Technical Memorandum



To: F Kuranchie From: I Epari

Company: M Mining SLR Consulting Australia Pty Ltd

cc: Date: 1 August 2023

Project No. 620.V14721.00001

RE: Millennium Mine

Groundwater Drawdown information for the EA

Introduction

The Millennium Coal Mine is located approximately 20 kilometres (km) south-east of the township of Moranbah, within the Isaac Regional Council Local Government Area (LGA) in Queensland.

The Millennium Mine consists of two mining areas with six contiguous mining leases (ML): the Mavis Downs area (ML 70457, ML 70483 and ML 70485); and the Millennium area (ML 70313, ML 70401, ML 70344), together form a single operational project, the Millennium Mine. Millennium Mine operates under Environmental Authority (EA) EPML00819213.

SLR (2021)¹ noted that the screened aquifer information in EA Table D1 is inconsistent with the bore logs or the site geological model. The information was re-visited after a DES meeting on 29 June 2023. The review of EA Table D1 is part of the scope of this technical memorandum.

The most recent update of the EA (30 March 2023) included Condition D6.0, which states:

"The environmental authority holder must provide predicted maximum incremental drawdown values for bores MB2, MB8B, MB9B, MB10B and CS_MB2 to populate Trigger level thresholds in Table D3 – Groundwater level thresholds by 31 May 2023. These values must be sourced from the numerical model used to develop predicted drawdowns for Mavis underground impacts as presented in the Millennium Groundwater Impact Assessment (2021)."

This memo provides the relevant groundwater level trigger thresholds for EA Table D3.

Groundwater Monitoring Network (EA Table D1)

Table 1 lists the current aquifer attribution as listed in the EA, the information found on the bore logs (Appendix A), and the information from the geological model used as the basis for the layering of the numerical model in SLR (2021). For each bore, it was then assessed in which formation the bore is most likely screened, incorporating multiple data sources, including the publicly available surface and solid geology maps (Appendix B).

Figure 1 shows a cross-section of the site. This cross-section was based on the site geological model, deemed the most accurate source of information for the coal resource. The cross-section intersects MB9A/B, visually showing the most likely screened formations at this nested location.

The final screened formation is listed in the last column of Table 1. For the Rangal Coal Measures (RCM) and Fort Cooper Coal Measures (FCCM), it was distinguished if the bore is screened in a coal seam (Coal) or over/inter/underburden (Sandstone).

EA Table D1 lists the coordinates for the designated monitoring network. It was noted that these coordinates needed to be corrected. Site personnel visited each monitoring bore and took handheld GPS coordinates at each bore. The corrected Latitude and Longitude readings are listed in Table 2.

¹ SLR (2021) Millennium Mine Supporting documentation to the Environmental Authority (EPML00819213) amendment application Mavis Underground operations - Groundwater Impact Assessment. State considerations SLR Ref: 620.30404.00000-R01, Version No: -v3.0, October 2021

Table 1 Screened aquifer assessment based on bore logs, geological site model and geology maps

Monitoring bore	Bore Depth (mbgl)	Aquifer (current EA)	Screened interval (Bore logs) Appendix A	Model layer (numerical model based on site geological model)	Assessment	Proposed aquifer for amended EA
MB2	90	Permian Rangal	Permian Rangal (Sandstone and Coal)	Rangal Coal Measures (RCM)	Consistent across multiple data sources.	RCM (Coal)
MB8A	30 Fort Cooper (New Chum Creek Alluvium) Sandstone Rewan The Surface geology map (Appendix B) shows a Rewan outcrop at the location, and the bore is assessed as being more likely screened in the Rewan than in the Fort Cooper CM.		Rewan Group			
MB8B	80 Fort Cooper Sandstone RCM overburden The numerical model (based on the site geological model) assigned this bore to the RCM. Based on this information, this bore is more likely in the RCM than in the Fort		geological model) assigned this bore to the RCM. Based on this information, this bore is	RCM (Sandstone)		
MB9A	30	Fort Cooper (New Chum Creek Alluvium)	Moranbah Coal Seam	FCCM (Coal Seam), refer to Figure 1	Based on the site geological model, the cross-section shows that MB9A intersects the FCCM (Coal Seam).	FCCM (Coal)
MB9B	80	Fort Cooper	Moranbah Coal Measures Sandstone	FCCM (Sandstone underburden), refer to Figure 1	The cross-section based on the site geological model shows that MB9A intersects the FCCM (Sandstone underburden).	FCCM (Sandstone)
MB10A	35	Fort Cooper (New Chum Creek Alluvium)	Fort Cooper (Sandstone)	FCCM (Coal Seam)	The numerical model shows MB10A in the FFCM coal seam. The bore log has no coal in the screened interval, so FCCM (Sandstone) is proposed as the screened formation.	FCCM (Sandstone)
MB10B	80	Fort Cooper	Fort Cooper (Sandstone)	FCCM (Underburden)	The numerical model shows MB10A in the FFCM underburden, consistent with the logs.	FCCM (Sandstone)
CS_MB2	170	Rangal Coal Measures – Leichhardt Seam	Rangal Coal Measures – Leichhardt Seam	Leichhardt Seam	Bore logs and geological site model/ numerical model are consistent.	RCM (Coal)



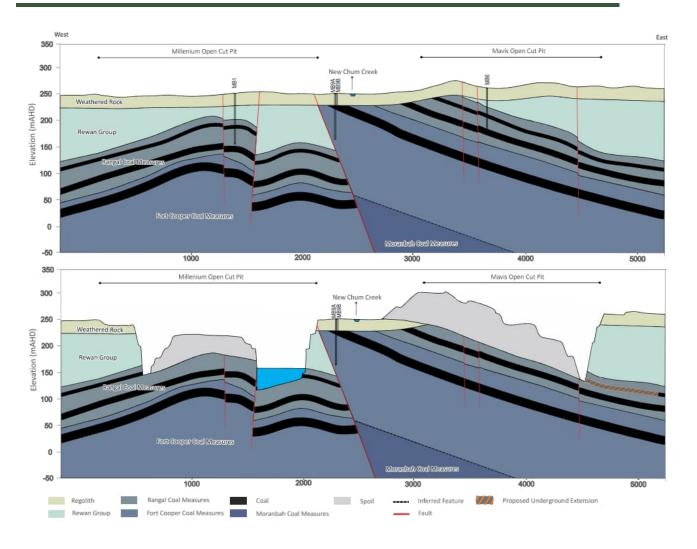


Figure 1 Conceptual cross-section around the Millenium and Mavis sites showing bore MB9A/B.



Bore MB8A has been found dry since installation. It is recommended to retain this bore in the monitoring network but remove it as a compliance bore, given that there are no results at this bore.

Table 2 Final proposed EA Table D1.

Monitoring bore	Latitude	Longitude	Ground elevation (mAHD)	Depth (mbgl)	Screens (mbgl)	Aquifer	Monitoring Frequency	Monitoring Parameters
MB2	22°1′50″ S	148°14′18″ E	262.4	90	72- 90	RCM (Coal)	Quarterly	SWL
MB8A	22°0′28″ S	148°14′3″ E	259.1	30	22-28	Rewan Group	Quarterly	SWL and Quality
MB8B (Monitoring, not compliance	22°0′28″ S	148°14′3″ E	259.1	80	62-74	RCM (Sandstone)	Quarterly	SWL and Quality
MB9A	22°0′34″ S	148°14′43′ E	251.8	30	22-30	FCCM (Coal)	Quarterly	SWL and Quality
MB9B	22°0′34″ S	148°14′43′ E	251.8	80	60-74	FCCM (Sandstone)	Quarterly	SWL and Quality
MB10A	22°1′33″ S	148°16′0″ E	233.9	35	27-35	FCCM (Sandstone)	Quarterly	SWL and Quality
MB10B	22°1′33″ S	148°16′0″ E	233.9	80	64-76	FCCM (Sandstone)	Quarterly	SWL and Quality
CS_MB2	22°1′10″ S	148°17′16″ E	236.4	170	161-164	RCM (Coal)	Quarterly	SWL

Notes: green shade denotes amended values

Groundwater Level Trigger Thresholds (EA Table D3)

Approach

The methodology adopted to develop the proposed EA groundwater level trigger thresholds was based on numerical groundwater modelling predictions for the Mavis underground operations reported in SLR (2021). The outputs of the numerical groundwater model were reviewed with respect to predicted groundwater levels at the five monitoring bores (MB02, MB08B, MB09B, MB10B and CS_MB2) for the EA over the life of Millennium. By comparison of groundwater level predictions at the commencement of Mavis underground mining and at the end of mining, incremental groundwater drawdown values were calculated. The maximum groundwater level drawdown predicted at each of the five EA monitoring bores was then extracted from those calculations, providing groundwater level trigger thresholds at each bore that are not expected to be exceeded after accounting for natural groundwater level variability. Natural groundwater variability was accounted for by reviewing the groundwater levels over the last five years. Exceedance of these groundwater drawdown values would therefore indicate the potential for groundwater impacts beyond those modelled, and thus this approach is considered appropriate for the EA.

Further, it was noted that the shallow bores of the Fort Cooper Coal Measures (FCCM) had a level trigger threshold of 1 m in the EA Table D3, as pre-populated by DES. It is considered that drawdown values of less than 2 m are not appropriate for the groundwater level trigger thresholds for the EA since natural groundwater level variability of up to approximately 2 m is expected over the life of the project. This is driven by climate variability, as presented in the water level plots in Appendix A. Thus, drawdown level trigger thresholds of less than 2 m will likely result in erroneous EA trigger breaches due to natural non-mining related effects. Furthermore, the 2 m drawdown limit is also the lowest of the *Water Act 2000* bore trigger thresholds used within Chapter 3 of the Water Act to define the potential for impacts to third-party groundwater extraction bores. Therefore, considering both natural groundwater level variability and bore trigger thresholds defined in the Water Act, it is proposed that a lower limit for the level trigger threshold of 2 m be adopted for the EA.



Model Drawdown Predictions

The numerical groundwater model drawdown predictions at the five EA monitoring bores over the life of the Mavis underground mine are provided in Table 3. The method used for the drawdown was to calculate the difference between the water levels in January 2023 and the end of mining in December 2027. This is considered the incremental drawdown for this assessment.

The water levels over the entire measurement period for each bore are shown in Appendix C. To account for climatic variability, the water level for the last five years has been reviewed at each bore. The difference between the maximum and minimum recorded water levels is listed as the "Variability over the last five years (m)" in Table 3. If the variability was not likely to be mining affected, the proposed drawdown trigger (Table 3) was then calculated by adding the predicted drawdown and half of the natural variability (i.e. accounting for the additional drawdown that may be caused by climate variability). For the two bores where a mining drawdown impact was likely (MB2 and MB8B), the predicted drawdown values were applied with no further changes (no additional variability predicted).

Bore MB9B shows a groundwater level recovery since observations stared, including over the last five years, with the rate of increase slowing down over the last three years, and tending towards a plateau around 221 mAHD. A mining impact is likely, however, it relates to water level recovery rather than water level drawdown. Given this potential mining impact, no additional natural variability was added to the model predictions to obtain the drawdown trigger. The proposed reference water level was the last observation in October 2022 (Figure 2). It is still deemed useful to have a drawdown trigger for MB9B (measured from the reference level) to have an early warning for a reversal of the recovery curve. Water quality changes associated with the water level increase are covered under the EA water quality triggers.

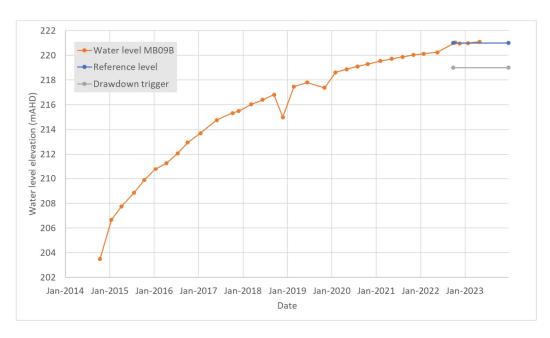


Figure 2 Groundwater level at MB9B with reference and trigger level



Table 3 Model predicted groundwater drawdowns between January 2023 and December 2027.

Bore	Aquifer	Predicted Drawdown (m) from SLR (2021) model	Variability over the last five years (m)	Mining impact likely in the last five years?	Proposed EA drawdown trigger threshold (m)
MB2	RCM (Coal)	4.3	5.0	Likely	4.3
MB8B	RCM (Sandstone)	1.4	2.5	Likely	2.0*
MB9B	FCCM (Sandstone)	1.2	6.0	Likely (recovery)	2.0*
MB10B	FCCM (Sandstone)	-0.2	3.0	No	2.0*
CS_MB2	RCM (Coal)	48.3	6.0	No	51.3

^{*}The minimum drawdown level of 2 m was adopted, as the calculated value was below this minimum.

EA Table D3 correction

During this scope of work, it was noted that the reference water level for CS_MB2 in Table D3 of the EA needs to be corrected. Bore CS_MB2 has a ground elevation of 236.4 mAHD². This value was incorrectly listed as the reference water level in the EA. Instead, the correct reference water level is the ground elevation (236.4 mAHD) minus the reference depth to water (84.63m), which is 151.8 mAHD. Since the first version of this report, new water level data for CS_MB2 has been made available (Appendix C). The longer time series shows that the reference level of 151.8 mAHD is conservative (recently, lower water levels have been observed before Mavis underground had started). However, it is recommended to keep the reference level at 151.8 mAHD.

Final proposed Table D3

Table 4 presents the final proposed EA Table D3, which includes the corrected reference water level for CS_MB2 and the proposed triggers for the bores that previously had no drawdown value assigned to them. The trigger limit for MB8A was removed because this bore has historically been found dry.

Table 4 Final proposed EA Table D3.

Monitoring bore	Aquifer	Level trigger threshold (m) (drawdown from reference water level)	Reference water level (mbgl)	Reference water level* (mAHD)
MB2	RCM (Coal)	4.3	86.6	175.7
MB8B	RCM (Sandstone)	2.0	64.4	194.7
MB9A	FCCM (Coal)	2.0	25.1	226.7
MB9B	FCCM (Sandstone)	2.0	30.9	221.0
MB10A	FCCM (Sandstone)	2.0	19.7	214.3
MB10B	FCCM (Sandstone)	2.0	19.9	214.0
CS_MB2	RCM (Coal)	51.3	84.6	151.8

 $^{{}^{\}star}\text{Reference}$ water level based on the last observation in October 2022.

² SLR (2022) Millennium Mine Groundwater Network Review and Trigger Assessment, SLR Ref: 620.30802.00000-R02 Version No: -v3.0, February 2023



6

Closure

This memo addressed the requirement of condition D6.0 of the EA and provided corrected values for any identified incorrect bore details (coordinates and aquifer attributions).

Regards,

SLR Consulting Australia Pty Ltd

I Epari

Principal Consultant



Appendix A – Bore logs





Australasian Groundwater & Environmental Consultants Pty Ltd

36 Jeays St, Bowen Hills, Queensland 4006

BOREHOLE LOG

BOREHOLE ID: MB 2

Page 1 of 2

PROJECT NO. G1506 DRILLER: Damien Mulcahy DATUM: AGD 84 Z55

PROJECT NAME: Millennium Coal Mine DRILLING METHOD: Rotary Percussion GROUND LEVEL: - mAHD

DATE: 2 August 2010 DRILL RIG: THD TOP OF CASING LEVEL: +0.58 m

CONTRACTOR: Big Hole Drilling Pty Ltd COORDINATES: 627690 mE / 7563100 mN LOGGED BY: DI

CONTRACTOR:	Big Hole Drilling Pty Ltd COORDINATES:	627690 mE / 7563100 mN	LOGGED BY: DI
Elevation Depth Graph	nic Lithologic Description	Bore Constructi	ion Bore Description
0 0 7/2/2	SANDY CLAY: high plasticity, brown with yellow mot medium sand, stiff, dry.		175mm PVC surface casing +0.58m to 6m
+ =====================================	SANDSTONE: extremely to highly weathered, red by with strong iron alteration, fine to medium grained, d	ry/ //	
5	SILTSTONE: highly weathered to fresh, yellow brow to slightly moist.	n, dry	cement bentonite grout 0m to 8m
10 10	SANDSTONE: moderately weathered, brown, fine to medium grained, dry.		
1010	SILTSTONE: moderately weathered to fresh, yellow brown to grey, dry. Fresh from 15m.)0000000	
1515		2000000 200000000000000000000000000000	
† †			
2020	SANDSTONE: fresh, grey, fine to medium grained, c		
	SILTSTONE: fresh, grey, dry.)	
2525	SILITOTONE. Healt, grey, dry.		
			class 12 PVC casing, 100mm ID, +0.58m to 72m
3030	::- : : :	00000000000000000000000000000000000000	
3535	:: ::: :::::::::::::::::::::::::::::::	ust 2010	
	interbedded SILTSTONE/SANDSTONE: fresh, of to dark grey, fine grained sandstone, dry.	at 28 Aug	
4040	<u>-</u> - 	lgdn Occ	
		W ON ON	
4545	<u></u>	S	
50	SILTSTONE: fresh, grey to dark grey, dry to slightly (at 56m).	moist Oil Oil Oil	



Australasian Groundwater & Environmental Consultants Pty Ltd

36 Jeays St, Bowen Hills, Queensland 4006

BOREHOLE LOG

BOREHOLE ID: MB 2 Page 2 of 2

PROJECT NO. G1506 DRILLER: Damien Mulcahy DATUM: AGD 84 Z55

PROJECT NAME: Millennium Coal Mine DRILLING METHOD: Rotary Percussion GROUND LEVEL: - mAHD

DATE: 2 August 2010 DRILL RIG: THD TOP OF CASING LEVEL: +0.58 m

CONTRACTOR: Big Hole Drilling Pty Ltd COORDINATES: 627690 mE / 7653100 mN LOGGED BY: DI

CONTRACTOR:	Big Hole Drilling Pty Ltd COORDINATES:	627690 mE / 7653100 mN	LOGGED BY: DI
Elevation Graph	ic Lithologic Description	Bore Construction	n Bore Description
505050	SILTSTONE: fresh, grey to dark grey, dry to slightly r (at 56m).	noist	backfill 8m to 68m
6060	INTERBEDDED SILTSTONE/SANDSTONE: fresh, g to dark grey, fine to medium grained sandstone, fractured(?), moist.	rey	
65 — -65	SANDSTONE: fresh, grey, fine to medium grained, n to slightly wet.	noist San	1/2" bentonite pellet seal 68m to
7070	INTERBEDDED SILTSTONE/SANDSTONE: fresh, g to dark grey, fine grained sandstone, slightly wet.	rey	69m
7575	SANDSTONE: fresh, dark grey, fine grained, slightly	wet.	class 12 PVC screen, 100mm ID, hand slotted, 72m to 90m
80	INTERBEDDED SILTSTONE/SANDSTONE: fresh, d grey, fine grained sandstone, slightly wet.	ark	
8585	INTERBEDDED SANDSTONE/COAL/SILTSTONE: f dark grey to black, fine grained sandstone, wet. Visu estimate ~0.5L/sec.	resh, lal	gravel pack 3-6mm 69m to 90m
90			drilled depth 90m
95			
100 -100			I

Page: 1 of 4

Repor	t Date: 16/09/2	2021 1	6:35			Groundwater Informa	tion				GWDB8250
						Bore Report					
From \	'ear:										
Regis	tered Number	Facil	itv Type		Facility Status	Drilled Date	Office		Shire		
1622			Artesian F	acility	Existing	09/12/2013	Mackay		3980 - ISAAC	REGIONAL	
Deta	ils					Location	1				
_	iption					Latitude	22-00)-34	Basin	1304	
Parisl	•	4308	- STALBF	RIDGE		Longitude		13-59	Sub-area		
Origir	al Name	MB 8	BA			GIS Latitud	e -22 0	0952409	Lot	2	
						GIS Longitu		2330537	Plan	GV165	
						Easting	6272				
Drille	Name	BAK	ER, STEV	EN JOHN		Northing	7565		Map Scale		
Drill C	ompany	HOD	GE DRILL	ING		Zone	55		Map Series		
Cons	Method	ROT	ARY AIR			Accuracy			Map No		
Bore	Line					GPS Accur	acv		Map Name		
D/O F	ile No		/515/000	Polyg	jon	Checked	Yes		Prog Section		
R/O F	ile No	(173	3)	Fauir	oment						
	ile No				f Bore Replaced						
	eceived Date	06/0	1/2014		Owner DNR						
Roles			Monitorin		Omici Divik						
				·							
Casi										7 rooord	s for RN 162245
Casi	ng									r record	S 101 RN 102243
Pipe	Date	Rec	Top (m)	Bottom (m)	Material Description				Mat Size (mm)	Size Desc	Outside Diameter (mm)
Α	09/12/2013	1	0.00	22.00	Polyvinyl Chloride						115
Α	09/12/2013	2	22.00		Screen						115
Α	09/12/2013	3	20.00	30.00	Gravel Pack				3.000	GR - Gravel Size	150
Х	09/12/2013	4	17.00	20.00	Bentonite Seal						150
						Outside: 1 Outside	4				Dames Conf. 1
D	4 D-4 40/00/	2004 4	0.05			Queensland Governn					Page: 2 of 4 GWDB8250
Repor	t Date : 16/09/2	2021 1	6.35			Groundwater Informa	tion				GWDB0250
						Bore Report					
From \	'ear:										
Pipe	Date	Rec	Top (m)	Bottom (m)	Material Description				Mat Size (mm)	Size Desc	Outside Diameter (mm)
Х	09/12/2013	5	6.00	17 00	Cuttings or other fill betwee	en casing and hole wall					150
X	09/12/2013	6	5.00		Grout	caoing and noic wall					150
X	09/12/2013	7			Grout						157
^	03/12/2013	- 1	0.00	5.00	Grout						131

Pipe	Date	Rec	Top (m)	Bottom (m)	Material Description	Mat Size (mm)	Size Desc	Outside Diameter (mm)
Χ	09/12/2013	5	6.00	17.00	Cuttings or other fill between casing and hole wall			150
Χ	09/12/2013	6	5.00	6.00	Grout			150
Χ	09/12/2013	7	0.00	5.00	Grout			157
Strat	a Logs						8 records	for RN 162245

Rec	Top (m)	Bottom (m)	Strata Description	
1	0.00	1.00	SOIL	
2	1.00	3.00	CLAY, RED	
3	3.00	5.00	CLAY	
4	5.00	6.00	CLAY, SANDY	
5	6.00	12.00	CLAY	
6	12.00	13.00	CLAY, HARD	
7	13.00	15.00	CLAY	
8	15.00	30.00	SANDSTONE	
Stratig	raphies			0 records for RN 162245
Aquife	rs			0 records for RN 162245

Pump Tests Part 1	0 records for RN 162245
Pump Tests Part 2	0 records for RN 162245
Bore Conditions	0 records for RN 162245
Elevations	0 records for RN 162245

Water Analysis Part 1

0 records for RN 162245

Queensland Government **Bore Report**

Page: 3 of 4 Report Date: 16/09/2021 16:35 **Groundwater Information** GWDB8250

From Year:

Water Analysis Part 2	0 records for RN 162245
Water Levels	0 records for RN 162245
Wire Line Logs	0 records for RN 162245
Field Measurements	0 records for RN 162245
Special Water Analysis	0 records for RN 162245

Queensland Government **Groundwater Information** Page: 4 of 4

GWDB8250

Bore Report

From Year:

User Licence and Conditions

Report Date: 16/09/2021 16:35

Disclaimer

Open Licence (Single Supply)

- You may use the supplied data for your own purposes (including supply to consultants for a specific consultancy project for you but the consultants must return or destroy the supplied data when the project is finished). You must not sell or distribute the supplied data.
- You must display this copyright notice on any copies of the supplied data however altered, reformatted or redisplayed if you supply to a consultant or copy for back up purposes: "© State of Queensland 2021".
- You may create and distribute hardcopy and digital products based on or containing the supplied data, provided all the following conditions are met:
- You must display this acknowledgment on the product(s): "Based on or contains data provided by the State of Queensland 2021. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws."
- You must include metadata with the product(s) you create that use or incorporate the supplied data and the metadata must incorporate as a minimum the metadata provided with this supplied data.

Obligations:

- You must not use the data for direct marketing or in breach of the privacy laws.

The State of Queensland is the owner of the intellectual property rights in and to the supplied data or has the right to make this supplied data available.

Disclaimer and indemnity:

You agree to accept all responsibility and risks associated with the use of the supplied data. The State makes no representations or warranties in relation to the supplied data, and, you agree that, to the extent permitted by law, all warranties relating to accuracy, reliability, completeness, currency or suitability for any particular purpose and all liability for any loss, damage or costs (including consequential damage) incurred in any way (including but not limited to that arising from negligence) in connection with any use of or reliance on the supplied data are excluded or limited. You agree to continually indemnify the State of Queensland (and its officers and employees) against any loss, cost, expense, damage and liability of any kind (including consequential damage and liability in negligence) arising directly or indirectly from or related to any claim relating to your use of the supplied data or any product made from the data.

Queensland Government Page: 1 of 4 Report Date: 16/09/2021 16:35 **Groundwater Information** GWDB8250

From Year:				Bore Report				
Registered Number	Facility Type		Facility Status	Drilled Date Offi	ce	Shire		
162244	Sub-Artesian F	acility	Existing	09/12/2013 Mad	ckay	3980 - ISAAC F	REGIONAL	
Details				Location				
Description				Latitude	22-00-34	Basin	1304	
Parish	4308 - STALB	RIDGE		Longitude	148-13-59	Sub-area		
Original Name	MB 8B			GIS Latitude	-22.00952846	Lot	2	
				GIS Longitude	148.2329962	Plan	GV165	
				Easting	627270			
Driller Name	BAKER, STE	/EN JOHN		Northing	7565605	Map Scale		
Drill Company	HODGE DRIL	LING		Zone	55	Map Series		
Const Method	ROTARY AIR			Accuracy		Map No		
Bore Line				GPS Accuracy		Map Name		
D/O File No	LON/515/000 (1733)	Polygon		Checked	Yes	Prog Section		
R/O File No		Equipment						
H/O File No		RN of Bore	Replaced					
Log Received Date		Data Owner	r DNR					
Roles	Mine Monitorii	ng						
Casing							8 reco	rds for RN 162244
Pipe Date	Rec Top (m)) Bottom Mate (m)	rial Description			Mat Size (mm)	Size Desc	Outside Diameter (mm)
A 09/12/2013	1 0.00	62.00 Poly	vinyl Chloride					115
A 09/12/2013	2 62.00	80.00 Scre	en					

Α 09/12/2013 3 60.00 80.00 Gravel Pack 3.000 GR - Gravel Size 150 09/12/2013 Χ 57.00 60.00 Bentonite Seal 150 4

Report Date: 16/09/2021 16:35

Rec Top (m) Bottom Strata Description (m)

From Year:

Queensland Government Groundwater Information Bore Report

Page: 2 of 4

GWDB8250

Pipe	Date	Rec	Top (m)	Bottom (m)	Material Description	Mat Size (mm) Size Desc	Outside Diameter (mm)
Χ	09/12/2013	5	6.00	57.00	Cuttings or other fill between casing and hole wall		150
Χ	09/12/2013	6	5.00	6.00	Grout		150
Χ	09/12/2013	7	0.50	5.00	Grout		150
Χ	09/12/2013	8	0.00	0.50	Grout		200
Strat	a Logs					8	3 records for RN 162244

1	0.00	1.00 SOIL	
2	1.00	3.00 CLAY, RED	
3	3.00	5.00 CLAY	
4	5.00	6.00 CLAY, SANDY	
5	6.00	12.00 CLAY	
6	12.00	13.00 CLAY, VERY HARD	
7	13.00	15.00 CLAY	
8	15.00	80.00 SANDSTONE	
Stratigra	aphies		0 records for RN 16224
	-		
Aquifer	S		0 records for RN 16224
Pump T	ests Par	t1	0 records for RN 16224
Pump T	ests Par	t 2	0 records for RN 16224
			0 records for RN 16224
Bore Co	onditions		U records for RN 10224

Queensland Government Groundwater Information Bore Report

nd Government Page: 3 of 4 ter Information GWDB8250

Page: 4 of 4

GWDB8250

From Year:

Report Date: 16/09/2021 16:35

Water Analysis Part 1	0 records for RN 162244
Water Analysis Part 2	0 records for RN 162244
Water Levels	0 records for RN 162244
Wire Line Logs	0 records for RN 162244
Field Measurements	0 records for RN 162244
Special Water Analysis	0 records for RN 162244

Queensland Government
Groundwater Information
Bore Report

Report Date: 16/09/2021 16:35

From Year:

User Licence and Conditions

Disclaimer

Open Licence (Single Supply)

Permitted use

- You may use the supplied data for your own purposes (including supply to consultants for a specific consultancy project for you but the consultants must return or destroy the supplied data when the project is finished). You must not sell or distribute the supplied data.
- You must display this copyright notice on any copies of the supplied data however altered, reformatted or redisplayed if you supply to a consultant or copy for back up purposes: "© State of Queensland 2021".
- You may create and distribute hardcopy and digital products based on or containing the supplied data, provided all the following conditions are met:
- You must display this acknowledgment on the product(s): "Based on or contains data provided by the State of Queensland 2021. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws."
- You must include metadata with the product(s) you create that use or incorporate the supplied data and the metadata must incorporate as a minimum the metadata provided with this supplied data.

Obligations:

- You must not use the data for direct marketing or in breach of the privacy laws.

Ownership

The State of Queensland is the owner of the intellectual property rights in and to the supplied data or has the right to make this supplied data available.

Disclaimer and indemnity:

You agree to accept all responsibility and risks associated with the use of the supplied data. The State makes no representations or warranties in relation to the supplied data, and, you agree that, to the extent permitted by law, all warranties relating to accuracy, reliability, completeness, currency or suitability for any particular purpose and all liability for any loss, damage or costs (including consequential damage) incurred in any way (including but not limited to that arising from negligence) in connection with any use of or reliance on the supplied data are excluded or limited. You agree to continually indemnify the State of Queensland (and its officers and employees) against any loss, cost, expense, damage and liability of any kind (including consequential damage and liability in negligence) arising directly or indirectly from or related to any claim relating to your use of the supplied data or any product made from the data.

Page: 1 of 4 GWDB8250 Report Date: 16/09/2021 16:33 **Groundwater Information**

From	Voar-

Elevations

	stered Numbe			oilite :	_	/ Status		Drilled Date				Shire	DECIONAL	
1622	46	Sub-A	rtesian Fa	Cility	Existin	9		09/12/2013	Mac	кау		3980 - ISAAC I	REGIONAL	
Deta								Locatio	n					
	ription	4000	0741.00	IDOF				Latitude		22-00-		Basin	1304	
Parish	n nal Name	4308 MB 9	- STALBR ^	IDGE				Longitude		148-14		Sub-area		
Origin	iai ivaille	IVID 9	Α					GIS Latitu			112592		2	
								GIS Longi Easting	ituae	148.24 62843		Plan	GV165	
Drille	r Name	BAKE	R, STEVE	N JOHN				Northing		75654		Map Scale		
Drill C	Company	HODO	GE DRILLI	NG				Zone		55		Map Series		
Const	Method	ROTA	ARY AIR					Accuracy				Map No		
Bore								GPS Accu	ıracy			Map Name		
D/O F	ile No	LON/9	515/000 3)	Polyg	jon			Checked		Yes		Prog Section		
R/O F	ile No			Equip	oment									
H/O F	ile No			RN of	f Bore Replaced									
_	eceived Date		/2014		Owner	DNR								
Roles		Mine	Monitoring	I										
Casi	na												6	records for RN 162
	Date	Rec	Top (m)	Bottom	Material Descri	ption						Mat Size (mm)		Outsic
				(m)										Diamet (mi
Α	09/12/2013	1	0.00	22.00	Polyvinyl Chloric	de								1
Α	09/12/2013	2	22.00	30.00	Screen									1
Α	09/12/2013	3	20.00	30.00	Gravel Pack							3.000	GR - Gravel	Size 1
Χ	09/12/2013	4	17.00	20.00	Bentonite Seal									1
rom Y	rear:							Bore Report						
Pipe	Date	Rec	Top (m)	Bottom	Material Descri	ption						Mat Size (mm)	Size Desc	Outsid
				(m)										Diamet (mı
Χ	09/12/2013	5	6.00	17.00	Cuttings or othe	r fill betwee	en casir	ng and hole wall						1
Χ	09/12/2013	6	0.00	6.00	Grout									1
Strat	a Logs												7 /	records for RN 162
Re	ec Top (m)		Strata De	escription	n									
	1 0.00	(m) 1.00	SOIL											
	2 1.00		CLAY											
	3 3.00		CLAY, S	ANDY										
	4 4.00	5.00	ROCK											
			01 41/ 0	ANDY										
	5 5.00	8.00	CLAY, S											
	6 8.00	12.00	CLAY											
	6 8.00 7 12.00	12.00		EAM										
Strat	6 8.00	12.00	CLAY	EAM									0 1	records for RN 162
Aqui	6 8.00 7 12.00 igraphies fers	12.00 30.00	CLAY COAL SE	EAM									1 /	records for RN 162
Aqui	6 8.00 7 12.00 igraphies	12.00 30.00	CLAY COAL SE	EAM	Date	SWL (m)		Quality	Yield (L/s)		Cond	Formation Name	1 /	
Aqui	6 8.00 7 12.00 igraphies fers Top (m) Bo	12.00 30.00 ttom L (m)	CLAY COAL SE		Date			Quality			Cond PS	Formation Name	1 /	records for RN 162
Aqui Rec	6 8.00 7 12.00 igraphies fers Top (m) Bo	12.00 30.00 ttom L (m) 30.00 C	CLAY COAL SE		Date			Quality					1 i	records for RN 162
Aqui Rec 1	6 8.00 7 12.00 sigraphies fers Top (m) Bo	12.00 30.00 ttom L (m) 30.00 C	CLAY COAL SE		Date			Quality					1 / SAL MEASURE 0 /	records for RN 162
Aqui Rec 1 Pum Pum	6 8.00 7 12.00 sigraphies fers Top (m) Bo 12.00 p Tests Par	12.00 30.00 ttom L (m) 30.00 C	CLAY COAL SE		Date			Quality					1 / SAL MEASURE 0 /	records for RN 162

0 records for RN 162246

Report Date: 16/09/2021 16:33

Queensland Government
Groundwater Information
Bore Report

Page: 3 of 4 GWDB8250

Page: 4 of 4

GWDB8250

From Year:

Water Analysis Part 1	0 records for RN 162246
Water Analysis Part 2	0 records for RN 162246
Water Levels	0 records for RN 162246
Wire Line Logs	0 records for RN 162246
Field Measurements	0 records for RN 162246
Special Water Analysis	0 records for RN 162246

Queensland Government
Groundwater Information
Bore Report

From Year:

User Licence and Conditions

Report Date: 16/09/2021 16:33

Disclaimer

Open Licence (Single Supply)

Permitted use

- You may use the supplied data for your own purposes (including supply to consultants for a specific consultancy project for you but the consultants must return or destroy the supplied data when the project is finished). You must not sell or distribute the supplied data.
- You must display this copyright notice on any copies of the supplied data however altered, reformatted or redisplayed if you supply to a consultant or copy for back up purposes: "© State of Queensland 2021".
- You may create and distribute hardcopy and digital products based on or containing the supplied data, provided all the following conditions are met:
- You must display this acknowledgment on the product(s): "Based on or contains data provided by the State of Queensland 2021. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws."
- You must include metadata with the product(s) you create that use or incorporate the supplied data and the metadata must incorporate as a minimum the metadata provided with this supplied data.

Obligations:

- You must not use the data for direct marketing or in breach of the privacy laws.

Ownership

The State of Queensland is the owner of the intellectual property rights in and to the supplied data or has the right to make this supplied data available.

Disclaimer and indemnity:

You agree to accept all responsibility and risks associated with the use of the supplied data. The State makes no representations or warranties in relation to the supplied data, and, you agree that, to the extent permitted by law, all warranties relating to accuracy, reliability, completeness, currency or suitability for any particular purpose and all liability for any loss, damage or costs (including consequential damage) incurred in any way (including but not limited to that arising from negligence) in connection with any use of or reliance on the supplied data are excluded or limited. You agree to continually indemnify the State of Queensland (and its officers and employees) against any loss, cost, expense, damage and liability of any kind (including consequential damage and liability in negligence) arising directly or indirectly from or related to any claim relating to your use of the supplied data or any product made from the data.

Queensland Government Page: 1 of 4 GWDB8250 Report Date: 16/09/2021 16:34 **Groundwater Information**

Dag!-t-	: ad Nissaha	F	4. T			litu Ctat	Ball I Bar	04.		Ohir-			
Register 162247	ed Numb		ty Type Irtesian Fa	acility	Facı Exist	lity Status ting	Drilled Date 09/12/2013	Mack		Shire 3980 - ISAAC I	REGIO	DNAL	
Details							Location	n					
Description							Latitude		22-00-40	Basin	130	4	
Parish		4308	- STALBR	RIDGE			Longitude		148-14-39	Sub-area			
Original N	Name	MB 9	В				GIS Latitud	de	-22.01108319	Lot	2		
							GIS Longite	ude	148.2442497	Plan	GV	165	
							Easting		628430				
Driller Na	me	BAKE	R, STEVI	EN JOHN			Northing		7565424	Map Scale			
Orill Com	pany	HOD	GE DRILL	ING			Zone		55	Map Series			
Const Me		ROTA	ARY AIR				Accuracy			Map No			
Bore Line							GPS Accur	racy		Map Name			
D/O File N	No	LON/ (1733	515/000 8)	Polyg	gon		Checked		Yes	Prog Section			
R/O File N	No	(1700	,,	Equip	oment								
H/O File N	No				f Bore Replaced	i							
Log Rece	ived Date	06/01	/2014	Data	Owner	DNR							
Roles		Mine	Monitoring	g									
asing												6 records f	or RN 1622
Pipe Da	ate	Rec	Top (m)	Bottom	Material Des	cription				Mat Size (mm)	Size	Desc	Outside
•			,	(m)		•							Diameter
A 09	9/12/2013	1	0.00	80.00	Polyvinyl Chlo	oride				8.000	WT -	Wall Thickness	(mm) 115
	9/12/2013	2	60.00		Screen							Aperture Size	115
	9/12/2013	3	58.00		Gravel Pack							Gravel Size	
X 09	9/12/2013	4	55.00	58.00	Bentonite Sea	al							150
							Queensland Governn	nent					Page: 2 of
Report Da	ate: 16/09	9/2021 1	6:34				Groundwater Informa	ation					GWDB825
							Bore Report						
rom Year	:												
Pipe Da	ate	Rec	Top (m)	Bottom (m)	Material Des	cription				Mat Size (mm)	Size	Desc	Outside Diameter
v 00	9/12/2013	-	6.00			har fill batura	en casing and hole wall						(mm) 150
	9/12/2013	5 6	6.00 0.00		Grout	nei iii betwe	en casing and note wall						165
\ 08	7/12/2013	U	0.00	0.00	Glout								
Strata L	.ogs											11 records f	or RN 16224
Rec	Top (m)	Bottom (m)		escription	n								
1	0.00		SOIL										
2	1.00	3.00	CLAY										
3	3.00	4.00	CLAY, S	SANDY									
4	4.00	5.00	ROCK										
7	5.00	8.00	CLAY, S	SANDY									
5													
	8.00	12.00	CLAY										
5	8.00 12.00			EAM, MOI	RANBAH								
5 6		32.00			RANBAH								
5 6 7	12.00	32.00 36.50	COAL SI										

0 records for RN 162247

11

Aquifers

Stratigraphies

Pump Tests Part 1

Pump Tests Part 2

Bore Conditions

72.00

80.00 MUDSTONE

Queensland Government Report Date: 16/09/2021 16:34 **Groundwater Information Bore Report**

Page: 3 of 4 GWDB8250

Page: 4 of 4

GWDB8250

From Year:

Elevations	0 records for RN 162247
Water Analysis Part 1	0 records for RN 162247
Water Analysis Part 2	0 records for RN 162247
Water Levels	0 records for RN 162247
Wire Line Logs	0 records for RN 162247
Field Measurements	0 records for RN 162247
Special Water Analysis	0 records for RN 162247

Queensland Government **Groundwater Information Bore Report**

From Year:

User Licence and Conditions

Report Date: 16/09/2021 16:34

Disclaimer

Open Licence (Single Supply)

- You may use the supplied data for your own purposes (including supply to consultants for a specific consultancy project for you but the consultants must return or destroy the supplied data when the project is finished). You must not sell or distribute the supplied data.
- You must display this copyright notice on any copies of the supplied data however altered, reformatted or redisplayed if you supply to a consultant or copy for back up purposes: "© State of Queensland 2021".
- You may create and distribute hardcopy and digital products based on or containing the supplied data, provided all the following conditions are met:
- You must display this acknowledgment on the product(s): "Based on or contains data provided by the State of Queensland 2021. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws."
- You must include metadata with the product(s) you create that use or incorporate the supplied data and the metadata must incorporate as a minimum the metadata provided with this supplied data.

Obligations:

- You must not use the data for direct marketing or in breach of the privacy laws.

The State of Queensland is the owner of the intellectual property rights in and to the supplied data or has the right to make this supplied data available.

Disclaimer and indemnity:

You agree to accept all responsibility and risks associated with the use of the supplied data. The State makes no representations or warranties in relation to the supplied data, and, you agree that, to the extent permitted by law, all warranties relating to accuracy, reliability, completeness, currency or suitability for any particular purpose and all liability for any loss, damage or costs (including consequential damage) incurred in any way (including but not limited to that arising from negligence) in connection with any use of or reliance on the supplied data are excluded or limited. You agree to continually indemnify the State of Queensland (and its officers and employees) against any loss, cost, expense, damage and liability of any kind (including consequential damage and liability in negligence) arising directly or indirectly from or related to any claim relating to your use of the supplied data or any product made from the data.

Page: 1 of 4 GWDB8250 Report Date: 16/09/2021 16:27 **Groundwater Information**

20.00

COAL - Coal SDST - Sandstone

Regis	tered Numbe				Facility Status	Drilled Date		Shire		
622	49	Sub-A	rtesian Fa	acility	Existing	10/12/2013	Mackay	3980 - ISAAC I	REGIONAL	
Deta	ils					Location				
Descri	iption					Latitude	22-01-39	Basin	1304	
Parish	1	2420	- ILSINGT	ΓON		Longitude	148-15-57	Sub-area		
Origin	al Name	MB 10	AC			GIS Latitud	e -22.0274232	Lot	4	
						GIS Longitu	ide 148.2657576	Plan	SP190266	
D=:!! -=	Name	DAKE	D OTEV	-N. 1011N		Easting	630635			
	ompany		ER, STEVE GE DRILL			Northing -	7563596	Map Scale		
	Method		ARY AIR	ing		Zone	55	Map Series		
Bore L		11017				Accuracy GPS Accura	acv.	Map No Map Name		
D/O Fi	ile No	LON/	515/000	Polyg	on	Checked	Yes	Prog Section		
		(1733)				100			
R/O Fi					oment					
H/O Fi	eceived Date	06/01	/2014		Bore Replaced Owner DNR					
Roles	eceived Date		Monitoring		Owner DINK					
		1411110	Wiering	9						
Casir	าต								6 records fo	or RN 1622
	Date	Rec	Top (m)	Bottom	Material Description			Mat Size (mm)	Size Desc	Outside
			,	(m)	·			` ,		Diamete
Α	10/12/2013	2	27.00	35.00	Perforated or Slotted Casin	g				(mm
A	10/12/2013	3	25.50		Gravel Pack	3		0.300	GR - Gravel Size	150
Χ	10/12/2013	1	0.00	35.00	Polyvinyl Chloride			0.800	WT - Wall Thickness	115
X	10/12/2013	4	23.00	25.50	Bentonite Seal					150
						Bore Report				
rom Y	ear:									
Pipe	Date	Rec	Top (m)	Bottom	Material Description			Mat Size (mm)	Size Desc	Outside
•			,	(m)	·			` ,		Diameter
	2410									(mm
X		5	6.00	23.00	Cuttings or other fill between	en casing and hole wall				150
	10/12/2013	5 6	6.00		Cuttings or other fill betwee Grout	n casing and hole wall				
(10/12/2013 10/12/2013				-	en casing and hole wall			12 records fo	16
< Strata	10/12/2013 10/12/2013 a Logs	6	0.00	6.00	Grout	en casing and hole wall			12 records fo	16
× Strata	10/12/2013 10/12/2013	6	0.00 Strata D	6.00	Grout	en casing and hole wall			12 records fo	165
× Strata Re	10/12/2013 10/12/2013 a Logs	6 Bottom (m)	0.00 Strata D	6.00	Grout	en casing and hole wall			12 records fo	165
X Strata Re	10/12/2013 10/12/2013 a Logs c Top (m) E	6 Sottom (m) 0.50	0.00 Strata D	6.00	Grout	en casing and hole wall			12 records fo	165
X Strata Re	10/12/2013 10/12/2013 a Logs c Top (m) E	6 3 3.00	0.00 Strata Do	6.00	Grout	en casing and hole wall			12 records fo	165
X Strata Re	10/12/2013 10/12/2013 a Logs c Top (m) E 1 0.00 2 0.50	6 Bottom (m) 0.50 3.00 8.00	0.00 Strata Do	6.00 escription	Grout	en casing and hole wall			12 records fo	165
X Strata Re	10/12/2013 10/12/2013 a Logs c Top (m) E 1 0.00 2 0.50 3 3.00	6 Bottom (m) 0.50 3.00 8.00 8.50	Strata Do SOIL CLAY CLAY, S. CLAY, D	6.00 escription	Grout	en casing and hole wall			12 records fo	165
X Strata Re	10/12/2013 10/12/2013 a Logs c Top (m) E 1 0.00 2 0.50 3 3.00 4 8.00 5 8.50 6 9.00	30ttom (m) 0.50 3.00 8.00 9.00 14.00	O.00 Strata D. SOIL CLAY CLAY, S. CLAY, D COAL, W CLAY	6.00 escription ANDY RY VEATHER	Grout	en casing and hole wall			12 records fo	165
X Strata Re	10/12/2013 10/12/2013 a Logs c Top (m) E 1 0.00 2 0.50 3 3.00 4 8.00 5 8.50 6 9.00 7 14.00	30ttom (m) 0.50 3.00 8.00 8.50 9.00 14.00 17.00	SOIL CLAY, S. CLAY, D. COAL, W. CLAY MUDSTO	6.00 PESCRIPTION ANDY PRY VEATHER ONE	Grout	en casing and hole wall			12 records fo	165
X Re	10/12/2013 10/12/2013 a Logs c Top (m) E 1 0.00 2 0.50 3 3.00 4 8.00 5 8.50 6 9.00 7 14.00 8 17.00	30ttom (m) 0.50 3.00 8.00 8.50 9.00 14.00 20.00	O.00 Strata Do SOIL CLAY, S. CLAY, D. COAL, W. CLAY MUDSTO SANDST	6.00 PESCRIPTION ANDY PRY VEATHER ONE	Grout	en casing and hole wall			12 records fo	165
Re	10/12/2013 10/12/2013 a Logs 1 0.00 2 0.50 3 3.00 4 8.00 5 8.50 6 9.00 7 14.00 8 17.00 9 20.00	30ttom (m) 0.50 3.00 8.50 9.00 14.00 20.00 20.20	O.00 Strata Do SOIL CLAY, CLAY, S. CLAY, D COAL, W CLAY MUDSTC SANDST COAL	6.00 escription ANDY RY VEATHER ONE	Grout	en casing and hole wall			12 records fo	150 168 or RN 1622
X Setrata Re	10/12/2013 10/12/2013 a Logs c Top (m) E 1 0.00 2 0.50 3 3.00 4 8.00 5 8.50 6 9.00 7 14.00 8 17.00 9 20.00 0 20.20	30ttom (m) 0.50 3.00 8.50 9.00 14.00 20.00 20.20 21.00	O.00 Strata Do SOIL CLAY CLAY, S. CLAY, D. COAL, W. CLAY MUDSTC SANDST COAL MUDSTC	6.00 escription ANDY RY VEATHER ONE ONE	Grout	en casing and hole wall			12 records fo	165
X Re	10/12/2013 10/12/2013 a Logs c Top (m) E 1 0.00 2 0.50 3 3.00 4 8.00 5 8.50 6 9.00 7 14.00 8 17.00 9 20.00 0 20.20 1 21.00	6 3ottom (m) 0.50 3.00 8.00 8.50 9.00 14.00 17.00 20.00 20.20 21.00 26.00	O.00 Strata D. SOIL CLAY CLAY, S. CLAY, D COAL, W CLAY MUDSTC SANDST COAL MUDSTC SANDST	6.00 escription ANDY RY VEATHER ONE TONE TONE	Grout	en casing and hole wall			12 records fo	16
X Re 1 1	10/12/2013 10/12/2013 a Logs 1 0.00 2 0.50 3 3.00 4 8.00 5 8.50 6 9.00 7 14.00 8 17.00 9 20.00 0 20.20 1 21.00 2 26.00	6 3ottom (m) 0.50 3.00 8.00 8.50 9.00 14.00 17.00 20.00 20.20 21.00 26.00	O.00 Strata D. SOIL CLAY CLAY, S. CLAY, D COAL, W CLAY MUDSTC SANDST COAL MUDSTC SANDST	6.00 escription ANDY RY VEATHER ONE ONE	Grout	en casing and hole wall				169
C Re	10/12/2013 10/12/2013 a Logs c Top (m) E 1 0.00 2 0.50 3 3.00 4 8.00 5 8.50 6 9.00 7 14.00 8 17.00 9 20.00 0 20.20 1 21.00 2 26.00 igraphies	6 3ottom (m) 0.50 3.00 8.00 8.50 9.00 14.00 17.00 20.00 20.20 21.00 26.00	O.00 Strata D. SOIL CLAY CLAY, S. CLAY, D COAL, W CLAY MUDSTC SANDST COAL MUDSTC SANDST	6.00 escription ANDY RY VEATHER ONE TONE TONE	Grout	en casing and hole wall			0 records fo	169 Dr RN 1622
1 1 1 1 1 ctrati	10/12/2013 10/12/2013 a Logs c Top (m) E 1 0.00 2 0.50 3 3.00 4 8.00 5 8.50 6 9.00 7 14.00 8 17.00 9 20.00 0 20.20 1 21.00 2 26.00 igraphies fers	6 3ottom (m) 0.50 3.00 8.50 9.00 14.00 17.00 20.00 20.20 21.00 26.00 35.00	O.00 Strata D. SOIL CLAY CLAY, S. CLAY, D COAL, W CLAY MUDSTC SANDST COAL MUDSTC SANDST	6.00 escription ANDY RY VEATHER ONE TONE TONE	Grout ARSE					162 or RN 162
1 1 1 1 rati	10/12/2013 10/12/2013 a Logs c Top (m) E 1 0.00 2 0.50 3 3.00 4 8.00 5 8.50 6 9.00 7 14.00 8 17.00 9 20.00 0 20.20 1 21.00 2 26.00 igraphies	6 3ottom (m) 0.50 3.00 8.50 9.00 14.00 17.00 20.00 20.20 21.00 26.00 35.00	O.00 Strata D. SOIL CLAY CLAY, S. CLAY, D COAL, W CLAY MUDSTC SANDST COAL MUDSTC SANDST	6.00 escription ANDY RY VEATHER ONE TONE TONE	Grout ARSE	Flow Quality Y	ield Contr Cond	Formation Name	0 records fo	10 pr RN 162

1 records for RN 162249 Pump Tests Part 1

"BRACKIS H"

14.00 Y

PS

-19.80 N

10/12/2013

Queensland Government Groundwater Information Bore Report Page: 3 of 4 GWDB8250

> Page: 4 of 4 GWDB8250

Report Date: 16/09/2021 16:27

From Year:

	cui.															
Pipe	Date	Rec	RN o Pumpe Bo	d	(m) Bott		st Meth n)	Test Typ	oes	Pum Type			Q Prior to Test (I/s)	Dur of Q PR (mins)	Pres on Arriv (m)	Q on Arriv (I/s/)
Α	10/12/2013	1	16224	49 20	0.00		PUM			AIR		26.00				
Pum	p Tests Par	rt 2												1 /	records for RN	1622
Pipe	Date		Test Dur (mins)	SWL(m)	Recov Time (mins)	Resid DD (m)	Max DD or P RED (m)	Q at Max DD (I/s)	Time to Max DD (mins)	 Calc Stat HD (m)	Desigi Yield (I/s)	n Desig BP (m		Tm n) (m2	sy 2/Day)	Stor
Α	10/12/2013	1	60	-19.80)			14.00)				26	.00		
Bore	Conditions	S												0	records for RN	1622
Elev	ations													0	records for RN	1622
Wate	er Analysis	Part 1	1											0	records for RN	1622
Wate	er Analysis	Part 2	2											0	records for RN	1622
Wate	er Levels													0	records for RN	1622
Wire	Line Logs													0	records for RN	1622
Field	l Measurem	ents												0	records for RN	1622
Spec	ial Water A	nalvs	sis											0	records for RN	1622

Queensland Government
Groundwater Information
Roro Poport

Bore Report

From Year:

User Licence and Conditions

Report Date: 16/09/2021 16:27

Disclaimer

Open Licence (Single Supply)

Permitted use

- You may use the supplied data for your own purposes (including supply to consultants for a specific consultancy project for you but the consultants must return or destroy the supplied data when the project is finished). You must not sell or distribute the supplied data.
- You must display this copyright notice on any copies of the supplied data however altered, reformatted or redisplayed if you supply to a consultant or copy for back up purposes: "© State of Queensland 2021".
- You may create and distribute hardcopy and digital products based on or containing the supplied data, provided all the following conditions are met:
- You must display this acknowledgment on the product(s): "Based on or contains data provided by the State of Queensland 2021. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws."
- You must include metadata with the product(s) you create that use or incorporate the supplied data and the metadata must incorporate as a minimum the metadata provided with this supplied data.

Obligations:

- You must not use the data for direct marketing or in breach of the privacy laws.

Ownership

The State of Queensland is the owner of the intellectual property rights in and to the supplied data or has the right to make this supplied data available.

Disclaimer and indemnity:

You agree to accept all responsibility and risks associated with the use of the supplied data. The State makes no representations or warranties in relation to the supplied data, and, you agree that, to the extent permitted by law, all warranties relating to accuracy, reliability, completeness, currency or suitability for any particular purpose and all liability for any loss, damage or costs (including consequential damage) incurred in any way (including but not limited to that arising from negligence) in connection with any use of or reliance on the supplied data are excluded or limited. You agree to continually indemnify the State of Queensland (and its officers and employees) against any loss, cost, expense, damage and liability of any kind (including consequential damage and liability in negligence) arising directly or indirectly from or related to any claim relating to your use of the supplied data or any product made from the data.

Page: 1 of 4 GWDB8250 Report Date: 16/09/2021 16:28 **Groundwater Information**

Register	red Number	Facili	ty Type		Facility Status	Drilled Date Off	ice	Shire		
162248	3	Sub-A	rtesian Fa	cility	Existing	10/12/2013 Ma	ckay	3980 - ISAAC I	REGIONAL	
Details	S					Location				
Descript	tion					Latitude	22-01-39	Basin	1304	
Parish		2420	- ILSINGT	ON		Longitude	148-15-57	Sub-area		
Original	Name	MB10)B			GIS Latitude	-22.02746627	Lot	4	
						GIS Longitude	148.2657368	Plan	SP190266	
						Easting	630633			
Driller N	ame	BAKE	ER, STEVE	EN JOHN		Northing	7563592	Map Scale		
Drill Con	mpany	HOD	GE DRILL	ING		Zone	55	Map Series		
Const M	lethod	ROT	ARY AIR			Accuracy		Map No		
Bore Lin	ne					GPS Accuracy		Map Name		
D/O File	No	LON/ (1733	/515/000 3)	Polyg	on	Checked	Yes	Prog Section		
R/O File	No			Equip	ment					
H/O File	No			RN of	Bore Replaced					
l oa Doo										
Log Rec	eived Date	06/01	/2014	Data	Owner DNR					
-	eived Date		/2014 Monitoring		Owner DNR					
Roles					Owner DNR				6 records fo	r <i>RN</i> 1622
Roles	J		Monitoring	9	Owner DNR Material Description			Mat Size (mm)		r RN 1622 Outside Diamete (mm
Roles Casing	J	Mine	Monitoring	Bottom (m)				, ,		Outside Diamete
Roles Casing Pipe D) Date	Mine	Monitoring Top (m)	Bottom (m) 80.00	Material Description			0.800	Size Desc	Outside Diamete (mm
Casing Pipe D A 1 A 1	Date 0/12/2013	Mine Rec	Top (m)	Bottom (m) 80.00 76.00	Material Description Polyvinyl Chloride			0.800	Size Desc WT - Wall Thickness	Outside Diamete (mm
Casing Pipe C A 1 A 1 A 1	Date 0/12/2013 0/12/2013	Mine Rec	Top (m) 0.00 64.00	Bottom (m) 80.00 76.00 80.00	Material Description Polyvinyl Chloride Perforated or Slotted Casing			0.800	Size Desc WT - Wall Thickness AP - Aperture Size	Outside Diamete (mm
Casing Pipe C A 1 A 1 A 1	Oate 0/12/2013 0/12/2013 0/12/2013	Rec	Top (m) 0.00 64.00 62.00	Bottom (m) 80.00 76.00 80.00	Material Description Polyvinyl Chloride Perforated or Slotted Casing Gravel Pack			0.800	Size Desc WT - Wall Thickness AP - Aperture Size	Outside Diamete (mm 118
Casing Pipe C A 1 A 1 A 1 X 1	Oate 0/12/2013 0/12/2013 0/12/2013	Rec 1 2 3 4	Top (m) 0.00 64.00 62.00 59.00	Bottom (m) 80.00 76.00 80.00	Material Description Polyvinyl Chloride Perforated or Slotted Casing Gravel Pack Bentonite Seal	Queensland Government Groundwater Information		0.800	Size Desc WT - Wall Thickness AP - Aperture Size GR - Gravel Size	Outside Diamete (mm 118

Bore Report

From Year:

Pipe	Date	Rec	Top (m)	Bottom (m)	Material Description	Mat Size (mm)		utside ameter (mm)
Χ	10/12/2013	5	6.00	59.00	Cuttings or other fill between casing and hole wall			150
X	10/12/2013	6	0.00	6.00	Grout			165
Strat	a Logs						13 records for RN	162248

Rec	Top (m)		Strata Description
4	0.00	(m)	COL
1	0.00	0.50	SOIL
2	0.50	3.00	CLAY
3	3.00	8.00	CLAY, SANDY
4	8.00	8.50	CLAY, DRY
5	8.50	9.00	COAL, WEATHERED
6	9.00	14.00	CLAY
7	14.00	17.00	MUDSTONE
8	17.00	20.00	SANDSTONE
9	20.00	20.20	COAL
10	20.20	21.00	MUDSTONE
11	21.00	26.00	SANDSTONE
12	26.00	78.00	SANDSTONE, COARSE
13	78.00	80.00	MUDSTONE
Stratig	raphies		0 records for RN 162248

Aquifers 2 records for RN 162248

Rec Top (m) Bottom Lithology Date SWL Flow Quality Yield Contr Cond Formation Name (m) (m) (L/s) 20.00 20.20 COAL - Coal 10/12/2013 -18.50 N "BRACKIS 12.00 N PS

Queensland Government Bore Report

Page: 3 of 4 Report Date: 16/09/2021 16:28 **Groundwater Information** GWDB8250

From	Year:
------	-------

Rec	Top (m)	Bottor (r		ithology			Date		SWL (m)	Flow	Qualit	у	Yield (L/s)	Contr	Cond	Forn	nation N	ame			
2	66.00	78.0	00 S	DST - San	dstone					N	"BRAC H"	CKIS	0.10	N	PS						
Pum	o Tests	Part 1																	1	records for RN	162248
Pipe	Date	R	ec	RN of Pumped Bore		m) Bot	tom (m)	Dist (m)	Meth	Test	Types				Pump Type			Q Prior to Test (I/s)	Dur o Q PR (mins		Q on Arriv (I/s/)
Α	10/12/20	13	1	162248	26.	.00 7	8.00		PUM						AIR		65.00				
Pum	o Tests	Part 2																	1	records for RN	162248
Pipe	Date	R		est S' Our mins)	WL(m)	Recov Time (mins)	Resid DD (1	m) o R	Max DD or P RED m)	Q at Max (I/s)	DD M	me to ax DD nins)	Max Q (I/s)	Cald Stat (m)	HD Y	esign 'ield /s)	Desig BP (m			nsy 2/Day)	Stor
Α	10/12/20	13	1	60				•	·	(0.10							65	5.00		
Bore	Conditi	ions																	0	records for RN	162248
Eleva	ations																		0	records for RN	162248
Wate	r Analy:	sis Pa	rt 1																0	records for RN	162248
Wate	r Analy	sis Pa	rt 2																0	records for RN	162248
Wate	r Levels	3																	0	records for RN	162248
Wire	Line Lo	gs																	0	records for RN	162248
Field	Measu	remen	ts																0	records for RN	162248
Spec	ial Wate	er Ana	lysi	s															0	records for RN	162248
																					4
Repor	Date: 10	6/09/202	21 16	6:28									rnment mation							_	: 4 of 4 VDB8250
											Bore	Repo	rt								

User Licence and Conditions

Disclaimer

From Year:

Open Licence (Single Supply)

- You may use the supplied data for your own purposes (including supply to consultants for a specific consultancy project for you but the consultants must return or destroy the supplied data when the project is finished). You must not sell or distribute the supplied data.
- You must display this copyright notice on any copies of the supplied data however altered, reformatted or redisplayed if you supply to a consultant or copy for back up purposes: "© State of Queensland 2021".
- You may create and distribute hardcopy and digital products based on or containing the supplied data, provided all the following conditions are met:
- You must display this acknowledgment on the product(s): "Based on or contains data provided by the State of Queensland 2021. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws."
- You must include metadata with the product(s) you create that use or incorporate the supplied data and the metadata must incorporate as a minimum the metadata provided with this supplied data.

Obligations:

- You must not use the data for direct marketing or in breach of the privacy laws.

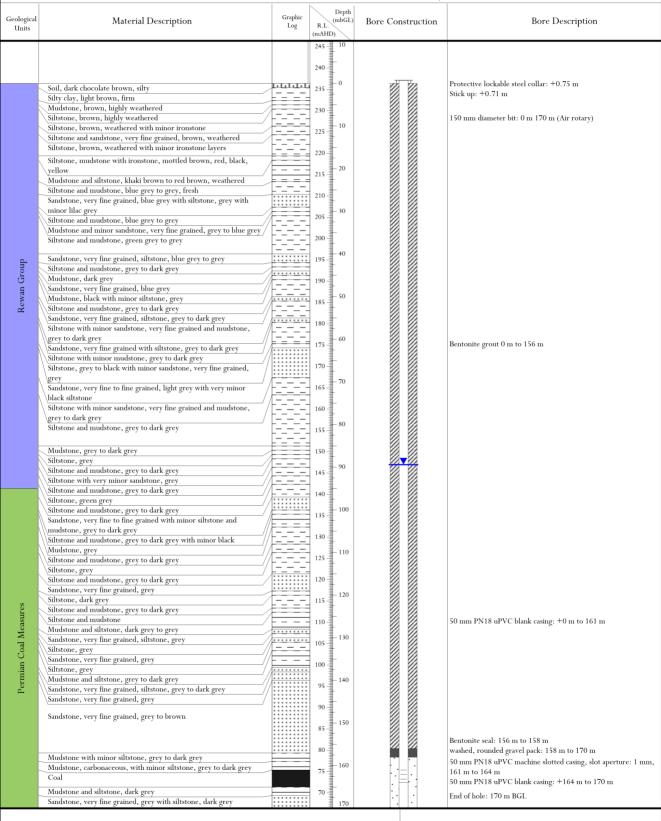
The State of Queensland is the owner of the intellectual property rights in and to the supplied data or has the right to make this supplied data available.

Disclaimer and indemnity:

You agree to accept all responsibility and risks associated with the use of the supplied data. The State makes no representations or warranties in relation to the supplied data, and, you agree that, to the extent permitted by law, all warranties relating to accuracy, reliability, completeness, currency or suitability for any particular purpose and all liability for any loss, damage or costs (including consequential damage) incurred in any way (including but not limited to that arising from negligence) in connection with any use of or reliance on the supplied data are excluded or limited. You agree to continually indemnify the State of Queensland (and its officers and employees) against any loss, cost, expense, damage and liability of any kind (including consequential damage and liability in negligence) arising directly or indirectly from or related to any claim relating to your use of the supplied data or any product made from the data.



Project No.: 4043 MONITORING BORE Project Name: Gundyer MB2



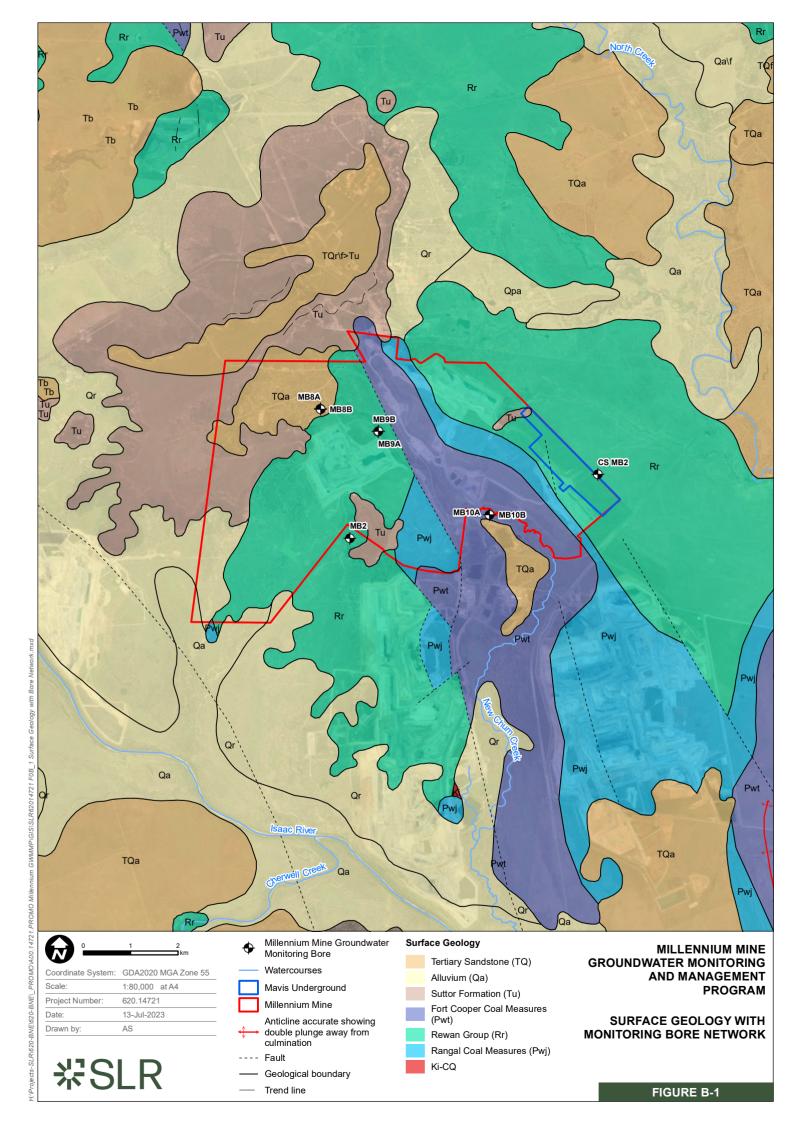
Date Drilled: 2.5.2020 Drilling Company: DEPCO Drilling Easting: 632811 RL: 236.4

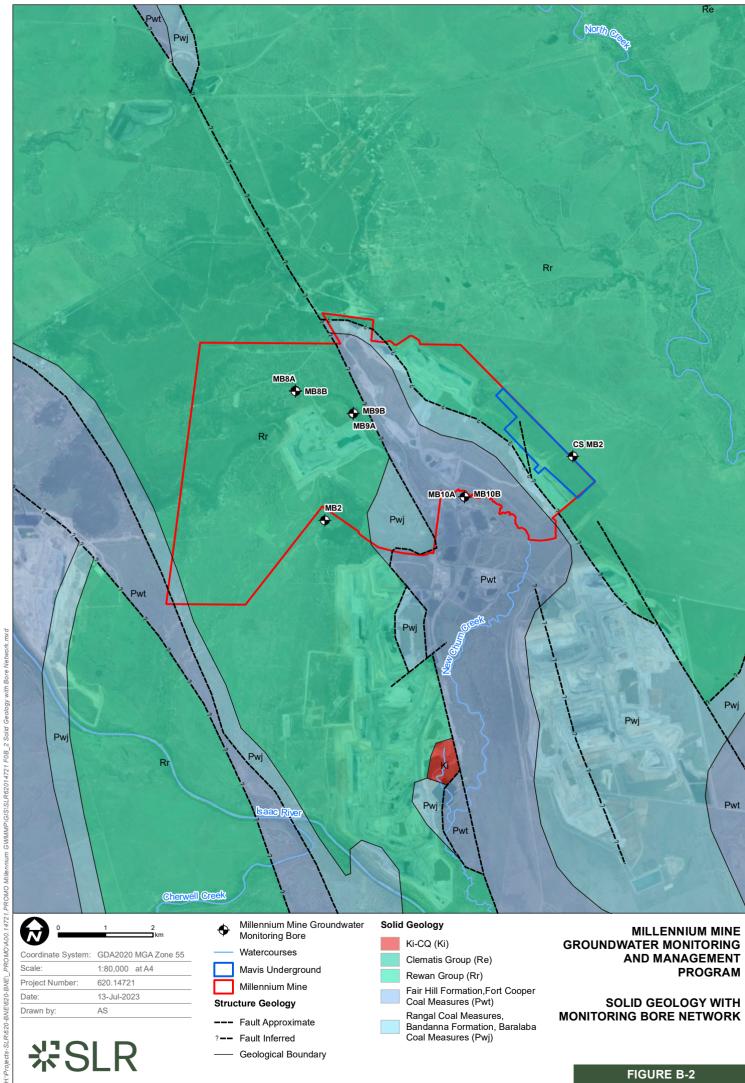
Driller: David Grisinger Drilling Method: Rotary open hole Northing: 7564270 TD: 170.0

Drill Rig: UDR650 Logged By: DFB Datum: AGD84 Zone55

Appendix B – Geology Maps







Appendix C – Water level observations

