

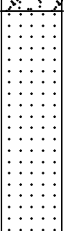
GEOTECHNICAL BOREHOLE LOG

BH6

SHEET 1 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 17/09/2014
 DATE COMPLETED: 19/09/2014
 SURFACE RL: 161.80 m AHD
 COORDS: 278410.08 m E 6421136.41 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Information								
METHOD	WATER	FIELD TEST	SAMPLE	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE AND ADDITIONAL OBSERVATIONS			
AD/T	(Not Encountered)		0.10m				GP-SP	Sandy GRAVEL/Gravelly SAND, fine to coarse grained sand, brown to dark brown, sub rounded-rounded gravel, up to 20mm	D		SLOPEWASH			
			D											
			0.30m	161.5	0.5									
					0.70		SP	Gravelly SAND, fine to coarse grained, pale yellow brown, sub rounded-rounded gravel, up to 20mm					RESIDUAL	
			1.00m	161.0	1.00		SP	Gravelly SAND, fine to coarse grained, pale brown, sub rounded-rounded gravel, up to 5mm					MONITORING WELL DETAILS: 50mm PVC screen installed at base (RL~126 to ~117m AHD) Gravel pac from RL129 to 117.0m AHD Bentonite Plug from RL~131 to ~129m	
			D											
			1.30m	160.5	1.5									
					1.80			SAND, fine to coarse grained, pale brown, trace of gravel						
			2.00m	160.0	2.0									
			D											
			2.10m	159.5	2.5									
					2.80									
			3.00m	159.0	3.0									
D														
3.30m	158.5	3.5												
RR	0% LOSS			158.0	3.80			Pebbly SANDSTONE, fine to coarse grained, pale orange-brown, sub rounded-rounded gravel, up to 20mm	HW	L	BEDROCK			
				157.5	4.0									
					4.5			CONTINUED AS CORED BOREHOLE						
					157.0									
LOGGED: JJ						CHECKED: JE			DATE: 17/11/2014					

PROJECT No: 9325
CLIENT: Upper Hunter Holdings Pty Ltd
PROJECT: Proposed Quarry Investigation
LOCATION: "Dolwende" Golden Highway, Hollydeen

DATE COMMENCED: 17/09/2014
DATE COMPLETED: 19/09/2014
SURFACE RL: 161.80 m AHD
COORDS: 278410.08 m E 6421136.41 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description									
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₆₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)				
				161.5	0.5										
				161.0	1.0										
				160.5	1.5										
				160.0	2.0										
				159.5	2.5										
				159.0	3.0										
				158.5	3.5										
				158.0	4.0										
				157.5	4.5										
				157.0	4.55		START CORING AT 4.55m								
HQ	0% LOSS	96	96	157.0	4.83		CONGLOMERATE, fine to coarse, sub rounded gravel, up to 30mm, pale orange-brown, fine to coarse grained sand matrix	MW			Numerous drill breaks				
					4.88		CORE LOSS 0.05m (4.83-4.88)	MW			BP 10° Clay VNR PR RF				
LOGGED: JJ							CHECKED: JE				DATE: 17/11/2014				

CORED BOREHOLE LOG

BH6

SHEET 3 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 17/09/2014
 DATE COMPLETED: 19/09/2014
 SURFACE RL: 161.80 m AHD
 COORDS: 278410.08 m E 6421136.41 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information					Field Material Description				
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)
HQ	0% LOSS	100	100	156.5	5.31		CONGLOMERATE, fine to coarse, sub rounded gravel, up to 30mm, pale orange-brown, fine to coarse grained sand matrix	MW	Numerous drill breaks JT 30° Mn SN PR RF BP 10° Fe SN PR RF
				156.0	5.5		CONGLOMERATE, fine to medium sub angular-sub rounded gravel, up to 15mm, pale grey-orange brown, fine to coarse grained sand matrix		
				155.5	6.0		Iron oxide cemented band from 6.35m to 6.38m	HW	BP 10° Fe SN PR RF
				155.0	6.5				
				154.5	7.0				
				154.0	7.30		Iron oxide cemented band from 7.13m to 7.15m	MW	BP 10° Mn SN PR RF BP 10° Fe SN PR RF
				153.5	7.5				
				153.0	8.0		CONGLOMERATE, fine to coarse, sub angular-sub rounded gravel, up to 50mm, pale brown-grey		BP 10° Fe SN PR RF BP 10° Fe SN PR RF
				152.5	8.5				
				152.0	9.0				
				151.5	9.5				

LOGGED: JJ

CHECKED: JE

DATE: 17/11/2014

PROJECT No: 9325
CLIENT: Upper Hunter Holdings Pty Ltd
PROJECT: Proposed Quarry Investigation
LOCATION: "Dolwende" Golden Highway, Hollydeen

DATE COMMENCED: 17/09/2014
DATE COMPLETED: 19/09/2014
SURFACE RL: 161.80 m AHD
COORDS: 278410.08 m E 6421136.41 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

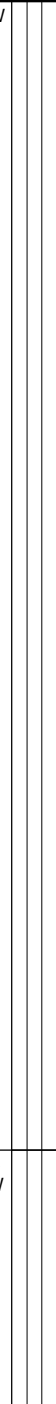
Borehole Information						Field Material Description											
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₆₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)						
HQ	0% LOSS	100	100	151.5	10.5	151.0	CONGLOMERATE, fine to coarse, sub angular-sub rounded gravel, up to 50mm, pale brown-grey	MW	0.03	0.1	Numerous drill breaks						
			151.0	11.0	0.3	1			10	BP 10° Fe SN ST RF							
			150.5	11.5	1	10			BP 10° Fe SN PR RF								
			150.0	12.0	1	10						BP 10° Fe SN PR RF					
			149.5	12.5	1	10							BP 10° Fe SN PR RF				
			149.0	13.0	1	10								BP 10° Fe SN PR RF			
			148.5	13.5	1	10									BP 10° Fe SN PR RF		
			148.0	14.0	1	10										BP 10° Fe SN PR RF	
			147.5	14.5	1	10											BP 10° Fe SN PR RF
			147.0														

LOGGED: JJ

CHECKED: JE

DATE: 17/11/2014

DATE COMMENCED: 17/09/2014
DATE COMPLETED: 19/09/2014
SURFACE RL: 161.80 m AHD
COORDS: 278410.08 m E 6421136.41 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description					
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is(50) MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)
HQ	↑	100	100	146.5	15.5		CONGLOMERATE, fine to coarse, sub angular-sub rounded gravel, up to 50mm, pale brown-grey	MW			Numerous drill breaks
							BP 15° Fe SN PR RF				
							BP 10° Fe SN PR RF				
							BP 15° Fe SN PR RF				
				143.5	18.5						JT 85° Clay SN PR RF 10 mm With tree rootlets
				143.0	18.80		Bedding contact ~40°, undulating	F - SW			BP 5° Fe SN PR RF
				19.0		CONGLOMERATE, sub angular-sub rounded gravel, up to 20mm, pale grey-green to pale orange-brown, in a fine to coarse grained sand matrix					
		100	98	142.5	19.5						
				142.0							
LOGGED: JJ						CHECKED: JE				DATE: 17/11/2014	

PROJECT No: 9325
CLIENT: Upper Hunter Holdings Pty Ltd
PROJECT: Proposed Quarry Investigation
LOCATION: "Dolwende" Golden Highway, Hollydeen

DATE COMMENCED: 17/09/2014
DATE COMPLETED: 19/09/2014
SURFACE RL: 161.80 m AHD
COORDS: 278410.08 m E 6421136.41 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description												
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₆₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)							
HQ	0% LOSS	100	98	141.5	20.5		CONGLOMERATE, sub angular-sub rounded gravel, up to 20mm, pale grey-green to pale orange-brown, in a fine to coarse grained sand matrix	F - SW			Numerous drill breaks							
		100	100	141.0			21.0	140.5			21.5	140.0	22.0	139.5	22.5	139.0	23.0	138.5
		100	100				Predominately coarse gravel, up to 50mm from 23.45m to 25.3m	SW			JT 50° Fe SN PR S JT 50° Fe SN U S JT 50° Fe SN PR RF BP 10° Fe SN U RF							
LOGGED: JJ							CHECKED: JE				DATE: 17/11/2014							

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 17/09/2014
 DATE COMPLETED: 19/09/2014
 SURFACE RL: 161.80 m AHD
 COORDS: 278410.08 m E 6421136.41 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information					Field Material Description				
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)
							CONGLOMERATE, sub angular-sub rounded gravel, up to 20mm, pale grey-green to pale orange-brown, in a fine to coarse grained sand matrix	SW	
		100	100	136.5	25.30		COAL, black, laminated	HW	BP 15° X U S
				25.45	25.5		SANDSTONE, fine to medium grained, lithic, pale grey to pale orange brown		BP 15° Clay VNR PR S
				25.55			CLAYSTONE, grey		Numerous drill breaks
				25.70			SANDSTONE, fine to medium grained, pale grey with iron oxide bands	SW - F	BP 20° Fe SN PR S
				136.0					
				26.0					
		100	100	135.5	26.33		CONGLOMERATE, sub angular-sib rounded gravel, up to 50mm, pale grey, fine to coarse grained sand matrix		BP 20° Fe SN PR S
				26.5					
				135.0					
				27.0					
				134.5					
				27.5					
				134.0					
				28.0					
				133.5					
		100	100	28.5					
				133.0					
				29.0					
				132.5	29.33		Packer Test #2 28.6m to 31.4m leakage rates up to 42L/min		
				29.5			Bedding/Contact 15°, undulating		
				29.59			Laminated SANDSTONE, fine grained, grey with dark grey laminations		
				132.0			CONGLOMERATE, sub rounded-sub angular gravel, up to 40mm, pale grey to pale orange and brown, fine to coarse grained sand matrix		
							Bedding/Contact 15°, PR, RF		
LOGGED: JJ					CHECKED: JE				
					DATE: 17/11/2014				

DATE COMMENCED: 17/09/2014
DATE COMPLETED: 19/09/2014
SURFACE RL: 161.80 m AHD
COORDS: 278410.08 m E 6421136.41 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description																				
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is(50) MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)															
HQ	0% LOSS	100	100	131.5	30.5		CONGLOMERATE, sub rounded-sub angular gravel, up to 40mm, pale grey to pale orange and brown, fine to coarse grained sand matrix	SW - F			Numerous drill breaks															
		100	100	131.0	31.0		130.5	31.5			130.0	32.0	32.15	129.5	32.5	129.0	33.0	128.5	33.5	128.0	33.85	34.0	127.5	34.5	127.0	34.85
							Laminated SANDSTONE, fine to medium grained, pale grey with black laminations, occasional bands of rounded gravel																			
							Bedding/Contact ~10°, undulating																			
							CONGLOMERATE, sub rounded-sub angular gravel, up to 40mm, pale grey-green, fine to coarse grained sand matrix																			

LOGGED: JJ

CHECKED: JE

DATE: 17/11/2014

CORED BOREHOLE LOG

BH6

SHEET 9 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 17/09/2014
 DATE COMPLETED: 19/09/2014
 SURFACE RL: 161.80 m AHD
 COORDS: 278410.08 m E 6421136.41 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information					Field Material Description				
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)
							COAL, black with grey bands		Numerous drill breaks
		100	100		126.5				BP 10° CN PR S
					35.45				
					35.5		SILTSTONE, fine grained, grey with discontinuous dark grey-black laminations		BP 10° X PR S
					126.0				
					35.95				
					36.0		Laminated SANDSTONE, fine to medium grained, pale grey with dark grey laminations		
					125.5				
					36.55				
					36.52		SANDSTONE, fine to coarse grained, pale grey, with rare gravel, up to 10mm		BP 10° X PR S
					125.0				
					37.0				
					124.5				
					37.5				
					37.56		COAL, black with grey bands		BP 5° CN PR S
					124.0				
					38.0				
					123.5				
					38.5				
					123.0				
					39.0				
					122.5				
					39.5				
					39.67				
					122.0		TUFF, pale purple and grey		BP 5° CN PR S
					39.90		Sandstone band from 39.83m to 39.9m		
							TUFF, fine grained, pale grey-green		

LOGGED: JJ

CHECKED: JE

DATE: 17/11/2014

PROJECT No: 9325
CLIENT: Upper Hunter Holdings Pty Ltd
PROJECT: Proposed Quarry Investigation
LOCATION: "Dolwende" Golden Highway, Hollydeen

DATE COMMENCED: 17/09/2014
DATE COMPLETED: 19/09/2014
SURFACE RL: 161.80 m AHD
COORDS: 278410.08 m E 6421136.41 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description						
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₆₀ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)	
HQ	↑ 0% LOSS	100	44		121.5	x x x x	TUFF, fine grained, pale grey-green	F				



Client: Upper Hunter Holdings Pty Ltd - Goat farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH6

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd - Goat farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH6

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd - Goat farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH6

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd - Goat farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH6

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd - Goat farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH6

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd - Goat farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH6

RCA ref: 9325

GEOTECHNICAL BOREHOLE LOG

BH7

SHEET 1 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 19/09/2014
 DATE COMPLETED: 23/09/2014
 SURFACE RL: 167.12 m AHD
 COORDS: 278663.24 m E 6421140.31 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Information					
METHOD	WATER	FIELD TEST	SAMPLE	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	↑ (Not Encountered)		0.10m	167.0	0.5			Sandy GRAVEL, up to 30mm, orange-red-brown, sub rounded-rounded			SLOPEWASH
		D	0.30m								
RR	↓		0.90m	166.5	0.80			Gravelly SAND, fine to coarse grained, orange-brown			RESIDUAL
		D	1.00m								
				166.0	1.0						MONITORING WELL DETAILS: 50mm screwed PVC well casing installed to RL127.0m AHD Well screen 9.0m length ~RL136.1m to 127.1m AHD Gravel pac from ~RL139.1m to base of BH7 Bentonite Plug from ~RL141 AHD to top of gravel pac
				165.5	1.5			CONTINUED AS CORED BOREHOLE			
				165.0	2.0						
				164.5	2.5						
				164.0	3.0						
				163.5	3.5						
				163.0	4.0						
				162.5	4.5						
LOGGED: JJ						CHECKED: JE				DATE: 08/12/2014	

CORED BOREHOLE LOG

BH7

SHEET 2 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 19/09/2014
 DATE COMPLETED: 23/09/2014
 SURFACE RL: 167.12 m AHD
 COORDS: 278663.24 m E 6421140.31 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

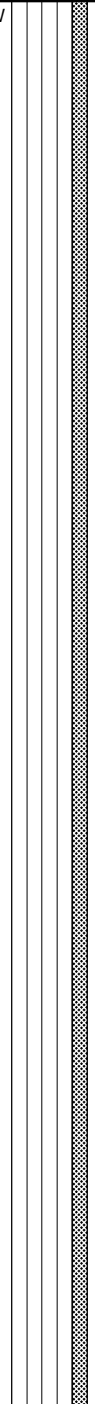
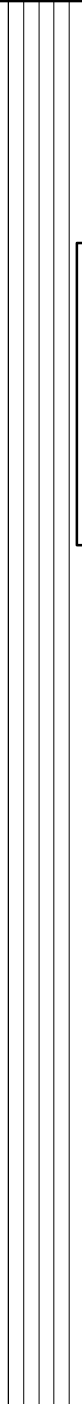
Borehole Information						Field Material Description									
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₅₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)				
				167.0											
					0.5										
				166.5											
					1.0										
				166.0											
					1.45		START CORING AT 1.45m								
				165.5			CONGLOMERATE, sub angular-rounded gravel, up to 50mm, pale grey-brown with orange-brown stained zones and defects, fine to coarse grained sand matrix	MW			BP 15 - 20° Fe SN U RF				
					2.0										
				165.0											
					2.5										
				164.5											
					3.0						BP 15 - 20° Fe SN PR RF				
				164.0											
					3.5		Clay infilled near vertical joints, up to 40mm thick from 3.3m to 5.2m	HW			JT 75 - 90° Clay VNR U RF 30 mm				
				163.5											
					4.0			MW			BP 15° Fe SN PR RF BP 15° Fe SN PR RF				
				163.0											
					4.5						JT 80 - 90° Clay U RF 40 mm With tree roots to 5.2m				
				162.5											
LOGGED: JJ							CHECKED: JE				DATE: 08/12/2014				

PROJECT No: 9325
CLIENT: Upper Hunter Holdings Pty Ltd
PROJECT: Proposed Quarry Investigation
LOCATION: "Dolwende" Golden Highway, Hollydeen

DATE COMMENCED: 19/09/2014
DATE COMPLETED: 23/09/2014
SURFACE RL: 167.12 m AHD
COORDS: 278663.24 m E 6421140.31 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description						
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₆₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)	
HQ	0% LOSS	100	97	162.0	5.5		CONGLOMERATE, sub angular-rounded gravel, up to 50mm, pale grey-brown with orange-brown stained zones and defects, fine to coarse grained sand matrix	MW	EL -0.03 WL -0.1 L -0.3 H -1 W -3 EH -10 10 30 100 300 1000 3000	<		

DATE COMMENCED: 19/09/2014
DATE COMPLETED: 23/09/2014
SURFACE RL: 167.12 m AHD
COORDS: 278663.24 m E 6421140.31 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is (50) MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
HQ	↑	100	100	157.0	0		CONGLOMERATE, sub angular-rounded gravel, up to 50mm, pale grey-brown with orange-brown stained zones and defects, fine to coarse grained sand matrix	MW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
				10.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

CORED BOREHOLE LOG

BH7

SHEET 5 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 19/09/2014
 DATE COMPLETED: 23/09/2014
 SURFACE RL: 167.12 m AHD
 COORDS: 278663.24 m E 6421140.31 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description					
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is(50) MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)
				152.0	15.07		Pebbly SANDSTONE, fine to coarse grained, pale brown-grey, with sub angular gravel, up to 20mm	MW			
				151.5	15.5						
				16.0	16.0			HW			BP 10° Fe SN PR RF
				151.0	16.0			MW			BP 10° Fe SN PR RF
				16.5	16.5						
				150.5	16.88		CONGLOMERATE, sub angular-rounded gravel, up to 40mm, pale brown-grey, fine to coarse grained sand matrix				BP 10° Fe SN PR RF
				17.0	17.0						
				150.0	17.5						BP 10° Fe SN PR RF
				149.5	18.0						Several DB's
				149.0	18.5						BP 10° Fe SN U RF
				18.85	18.85		Pebbly SANDSTONE, fine to coarse grained, pale brown-grey, with sub angular gravel, up to 15mm				
				148.0	19.0						
				147.5	19.5						BP 10° Fe SN PR RF
				19.80	19.80		CONGLOMERATE, as above				

LOGGED: JJ

CHECKED: JE

DATE: 08/12/2014

DATE COMMENCED: 19/09/2014
DATE COMPLETED: 23/09/2014
SURFACE RL: 167.12 m AHD
COORDS: 278663.24 m E 6421140.31 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description						
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is (50) MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)	
HQ	0% LOSS	100	100	147.0			CONGLOMERATE, as above	MW				
				20.5								
				146.5								
				20.86								
				21.0								
				146.0								
				21.5								
				145.5								
				22.0								
				145.0								
HQ	0% LOSS	100	100	22.5			CONGLOMERATE, sub rounded gravel, up to 80mm, pale brown-grey, fine to coarse grained sand matrix Packer Test #1 20.6m to 23.4m leakage rate up to 52L/min				DB BP 10° Fe SN PR RF BP 30° Fe SN PR RF	
				144.5								
				23.0								
				144.0								
				23.5								
				143.5								
				24.0								
				24.05								
				24.22								
				24.46								
HQ	10% LOSS	92	86	143.0			Tuffaceous CLAYSTONE, grey, black laminations	F			BP 10° Fe SN PR RF DB DB DB BP 15° Fe SN PR RF BP 20° Fe SN U RF DB BP 15 - 30° Fe SN U RF	
				24.22			CORE LOSS 0.24m (24.22-24.46)					BP15 Fe SN U RF Drill breaks from 24.0m to 24.22m
				24.46			COAL, black, highly fractured/cleated	F				BP 5° Fe SN U S
				24.505			Carbonaceous SILTSTONE, dark grey to black, with iron oxide stained defects					JT 15° Fe SN PR S
HQ	10% LOSS	92	86	142.5			Laminated SANDSTONE, fine grained, grey, with dark grey bands/laminations				JT 15° Fe SN PR S BP 5° Fe SN PR S BP 5° Fe SN PR S	
				24.75								
LOGGED: JJ						CHECKED: JE				DATE: 08/12/2014		

PROJECT No: 9325
CLIENT: Upper Hunter Holdings Pty Ltd
PROJECT: Proposed Quarry Investigation
LOCATION: "Dolwende" Golden Highway, Hollydeen

DATE COMMENCED: 19/09/2014
DATE COMPLETED: 23/09/2014
SURFACE RL: 167.12 m AHD
COORDS: 278663.24 m E 6421140.31 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information							Field Material Description								
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₆₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)				
HQ	0% LOSS	92	86	142.0			Laminated SANDSTONE, fine grained, grey, with dark grey bands/laminations	F			BP 10° Fe SN U S				
				25.5											
				141.5	25.74		SANDSTONE, fine to medium grained, pale grey, with carbonaceous laminations								
				26.0	26.09		Interbedded Pebbly SANDSTONE and CONGLOMERATE, fine to coarse grained, pale grey, iron oxide stained (26.8m to 27.3m), sub angular-sub rounded gravel, up to 30mm								
				26.5											
				140.5	26.65		CONGLOMERATE, sub angular-sub rounded, up to 70mm gravel, pale brown-grey								
				27.0								MW			
				140.0								F			
				27.5											
				139.5											
				28.0											
				139.0											
		28.5				MW									
		138.5													
		29.0													
		138.0						Packer Test #2 28.6m to 31.4m leakage rate up to 38L/min							
		29.5													
		137.5								BP 10° Fe SN U S					
		LOGGED: JJ							CHECKED: JE				DATE: 08/12/2014		

CORED BOREHOLE LOG

BH7

SHEET 8 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 19/09/2014
 DATE COMPLETED: 23/09/2014
 SURFACE RL: 167.12 m AHD
 COORDS: 278663.24 m E 6421140.31 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description					
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is(50) MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)
HQ	↑	100	100	137.0	30.00		Pebbly SANDSTONE, fine to coarse grained, pale brown-grey to pale grey, with conglomerate bands	MW F			
					30.5						
					136.5						
					31.0						
					136.0						
					31.5						
					135.5						
					32.0						
					135.0						
					32.07						
					32.5						
					134.5						
					33.0						
					134.0						
					33.5						
					133.5						
					34.0						
					133.0						
					34.5						
					132.5						

RCA_LIB_08_RCA_STANDARD.GLB Log RCA CORED BOREHOLE LOG 9325 BORES.GPJ <<DrawingFile>> 09/12/2014 11:25 Produced by GINT Professional. Developed by Datagel

LOGGED: JJ

CHECKED: JE

DATE: 08/12/2014

DATE COMMENCED: 19/09/2014
DATE COMPLETED: 23/09/2014
SURFACE RL: 167.12 m AHD
COORDS: 278663.24 m E 6421140.31 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description						
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is(50) MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)	
HQ	0% LOSS	100	100	132.0		○ ○						

CORED BOREHOLE LOG

BH7

SHEET 10 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 19/09/2014
 DATE COMPLETED: 23/09/2014
 SURFACE RL: 167.12 m AHD
 COORDS: 278663.24 m E 6421140.31 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information							Field Material Description										
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₅₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)						
HQ	0% LOSS	100	100	127.0		x x x x x x	TUFF, fine grained, pale grey-green	F	EL 0.03 VL 0.1 L 0.3 M 1 H 3 VH 3 EH 10 10 30 100 300 1000 3000								
					40.5		CORED BOREHOLE BH7 TERMINATED AT 40.20 m										
					126.5												
					41.0												
					126.0												
					41.5												
					125.5												
					42.0												
					125.0												
					42.5												
					124.5												
					43.0												
					124.0												
					43.5												
					123.5												
					44.0												
					123.0												
					44.5												
					122.5												
LOGGED: JJ							CHECKED: JE							DATE: 08/12/2014			



Client: Upper Hunter Holdings Pty Ltd – Goat Farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH7

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd – Goat Farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH7

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd – Goat Farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH7

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd – Goat Farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH7

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd – Goat Farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH7

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd – Goat Farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH7

RCA ref: 9325

GEOTECHNICAL BOREHOLE LOG

BH8

SHEET 1 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 15/09/2014
 DATE COMPLETED: 17/09/2014
 SURFACE RL: 158.71 m AHD
 COORDS: 278184.44 m E 6421170.92 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Information					
METHOD	WATER	FIELD TEST	SAMPLE	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	MOISTURE/ WEATHERING	CONSISTENCY/ RELATIVE DENSITY/ STRENGTH	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	↑ (Not Encountered)		0.10m	158.5	0.30			TOPSOIL, Silty SAND, fine to medium grained, dark brown-black, with sub rounded-rounded gravel	M		TOPSOIL
			D 0.30m								Clayey SAND/Clayey GRAVEL, up to 10mm, pale brown, sub rounded-rounded, medium to coarse grained sand
RR	↓		0.70m	158.0	0.5						MONITORING WELL DETAILS: 50mm screwed PVC well casing installed to ~RL118.9m AHD Well screen 6.0m length from ~RL125m to 127.1m AHD Gravel pac from ~RL128m AHD to base of BH8 Bentonite Plug from ~RL130m AHD to top of gravel pac Auger TC-bit refusal at 1.5m Rock roller to 2.0m
			D 1.00m	157.5	1.0						
				157.0	1.5						
				157.0	2.0			CONTINUED AS CORED BOREHOLE			
				156.5							
					2.5						
				156.0							
					3.0						
				155.5							
					3.5						
				155.0							
					4.0						
				154.5							
					4.5						
				154.0							
LOGGED: JJ						CHECKED: JE			DATE: 08/12/2014		

CORED BOREHOLE LOG

BH8

SHEET 2 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 15/09/2014
 DATE COMPLETED: 17/09/2014
 SURFACE RL: 158.71 m AHD
 COORDS: 278184.44 m E 6421170.92 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

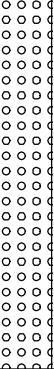
Borehole Information						Field Material Description									
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₅₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)				
				158.5	0.5										
				158.0	1.0										
				157.5	1.5										
				157.0	2.00		START CORING AT 2.00m								
				156.5	2.5		Pebbly SANDSTONE, fine to coarse grained sand matrix, with rounded gravel, up to 20mm, grey with iron oxide bands	MW							
		100	69	2.64							BP 5° Fe VNR PR RF				
				2.73			CLAYSTONE, pale grey-green, tuffaceous	HW			(Drill breaks throughout)				
				2.73			CONGLOMERATE, rounded gravel, up to 20mm, in a fine to coarse grained sand matrix, grey to pale grey with iron oxide stained zones	MW							
				3.0											
				155.5	3.5						BP 5° Fe SN U RF				
				155.0	4.0						BP 5° Fe SN U RF				
		100	100	154.5	4.5										
				154.0											
								SW							
LOGGED: JJ							CHECKED: JE				DATE: 08/12/2014				

LOGGED: JJ

CHECKED: JE

DATE: 08/12/2014

DATE COMMENCED: 15/09/2014
DATE COMPLETED: 17/09/2014
SURFACE RL: 158.71 m AHD
COORDS: 278184.44 m E 6421170.92 m N MGA94 56
DRILL MODEL: Hydopower Scout Truck Mounted

Borehole Information							Field Material Description									
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is (50) MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)					
HQ		100	100	153.5	5.5		CONGLOMERATE, rounded gravel, up to 20mm, in a fine to coarse grained sand matrix, grey to pale grey with iron oxide stained zones	SW			BP 10° CN U RF					
				153.0	6.0	Pebbly SANDSTONE, medium to coarse grained, with rounded gravel, up to 10mm, pale brown (iron oxide stained) to grey	MW									
				152.5	6.23											
				152.0	6.5											
				151.5	7.0											
				151.0	7.5											
				150.5	8.0											
				150.0	8.30			CONGLOMERATE, rounded gravel, up to 20mm, in a fine to coarse grained sand matrix, pale grey mottled orange-brown (iron oxide stain)					BP 10° Fe SN PR RF			
				149.5	9.0											
				149.0	9.5			BP 10° Fe SN U RF								
LOGGED: JJ							CHECKED: JE			DATE: 08/12/2014						

PROJECT No: 9325
CLIENT: Upper Hunter Holdings Pty Ltd
PROJECT: Proposed Quarry Investigation
LOCATION: "Dolwende" Golden Highway, Hollydeen

DATE COMMENCED: 15/09/2014
DATE COMPLETED: 17/09/2014
SURFACE RL: 158.71 m AHD
COORDS: 278184.44 m E 6421170.92 m N MGA94 56
DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description						
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₆₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)	
HQ	0% LOSS	100	100	148.5	10.10	○○○○○	Pebbly SANDSTONE, fine to coarse grained, pale grey to pale brown with dark orange brown bands	MW	EL-0.03 VL-0.1 L-0.3 W-1 W-3 W-10 EL-10 10 30 100 300 1000 3000	</		

CORED BOREHOLE LOG

BH8

SHEET 5 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 15/09/2014
 DATE COMPLETED: 17/09/2014
 SURFACE RL: 158.71 m AHD
 COORDS: 278184.44 m E 6421170.92 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description									
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is(50) MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)				
					15.15			MW							
					143.5		CONGLOMERATE, as above	SW							
					15.5										
					143.0										
					16.0										
					142.5										
					16.5										
		100	100		142.0		SANDSTONE, fine to coarse grained, pale grey-green with orange-brown band					BP 5° Fe SN PR S			
					17.0			MW							
					17.10		CONGLOMERATE, as above	SW							
					141.5										
					17.5										
					141.0										
					18.0										
					140.5			MW							
					18.5										
					140.0										
					19.0							BP 5° Fe SN PR RF			
		100	100		139.5										
					19.5										
					139.0							JT 80° Fe SN U RF			
					19.95		Pebbly Sandstone, as below					BP 5° Fe SN U RF			

LOGGED: JJ

CHECKED: JE

DATE: 08/12/2014

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 15/09/2014
 DATE COMPLETED: 17/09/2014
 SURFACE RL: 158.71 m AHD
 COORDS: 278184.44 m E 6421170.92 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description										
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₅₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)					
HQ	0% LOSS	100	100	138.5			Pebbly SANDSTONE, fine to coarse grained, pale grey with orange-brown (iron oxide stained) bands, rounded gravel, up to 10mm	MW			(Drill breaks throughout)					
				20.5											JT 50 - 60° Fe VNR Clay, PR,RF <2mm	
				138.0			Conglomerate bands from 20.6m to 20.85m, 21.55 to 21.85m and 22.75m to 22.95									
				21.0				SW								
				137.5			Packer Test #1 20.6m to 23.4m leakage rate up to 35L/min									
				21.5				MW							JT 80° Fe VNR U RF	
				137.0												
				22.0				SW								
				136.5												
				22.5												
		136.0														
		23.0				MW								JT 50° Fe VNR PR RF		
		135.5												JT 75° Fe VNR PR RF		
		23.5												JT 25° Fe VNR PR RF		
		23.55														
		135.0			SILTSTONE, fine grained, grey with carbonaceous laminations, iron oxide stained from 23.8m	SW										
						MW										
		24.00														
		134.5			CONGLOMERATE, rounded gravel, up to 50mm, in fine to coarse grained sand matrix, pale grey-pale to pale orange-brown (iron oxide stain)	SW - F								BP 5° Fe SN U S		
		24.5												JT 85° Fe SN PR RF		
134.0																
LOGGED: JJ							CHECKED: JE				DATE: 08/12/2014					

LOGGED: JJ

CHECKED: JE

DATE: 08/12/2014

CORED BOREHOLE LOG

BH8

SHEET 7 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 15/09/2014
 DATE COMPLETED: 17/09/2014
 SURFACE RL: 158.71 m AHD
 COORDS: 278184.44 m E 6421170.92 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description					
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is(50) MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)
							CONGLOMERATE, rounded gravel, up to 50mm, in fine to coarse grained sand matrix, pale grey-pale to pale orange-brown (iron oxide stain)	SW - F			
					133.5						
					25.5						
					133.0						BP 10° Fe SN U S
					26.0						
					132.5						
					26.5						
					132.0						
					27.0						
					131.5						BP 10° Fe SN U RF
					27.5						
					131.0						
					28.0						BP 10° Fe SN U S JT 70° Fe SN PR RF
					130.5						BP 10° Fe SN U S JT 25° Fe SN PR RF
					28.5						
					130.0						
					29.0						
					129.5						BP 5° Fe SN PR S
					29.23		CORE LOSS 0.15m (29.23-29.38)				
					29.38		Carbonaceous SHALE, dark grey	F - SW			BP 5° Fe SN PR S
					29.505		SILTSTONE, grey, with iron oxide stained defects				BP 5° Fe SN PR S
					129.0						

Packer Test #2
 28.6m to 31.4m leakage rate
 up to 31L/min

LOGGED: JJ

CHECKED: JE

DATE: 08/12/2014

CORED BOREHOLE LOG

BH8

SHEET 8 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 15/09/2014
 DATE COMPLETED: 17/09/2014
 SURFACE RL: 158.71 m AHD
 COORDS: 278184.44 m E 6421170.92 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information							Field Material Description							
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₆₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)			
HQ		80	63		30.00		SANDSTONE, fine to medium grained, grey	SW						
					128.5			F						
					30.5									
					30.60									
					128.0		CONGLOMERATE, fine to coarse gravel, up to 40mm, pale grey sandy matrix, fine to coarse grained				BP 10° CN U S			
					31.0						Numerous drill breaks in conglomerate core from 30.6m to 40m			
					127.5									
					31.5									
		100	100		127.0									
					32.0									
					126.5									
					32.5									
					126.0									
					33.0									
					125.5		Carbonaceous siltstone band, dark grey from 33.18m to 33.23m				BP 5° CN PR S			
					33.5									
					125.0									
					34.0									
		100	100		124.5									
					34.5									
					124.0									
LOGGED: JJ							CHECKED: JE			DATE: 08/12/2014				

LOGGED: JJ

CHECKED: JE

DATE: 08/12/2014

CORED BOREHOLE LOG

BH8

SHEET 9 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 15/09/2014
 DATE COMPLETED: 17/09/2014
 SURFACE RL: 158.71 m AHD
 COORDS: 278184.44 m E 6421170.92 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description					
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is(50) MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)
							CONGLOMERATE, fine to coarse gravel, up to 40mm, pale grey sandy matrix, fine to coarse grained	F			
		100	100	123.5							
				35.5							
				123.0							
				36.0							
				122.5							
				36.5							
				122.0			Packer Test #3 36.6m to 38.4m Straddle packer wouldnt seal, test abandoned				
				37.0							
				121.5							
				37.5							
		100	100	121.0							
				38.0							
				120.5							
				38.5							
				120.0							
				39.0							
				119.5							
		100	100	39.5							
				119.0							

LOGGED: JJ

CHECKED: JE

DATE: 08/12/2014

CORED BOREHOLE LOG

BH8

SHEET 10 OF 10

PROJECT No: 9325
 CLIENT: Upper Hunter Holdings Pty Ltd
 PROJECT: Proposed Quarry Investigation
 LOCATION: "Dolwendee" Golden Highway, Hollydeen

DATE COMMENCED: 15/09/2014
 DATE COMPLETED: 17/09/2014
 SURFACE RL: 158.71 m AHD
 COORDS: 278184.44 m E 6421170.92 m N MGA94 56
 DRILL MODEL: Hydropower Scout Truck Mounted

Borehole Information						Field Material Description									
METHOD	WATER	CORE RECOVERY	RQD	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents) (ROCK NAME; grain size, colour, minor constituents)	WEATHERING	INFERRED STRENGTH Is ₍₅₀₎ MPa	AVERAGE DEFECT SPACING (mm)	DEFECT DESCRIPTION AND ADDITIONAL OBSERVATIONS (defect type, inclination, infilling, planarity, roughness, thickness)				
HQ	↓				40.00		COAL, black Tuffaceous band from 40.05m to 40.07m	F							
					118.5		CORED BOREHOLE BH8 TERMINATED AT 40.10 m								
					40.5										
					118.0										
					41.0										
					117.5										
					41.5										
					117.0										
					42.0										
					116.5										
					42.5										
					116.0										
					43.0										
					115.5										
					43.5										
					115.0										
					44.0										
					114.5										
					44.5										
					114.0										
LOGGED: JJ							CHECKED: JE				DATE: 08/12/2014				



Client: Upper Hunter Holdings Pty Ltd – Goat Farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH8

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd – Goat Farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH8

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd – Goat Farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH8

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd – Goat Farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH8

RCA ref: 9325



Client: Upper Hunter Holdings Pty Ltd – Goat Farm Trust

RCA Australia

Project: Proposed Quarry

Location: BH8

RCA ref: 9325