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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP31

Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548399 m	Date Started: 9/28/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5172058 m	Date Completed: 9/28/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with minor silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, grey and brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						becomes brownish grey.	
2.0						becomes with cobbles present in the soil matrix to the base of the test pit.	
2.5							
3.0							
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP32

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548361 m	Date Started: 9/28/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5172034 m	Date Completed: 9/28/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, grey and brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt. becomes brownish grey	
1.5						becomes with cobbles present in the soil matrix to the base of the test pit.	
2.0							
2.5							
3.0							
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP33

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548273 m	Date Started: 9/28/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171976 m	Date Completed: 9/28/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes greyish brown. becomes with cobbles present in the soil matrix to the base of the test pit.	
1.5							
2.0							
2.5							
3.0							
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548356 m	Date Started: 9/28/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171910 m	Date Completed: 9/28/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.5m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt. becomrs with cobbles present in the soil matrix to the base of the test pit. becomes greyish brown.	
1.5							
2.0							
2.5							
3.0							
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548434 m	Date Started: 9/28/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171877 m	Date Completed: 9/28/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.5m. (TOPSOIL)	
1.0						0.30 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						becomes with cobbles present in the soil matrix to the base of the test pit.	
2.0						becomes brownish grey.	
2.5							
3.0							
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548409 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171802 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.5m. (TOPSOIL)	
1.0						0.25 **sandy GRAVEL** with minor silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						becomes with cobbles present in the soil matrix to the base of the test pit.	
2.0						becomes brownish grey. Cobbles present to the base of the test pit.	
2.5							
3.0							
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

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Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548494 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171752 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.5m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with minor silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						Brownish grey. Cobbles present in the soil matrix to the base of the test pit.	
2.0							
2.5							
3.0							
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548466 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171645 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.3m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with minor silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						becomes brownish grey.	
2.0						becomes with cobbles present in the soil matrix to the base of the test pit.	
2.5							
3.0							
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
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Sheet **1** of **1**

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548410 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171706 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.3m. (TOPSOIL)	
1.0						0.25 **sandy GRAVEL** with minor silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						becomes brownish grey.	
2.0						becomes with cobbles present in the soil matrix to the base of the test pit.	
2.5							
3.0							
3.5							
4.0						4.10 End of Test Pit at 4.1m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
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Checked by: RJH
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Sheet **1** of **1**

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Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548344 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171833 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.4m. (TOPSOIL)	
1.0						0.25 **sandy GRAVEL** with minor silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						becomes with cobbles present in the soil matrix. becomes brownish grey.	
2.0						becomes minor sand with no cobbles to 2.3m	
2.5						becomes **sandy**	
3.0							
3.5							
4.0							
4.5						4.30 End of Test Pit at 4.3m (TARGET DEPTH ACHIEVED)	

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
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Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548498 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171846 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.3m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with minor to some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						becomes minor silt, brownish grey.	
2.0						becomes with cobbles present in the soil matrix to the base of the test pit.	
2.5							
3.0							
3.5							
4.0						4.20 End of Test Pit at 4.2m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548605 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171721 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.20						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.5m. (TOPSOIL)	
						sandy GRAVEL with minor to some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
0.5						becomes minor silt.	
1.0						becomes with cobbles present in the soil matrix to the base of the test pit.	
						becomes brownish grey.	
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.10						End of Test Pit at 4.1m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator Test Pit Dimensions: Contractor: TEXCO	Easting: 1548576 m Northing: 5171788 m Ground Level: N/A	Date Started: 9/29/2011 Date Completed: 9/29/2011	Logged by: RS Input by: RS Checked by: RJH Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.20						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.3m. (TOPSOIL)	
						sandy GRAVEL with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
0.5						becomes minor silt, brownish grey, cobbles present in the soil matrix to the base of the test pit.	
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.10						End of Test Pit at 4.1m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP44

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548642 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171737 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.5m. (TOPSOIL) 0.20	
1.0						**sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						becomes minor silt, brownish grey	
2.0						becomes with cobbles present in the soil matrix to the base of the test pit.	
2.5							
3.0							
3.5							
4.0						End of Test Pit at 4.2m (TARGET DEPTH ACHIEVED) 4.20	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP45

Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548708 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171830 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.5m. (TOPSOIL) 0.20	
1.0						**sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt. becomes with cobbles present in the soil matrix to the base of the test pit. becomes brownish grey.	
1.5							
2.0							
2.5							
3.0							
3.5							
4.0						4.10 End of Test Pit at 4.1m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548814 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171995 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.5m. (TOPSOIL) 0.20	
1.0						**sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt.	
1.5						becomes with cobbles present in the soil matrix to the base of the test pit.	
2.0						becomes brownish grey.	
2.5						becomes minor sand and no cobbles to 2.4m.	
3.0						becomes **sandy**	
3.5							
4.0						4.10 End of Test Pit at 4.1m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548745 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171946 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.4m. (TOPSOIL)	
1.0						0.25 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt. becomes with cobbles present in the soil matrix to the base of the test pit. becomes brownish grey.	
1.5							
2.0							
2.5						becomes minor sand and no cobbles to 3m.	
3.0						becomes **sandy**	
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548664 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171923 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.5m. (TOPSOIL)	
1.0						0.25 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt and cobbles present to the base of the test pit. becomes brownish grey.	
1.5							
2.0							
2.5							
3.0							
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548590 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171888 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.4m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt. becomes brownish grey, cobbles present to the base of the test pit.	
1.5							
2.0							
2.5							
3.0							
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP50

Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548517 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171852 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.4m. (TOPSOIL)	
1.0						0.25 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt, cobbles present in the soil matrix to the base of the test pit. becomes brownish grey.	
1.5							
2.0							
2.5						becomes minor sand and no cobbles to 2.6m.	
3.0						becomes **sandy**	
3.5							
4.0						4.20 End of Test Pit at 4.2m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548524 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171926 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.25						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL)	
						sandy GRAVEL with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt, dark brownish grey	
						becomes brownish grey and cobbles present in the soil matrix to the base of the test pit.	
4.30						End of Test Pit at 4.3m (TARGET DEPTH ACHIEVED)	

0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP52

Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548626 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171985 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.4m. (TOPSOIL)	
1.0						0.25 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt. becomes brownish grey, cobbles present in the soil matrix to the base of the test pit.	
1.5							
2.0							
2.5						becomes minor sand and no cobbles to 3m.	
3.0						becomes **sandy**	
3.5							
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP53

Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548713 m	Date Started: 9/29/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5172035 m	Date Completed: 9/29/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
						SILT, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL)	
0.25						**sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt. becomes brownish grey and cobbles present in the soil matrix to the base of the test pit.	
4.10						End of Test Pit at 4.1m (TARGET DEPTH ACHIEVED)	

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
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Verified by: RJH

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP54

Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548782 m	Date Started: 9/30/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5172163 m	Date Completed: 9/30/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.4m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						becomes minor silt.	
2.0						becomes with cobbles present in the soil matrix to the base of the test pit.	
2.5						becomes brownish grey	
3.0						becomes minor sand and no cobbles to 2.5m.	
3.5						becomes **sandy**	
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP55

Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548716 m	Date Started: 9/30/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5172100 m	Date Completed: 9/30/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL)	
1.0						0.30 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt and cobbles present in the soil matrix to the base of the test pit. becomes brownish grey.	
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5						4.30 End of Test Pit at 4.3m (TARGET DEPTH ACHIEVED)	

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548625 m	Date Started: 9/30/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5172063 m	Date Completed: 9/30/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.0						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL)	
0.20							
0.5						**sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt and cobbles present in the soil matrix to the base of the test pit. becomes brownish grey.	
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.10						End of Test Pit at 4.1m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548536 m	Date Started: 9/30/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171995 m	Date Completed: 9/30/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						0.15 **SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL) **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt and cobbles present in the soil matrix to the base of the test pit. becomes brownish grey.	
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0						4.20 End of Test Pit at 4.2m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548463 m	Date Started: 9/30/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5171943 m	Date Completed: 9/30/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						0.15 **SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL)	
1.0						**sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						becomes minor silt.	
2.0						becomes with cobbles present in the soil matrix to the base of the test pit.	
2.5						becomes brownish grey.	
3.0							
3.5							
4.0						4.20 End of Test Pit at 4.2m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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TP59

Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TEST PIT INFORMATION
Excavator Type: 22 Tonne Excavator
Test Pit Dimensions:
Contractor: TEXCO

CO-ORDINATES OD New Zealand TM
Easting: 1548424 m
Northing: 5172041 m
Ground Level: N/A

Date Started: 9/30/2011
Date Completed: 9/30/2011

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.20						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL)	
0.5						**sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt. becomes with cobbles present in the soil matrix to the base of the test pit.	
1.0						becomes brownish grey.	
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.40						End of Test Pit at 4.4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
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Checked by: RJH
Verified by: RJH

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP60

Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548485 m	Date Started: 9/30/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5172079 m	Date Completed: 9/30/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
						SILT, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.4m. (TOPSOIL)	
0.25						**sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes minor silt and cobbles present in the soil matrix to the base of the test pit. becomes brownish grey	
2.50						**SAND**, sand is fine to coarse grained and well graded, greyish brown. Tightly packed, moist, sub-horizontal bedding	
2.80						**sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
4.00						End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	

Remarks:

Water Table Not Encountered

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Sheet **1** of **1**

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP61

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548570 m	Date Started: 9/30/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5172126 m	Date Completed: 9/30/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.4m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels.	
1.5						becomes minor silt, brown and cobbles present in the soil matrix to the base of the test pit.	
2.0						becomes brownish grey	
2.5							
3.0						becomes minor sand and no cobbles to 3.3m.	
3.5						becomes **sandy**	
4.0						4.00 End of Test Pit at 4m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

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Client: **CDL NZ Land Development Ltd**
Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548516 m	Date Started: 9/30/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5172195 m	Date Completed: 9/30/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes with minor silt and cobbles present in the soil matrix to the base of the test pit. becomes brownish grey.	
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5						4.30 End of Test Pit at 4.3m (TARGET DEPTH ACHIEVED)	

Remarks:

Water Table Not Encountered

Logged by: RS
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Verified by: RJH

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

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Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548431 m	Date Started: 9/30/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5172133 m	Date Completed: 9/30/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.6m. (TOPSOIL)	
1.0						0.25 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes with minor silt and cobbles present in the soil matrix to the base of the test pit. becomes brownish grey.	
1.5							
2.0							
2.5							
3.0							
3.5							
4.0						4.10 End of Test Pit at 4.1m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
Input by: RS
Checked by: RJH
Verified by: RJH

Sheet **1** of **1**

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Project Name: **Brookside Road Subdivision**
Location: **Cnr Burnham School Road & Brookside Road, Rolleston**
Project Reference: **224926**

TP64

Sheet **1** of **1**

TEST PIT INFORMATION	CO-ORDINATES OD New Zealand TM		
Excavator Type: 22 Tonne Excavator	Easting: 1548423 m	Date Started: 9/30/2011	Logged by: RS
Test Pit Dimensions:	Northing: 5172240 m	Date Completed: 9/30/2011	Input by: RS
Contractor: TEXCO	Ground Level: N/A		Checked by: RJH
			Verified by: RJH

Depth (m)	Sample	Water Level (m)	Graphic Log	Shear Vane Tests	Pocket Penetrometer Tests	Soil Description	Elevation (m)
0.5						**SILT**, minor fine to medium grained poorly graded sand and trace fine grained subrounded gravels, dark brown, moist, low plasticity, rootlets to 0.4m. (TOPSOIL)	
1.0						0.20 **sandy GRAVEL** with some silt, sand is fine to coarse grained and well graded, gravel is fine to coarse grained, subrounded to rounded and well graded, brown. Tightly packed, moist, sub-horizontal bedding, greywacke gravels. becomes with minor silt and cobbles present in the soil matrix to the base of the test pit. becomes brownish grey.	
1.5							
2.0							
2.5							
3.0							
3.5							
4.0						4.20 End of Test Pit at 4.2m (TARGET DEPTH ACHIEVED)	
4.5							

Remarks:

Water Table Not Encountered

Logged by: RS
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GENERAL NOTES

This site investigation was carried out in accordance with described in the New Zealand Geotechnical Society's "Guidleines for the Field Description of Soils and Rocks in Engineering Use" for the specific purpose and client as defined in the introductory section(s) of this document. The report should not be used by other parties or for other purposes without prior consultation with Aurecon, as it may not contain adequate or appropriate information.

LOGGING

The information on the Logs (Boreholes, Test Pits, Natural Exposures etc.) has been based on a visual and tactile assessment except at the discrete locations where test information has been reported (eg field and/or laboratory results).

Reference should be made to our standard sheets for the definition of our logging procedures (Soil and/or Rock Descriptions, as appropriate).

GROUNDWATER

Unless otherwise indicated, the water levels given on the logs are the levels of free water or seepage in the test hole recorded at the given time of measuring. The measured ground water level may be affected by the method of investigation (for example, if rotary drilling is utilised, drilling fluids will be pumped into the ground).

The actual groundwater level may differ from the recorded level depending on material permeabilities. Further variations of this level could occur with time due to such effects as seasonal and tidal fluctuations or construction activities.

Final confirmation of levels can only be made by appropriate instrumentation techniques and programmes.

SAMPLING

Samples extracted during the fieldwork phase of a site investigation may be 'disturbed' or 'undisturbed' (as indicated on the logs) depending on the intended mature and purpose of the sample as well as the practicable method of extraction, transportation, extrusion and testing. This aspect should be taken into account when assessing test results which must of necessity reflect the effects of such disturbance.

Generally, 'disturbed' samples would be suitable for visual identification, moisture content determination, Atterberg Limits testing, compaction and California bearing ratio (CBR) testing, amongst others.

The amount sampled is also a limiting factor in the suitability for testing purposes, for example, a minimum of 10 kg is necessary for compaction and CBR testing.

'Undisturbed' samples are normally necessary for laboratory testing such as shrink-swell tests. These samples are obtained by pushing a thin-walled, mild steel tube with a machined cutting edge into the soil, and extracting the assembly. The soil (normally of nominal 50 mm diameter) is extruded at the laboratory prior to testing.

LABORATORY TESTING

Laboratory testing is normally carried out in accordance with relevant British, Australian or New Zealand Standards (eg AS1289) or to State Roads Authoities or TransitNZ Standards where specified. All testing is carried out in ISO9001 laboratories unless prior agreements are made between Aurecon and the client.

Where tests are used which are not covered by Standard procedures, the method details are provided in the report.

All soil properties (as measured by laboratory testing) exhibit inherent variability and thus a certain statistical number of tests is required in order to predict an average property with any degree of confidence. The site variability of soil strata, future changes in moisture and other conditions and the discrete sampling positions must also be considered when assessing the representative nature of the laboratory programme.

Certain laboratory tests provide interpreted soil properties as derived by conventional mathematical procedures. The applicability of such properties to engineering design must be assessed with due regard to the site, sample condition, procedure and the proposed development.

INTERPRETATION OF RESULTS

The discussion and any recommendations contained within this report are normally based on a site evaluation from discrete test hole data. Generalised or idealised subsurface conditions (including any cross-sections contained in the report) have been assumed or prepared by interpolation and /or extrapolation of these data. As such, these conditions are an interpretation and must be considered as a guide only.

CHANGE IN CONDITIONS

Local variations or anomalies in the generalised ground conditions used for this report can occur, particularly between discrete test hole locations. Furthermore, certain design or construction procedures may have been assumed in assessing the soil-structure interaction behaviour of the site.

Any change in design, in construction methods, or in ground conditions as noted during construction, from those assumed in this report should be referred to Aurecon for appropriate assessment and comment.

FOUNDATION DEPTH

Where referred to in the report, the recommended depth of any foundation (piles, caissons, footings, etc.) is an engineering estimate of the depth to which they should be constructed. The estimate is influenced and perhaps limited by the fieldwork method and testing carried out in connection with the site investigation, and other pertinent information as has been made available. The depth remains, however, an estimate and therefore liable to variation. Foundation drawings, designs and specifications based upon this report should provide for variations in the final depth depending upon the ground conditions at each point of support.

REPRODUCTION OF REPORTS

Where it is desired to reproduce the information contained in this report for the inclusion in the contract documents or engineering specification of the subject development, such reproduction should include all of the report, including appendices (if any).

SOIL > field guide sheet

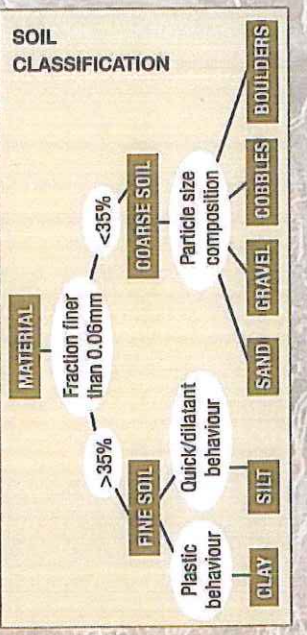
FIELD DESCRIPTION OF SOIL

SEQUENCE OF TERMS – fraction – colour – structure – strength – moisture – bedding – plasticity – sensitivity – additional

GRAIN SIZE CRITERIA

TYPE	COARSE							FINE		ORGANIC
	Boulders	Cobbles	Gravel			Sand			Silt	Clay	Organic Soil
			coarse	medium	fine	coarse	medium	fine			
Size Range (mm)	200	60	20	6	2	0.6	0.2	0.06	0.002		
Graphic Symbol											

SOIL CLASSIFICATION



PROPORTIONAL TERMS DEFINITION (COARSE SOILS)

Fraction	Term	% of Soil Mass	Example
Major	(....) [UPPER CASE]	≥ 50 [major constituent]	GRAVEL
Subordinate	(....) y [lower case]	20 – 50	Sandy
Minor	with some ... with minor ...	12 – 20 5 – 12	with some sand with minor sand
	with trace of (or slightly)...	< 5	with trace of sand (slightly sandy)

DENSITY INDEX (RELATIVE DENSITY) TERMS

Descriptive Term	Density Index (I_D)	SPT "N" value (blows / 300 mm)	Dynamic Cone (blows / 100 mm)
Very dense	> 85	> 50	> 17
Dense	65 – 85	30 – 50	7 – 17
Medium dense	35 – 65	10 – 30	3 – 7
Loose	15 – 35	4 – 10	1 – 3
Very loose	< 15	< 4	0 – 2

Note: • No correlation is implied between Standard Penetration Test (SPT) and Dynamic Cone Test values.
• SPT "N" values are uncorrected. • Dynamic Cone Penetrometer (Scala)

CONSISTENCY TERMS FOR COHESIVE SOILS

Descriptive Term	Undrained Shear Strength (kPa)	Diagnostic Features
Very soft	< 12	Easily exudes between fingers when squeezed
Soft	12 – 25	Easily indented by fingers
Firm	25 – 50	Indented by strong finger pressure and can be indented by thumb pressure
Stiff	50 – 100	Cannot be indented by thumb pressure
Very stiff	100 – 200	Can be indented by thumb nail
Hard	200 – 500	Difficult to indent by thumb nail

ORGANIC SOILS/ DESCRIPTORS

Term	Description
Topsoil	Surficial organic soil layer that may contain living matter. However topsoil may occur at greater depth, having been buried by geological processes or man-made fill, and should then be termed a buried topsoil.
Organic clay, silt or sand	Contains finely divided organic matter; may have distinctive smell; may stain; may oxidise rapidly. Describe as for inorganic soils.
Peat	Consists predominantly of plant remains. ***Firm***: Fibres already compressed together ***Spongy***: Very compressible and open stucture ***Plastic***: Can be moulded in hand and smears in fingers ***Fibrous***: Plant remains recognisable and retain some strength ***Amorphous***: No recognisable plant remains
Roolets	Fine, partly decomposed roots, normally found in the upper part of a soil profile or in a redeposited soil (e.g. colluvium or fill)
Carbonaceous	Discrete particles of hardened (carbonised) plant material.

MOISTURE CONDITION

Condition	Description	Granular Soils	Cohesive Soils
Dry	Looks and feels dry	Run freely through hands	Hard, powdery or friable
Moist	Feels cool, darkened in colour	Tend to cohere	Weakened by moisture, but no free water on hands when remoulding
Wet			Weakened by moisture, free water forms on hands when handling
Saturated	Feels cool, darkened in colour and free water is present on the sample		

PLASTICITY (CLAYS & SILTS)

Term	Description
High plasticity	Can be moulded or deformed over a wide range of moisture contents without cracking or showing any tendency to volume change
Low plasticity	When moulded can be crumbled in the fingers; may show quick or dilatant behaviour

GRADING (GRAVELS & SANDS)

Term	Description	
Well graded	Good representation of all particle sizes from largest to smallest	
Poorly graded	Limited representation of grain sizes - further divided into:	
	Uniformly graded	Most particles about the same size
	Gap graded	Absence of one or more intermediate sizes

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compiled by KATE WILLIAMS design KARRYN MUSCHAMP

ROCK > field guide sheet

FIELD DESCRIPTION OF ROCK

SEQUENCE OF TERMS – weathering – colour – fabric – rock name – strength – discontinuities – additional

SCALE OF ROCK MASS WEATHERING

Term	Grade	Abbreviation	Description
Unweathered (fresh rock)	I	UW	Rock mass shows no loss of strength, discolouration or other effects due to weathering. There may be slight discolouration on major rock mass defect surfaces or on clasts.
Slightly Weathered	II	SW	The rock mass is not significantly weaker than when fresh. Rock may be discoloured along defects, some of which may have been opened slightly.
Moderately Weathered	III	MW	The rock mass is significantly weaker than the fresh rock and part of the rock mass may have been changed to a soil. Rock material may be discoloured and defect and clast surfaces will have a greater discolouration, which also penetrates slightly into the rock material. Increase in density of defects due to physical disintegration.
Highly Weathered	IV	HW	Most of the original rock mass strength is lost. Material is discoloured and more than half the mass is changed to a soil by chemical decomposition or disintegration (increase in density of defects/fractures). Decomposition adjacent to defects and at the surface of clasts penetrates deeply into the rock material. Lithorelicts or corestones of unweathered or slightly weathered rock may be present.
Completely Weathered	V	CW	Original rock strength is lost and the rock mass changed to a soil either by decomposition (with some rock fabric preserved) or by physical disintegration.
Residual Soil	VI	RS	Rock is completely changed to a soil with the original fabric destroyed (pedological soil).

ROCK STRENGTH TERMS

Term	Field Identification of Specimen	Unconfined uniaxial compressive strength q_u (MPa)	Point load strength $I_{s(50)}$ (MPa)
Extremely strong	Can only be chipped with geological hammer	> 250	>10
Very strong	Requires many blows of geological hammer to break it	100 – 250	5 – 10
Strong	Requires more than one blow of geological hammer to fracture it	50 – 100	2 – 5
Moderately strong	Cannot be scraped or peeled with a pocket knife. Can be fractured with single firm blow of geological hammer	20 – 50	1 – 2
Weak	Can be peeled by a pocket knife with difficulty. Shallow indentations made by firm blow with point of geological hammer	5 – 20	<1
Very weak	Crumbles under firm blows with point of geological hammer. Can be peeled by a pocket knife	1 – 5	
Extremely weak (soil description required)	Indented by thumb nail or other lesser strength terms used for soils	<1	

Note: • No correlation is implied between q_u and $I_{s(50)}$

SPACING OF DEFECTS/ DISCONTINUITIES

Term	Spacing
Very widely spaced	>2 m
Widely spaced	600 mm – 2 m
Moderately widely spaced	200 mm – 600 mm
Closely spaced	60 mm – 200 mm
Very closely spaced	20 mm – 60 mm
Extremely closely spaced	<20 mm

APERTURE OF DISCONTINUITY SURFACES

Term	Aperture (mm)	Description
Tight	Nil	Closed
Very Narrow	> 0 – 2	
Narrow	2 – 6	
Moderately Narrow	6 – 20	Gapped
Moderately Wide	20 – 60	Open
Wide	60 – 200	
Very Wide	> 200	-

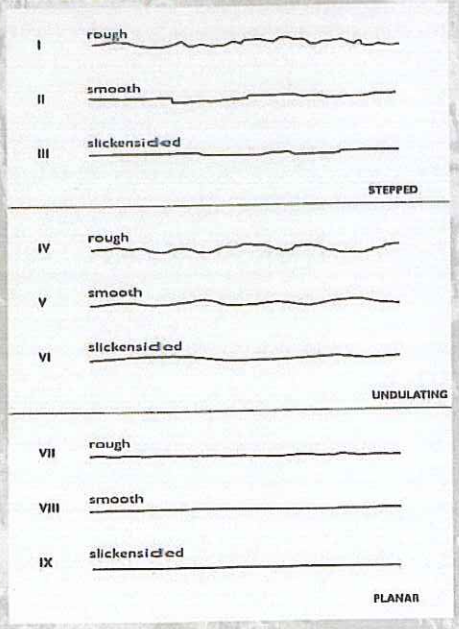
BEDDING THICKNESS TERMS

Term	Bed Thickness
Thinly laminated	< 2 mm
Laminated	2 mm - 6 mm
Very thin	6 mm - 20 mm
Thin	20 mm - 60 mm
Moderately thin	60 mm - 200 mm
Moderately thick	0.2 m - 0.6 m
Thick	0.6 m - 2 m
Very thick	> 2 m

BEDDING INCLINATION TERMS

Term	Inclination (from horizontal)
Sub-horizontal	0° – 5°
Gently inclined	6° – 15°
Moderately inclined	16° – 30°
Steeply inclined	31° – 60°
Very steeply inclined	61° – 80°
Sub-vertical	81° – 90°

ROUGHNESS AND APERTURE



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