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GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND

FINAL 17/03/2016

BOREHOLE No BH203

Sheet 1 of 5

A-) V (<u> </u>	-	•			SYI	MBOLS	REFER FORM F:GEOT	017/8-2014		REFERENCE No	H	12212
PROJECT		Mac	kay Ring	g Ro	ad									
LOCATION		Pion	eer Rive	r B	ridge, Abutment A (RI	HS)						COORDINATES 721288.	7 E; 76600	18.5 N
PROJECT N	0	FG61	184		SURFACE RL	7.33m	PLU	INGE 9	0°	DATE START	ED 21/09/201	5 GRID DATUM	GDA 94 / I	MGA Z55
JOB No		242/	′10G/90	6	HEIGHT DATUM	A.H.D.	BEA	RING _		DATE COMPLET	ED 24/09/201	5 DRILLER	Saxon Dril	ling
DEPTH (m)	1)	CASING WASH BORING CORE DRILLING	RQD ()%	SAMPLE	MATERIAL DES	CRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH	DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
6.6	53			A	Silty CLAY trace sand Dark brown, dry, firm Medium plasticity. 0.30m: becomes mo Silty CLAY trace sand Mottled brown and comoist, firm to stiff. Fine to medium grain medium plasticity.	n. ist (Alluvium) orange browi ned sand,	1,	(CI)		-			2, 3, 6 N=9 3, 3, 5 N=8	SPT
4.0	03			C	3.00m: becomes stif Sandy CLAY (Alluviun Grey mottled orange very stiff. Fine grained sand, m plasticity.	n) brown, moi	x	(CI)		-			4, 6, 10 N=16 6, 7, 10 N=17	SPT SPT
- - - - - - - - - - - - - - - - - - -	53			E	Silty SAND (Alluvium Pale grey, moist, med Fine grained sand.		***********	(SM)		-			5, 5, 6 N=11 5, 7, 9 N=16	SPT
- 0.8					Silty SAND trace clay Pale grey, moist, med Fine grained sand.	dium dense.	X X X X X	(SM)		-			7, 12, 15 N=27	SPT
- 8 -0.9	97			Н	CLAY trace sand (Allu Orange brown mottle stiff to very stiff. Fine to medium grain to medium plasticity. Clayey SAND (Alluviu Orange brown mottle medium dense.	ed grey, mois ned sand, lov m)	v	(CI)		-			8, 8, 15 N=23	SPT
- - - - - - -					Fine to medium grain 9.50m: clay content Continued on n	decreasing.			# # # # # # # # # # # # # # # # # # #				8, 10, 11 N=21	SPT
REM	ARKS	S: k	(gwu =	W	undaru Granodio	rite						LOGGED BY	REVIE	WED BY
												C.Boyes	S.	Foley
							MAD CEOTEC	LINUCAL DO	DELIGIE LOG CREATER WIT	II HOLEDACE CL				

GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014 FINAL 17/03/2016

BH203 BOREHOLE No

Sheet 2 of 5

H12212 REFERENCE No Mackay Ring Road PROJECT Pioneer River Bridge, Abutment A (RHS) COORDINATES 721288.7 E; 7660018.5 N LOCATION FG6184 PLUNGE 90° DATE STARTED 21/09/2015 GRID DATUM GDA 94 / MGA Z55 SURFACE RL 7.33m PROJECT No 242/10G/906 DRILLER Saxon Drilling HEIGHT DATUM A.H.D. DATE COMPLETED 24/09/2015 JOB No BEARING USCS WEATHERING ADDITIONAL DATA INTACT DEFECT SPACING SAMPLES TESTS Ê LITHOLOGY STRENGTH TEST RESULTS RΙ DEPTH SAMP MATERIAL DESCRIPTION (m) CORE REC % ᅾᆂᆂᆂᆋᆛᅿᆲᅵᇊᆼᇅᄛᇂᇂᇕ 10.00m: becomes fine to coarse -2.87 grained sand 8, 10, 13 CLAY trace sand (Alluvium) N=21 Grey mottled orange brown, moist, very stiff. Medium grained sand, low to medium plasticity. SPT 11.00m: becomes pale grey, stiff to very stiff. (CI) 12.00m: becomes pale grey SPT mottled orange brown 7, 6, 10 -5.67 Clayey SAND (Alluvium) SPT Grey mottled brown, moist, medium 8, 11, 12 N=23 dense. Fine to medium grained sand, low plasticity. 14.00m: becomes fine to medium grained sand. Clay content SPT 7. 9. 8 decreasing. (SC) N=17 15 15.00m: becoming pale grey. Fine to coarse grained sand. 0 SPT 7, 6, 8 N=14 -8.37 MICRODIORITE (Kgwu) XW: Recovered as green grey, moist, 16 hard, sandy clay. Low to medium SPT XW plasticity. -9.47 GRANODIORITE (Kgwu) 17 XW: Recovered as grey and dark grey, moist, hard, sandy clay. Fine to coarse grained sand, low plasticity. -10.68 (41) GRANODIORITE (Kgwu) D (18.20m) HW: Pink speckled grey, medium HW grained, porphyritic, low to medium A (18.57m) strength. Is(50)=0.12 MPa D (18.75m) Js: 5° to 20°; (<4/m); PI/Ro; OP; Sinf; ☐ 18.82m-18.89m: XW Cly zone; 5°, XW Is(50)=0.29 MPa Is(50)=0.23 MPa UCS=4.87 MPa PI/Ro Js: 30° to 50° ;(<2/m); PI/Ro; OP; 19 (19.00m) HW Sinf or Fe St; 100 (36) -11.99 19.32m: Contact; 30°, Un/Ro; MICRODIORITE (Kgwu) ⊐ 19.46m-19.50m: HFZ MW: Green grey, fine to medium ¬ 19.62m-19.70m; HFZ; MW grained, massive. 19.79m-19.84m; HFZ: Is(50)=0.47 MPa D (19.90m) A (19.98m) Continued on next sheet REMARKS: Kgwu = Wundaru Granodiorite LOGGED BY **REVIEWED BY** C.Boyes S.Foley TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

GEOTECHNICAL BOREHOLE LOG

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

FINAL 17/03/2016

BOREHOLE No BH203

Sheet 3 of 5

REFERENCE No H12212

Mackay Ring Road PROJECT Pioneer River Bridge, Abutment A (RHS) COORDINATES 721288.7 E; 7660018.5 N LOCATION FG6184 SURFACE RL 7.33m PLUNGE 90° DATE STARTED 21/09/2015 GRID DATUM GDA 94 / MGA Z55 PROJECT No 242/10G/906 DRILLER Saxon Drilling HEIGHT DATUM A.H.D. DATE COMPLETED 24/09/2015 JOB No BEARING USCS WEATHERING ADDITIONAL DATA INTACT DEFECT SPACING SAMPLES TESTS Ê LITHOLOGY AND TEST RESULTS STRENGTH RΙ DEPTH SAMP MATERIAL DESCRIPTION (m) CORE REC % ᇁᆂᆂᄫᅴᅿᆿᆸᇝᇰᄓᄫᇂᇂᇕ MICRODIORITE (Kgwu) MW: (cont'd) medium to high MW Is(50)=2.40 MPa A (20.42m) (20) strength. Calcite veinlets 20.59m-20.78m: HFZ; Cly FL, HW throughout. XW brecciated zones Js: 5° to 15°; (<4/m); PI/Sm; OP; Cn MW or Cly FL; 21.00m-21.07m: SZ; Cly FL, HW brecciated; 21.07m-21.15m: HFZ; 21.10m-21.19m: Upper contact: Js: 20° to 40°; (<2/m); PI/Sm; OP; 100 MW -14.08 (51) Sinf or Cn; Is(50)=1.40 MPa A (21.46m) MW 50°; PI/Sm; GRANODIORITE (Kgwu) Lower contact: 50°; PI/Ro, OP; SW: Pale grey speckled dark grey, Is(50)=11.00 MPa D (21.80m) medium grained, porphyritic, very 22 high strength. Js: 5° to 15° ;(<4/m); PI/Sm-Ro; OP; Cn or Fe St: Is(50)=3.50 MPa A (22.50m) Js: 20° to 40°; (<2/m); PI/Sm; OP; Cn ¬ 22.62m-22.70m: HFZ 100 or Sinf; (47) 22.88m-23.42m; BZ Js: 50° to 60°; (<3/m); PI/Sm; OP; Fe 23 Is(50)=2.20 MPa I (23.35m) UCS=131.00 MPa (23.55m) SW 24.12m-24.18m: XW Cly zone; 45°, 100 (34) 100 (84) A (24.78m) Is(50)=19.00 MPa D (24.90m) 25 С М Is(50)=7.80 MPa A (25.50m) 26 100 (59) 19.00 ☐ 26.28m-26.34m: HW zone 26.33m: Contact; 30°, Un/Ro, HW MICRODIORITE (Kgwu) Is(50)=4.20 MPa A (26.46m) SW SW: Grey, medium grained, massive, Is(50)=7.10 MPa D (26.60m) -19.48 high strength. 26.81m: Contact; 50°, PI/Sm, CA VN GRANODIORITE (Kgwu) 27 (27) MW: Grey dark grey and pink, MW VH Is(50)=9.90 MPa D (27.15m)_ medium to coarse grained, H-VH 27.46m-27.70m: HW BZ; porphyritic, high to very high L HW 100 strength, Broken throughout, (33) 27.83m-28.13m: SZ; brecciated, Cly Js: 5° to 15°; (<4/m); PI/Sm-Ro; OP; LM FL <40mm 28 Fe St: MW (46) Js: 70° to 90°; (<3/m); PI/Sm; OP; Fe A (28.24m) St or Sinf; Is(50)=6.70 MPa D (28.32m) -21.19 28.52m: Contact; 45°, PI/Sm, OP, Fe MICRODIORITE (Kgwu) 28.74m: VN; 70°, PI/Sm, FL, CA SW: Grey, fine grained, massive, Is(50)=4.10 MPa I (28.92m) very high strength. -21.79 ys: 5° to 15°; (<2/m); Pl-Un/Ro; OP; 29.12m: Contact; 70°, Un/Sm, OP, Fe St; Fe St; GRANODIORITE (Kgwu) SW 29.58m: Microdiorite band :Contact 60°, PI/Sm, CA VN <3mm; SW: Grey, pink and dark grey, Is(50)=8.70 MPa A (29.77m)medium to coarse grained, 22.62 29.95m; Contact; 60°, PI/Sm, CA VN Continued on next sheet REMARKS: Kgwu = Wundaru Granodiorite **LOGGED BY REVIEWED BY** S.Foley C.Boyes TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

GEOTECHNICAL BOREHOLE LOG

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

FINAL 17/03/2016

BH203 BOREHOLE No

Sheet 4 of 5

H12212 REFERENCE No

Mackay Ring Road PROJECT Pioneer River Bridge, Abutment A (RHS) COORDINATES 721288.7 E; 7660018.5 N LOCATION FG6184 SURFACE RL 7.33m PLUNGE 90° DATE STARTED 21/09/2015 GRID DATUM GDA 94 / MGA Z55 PROJECT No 242/10G/906 DRILLER Saxon Drilling HEIGHT DATUM A.H.D. DATE COMPLETED 24/09/2015 JOB No BEARING USCS WEATHERING ADDITIONAL DATA INTACT DEFECT SPACING SAMPLES TESTS Ê LITHOLOGY AND TEST RESULTS STRENGTH RΙ DEPTH MATERIAL DESCRIPTION CORE REC % ᅖᆂᆂᆂᄝᆜᆛᅖᆝᇛᇰᆟᄝᇂᄛᆘᆽ porphyritic, very high strength. I (30.10m) 30.25m-30.43m: HFZ; 80°, PI/Sm OP, CA <1mm; s: 5°-15°; (<4/m); PI-Un/Ro; OP; s: 60°(<2/m); PI/Sm; OP; FeSt/Sinf ¬ 30.60m-30.67m: SZ; XW Cly FL; MW GRANODIORITE (Kgwu) 30.80m-31.07m: HFZ (0)MW: Grey, dark grey and pink, -23.86 100 medium grained, porphyritic, high 31.19m: Contact; 60°, PI/SI, OP, Cly (29) to very high strength. Vr <1mm; SZ; HW, Cly FL, 60°, PI/SI; Is(50)=2.10 MPa A (31.42m) s: 5° to 15° ;(<3/m); PI-St/Sm; OP; (97) Fe St or Cly/Sinf; UCS=49.80 MPa (31.80m) s: 50° to 70°; (<4/m); PI/Sm-SI; OP; e St or Cly; Is(50)=2.10 MPa D (32.15m) MICRODIORITE (Kgwu) SW: Grey, fine grained, massive, very high strength. Calcite veins throughout <4mm. Js: 5° to 15°; (<5/m); PI-Un/Sm-Ro; 33 OP; Cn or CA VN <2mm; Is(50)=12.00 MPa A (33.17m)-Js: 30° to 50°; (<3/m); PI/Sm; CA VN (89) Js: 70° to 80°; (<1/m); Pl-Un/Sm; CD; CA VN <2mm; Is(50)=7.40 MPa D (34.46m) 35 SW Is(50)=8.20 MPa A (35.78m)-Is(50)=1.60 MPa D (35.86m)_ ⊃ 36.07m-36.10m: VN; 70°, PI/Sm, FL, CA 36.18m-36.33m: VN; 80°, CA; 100 М 37 Is(50)=8.50 MPa A (37.20m) Is(50)=10.00 MPa I (37.35m) ¬ 37.74m-37.92m: HFZ <u>-31.</u>33 38.66m: COntact; 5°, PI/Sm, CD; GRANODIORITE (Kgwu) SW: Grey and dark grey, medium to UCS=132.00 MPa (38.95m). coarse grained, porphyritic, very 100 high strength. (97)Js: 5° to 15°; (<2/m); Pl-Un/Ro; OP; Cn or CA VN; Js: 30° to 50°; (<3/m); Pl-Un/Ro; OP; Continued on next sheet REMARKS: Kgwu = Wundaru Granodiorite **LOGGED BY REVIEWED BY** C.Boyes S.Foley TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

GEOTECHNICAL BOREHOLE LOG

FINAL 17/03/2016

BOREHOLE No BH203

Sheet 5 of 5

		₹	10	Go	V	ernment		SY		GEOTECHNICAL T REFER FORM F:G			REFERENCE No	н	12212
PROJEC	T	N	Ласk	ay Ring	g Ro	ad	J								
LOCATI	ON	P	Pione	eer Rive	er B	ridge, Abutment A (RI	HS)						COORDINATES 721288.7	7 E; 76600	18.5 N
PROJEC	T No	F	G61	84		SURFACE RL	7.33m	PLU	JNGE 9	10°	DATE STAF	TED 21/09/201	5 GRID DATUM	GDA 94 / I	MGA Z55
JOB No		2	242/	10G/90	16	HEIGHT DATUM	A.H.D.	BEA	RING °		DATE COMPLE	24/09/201	5 DRILLER	Saxon Dril	ling
DЕРТН (m)	R.L. (m)	AUGER	WASH BORING CORE DRILLING	RQD ()% CORE REC%	SAMPLE	MATERIAL DES	CRIPTION	LITHOLOGY	USCS WEATHERING	INTACT STRENGTH □ 5 ± 5 ± 5 ± 5 ± 5	DEFECT SPACING		ADDITIONAL DATA AND TEST RESULTS		SAMPLES TESTS
	-34.24			100		Cn or Fe St; GRANODIORITE (Kgw SW: (cont'd) Borehole complete			•		M		Is(50)=15.00 MPa 50)=15.00 MPa (50)=8.50 MPa	D (40.05m)
RE	MAR	KS:	: K	gwu =	= W	/undaru Granodio	rite						LOGGED BY		EWED BY
								ID CEOTE -	LINIICA: 5	OBELIOLE LOS COSTOS	WITH HOLESAGE **		C.Boyes	S.	Foley
							TN	IK GEOTEC	HNICAL BO	DREHOLE 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	24/09/15
Borehole No.	BH 203	TMR H No.	H12212
Location	Pioneer River Bridge	Start Depth (m)	18.01
Detail	Abutment A, RHS	Finish Depth (m)	41.57
Chainage		Submitted By	M.Ensor
Remarks		<u> </u>	
FEAD184	M.R.R.	PA1203	1904



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



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Chainage		Submitted By	M.Ensor
Remarks			



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Detail	Abutment A, RHS	Finish Depth (m)	41.57
Chainage		Submitted By	M.Ensor
Remarks			

