SOIL LOG

HOLE NO: **BH BV 7**

PROJECT : Brisbane Valley Grade Separation	JOB NO : QB10200.4	PAGE : 1 OF 10
POSITION : E: 470424, N: 6949695 (56 MGA94)	SURFACE ELEVATION : 56.7 (AHD)	LOCATION : Brisbane Valley Hwy
RIG TYPE : Hydrapower Scout	CONTRACTOR : GeoDrill - T Partleton	DIP / AZIMUTH : 90°
DATE DRILLED : 17/5/11 to 18/5/11	LOGGED BY : LN CHECKED BY : VP	STANDARD : AS1736

DRILLING & WATER DETAIL	LAB DATA: Moisture Content	Dry Density	% Fines	Atterberg Limits	SAMPLES & SPT DATA	RL (m)	DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE	CONSISTENCY / RELATIVE DENSITY (S / L, F / MD, St / D, VSt / VD)	COMMENTS Field Test Data & Other Observations
Groundwater					D				CLAY - sandy CLAY, high plasticity, dark brown, fine to medium sand, moist, soft to firm.	M		0.00: FILL
					0.30m				0.30m			
					D				CLAY - sandy CLAY, high plasticity, grey brown streaked orange, some fine sand, moist, soft.	M		0.30: FILL
						56.2	0.5					
					1.00m				1.00m			
					SPT 3, 3, 6 N=9	55.7	1.0		CLAY - high plasticity, brown, trace fine sand, moist, stiff.	M		1.00: FILL
					1.45m							
						55.2	1.5					
					1.80m				1.80m			
					D				CLAY - gravelly CLAY, high plasticity, brown, trace fine sand, some white low plasticity silt, some fine to medium limestone gravel , moist, stiff.	M		1.80: FILL
					2.00m				2.00m			
					SPT 4, 7, 12 N=19	54.7	2.0		CLAY - high plasticity, brown, moist, stiff.	M		
									2.20m			
									SILT - sandy clayey SILT, high plasticity fines, yellow-grey brown, fine to medium sand, moist, stiff.	M		
					2.45m							
						54.2	2.5		2.50m			
									SILT - sandy SILT, high plasticity fines, grey mottled orange, fine to coarse sand, moist, very stiff.			
					3.00m							
					SPT 7, 10, 12 N=22	53.7	3.0			M		
					3.45m							

DRILLING

HA	Hand Auger	HQ	HQ Coring
AS	Auger	NQ	NQ Coring
WB	Washbore	PQ	PQ Coring
RR	Rock Rolling		NMLC NMLC Coring

GROUNDWATER SYMBOLS
▼ = Water level (static)
▽ = Water level (during drilling)

SAMPLES & FIELD TESTS

D	Disturbed Sample	SPT	SPT Sample
ES	Env Soil Sample	U	Undisturbed Tube Sample
EW	Env Water Sample	W	Water Sample

HP Hand Penetrometer
HV Hand Vane Shear
(P: Peak Su R: Residual Su)
N SPT blows per 300mm
HW SPT penetration by hammer weight
RW SPT penetration by rod weight

MOISTURE CONDITION
D = Dry M = Moist W = Wet

DENSITY (N-value)

VL	Very Loose	0 - 4
L	Loose	4 - 10
MD	Medium Dense	10 - 30
D	Dense	30 - 50
VD	Very Dense	50 - 100
CO	Compact	>50/150mm

CONSISTENCY (Su) {N-value}

VS	Very Soft	< 12 kPa {0-2}
S	Soft	12 - 25 {2-4}
F	Firm	25 - 50 {4-8}
St	Stiff	50 - 100 {8-15}
VSt	Very Stiff	100 - 200 {15-30}
H	Hard	> 200 kPa {>30}

SKM AGS REV02.1 (WORKIN-BRISBANE).GLB Log SKM SOIL LOG BRISBANE VALLEY GRADE SEPARATION TP,AH AND BH LOGS.GPJ <<DrawingFile>> 29/11/2011 11:40

SOIL LOG

HOLE NO: **BH BV 7**

PROJECT : Brisbane Valley Grade Separation | JOB NO : QB10200.4 | PAGE : 2 OF 10

POSITION : E: 470424, N: 6949695 (56 MGA94) | SURFACE ELEVATION : 56.7 (AHD) | LOCATION : Brisbane Valley Hwy

RIG TYPE : Hydrapower Scout | CONTRACTOR : GeoDrill - T Partleton | DIP / AZIMUTH : 90°

DATE DRILLED : 17/5/11 to 18/5/11 | LOGGED BY : LN | CHECKED BY : VP | STANDARD : AS1736

DRILLING & WATER DETAIL	LAB DATA: Moisture Content	Dry Density	% Fines	Atterberg Limits	SAMPLES & SPT DATA	RL (m)	DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION (Soil Type, Colour, Plasticity or Particle Characteristic, Secondary and Minor Components)	MOISTURE	CONSISTENCY / RELATIVE DENSITY (S / L, F / MD, St / D, VSt / VD)	COMMENTS (Field Test Data & Other Observations)
									SILT - sandy SILT, high plasticity fines, grey mottled orange, fine to coarse sand, moist, very stiff. *(continued)*	M		
					4.00m	52.7	4.0		4.00m			
					SPT 8, 9, 11 N=20				SILT - sandy SILT, high plasticity fines, grey mottled orange, fine to medium sand in thin layers at 4.2 m, moist, very stiff.			
					4.45m							
						52.2	4.5			M		
					5.00m	51.7	5.0		5.00m			
					SPT 15, 9, 12 N=21				IRONSTONE - red brown, extremely weathered, extremel low strength, moist, medium dense.	M		
									5.15m			
									SILT - sandy SILT, high plasticity fines, orange mottled grey, fine to coarse sand in thin layers, moist, very stiff.			
					5.45m							
						51.2	5.5			M		
					6.00m	50.7	6.0		6.00m			
					SPT 7, 9, 14 N=23				SILT - sandy SILT, high plasticity fines, grey mottled orange, fine to coarse sand, moist, very stiff to hard.			
					6.45m							
						50.2	6.5			M		
					7.00m							

Groundwater

DRILLING

HA	Hand Auger	HQ	HQ Coring
AS	Auger	NQ	NQ Coring
WB	Washbore	PQ	PQ Coring
RR	Rock Rolling		NMLC NMLC Coring

GROUNDWATER SYMBOLS
▼ = Water level (static)
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SAMPLES & FIELD TESTS

D	Disturbed Sample	SPT	SPT Sample
ES	Env Soil Sample	U	Undisturbed Tube Sample
EW	Env Water Sample	W	Water Sample

HP Hand Penetrometer
HV Hand Vane Shear
(P: Peak Su R: Residual Su)
N SPT blows per 300mm
HW SPT penetration by hammer weight
RW SPT penetration by rod weight

MOISTURE CONDITION
D = Dry M = Moist W = Wet

DENSITY (N-value)

VL	Very Loose	0 - 4
L	Loose	4 - 10
MD	Medium Dense	10 - 30
D	Dense	30 - 50
VD	Very Dense	50 - 100
CO	Compact	>50/150mm

CONSISTENCY (Su) {N-value}

VS	Very Soft	< 12 kPa {0-2}
S	Soft	12 - 25 {2-4}
F	Firm	25 - 50 {4-8}
St	Stiff	50 - 100 {8-15}
VSt	Very Stiff	100 - 200 {15-30}
H	Hard	> 200 kPa {>30}

SKM AGS REV02.1 (WORKIN-BRISBANE).GLB Log SKM SOIL LOG BRISBANE VALLEY GRADE SEPARATION TP,AH AND BH LOGS.GPJ <<DrawingFile>> 29/11/2011 11:40

SOIL LOG

HOLE NO: **BH BV 7**

PROJECT : Brisbane Valley Grade Separation | JOB NO : QB10200.4 | PAGE : 3 OF 10

POSITION : E: 470424, N: 6949695 (56 MGA94) | SURFACE ELEVATION : 56.7 (AHD) | LOCATION : Brisbane Valley Hwy

RIG TYPE : Hydrapower Scout | CONTRACTOR : GeoDrill - T Partleton | DIP / AZIMUTH : 90°

DATE DRILLED : 17/5/11 to 18/5/11 | LOGGED BY : LN | CHECKED BY : VP | STANDARD : AS1736

DRILLING & WATER DETAIL	LAB DATA: Moisture Content	Dry Density	% Fines	Atterberg Limits	SAMPLES & SPT DATA	RL (m)	DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION (Soil Type, Colour, Plasticity or Particle Characteristic, Secondary and Minor Components)	MOISTURE	CONSISTENCY / RELATIVE DENSITY (S / L, F / MD, St / D, VSt / VD)	COMMENTS (Field Test Data & Other Observations)
Groundwater					SPT 17, 19, 30/125mm N=R				SILT - sandy SILT, high plasticity fines, grey mottled orange, fine to coarse sand, moist, very stiff to hard. *(continued)*	M		
									7.15m SAND - silty SAND, fine to medium sand, orange, moist, dense.	M		
									SILT - sandy SILT, high plasticity fines, grey mottled orange, fine to medium sand, moist, hard.			
					7.43m	49.2	7.5			M		
					8.00m SPT 13, 26, 30/90mm N=R	48.7	8.0		8.00m SILT - sandy SILT, high plasticity fines, grey mottled orange, fine to medium sand, trace of fine to medium extremely weathered and extremely low strength ironstone, moist, hard.			
					8.39m	48.2	8.5			M		
					9.00m SPT 12, 20, 24 N=44	47.7	9.0		9.00m SILT - high plasticity fines, grey mottled orange, moist, hard.			
					9.45m	47.2	9.5			M		
					10.00m SPT 12, 17, 27 N=44	46.7	10.0					
					10.45m							

DRILLING

HA	Hand Auger	HQ	HQ Coring
AS	Auger	NQ	NQ Coring
WB	Washbore	PQ	PQ Coring
RR	Rock Rolling		NMLC NMLC Coring

GROUNDWATER SYMBOLS
▼ = Water level (static)
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SAMPLES & FIELD TESTS

D	Disturbed Sample	SPT	SPT Sample
ES	Env Soil Sample	U	Undisturbed Tube Sample
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HP Hand Penetrometer
HV Hand Vane Shear
(P: Peak Su R: Residual Su)
N SPT blows per 300mm
HW SPT penetration by hammer weight
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MOISTURE CONDITION
D = Dry M = Moist W = Wet

DENSITY (N-value)

VL	Very Loose	0 - 4
L	Loose	4 - 10
MD	Medium Dense	10 - 30
D	Dense	30 - 50
VD	Very Dense	50 - 100
CO	Compact	>50/150mm

CONSISTENCY (Su) {N-value}

VS	Very Soft	< 12 kPa {0-2}
S	Soft	12 - 25 {2-4}
F	Firm	25 - 50 {4-8}
St	Stiff	50 - 100 {8-15}
VSt	Very Stiff	100 - 200 {15-30}
H	Hard	> 200 kPa {>30}

SKM AGS REV02.1 (WORKIN-BRISBANE).GLB Log SKM SOIL LOG BRISBANE VALLEY GRADE SEPARATION TP,AH AND BH LOGS.GPJ <<DrawingFile>> 29/11/2011 11:40

SOIL LOG

HOLE NO: **BH BV 7**

PROJECT : Brisbane Valley Grade Separation | JOB NO : QB10200.4 | PAGE : 4 OF 10

POSITION : E: 470424, N: 6949695 (56 MGA94) | SURFACE ELEVATION : 56.7 (AHD) | LOCATION : Brisbane Valley Hwy

RIG TYPE : Hydrapower Scout | CONTRACTOR : GeoDrill - T Partleton | DIP / AZIMUTH : 90°

DATE DRILLED : 17/5/11 to 18/5/11 | LOGGED BY : LN | CHECKED BY : VP | STANDARD : AS1736

DRILLING & WATER DETAIL	LAB DATA: Moisture Content	LAB DATA: Dry Density	LAB DATA: % Fines	LAB DATA: Atterberg Limits	SAMPLES & SPT DATA	RL (m)	DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE	CONSISTENCY / RELATIVE DENSITY S / L · F / MD · St / D · VSt / VD	COMMENTS Field Test Data & Other Observations
					11.00m SPT 30/105mm N=R 11.11m	45.7	11.0		SILT - high plasticity fines, grey mottled orange, moist, hard. *(continued)*	M		
						45.2	11.5					
					12.00m SPT 30, 30/110mm N=R	44.7	12.0		12.00m SILT - high plasticity fines, grey mottled orange, some orange brown extremely weathered, extremely low strength fine to medium ironstone gravel at 12.3 m, moist, hard.			
					12.26m							
						44.2	12.5					
					13.00m SPT 30/110mm N=R 13.11m	43.7	13.0			M		
						43.2	13.5					
Groundwater					14.00m							

DRILLING

HA	Hand Auger	HQ	HQ Coring
AS	Auger	NQ	NQ Coring
WB	Washbore	PQ	PQ Coring
RR	Rock Rolling		NMLC NMLC Coring

GROUNDWATER SYMBOLS
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SAMPLES & FIELD TESTS

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MOISTURE CONDITION
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DENSITY (N-value)

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MD	Medium Dense	10 - 30
D	Dense	30 - 50
VD	Very Dense	50 - 100
CO	Compact	>50/150mm

CONSISTENCY (Su) {N-value}

VS	Very Soft	< 12 kPa {0-2}
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H	Hard	> 200 kPa {>30}

SKM AGS REV02.1 (WORKIN-BRISBANE).GLB Log SKM SOIL LOG BRISBANE VALLEY GRADE SEPARATION TP,AH AND BH LOGS.GPJ <<DrawingFile>> 29/11/2011 11:40

SOIL LOG

HOLE NO: **BH BV 7**

PROJECT : Brisbane Valley Grade Separation | JOB NO : QB10200.4 | PAGE : 5 OF 10

POSITION : E: 470424, N: 6949695 (56 MGA94) | SURFACE ELEVATION : 56.7 (AHD) | LOCATION : Brisbane Valley Hwy

RIG TYPE : Hydrapower Scout | CONTRACTOR : GeoDrill - T Partleton | DIP / AZIMUTH : 90°

DATE DRILLED : 17/5/11 to 18/5/11 | LOGGED BY : LN | CHECKED BY : VP | STANDARD : AS1736

DRILLING & WATER DETAIL	LAB DATA: Moisture Content	LAB DATA: Dry Density	LAB DATA: % Fines	LAB DATA: Atterberg Limits	SAMPLES & SPT DATA	RL (m)	DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE	CONSISTENCY / RELATIVE DENSITY: S / L	F / MD	St / D	VSt / VD	COMMENTS Field Test Data & Other Observations
					SPT 30/75mm N=R 14.08m				SILT - high plasticity fines, grey mottled orange, some orange brown extremely weathered, extremely low strength fine to medium ironstone gravel at 12.3 m, moist, hard. *(continued)*	M					
						42.2	14.5		14.50m Continued as Cored Borehole						
						41.7	15.0								
						41.2	15.5								
						40.7	16.0								
						40.2	16.5								
						39.7	17.0								

DRILLING

HA	Hand Auger	HQ	HQ Coring
AS	Auger	NQ	NQ Coring
WB	Washbore	PQ	PQ Coring
RR	Rock Rolling		NMLC NMLC Coring

GROUNDWATER SYMBOLS
▼ = Water level (static)
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SAMPLES & FIELD TESTS

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EW	Env Water Sample	W	Water Sample

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(P: Peak Su R: Residual Su)
N SPT blows per 300mm
HW SPT penetration by hammer weight
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MOISTURE CONDITION
D = Dry M = Moist W = Wet

DENSITY (N-value)

VL	Very Loose	0 - 4
L	Loose	4 - 10
MD	Medium Dense	10 - 30
D	Dense	30 - 50
VD	Very Dense	50 - 100
CO	Compact	>50/150mm

CONSISTENCY (Su) {N-value}

VS	Very Soft	< 12 kPa {0-2}
S	Soft	12 - 25 {2-4}
F	Firm	25 - 50 {4-8}
St	Stiff	50 - 100 {8-15}
VSt	Very Stiff	100 - 200 {15-30}
H	Hard	> 200 kPa {>30}

SKM AGS REV02.1 (WORKIN-BRISBANE).GLB Log SKM SOIL LOG BRISBANE VALLEY GRADE SEPARATION TP,AH AND BH LOGS.GPJ <<DrawingFile>> 29/11/2011 11:40

ROCK LOG

HOLE NO: **BH BV 7**

PROJECT : Brisbane Valley Grade Separation	JOB NO : QB10200.4	PAGE : 6 OF 10
POSITION : E: 470424, N: 6949695 (56 MGA94)	SURFACE ELEVATION : 56.7 (AHD)	LOCATION : Brisbane Valley Hwy
RIG TYPE : Hydrapower Scout	CONTRACTOR : GeoDrill - T Partleton	DIP / AZIMUTH : 90°
DATE DRILLED : 17/5/11 to 18/5/11	LOGGED BY : LN CHECKED BY : VP	STANDARD : AS1736

DRILLING			MATERIAL					DEFECTS & COMMENTS		
DRILLING & WATER DETAIL	TCR/RQD DRILL DEPTH	FIELD TESTS	RL (m)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral EL VL L M H VH EH (-0.03 -0.1 -0.3 -1 -3 -10)	DEFECT SPACING (mm) 20 60 200 600 2000	COMMENTS Description of joints, seams, defects, additional observations and comments	INSTALLATION DETAIL
						START CORING AT 14.50m					
			42.2	14.5		SILTSTONE - faintly layered, grey, very low to low strength, slightly weathered.	SW			— 14.50: ROCK	
		14.76m									
		14.85m									
		15.00m	41.7	15.0		SILTSTONE - faintly layered, red brown, very low to low strength, slightly weathered.	SW				
						SANDSTONE - massive, medium sand, orange grey, of low strength, moderately weathered.	MW				
		15.54m	41.2	15.5		SANDSTONE - massive, fine to medium sand, grey with some orange streaking, high strength, slightly weathered.	SW				
Run 1	84% TCR 69% RQD		40.7	16.0		SANDSTONE - massive, fine to medium sand, grey brown, some fine gravels, low to medium strength, moderately weathered.	MW				
			40.2	16.5		SANDSTONE - massive, coarse sand, grey streaked orange brown, trace fine to medium quartz gravel, medium strength, moderately weathered.	MW			— CN IR RF J60(op)(ro)W	
		16.70m									
		16.85m				CORE LOSS				— 16.85: CORE LOSS = 0.45	
	17.30		39.7	17.0							
	100% TCR 83% RQD					SANDSTONE - massive, coarse sand, light grey , trace fine to medium quartz gravel, medium strength, moderately weathered.	MW				

DRILLING

NMLC NMLC Coring
NQ NQ Coring
HQ HQ Coring
PQ PQ Coring

TCR % core run recovered
RQD % core run > 100mm long (rock fraction only measured)

GROUNDWATER SYMBOLS
▼ = Water level (static)
▽ = Water level (during drilling)

SAMPLES & FIELD TESTS

D Disturbed Sample
W Water Sample
ES Env Soil Sample
EW Env Water Sample
SPT SPT Sample
U Undisturbed Tube Sample

PHOTOGRAPHS NOTES ☐ YES ☒ NO

DEFECT ABBREVIATIONS

CS Crushed Seam
CZ Crushed Zone
DB Drill Break
FZ Fractured Zone
JT Joint
IS Infilled Seam
SZ Shear Zone
VN Vein
CN Clean
CT Coating
SN Stain
VR Veneer
POL Polished
RF Rough
S Smooth
SL Slickensided
Cu Curved
IR Irregular
PR Planar
ST Stepped
Un Undulated

ROCK STRENGTH (Is50 MPa)

0-0.03	Extremely Low
0.03-0.1	Very Low
0.1-0.3	Low
0.3-1.0	Medium
1.0-3.0	High
3.0-10	Very High

SKM AGS REV02.1 (WORKIN-BRISBANE).GLB Log SKM ROCK(BRISBANE) BRISBANE VALLEY GRADE SEPARATION TP,AH AND BH LOGS.GPJ <<DrawingFile>> 29/11/2011 11:42

ROCK LOG

HOLE NO: **BH BV 7**

PROJECT : Brisbane Valley Grade Separation	JOB NO : QB10200.4	PAGE : 7 OF 10
POSITION : E: 470424, N: 6949695 (56 MGA94)	SURFACE ELEVATION : 56.7 (AHD)	LOCATION : Brisbane Valley Hwy
RIG TYPE : Hydrapower Scout	CONTRACTOR : GeoDrill - T Partleton	DIP / AZIMUTH : 90°
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DRILLING			MATERIAL						DEFECTS & COMMENTS		
DRILLING & WATER DETAIL	TCR/RQD DRILL DEPTH	FIELD TESTS	RL (m)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral EL VL L M H VH EH -0.03 -0.1 -0.3 -1 -3 -10	DEFECT SPACING (mm) 20 60 200 600 2000	COMMENTS Description of joints, seams, defects, additional observations and comments	INSTALLATION DETAIL
						SANDSTONE - massive, coarse sand, light grey , trace fine to medium quartz gravel, medium strength, moderately weathered. *(continued)*	MW				
						SANDSTONE - massive, coarse sand, orange grey , trace fine to medium quartz gravel, medium strength, moderately weathered.	MW				
			38.7	18.0		SANDSTONE - massive, coarse sand, orange, some fine to medium quartz gravels, low to medium strength, moderately weathered.	MW				
Run 2	100% TCR 83% RQD		38.2	18.5		SANDSTONE - massive, medium to coarse sand, grey , high strength, slightly weathered.	SW				
			37.7	19.0		SANDSTONE - massive, coarse sand, some fine to medium quartz gravel, orange, medium strength, moderately weathered.	MW				
		19.60m	37.2	19.5							
			36.7	20.0						— CN IR RF J70(op)(ro)W	
	20.30					SANDSTONE - massive, coarse sand, trace fine to medium quartz gravel, orange, medium strength, moderately weathered. .	MW				
	100% TCR 86% RQD	20.68m	36.2	20.5							
Run 3											

SKM AGS REV02.1 (WORKIN-BRISBANE).GLB Log SKM ROCK(BRISBANE) BRISBANE VALLEY GRADE SEPARATION TP,AH AND BH LOGS.GPJ <<DrawingFile>> 29/11/2011 11:42

DRILLING

NMLC NMLC Coring
NQ NQ Coring
HQ HQ Coring
PQ PQ Coring

TCR % core run recovered
RQD % core run > 100mm long (rock fraction only measured)

GROUNDWATER SYMBOLS
▼ = Water level (static)
▽ = Water level (during drilling)

SAMPLES & FIELD TESTS

D Disturbed Sample
W Water Sample
ES Env Soil Sample
EW Env Water Sample
SPT SPT Sample
U Undisturbed Tube Sample

PHOTOGRAPHS NOTES ☐ YES ☒ NO

DEFECT ABBREVIATIONS

CS Crushed Seam
CZ Crushed Zone
DB Drill Break
FZ Fractured Zone
JT Joint
IS Infilled Seam
SZ Shear Zone
VN Vein
CN Clean
CT Coating
SN Stain
VR Veneer
POL Polished
RF Rough
S Smooth
SL Slickensided
Cu Curved
IR Irregular
PR Planar
ST Stepped
Un Undulated

ROCK STRENGTH (Is50 MPa)

0-0.03	Extremely Low
0.03-0.1	Very Low
0.1-0.3	Low
0.3-1.0	Medium
1.0-3.0	High
3.0-10	Very High

ROCK LOG

HOLE NO: **BH BV 7**

PROJECT : Brisbane Valley Grade Separation	JOB NO : QB10200.4	PAGE : 8 OF 10
POSITION : E: 470424, N: 6949695 (56 MGA94)	SURFACE ELEVATION : 56.7 (AHD)	LOCATION : Brisbane Valley Hwy
RIG TYPE : Hydrapower Scout	CONTRACTOR : GeoDrill - T Partleton	DIP / AZIMUTH : 90°
DATE DRILLED : 17/5/11 to 18/5/11	LOGGED BY : LN CHECKED BY : VP	STANDARD : AS1736

DRILLING			MATERIAL					DEFECTS & COMMENTS		
DRILLING & WATER DETAIL	TCR/RQD / DRILL DEPTH	FIELD TESTS	RL (m)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral EL -0.03 VL -0.1 L -0.3 M -1 H -3 VH -10 EH	DEFECT SPACING (mm) 20 60 200 600 2000	COMMENTS Description of joints, seams, defects, additional observations and comments	INSTALLATION DETAIL
	100% TCR 86% RQD		35.2	21.5		SANDSTONE - massive, coarse sand, trace fine to medium quartz gravel, orange, medium strength, moderately weathered. . *(continued)*	MW				
	21.60										
Run 4	80% TCR 43% RQD		34.7	22.0						— CN IR RF J70(op)(ro)W	
			34.2	22.5		CORE LOSS				— 22.60: CORE LOSS = 0.25	
	22.85										
		22.96m	33.7	23.0		SANDSTONE - coarse sand, trace fine to medium quartz gravel, orange, medium strength, moderately weathered. .	MW				
			33.2	23.5						— CN IR RF J85(op)(ro)W	
	89% TCR 77% RQD										
			32.7	24.0		SANDSTONE - coarse sand, trace fine to medium quartz gravel, grey, medium strength, moderately weathered. .	MW				
						SANDSTONE - coarse sand, trace fine to medium quartz gravel, red brown, medium strength, moderately weathered. .	MW				
Run 5						SANDSTONE - coarse sands, trace fine to medium quartz gravel, orange, medium strength, moderately weathered. .	MW				

DRILLING

NMLC NMLC Coring
NQ NQ Coring
HQ HQ Coring
PQ PQ Coring

TCR % core run recovered
RQD % core run > 100mm long (rock fraction only measured)

GROUNDWATER SYMBOLS
▼ = Water level (static)
▽ = Water level (during drilling)

SAMPLES & FIELD TESTS

D Disturbed Sample
W Water Sample
ES Env Soil Sample
EW Env Water Sample
SPT SPT Sample
U Undisturbed Tube Sample

PHOTOGRAPHS NOTES ☐ YES ☒ NO

DEFECT ABBREVIATIONS

CS Crushed Seam, CZ Crushed Zone, DB Drill Break, FZ Fractured Zone, JT Joint, IS Infilled Seam, SZ Shear Zone, VN Vein
CN Clean, CT Coating, SN Stain, VR Veneer
POL Polished, RF Rough, S Smooth, SL Slickensided
Cu Curved, IR Irregular, PR Planar, ST Stepped, Un Undulated

ROCK STRENGTH (Is50 MPa)

0-0.03	Extremely Low
0.03-0.1	Very Low
0.1-0.3	Low
0.3-1.0	Medium
1.0-3.0	High
3.0-10	Very High

SKM AGS REV02.1 (WORKIN-BRISBANE).GLB Log SKM ROCK(BRISBANE) BRISBANE VALLEY GRADE SEPARATION TP,AH AND BH LOGS.GPJ <<DrawingFile>> 29/11/2011 11:42

ROCK LOG

HOLE NO: **BH BV 7**

PROJECT : Brisbane Valley Grade Separation	JOB NO : QB10200.4	PAGE : 9 OF 10
POSITION : E: 470424, N: 6949695 (56 MGA94)	SURFACE ELEVATION : 56.7 (AHD)	LOCATION : Brisbane Valley Hwy
RIG TYPE : Hydrapower Scout	CONTRACTOR : GeoDrill - T Partleton	DIP / AZIMUTH : 90°
DATE DRILLED : 17/5/11 to 18/5/11	LOGGED BY : LN CHECKED BY : VP	STANDARD : AS1736

DRILLING			MATERIAL						DEFECTS & COMMENTS		
DRILLING & WATER DETAIL	TCR/RQD DRILL DEPTH	FIELD TESTS	RL (m)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral EL VL L M H VH EH	DEFECT SPACING (mm) 20 60 200 600 2000	COMMENTS Description of joints, seams, defects, additional observations and comments	INSTALLATION DETAIL
		24.54m				SANDSTONE - coarse sands, trace fine to medium quartz gravel, orange, medium strength, moderately weathered. . *(continued)*	MW			
						SANDSTONE - coarse sand, trace fine to medium quartz gravel, grey, medium strength, moderately weathered. .	MW			
		24.82m				SANDSTONE - coarse sand, some fine to medium quartz gravel, grey, medium strength, moderately weathered. .	MW			
			31.7	25.0							
		25.15m									
	89% TCR 77% RQD										
		25.39m									
			31.2	25.5		CORE LOSS				25.55: CORE LOSS = 0.43	
	25.90										
			30.7	26.0		SANDSTONE - coarse sand, some fine to medium quartz gravel, grey stained brown, low strength, moderately weathered. .	MW				
						SILTSTONE - faintly layered, grey, very low to low strength, slightly weathered.	SW				
						SANDSTONE - coarse sand, some fine to medium quartz gravel, grey stained brown, low strength, moderately weathered.	SW				
						SILTSTONE - low to medium strength faintly layered, dark grey, very low to low strength, slightly weathered, with very thinly to thinly layered fine grain sandstone low to medium strength .	SW				
			30.2	26.5							
		26.73m									
		26.88m									
	97% TCR 91% RQD					SILTSTONE - faintly layered, dark grey, low strength, slightly weathered, with very thinly to thinly layered fine grain sandstone low to medium strength.	SW				
			29.7	27.0							
Run 6											
			29.2	27.5							

SKM AGS REV02.1 (WORKIN-BRISBANE).GLB Log SKM ROCK(BRISBANE) BRISBANE VALLEY GRADE SEPARATION TP,AH AND BH LOGS.GPJ <<DrawingFile>> 29/11/2011 11:42

DRILLING

NMLC NMLC Coring
NQ NQ Coring
HQ HQ Coring
PQ PQ Coring

TCR % core run recovered
RQD % core run > 100mm long (rock fraction only measured)

GROUNDWATER SYMBOLS
▼ = Water level (static)
▽ = Water level (during drilling)

SAMPLES & FIELD TESTS

D Disturbed Sample
W Water Sample
ES Env Soil Sample
EW Env Water Sample
SPT SPT Sample
U Undisturbed Tube Sample

PHOTOGRAPHS NOTES ☐ YES ☒ NO

DEFECT ABBREVIATIONS

CS Crushed Seam
CZ Crushed Zone
DB Drill Break
FZ Fractured Zone
JT Joint
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VR Veneer
POL Polished
RF Rough
S Smooth
SL Slickensided
Cu Curved
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PR Planar
ST Stepped
Un Undulated

ROCK STRENGTH (Is50 MPa)

0-0.03	Extremely Low
0.03-0.1	Very Low
0.1-0.3	Low
0.3-1.0	Medium
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3.0-10	Very High

ROCK LOG

HOLE NO: **BH BV 7**

PROJECT : Brisbane Valley Grade Separation	JOB NO : QB10200.4	PAGE : 10 OF 10
POSITION : E: 470424, N: 6949695 (56 MGA94)	SURFACE ELEVATION : 56.7 (AHD)	LOCATION : Brisbane Valley Hwy
RIG TYPE : Hydrapower Scout	CONTRACTOR : GeoDrill - T Partleton	DIP / AZIMUTH : 90°
DATE DRILLED : 17/5/11 to 18/5/11	LOGGED BY : LN CHECKED BY : VP	STANDARD : AS1736

DRILLING | MATERIAL | DEFECTS & COMMENTS

DRILLING & WATER DETAIL	TCR/RQD DRILL DEPTH	FIELD TESTS	RL (m)	DEPTH (m)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral EL VL L M H VH EH (-0.03, -0.1, -0.3, -1, -3, -10)	DEFECT SPACING (mm) 20 60 200 600 2000	COMMENTS Description of joints, seams, defects, additional observations and comments	INSTALLATION DETAIL
	97% TCR 91% RQD	28.56m	28.2	28.5		SILTSTONE - faintly layered, dark grey, low strength, slightly weathered, with very thinly to thinly layered fine grain sandstone low to medium strength. *(continued)*	SW				
		28.73m 28.74m									
	28.90					SILTSTONE - clayey siltstone, fine grain, faintly layered, dark grey, extremely low to very low strength, slightly weathered.	SW				
			27.7	29.0							
						SILTSTONE - clayey siltstone, fine grain, faintly layered, with some organics, black, slickensided, extremely low to very low strength, slightly weathered.	SW				
						SILTSTONE - clayey siltstone, fine grain, faintly layered, dark grey, extremely low to very low strength, slightly weathered.	SW				
			27.2	29.5							
Run 6	98% TCR 84% RQD										
		29.95m				SILTSTONE - clayey siltstone, fine grain, faintly layered, dark grey, extremely low to very low strength, slightly weathered.	SW				
			26.7	30.0							
	30.30					CORE LOSS				30.27: CORE LOSS = 0.03	
						Terminated @ 30.3m. No water encountered.					
			26.2	30.5							
			25.7	31.0							

DRILLING

NMLC NMLC Coring
NQ NQ Coring
HQ HQ Coring
PQ PQ Coring

TCR % core run recovered
RQD % core run > 100mm long (rock fraction only measured)

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PHOTOGRAPHS NOTES ☐ YES ☒ NO

DEFECT ABBREVIATIONS

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SKM AGS REV02.1 (WORKIN-BRISBANE).GLB Log SKM ROCK(BRISBANE) BRISBANE VALLEY GRADE SEPARATION TP,AH AND BH LOGS.GPJ <<DrawingFile>> 29/11/2011 11:42

File: QB10200.4 BH BV 7 10 OF 10

CORE PHOTOGRAPHS	PROJECT: Brisbane Valley Grade Separation	
JOB NO.: QB10200.4	LOCATION: Warrego – Brisbane Valley Hwy Intersection	
BOREHOLE: BH BV 7	DEPTH:30.3 m	RL:56.7
CLIENT:TMR	COORDS:	DRILL RIG: Hydra Scout	CONTRACTOR: Geodrill
LOGGED BY:LN	CHECKED BY:VP	DATE:18/5/11

CORE:BH BV 7, 14.5 m to 19.85 m

CORE:BH BV 7, 19.85 m to 24.82 m

CORE : 24.82 m to 29.92 m

SINCLAIR KNIGHT MERZ SKM	CORE PHOTOGRAPHS	PROJECT: Brisbane Valley Grade Separation	
	JOB NO.: QB10200.4	LOCATION: Warrego – Brisbane Valley Hwy Intersection	
	BOREHOLE: BH BV 7	DEPTH:30.3 m	RL:56.7
CLIENT:TMR	COORDS:	DRILL RIG: Hydra Scout	CONTRACTOR: Geodrill
LOGGED BY:LN		CHECKED BY:VP	DATE:18/5/11

CORE: BH BV 7, 29.92 m to 30.3 m

CORE/ FIGURE:

CORE / FIGURE