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## Queensland Government

# GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

**FINAL** 17/03/2016

BOREHOLE No BH271

Sheet 1 of 4

EFERENCE No H12423

Color   Colo	AURAS AT 1	1000	SYMBOLS REFER FORM F:GEO	Γ 017/8-2014	REFERENCE NO		
PROJECT No.   FG6184   SURFACE RI, 11.82m   PLUME 90"   DATE STATED 28/09/2015   GRID DATUM CIDA 94 / MCA	PROJECT	Mackay Ring Road					
242/10G/906	COORDINATES 720903.1						N
RL D D D D D D D D D D D D D D D D D D D	PROJECT No	<del></del>			9/2015 GRID DATUM GDA 94 / MG/		
Sandy CLAY (Fill) Brown, dry, stiff to very stiff, Fine to medium grained sand,, medium plasticity.  2 9.72  A Silty Clayey SAND (Alluvium) Brown mottled white, dry, medium dense. Fine to medium grained sand.  2 00m: becomes cange brown.  Every Sand (Alluvium) Brown mottled orange, moist, stiff. Fine grained sand, medium plasticity.  Clayey SAND (Alluvium) Brown mottled orange moist, stiff. Fine grained sand, medium plasticity.  Clayey SAND (Alluvium) Brown mottled orange brown, moist, medium dense. Fine to medium grained sand.  SC)  Silty SAND trace clay and gravel (Alluvium) Orange brown, moist to wet, medium dense.  Fine to coarse grained sand, fine trained gravel.  5.0m becomes wet  SM)  6.0m becomes medium to coarse grained sand, fine trained gravel.  5.0m becomes medium to coarse grained sand, frace medium to coarse grained sand, frace medium to coarse grained sand, frace medium to coarse grained gravel, angular to subrounded grains.  7.0m gravel content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glayey SAND (Alluvium) Orange brown, moist, go content increasing Glay	IOB No	242/10G/906 HEIGHT DATUM A.H.D.	/10G/906 HEIGHT DATUM A.H.D. BEARING DATE COMPLETED 30/09/2015 DRILLER S83				
Sandy CLAY (Fill) Brown, dry, stiff to very stiff. Fine to medium grained sand., medium plasticity.  A Silty Clayey SAND (Alluvium) Brown mottled white, dry, medium dense. Fine to medium grained sand. CLAY trace sand (Alluvium) Brown mottled ornage, moist, stiff. Fine grained sand, medium plasticity.  Clayey SAND (Alluvium) Brown mottled ornage, moist, stiff. Fine grained sand, medium plasticity. Clayey SAND (Alluvium) Brown mottled ornage brown, moist, medium dense. Fine to medium grained sand.  CLAY trace sand (Alluvium) Brown mottled ornage brown, moist, medium dense. Fine to medium grained sand.  SCC)  Silty SAND trace clay and gravel (Alluvium) Orange brown, moist to wet, medium dense. I fine to coarse grained sand, fine grained gravel.  Som: becomes wet  Som: becomes wet  CAY 2  Clayey SAND (Alluvium) Orange brown, moist, loose to medium dense. Fine to coarse grained sand, fine grained gravel, angular to subrounded grains.  CAY 4.72  Clayey SAND (Alluvium) Orange brown, moist, loose to medium dense. Fine grained sand. To 3.52  Come grained gravel, angular to subrounded grains.  SA, 8	DEPTH (m)		LUTHOLOGY WEATHERING WEATHERING TO THE PROPERTY OF THE PROPERT	SPACING	AND	SAMPLES	0
7.42    Total content increasing   Total content	- 1	Sandy CLAY (Fill) Brown, dry, stiff to very stiff. Fine to medium grained sand medium plasticity.  A  Silty Clayey SAND (Alluvium) Brown mottled white, dry, medense. Fine to medium graines sand. 2.00m: becomes orange brow Fine grained sand. CLAY trace sand (Alluvium) Brown mottled orange, moist Fine grained sand, medium plasticity. Clayey SAND (Alluvium) Brown mottled orange brown Brown mottled orange brown	edium (sc)			7, 5, 8 SP N=13	T -
Orange brown, moist to wet, medium dense.  Fine to coarse grained sand, fine grained gravel.  5.00m: becomes wet  (SM)  F coarse grained sand, trace medium to coarse grained sand, trace medium to coarse grained gravel, angular to subrounded grains.  7 4.72  G Clayey SAND (Alluvium) Orange brown, moist, loose to medium dense. Fine grained sand. 7.10 to 7.30m: Clay: Brown, moist, soft. Medium to high plasticity.  8.00m: Becoming loose. Fine to medium grained sand.  7.80 medium dense. Fine grained sand. 6, 2, 4  8.00m: Becoming loose. Fine to medium grained sand.	7.42	D Silty SAND trace clay and grav		-			'T -
F G.Outh. Decoming inedium to coarse grained sand, trace medium to coarse grained sand, trace medium to coarse grained gravel, angular to subrounded grains.  7 4.72  G Clayey SAND (Alluvium)  Orange brown, moist, loose to medium dense. Fine grained sand. 7.10 to 7.30m: Clay: Brown, moist, soft. Medium to high plasticity.  8.00m: Becoming loose. Fine to medium grained sand.  6,2,4	5	Orange brown, moist to wet, medium dense. E fine to coarse grained sand, f grained gravel.		-			'T -
Clayey SAND (Alluvium) Orange brown, moist, loose to Inedium dense. Fine grained sand. 7.10 to 7.30m: Clay: Brown, moist, soft. Medium to high plasticity.  8.00m: Becoming loose. Fine to Inedium grained sand.  8.00m: Becoming loose. Fine to Inedium grained sand.  6,2,4	- 6 	F grained sand, trace medium to coarse grained gravel, angula	o  ∰   +				T
8 3.52 H 8.00m: Becoming loose. Fine to medium grained sand.	-	G Clayey SAND (Alluvium)  Orange brown, moist, loose to medium dense. Fine grained 9  7.10 to 7.30m: Clay: Brown, m	o sand. Osci				Т
Dark grey brown, moist, firm to stiff.  Fine grained sand, medium	3.52	H <u>medium grained sand.</u> Silty CLAY trace sand (Alluviur Dark grey brown, moist, firm Fine grained sand, medium	m) 🔀				т
	-		ng. — +				т
Continued on next sheet		Continued on next sheet					
REMARKS: Kgwu = Wundaru Granodiorite LOGGED BY REVIEWE	REMARK	KS: Kgwu = Wundaru Granodiorite	LOGGED BY	REVIEWED	BY		
C.Boyes S. Fole			C.Boyes	S. Foley			

# Queensland

## **GEOTECHNICAL BOREHOLE LOG**

**FINAL** 17/03/2016

BOREHOLE No BH271

Sheet 2 of 4

		200	du	V	eniment	SYI		REFER FORM F:GEOT			REFERENCE No	H1	.2423
PROJEC	Т	Ma	ackay Rinį	g Ro	ad								
OCATI	NC	Ca	lrossie Ro	<u>t</u>						_	COORDINATES 720903.1	E; 765774	659.0 N
PROJEC	T No	FG	6184		SURFACE RL 11.82m	PLU	INGE 9	0°	DATE STARTED	28/09/2015	GRID DATUM G	iDA 94 / N	/IGA Z55
OB No		24	2/10G/90	)6	HEIGHT DATUM A.H.D.	BEA	RING _		DATE COMPLETED	30/09/2015	DRILLER S	axon Drill	ing
DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING	RQD ()% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
-	1.62	-		J	Silty CLAY trace sand (Alluvium) (Cont'd) Silty Sandy CLAY (Alluvium) Grey, moist, very stiff. Fine grained sand, low plasticity.	×-     X-   X-   -	(CI)	± ± ±				5, 5, 8 N=13	SPT
- 11				K	11.00m: becomes pale grey mottled brown. Clay content increasing.	×	(CL)	+ + + + + + + + + + + + + + + + + + + +				6, 8, 10 N=18	SPT
- 12 -	-0.18			L	Clayey SAND (Alluvium) Grey, moist, medium dense. Fine to coarse grained sand,			+				5, 4, 10 N=14	SPT
- 13				М	nedium plasticity.  12.00m: becomes fine to medium grained sand.  13.00m: becomes medium to coarse grained sand.		(SC)	+				9, 10, 11 N=21	SPT
- 14	-2.38			N	Sandy CLAY (Alluvium) Pale grey and orange brown, moist,			<u> </u>				8, 12, 13 N=25	SPT
- 15				0	very stiff. Fine to coarse grained sand, medium to high plasticity.  15.00m: becomes hard		(CI)	+				10, 18, 21 N=39	SPT
- 16	-4.18			Р	Clayey SAND (Alluvium) Pale grey and orange brown, moist, medium dense. Fine grained sand.		(SC)	+				6, 6, 8 N=14	SPT
- 17 ·	-5.18			Q	Silty SAND (Alluvium) Pale grey, moist, medium dense. Fine to medium grained.	X X X X		+ + + + + + + + + + + + + + + + + + + +		17.00m-17.45m: No recovered	o sample	6, 9, 12 N=21	SPT
- 18 -	-6.88			R		X X X X	(SM)					8, 11, 14 N=25	SPT
- 19 -					Silty CLAY trace sand (Alluvium) Pale grey and orange brown, moist, very stiff. Fine to medium grained sand, low plasticity.	X_ X_ X_ X_	(CL)	+				11, 12, 10 N=22	SPT
	-8.18	Ш	Щ	Ц	Continued on next sheet	×_		<u> </u>					
RE	MAR	KS:	Kgwu :	= W	/undaru Granodiorite						LOGGED BY	REVIF	WED BY
C.Boyes							Foley						
													,

# **Queensland** Government

### **GEOTECHNICAL BOREHOLE LOG**

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

FINAL 17/03/2016

**BH271** BOREHOLE No

Sheet 3 of 4

H12423 REFERENCE No Mackay Ring Road PROJECT COORDINATES 720903.1 E; 765774659.0 N Calrossie Rd LOCATION FG6184 PLUNGE 90° DATE STARTED 28/09/2015 GRID DATUM GDA 94 / MGA Z55 SURFACE RL 11.82m PROJECT No 242/10G/906 DATE COMPLETED 30/09/2015 DRILLER Saxon Drilling HEIGHT DATUM A.H.D. JOB No BEARING USCS WEATHERING ADDITIONAL DATA AND TEST RESULTS INTACT STRENGTH DEFECT SPACING SAMPLES TESTS Ê LITHOLOGY SAMPLE RΙ DEPTH MATERIAL DESCRIPTION (m) CORE REC % ᇁᆂᆂᆂᅬᅿᅿᆿᅟᅴᇜᇰᄓॾᇂᆘᇹᄪ Silty CLAY trace sand (Alluvium) 9, 12, 13 (Cont'd) (CL) 11. 13. 14 N=27 SPT -10.48 9, 11, 13 Silty CLAY (Residual) Pale grey, moist, very stiff. (CL) Low plasticity. -11.18 MICRODIORITE (Kgwu) SPT 30, 30/115mn XW: Recovered as brown and pale grey, moist, hard, silty clay trace sand and gravel. Fine grained sand, low plasticity. XW SPT 13, 22, 30 -13.18 25 MICRODIORITE (Kgwu) SPT HW: Grey brown, fine grained, massive, very low strength. HW 26 Z -14.78 GRANODIORITE (Kgwu) HW: Recovered as grey and dark 27 grey, dry, very dense, silty sand. Fine to medium grained sand. 30/75mm HW 30/10mr 17.48 30/20mm (0) 29.38m-29.48m: HFZ; Cly FL; MICRODIORITE (Kgwu) □ 29.56m-29.59m: HFZ; Cly FL;
 □ 29.62m-29.72m: HFZ; Cly FL; D (29.55m)-MW: Brown and grey, fine grained, MW Is(50)=0.37 MPa massive, low to medium strength. 29.77m-29.86m: HFZ, Cly Is(50)=0.46 MPa I (29.85m) Continued on next sheet REMARKS: Kgwu = Wundaru Granodiorite **LOGGED BY REVIEWED BY** C.Boyes S. Foley TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

# **Queensland** Government

### **GEOTECHNICAL BOREHOLE LOG**

FOR GEOTECHNICAL TERMS AND

FINAL 17/03/2016

**BH271** BOREHOLE No

Sheet 4 of 4

H12423 REFERENCE No

SYMBOLS REFER FORM F:GEOT 017/8-2014 Mackay Ring Road PROJECT COORDINATES 720903.1 E; 765774659.0 N Calrossie Rd LOCATION FG6184 PLUNGE 90° DATE STARTED 28/09/2015 GRID DATUM GDA 94 / MGA Z55 SURFACE RL 11.82m PROJECT No 242/10G/906 DRILLER Saxon Drilling HEIGHT DATUM A.H.D. DATE COMPLETED 30/09/2015 JOB No BEARING USCS WEATHERING ADDITIONAL DATA INTACT DEFECT SPACING SAMPLES TESTS Ê LITHOLOGY AND TEST RESULTS STRENGTH RΙ DEPTH SAMPI MATERIAL DESCRIPTION (m) CORE REC % ᇁᆂᆂᆂᅿᅿᅿᆿᆸᆔᇬᄓᄫᇂᇂᇦ MICRODIORITE (Kgwu) Is(50)=1.00 MPa A (30.22m) MW: (Cont'd) Highly fractured zones 30.29m-30.46m: BZ throughout. MW 30.58m-30.60m: HFZ, Cly Js: 5° to 15° ;(<15/m); PI/Sm; OP; Cly Vr or Sinf: A (30.90m) Is(50)=0.46 MPa Js: 30° to 50°; (<4/m); PI/Sm; OP; Cly 30.98m-31.02m: HFZ, Cly 31.13m-31.49m: HFZ; Cly FL; HW 100 31.49m-31.68m; GRANODIORITE HW: Grey, medium grained, porphyritic, high strength.

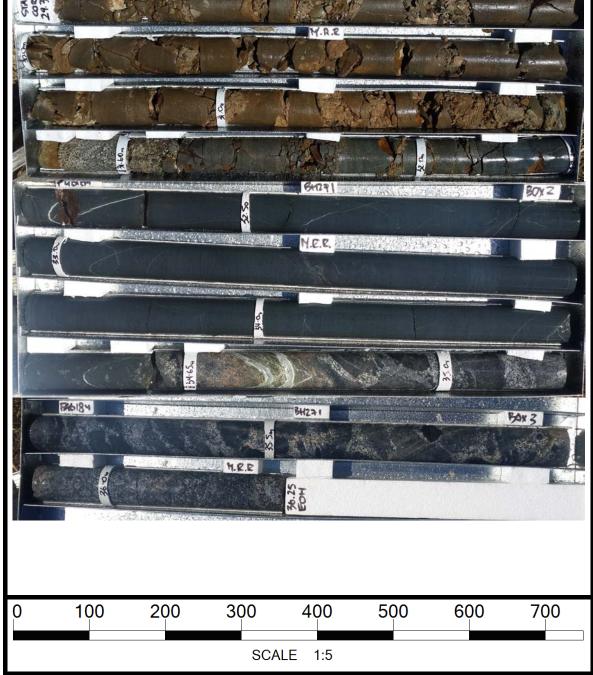
31.82m-31.90m: HFZ; Cly FL; (0) Is(50)=0.39 MPa A (31.90m) MW -20.38 100 MICRODIORITE (Kgwu) SW: Dark grey, fine grained, Is(50)=7.10 MPa D (32.45m) massive, very high strength. Calcite UCS=120.00 MPa (32.70m) veins throughout. E=62.6 GPa v= 0.112 Js: 5° to 15°; (<3/m); PI/Sm; CD; CA 33 Js: 30° to 40°; (<1/m); PI/Sm; CD; Cn SW Is(50)=16.00 MPa D (33.43m) or CA Vr; Is(50)=7.20 MPa A (33.50m) Is(50)=3.40 MPa A (34.32m) -22.78 GRANODIORITE (Kgwu) (100) 34.75m: VN CA; 60°, PI-Un/Sm, OP <10mm 34.78m: VN CA; 60°, PI-Un/Sm, CD, SW: Grey and dark grey, fine to 35 medium grained matrix, very high to <20mm extremely high strength. With (35.30m) frequent subangular to angular SW dolerite xenoliths. Js: 20° to 30°; (<2/m); PI/Sm; OP; Cn: Is(50)=11.00 MPa D (36.12m) -24.43 100 A (36.20m)-Borehole completed at 36.25m 37 REMARKS: Kgwu = Wundaru Granodiorite **LOGGED BY REVIEWED BY** C.Boyes S. Foley TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

### **CORE PHOTO LOG**

DEPARTMENT OF TRANSPORT AND MAIN ROADS Geotechnical Section 35 Butterfield Street, Herston Qld 4006 Phone 07 3066 3336



Project Name	Mackay - Ring Road (Stage 2)		
Project No.	FG6184	Date	30/09/15
Borehole No.	BH 271	TMR H No.	H12423
Location	Calrossie Rd Overpass	Start Depth (m)	29.30
Detail	Abutment B, RHS	Finish Depth (m)	36.25
Chainage		Submitted By	M.Ensor
Remarks			
time FUEIR	84241	V.Co.	BOX I
STAR SORE 24.35			
E	M.R.2		



### **CORE PHOTO LOG**

DEPARTMENT OF TRANSPORT AND MAIN ROADS Geotechnical Section 35 Butterfield Street, Herston Qld 4006 Phone 07 3066 3336



Project Name	Mackay - Ring Road (Stage 2)		
Project No.	FG6184	Date	30/09/15
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STAR SORE 24.35			
E	M.R.2		

