	PROJECT NAME NAC	Drilling 2022	
						.00000		Brisbane	
DA	TES	STARTE	<b>D</b> _9/	12/22	2	<b>COMPLETED</b> <u>4/1/23</u>	R.L. SURFACE 430.581		DATUM MAHD
DR	ILLI	NG CON	ITRAC	TOR	Cziso	o Drilling			
	LE S		62mm	1			LOGGED BY RD		CHECKED BY
Method	Water	Well Details	Depth (m)		Graphic Log	Material Descript	ion	Unit	Drilling and Bore Information
PDC			-		× × × × × × × × ×	Siltstone, medium grey, medium-high strengt	n, fresh <i>(continued)</i>		
162mm PDC			-				6 6 7		
16.			-		· · · · · · · · · · ·	Sandstone (fine-very fine) and Siltstone, med strength, fresh	ium grey, medium-high		
			-	$\neg$ $\vee$	· · · · · · · · · · · · · · · · · · ·	Siltstone, medium-dark grey, medium-high str	ength, fresh		Water Sample @ 39 m bgl
			40	× ×	× × × × × × × × ×	Siltstone, with mudstone (brown), medium-da			Airlift Yield: 1.7 (L/s) / EC: 7655 (uS/cm) / pH: 7.67 / Temp: 24.2 (°C)
			-	x x	× × × ×	fresh Coal, with mudstone (brown and grey), very c high-very high strength, fresh Coal, with mudstone (brown), lustrous, high-v			
			-		× × × × × × × × ×	Siltstone, medium-dark grey, medium-high str			Screened Interval 41 - 59 m bgl
				× × × ×	× × × × × × × × × × × ×				Water Sample @ 45 m bgl Airlift Yield: 1.9 (L/s) / EC: 7527
			-	$+ \times \times$	* * *		ey, medium strength, fresh		(uS/cm) / pH: 7.75 / Temp: 24.3 (°C)
			-		× × × × × × × × ×	Siltstone, with mudstone, medium-dark brown	, medium strength, fresh		
			-		· · · · · · · · ·	Sandstone (fine-very fine), with siltstone, med fresh		Walloon Coal Measures -	
			50	××	× × × × × × × × ×	Siltstone, medium-dark grey, medium strengt	n, fresh	Acland Coal Sequence	
			-		· · · · · · · · ·	Sandstone (fine), with siltstone, medium grey,	<b>C</b> ,		
			-		· · · · · · · · ·	Sandstone (fine), medium-dark grey, medium	<b>-</b>		Water Sample @ 51 m bgl Airlift Yield: 1.9 (L/s) / EC: 7527 (uS/cm) / pH: 7.75 / Temp: 24.3 (°C)
						Sandstone (fine), with minor mudstone, medi	ım grey, meaium strengtn, tresn		(do/on/)/ pri. 7.707 romp. 24.0 ( O)
			-			Sandstone (fine), with some coal, medium gre	ey, medium strength, fresh		
			-			Coal, with sandstone (fine) and siltstone, blac fresh	k, dull to lustrous, high strength,		
			60	× × × × × ×	× × × × × × × × ×	Siltstone, medium grey, medium strength, free	sh		
			-	X X		Siltstone, with very minor coal, medium grey,	medium strength, resh		Sump 59 - 60 m bgl
					× × × × × × × × × × × ×				Water Sample @ 63 m bgl Airlift Yield: 1.9 (L/s) / EC: 7739 (uS/cm) / pH: 7.92 / Temp: 26.5 (°C)
					× × × × × × × × × × × × × × ×	Siltstone, medium grey, medium strength, free	sh	Walloon Coal Measures Interburden	Water Sample @ 65 m bgl Airlift Yield: 1.9 (L/s) / EC: 7250 (uS/cm) / pH: 7.93 / Temp: 25.8 (°C)
			-		<u> </u>	111Pgc_LowerR terminated at 65m bgl.			-
			-	]					
			-						
		1	70			1			l

S	l enviror	R	12 Cannan S South Towns	ULTING PTY LTD St sville, QLD, 4810 (07) 4722 8000	BOF	REHOLE	NUMBER 132WBR PAGE 1 OF 1		
CL	IEN	New	Acland Coal Pty L	td (NAC)	PROJECT NAME NAC	AC Drilling 2022			
PR	OJE		MBER 620.31057	2.00000		Brisbane			
				o Drilling	<b>R.L. SURFACE</b> 425.341		DATUM _ m AHD		
							(ACD94 756)		
		;							
Method	Water	Well Details	Depth (m) Depth	Material Descriptio	on	Unit	Drilling and Bore Information		
ш			$-\frac{\lambda_{I}\lambda_{X}}{\lambda_{I}\lambda_{X}}\frac{\lambda_{I}\lambda_{X}}{\lambda_{I}\lambda_{X}}\frac{\lambda_{I}\lambda_{X}}{\lambda_{I}\lambda_{X}}$	CLAY (blacksoil), slightly silty, dark brown, firm			Bore cased with 50mm uPVC casing and 50mm uPVC slotted screen.		
200mm drag, reamed to 250mm	<b>_</b>			CLAY, v silty, medim brown, slightly moist		Q/T topsoil	and somm upve slotted screen.		
n drag, re						Weathered Walloon Coal	Grout 0 - 20 m bgl		
200mn				SILTSTONE, clayey, light grey brown, low strer	<b>9</b> ·	Measures	PVC Surface casing 0 - 16 m bgl		
				SILTSTONE, clayey, orange brown, med stren	gth, weathered				
				MUDSTONE, silty, medium brown, firm to soft		Walloon Coal Measures Overburden			
				MUDSTONE, silty, orange brown, firm to soft		Overbuilden	_		
				COAL, black, lusterous SILTSTONE, with some mudstone, medium gr	ev. low strenath				
U U	-			SANDSTONE (fine), silty, clayey, medium grey			Water Sample @ 16 m bgl		
n PC		$\mathbb{S}$			rey, low strength		Airlift Yield: 0.62 (L/s) / EC: 4668 (uS/cm) / pH: 8.22 / Temp: 23.4 (°C)		
150mm PDC			2 <u>0</u>		, low strength		Betonite 20 - 23 m bgl		
					medium to dark grey, low		Water Sample @ 21 m bgl Airlift Yield: 0.34 (L/s) / EC: 3486 (uS/cm) / pH: 8.28 / Temp: 22.9 (°C)		
				strenght SANDSTONE (fine), some siltstone, medium g SANDSTONE (very fine), coal, siltstone, mediu			Gravel Pack 23 - 48 m bgl		
				COAL, black, dull to lustrous, firm to strong					
				MUDSTONE, some siltstone, medium brown to SANDSTONE (very fine), some siltstone, medi	um to dark grey, low strength		Water Sample @ 27 m bgl Airlift Yield: 1.8 (L/s) / EC: 6797		
				MUDSTONE, slightly silty, coal, medium to darl	<b>3 3</b> <i>7</i>	Balgowan Coal Measures	(uS/cm) / pH: 7.91 / Temp: 22.1 (°C)		
			$30 \times \times$	SILTSTONE, with sandstone (very fine), mediu firm	<b>v</b> <i>v</i>	modouroo	Screened Interval 24 - 45 m bgl		
				SANDSTONE (very fine), with siltstone, dark gr	ey, low strength to firm		Water Sample @ 33 m bgl		
							Airlift Yield: 2.8 (L/s) / EC: 6793 (uS/cm) / pH: 7.93 / Temp: 22.1 (°C)		
				SANDSTONE (fine to very fine), with siltstone,					
				SANDSTONE (very fine), coal, medium to dark	<u> </u>		Water Sample @ 39 m bgl		
			40	SILTSTONE, interbedded coal, medium to darl			Airlift Yield: 2.8 (L/s) / EC: 6441 (uS/cm) / pH: 7.95 / Temp: 22.1 (°C)		
					lium grey. Firm strength, labile		Water Sample @ 45 m bgl Airlift Yield: 3.5 (L/s)		
				in parts		Walloon Coal Measures	Sump 45 - 46 m bgl Water Sample @ 48 m bgl Airlift Yield: 3.5 (L/s) / EC: 6684		
			-	132WBR terminated at 48m bgl.		Interburden	(uS/cm) / pH: 7.94 / Temp: 22.8 (°C)		

Depth B B B B B B B C C C C C C C C C C C C	R	D0000       PROJECTION         COMPLETED       24/11/22       R.L. SUR         Drilling       HOLE LCO         LOGGED       LOGGED         Material Description       LOGGED         Clay, with some basalt (fine), dark brown, low strength, ext       Clay, with some basalt (fine), orangey light brown colour. E weathered, low strength         Basalt (fine), aphantic, medium grey with very high amount and some calcite. Very clayey. Moderate strength, very hig Basalt(fine), aphantic, medium grey with moderate iron state calcite. Moderate strength	CT LOCATION Brist	bane 6983638'N	(AGD84 Z56)
ED _21 DNTRAC _Air Rc 150mm s Depth (m) 	21/11/22 ACTOR Cziso Rotary Im bith bith Construction Constructio	COMPLETED 24/11/22 R.L. SUR Drilling HOLE LC LOGGED Material Description Clay, with some basalt (fine), dark brown, low strength, ext Clay, with some basalt (fine), orangey light brown colour. E weathered, low strength Basalt (fine), aphantic, medium grey with very high amoun and some calcite. Very clayey. Moderate strength, very hig Basalt(fine), aphantic, medium grey with moderate iron sta calcite. Moderate strength	FACE _438.052 CATION _369846'E BY _RD remely weathered xtremely ts of iron staining	<u>6983638'N</u> 	(AGD84 Z56) CHECKED BY DL Drilling and Bore Information Bore cased with 50mm uPVC casing
Depth s Depth (m) s	ACTOR <u>Cziso</u> Rotary Im bih bih	Drilling HOLE LC HOLE LC LOGGED Material Description Clay, with some basalt (fine), dark brown, low strength, ext Clay, with some basalt (fine), orangey light brown colour. E weathered, low strength Basalt (fine), aphantic, medium grey with very high amoun and some calcite. Very clayey. Moderate strength, very hig Basalt(fine), aphanitic, medium grey with moderate iron sta calcite. Moderate strength	CATION _369846'E BY _RD	<u>6983638'N</u>	(AGD84 Z56) CHECKED BY DL Drilling and Bore Information Bore cased with 50mm uPVC casing
Air Ro 150mm 5 Depth 6	Rotary Im bth bth control of the second	HOLE LC LOGGED	BY RD	Unit	CHECKED BY Drilling and Bore Information Bore cased with 50mm uPVC casing
s Depth (m) 	Graphic Log	Material Description Clay, with some basalt (fine), dark brown, low strength, ex Clay, with some basalt (fine), orangey light brown colour. E weathered, low strength Basalt (fine), aphantic, medium grey with very high amoun and some calcite. Very clayey. Moderate strength, very hig Basalt(fine), aphantic, medium grey with moderate iron sta calcite. Moderate strength	remely weathered xtremely	Unit	Drilling and Bore Information Bore cased with 50mm uPVC casing
s Depth (m)	Graphic Log	Material Description Clay, with some basalt (fine), dark brown, low strength, ex Clay, with some basalt (fine), orangey light brown colour. E weathered, low strength Basalt (fine), aphantic, medium grey with very high amoun and some calcite. Very clayey. Moderate strength, very hig Basalt(fine), aphanitic, medium grey with moderate iron sta calcite. Moderate strength	xtremely (	-	Bore cased with 50mm uPVC casing
		Clay, with some basalt (fine), orangey light brown colour. E weathered, low strength Basalt (fine), aphantic, medium grey with very high amoun and some calcite. Very clayey. Moderate strength, very hig Basalt(fine), aphanitic, medium grey with moderate iron sta calcite. Moderate strength	xtremely (	Q/T Topsoil	
		Basalt (fine), aphantic, medium grey with very high amoun and some calcite. Very clayey. Moderate strength, very hig Basalt(fine), aphanitic, medium grey with moderate iron sta calcite. Moderate strength			
		low weathering to fresh Basalt (very fine), aphanitic, medium grey, high strength, lo fresh Basalt (very fine), aphanitic, medium grey, minor oxidised quartz. High strength, low weathering to fresh Basalt (very fine), aphanitic, medium grey with some iron s mudstone and calcite deposits, high strength, low weather Basalt (very fine), aphanitic, medium grey with minor quart high strength, low weathering Basalt (very fine), aphanitic, medium grey, moderate calcit high strength, low weathering Basalt (very fine), aphanitic, dark grey, significant iron staii high strength, moderate weathering Basalt (very fine), aphanitic, dark grey, significant iron staii	ining and minor ig, moderate is weathering in staining, very is to high some calcite. staining and a, high strength, e, high strength, w weathering to ron, calcite and taining, significant ng z and limestone, a and limestone, ing and calcite,	Main Range Volcanics	PVC Surface casing 0 - 4.7 m bgl Grout 0 - 47 m bgl Water Sample @ 6 m bgl Airlift Yield: 0.55 (L/s) / EC: 3190 (uS/cm) / pH: 7.87 / Temp: 22.8 (°C) Sump 81 - 82 m bgl Water Sample @ 8 m bgl Airlift Yield: 0.71 (L/s) / EC: 3927 (uS/cm) / pH: 7.92 / Temp: 22.9 (°C) Water Sample @ 12 m bgl Airlift Yield: 1.11 (L/s) / EC: 4151 (uS/cm) / pH: 7.93 / Temp: 23.4 (°C) Water Sample @ 20 m bgl Airlift Yield: 1.65 (L/s) / EC: 3893 (uS/cm) / pH: 7.94 / Temp: 22.9 (°C)
		minor iron staining, high strength, low weathering Basalt (very fine), aphanitic, medium grey, minor iron stain and quartz, high strength, low weathering Basalt (very fine), aphanitic, light-medium grey, some lime mudstone, high-very high strength, fresh Basalt (very fine), aphanitic, medium grey, very high streng Basalt (very fine), apanitic, medium grey with minor iron sta calcite, high strength, low weathering Basalt (very fine), aphanitic, some quartz, medium grey, lo high-very high strength Basalt (very fine), aphanitic, medium grey, with limestone,	ing, some calcite stone and th, fresh ining and minor w weathering,		Water Sample @ 32 m bgl Airlift Yield: 2.5 (L/s) / EC: 2697 (uS/cm) / pH: 8.14 / Temp: 22.9 (°C) Water Sample @ 38 m bgl Airlift Yield: 2.5 (L/s) / EC: 2565 (uS/cm) / pH: 8.16 / Temp: 22.7 (°C)
	3		Iow weathering to fresh         Basalt (very fine), aphanitic, medium grey, high strength, lot fresh         Basalt (very fine), aphanitic, medium grey, minor oxidised i quartz. High strength, low weathering to fresh         Basalt (very fine), aphanitic, medium grey with some iron s mudstone and calcite deposits, high strength, low weathering         Basalt (very fine), aphanitic, medium grey with minor quart high strength, low weathering         Basalt (very fine), aphanitic, medium grey, moderate calcite high strength, low weathering         Basalt (very fine), aphanitic, medium grey, moderate calcite high strength, now weathering         Basalt (very fine), aphanitic, medium grey, significant iron stain high strength, noderate weathering         Basalt (very fine), aphanitic, medium grey with minor iron s high strength, low weathering         Basalt (very fine), aphanitic, medium grey, significant calcit minor iron staining, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, significant calcit minor iron staining, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, some limes mudstone, high-very high strength, fresh         Basalt (very fine), aphanitic, medium grey, very high strengt         Basalt (very fine), aphanitic, medium grey, very high strengt         Basalt (very fine), aphanitic, medium grey, very high strengt         Basalt (very fine), aphanitic, medium grey, very high strengt         Basalt (very fine), aphanitic, medium grey, very high strengt         Basalt (very fin	Basalt (very fine), aphanitic, medium grey, high strength, low weathering to fresh         Basalt (very fine), aphanitic, medium grey, minor oxidised iron, calcite and quartz. High strength, low weathering to fresh         20         Basalt (very fine), aphanitic, medium grey with some iron staining, significant mudstone and calcite deposits, high strength, low weathering         Basalt (very fine), aphanitic, medium grey with minor quartz and limestone, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, moderate calcite and limestone, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, significant iron staining and calcite, high strength, noderate weathering         Basalt (very fine), aphanitic, dark grey, significant iron staining and calcite, high strength, low weathering         Basalt (very fine), aphanitic, medium grey with minor iron staining and calcite, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, significant calcite and limestone, minor iron staining, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, significant calcite and limestone, minor iron staining, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, significant calcite and limestone, minor iron staining, some calcite and quartz, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, some limestone and mudstone, high-very high strength, fresh         Basalt (very fine), aphanitic, medium grey, very high strength, fresh         Basalt (very fine), aphanitic, medium grey, ver	Iow weathering to fresh       Iow weathering to fresh         Basalt (very fine), aphanitic, medium grey, high strength, low weathering to fresh         Basalt (very fine), aphanitic, medium grey, minor oxidised iron, calcite and quartz. High strength, low weathering to fresh         Basalt (very fine), aphanitic, medium grey with some iron staining, significant mudstone and calcid edeposits, high strength, low weathering         Basalt (very fine), aphanitic, medium grey with minor quartz and limestone, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, moderate calcite and limestone, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, significant iron staining and calcite, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, significant calcite and limestone, minor iron staining, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, significant calcite and limestone, minor iron staining, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, significant calcite and limestone, minor iron staining, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, significant calcite and limestone, minor iron staining, high strength, low weathering         Basalt (very fine), aphanitic, medium grey, some limestone and mudstone, high-very high strength, low weathering         Basalt (very fine), aphanitic, medium grey, very high strength, fresh         Basalt (very fine), aphanitic, some quartz, medium grey, low weathering, high-very high strength, low weathering <t< td=""></t<>

S	environm		<b>&gt;</b>	12 Cannan S South Towns	LTING PTY LTD t ville, QLD, 4810 07) 4722 8000	BOI	REHOLE	NUMBER 133WBR PAGE 2 OF 2	
				d Coal Pty L 620.31057		PROJECT NAME NAC	· · · · · · · · · · · · · · · · · · ·		
					Drilling			DATUM _ m AHD	
EQ HO	UIPM	<b>IENT</b> _	Air R	otary		HOLE LOCATION         369846'E 6983638'N (AGD84 Z56)           LOGGED BY         RD         CHECKED BY         DL			
Method	Water	Well Details	Depth (m)	Graphic Log	Material Desc	ription	Unit	Drilling and Bore Information	
mmer		¥	-	K K K	Basalt (very fine), aphanitic, medium grey, limestone deposits, medium strength, low v Basalt (very fine), aphanitic, medium grey v	weathering to fresh (continued)	Main Range Volcanics		
162mm Hammer			50		medium-high strength, low weathering Siltstone, with some mudstone and calcite,	light grey, low strength, fresh	Walloon Coal Measures Interburden	Betonite 47 - 50 m bgl	
150mm PDC					Sandstone (very fine), very light grey, low s Sandstone (very fine), with coal (black, dull strength, fresh Coal, black, lustrous, with mudstone (grey t fresh Siltstone, light-medium grey, low-medium s Sandstone (very fine), with siltstone, light-m fresh	to lustrous), very light grey, low to brown), medium-high strength, strength, fresh		Water Sample @ 50 m bgl – Airlift Yield: 2.5 (L/s) / EC: 2555 (uS/cm) / pH: 8.16 / Temp: 23.3 (°C) Gravel Pack 50 - 87 m bgl Water Sample @ 57 m bgl Airlift Yield: 2.6 (L/s) / EC: 2762	
			60		Mudstone, with sandstone (very fine), light- strength, fresh Sandstone (very fine), with some mudstone strength, fresh Sandstone (fine), with some siltstone, light- fresh	e, medium grey, medium-high		(uS/cm) / pH: 8.06 / Temp: 25.8 (°C) Screened Interval 63 - 81 m bgl	
					Mudstone, with sandstone (fine) and coal, estrength, fresh Coal, black lustrous, with mudstone, high-v Sandstone (fine-very fine), with minor muds strength, fresh	rery high strength, fresh	Walloon Coal Measures - Balgowan Coal Sequence		
			7 <u>0</u>		Siltstone, with sandstone (very fine), light-n fresh Sandstone (fine-very fine), with minor calcil grey, medium strength, fresh Sandstone (fine-very fine), some mudstone strength, fresh	te and mudstone, medium-light		Water Sample @ 69 m bgl Airlift Yield: 2.75 (L/s) / EC: 2489 (uS/cm) / pH: 8.11 / Temp: 22.4 (°C)	
					Sandstone (fine-very fine), minor mudstone medium strength, fresh Mudstone, with sandstone (fine-very fine) a brown, medium strength, fresh	and coal, medium grey, slightly		Water Sample @ 75 m bgl Airlift Yield: 2.75 (L/s) / EC: 2624 (uS/cm) / pH: 7.96 / Temp: 21.5 (°C)	
			8 <u>0</u>		Mudstone, with significant coal, medium-da Mudstone, with some coal and sandstone ( medium strength, fresh Sandstone (very fine), with mudstone and s medium-high strength, fresh Sandstone (fine-very fine), minor mudstone fresh Siltstone, with some sandstone (very fine), Sandstone (fine), light-medium grey, mediu	(fine-very fine), medium grey, some coal, medium grey, e, light grey, low-medium strength, light grey, medium strength, fresh	Walloon Coal Measures	Water Sample @ 81 m bgl Airlift Yield: 4 (L/s) / EC: 2415 (uS/cm) / pH: 8 / Temp: 22.2 (°C)	
				× × × × × × × × × × × × × × × × × × ×	Siltstone, with some sandstone (fine) and r strength, fresh 133WBR terminated at 87m bgl.		Interburden	Water Sample @ 87 m bgl Airlift Yield: 3.6 (L/s) / EC: 2529 (uS/cm) / pH: 8.02 / Temp: 22.3 (°C)	
			90	-	· ···-g.				

S		R	solution	12 Cannan S South Towns	LTING PTY LTD t ville, QLD, 4810 (07) 4722 8000	I	BOREHO	PAGE 1 OF 3		
				Acland Coal Pty L BER _620.31057		PROJECT NAME         NAC Drilling 2022           PROJECT LOCATION         Brisbane				
					Drilling			DATUM AHD		
EQ HO	UIP LE \$	MEN	T _/	Air Rotary 52mm		HOLE LOCATION 36972	HOLE LOCATION         369726'E 6980653'N (AGD84 Z56)           LOGGED BY         RD         CHECKED BY         DL			
Method	Water	W		Oepth Carbon (m)	Material De	scription	Unit	Drilling and Bore Information		
250mm Blade					Topsoil, darkbrown to black, high strengt Clay, dark brown, hard	h	- Topsoil / regolith	Bore cased with 52mm stainless steel casing and 52mm stainless steel slotted screen.		
250m					Clay, with minor basalt, brown, basalt is I aphinitic Clay, with minor basalt, light brown, basa aphinitic Clay, with minor basalt, light brown to gre iron, aphinitic Basalt, significantly degraded to clay, gre staining, high strength, very highly weath Sandy Clay, tertiary, light grey, low streng	It is black with minor oxidised iron, ey, basalt is black with minor oxidised ey and brown with significant iron ered	Walloon Coal Measures - Overburden	Grout 0 - 64 m bgl		
C	-				Mudstone, dark brown, with clay and ver Coal, with mudstone, black, lustrous, hig		-			
152mm PDC					Coal, with minor mudstone, black, dull to	lustrous, high strength, fresh	-			
					Coal, with significant mudstone, black, do		_			
					Coal, with minor mudstone, black, dull to Siltstone, with sandstone (fine - very fine fresh		_			
					Siltstone, with sandstone (fine - very fine medium strength, fresh	, , , , , , , , , , , , , , , , , , , ,	-			
							Siltstone, with sandstone (fine - very fine strength, fresh Sandstone (fine - very fine), with siltstone fresh Sandstone (fine), light to medium grey & Sandstone (medium - fine), light grey, low	e, medium grey, medium strength, brown, medium strength, fresh		
	•				Sandstone (medium), with minor coal, lig Sandstone (fine), with coal and mudston fresh Coal, with siltstone, black, black, dull to li Siltstone, with very minor coal, medium g	e, light grey, low-medium strength, ustrous, high strength, fresh				
	<b>–</b>				Siltstone, with sandstone (fine), medium Sandstone (medium - fine), light grey, m	grey, medium strength, fresh	-			
					Coal, with mudstone, black, dull to lustro	us, high strength, fresh	-	Water Sample @ 39 m bgl Airlift Yield: 0.05 (L/s) / EC: 2018		

S		tal solutio	5 12 Sou	Cannan S ith Towns	ILTING PTY LTD St sville, QLD, 4810 (07) 4722 8000	E	BOREHC	PAGE 2 OF 3	
					td (NAC) .00000				
					<b>COMPLETED</b> _31/1/23			DATUM AHD	
EQ	UIPME	NT _	Air Rota	ry	o Drilling	HOLE LOCATION 36972			
	TES		52mm			_ LOGGED BY _RD		CHECKED BYDL	
Method		Nell etails	Depth (m)	Graphic Log	Material Descri	ption	Unit	Drilling and Bore Information	
152mm PDC					Sandstone (medium), with siltstone, light to r fresh Sandy Clay, medium grey, low strength	medium grey, medium strength,		(uS/cm) / pH: 8.07 / Temp: 30.6 (°C)	
								Water Sample @ 45 m bgl Airlift Yield: 0.09 (L/s) / EC: 2007 (uS/cm) / pH: 8.36 / Temp: 29.9 (°C)	
					Sandy Clay, with some sandstone (medium) Sandstone (medium), light grey, low strength				
			50		oundatone (meanin), igne grey, iow suchga	, iicon	Walloon Coal Measures - Interburden	Water Sample @ 51 m bgl Airlift Yield: 0.09 (L/s) / EC: 2036 (uS/cm) / pH: 8.35 / Temp: 31.1 (°C)	
				× × × × × × × × × × × × × × × × × × ×		y, medium strength, fresh			
					Sandstone (medium - fine), with siltstone an medium strength, fresh	d mudstone, medium grey,			
			6 <u>0 ∷</u> −×	× × × × × × × ×	Siltstone, with minor mudstone, medium gre	y, medium strength, fresh			
				· · · · · · · · · · · · · · · · · · ·	Sandstone (medium - fine), light grey, low st	rength, fresh			
					Coal, with sandstone (medium - fine), black,	lustrous, high strength, fresh		 Water Sample @_63 m bgl Airlift Yield: 0.1 (L/s) / EC: 1792	
13/3/23		Y	l –×	× × × × × × × × × × × × × × × ×	Siltstone, with mudstone and sandstone (fine strength, fresh	e), medium grey, medium		(uS/cm) / pH: 8.32 / Temp: 29.2 (°C) Betonite 64 - 66.5 m bgl	
620.31057.00000.GPJ TRAINING_LIANE.GDT 13				× × × × × × × × × × × × × × × × × × ×	Siltstone, medium grey, medium strength, fre	esh		Gravel Pack 66.5 - 111 m bgl	
NING			70		Coal, with mudstone, black, lustrous, high st	rength, fresh		Water Sample @ 69 m bgl Airlift Yield: 0.1 (L/s) / EC: 1440	
SPJ TRA					Sandstone (fine), with siltstone, light to medi	um grey, medium strength, fresh	Walloon Coal Measures -	(uS/cm) / pH: 8.3 / Temp: 31 (°C)	
0000.0			l ¬×	× × × × × × × × × ×	Siltstone, with mudstone, medium grey, med	lium strength, fresh	Balgowan Coal Sequence		
1057.0			l T×	× × × × × × × × × × × ×					
				× × × × × × × × × ×	Siltstone, with sandstone (fine), medium gre Sandstone (fine), with siltstone, light grey, m	-		Water Sample @ 75 m bgl	
								Airlift Yield: 0.33 (L/s) / EC: 1352 (uS/cm) / pH: 8.38 / Temp: 27.7 (°C)	
JLE / TES					Sandstone (fine), with minor coal, light to me fresh			Screened Interval 77 - 86 m bgl	
BOREHOLE / TEST PIT			80		Coal and siltstone, black, lustrous, high strer Sandstone (fine), with minor coal, light to me fresh				

S		R	12 Ca South	nnan S Towns	LTING PTY LTD t ville, QLD, 4810 07) 4722 8000	E	BOREHO	PAGE 3 OF 3
CL	IEN	New	Acland Coa	al Pty Li	td (NAC)	PROJECT NAME NAC	Drilling 2022	
PR	OJE		<b>IBER</b> 620	.31057			Brisbane	
					<b>COMPLETED</b> <u>31/1/23</u>			DATUM AHD
					Drilling			(10001750)
		SIZE <u>1</u>	5211111					
Method	Water	Well Details	Depth (m)	Graphic Log	Material Descri	ption	Unit	Drilling and Bore Information
152mm PDC				$\begin{array}{c} \times \times \times \\ \times \times \end{array}$	Siltstone, with sandstone (fine), light to med	ium grey, medium strength, fresh		Water Sample @ 81 m bgl
152m				× × ×	Coal, with siltstone and sandstone (fine), bla	ack, lustrous, high strength, fresh		Airlift Yield: 0.55 (L/s) / EC: 1203 (uS/cm) / pH: 8.32 / Temp: 26.5 (°C)
					Coal, with minor mudstone, black, lustrous,	high strength, fresh		
				· · · · · · · · · · · · · · · · · · ·	Sandstone (fine), with coa, light grey, mediu	m strength, fresh		
				× × × × × ×	Siltstone, with sandstone (fine), medium gre	y, medium strength, fresh		
					Mudstone, with coal, dark brown, medium s			
				× × × × × × × × × × × ×	Siltstone, with sandstone (fine), medium gre	y, medium strength, fresh		Water Sample @ 87 m bgl Airlift Yield: 1 (L/s) / EC: 1188 (uS/cm) / pH: 8.22 / Temp: 25.5 (°C)
			90 × ×	$\times \times \times$	,	<b>-</b>		
			·	 	Mudstone, with sandstone (fine), dark brown			
				:::::: × × ×	Sandstone (coarse), light grey, medium - hig Siltstone and mudstone, medium grey, med		Walloon Coal Measures -	
				× × × × × × × × ×	Siltstone, with minor sandstone (fine) and m		Balgowan Coal Sequence	Water Sample @ 93 m bgl
				· · · · · · · · · · · · · · · · · · ·	fresh Mudstone, with coal, brown, medium streng	th frach		Airlift Yield: 1 (L/s) / EC: 1222 (uS/cm) / pH: 8.3 / Temp: 26.9 (°C)
					Coal, with siltstone and mudstone, black, lus			
			100					Water Sample @ 99 m bgl Airlift Yield: 1.3 (L/s) / EC: 1118 (uS/cm) / pH: 8.34 / Temp: 26.1 (°C)
					Sandstone (fine), light grey, medium to high	strength, fresh		Screened Interval 98 - 104 m bgl
			]		Sandstone (fine), with minor coal, light grey,			
S.					Coal, with siltstone and mudstone, black, lus			Sump 104 - 110 m bgl
6U1 13/3/23				× × × × × × × × × × × × × × × × × × ×	Siltstone, with minor sandstone (fine), medit	ım grey, medium strength, fresh		Water Sample @ 105 m bgl Airlift Yield: 1.3 (L/s) / EC: 1104 (uS/cm) / pH: 8.31 / Temp: 25.5 (°C)
ANE				× × × × × × × × ×			Durabilla Formation	
- NG			. <u>× ×</u>		Siltstone, with mudstone, medium grey, med	dium strength, fresh		Water Sample @ 111 m bgl
IKAIN				× × × × × × × × ×	Siltstone, with minor sandstone (fine), mediu	um grey, medium strength, fresh		Airlift Yield: 1.3 (L/s) / EC: 1107 (uS/cm) / pH: 8.29 / Temp: 25.8 (°C)
		<u> </u>		~ ~ ~	BCS3 terminated at 111m bgl.			1
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1. /GUT								
BOREHULE / IESI PII								
IOLE								
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CL	IEN	Γ <u>Ν</u>	ew A	Acland	l Coal Pty L	td (NAC)	PROJECT NAME NAC	Drilling 2022			
PR	OJE	CT N	UMI	BER _	620.31057	.00000	PROJECT LOCATION Brisbane				
						COMPLETED			DATUM MAHD		
								54'E 6977533'N	(AGD84 756)		
				i0mm			HOLE LOCATION371454'E 6977533'N (AGD84 Z56)           LOGGED BYRD         CHECKED BYDL				
		s									
Method	Water	We Deta		Depth (m)	Graphic Log	Material Descrip	tion	Unit	Drilling and Bore Information		
ade		$\mathbb{X}$	$\mathbb{N}$			Clay, brown and dark brown, hard			Bore cased with 52mm stainless steel casing and 52mm stainless steel		
250mm blade			Ø			Clay, with minor silt, medium brown, hard			slotted screen.		
250r						Clay, orangey brown, firm		Regolith			
		$\mathbb{X}$	$\mathbb{X}$		HH	Basalt (fine-very fine) with significant clay, bla	ack with iron staining, high	Regoliun			
			$\mathbb{N}$	-		strength, extremely weathered			Grout 0 - 72 m bgl		
			Ø	-	ĴŶĴŶ	Basalt (fine-very fine) with some clay, black v highly weathered			_		
			)		× × × × × × × × × × × × × × × × ×	Siltstone, with moderate gravel and significar strength, highly weathered	,				
			$\mathbb{N}$	10		Siltstone, with minor gravel and very significative weathered	nt clay, low strength, highly	Walloon Coal Measures -			
				-		Mudstone, orangey brown, low strength, mod	lerately weathered	Overburden			
			Ø	-		Coal, with mudstone, black, dull, high strengt	h low weathering		-		
			)			Coal, with mudstone, black, dull to lustrous, h		-			
			$\mathbb{N}$								
50mm PDC				La ta		Coal, with significant mudstone, black, dull to	lustrous, high strength, fresh				
150m					× × × × × × × × × × × × × × × × × × × ×	Siltstone, medium grey, low-medium strengt	n, fresh				
		$\mathbb{X}$	$\mathbb{X}$	20		Coal stringer, with siltstone, black, dull to lust					
			$\mathbb{X}$	-	<u> </u>	Sandstone (fine), light-medium grey, low-med Siltstone, medium grey, medium strength, fre		-			
				_	× × × × × × × × × × × × × × × × × × × ×						
				_	<del>×. ×. ×. ×. ×.</del> 	Sandstone (fine), light-medium grey, low-me	<b>Q</b> .				
		$\mathbb{N}$	$\mathbb{N}$	-	* * * * * *	Siltstone, with minor coal, medium grey, med	<b>.</b>	-			
						Coal, with minor mudstone, black, dull to lust	rous, nign strengtn, fresn				
						Coal, with moderate mudstone, black, dull to	lustrous, high strength, fresh	Walloon Coal Measures - Acland Coal	Water Sample @ 27 m bgl Airlift Yield: 0.13 (L/s) / EC: 10488 (uS/cm) / pH: 8.05 / Temp: 29.2 (°C)		
			$\mathbb{N}$	30		Coal, with significant mudstone, black, dull to		Sequence			
						Coal with minor mudstone, black, dull to lustr	ous, high strength, fresh				
	<b>T</b>				× × × × × × × × × × × × × × × × × × ×	Siltstone, medium grey, medium strength, fre	sh	-	Water Sample @ 33 m bgl Airlift Yield: 1.3 (L/s) / EC: 8370 (uS/cm) / pH: 8.27 / Temp: 26.8 (°C)		
			[		× × × × × × × ×	Siltstone and Coal, medium-dark grey, mediu	ım-high strength, fresh	-			
				-	· · · · · · · · · · · · · · · · · · ·	Sandstone (fine) and Siltstone, medium grey	, medium-high strength, fresh	-			
				40		Mudstone, dark brown, low-medium strength	, fresh		Water Sample @ 39 m bgl Airlift Yield: 1.3 (L/s) / EC: 8595 (uS/cm) / pH: 8.65 / Temp: 26.3 (°C)		
		Ŕ	Ø	+		Coal, with minor mudstone, black, lustrous, h	igh strength, fresh	-	(2.2., 5), p 0.00 / 10mp. 20.0 ( 0)		
					× ×	Siltstone, medium-dark grey, medium streng	th, fresh				
		Ø	Ø	_	~ ~ ~ × × × × × × × × × × × × × × ×						

S		tal solutio	) 1 S	12 Cannan S South Towns	LTING PTY LTD t ville, QLD, 4810 07) 4722 8000	E	BOREHO	PAGE 2 OF	
L		New	Aclan	d Coal Pty L	td (NAC) PF	ROJECT NAME NAC	Drilling 2022		
R	OJECT		IBER	620.31057	.00000 PF		DN Brisbane		
A.	TE STA	ARTE	<b>D</b> _6/	1/23	COMPLETED R.L.	SURFACE _430.049		DATUM AHD	
R	ILLING	CON	ITRAC	TOR Czisc	o Drilling				
Q	UIPME	NT _	Air Ro	otary	HOI	E LOCATION 37145	4'E 6977533'N	(AGD84 Z56)	
0	LE SIZ	<b>E</b> _1	50mm	1	LOC	GGED BY RD		CHECKED BY DL	
0	TES _		1	1				1	
00000		Well Details	Depth (m)	Graphic Log	Material Description		Unit	Drilling and Bore Information	
			-	× × × × × × × × × × × × × × × × × × × ×	Siltstone, with mudstone, dark grey, medium streng	th, fresh		Water Sample @ 45 m bgl Airlift Yield: 1.7 (L/s) / EC: 8754	
				× × × × × × × × × ×	Sandstone (fine - very fine), with siltstone, medium-	dark grey, medium		(uS/cm) / pH: 8.46 / Temp: 27.2 (°C	
		1 🕅			strength, fresh				
			5 <u>0</u>		Sandstone (fine), with brown mudstone, medium-da	rk grey, medium strength,			
			-		Sandstone (fine), with very minor mudstone, medium fresh	m grey, medium strength,		Water Sample @ 54	
		1 🕅	1 —					Water Sample @ 51 m bgl Airlift Yield: 1.7 (L/s) / EC: 8602	
								(uS/cm) / pH: 7.77 / Temp: 23.6 (°C	
			-				Walloon Coal Measures -		
					Sandstone (fine), with minor coal, medium grey, me	<b>u</b> .	Acland Coal Sequence		
			-		Coal, with sandstone (fine), black, dull to lustrous, h				
			-		Coal, with siltstone, black, dull to lustrous, high strer Siltstone, medium grey, medium strength, fresh	iyui, iicəli			
ļ		1 🕅		$\begin{array}{c} \times \times \times \times \times \\ \times \times \times \times \times \\ \times \times \times \times \times \end{array}$	Siltstone, with minor coal, medium-dark grey, mediu	m strength, fresh			
				$\begin{array}{c} \hat{\mathbf{x}} & \hat{\mathbf{x}} & \hat{\mathbf{x}} & \hat{\mathbf{x}} \\ \mathbf{x} & \mathbf{x} & \mathbf{x} & \mathbf{x} & \mathbf{x} \\ \end{array}$					
	Sandstone (fine), with siltstone				Sandstone (fine), with siltstone, medium grey, medi	um strength, fresh			
								Water Sample @ 63 m bgl	
				xxxxx 11 1			Sandstone (fine), with minor coal, medium grey, me	dium strength, fresh	
			-	$\begin{array}{c} \cdot \cdot$	Siltstone, with mudstone, medium-dark grey, mediu	m strength, fresh			
			-	× × × × × ×	Sandstone, with minor mudstone, medium grey, low	<b>U</b>			
				× × × × × × × × × × × ×	Siltstone, with sandstone (fine-very fine), medium-d strength, fresh Sandstone (fine), with mudstone, extremely clayey,			Water Sample @ 69 m bgl	
			7 <u>0</u>		strength, fresh	nynt-meulum grey, IOW		Airlift Yield: 1.7 (L/s) / EC: 8106 (uS/cm) / pH: 7.96 / Temp: 25.5 (°C	
				<u> </u> .			Walloon Coal		
					Sandstone (fine), with mudstone, medium grey, me	dium strength, fresh	Measures - Interburden	Rotonito 72 75 5 m b -1	
			-					Betonite 72 - 75.5 m bgl	
			-						
			-	]					
			-					Gravel Pack 75.5 - 132 m bgl	
			-	× × × × × × × × × × × × × × × × × × ×	Siltstone, with sandstone (fine), medium-dark grey, Sandstone (fine), with siltstone, medium grey, medi	<b>U</b> .			
			80	× × × × × × × × ×	Siltstone, with coal, medium-dark grey, medium stre	<b>U</b> 1		-	
			-	$\begin{array}{c} \times & \times & \times & \times \\ \times & \times & \times & \times & \times \\ \times & \times &$	Siltstone, medium-dark grey, medium strength, fres	h		Water Sample @ 81 m bgl Airlift Yield: 1.5 (L/s) / EC: 8349	
			-		Sandstone (fine) and Siltstone, medium grey, mediu	ım strength, fresh		(uS/cm) / pH: 7.99 / Temp: 25.7 (°C	
ļ			_				Walloon Coal		
			-		Sandstone (fine), with siltstone and coal, medium g	ey, medium strenath.	Measures - Balgowan Coal		
						Sequence			
			-					Water Sample @ 87 m bgl Airlift Yield: 1.5 (L/s) / EC: 7471	
			_	× × × × × × × × × ×	Siltstone, with coal, medium grey, medium strength,	fresh		(uS/cm) / pH: 8.02 / Temp: 25.6 (°C	
			90	$\begin{array}{c} \times \times \times \times \times \\ \times \times \times \times \times \end{array}$	Siltstone, medium grey, medium strength, fresh				

					<u>d Coal Pty L</u> 620.31057	· · · · · ·	PROJECT NAME         NAC Drilling 2022           PROJECT LOCATION         Brisbane						
						COMPLETED18/1/23	<b>R.L. SURFACE</b> 430.049		DATUM MAHD				
QU	PM	ENT			tary	o Drilling							
ют						1							
	water	We Deta		Depth (m)	Graphic Log	Material Descrip	tion	Unit	Drilling and Bore Information				
		· . · .			× × × × × × × × × × × × × × × × × × × ×	Siltstone, medium grey, medium strength, fre	sh <i>(continued)</i>						
									× × × × × ×	high strength, fresh	grey, medium strength, fresh dium strength, fresh e, medium-dark grey, medium -		Water Sample @ 93 m bgl Airlift Yield: 1.5 (L/s) / EC: 8019 (uS/cm) / pH: 7.92 / Temp: 25.7 (°C
						Sandstone (fine), extremely minor coal, media Sandstone (fine), medium grey, medium strer Sandstone (fine), and mudstone, medium gre fresh Sandstone (very fine), medium-dark grey, med Sandstone (medium-fine), medium grey, med	ngth, fresh ey and brown, medium strength, edium strength, fresh		Water Sample @ 99 m bgl Airlift Yield: 1.5 (L/s) / EC: 8159 (uS/cm) / pH: 8.23 / Temp: 25.4 (°C				
						Sandstone (fine), medium grey, medium-high Sandstone (medium-fine), with mudstone, ligh strength, fresh Sandstone (medium), medium grey, medium	nt-medium grey, medium strength, fresh	Walloon Coal	Water Sample @ 105 m bgl Airlift Yield: 1.3 (L/s) / EC: 7304				
							× × × × × × × × × × × × × × × × × × ×	Siltstone, with coal, medium-dark grey, mediu	nd brown, medium strength, yth, fresh im strength, fresh	Measures - Balgowan Coal Sequence	(uS/cm) / pH: 7.87 / Temp: 29.3 (°C Screened Interval 109 - 124 m bgl		
						× × × × × × × ×		ngth, fresh grey, medium strength, fresh	-	Water Sample @ 111 m bgl Airlift Yield: 1.25 (L/s) / EC: 7985 (uS/cm) / pH: 8.13 / Temp: 26 (°C)			
				_	× × × × × × × × × × × × × × × × × × ×	,,			Water Sample @ 117 m bgl Airlift Yield: 1.3 (L/s) / EC: 7331 (uS/cm) / pH: 8.16 / Temp: 25.4 (°C				
				_ 12 <u>0</u>	× × × × ×	Sandstone (fine), with minor mudstone, light-r fresh	medium grey, medium strength,		(				
					× × × × × × × × × × × × × × × × × × ×	Sandstone (medium-fine), with extremely min medium strength, fresh Siltstone, with minor coal, medium grey, medi			Water Sample @ 123 m bgl				
					× × × × × ×	Sandstone (medium-fine), with mudstone, me fresh	edium grey, medium strength,		- Airlift Yield: 1.3 (L/s) / EC: 7124 (uS/cm) / pH: 8.11 / Temp: 26.5 (°C				
					× × × × × × × × × × × × × × × × × × ×	medium strength, fresh	dium-fine), medium grey,	Durabilla Formation	Sump 124 - 130 m bgl Water Sample @ 129 m bgl Airlift Yield: 1.3 (L/s) / EC: 6757				
		L		13 <u>0</u> -	× × × × × × × × × × × × × × × × × × ×	Sandstone (medium), light-medium grey, low- Siltstone and sandstone (medium-fine), with r medium-dark grey, medium strength, fresh	<b>u</b> .		(uS/cm) / pH: 8.09 / Temp: 26.4 (°C Water Sample @ 132 m bgl Airlift Yield: 1.3 (L/s) / EC: 7879 (uS/cm) / pH: 8.15 / Temp: 26.1 (°C				

solutions	12 Cannan S South Towns	t ville, QLD, 4810		BOREHC	DLE NUMBER LCA1 PAGE 1 OF 1
		,	PROJECT NAME NAC	Drilling 2022	
RTED 2	24/11/22	<b>COMPLETED</b> _25/11/22	<b>R.L. SURFACE</b> 420.063		DATUM _ m AHD
150m	m		LOGGED BY RD		CHECKED BY DL
		Material Desc	ription	Unit	Drilling and Bore Information
-		weathered		Q/T Topsoil	Bore cased with 50mm uPVC casing and 50mm uPVC slotted screen.
-		Clay, light brown, firm, with very minor grav sub-angular to sub-rounded, very highly w	vel. Gravel is typically basalt (fine), eathered		Grout 0 - 1 m bgl Betonite 1 - 1.25 m bgl
-					Gravel Pack 1.25 - 5 m bgl
		Clay, orangy brown, firm, with very minor g (fine), sub-angular to sub-rounded, very hi	ravel. Gravel is typically basalt ghly weathered	- Alluvium	Screened Interval 1.5 - 4.5 m bgl
		Clay, with minor sandstone (coarse), light highly weathered	grey and orangey brown, stiff,		Sump 4.5 - 4.85 mbgl
	IUMBEF           RTED	12 Cannan S South Towns Telephone: ( ew Acland Coal Pty L: UMBER _620.31057 RTED _24/11/22 CONTRACTOR _Czisc T _Air Rotary _150mm	ew Acland Coal Pty Ltd (NAC)           IUMBER         620.31057.00000           RTED         24/11/22         COMPLETED         25/11/22           CONTRACTOR         Cziso Drilling         T           T         Air Rotary         150mm             all         Depth         B           general         General         Material Desc           all         Depth         B           general         Clay, with minor siltstone, dark brown and weathered             Clay, medium brown, soft-firm, very highly             Clay, light brown, firm, with very minor gras sub-angular to sub-rounded, very highly we sub-angular to sub-rounded to sub-rounded to sub-rounded to sub-rounded to sub-rounded	12 Cannan SS INCOLD 4810     South Tommsville, OLD, 4810     Telephone: (07) 4722 8000     ew Acland Coal Pty Ltd (NAC)     PROJECT LOCATION     PROJECT LOCATION     PROJECT LOCATION     TEED 24/11/22     COMPLETED 25/11/22     RL SURFACE 420.063     Clay Complete 25/11/22     RL SURFACE 420.063     PROJECT LOCATION 36951     LOGGED BY RD     Clay with minor sitistone, dark brown and brown in parts, hard, extremely     weathered     Clay, medium brown, soft-firm, very highly weathered.     Clay, medium brown, soft-firm, very highly weathered     Clay, medium brown, soft-firm, very highly weathered     Clay, medium brown, soft-firm, very highly weathered     Clay, crangy brown, firm, with very minor gravel. Gravel is typically basalt (fine), sub-angular to sub-rounded, very highly weathered     Clay, with minor sandstone (coarse), light grey and orangey brown, stiff,     Clay, with minor sandstone (coarse), light grey and orangey brown, stiff,	T2 Carriers 51     South Townsville, QLD, 410     Telephone: (07) 4722 8000      WA cland Coal Pty Ltd (NAC)     PROJECT NAME_NAC Drilling 2022     NUMBER 620.31057.00000     PROJECT LOCATION_Brisbane      TED 24/11/22     COMPLETED 25/11/22     RL SURFACE 420.063     DONTRACTOR_C2iso Drilling     HOLE LOCATION_369590'E 6979223'N     LOGGED BY_RD      LOGGED BY_RD      LOGGED BY_RD      LOGGED BY_RD      LOGGED BY_RD      Clay, with minor allistone, dark brown and brown in parts, hard, extremely     weathered     Clay, medium brown, soft-firm, very highly weathered.     Clay, medium brown, soft-firm, very highly weathered     Clay, light brown, firm, with very minor gravel. Gravel is typically basait (fine),     sub-angular to sub-rounded, very highly weathered     Clay, carangy brown, firm, with very minor gravel. Gravel is typically basait (fine),     Sub-angular to sub-rounded, very highly weathered     Clay, with minor sandstone (coarse), light grey and orangey brown, stiff.

BOREHOLE / TEST PIT 620.31057.00000.GPJ TRAINING\_LIANE.GDT 13/3/23

	12 Cannan S South Towns	LTING PTY LTD t ville, QLD, 4810 07) 4722 8000	I	BOREHC	PAGE 1 OF	
CLIENT New A		id (NAC)	PROJECT NAME NAC	Drilling 2022		
				TION Brisbane		
DATE STARTED	25/11/22	<b>COMPLETED</b> <u>25/11/22</u>			DATUM m AHD	
		Drilling				
er jod	Graphic (m) Graphic	Material Desci		Unit	Drilling and Bore Information	
		Clay, minor siltstone, dark brown, hard, ext	remely weathered	Q/T Topsoil	Bore cased with 50mm uPVC casing and 50mm uPVC slotted screen.	
		Clay, brown, hard-firm, very highly weather Clay, with very minor gravel, orangey brow (coarse-fine) angular to sub-rounded, hihg!	n, firm-hard. Gravel is basalt	Alluvium	Grout 0 - 1.3 m bgl Betonite 1.3 - 2 m bgl Gravel Pack 2 - 6.9 m bgl Screened Interval 3 - 6 m bgl	
		Clay with some sand (fine-very fine) and ve firm-hard. Gravel is basalt (fine), sub-angul weathered Siltstone, very clayey, light brown and oran strength, extremely weathered	ar to sub-rounded, highly		Sump 6 - 6.5 m bgl	
		Siltstone, with mudstone, light grey, mediur Mudstone, with extremely minor coal, dark parts, medium strength, highly weathered		Walloon Coal Measures Overburden	Betonite 6.9 - 9 m bgl	
		LCA2 terminated at 9m bgl.				