



#### **BOREHOLE LOG**

Borehole No.: **BH27** 

Sheet 2 of 2

Client: Project: Water Corporation

Balannup A WWPS and

Keane Road Pressure Main

**Coordinates:** E 400 430, N 6443 644

Ground Surface Elevation: +22.3m AHD Total Depth: 6.0m

Commenced: 27-Jul-13 Completed: 27-Jul-13

Job No.:

61/29471/02

Contractor: Hagstrom Drilling Driller: Peter Lowenstein

	usnı								оор. о	pe 7822DT Inclination: Vertical						СМ		
H	ole D	ng F Diame				None 120	!			Casing Size: NA					Processed: CM 30-Oct-1 Checked: AW I a/II/I  Sample/ Test Records & Comments  D			
Depth Scale (m)	Dai	ly Proserv (m) yadeg 60	rogre	ess/	Water	Depth (m)/ [Elev.]	Geological Unit	Graphic Log	Classification	Strata Description  (type; colour; fines plasticity or particle characteristic minor components; structure and/or origin)	Moisture Condition	Consistency/ Relative Density	Sample Type & Depth	Sample No.	Sam	ple/ Test Reco		Depth Scale (m)
-						5.7 [+16.6			SC	CLAYEY SAND Blue/grey, medium grained, low to medium plasticity, organic odour GUILDFORD FORMATION  CORELOSS from 5.7 to 6.0m Inferred to be CLAYEY SAND			5.50	D D				-
-6 - 	27/01	7				6.0 [+16.3				Termination Depth = 6.00m (Target Depth)								6-
-  -7  -  -  -  -		The second section is a second second section in the second section is a second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section is a second section in the second section in the second section is a section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section in the section is a section in the section		THE RESERVE AND THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN T														7
- 8	- 1			American Interpretation of the Control of the Contr														8
																		9-

#### Lithological Log



Hyd2o Suite 6B 103 Rokeby Rd Subiaco, WA 6008

PO Box 1055 Subiaco WA 6904

Client : Cedar Woods

Project: **Anstey Road** 400425 Easting Northing 6443568

MGA Zone 50, GDA 94 Datum: Drill Rig Hollow Auger Drill type:

Hole diameter: 75 mm Job Number : H13008

Start Hole: End Hole : Logged by:

Renee Blandin

Total Depth: 5.89 RL Top of Casing: 22.67 RL Nat Surface : 22.17 Bore Name

AR5

							Soil C	haracteristics		
support	backfill	water	Slot / Screen Depth	Depth (metres)	Colour	Particle Size	Texture	Organic Content	Moisture	Comment
PVC (Class 9)				_						
PVC (C			Bentonite	_		Fine	Sand	Low		
			Seal Gravel	1.0 m 			Clayey Sand		Slightly Moist	
			5.475.	- -		Medium	Siayoy dana	-	ivioist	
				2.0 m	Solid Light Brown		Sandy clay			
				- - 3.0 m			Clayey Sand	-		
				- -					Moist	
				4.0 m					Saturated	
				- - -	Solid Light Grey	Fine	Sand			
				5.0 m						
				- - -						
				6.0 m						- End of hole
				- -						
				7.0 m						
				- - -						
				8.0 m 						
				9.0 m						
				-						
				- 10.0 m						

COLOUR:

Black, White, Biege Dark/Medium/Light: Brown, Red, Orange, Yellow, Grey, Blue Composition: Solid, Blemish, Mottle

PARTICLE SIZE : Fine, Medium, Course

TEXTURE : Sand, Loamy Sand, Clayey Sand Silt, Loam, Sandy Loam, Clayey Loam

Clay, Sandy Clay High, Medium, Low

ORGANICS: MOISTURE: Dry, Slightly Moist, Moist, Saturated Date

Static Water Level

16/05/2013

Stickup above NS (m) 0.50 Water Level bTOC (m) 2.62 Water Level bNS (m) 2.12

#### Lithological Log



Hyd2o Suite 6B 103 Rokeby Rd Subiaco, WA 6008

PO Box 1055 Subiaco WA 6904

Client : Cedar Woods Project: **Anstey Road** 

400198 Easting Northing 6443792 MGA Zone 50, GDA 94 Datum:

Drill Rig Hollow Auger Drill type:

Hole diameter: 75 mm Job Number : H13008

Start Hole: End Hole :

Logged by: Renee Blandin

Total Depth: 5.78 RL Top of Casing: 23.73 RL Nat Surface : 23.23 Bore Name

AR<sub>6</sub>

ure Comment
Coffey Rock
d
End of hole

COLOUR:

Black, White, Biege Dark/Medium/Light: Brown, Red, Orange, Yellow, Grey, Blue Composition: Solid, Blemish, Mottle

PARTICLE SIZE : Fine, Medium, Course

TEXTURE : Sand, Loamy Sand, Clayey Sand Silt, Loam, Sandy Loam, Clayey Loam

Clay, Sandy Clay High, Medium, Low ORGANICS:

MOISTURE: Dry, Slightly Moist, Moist, Saturated Static Water Level

0.50

Stickup above NS (m)

16/05/2013

Date

Water Level bTOC (m) 3.79 Water Level bNS (m) 3.29

## **Appendix F** – Summary of laboratory test results

F1: Summary Test Report

F2: Summary of Test Results

Report Code	Report Type	Samples on Report	Lot Number	Sample Date	Report Date
5029/P/256	Keane Road Pressure Mai	n	<u> </u>	•	
5029/R/1472-1	AS Soil Particle Size Distribution	5029/S/6394	A01 Sample 1 Depth 0.0m	11/08/2015	25/08/2015
5029/R/1473-1	AS Soil Particle Size Distribution	5029/S/6395	A01 Sample 2 Depth 0.4m	11/08/2015	25/08/2015
5029/R/1474-1	Atterberg Limits (with A-Line graph)	5029/S/6396	A01 Sample 3 Depth 0.6m	11/08/2015	25/08/2015
5029/R/1475-1	AS Soil Particle Size Distribution	5029/S/6397	A01 Sample 4 Depth 0.8m	11/08/2015	25/08/2015
5029/R/1476-1	AS Soil Particle Size Distribution	5029/S/6399	A01 Sample 6 Depth 1.2m	11/08/2015	25/08/2015
5029/R/1477-1	AS Soil Particle Size Distribution	5029/S/6400	A01 Sample 7 Depth 1.5m	11/08/2015	25/08/2015
5029/R/1478-1	AS Soil Particle Size Distribution	5029/S/6402	A01 Sample 9 Depth 2.0m	11/08/2015	25/08/2015
5029/R/1479-1	AS Soil Particle Size Distribution	5029/S/6403	A01 Sample 10 Depth 2.3m	11/08/2015	25/08/2015
5029/R/1480-1	AS Soil Particle Size Distribution	5029/S/6404	A01 Sample 11 Depth 2.8m	11/08/2015	25/08/2015
5029/R/1481-1	AS Soil Particle Size Distribution	5029/S/6405	A01 Sample 13 Depth 3.8m	11/08/2015	25/08/2015
5029/R/1482-1	AS Soil Particle Size Distribution	5029/S/6406	A01 Sample 15 Depth 6.5m	11/08/2015	25/08/2015
5029/R/1493-1	AS Soil Particle Size Distribution	5029/S/6398	A01 Sample 5 Depth 1.0m	11/08/2015	26/08/2015
5029/R/1494-1	AS Soil Particle Size Distribution	5029/S/6407	A01 Sample 16 Depth 7.5m	11/08/2015	26/08/2015
5029/R/1495-1	AS Soil Particle Size Distribution	5029/S/6408	A01 Sample 17 Depth 8.5m	11/08/2015	26/08/2015
5029/R/1496-1	AS Soil Particle Size Distribution	5029/S/6409	A02 Sample 1 Depth 0.0m	11/08/2015	26/08/2015
5029/R/1497-1	AS Soil Particle Size Distribution	5029/S/6410	A02 Sample 2 Depth 0.3m	11/08/2015	26/08/2015
5029/R/1498-1	AS Soil Particle Size Distribution	5029/S/6411	A02 Sample 3 Depth 0.5m	11/08/2015	26/08/2015
5029/R/1499-1	AS Soil Particle Size Distribution	5029/S/6412	A02 Sample 4 Depth 0.8m	11/08/2015	26/08/2015
5029/R/1500-1	AS Soil Particle Size Distribution	5029/S/6413	A02 Sample 5 Depth 1.0m	11/08/2015	26/08/2015
5029/R/1501-1	Atterberg Limits (with A-Line graph)	5029/S/6414	A02 Sample 6 Depth 1.3m	11/08/2015	26/08/2015
5029/R/1502-1	AS Soil Particle Size Distribution	5029/S/6415	A02 Sample 7 Depth 1.5m	11/08/2015	26/08/2015
5029/R/1503-1	AS Soil Particle Size Distribution	5029/S/6416	A02 Sample 8 Depth 1.8m	11/08/2015	26/08/2015
5029/R/1504-1	AS Soil Particle Size Distribution	5029/S/6417	A02 Sample 9 Depth 2.0m	11/08/2015	26/08/2015
5029/R/1505-1	AS Soil Particle Size Distribution	5029/S/6418	A02 Sample 10 Depth 2.3m	11/08/2015	26/08/2015
5029/R/1506-1	Atterberg Limits (with A-Line graph)	5029/S/6419	A02 Sample 11 Depth 2.5m	11/08/2015	26/08/2015
5029/R/1507-1	AS Soil Particle Size Distribution	5029/S/6420	A02 Sample 12 Depth 2.8m	11/08/2015	26/08/2015
5029/R/1508-1	AS Soil Particle Size Distribution	5029/S/6421	A03 Sample 1 Depth 0.0m	11/08/2015	26/08/2015
5029/R/1509-1	AS Soil Particle Size Distribution	5029/S/6422	A03 Sample 2 Depth 0.2m	11/08/2015	26/08/2015
5029/R/1510-1	Atterberg Limits (with A-Line graph)	5029/S/6423	A03 Sample 3 Depth 0.5m	11/08/2015	26/08/2015
5029/R/1511-1	AS Soil Particle Size Distribution	5029/S/6424	A03 Sample 4 Depth 0.7m	11/08/2015	26/08/2015
5029/R/1512-1	AS Soil Particle Size Distribution	5029/S/6425	A03 Sample 5 Depth 1.0m	11/08/2015	26/08/2015
5029/R/1513-1	AS Soil Particle Size Distribution	5029/S/6427	A03 Sample 7 Depth 1.5m	11/08/2015	26/08/2015
5029/R/1514-1	AS Soil Particle Size Distribution	5029/S/6428	A03 Sample 8 Depth 1.8m	11/08/2015	26/08/2015
5029/R/1515-1	AS Soil Particle Size Distribution	5029/S/6429	A03 Sample 9 Depth 2.1m	11/08/2015	26/08/2015
5029/R/1516-1	AS Soil Particle Size Distribution	5029/S/6430	A03 Sample 10 Depth 2.3m	11/08/2015	26/08/2015
5029/R/1517-1	AS Soil Particle Size Distribution	5029/S/6431	A03 Sample 11 Depth 2.6m	11/08/2015	26/08/2015
5029/R/1518-1	AS Soil Particle Size Distribution	5029/S/6432	A03 Sample 12 Depth 2.8m	11/08/2015	26/08/2015
5029/R/1519-1	AS Soil Particle Size Distribution	5029/S/6433	A04 Sample 1 Depth 0.0m	11/08/2015	26/08/2015
5029/R/1520-1	AS Soil Particle Size Distribution	5029/S/6434	A04 Sample 2 Depth 0.3m	11/08/2015	26/08/2015
5029/R/1521-1	AS Soil Particle Size Distribution	5029/S/6435	A04 Sample 3 Depth 0.5m	11/08/2015	26/08/2015
5029/R/1522-1	AS Soil Particle Size Distribution	5029/S/6436	A04 Sample 4 Depth 0.8m	11/08/2015	26/08/2015

Report Code	Report Type	Samples on Report	Lot Number	Sample Date	Report Date
5029/P/256	Keane Road Pressure Main	<u> </u>	<u> </u>	•	•
5029/R/1523-1	AS Soil Particle Size Distribution	5029/S/6438	A04 Sample 6 Depth 1.3m	11/08/2015	26/08/2015
5029/R/1524-1	AS Soil Particle Size Distribution	5029/S/6439	A04 Sample 7 Depth 1.5m	11/08/2015	26/08/2015
5029/R/1525-1	AS Soil Particle Size Distribution	5029/S/6440	A04 Sample 8 Depth 1.8m	11/08/2015	26/08/2015
5029/R/1526-1	AS Soil Particle Size Distribution	5029/S/6441	A04 Sample 9 Depth 2.0m	11/08/2015	26/08/2015
5029/R/1527-1	AS Soil Particle Size Distribution	5029/S/6442	A04 Sample 10 Depth 2.3m	11/08/2015	26/08/2015
5029/R/1528-1	AS Soil Particle Size Distribution	5029/S/6444	A04 Sample 12 Depth 2.8m	11/08/2015	26/08/2015
5029/R/1529-1	AS Soil Particle Size Distribution	5029/S/6445	A05 Sample 1 Depth 0.0m	11/08/2015	26/08/2015
5029/R/1530-1	AS Soil Particle Size Distribution	5029/S/6446	A05 Sample 2 Depth 0.2m	11/08/2015	26/08/2015
5029/R/1531-1	AS Soil Particle Size Distribution	5029/S/6447	A05 Sample 3 Depth 0.5m	11/08/2015	26/08/2015
5029/R/1532-1	AS Soil Particle Size Distribution	5029/S/6448	A05 Sample 4 Depth 0.8m	11/08/2015	26/08/2015
5029/R/1533-1	AS Soil Particle Size Distribution	5029/S/6449	A05 Sample 5 Depth 1.0m	11/08/2015	26/08/2015
5029/R/1534-1	AS Soil Particle Size Distribution	5029/S/6450	A05 Sample 6 Depth 1.3m	11/08/2015	26/08/2015
5029/R/1535-1	AS Soil Particle Size Distribution	5029/S/6451	A05 Sample 7 Depth 1.5m	11/08/2015	26/08/2015
5029/R/1536-1	AS Soil Particle Size Distribution	5029/S/6452	A05 Sample 8 Depth 1.8m	11/08/2015	26/08/2015
5029/R/1537-1	AS Soil Particle Size Distribution	5029/S/6455	A05 Sample 11 Depth 2.5m	11/08/2015	26/08/2015
5029/R/1538-1	AS Soil Particle Size Distribution	5029/S/6456	A05 Sample 12 Depth 2.8m	11/08/2015	26/08/2015
5029/R/1539-1	AS Soil Particle Size Distribution	5029/S/6457	A05 Sample 13 Depth 3.5m	11/08/2015	26/08/2015
5029/R/1754-1	Atterberg Limits (with A-Line graph)	5029/S/6437	A04 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1755-1	Atterberg Limits (with A-Line graph)	5029/S/6453	A05 Sample 9 Depth 2.0m	11/08/2015	05/09/2015
5029/R/1756-1	Atterberg Limits (with A-Line graph)	5029/S/6454	A05 Sample 10 Depth 2.2m	11/08/2015	05/09/2015
5029/R/1757-1	AS Soil Particle Size Distribution	5029/S/6458	A05 Sample 15 Depth 4.8m	11/08/2015	05/09/2015
5029/R/1758-1	AS Soil Particle Size Distribution	5029/S/6459	A05 Sample 18 Depth 7.5m	11/08/2015	05/09/2015
5029/R/1759-1	AS Soil Particle Size Distribution	5029/S/6460	A06 Sample 1 Depth 0.0m	11/08/2015	05/09/2015
5029/R/1760-1	AS Soil Particle Size Distribution	5029/S/6461	A06 Sample 2 Depth 0.3m	11/08/2015	05/09/2015
5029/R/1761-1	AS Soil Particle Size Distribution	5029/S/6462	A06 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1762-1	AS Soil Particle Size Distribution	5029/S/6463	A06 Sample 4 Depth 0.7m	11/08/2015	05/09/2015
5029/R/1763-1	AS Soil Particle Size Distribution	5029/S/6464	A06 Sample 5 Depth 1.1m	11/08/2015	05/09/2015
5029/R/1764-1	AS Soil Particle Size Distribution	5029/S/6465	A06 Sample 6 Depth 1.3m	11/08/2015	05/09/2015
5029/R/1765-1	AS Soil Particle Size Distribution	5029/S/6466	A06 Sample 7 Depth 1.4m	11/08/2015	05/09/2015
5029/R/1766-1	Atterberg Limits (with A-Line graph)	5029/S/6467	A06 Sample 8 Depth 1.7m	11/08/2015	05/09/2015
5029/R/1767-1	AS Soil Particle Size Distribution	5029/S/6468	A06 Sample 9 Depth 2.1m	11/08/2015	05/09/2015
5029/R/1768-1	AS Soil Particle Size Distribution	5029/S/6469	A06 Sample 10 Depth 2.3m	11/08/2015	05/09/2015
5029/R/1769-1	AS Soil Particle Size Distribution	5029/S/6470	A06 Sample 12 Depth 2.8m	11/08/2015	05/09/2015
5029/R/1770-1	AS Soil Particle Size Distribution	5029/S/6471	A07 Sample 1 Depth 0.0m	11/08/2015	05/09/2015
5029/R/1771-1	AS Soil Particle Size Distribution	5029/S/6472	A07 Sample 2 Depth 0.3m	11/08/2015	05/09/2015
5029/R/1772-1	Atterberg Limits (with A-Line graph)	5029/S/6473	A07 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1773-1	AS Soil Particle Size Distribution	5029/S/6474	A07 Sample 4 Depth 0.8m	11/08/2015	05/09/2015
5029/R/1774-1	AS Soil Particle Size Distribution	5029/S/6475	A07 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1775-1	AS Soil Particle Size Distribution	5029/S/6476	A07 Sample 6 Depth 1.3m	11/08/2015	05/09/2015
5029/R/1776-1	AS Soil Particle Size Distribution	5029/S/6477	A07 Sample 7 Depth 1.5m	11/08/2015	05/09/2015
5029/R/1777-1	AS Soil Particle Size Distribution	5029/S/6478	A07 Sample 8 Depth 1.8m	11/08/2015	05/09/2015

Report Code	Report Type	Samples on Report	Lot Number	Sample Date	Report Date
5029/P/256	Keane Road Pressure Main				
5029/R/1778-1	Atterberg Limits (with A-Line graph)	5029/S/6479	A07 Sample 9 Depth 2.0m	11/08/2015	05/09/2015
5029/R/1779-1	AS Soil Particle Size Distribution	5029/S/6480	A07 Sample 10 Depth 2.3m	11/08/2015	05/09/2015
5029/R/1780-1	AS Soil Particle Size Distribution	5029/S/6481	A07 Sample 11 Depth 2.5m	11/08/2015	05/09/2015
5029/R/1781-1	AS Soil Particle Size Distribution	5029/S/6482	A07 Sample 12 Depth 2.8m	11/08/2015	05/09/2015
5029/R/1782-1	AS Soil Particle Size Distribution	5029/S/6483	A08 Sample 1 Depth 0.0m	11/08/2015	05/09/2015
5029/R/1783-1	AS Soil Particle Size Distribution	5029/S/6484	A08 Sample 2 Depth 0.2m	11/08/2015	05/09/2015
5029/R/1784-1	AS Soil Particle Size Distribution	5029/S/6485	A08 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1785-1	AS Soil Particle Size Distribution	5029/S/6486	A08 Sample 4 Depth 0.8m	11/08/2015	05/09/2015
5029/R/1786-1	AS Soil Particle Size Distribution	5029/S/6488	A08 Sample 6 Depth 1.2m	11/08/2015	05/09/2015
5029/R/1787-1	AS Soil Particle Size Distribution	5029/S/6490	A08 Sample 8 Depth 1.8m	11/08/2015	05/09/2015
5029/R/1788-1	Atterberg Limits (with A-Line graph)	5029/S/6491	A08 Sample 9 Depth 2.0m	11/08/2015	05/09/2015
5029/R/1789-1	AS Soil Particle Size Distribution	5029/S/6492	A08 Sample 10 Depth 2.3m	11/08/2015	05/09/2015
5029/R/1790-1	AS Soil Particle Size Distribution	5029/S/6494	A08 Sample 12 Depth 2.8m	11/08/2015	05/09/2015
5029/R/1791-1	AS Soil Particle Size Distribution	5029/S/6497	A09 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1792-1	AS Soil Particle Size Distribution	5029/S/6499	A09 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1793-1	AS Soil Particle Size Distribution	5029/S/6500	A09 Sample 6 Depth 1.4m	11/08/2015	05/09/2015
5029/R/1794-1	AS Soil Particle Size Distribution	5029/S/6501	A09 Sample 7 Depth 1.6m	11/08/2015	05/09/2015
5029/R/1795-1	AS Soil Particle Size Distribution	5029/S/6502	A09 Sample 8 Depth 1.8m	11/08/2015	05/09/2015
5029/R/1796-1	AS Soil Particle Size Distribution	5029/S/6503	A09 Sample 9 Depth 2.0m	11/08/2015	05/09/2015
5029/R/1797-1	AS Soil Particle Size Distribution	5029/S/6505	A09 Sample 11 Depth 2.4m	11/08/2015	05/09/2015
5029/R/1798-1	AS Soil Particle Size Distribution	5029/S/6508	A10 Sample 2 Depth 0.3m	11/08/2015	05/09/2015
5029/R/1799-1	AS Soil Particle Size Distribution	5029/S/6509	A10 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1800-1	AS Soil Particle Size Distribution	5029/S/6510	A10 Sample 4 Depth 0.8m	11/08/2015	05/09/2015
5029/R/1801-1	AS Soil Particle Size Distribution	5029/S/6511	A10 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1802-1	AS Soil Particle Size Distribution	5029/S/6512	A10 Sample 6 Depth 1.3m	11/08/2015	05/09/2015
5029/R/1803-1	AS Soil Particle Size Distribution	5029/S/6513	A11 Sample 1 Depth 0.0m	11/08/2015	05/09/2015
5029/R/1804-1	AS Soil Particle Size Distribution	5029/S/6514	A11 Sample 2 Depth 0.2m	11/08/2015	05/09/2015
5029/R/1805-1	AS Soil Particle Size Distribution	5029/S/6517	A11 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1806-1	AS Soil Particle Size Distribution	5029/S/6518	A11 Sample 6 Depth1.3m	11/08/2015	05/09/2015
5029/R/1807-1	Atterberg Limits (with A-Line graph)	5029/S/6520	A11 Sample 8 Depth 1.8m	11/08/2015	05/09/2015
5029/R/1808-1	AS Soil Particle Size Distribution	5029/S/6523	A11 Sample 11 Depth 2.4m	11/08/2015	05/09/2015
5029/R/1809-1	AS Soil Particle Size Distribution	5029/S/6526	A12 Sample 2 Depth 0.3m	11/08/2015	05/09/2015
5029/R/1810-1	AS Soil Particle Size Distribution	5029/S/6527	A12 Sample 3 Depth 0.4m	11/08/2015	05/09/2015
5029/R/1811-1	AS Soil Particle Size Distribution	5029/S/6528	A12 Sample 4 Depth 0.8m	11/08/2015	05/09/2015
5029/R/1812-1	Atterberg Limits (with A-Line graph)	5029/S/6529	A12 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1813-1	AS Soil Particle Size Distribution	5029/S/6531	A12 Sample 7 Depth 1.5m	11/08/2015	05/09/2015
5029/R/1814-1	AS Soil Particle Size Distribution	5029/S/6532	A12 Sample 8 Depth 1.8m	11/08/2015	05/09/2015
5029/R/1815-1	AS Soil Particle Size Distribution	5029/S/6534	A12 Sample 10 Depth 2.3m	11/08/2015	05/09/2015
5029/R/1816-1	AS Soil Particle Size Distribution	5029/S/6535	A12 Sample 11 Depth 2.5m	11/08/2015	05/09/2015
5029/R/1817-1	AS Soil Particle Size Distribution	5029/S/6536	A12 Sample 12 Depth 2.8m	11/08/2015	05/09/2015
5029/R/1818-1	AS Soil Particle Size Distribution	5029/S/6538	A13 Sample 2 Depth 0.3m	11/08/2015	05/09/2015

Report Code	Report Type	Samples on Report	Lot Number	Sample Date	Report Date
5029/P/256	Keane Road Pressure Ma	n	-	•	<u> </u>
5029/R/1819-1	AS Soil Particle Size Distribution	5029/S/6539	A13 Sample 3 Depth 0.5m	11/08/2015	05/09/2015
5029/R/1820-1	AS Soil Particle Size Distribution	5029/S/6541	A13 Sample 5 Depth 1.0m	11/08/2015	05/09/2015
5029/R/1821-1	AS Soil Particle Size Distribution	5029/S/6543	A13 Sample 7 Depth 1.5m	11/08/2015	05/09/2015
5029/R/1822-1	AS Soil Particle Size Distribution	5029/S/6544	A13 Sample 8 Depth 1.8m	11/08/2015	05/09/2015
5029/R/1823-1	AS Soil Particle Size Distribution	5029/S/6545	A13 Sample 9 Depth 2.0m	11/08/2015	05/09/2015
5029/R/1824-1	AS Soil Particle Size Distribution	5029/S/6549	A14 Sample 1 Depth 0.0m	11/08/2015	05/09/2015
5029/R/1825-1	AS Soil Particle Size Distribution	5029/S/6551	A14 Sample 3 Depth 0.4m	11/08/2015	05/09/2015
5029/R/1826-1	Atterberg Limits (with A-Line graph)	5029/S/6552	A14 Sample 4 Depth 0.8m	11/08/2015	05/09/2015
5029/R/1831-1	AS Soil Particle Size Distribution	5029/S/6487	A08 Sample 5 Depth 1.0m	11/08/2015	07/09/2015
5029/R/1832-1	AS Soil Particle Size Distribution	5029/S/6493	A08 Sample 11 Depth 2.5m	11/08/2015	07/09/2015
5029/R/1833-1	AS Soil Particle Size Distribution	5029/S/6495	A09 Sample 1 Depth 0.0m	11/08/2015	07/09/2015
5029/R/1834-1	AS Soil Particle Size Distribution	5029/S/6504	A09 Sample 10 Depth 2.3m	11/08/2015	07/09/2015
5029/R/1836-1	AS Soil Particle Size Distribution	5029/S/6506	A09 Sample 12 Depth 2.6m	11/08/2015	07/09/2015
5029/R/1837-1	AS Soil Particle Size Distribution	5029/S/6507	A10 Sample 1 Depth 0.0m	11/08/2015	07/09/2015
5029/R/1839-1	AS Soil Particle Size Distribution	5029/S/6515	A11 Sample 3 Depth 0.5m	11/08/2015	07/09/2015
5029/R/1840-1	AS Soil Particle Size Distribution	5029/S/6516	A11 Sample 4 Depth 0.8m	11/08/2015	07/09/2015
5029/R/1841-1	AS Soil Particle Size Distribution	5029/S/6519	A11 Sample 7 Depth 1.5m	11/08/2015	07/09/2015
5029/R/1842-1	AS Soil Particle Size Distribution	5029/S/6521	A11 Sample 9 Depth 2.0m	11/08/2015	07/09/2015
5029/R/1843-1	AS Soil Particle Size Distribution	5029/S/6522	A11 Sample 10 Depth 2.3m	11/08/2015	07/09/2015
5029/R/1844-1	AS Soil Particle Size Distribution	5029/S/6525	A12 Sample 1 Depth 0.0m	11/08/2015	07/09/2015
5029/R/1845-1	AS Soil Particle Size Distribution	5029/S/6530	A12 Sample 6 Depth 1.3m	11/08/2015	07/09/2015
5029/R/1846-1	Atterberg Limits (with A-Line graph)	5029/S/6533	A12 Sample 9 Depth 2.0m	11/08/2015	07/09/2015
5029/R/1847-1	AS Soil Particle Size Distribution	5029/S/6537	A13 Sample 1 Depth 0.0m	11/08/2015	07/09/2015
5029/R/1849-1	AS Soil Particle Size Distribution	5029/S/6540	A13 Sample 4 Depth 0.8m	11/08/2015	07/09/2015
5029/R/1851-1	AS Soil Particle Size Distribution	5029/S/6546	A13 Sample 10 Depth 2.3m	11/08/2015	07/09/2015
5029/R/1852-1	Atterberg Limits (with A-Line graph)	5029/S/6547	A13 Sample 11 Depth 2.5m	11/08/2015	07/09/2015
5029/R/1855-1	AS Soil Particle Size Distribution	5029/S/6548	A13 Sample 12 Depth 2.8m	11/08/2015	07/09/2015
5029/R/1856-1	AS Soil Particle Size Distribution	5029/S/6550	A14 Sample 2 Depth 0.3m	11/08/2015	07/09/2015
5029/R/1858-1	AS Soil Particle Size Distribution	5029/S/6553	A14 Sample 5 Depth 1.0m	11/08/2015	07/09/2015
5029/R/1860-1	Atterberg Limits (with A-Line graph)	5029/S/6555	A14 Sample 7 Depth 1.5m	11/08/2015	07/09/2015
5029/R/1862-1	AS Soil Particle Size Distribution	5029/S/6556	A14 Sample 8 Depth 1.8m	11/08/2015	07/09/2015
5029/R/1863-1	AS Soil Particle Size Distribution	5029/S/6557	A14 Sample 9 Depth 2.1m	11/08/2015	07/09/2015
5029/R/1865-1	AS Soil Particle Size Distribution	5029/S/6558	A14 Sample 10 Depth 2.3m	11/08/2015	07/09/2015
5029/R/1866-1	AS Soil Particle Size Distribution	5029/S/6561	A15 Sample 1 Depth 0.0m	11/08/2015	07/09/2015
5029/R/1868-1	AS Soil Particle Size Distribution	5029/S/6564	A15 Sample 4 Depth 0.9m	11/08/2015	07/09/2015
5029/R/1869-1	Atterberg Limits (with A-Line graph)	5029/S/6565	A15 Sample 5 Depth 1.0m	11/08/2015	07/09/2015
5029/R/1870-1	Atterberg Limits (with A-Line graph)	5029/S/6569	A15 Sample 9 Depth 2.0m	11/08/2015	07/09/2015
5029/R/1871-1	Atterberg Limits (with A-Line graph)	5029/S/6577	A16 Sample 3 Depth 0.6m	11/08/2015	07/09/2015
5029/R/1878-1	Atterberg Limits (with A-Line graph)	5029/S/6582	A16 Sample 8 Depth 1.8m	11/08/2015	07/09/2015
5029/R/1879-1	Atterberg Limits (with A-Line graph)	5029/S/6589	A17 Sample 3 Depth 0.6m	11/08/2015	07/09/2015
5029/R/1890-1	Atterberg Limits (with A-Line graph)	5029/S/6401	A01 Sample 8 Depth 1.8m	11/08/2015	08/09/2015

Report Code	Report Type	Samples on Report	Lot Number	Sample Date	Report Date
5029/P/256	Keane Road Pressure Main				
5029/R/1891-1	Atterberg Limits (with A-Line graph)	5029/S/6426	A03 Sample 6 Depth 1.3m	11/08/2015	08/09/2015
5029/R/1892-1	Atterberg Limits (with A-Line graph)	5029/S/6443	A04 Sample 11 Depth 2.5m	11/08/2015	08/09/2015
5029/R/1893-1	Atterberg Limits (with A-Line graph)	5029/S/6489	A08 Sample 7 Depth 1.5m	11/08/2015	08/09/2015
5029/R/1894-1	Atterberg Limits (with A-Line graph)	5029/S/6496	A09 Sample 2 Depth 0.2m	11/08/2015	08/09/2015
5029/R/1895-1	Atterberg Limits (with A-Line graph)	5029/S/6498	A09 Sample 4 Depth 0.8m	11/08/2015	08/09/2015
5029/R/1896-1	Atterberg Limits (with A-Line graph)	5029/S/6524	A11 Sample 12 Depth 2.8m	11/08/2015	08/09/2015
5029/R/1897-1	Atterberg Limits (with A-Line graph)	5029/S/6542	A13 Sample 6 Depth 1.4m	11/08/2015	08/09/2015
5029/R/1949-1	AS Soil Particle Size Distribution	5029/S/6554	A14 Sample 6 Depth 1.3m	11/08/2015	09/09/2015
5029/R/1950-1	AS Soil Particle Size Distribution	5029/S/6559	A14 Sample 11 Depth 2.5m	11/08/2015	09/09/2015
5029/R/1951-1	AS Soil Particle Size Distribution	5029/S/6560	A14 Sample 12 Depth 2.8m	11/08/2015	09/09/2015
5029/R/1952-1	AS Soil Particle Size Distribution	5029/S/6562	A15 Sample 2 Depth 0.2m	11/08/2015	09/09/2015
5029/R/1954-1	AS Soil Particle Size Distribution	5029/S/6563	A15 Sample 3 Depth 0.5m	11/08/2015	09/09/2015
5029/R/1955-1	AS Soil Particle Size Distribution	5029/S/6566	A15 Sample 6 Depth 1.3m	11/08/2015	09/09/2015
5029/R/1956-1	AS Soil Particle Size Distribution	5029/S/6567	A15 Sample 7 Depth 1.5m	11/08/2015	09/09/2015
5029/R/1957-1	AS Soil Particle Size Distribution	5029/S/6568	A15 Sample 8 Depth 1.8m	11/08/2015	09/09/2015
5029/R/1958-1	AS Soil Particle Size Distribution	5029/S/6570	A15 Sample 10 Depth 2.3m	11/08/2015	09/09/2015
5029/R/1959-1	AS Soil Particle Size Distribution	5029/S/6571	A15 Sample 11 Depth 2.5m	11/08/2015	09/09/2015
5029/R/1960-1	AS Soil Particle Size Distribution	5029/S/6572	A15 Sample 12 Depth 2.8m	11/08/2015	09/09/2015
5029/R/1961-1	AS Soil Particle Size Distribution	5029/S/6573	A15 Sample 13 Depth 3.2m	11/08/2015	09/09/2015
5029/R/1962-1	AS Soil Particle Size Distribution	5029/S/6574	A15 Sample 14 Depth 4.2m	11/08/2015	09/09/2015
5029/R/1963-1	AS Soil Particle Size Distribution	5029/S/6575	A16 Sample 1 Depth 0.0m	11/08/2015	09/09/2015
5029/R/1964-1	AS Soil Particle Size Distribution	5029/S/6576	A16 Sample 2 Depth 0.3m	11/08/2015	09/09/2015
5029/R/1965-1	AS Soil Particle Size Distribution	5029/S/6578	A16 Sample 4 Depth 0.8m	11/08/2015	09/09/2015
5029/R/1966-1	AS Soil Particle Size Distribution	5029/S/6579	A16 Sample 5 Depth 1.0m	11/08/2015	09/09/2015
5029/R/1967-1	AS Soil Particle Size Distribution	5029/S/6580	A16 Sample 6 Depth 1.3m	11/08/2015	09/09/2015
5029/R/1968-1	AS Soil Particle Size Distribution	5029/S/6581	A16 Sample 7 Depth 1.5m	11/08/2015	09/09/2015
5029/R/1969-1	AS Soil Particle Size Distribution	5029/S/6583	A16 Sample 9 Depth 2.0m	11/08/2015	09/09/2015
5029/R/1970-1	AS Soil Particle Size Distribution	5029/S/6584	A16 Sample 10 Depth 2.3m	11/08/2015	09/09/2015
5029/R/1971-1	AS Soil Particle Size Distribution	5029/S/6585	A16 Sample 11 Depth 2.5m	11/08/2015	09/09/2015
5029/R/1972-1	AS Soil Particle Size Distribution	5029/S/6586	A16 Sample 12 Depth 2.9m	11/08/2015	09/09/2015
5029/R/1973-1	AS Soil Particle Size Distribution	5029/S/6587	A17 Sample 1 Depth 0.0m	11/08/2015	09/09/2015
5029/R/1974-1	AS Soil Particle Size Distribution	5029/S/6588	A17 Sample 2 Depth 0.3m	11/08/2015	09/09/2015
5029/R/1975-1	AS Soil Particle Size Distribution	5029/S/6590	A17 Sample 4 Depth 0.8m	11/08/2015	09/09/2015
5029/R/1976-1	AS Soil Particle Size Distribution	5029/S/6591	A17 Sample 5 Depth 1.1m	11/08/2015	09/09/2015
5029/R/1977-1	AS Soil Particle Size Distribution	5029/S/6592	A17 Sample 6 Depth 1.3m	11/08/2015	09/09/2015
5029/R/1978-1	Atterberg Limits (with A-Line graph)	5029/S/6593	A17 Sample 7 Depth 1.5m	11/08/2015	09/09/2015
5029/R/1979-1	AS Soil Particle Size Distribution	5029/S/6594	A17 Sample 8 Depth 1.8m	11/08/2015	09/09/2015
5029/R/1980-1	AS Soil Particle Size Distribution	5029/S/6595	A17 Sample 9 Depth 2.0m	11/08/2015	09/09/2015
5029/R/1981-1	AS Soil Particle Size Distribution	5029/S/6596	A17 Sample 10 Depth 2.3m	11/08/2015	09/09/2015
5029/R/1982-1	AS Soil Particle Size Distribution	5029/S/6597	A17 Sample 11 Depth 2.5m	11/08/2015	09/09/2015
5029/R/1983-1	AS Soil Particle Size Distribution	5029/S/6598	A17 Sample 12 Depth 2.9m	11/08/2015	09/09/2015

Report Code	Report Type	Samples on Report	Lot Number	Sample Date	Report Date
5029/P/256	Keane Road Pressure Main				
5029/R/1984-1	Moisture Content Report	5029/S/6396, 5029/S/6399, 5029/S/6401, 5029/S/6402, 5029/S/6404, 5029/S/6405, 5029/S/6407, 5029/S/6412, 5029/S/6414, 5029/S/6416, 5029/S/6418, 5029/S/6419, 5029/S/6420, 5029/S/6422, 5029/S/6423, 5029/S/6424, 5029/S/6426, 5029/S/6428, 5029/S/6429, 5029/S/6430, 5029/S/6439, 5029/S/6440, 5029/S/6442, 5029/S/6443, 5029/S/6444, 5029/S/6450, 5029/S/6452, 5029/S/6453, 5029/S/6454, 5029/S/6458, 5029/S/6459, 5029/S/6467, 5029/S/6468, 5029/S/6473, 5029/S/6474, 5029/S/6475, 5029/S/6482, 5029/S/6484, 5029/S/6486, 5029/S/6487, 5029/S/6488, 5029/S/6489, 5029/S/6490, 5029/S/6491, 5029/S/6503, 5029/S/6506, 5029/S/6514, 5029/S/6515, 5029/S/6500, 5029/S/6501, 5029/S/6503, 5029/S/6500, 5029/S/6514, 5029/S/6515, 5029/S/6524, 5029/S/6529, 5029/S/6530, 5029/S/6532, 5029/S/6524, 5029/S/6533, 5029/S/6534, 5029/S/6536, 5029/S/6533, 5029/S/6554, 5029/S/6554, 5029/S/6554, 5029/S/6554, 5029/S/6556, 5029/S/6564, 5029/S/6556, 5029/S/6564, 5029/S/6565, 5029/S/6564, 5029/S/6565, 5029/S/6564, 5029/S/6565, 5029/S/6566, 5029/S/6564, 5029/S/6565, 5029/S/6566, 5029/S/6564, 5029/S/6565, 5029/S/6566, 5029/S/6568, 5029/S/6580, 5029/S/6580, 5029/S/6582, 5029/S/6583, 5029/S/6589, 5029/	A01 Sample 3 Depth 0.6m	11/08/2015	09/09/2015

Table 1: Summary of laboratory testing (soil samples)

Test	Sample	Group Symbol	Soil Unit	Moisture Content	Particle Size Distribution			Atterberg Limits				Organic Content
Pit ID	Depth	Group Symbol	Soli Offit	(%)	% Fines	% Sand	% Gravel	LL%	PL %	PI %	LL %	%
A01	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A01	0.3	Sand (SP)	Bassendean Sand (BS)		3	97	0					
A01	0.5	Sand (SP) / Clayey Sand (SC)	Bassendean Sand (BS) / Guildford Formation (GC)	15.4	12	88	0					<0.5
A01	0.8	Clayey Sand (SC)	Guildford Formation (GC)		20	80	0					
A01	1.0	Clayey Sand (SC)	Guildford Formation (GC)		20	80	0					
A01	1.1	Clayey Sand (SC)	Guildford Formation (GC)	15.2	29	70	1					
A01	1.5	Clayey Sand (SC)	Guildford Formation (GC)		31	69	0					
A01	1.8	Clayey Sand (SC)	Guildford Formation (GC)	14.7	20	80	0	40	12	28	8	<0.5
A01	2.0	Clayey Sand (SC)	Guildford Formation (GC)	14.5	18	82	0					
A01	2.3	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)		11	89	0					
A01	2.8	Clayey Sand (SC)	Guildford Formation (GC)	14.0	18	82	0					
A01	3.8	Clayey Sand (SC)	Guildford Formation (GC)	16.6	14	86	0					
A01	6.5	Sand (SP)	Guildford Formation (GS)		10	90	0					
A01	7.5	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)	20.6	13	87	0					
A01	8.5	Sand (SP)	Guildford Formation (GS)		10	90	0					
A02	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A02	0.3	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A02	0.5	Sand (SP)	Bassendean Sand (BS)		4	96	0					
A02	0.8	Clayey Sand (SC)	Guildford Formation (GC)	18.4	23	77	0					
A02	1.0	Clayey Sand (SC)	Guildford Formation (GC)		22	78	0					
A02	1.3	Clayey Sand (SC)	Guildford Formation (GC)	16.5	18	82	0	37	11	26	8	<0.5
A02	1.5	Clayey Sand (SC)	Guildford Formation (GC)		22	78	0					
A02	1.8	Clayey Sand (SC)	Guildford Formation (GC)	17.1	20	80	0					
A02	2.0	Clayey Sand (SC)	Guildford Formation (GC)		19	81	0					
A02	2.3	Clayey Sand (SC)	Guildford Formation (GC)		21	79	0					
A02	2.5	Clayey Sand (SC)	Guildford Formation (GC)	16.4	23	77	0	42	10	32	8.5	<0.5
A02	2.8	Clayey Sand (SC)	Guildford Formation (GC)	15.2	22	78	0					
A03	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A03	0.2	Clayey Sand (SC)	Guildford Formation (GC)	13.5	15	85	0					
A03	0.5	Clayey Sand (SC)	Guildford Formation (GC)	12.4	18	82	0	29	11	18	3	<0.5
A03	0.7	Clayey Sand (SC)	Guildford Formation (GC)	14.1	15	85	0					
A03	1.0	Clayey Sand (SC)	Guildford Formation (GC)		16	84	0					
A03	1.3	Clayey Sand (SC)	Guildford Formation (GC)	11.9	15	85	0	29	14	15	2	<0.5
A03	1.5	Clayey Sand (SC)	Guildford Formation (GC)		18	82	0					
A03	1.8	Clayey Sand (SC)	Guildford Formation (GC)	14.5	16	84	0					
A03	2.05	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GS)	15.3	11	88	1					
A03	2.3	Sand (SP)	Guildford Formation (GS)	17.3	10	90	0					
A03	2.6	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GS)		12	88	0					
A03	2.8	Clayey Sand (SC)	Guildford Formation (GS)		14	86	0					
A04	0.0	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A04	0.3	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A04	0.5	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A04	0.8	Sand (SP)	Bassendean Sand (BS)		7	93	0					
A04	1.0	Sand (SP) / Clayey Sand (SC)	Bassendean Sand (BS)		11	89	0	28	13	15	2	<0.5
A04	1.3	Clayey Sand (SC)	Guildford Formation (GC)		14	86	0					
A04	1.5	Clayey Sand (SC)	Guildford Formation (GC)	20.3	13	87	0					
A04	1.8	Clayey Sand (SC)	Guildford Formation (GC)	16.9	15	85	0					

Test	Sample			Moisture	Particle Size Distribution			Atterberg Limits				Organic Content
Pit ID	Depth	Group Symbol	Soil Unit	Content (%)	% Fines	% Sand	% Gravel	LL%	PL %	PI %	LL %	Content %
A04	2.0	Clayey Sand (SC)	Guildford Formation (GC)		13	87	0					
A04	2.3	Clayey Sand (SC)	Guildford Formation (GC)	15.3	15	85	0					
A04	2.5	Clayey Sand (SC)	Guildford Formation (GC)	14.3	19	81	0	32	11	21	5	<0.5
A04	2.8	Clayey Sand (SC)	Guildford Formation (GC)	14.2	18	82	0					
A05	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A05	0.2	Sand (SP)	Bassendean Sand (BS)		3	97	0					
A05	0.5	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A05	0.8	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A05	1.0	Sand (SP)	Bassendean Sand (BS)		6	94	0					
A05	1.3	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)	16.2	12	88	0					
A05	1.5	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)		11	89	0					
A05	1.8	Clayey Sand (SC)	Guildford Formation (GC)	15.5	17	83	0					
A05	2.0	Clayey Sand (SC)	Guildford Formation (GC)	13.6	18	82	0	23	13	10	2.5	<0.5
A05	2.2	Clayey Sand (SC)	Guildford Formation (GC)	16.0	13	87	0	27	15	12	3	<0.5
A05	2.5	Sand (SP)	Guildford Formation (GS)		8	92	0					
A05	2.8	Sand (SP)	Guildford Formation (GS)		10	90	0					
A05	3.5	Sand (SP)	Guildford Formation (GS)		6	94	0					
A05	4.8	Sand (SP)	Guildford Formation (GS)	13.6	9	90	1					
A05	7.5	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GS)	21.6	12	88	0					
A06	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A06	0.3	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A06	0.5	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A06	0.7	Sand (SP)	Bassendean Sand (BS)		4	96	0					
A06	1.0	Sand (SP)	Bassendean Sand (BS)		6	94	0					
A06	1.3	Sand (SP)	Bassendean Sand (BS)		9	91	0					
A06	1.4	Sand (SP)	Bassendean Sand (BS)		8	92	0					
A06	1.7	Clayey Sand (SC)	Guildford Formation (GC)	13.7	16	84	0	22	12	10	3	<0.5
A06	2.0	Sand (SP)	Guildford Formation (GS)	13.0	10	90	0					
A06	2.3	Sand (SP)	Guildford Formation (GS)		10	90	0					
A06	2.8	Clayey Sand (SC)	Guildford Formation (GS)		13	87	0					
A07	0.0	Sand (SP)	Bassendean Sand (BS)		10	90	0					
A07	0.3	Sand (SP)	Bassendean Sand (BS)		7	93	0					
A07	0.5	Clayey Sand (SC)	Guildford Formation (GC)	18.8	25	69	6	35	25	10	7.5	<0.5
A07	0.8	Clayey Sand (SC)	Guildford Formation (GC)	16.6	28	63	9					
A07	1.0	Clayey Sand (SC)	Guildford Formation (GC)	17.4	29	71	0					
A07	1.3	Clayey Sand (SC)	Guildford Formation (GC)		25	75	0					
A07	1.5	Clayey Sand (SC)	Guildford Formation (GC)		16	84	0					
A07	1.8	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GS)		11	89	0					
A07	2.0	Sand (SP)	Guildford Formation (GS)		7	93	0					
A07	2.3	Sand (SP)	Guildford Formation (GS)		7	93	0					
A07	2.5	Sand (SP)	Guildford Formation (GS)		7	93	0					
A07	2.8	Clayey Sand (SC)	Guildford Formation (GC)	12.5	16	84	0					
A08	0.0	Sand (SP)	Bassendean Sand (BS)		4	96	0					
A08	0.2	Clayey Sand (SC)	Guildford Formation (GC)	10.5	14	86	0					
A08	0.5	Clayey Sand (SC)	Guildford Formation (GC)		16	84	0					
A08	0.8	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)	9.7	12	88	0					
80A	1.0	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)	12.5	12	88	0					
A08	1.2	Clayey Sand (SC)	Guildford Formation (GC)	12.7	15	85	0					

Test	Sample	Croup Symbol	Soil Unit	Moisture	Particle S	Particle Size Distribution			Atterberg Limits			
Pit ID	Depth	Group Symbol	Soli Unit	Content (%)	% Fines	% Sand	% Gravel	LL%	PL %	PI %	LL %	Content %
A08	1.5	Clayey Sand (SC)	Guildford Formation (GC)	11.8	17	83	0					<0.5
A08	1.8	Clayey Sand (SC)	Guildford Formation (GC)	12.0	14	86	0					
A08	2.0	Clayey Sand (SC)	Guildford Formation (GC)	13.7	17	83	0	22	12	10	2	<0.5
A08	2.3	Sand (SP) / Clayey Sand (SC)	Bassendean Sand (BS)		11	89	0					
A08	2.5	Sand (SP)	Bassendean Sand (BS)		9	91	0					
A08	2.8	Sand (SP)	Bassendean Sand (BS)		10	90	0					
A09	0.0	Sand (SP)	Bassendean Sand (BS)		6	94	0					
A09	0.2	Clayey Sand (SC)	Guildford Formation (GC)	11.3	21	79	0	28	12	16	6	<0.5
A09	0.5	Clayey Sand (SC)	Guildford Formation (GC)	14.5	16	84	0					
A09	0.8	Clayey Sand (SC)	Guildford Formation (GC)	11.4	21	78	1	30	12	18	5.5	<0.5
A09	1.0	Sand (SP)	Guildford Formation (GS)	11.5	3	97	0					
A09	1.3	Clayey Sand (SC)	Guildford Formation (GC)	15.2	23	77	0					
A09	1.5	Clayey Sand (SC)	Guildford Formation (GC)	13.4	21	79	0					
A09	1.8	Sand (SP)	Guildford Formation (GS)		6	94	0					
A09	2.0	Clayey Sand (SC)	Guildford Formation (GC)	14.0	19	81	0					
A09	2.3	Clayey Sand (SC)	Guildford Formation (GC)		18	82	0					
A09	2.4	Clayey Sand (SC)	Guildford Formation (GC)		15	85	0					
A09	2.5	Clayey Sand (SC)	Guildford Formation (GC)	16.3	14	86	0					
A10	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A10	0.3	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A10	0.5	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A10	0.8	Sand (SP)	Bassendean Sand (BS)		3	97	0					
A10	1	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A10	1.3	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A11	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A11	0.1	Clayey Sand (SC)	Guildford Formation (GC)	16.0	20	80	0					
A11	0.5	Clayey Sand (SC)	Guildford Formation (GC)	16.7	30	70	0					
A11	0.8	Clayey Sand (SC)	Guildford Formation (GC)	13.3	24	76	0					
A11	1.0	Clayey Sand (SC)	Guildford Formation (GC)	14.9	23	77	0					
A11	1.3	Clayey Sand (SC)	Guildford Formation (GC)	18.5	30	70	0					
A11	1.5	Clayey Sand (SC)	Guildford Formation (GC)	10.0	26	74	0					
A11	1.8	Clayey Sand (SC)	Guildford Formation (GC)	18.8	26	73	1	47	14	33	14	<0.5
A11	2	Clayey Sand (SC)	Guildford Formation (GC)	18.9	21	79	0	77	14	33	14	<b>\0.5</b>
A11	2.3		Guildford Formation (GC)	16.4	18	82						
		Clayey Sand (SC)	` '	10.4			0					
A11	2.4	Sand (SP) / Clavey	Guildford Formation (GS)	17.0	6	94	0	20	11	17	1	0.6
A11	2.8	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GS)	17.0	12	88	0	28	11	17	4	0.6
A12	0.0	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A12	0.3	Sand (SP)	Bassendean Sand (BS)		2	98	0					
A12	0.4	Sand (SP)	Bassendean Sand (BS)		3	97	0					
A12	0.8	Sand (SP)	Bassendean Sand (BS)		8	92	0					
A12	1.0	Clayey Sand (SC)	Guildford Formation (GC)	13.6	13	77	10					0.9
A12	1.3	Clayey Sand (SC)	Guildford Formation (GC)	12.4	16	60	24					
A12	1.5	Clayey Sand (SC)	Guildford Formation (GC)		19	81	0					
A12	1.8	Clayey Sand (SC)	Guildford Formation (GC)	14.0	20	80	0					
A12	2.0	Clayey Sand (SC)	Guildford Formation (GC)	13.7	21	79	0	25	10	15	4.5	<0.5
A12	2.3	Clayey Sand (SC)	Guildford Formation (GC)	13.4	18	82	0					
A12	2.5	Clayey Sand (SC)	Guildford Formation (GC)		14	86	0					
A12	2.8	Clayey Sand (SC)	Guildford Formation (GC)	15.1	14	86	0					
A13	0.0	Sand (SP)	Bassendean Sand (BS)		4	96	0					
A13	0.3	Sand (SP)	Bassendean Sand (BS)		6	94	0					
A13	0.5	Sand (SP)	Bassendean Sand (BS)		3	97	0					

Toot	Comple			Moisture	Particle S	ize Distribu	ıtion	Atterbe	rg Limits			Organic
Test Pit ID	Sample Depth	Group Symbol	Soil Unit	Content (%)	% Fines	% Sand	% Gravel	LL%	PL %	PI %	LL %	Content %
A13	0.8	Sand (SP)	Bassendean Sand (BS)		4	96	0					
A13	1.0	Sand (SP)	Bassendean Sand (BS)		11	89	0					
A13	1.3	Clayey Sand (SC)	Guildford Formation (GC)	16.0	20	80	0	32	11	21	3	<0.5
A13	1.5	Clayey Sand (SC)	Guildford Formation (GC)		21	79	0					
A13	1.8	Clayey Sand (SC)	Guildford Formation (GC)		22	78	0					
A13	2.0	Clayey Sand (SC)	Guildford Formation (GC)	20.0	25	75	0					
A13	2.3	Clayey Sand (SC)	Guildford Formation (GC)	18.1	19	81	0					
A13	2.5	Clayey Sand (SC)	Guildford Formation (GC)	18.5	20	80	0	70	12	58	9	<0.5
A13	2.8	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)		12	88	0					
A14	0.0	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A14	0.3	Sand (SP)	Bassendean Sand (BS)		7	93	0					
A14	0.4	Clayey Sand (SC)	Guildford Formation (GC)	20.3	13	87	0					
A14	0.8	Clayey Sand (SC)	Guildford Formation (GC)	18.9	15	85	0	40	13	27	9	<0.5
A14	1.0	Clayey Sand (SC)	Guildford Formation (GC)	13.5	16	84	0					
A14	1.3	Sand (SP)	Guildford Formation (GS)	10.6	11	89	0					
A14	1.5	Sand (SP)	Guildford Formation (GS)	12.1	11	89	0	26	11	15	4.5	<0.5
A14	1.8	Clayey Sand (SC)	Guildford Formation (GC)	14.5	15	85	0					
A14	2.0	Clayey Sand (SC)	Guildford Formation (GS)		13	87	0					
A14	2.3	Sand (SP)	Guildford Formation (GS)		8	92	0					
A14	2.5	Sand (SP)	Guildford Formation (GS)		5	95	0					
A14	2.8	Sand (SP)	Guildford Formation (GS)		8	92	0					
A15	0.0	Clayey Sand (SC)	Guildford Formation (GC)		34	66	0					
A15	0.2	Clayey Sand (SC)	Guildford Formation (GC)		13	87	0					
A15	0.5	Clayey Sand (SC)	Guildford Formation (GC)		13	87	0					
A15	0.9	Clayey Sand (SC)	Guildford Formation (GC)	19.1	17	83	0					
A15	1.0	Clayey Sand (SC)	Guildford Formation (GC)	21.2	20	73	7	36	12	24	8.5	<0.5
A15	1.3	Clayey Sand (SC)	Guildford Formation (GC)	21.6	27	73	0				0.0	10.0
A15	1.5	Clayey Sand (SC)	Guildford Formation (GC)	26.3	24	76	0					
A15	1.8	Clayey Sand (SC)	Guildford Formation (GC)	20.0	20	80	0					
A15	2.0	Clayey Sand (SC)	Guildford Formation (GC)	14.5	18	82	0	37	12	25	7.5	<0.5
A15	2.3	Clayey Sand (SC)	Guildford Formation (GC)	14.0	13	87	0	07	12	20	7.0	<b>40.0</b>
A15	2.5	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)	15.9	12	88	0					
A15	2.8	Sand (SP)	Guildford Formation (GS)		5	95	0					
A15	3.2	Sand (SP)	Guildford Formation (GS)		5	95	0					
A15	4.2	Sand (SP)	Guildford Formation (GS)	17.1	10	90	0					
A16	0.0	Sand (SP)	Bassendean Sand (BS)	17.1	3	97	0					
A16	0.3	Sand (SP)	Bassendean Sand (BS)		1	99	0					
A16	0.6	Clayey Sand (SC)	Guildford Formation (GC)	28.2	29	71	0	78	16	62	17	<0.5
A16	0.8	Clayey Sand (SC)	Guildford Formation (GC)	20.2	26	74	0	, 0	10	JZ.	17	<b>10.0</b>
A16	1.0	Clayey Sand (SC)	Guildford Formation (GC)	21.1	35	65	0					
A16	1.3	Clayey Sand (SC)	Guildford Formation (GC)	26.1	37	63	0					
A16	1.5	Clayey Sand (SC)  Clayey Sand (SC)	Guildford Formation (GC)	25.2	42	58	0					
A16	1.8	Clayey Sand (SC)  Clayey Sand (SC)	Guildford Formation (GC)	25.2	35	65	0	37	13	24	11	<0.5
A16	2.0	Clayey Sand (SC)	Guildford Formation (GC)	22.9	33	67	0	31	13	24	11	<b>\0.</b> 3
A16	2.3	Clayey Sand (SC)	Guildford Formation (GC)	22.3	24	76	0					
A16	2.5	Sand (SP) / Clayey Sand (SC)	Guildford Formation (GC)		12	88	0					
A16	2.9	Sand (SP)	Guildford Formation (GS)		6	94	0					
A16	0.0	Sand (SP)	Bassendean Sand (BS)		7	93	0					
A17	0.0	Sand (SP)	Bassendean Sand (BS)		6	93	0					
A17	0.6		Guildford Formation (GC)	21.9	27	69		43	21	22	8.5	<0.5
AII	0.0	Clayey Sand (SC)	Guildiola Folffiation (GC)	21.9	21	UB	4	40	21	22	0.0	<0.3

Test	Sample	Group Symbol	Soil Unit	Moisture Content	Particle S	ize Distribu	tion	Atterber	g Limits			Organic Content
Pit ID	Depth	Этоир Зушьог	Son Other	(%)	% Fines	% Sand	% Gravel	LL%	PL %	PI %	LL %	%
A17	0.8	Clayey Sand (SC)	Guildford Formation (GC)	22.5	26	74	0					
A17	1.0	Clayey Sand (SC)	Guildford Formation (GC)	21.3	37	63	0					
A17	1.3	Clayey Sand (SC)	Guildford Formation (GC)		45	55	0					
A17	1.5	Clayey Sand (SC)	Guildford Formation (GC)	25.2	50	50	0	67	15	52	15	<0.5
A17	1.8	Clayey Sand (SC)	Guildford Formation (GC)		52	48	0					
A17	2.0	Clayey Sand (SC)	Guildford Formation (GC)	30.7	47	53	0					
A17	2.3	Clayey Sand (SC)	Guildford Formation (GC)		36	64	0					
A17	2.5	Clayey Sand (SC)	Guildford Formation (GC)	19.0	20	80	0					
A17	2.9	Clayey Sand (SC)	Guildford Formation (GC)		16	84	0					

Notes:

Fines < 0.075mm

0.075 mm < Sand < 2.36mm PL = plastic limit

2.36 mm < gravel < 63 mm PI = plasticity index

LS = linear shrinkage

LL = liquid limit PL = plastic limit

Testing standards used:

AS 1289.2.1.1 (moisture content), 3.6.1 (PSD) & 3.6.3 (PSD and hydrometer)

ASTM: D2974-07a Test Method C (organic content)

AS 1289.3.1.2, 3.3.1 and 3.4.1 (Atterberg Limits)

Table 2: Summary of laboratory testing (water samples)

Sample	Electrical	Total Dissolved	Total Alkalinity	Sulfate	Chloride	Major Cation	ons			Ionic Balan	ce	
Depth	Conductivity (µS/cm)	Solids (mg/L)	(mg/L)	(mg/L)	(mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Anions (meq/L)	Total Cations (meq/L)	Ionic Balance (%)
A01 Shallow	286	654	100	<10	32	23	5	42	7	2.90	3.56	10.3
A01 Deep	2430	2940	145	112	690	10	35	429	5	24.7	22.2	5.41
A05 Shallow	166	2360	57	<1	17	7	4	29	<1	1.62	1.94	-
A05 Deep	5450	4820	104	64	1820	36	126	891	9	54.8	51.2	3.41
A07	3410	1880	202	30	1020	15	32	622	8	33.4	30.6	4.38
A15	3710	2490	419	541	668	16	26	738	8	38.5	35.2	4.42
AR5	33600	2000	531	147	724	11	37	624	6	34.1	30.9	4.96
AR6	2860	2790	<1	643	556	16	79	432	4	29.1	26.2	5.23
BH06 North	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
BH06 South	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
BH13	12300	6900	65	143	4270	7 4 36 126 15 32 16 26 11 37 16 79 Pending Pending	224	2220	13	125	118	2.82

Notes:

Fines < 0.075mm

0.075 mm < Sand < 2.

Testing standards used: APHA 2510 B & APHA 2540 B

# **Appendix G** – PSD test results

G1: PSD test results

G2: Hydrometer test results



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project:

Location: Perth

Area Description:

Component:

Keane Road Pressure Main

Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259

Report Date / Page: 25/08/2015 Page 1 of 1

Sample Location

5029/R/1472-1

A01 Sample 1 Depth 0.0m

5029/P/256

08 9721 2348

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6394

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 19/08/2015

Material Source Yellow SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	.633	Ţ,	PAR	TICLE	SIZ	ZE D	ISTR	IBUT	ION (	GR/	APH	1		
37.5		100		100	I						_		_	-		-	-
19.0		100		44	-												
9.5		100		90													
4.75		100		80													
2.36		100		.00				1									
1.18		100		70													
0.600		95			1												
0.425		75		€ 60	1			1									
0.300		37		5 up	1			1									
0.150		9		g 50	-			_									
0.075		2		(%) Bercent Passing (%) 20 0 0 0 0	0.075	-0.150	0.300	0,425	50.600	-1.18	- 2,36	4.7	6.7	9,5	13,2	19,0	= 37.5 - 36.5
					Ů.	9		O,		Sieve	Size (	mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1473-1

Project Number: 5029/P/256

Lot Number: A01 Sample 2 Depth 0.4m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 25/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6395

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source -

Material Type Yellow SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZ	E DIS	TRIE	BUTIC	N G	RA	PH				
37.5		100		1	00			-		_	_	-	_	-		-	_	1
19.0		100			40.7			/										
9.5		100			90			1										1
4.75		100			00			1										
2.36		100		- 6	80													1
1.18		100			70 -			1										
0.600		97			70			1										
0.425		83		%)	60													
0.300		50		5u	25		- 1											
0.150		10		SSE	50 -		- 1											
0.075		3		Percent F	40 - 30 - 20 - 10 - 0 .075	-0.150	0,300	0,425		1.18 eve 5	2.36 ize (min		6.7	9.5	13,2	19.0	1.00 V. iv	241

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

5029/R/1475-1

A01 Sample 4 Depth 0.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

25/08/2015

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Component:

AS1289.3.6.1 Sample Location

**Test Request** 

Sample Number 5029/S/6397

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 25/08/2015

Material Source Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-533	Ų.	PART	TCLE	SIZ	E DIS	RIBU	JTION	V GF	RAP	H			
37.5		100		100	T				/	_	-	-		_	-	-	-
19.0		100		42	-			1									П
9.5		100		90	1			1									
4.75		100		-	-			1									
2.36		100		80	1			1									
1.18		100		70				/									_
0.600		95			-												
0.425		82		€ 60													
0.300		56		Ē	1		1										
0.150		29		\$ 50	1		/										
0.075		20		(%) Supercourt Passing (%) 20 10	/		_										
				0	1		o seals	ngan	1 : : : ()		1	-1-11	Tren	David:	מפים	eq.	TT
					0.075	0.150	0.300	0.425	0.600		2.36	4.75	6.7	13,2	19,0	26.5	37,5
									AS Sie	ve Size	e (mm)	)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Lot Number:

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Client Reference/s: 61/32259 Report Date / Page: 26/08/2015

Test Procedures: AS1289.3.6.1 Sample Number 5029/S/6398

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 19/08/2015

Material Source

Sample Location

08 9721 2348

5029/R/1493-1

A01 Sample 5 Depth 1.0m

Page 1 of 1

5029/P/256

5029/T/1144

**Test Request** 

Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICLE	SIZ	ZE D	ISTR	IBUTI	ON G	RA	PH				
37.5		100		100	1							_						
19.0		100		00	-													
9.5		100		90				1										
4.75		100		80														
2.36		100		.00														
1.18		100		70	1		_ /											
0.600		95			-													
0.425		86		€ 60	1		_/_											1
0.300		70		Đuị			/											
0.150		36		\$ 50	-													_
0.075		20		60 50 40 30 20 10	/													
				0	0.075	0.150	0.300	0,425		1,18 Sleve	2.36 Size (m	- 4.75 E)	6.7	9.5	13,2	- 19.0	26.5	F 37.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6399 Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 19/08/2015

Material Source

Report Number: 5029/R/1476-1

Project Number: 5029/P/256

Lot Number: A01 Sample 6 Depth 1.2m

Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259

Report Date / Page: 25/08/2015

Page 1 of 1

Sample Location

**Test Request** 

Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZ	E DI	STRI	BUTIC	N G	RA	PH			
37.5		100		100	1					_	-						_
19.0		100		00				1									
9.5		100		90				/									
4.75		100		80				1									
2.36		99		.00													
1.18		99		70	1		/										
0.600		95			-		_ [										
0.425		84		€ 60	1												
0.300		65		5	1		/										
0.150		38		\$ 50	1		/										
0.075		29		(%) Burssed theorem 30 50 10	/	1											
				0	0.075	0.150	0,300	0.425		1,16 sleve	2,36 Size (mi	- 4.75	6.7	9.5	13,2	19.0	л о/, о

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project:

Location: Perth

Area Description:

Component:

Keane Road Pressure Main

Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259

Report Date / Page: 25/08/2015 Page 1 of 1

5029/R/1477-1

A01 Sample 7 Depth 1.5m

5029/P/256

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6400

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 19/08/2015

Material Source

Sample Location

08 9721 2348

**Test Request** 

Brown SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	0.04.1		PART	ICLE	SI	ZE D	ISTRI	BUTIC	)N G	RA	PH			
37.5		100		100	1				-		_	_	_	-		-	
19.0		100		00													
9.5		100		90				1									
4.75		100		80				1									
2.36		100		00				/									
1.18		100		70													
0.600		96			-		- /										
0.425		83		<b>≥</b> 60	1												
0.300		59		5u	-		1										
0.150		37		\$ 50	1		/										
0.075		31		ant i		1											
				§ 40	+-	_/											
				30													
				20													
				20	1												
				10													
				0	1		111						111111	***	91.77	41111	1
					0.075	0.150	0,300	0,425	0.600	1.18	2,36	4.75	6.7	9.5	13,2	19,0	26.5
					75	8	8	25						20	10	0 (	л
									AS	Sieve	Size (mr	n)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1478-1

Project Number: 5029/P/256

Lot Number: A01 Sample 9 Depth 2.0m

Sample Location

08 9721 2348

Fax:

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 25/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6402

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

2015

Material Source - Material Type Grey Silty SAND

**Test Request** 

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SI	ZE D	ISTR	IBUTIO	ON G	RAI	PH			
37.5		100		1	00					/	_	_	_	-		-	-
19.0		100							1								
9.5		100		-	90												
4.75		100		4	00												
2.36		100		- 2	80			- /									
1.18		100			70 -			+									
0.600		94			70			1									
0.425		72		(%)	60												
0.300		36		9													
0.150		20		988	50 -												
0.075		18		Percent Passing (%)			- 1										
				900	40		-1	1									
				ď			1										
				1 4	30 -		/										
						/											
				-7	20 -	_											
					74												
				1.0	10 -												
					0												
					0	0	0		0	<u> </u>	10	4	9	9	H	± 18	ω ω
					0.075	0.150	0.300	0.425	60	1,18	2.36	4.75	6.7	9.5	13.2	10.5	37.5
					OI.	9	9	O.C		Slave	Size (mi	enó.					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Lot Number: A01 Sample 10 Depth 2.3m

Internal Test Request: 5029/T/1144

Sample Location

Client Reference/s: 61/32259

Report Date / Page: 25/08/2015 Page 1 of 1

5029/R/1479-1

5029/P/256

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6403

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	ICLE	SIZE	DIST	RIB	UTIO	N G	RAF	Н			
37.5		100		100					1		-	-		-	_		-
19.0		100		- 2	5				/								
9.5		100		90	1 -			1									
4.75		100		00				- 1									
2.36		100		80				- 1									
1.18		100		70	1												
0.600		89		2-6	-												
0.425		58		£ 60	) -												
0.300		22		E C				1									
0.150		12		% 50	0 -		-	1									
0.075		11		90 Sercent Passing (%)	)	1											
				,	0.075	0.150	0,300	0.600	1,18		2,36	4.75	6.7	9.5	19,0	26.5	37,5
									AS Sie	ve Siz	e (mm	0					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1480-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A01 Sample 11 Depth 2.8m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 25/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6404

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source -

Sample Location

Test Request

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		ď	PART	ICLE	SIZ	E DIST	RIBUTI	ON G	RA	PH				
37.5		100		100	T				1	_	_	_	-	_	-	_	-
19.0		100		4/4	1				/								
9.5		100		90	1			1									1
4.75		100			-			- 1									
2.36		100		80	1			-/									
1.18		100		70													
0.600		90			-			1									
0.425		60		€ 60	1			1									
0.300		35		E C													1
0.150		20		% 50	1			_									_
0.075		18		(%) 60 South Passing (%) 30 South Passing (%) 10		1	1										
				0	0.075	0.150	0.300	0.425		2.36	- 4.75	6.7	9.5	13,2	19,0	26.5	+ 37.5
									AS Siev	e Size (n	nm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Report Number: 5029/R/1481-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A01 Sample 13 Depth 3.8m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 25/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6405

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TICLE	SIZ	E D	ISTRI	BUTIO	O NC	RA	PH				
37.5		100		100	1				-	/	_	_	_	-		-		-
19.0		100		42	-				/									
9.5		100		90					/									
4.75		100		90	-			_/										
2.36		100		80	1			1										
1.18		100		70	1			1										
0.600		92			-			1										
0.425		73		€ 60	1													
0.300		41		Ē				1										
0.150		16		% 50	-		_											-
0.075		14		(%) 60 50 40 30 20		_/	/											
				0	0.075	0.150	0,300	0,425		-1,18	2.36 Size (m	4.75	6.7	9.5	13,2	19.0	26.5	+ 37.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1482-1

A01 Sample 15 Depth 6.5m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

25/08/2015

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

Perth

AS1289.3.6.1 Sample Location

**Test Request** 

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZE	DIST	RIBUTI	ON G	RA	PH			
37.5		100		1	00				9				-		-	_
19.0		100			00				/							
9.5		100			90 -				/							
4.75		100		-	80 -											
2.36		100		- 12	00			1								
1.18		98			70 -			I								
0.600		75			,0											
0.425		55		8	60											
0.300		33		5	27			1								
0.150		16		388	50 -											
0.075		10		Percent F	40 - 30 - 20 -	1	/									
					0.075	0.150	0.300	0.600		2,36 e Size (m	4.75	6.7	9,5	13,2	19.0	3/.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g gul-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6407

Location: Perth

Component:

Sample Number

Area Description:

Test Procedures: AS1289.3.6.1

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source -

Report Number: 5029/R/1494-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A01 Sample 16 Depth 7.5m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015

Page 1 of 1

Sample Location

Test Request

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	ICLE	SIZ	E DI	STR	BUTI	ON G	RA	PH			
37.5		100		100			-		_		_	_					
19.0		100		00			1										
9.5		100		90			/										
4.75		100		80			1										
2.36		100		.00			/										
1.18		100		70													
0.600		99			+	- /											
0.425		97		€ 60	1												
0.300		93		5		1											
0.150		55		% 50	-												
0.075		13		15	1	1											
				Wercent Passing (%) 20 40	-	_											
					1												
				30	1												
				654	1												
				20	1/												
					4												
				10													
				0	1						-						
				0	0		0	0 6	<b>D</b>	4	10	4	9	9	17	15 5	2 0
					0.075	0.150	0.300	0.425	8	1,18	2,36	4.75	6.7	Ç	13,2	19.0	n i
						-	_				Size (m						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Sample Number

Area Description:

Test Procedures: AS1289.3.6.1

5029/S/6408

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source -

Report Number: 5029/R/1495-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A01 Sample 17 Depth 8.5m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Sample Location

Test Request

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICLE	SIZ	ZE D	ISTR	IBUTI	ON C	RA	PH				
37.5		100		100	1				-		_	_					_	
19.0		100		00				1										
9.5		100		90				1										
4.75		100		80				1										
2.36		100		.00														
1.18		100		70														
0.600		97			-													-
0.425		88		€ 60	1		/											
0.300		70		9	1		/											
0.150		43		\$ 50		-	_											
0.075		10		(%) 60 Fercent bassing (%) 30 20 10	/	/												
				ø	0.075	0.150	0.300	0.425		1,18 Sieve	2:36 Size (n	4.75 m)	6.7	9,5	13,2	19,0	26.5	F 37.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Internal Test Request: 5029/T/1144

08 9721 2348

Client Reference/s: 61/32259

Sample Location

Report Date / Page: 26/08/2015 Page 1 of 1

A02 Sample 1 Depth 0.0m

5029/R/1496-1

5029/P/256

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6409

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		nini i	P	ART	ICLE	SIZ	E DI	STRI	BUTIO	ON G	RA	PH			
37.5		100			100 —				1		-	_					_	-
19.0		100			00				1									
9.5		100			90 -													
4.75		100			80													
2.36		100			00													
1.18		100			70 -													
0.600		100		~				- 1										
0.425		93		(8)	60			_/										
0.300		57		E P				- †										
0.150		8		388	50 -			-										
0.075		2		THE !				1										
				Percent Passing (%)	40 -		-	1										
				4	_ 1			-										
					30 -													
					92.		- /											
					20 -		1											
					10													
					10 -		1											
					0													
							9	0	0 9	2	5	ro.	4	6.7	9.5	13	6 6	3
					0.075		0.150	0,300	0.425	2.600	1,18	2.36	4.75	7	on	13,2	19.0	37.5
									200		leve !	Size (m	m)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/P/256 Project Number:

Lot Number: A02 Sample 2 Depth 0.3m

Sample Location

08 9721 2348

Fax:

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Yellow SAND

5029/R/1497-1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6410

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Client Sampled Sampled By 19/08/2015 **Date Tested** 

Material Source Material Type

Specification Percent Specification PARTICLE SIZE DISTRIBUTION GRAPH AS Sieve (mm) Minimum Passing (%) Maximum 100 37.5 100 19.0 100 90 9.5 100 100 4.75 80 2.36 100 100 1.18 70 0.600 97 79 0.425 60 Percent Passing 0.300 42 0.150 6 50 0.075 1 40 30 20 10 0 0.075 AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Sample Number

Component:

AS1289.3.6.1

5029/S/6411

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 19/08/2015

Material Source

Report Number: 5029/R/1498-1

Project Number: 5029/P/256

Lot Number: A02 Sample 3 Depth 0.5m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015

Sample Location

Page 1 of 1

**Test Request** 

White SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	0.00	-1	PART	TCLE	SIZ	E DI	STRI	BUTIC	N G	RA	PH			
37.5		100		10	0						_	_	_			-	
19.0		100		à													
9.5		100		9	u			1									
4.75		100		۰	0 -												
2.36		100		.0	0			1									
1.18		100		7	0 -												
0.600		94															
0.425		77		\$ 6	0												
0.300		52		5			- /										
0.150		8		SSE 5	0 -		- †										
0.075		4		P.F.													
				Percent Passing (%)	0 -		1										
				۵	1		1										
				3	0		1										
					- 1												
				2	0 -	- /											
				1.2	4												
				1	0 -	1											
					0												
					0	0	0	0 9	<b>D</b>		10	4	9	9	H.	Ta !	2 0
					0.075	0.150	0.300	0.425	3	1,18	2.36	4.75	6.7	Ċ	13,2	19.0	26.5
					51	9	-	0, 0		Sleve !	Size (mr	66					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Phone: 08 9726 2187

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1499-1

08 9721 2348

Fax:

Project Number: 5029/P/256

Lot Number: A02 Sample 4 Depth 0.8m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

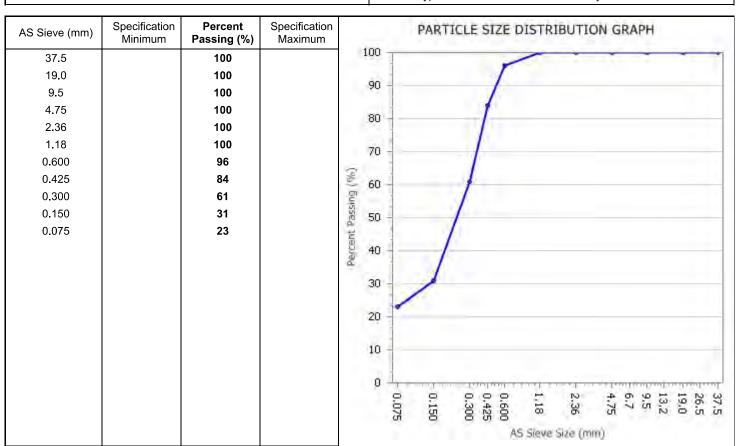
Sample Number 5029/S/6412

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Tv

Material Type Yellow silty SAND



Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1500-1

A02 Sample 5 Depth 1.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

26/08/2015

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

Keane Road Pressure Main

AS1289.3.6.1 Sample Location

**Test Request** 

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	1000		PART	TCLE	SI	ZE D	ISTRI	BUTIC	N G	RA	PH			
37.5		100		100	1				-	_		-					
19.0		100		00													
9.5		100		90				1									
4.75		100		80													
2.36		100		.00													
1.18		100		70			/										
0.600		97			-		1										
0.425		86		€ 60	1												
0.300		65		5 u	1		/										
0.150		31		50	1		/										
0.075		22		Percent Passing (%)													
				40	1	1											
				30	1	1											
					/												
				20													
				10	1												
				,,,													
				0	100		o selfa	rq re	70.1.1		-1		nilia.	11/27	n Lor	dia.	dir.
					0.075	0.150	0.300	0,425	0.600	1,18	2,36	4.75	6.7	9,5	13,2	19.0	26.5
					O.	9	9	01		Slave	Size (mi	665					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g gul-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax: 08 9721 2348

5029/R/1502-1

A02 Sample 7 Depth 1.5m

5029/P/256

5029/T/1144

61/32259

Sample Location

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Lot Number:

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Sample Number

5029/S/6415

Area Description: Report Date / Page: 26/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 19/08/2015 Material Source

Grey Silty SAND Material Type

**Test Request** 

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	.533		PAR	TICLE	SI	ZE D	ISTR	IBUTIO	N G	RA	PH				
37.5		100		100	T						_	_	_	-		-		•
19.0		100		- 22	+				1									
9.5		100		90	1			1	/									
4.75		100		200	. 1			/										
2.36		100		80				1										
1.18		100		70														
0.600		95			-													
0.425		80		€ 60	1													
0.300		53		Đu	1		- 1											
0.150		28		% 50	1		1											
0.075		22		90 Sercent Passing (%) 90 20 20 10	_	1	/											
				0	0.075	0.150	0,300	0.425	0.600 AS	1,18 Sieve	22 36 Size (mi	4.75	6.7	9.5	13,2	19,0	26.5	E 37.3

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Lot Number:

08 9721 2348

5029/R/1503-1

A02 Sample 8 Depth 1.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

Sample Location

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Perth

Report Date / Page: 26/08/2015

**Test Request** 

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6416

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	.000		PART	ICLE	SIZE	DISTR	IBUTIO	ON G	RA	PH			
37.5		100		100	1				/	_	_	_	-		_	_
19.0		100		45	-			1								
9.5		100		90				1								
4.75		100		200	-			/								
2.36		100		80				1								
1.18		100		70												
0.600		96			-		- 1									
0.425		80		€ 60												
0.300		53		Ē	1		- 1									
0.150		25		\$ 50			1									
0.075		20		(%) 60 50 40 30 20		1	/									
				0	0.075	0.150	0,300	0.600	1,18	2.36 Size (mi	4.75	6.7	9.5	13,2	26.5	37,5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1504-1

A02 Sample 9 Depth 2.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

26/08/2015

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

Perth

AS1289.3.6.1 Sample Location

**Test Request** 

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	.533		PAR	TICLE	SI	ZE D	ISTRI	BUTIC	ON G	RA	PH				
37.5		100		100						/	_	_	_	-		-		•
19.0		100		- 2														
9.5		100		90														
4.75		100		00	. 1			1										
2.36		100		80				1										
1.18		100		70														
0.600		95		- 2	-			1										
0.425		78		<b>€</b> 60														
0.300		50		54			- 1											
0.150		23		sse 50	1 -		- 1											
0.075		19		60 60 50 50 40 30 20 20 10	1-	الم	/											
				Ç		0.150	0.300	0.425	0.600 AS	1,18 Sleve	2.36 Size (mi	- 4.75 E	6.7	9.5	13,2	19,0	26.5	7 37.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:

god



Address: 72 McCombe Road, Davenport WA 6230

Laboratory: Geotech Bunbury 08 9726 2187 Phone:

Fax:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Sample Number

Component:

Test Procedures: AS1289.3.6.1

5029/S/6418

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 19/08/2015

Material Source

Report Number: 5029/R/1505-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A02 Sample 10 Depth 2.3m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

**Test Request** 

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	041	y fi	PART	TCLE	SIZ	E DIS	TRIB	UTIO	N G	RA	РН			
37.5		100		100	I				/		-	-					_
19.0		100		00	-												
9.5		100		90				1									
4.75		100		80				1									
2.36		100		.00				1									
1.18		100		70													
0.600		96			-												
0.425		80		€ 60	1												
0.300		53		Đị.			- 1										
0.150		26		% 50	-		1										
0.075		21		(%) Busseut Passing (%) 20 10 0		1	/										
				3	0.0	9.1	0,300	0.425	0.600	5	2.36	4.75	6.7	9.5	13.2	26.5	37.5
					0.075	0.150	ĕ	25	8 9	0	90	ű		70	N C	0 0	i
									AS Sie	ve Siz	e (min	Ú					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Lot Number:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Kana Daad Daassuus Main

Report Date / Page: 26/08/2015

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6420

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source -

Sample Location

5029/R/1507-1

A02 Sample 12 Depth 2.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

Test Request

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	ST	ZE D	ISTRI	BUTIC	N G	RAI	PH			
37.5		100		100	I						_	-	_	-		-	
19.0		100		-	-				1								
9.5		100		90													
4.75		100		90	-			1									
2.36		100		80	1			1									
1.18		100		70				1									
0.600		94			-												
0.425		78		<b>≥</b> 60			/										
0.300		53		Đuị.													
0.150		28		% 50	-		1										
0.075		22		(%) So 49 80 80 80 80 80 80 80 80 80 80 80 80 80		/											
				20	/	1											
				0	0.0	0.1	0.300	0.4	0.600	- 1,18	2,36	- 4.75	6.7	9.5	13,2	19.0	26.5
					0.075	0.150	ĕ	0,425	ğ	00	90	Ċ,		71	N	0	л
									AS	Sleve !	Size (min	n)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g gul-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Material Type

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1508-1

Project Number: 5029/P/256

Lot Number: A03 Sample 1 Depth 0.0m

08 9721 2348

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Grey Silty SAND

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6421

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source -

Sample Location

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZE	DISTR	RIBUTI	ON G	RA	PH			
37.5		100		1	00				/	_	_	_	-		-	•
19.0		100						1								
9.5		100			90 -			1								
4.75		100						/								
2.36		100		- 6	80			1								
1.18		100			70 -											
0.600		96			70											
0.425		80		(%)	60 -											
0.300		47		ē	00											
0.150		8		988	50 -		- 1									
0,075		2		Percent F	40 - 30 - 20 - 10 - 0.075	- 0.150	0.300	0.600	1.18	- 2.36	- 4.75	6.7	9.5	13,2	19,0	37.5
1									AS Sleve	Size (m	im)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Internal Test Request: 5029/T/1144
Client Reference/s: 61/32259

Report Date / Page:

Report Number:

Project Number:

Lot Number:

26/08/2015 Page 1 of 1

5029/R/1509-1

A03 Sample 2 Depth 0.2m

5029/P/256

Sample Location

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6422
Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source -

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	044	Ų.	PAR	TICLE	SIZ	E DI	STRI	BUTIC	ON G	RA	PH				
37.5		100		100	1					_	_	_		-		-		-
19.0		100		42	-													
9.5		100		90				1										1
4.75		100		90	-			1										
2.36		100		80														
1.18		99		70	1													
0.600		95		100	-		- /											
0.425		84		€ 60	1		- 1											4
0.300		61		E E			- /											
0.150		24		\$ 50	-													
0.075		15		(%) Surssed theory 930 50 10	/													
				0	0.075	- 0.150	0,300	0,425	0.60	-1,18	2.36	- 4.75	6.7	9.5	13,2	- 19.0	26.5	+ 37.5
					O.	9		0, 4		Sieve S	size (mi	n)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6424

Location: Perth

Area Description: Test Procedures:

Sample Number

Component:

AS1289.3.6.1

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 19/08/2015

Material Source

Sample Location

5029/R/1511-1

A03 Sample 4 Depth 0.7m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

26/08/2015

08 9721 2348

**Test Request** 

Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICLE	ST	ZE D	ISTR	IBUT	ION	GR	APH			
37.5		100		100	1				1.0	-	_			_		-	_
19.0		100		00	-				1								
9.5		100		90													
4.75		100		80	1			_/									
2.36		100		.00	-			1									
1.18		99		70													
0.600		93			-												
0.425		78		€ 60	1												
0.300		54		5			1										
0.150		23		6 50	-												
0.075		15		(%) 60 50 40 30 20 10	_		/										
				0	0.075	0.150	0,300	0.425		1,18 Sleve	2.36 Size ()	om)	4.7	9.5	13,2	19,0	26.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1512-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A03 Sample 5 Depth 1.0m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

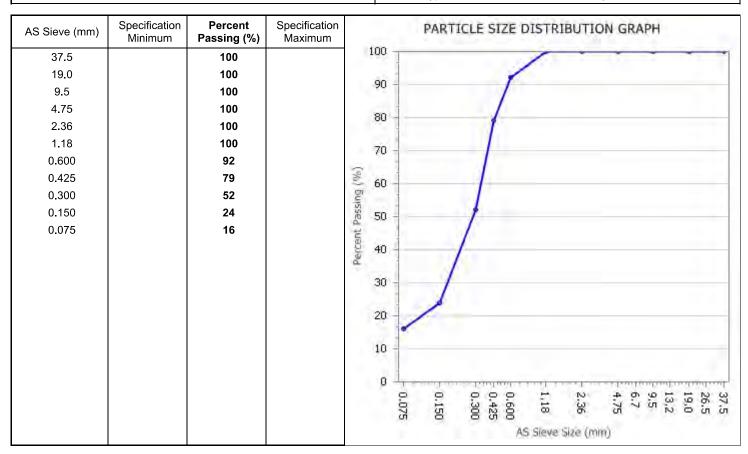
Sample Number 5029/S/6425

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

\_ . . . \_

Material Source - Material Type Yellow silty SAND



Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1513-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A03 Sample 7 Depth 1.5m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Yellow silty SAND

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6427

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type

Sample Location

Specification Percent Specification PARTICLE SIZE DISTRIBUTION GRAPH AS Sieve (mm) Minimum Passing (%) Maximum 100 37.5 100 19.0 100 90 9.5 100 100 4.75 80 2.36 100 1.18 99 70 0.600 91 74 0.425 60 Percent Passing 0.300 49 0.150 23 50 0.075 18 40 30 20 10 0 0.075 AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6428

Location: Perth

Area Description:

Sample Number

Component:

Test Procedures: AS1289.3.6.1

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 19/08/2015

Material Source

Report Number: 5029/R/1514-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A03 Sample 8 Depth 1.8m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015

Sample Location

Page 1 of 1

**Test Request** 

Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZ	ZE D	ISTR	IBUTI	ON G	RA	PH				
37.5		100		100	1						_	_				-		•
19.0		100		00	-				1									
9.5		100		90				1										
4.75		100		80				1										
2.36		100		00				1										
1.18		100		70														
0.600		93			-													
0.425		78		€ 60	1													
0.300		46		5														
0.150		22		% 50														
0.075		16		Percent Passing (%)			1											
				2														
				30		1												
				20	-	1	-											
				10														
				10														
				0	0.0	0.150	0.300	0.425	0.6	- 1,18	2.36	4.75	6.7	9.5	13,2	19,0	26.5	7 37
					0.075	50	ĕ	25	8	00	9.	ú		7.	N	0	on i	U
									AS	Sleve	Size (m	m)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Report Number:

Project Number:

Internal Test Request:

Lot Number:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Component:

AS1289.3.6.1

Sample Number 5029/S/6429

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 19/08/2015

Material Source

Client Reference/s: 61/32259 Report Date / Page: 26/08/2015

08 9721 2348

5029/R/1515-1

A03 Sample 9 Depth 2.1m

Page 1 of 1

5029/P/256

5029/T/1144

Sample Location

**Test Request** 

Yellow silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SI	ZE D	ISTR	IBUTIO	ON G	RA	PH				
37.5		100		1	.00					_	-	-	_	_	_	-	-	*
19.0		100			45				/									
9.5		100			90				1									
4.75		99			90				/									
2.36		99			80 -													
1.18		98			70 -			1										
0.600		90			,0			T										
0.425		70		8	60			1										
0.300		36		5	27			1										
0.150		15		388	50 -													
0.075		11		ad.	40 - 30 - 20 -	1												
					0 0.075	0.150	- 0.300	0.425	0,600 AS	-1,18 Sleve	2.36 Size (mi	÷ 4.75	6.7	9,5	13,2	19.0	26.5	T 37.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

5029/R/1516-1

A03 Sample 10 Depth 2.3m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

26/08/2015

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

AS1289.3.6.1 Sample Location

**Test Request** 

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		(00	PART	ICLE S	ZE D	ISTRI	BUTIO	N G	RAP	H			
37.5		100			100				/	_	-					7
19.0		100			00			/								
9.5		100			90 -			1								
4.75		100			80 -			1								
2.36		100		- 1	00			/								
1.18		100			70		/									
0.600		89		~	,,,		Ī									
0.425		69		8	60											
0.300		34		5	2.											
0.150		13		250	50 -											
0.075		10		H. P			- 1									
				Percent Passing (%)	40 -											
				4			1									
					30 -		/									
							/									
					20 -	-/								_		
					10											
					0 -		O O	0	11	10	4	o) o	David David	00 E	M.	1
					0.075	0.150	0.425	0.600	1,18	2,36	4.75	6.7	5 13,2	19,0	26.5	0000
					cn.	0	0 5			Size (mir						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1517-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A03 Sample 11 Depth 2.6m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6431

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source -

Test Request

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZ	E DIST	RIB	UTIO	N G	RA	PH			
37.5		100		1	00 —				1		-	_	_	-	_	-	-
19.0		100							/								
9.5		100		4	90 -			- 1									
4.75		100						-/									
2.36		100		3	80												
1.18		100			70 -			1									
0.600		91			70												
0.425		72		(%)	60												
0.300		41		5	00												
0.150		15		988	50 -												
0.075		12		Percent	40 30 20	1											
					0.075	0.150	0.300	0.425	AS Sie		2.36 e (mm		6.7	5,5	13.2	19.0	37.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187

Email: paul.kent@cardno.com

Fax:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1518-1

A03 Sample 12 Depth 2.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

26/08/2015

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

realic read i ressure Main

AS1289.3.6.1 Sample Location

**Test Request** 

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZ	E DI	STR	BUTIO	ON G	RA	PH			
37.5		100		100	I						_	_				-	
19.0		100		00													
9.5		100		90				1									
4.75		100		80													
2.36		100		.00				1									
1.18		100		70													
0.600		94			-												
0.425		79		€ 60	1												
0.300		48		5			- 1										
0.150		17		% 50	-												
0.075		14		E			1										
				Percent Passing (%) 40	+	-	1										
					1		/										
				30	1												
				-74	1	1											
				20		1											
				10													
				0	1												
				0	0	0	0	0 9	<b>D</b>	1	T/O	4	6	9	17	15	2
					0.075	0.150	0,300	0.425	3	1,18	2.36	4.75	6.7	Ç	13,2	19.0	26.5
					9.	9	9	-1		Clavia	Size (mi	del.					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1519-1

Project Number: 5029/P/256

Lot Number: A04 Sample 1 Depth 0.0m

Sample Location

08 9721 2348

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6433

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source -

- Material Type Yellow SAND

**Test Request** 

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZ	E D	ISTRI	BUTI	ON G	RA	PH			
37.5		100		1	00					/	_	_	_	-		-	
19.0		100			45				/								
9.5		100			90 -												
4.75		100			90												
2.36		100			80 -			7									
1.18		100			70 -			- [									
0.600		91															
0.425		64		8	60			1									
0.300		27		5				1									
0.150		3		388	50 -			_									
0.075		1		Pe	30 - 20 - 10 - 0.075	0.150	- 0.300	0.425		1,18 Sieve	2.36 (m	4.75 m)	6.7	9.5	13,2	26.5	37.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g zul-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Material Source

Component:

Report Number: 5029/R/1520-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A04 Sample 2 Depth 0.3m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6434

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 19/08/2015

Yellow silty SAND Material Type

**Test Request** 

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SI	ZE D	ISTR:	IBUTIO	ON G	RAF	PH			
37.5		100			100					/	_	_	_	-	_	_	-
19.0		100			45				1								
9.5		100		1.4	90 -												
4.75		100			00												
2.36		100		- 1	80 -			1									
1.18		100			70 -			1									
0.600		94			70			T									
0.425		70		(%)	60			1									
0.300		30		ē				1									
0.150		5		355	50 -			L									
0.075		1		Percent Passing (%)													
				S CB	40 -		- 1										
				ď			- 1										
					30 -		- }										
							/										
					20 -		/										
						1											
					10 -	-/											
						_											
					0 4	0	0	o o	0		TV)	4	9	9	din.	. N	
					0.075	0.150	0.300	0.425	60	1,18	2,36	4.75	6.7	9.5	13.0	26.5	07.0
					cu.	0	0	o.			Size (m						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Report Number:

Project Number:

Internal Test Request:

Lot Number:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project:

5029/S/6435

Location: Perth

Area Description:

Sample Number

Component:

Keane Road Pressure Main

Client Reference/s: 61/32259 Report Date / Page: 26/08/2015

Test Procedures: AS1289.3.6.1

Sampling Method Tested As Received

11/08/2015 **Date Sampled** 

Sampled By Client Sampled **Date Tested** 19/08/2015

Material Source

Sample Location

5029/R/1521-1

A04 Sample 3 Depth 0.5m

Page 1 of 1

5029/P/256

5029/T/1144

08 9721 2348

**Test Request** 

Yellow SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	ICLE	SI	ZE D	ISTR	RIBU	TION	G	RAP	H			
37.5		100		1	100 —				-	/	_		-					
19.0		100			00				1									
9.5		100			90 -				1									
4.75		100			80 -													
2.36		100			00													
1.18		100			70 -			1										
0.600		92			,,			+										-
0.425		67		8	60													
0.300		27		5														
0.150		4		388	50 -			1										
0.075		1		Percent Passing (%)	40 - 30 - 20 - 10 -		/		m = :	: 74]		1-1-6	=1**	121000	777	To the last	7771	*****
					0.075	0.150	0.300	0,425	0.600 AS	1,18 Sleve	2.36 Size			6.7	0 7	13.0	26.5	37,5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Component:

Perth

AS1289.3.6.1

Sample Number 5029/S/6436

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 19/08/2015

Material Source -

Sample Location

08 9721 2348

5029/R/1522-1

A04 Sample 4 Depth 0.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

26/08/2015

Test Request

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZ	E DI	STRI	BUTIO	N G	RA	PH			
37.5		100		1	00						-	-				-	_
19.0		100			00				/								
9.5		100			90 -												
4.75		100			80			/									
2.36		100		- 1	00			- /									
1.18		100			70												
0.600		91						1									
0.425		66		8	60		_	1									
0.300		29		5				1									
0.150		10		SSE	50 -			1									
0.075		7		11													
				Percent Passing (%)	40 -		- 1										
					1		- 1										
					30 -		- }										
					SA.		/										
				- 1	20 -		/										
					16	/											
				111	10												
					0												
					0	9	0	0.0		<u></u>	10	4	6	9	<del></del>	1 2	
					0.075	0.150	0,300	0.425	8	1,18	2.36	4.75	6.7	OI.	13.2	26.5	0,0
					0.	9	9	9, 4		Sleve !	Size (min	rio Co					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g zul



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

08 9721 2348

5029/R/1523-1

A04 Sample 6 Depth 1.3m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

26/08/2015

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

AS1289.3.6.1 Sample Location

**Test Request** 

Sampling Method Tested As Received
Date Sampled 11/08/2015

Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICLE	SI	ZE D	ISTRI	BUTIC	ON G	RA	PH				
37.5		100		100					- 4		_	_						•
19.0		100		00					/									
9.5		100		90														
4.75		100		80														
2.36		100		.00				1										
1.18		100		70				1										
0.600		91			-													
0.425		72		€ 60	1													
0.300		49		5			1											
0.150		21		% 50			_ [											_
0.075		14		90 50 40 30 6/4/2														
				20 10	/	1		mjn	70 t :			-=1*	nile.	20127	mju	.,,,,,,	of co.	
					0.075	0.150	0.300	0.425	0.600	1,18	2.36	4.75	6.7	9.5	13,2	19,0	26.5	01.0
										Sieve	Size (mi	n)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

08 9721 2348

5029/R/1524-1

A04 Sample 7 Depth 1.5m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

26/08/2015

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

Perth

AS1289.3.6.1 Sample Location

**Test Request** 

Sampling Method Tested As Received
Date Sampled 11/08/2015

Sampled By Client Sampled
Date Tested 19/08/2015

Material Source - Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	125	2,1	PART	TCLE	ST	ZE D	ISTRI	BUTIC	)N G	RA	PH				
37.5		100		10						1	_	_	_	-		1		•
19.0		100		o.	5				/									
9.5		100		9	0 -				1									
4.75		100		8	0													
2.36		100		.0				7										
1.18		100		7	0 -			1										
0.600		89						1										
0.425		68		% 6i	0													
0.300		40		Đu.														
0.150		19		588	0 -			_										
0.075		13		9 6 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0 -	1	/											
				L	0.075	0.150	0,300	0.425		1.18 Sleve	23 Size (mir	- 4.75 E	6.7	9.5	13,2	19,0	26.5	E 0/10

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Lot Number:

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Sample Location

5029/R/1525-1

A04 Sample 8 Depth 1.8m

5029/P/256

5029/T/1144

08 9721 2348

Test Procedures: AS1289.3.6.1 Sample Number 5029/S/6440

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 20/08/2015

Material Source Yellow silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	.557		PAR	TICLE	SIZ	E DI	STRI	BUTIC	ON G	RA	PH				
37.5		100		100	1						_	_		-		-	_	-
19.0		100		- 23	-				/									
9.5		100		90	1			1										
4.75		100		90				_/										
2.36		100		80	1			1										
1.18		100		70				1										
0.600		91		-	-													
0.425		76		≥ 60	1													
0.300		53		5			- 1											
0.150		22		% 50	-		Ī											-
0.075		15		(%) 50 40 30 20 10	/		/											
				0	1			mjer	111111	-		1-	nili	0000	mjor	· mare	dir.	T
					0.075	0.150	0.300	0.425	0.600	1,18	2,36	4.75	6.7	9.5	13,2	19,0	26.5	37.5
									AS:	Sieve S	size (mi	n)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1526-1

A04 Sample 9 Depth 2.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

Sample Location

26/08/2015

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Sampling Method

Component:

Perth

Tested As Received

AS1289.3.6.1 5029/S/6441

Date Sampled 11/08/2015
Sampled By Client Sampled

Date Tested 20/08/2015

Material Source - Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZ	ZE D	ISTRI	BUTIC	ON G	RA	PH				
37.5		100		100	I					1		_	_	_		-		٠
19.0		100		00	-				/									
9.5		100		90					1									
4.75		100		80														
2.36		100		.00				1										
1.18		100		70	1			1										
0.600		89			-													
0.425		72		€ 60	1			_										
0.300		47		9	1													
0.150		19		% 50	-		_ /											
0.075		13		60 50 40 30 20		1	/											
				10 0	0.075	0.150	0,300	0,425		1.18 Sleve	2,36 Size (mi	4.75	6.7	9.5	13,2	- 19,0	2 2	

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

K D ID M.

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Number:

Project Number:

Lot Number:

Report Date / Page: 26/08/2015 Page 1 of 1

Sample Location

5029/R/1527-1

A04 Sample 10 Depth 2.3m

5029/P/256

08 9721 2348

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6442

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Material Source - Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	THE STEE STEE STOTE STOTE STATE
37.5		100		100
19.0		100		00
9.5		100		90
4.75		100		80
2.36		100		
1.18		100		70 -
0.600		88		
0.425		71		€ 60
0.300		45		Die .
0.150		20		50 -
0.075		15		26.5 19.0 19.0 19.0 13.2 9.5 6.7 4.75 0.600 0.425 0.075
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g zul-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1528-1

A04 Sample 12 Depth 2.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

26/08/2015

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

Perth

AS1289.3.6.1 Sample Location

**Test Request** 

Sampling Method Tested As Received
Date Sampled 11/08/2015

Sampled By Client Sampled
Date Tested 20/08/2015

Material Source - Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	ST	ZE D	ISTRI	BUTIC	N G	RA	PH				
37.5		100		100	1				- 0	/	-	_	_	_		-		•
19.0		100		00	-				/									
9.5		100		90					1									
4.75		100		80	-			1										
2.36		100		00				1										
1.18		100		70														
0.600		90			-													
0.425		75		<b>€</b> 60														
0.300		49		5	1		- 1											
0.150		24		\$ 50			_ [											
0.075		18		(%) Busseut Passing (%) 20 10	_	1	/											
				0	0.075	0.150	0,300	0.425	0.600 AS	1,18 Sleve	22 38 Size (mr	4.75	6.7	9.5	13,2	19,0	26.5	7 37.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1529-1

A05 Sample 1 Depth 0.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

26/08/2015

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

Perth

AS1289.3.6.1 Sample Location

**Test Request** 

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	174	4.7	PAR	TICLE	ST	ZE D	ISTR	IBU	TION	V G	RAP	H			
37.5		100		100							_		-					
19.0		100		à	5													
9.5		100		91	1													
4.75		100		8				1										
2.36		100		.00	,			T										
1.18		100		7	1 -													
0.600		96						1										
0.425		80		≥ 61	1			_										
0.300		44		E E														
0.150		10		\$ 5	1 -		_											
0.075		2		11.			1											
				Percent Passing (%)	3		-/											
				ď			1											
				30	3		1											
				-			/											
				21	3	- /												
				145														
				10	1	/												
				14	/													
					0.0	0.1	0.3	0.4	0.6	1	N	)	4.7	6.7	9.5	3 5	26.	
					75	8	8	25	8	00	ō	٧.	O,		. 1	0 0	0	
					0.075	0.150	0,300	0.425		1.18 Sleve	Size			6.7	1	9.5	13,2 9,5	26.5 19,0 13,2 9,5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1530-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A05 Sample 2 Depth 0.2m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6446

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Material Source -

Sample Location

Test Request

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			P	ART	TCLE	SI	ZE C	ISTR	IBU	TION	G	RAF	Н			
37.5		100			100 —						_	_		-		-		-	
19.0		100			45														
9.5		100		1.0	90 -				1										
4.75		100			200				1										
2.36		100		- 1	80 -				1										
1.18		100			70 -				1										
0.600		96		~	,,,				1										
0.425		82		8	60				_										
0.300		51		5															
0.150		11		955	50 -			- 1											
0.075		3		Percent Passing (%)	40 - 30 - 20 - 10 -		-0.150	0.300	0.425		1.18	2.36		O.C	6.7	9,5	13.2	19.0	37.5
										AS	Sleve	Size	(mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Test Request

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1531-1

Project Number: 5029/P/256

Lot Number: A05 Sample 3 Depth 0.5m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Yellow SAND

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6447

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Material Source - Material Type

Specification Percent Specification PARTICLE SIZE DISTRIBUTION GRAPH AS Sieve (mm) Minimum Passing (%) Maximum 100 37.5 100 19.0 100 90 9.5 100 100 4.75 80 2.36 100 100 1.18 70 0.600 96 8 78 0.425 60 Percent Passing 0.300 42 0.150 7 50 2 0.075 40 30 20 10 0 0.075 0.600 0.425 0.300 AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury 08 9726 2187

Phone:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Sample Location

5029/R/1532-1

A05 Sample 4 Depth 0.8m

5029/P/256

08 9721 2348

Fax:

Report Number:

Project Number:

Lot Number:

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6448

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 20/08/2015

Material Source Yellow SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	.537	n	PAR	TICLE	SIZ	ZE D	ISTR	IBUT	ION	GR	APH				
37.5		100		100	1						_			_		-		-
19.0		100			-													
9.5		100		90	1			1										
4.75		100		80	-			1										
2.36		100		00				1										
1.18		100		70	1													
0.600		95			-			1										
0.425		78		€ 60	1													
0.300		40		5	1													
0.150		8		\$ 50	1		_											_
0.075		2		60 60 50 40 40 20 10 10 0		0.150	0.300	0.425	50.600	-1,18	- 2.36		7.0	ນ ເປັນ	13.2	19,0	26.5	+ 37.5
					01	9	-	O,		Sieve	Size (	mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project:

Location: Perth

Area Description:

Component:

Keane Road Pressure Main

Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259

Report Date / Page: 26/08/2015

Sample Location

5029/R/1533-1

A05 Sample 5 Depth 1.0m

Page 1 of 1

5029/P/256

08 9721 2348

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6449

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 20/08/2015

Material Source Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	ICLE	SIZE	DIST	RIB	UTIO	N G	RAI	Н			
37.5		100		1	100				1		-	_	_	-		_	-
19.0		100			45			,									
9.5		100		. 14	90												
4.75		100			00			-/									
2.36		100		- 6	80 -												
1.18		100			70 -			1									
0.600		93			,0			1									
0.425		74		8	60												
0.300		39		5	-												
0.150		10		SSE	50 -		_ /										
0.075		6		be	40 30 - 20 - 10 - 0.075	- 0.150	- 0.300	0.425	AS Sie		2.36 e (min		6.7	9.5	13.9	26.5	F 37,5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1534-1

Project Number: 5029/P/256

Lot Number: A05 Sample 6 Depth 1.3m

Sample Location

08 9721 2348

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6450

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

2010

Material Source - Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	THITTEE SIEE SIE SIE SIE SIE SIE SIE SIE SIE
37.5		100		100
19.0		100		
9.5		100		90
4.75		100		80
2.36		100		.00
1.18		100		70 -
0.600		93		
0.425		74		€ 60
0.300		46		Gr.
0.150		16		50 -
0.075		12		26.5 19.0 19.0 13.2 9.5 6.7 4.75 0.300 0.425 0.300 0.075
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g gul-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number:

Project Number: 5029/P/256

Lot Number: A05 Sample 7 Depth 1.5m

Sample Location

08 9721 2348

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Grey Silty SAND

5029/R/1535-1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6451

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 20/08/2015

Material Source Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-533		PART	TCLE	SIZ	E DI	STRI	BUTIO	N G	RA	PH			١	
37.5		100		100	I						_	_	_	-		-	_	1
19.0		100		- 25	-				/									
9.5		100		90				1										1
4.75		100		90	-			/										
2.36		100		80				1										
1.18		100		70				1										
0.600		91			-			1										
0.425		74		€ 60	1			_										
0.300		44		5														
0.150		16		% 50	-		-1											-
0.075		11		(%) 60 50 40 30 20 10		1	<i>†</i>											
				0	0.075	0.150	0.300	0.425		-1,18	2.36 Size (mi	4.75	6.7	9.5	13,2	19.0	26.5	F 37.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1536-1

08 9721 2348

5029/P/256 Project Number:

Lot Number: A05 Sample 8 Depth 1.8m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6452

Sampling Method Tested As Received

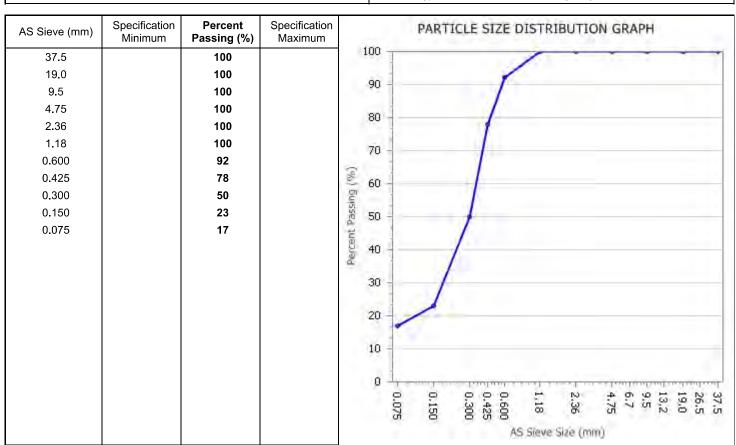
11/08/2015 **Date Sampled** Client Sampled Sampled By 20/08/2015 **Date Tested** 

Material Source

Material Type

Test Request

Grey Silty SAND



Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1537-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A05 Sample 11 Depth 2.5m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6455

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Sampled

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICLE	SI	ZE D	ISTR	IBUTIO	ON G	RA	PH				
37.5		100			100					1	_	_	_	-		-		•
19.0		100			40.				1									
9.5		100			90				1									
4.75		100			00				/									
2.36		100			80 -													
1.18		100			70 -													
0.600		88			70			4										
0.425		66		188	60													
0.300		34		Ē	-													
0.150		11		355	50 -			1										
0.075		8		Percent Passing (%)	40													
					0.075	0.150	0.300	0.425	0,600 AS	1,18 Sleve	2.36 Size (m	- 4.75 m)	6.7	9.5	13,2	19,0	26.5	737,5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1538-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A05 Sample 12 Depth 2.8m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 26/08/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6456

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Sampled

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TCLE	SIZ	E DI	STRI	BUTIO	ON G	RA	PH			
37.5		100		1	00 —					/	_	_		-		-	
19.0		100			00				/								
9.5		100			90 -												
4.75		100			80 -												
2.36		100			00			1									
1.18		100			70 -			1									
0.600		89			,,			I									
0.425		70		8	60												
0.300		37		5	27												
0.150		13		255	50 -												
0.075		10		ď	40 - 30 - 20 -	1	1										
					0.075	0.150	0,300	0.425		1,18 Sieve	2.3 Size (m	- 4.75 E	6.7	9.5	13,2	19.0	26.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 **Laboratory: Geotech Bunbury Phone:** 08 9726 2187

**Phone:** 08 9726 2187 **Fax**:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Lot Number:

08 9721 2348

5029/R/1539-1

A05 Sample 13 Depth 3.5m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

Sample Location

26/08/2015

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description: Report Date / Page:

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6457

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		- 1	PAR	TICLE	SIZ	E DIS	TRIE	BUTIC	N G	RA	PH			
37.5		100		10	00				-		-	_	_	-	_	_	-
19.0		100							/								
9.5		100		-	90												
4.75		100			80 -												
2.36		100			00												
1.18		100		15	70 -			1									
0.600		91															
0.425		72		€ 6	60			1									
0.300		35		5				1									
0.150		9		SSE S	50 -												
0.075		6		2	30 - 20 - 10 - 0 -0.075	- 0.150	0.300	0,425	0.600	-1.18	2.36	- 4.75	6.7	9.5	13.2	26.5	37.5
					25	50	8	25 8						20 1	0 0	0 01	G
									AS S	eve S	ize (mi	n)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:

g Juli



Cardno Geotech Pty Ltd ABN: 48 137 480 034

Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Material Source

Component:

Report Number: 5029/R/1757-1

Project Number: 5029/P/256

Lot Number: A05 Sample 15 Depth 4.8m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6458

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled

Date Tested 20/08/2015

Sample Location
Test Request

Area

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	TANTIER SIEE DISTINGUITON SIMILIT
75.0		100		100
37.5		100		and the state of t
19.0		100		90 -
9.5		100		80
4.75		100		.00
2.36		99		70
1.18		98		
0.600		65		\$ 60
0.425		46		8
0.300		28		× 50 -
0.150		12		2
0.075		9		60
				75.0 37.5 26.5 119.0 1.18 2.36 2.36 0.425 0.425 AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Cardno Geotech Pty Ltd ABN: 48 137 480 034

Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1758-1

Project Number: 5029/P/256

Lot Number: A05 Sample 18 Depth 7.5m

Sample Location

Page 1 of 1

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6459

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

015 Area

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	- 555	N	PAR	TICLE	SIZ	E DIS	TRIBL	MOIT	GRA	PH		
75.0		100		100	I		1	_	_	_	_		7	_	
37.5		100		43	-		1								
19.0		100		90	1		1								
9.5		100		90			/								
4.75		100		80	1										
2.36		100		70	. 1	/									
1.18		100			-										-
0.600		100		€ 60	1	1									
0.425		99		ē	1	- 1									
0.300		96		% 50	1	1									
0.150		63		12	1										
0.075		12		Percent Passing (%)	4-	1									
				2	1										
				30	1										
					1/										
				20	1										
				140	-1										
				10	J										
				0	1										
				0		9	00	0	-	N.	4 0	0 95	12	Νω	<b>A</b> A
					0.075	0.150	0.423	0.600	1.18	2,36	4.75	2.5	2 9	5 5	75.0 53.0
					0,	9	- 0	. 0	AS Sie	ve Size	(mm)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g zul-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 08 9721 2348

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6460

20/08/2015

Location: Perth

Area Description:

Sample Number

**Date Tested** 

Component:

Test Procedures: AS1289.3.6.1

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled

Material Source -

Report Number: 5029/R/1759-1

Project Number: 5029/P/256

Lot Number: A06 Sample 1 Depth 0.0m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

Sample Location

Page 1 of 1

Test Request

Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E ST	E DIS	TRIBU	MOIT	G	RAP	H			
75.0		100		10	00				/		_						
37.5		100						Ī									
19.0		100		-	90 -												
9.5		100			30 -												
4.75		100			,0												
2.36		100		-	70 -			1									
1.18		100															
0.600		95		8 6	50			1									
0.425		71		5													
0.300		30		255	50 -												
0.150		7		12													
0.075		2		Percent Passing (%)	10 -		-1										
				4	1												
				2	30 -		1										
							1										
				2	20 -		/										=
				19	10	1											
					0												
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	2 2	13.2	19.0	26.5	37.5	75.0
					-			100		ve Sizi	e (mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

paul.kent@cardno.com Email:

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description: Test Procedures:

Sample Number

AS1289.3.6.1

Sampling Method Tested As Received

5029/S/6461

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 20/08/2015

Material Source

Sample Location

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1760-1

A06 Sample 2 Depth 0.3m

Page 1 of 1

5029/P/256

5029/T/1144

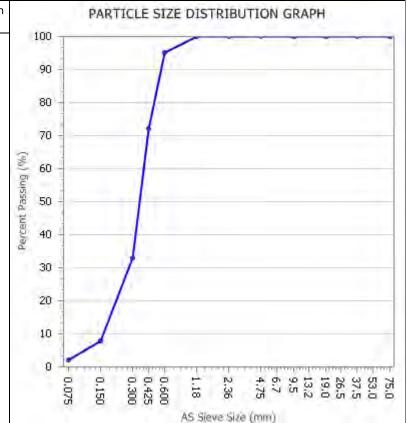
61/32259

05/09/2015

**Test Request** Area

Yellow SAND Material Type

im   Passing (%)   Maximum	TICLE S
100	
100	
100	
100	
100	
100 70	- 1
100	- 1
95	_
72	
33 8 50 -	-1-
8	
95 72 33 8 2	-1
	1
30 -	/
20	
10	
0	



Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 **Laboratory: Geotech Bunbury Phone:** 08 9726 2187

**Phone:** 08 9726 2187 **Fax:** 

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1761-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A06 Sample 3 Depth 0.5m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015 Page 1 of 1

Yellow SAND

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6462

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled

Date Tested 20/08/2015 Material Source -

Material Type

**Test Request** 

Area

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		241	PAR	TICL	E SI	ZE DIS	TRIBU	ITION	GRAI	PH		
75.0		100			100				/	_	_			_	
37.5		100			00			7							
19.0		100			90 -			- 1							
9.5		100			80 -										
4.75		100			00										
2.36		100			70 -										
1.18		100		~	, ,			1							
0.600		94		8	60			1_							
0.425		65		5											
0.300		27		355	50 -			1							
0.150		5		H				1							
0.075		1		Percent Passing (%)	40 -										
				4											
					30		-1								
							1								
					20 -		/								
					10	/									
					10 -	/									
					0	_									
					0 4	0	0	0 0	4	N	4 0	9 !	± N	υω	01 74
					0.075	0.150	300	0.600	18	2,36	4.75	9.5	9.0	7.5	75.0 53.0
					Ů.	0	9	31 C		ve Size	(mm)				
									1,000 0010	(control	(William)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

08 9721 2348

5029/R/1762-1

A06 Sample 4 Depth 0.7m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Sample Number

Component:

AS1289.3.6.1 5029/S/6463 Sample Location

Area

Sampling Method Tested As Received **Test Request** 

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 20/08/2015

Material Source Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	THE STATE OF THE S
75.0		100		100
37.5		100		
19.0		100		90
9.5		100		80
4.75		100		.00
2.36		100		70 -
1.18		100		
0.600		93		€ 60
0.425		68		E .
0.300		29		% 50 -
0.150		8		2
0.075		4		(%) 60 - 60 - 60 - 60 - 60 - 60 - 60 - 60
				30 -
				20
				10
				10
				0 1
				75.0 53.0 37.5 26.5 19.0 13.2 9.5 6.7 4.75 2.36 0.425 0.300 0.150
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

\_\_\_\_\_

Report Date / Page: 05/09/2015

Internal Test Request:

Client Reference/s:

Report Number:

Project Number:

Lot Number:

Test Procedures: AS1289.3.6.1
Sample Number 5029/S/6464

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Material Source -

Sample Location

08 9721 2348

5029/R/1763-1

A06 Sample 5 Depth 1.1m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

Area

**Test Request** 

Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBU	TION	GRA	PH			
75.0		100		100	T				/	_	_		-	_	_	
37.5		100		431	-			1								
19.0		100		90	1			- 1								٦
9.5		100			-			- 1								
4.75		100		80	1											
2.36		100		70												
1.18		100			-			1								
0.600		92		60 50 40 (%)	1											
0.425		68		5												
0.300		31		\$ 50	1		_									
0.150		10		12	1		- 1									
0.075		6		9 40	4-		-1									-
				a.	1		- 1									
				30	+		1									-
				2.24			/									
				20	1	1										
				16	1	/										
				10	-	_										
				0												
				0	9	0	0	00	+	N.	4 0	95		20 6	, OI	7.
					0.075	0.150	30	0.600 0.425	1.18	2,36	4.75	i or i	19.0	5 6	8	75.0
					9,	9	-	e, 9	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Test Procedures: AS1289.3.6.1 Sample Number 5029/S/6465

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 20/08/2015

Material Source

Report Number: 5029/R/1764-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A06 Sample 6 Depth 1.3m

Sample Location

Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

Page 1 of 1

**Test Request** 

Area

Yellow silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	THITTEE SIEE SIE SIE SIE SIE SIE SIE SIE SIE
75.0		100		100
37.5		100		
19.0		100		90
9.5		100		80
4.75		100		.00
2.36		100		70 -
1.18		100		7
0.600		92		€ 60
0.425		68		Bug .
0.300		37		50 -
0.150		13		a de la companya de l
0.075		9		(%) 60 - 60 - 60 - 60 - 60 - 60 - 60 - 60
				30
				20
				10
				p 1
				75.0 53.0 37.5 26.5 19.0 13.2 9.5 6.7 4.75 2.36 0.600 0.425 0.300 0.150
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

\_\_\_\_\_

Test Procedures: AS1289.3.6.1
Sample Number 5029/S/6466

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Material Source -

Report Number: 5029/R/1765-1

Project Number: 5029/P/256

Lot Number: A06 Sample 7 Depth 1.4m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

Sample Location

Page 1 of 1

**Test Request** 

Area

Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	THITTEE SIEE SIE SIE HIS THE SIGN SIGN
75.0		100		100
37.5		100		
19.0		100		90
9.5		100		80
4.75		100		00
2.36		100		70 -
1.18		100		
0.600		93		€ 60
0.425		70		Gr.
0.300		38		50 -
0.150		12		2
0.075		8		60 - 60 - 60 - 60 - 60 - 60 - 60 - 60 -
				75.0 10 0 10 0.500 0.4.75 0.4.75 0.4.75 AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g zul-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

AS1289.3.6.1

 Test Procedures:
 AS1289.3.6.1

 Sample Number
 5029/S/6468

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Material Source -

Sample Location

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1767-1

A06 Sample 9 Depth 2.1m

Page 1 of 1

5029/P/256

5029/T/1144

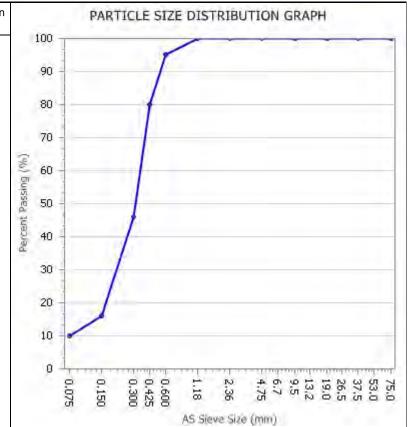
61/32259

05/09/2015

Test Request Area

Material Type Grey Silty SAND

AS Sieve (mm)	Specification	Percent	Specification	
710 Oleve (ITIIII)	Minimum	Passing (%)	Maximum	
75.0		100		
37.5		100		
19.0		100		
9.5		100		
4.75		100		
2.36		100		
1.18		100		
0.600		95		
0.425		80		
0.300		46		
0.150		16		
0.075		10		



Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6469

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

\_\_\_\_\_

AS1289.3.6.1

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Material Source -

Report Number: 5029/R/1768-1

Project Number: 5029/P/256

Lot Number: A06 Sample 10 Depth 2.3m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

Sample Location

Page 1 of 1

Test Request

Area

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	THE STATE OF THE S
75.0		100		100
37.5		100		40
19.0		100		90 -
9.5		100		80
4.75		100		.00
2.36		100		70 -
1.18		100		
0.600		95		€ 60
0.425		81		Bu .
0.300		44		50 -
0.150		15		1
0.075		10		(%) 60 - 50 - 40 - 40 - 40 - 60
				30
				20
				10
				75.0 75.0 37.5 26.5 19.0 19.0 13.2 0.425 0.300 0.150
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project:

Location: Perth

Area Description:

Component:

Keane Road Pressure Main

Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259 Report Date / Page: 05/09/2015

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6470

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 20/08/2015

Material Source

Sample Location

5029/R/1769-1

A06 Sample 12 Depth 2.8m

Page 1 of 1

5029/P/256

**Test Request** Area

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	100		PAR	TICLE	SIZ	E DIS	TRIBL	TION	GRA	API	H			
75.0		100		100				-		_	~				_		-
37.5		100		o.				1									
19.0		100		90				/									
9.5		100		80	1			f									
4.75		100		00													
2.36		100		70	1												
1.18		100		200	+		- 1										
0.600		97		(%) Buissed treated	1												
0.425		84		5 up			- 1										
0.300		45		S 50	1 -		-1										
0.150		16		TUE I	1		1										
0.075		13		9 40	1		-/-										
				-	1		/										
				30	) -												
				0.54		_/											
				20	1												
				10	-												
				10													
				0	1												
				,	0.075	0.150	0.300	0.600	1.18	2,36	4.75	9 5	13.2	19,0	37.5	53.0	1.c/
				_/			100.0	45.12	AS Sie	ve Size	(mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

08 9721 2348

5029/R/1770-1

A07 Sample 1 Depth 0.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

AS1289.3.6.1

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Sample Number

Component:

5029/S/6471 Sample Location

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 20/08/2015

Material Source

**Test Request** 

Internal Test Request:

Client Reference/s:

Report Date / Page:

Report Number:

Project Number:

Lot Number:

Area

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBU	MOITL	GR	RAP	H			
75.0		100		100	1						_						
37.5		100		00													
19.0		100		90													
9.5		100		80	1			1									
4.75		100		-00	1												
2.36		100		70	1												
1.18		100			-												-
0.600		97		Percent Passing (4%)	1												
0.425		81		Đ.	1		- 1										
0.300		50		50	1		1										
0.150		20		nt F	1		/										
0.075		10		9 40	4-		1										
				P	i		/										
				30	+	-/											
					1	1											
				20	+	1											
				- 26	1												
				10	-												
					7												
				0	0.075	0.150	0.300	0.600	1.18	2,36	4.75	n in	13.2	19.0	26.5	37.5	75.0
					٠.			T	AS SIA	ve Size	(mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description: Test Procedures:

Sample Number

AS1289.3.6.1 5029/S/6472

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Client Sampled Sampled By 20/08/2015 **Date Tested** 

Material Source

Sample Location

08 9721 2348

5029/R/1771-1

A07 Sample 2 Depth 0.3m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Area

Test Request

Material Type Yellow silty SAND

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

Specification Percent Specification PARTICLE SIZE DISTRIBUTION GRAPH AS Sieve (mm) Minimum Passing (%) Maximum 100 75.0 100 37.5 100 90 19.0 100 100 9.5 80 4.75 100 2.36 100 70 100 1.18 8 0.600 93 60 Percent Passing 0.425 69 0.300 34 50 12 0.150 0.075 40 30 20 10 0 75.0 53.0 37.5 26.5 19.0 19.0 13.2 9.5 4.75 0.075 AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

08 9721 2348

5029/R/1773-1

A07 Sample 4 Depth 0.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

Realle Road Flessule Mail

AS1289.3.6.1 5029/S/6474 Sample Lo

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

Material Source -

Sample Location
Test Request

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

Area

Material Type Yellow Sandy SILT

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	China i		PAR	TICLE	SIZ	E DIS	TRIBL	OITL	G	RAP	H			
75.0		100		100	I								_				
37.5		100		00	-						_						
19.0		100		90				-									
9.5		98		90	-			1									
4.75		94		80			- 1	1									
2.36		91		70	1		/										
1.18		90			+		1										
0.600		84		Percent Passing (%) 20	1		/										
0.425		77		9			/										
0.300		66		% 50	1	_ /											
0.150		43		E E	1												
0.075		28		8 40	4-	1											
				ď													
				30	1												
				20	+												
					4												
				10	1												
					1												
				0	0		O.	queq-		P.S	- A	D	o H	200	man.	0. (0	चन्त्र
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	3 6	7 32	19.0	6.5	1 0	5.0
					O.	0	0 (	u 0		ve Size						117	- 7

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Lot Number:

5029/R/1774-1

A07 Sample 5 Depth 1.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

AS1289.3.6.1

 Test Procedures:
 AS1289.3.6.1

 Sample Number
 5029/S/6475

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Material Source -

Sample Location

Internal Test Request:

Client Reference/s:

Report Date / Page:

Test Request Area

Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	541	Ų.	PART	TICLE	SIZ	E DIS	TRIBL	TION	GRA	APH			
75.0		100		100	1				/	_	_	7			_	
37.5		100		-	-			1								
19.0		100		90				1								
9.5		100		90			_/									
4.75		100		80			1									
2.36		100		70			1									
1.18		100			-		/									
0.600		95		Percent Passing (%)	1											
0.425		87		5		/										
0.300		73		% 50		_/										_
0.150		43		11	1	1										
0.075		29		9 40	-	/										-
				a.	1											
				30	1											-
				20	1											
				-34	4											
				10												
					1											
				0	0	0	0.0	3 0	4	N	2.4	0	gron H	: N	ωσ	7
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	2.6	13.2	26.5	7.5	75.0
					Ü	9	9,1	,, O	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

5029/R/1775-1

A07 Sample 6 Depth 1.3m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Component:

Perth

AS1289.3.6.1

Sample Number 5029/S/6476
Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 20/08/2015

Material Source -

476 Sample Location

Test Request

Area

Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBU	MOITL	G	RAP	H			
75.0		100		100	I				/	_	_						
37.5		100		00	-			1									
19.0		100		90				1									
9.5		100		80													
4.75		100		00													
2.36		100		70	1												
1.18		100			+		1										
0.600		96		60 50 40			/										
0.425		87		Đ.			/										
0.300		69		\$ 50	1												
0.150		36		DE P	1	1											
0.075		25		9 40	4-	_/											
				A		1											
				30	1												
					1												
				20	-												
				.16	1												
				10	1												
				0	0.075	0.150	0,300	0.600	1.18	2,36	4.75	200	13.	19.0	26.	3 53	75,
					75	8	8	8 2	00	9/	Oi		N	0	01 0	ло	0
									AS Sie	ve Size	e (mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g zul-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

paul.kent@cardno.com Email:

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Internal Test Request: Client Reference/s:

Report Date / Page:

Lot Number:

Report Number:

Project Number:

61/32259 05/09/2015

5029/R/1776-1

A07 Sample 7 Depth 1.5m

5029/P/256

5029/T/1144

08 9721 2348

Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6477

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 20/08/2015

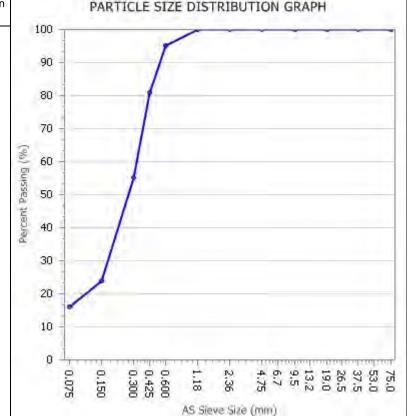
Material Source

Sample Location

**Test Request** Area

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		PARTICLE SIZE DI
75.0		100		100	
37.5		100		00	
19.0		100		90 -	
9.5		100		80	
4.75		100		00	
2.36		100		70 -	
1.18		100			
0.600		95		£ 60 -	
0.425		81		E I	1
0.300		55		½ 50 -	
0.150		24		5	/
0.075		16		Percent Passing (%)	
				-	
				30 -	
				20	
				20 -	
				10 -	
				,0	
				0 1	
					0.60 0.42 0.30
				0.0/5	0.600 0.425 0.300 0.150



Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Project Number: Lot Number:

> Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259

Report Number:

Report Date / Page: 05/09/2015 Page 1 of 1

5029/R/1777-1

A07 Sample 8 Depth 1.8m

5029/P/256

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6478

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 20/08/2015

Material Source

Sample Location

08 9721 2348

**Test Request** 

Area

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	1000		PAR	TICLE	SIZ	E DIS	TRIBL	TION	GRA	API	1			
75.0		100		100	I				/	_	_				_	_	-
37.5		100		00	-			1									
19.0		100		90				1									
9.5		100		80													
4.75		100		.00				1									
2.36		100		70													
1.18		100			-												
0.600		93		€ 60	1		_										
0.425		77		5 us	1		- 1										
0.300		45		% 50	4		-1										
0.150		20		115			1										
0.075		11		Percent Passing (4%)	4-		1										
				-	1		/										
				30	1	-/											
						/											
				20	To:	/											Ī
				10	/												
				10	1												
				0	1							*******	oren	.,,,,,,,,,		10111	-
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.50	13,2	19.0	37.5	53.0	7
							13.1		AS Sie	ve Size	(mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Component:

AS1289.3.6.1

Sample Number 5029/S/6480 Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 20/08/2015

Material Source

Sample Location

08 9721 2348

5029/R/1779-1

A07 Sample 10 Depth 2.3m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

**Test Request** Area

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	THE STEE STEE STOP IN SHAFT
75.0		100		100
37.5		100		
19.0		100		90
9.5		100		90
4.75		100		80
2.36		100		70 -
1.18		99		
0.600		92		(%) 60 - 50 - 40 - 40 -
0.425		58		E 1
0.300		35		% 50 -
0.150		11		2
0.075		7		8 40 -
				30
				20
				(0)
				10
				p 1
				6 6 666 F 6 46677788777
				75.0 53.0 37.5 26.5 119.0 113.2 9.5 4.75 4.75 2.36 0.600 0.425 0.300 0.150
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Client Reference/s: Report Date / Page:

**Test Request** 

Material Type

Area

Internal Test Request: 5029/T/1144

Sample Location

08 9721 2348

61/32259

05/09/2015 Page 1 of 1

A07 Sample 11 Depth 2.5m

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6481

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 20/08/2015

Material Source

Grey Silty SAND

5029/R/1780-1

5029/P/256

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	PARTICLE SIZE DISTRIBUTION GRAPH	
75.0		100		100	
37.5		100			
19.0		100		90 -	
9.5		100		80	
4.75		100		.00	
2.36		100		70 -	
1.18		99			
0.600		88		90 - 40 - 40 - 40 - 40 - 40 - 40 - 40 -	
0.425		64		S. C.	
0.300		30		V 50 -	4
0.150		10		E .	
0.075		7		8 40 -	-
				30 -	-1
				20	
				10	
				0	
					74
				53.0 37.5 26.5 19.0 13.2 9.5 6.7 4.75 2.36 0.425 0.300 0.425 0.300	75.0
				AS Sieve Size (mm)	

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

08 9721 2348

5029/R/1781-1

A07 Sample 12 Depth 2.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

Sample Location

05/09/2015

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

## PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Component:

AS1289.3.6.1

Sample Number 5029/S/6482 Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled

**Date Tested** 20/08/2015

Material Source **Grey SAND** Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	1764		PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		100	T				1	_	_				_	_
37.5		100														
19.0		100		90				1								
9.5		100		80	. 1			- /								
4.75		100		.00				1								
2.36		100		70												
1.18		100			-											
0.600		88		<sup>8</sup> 60	1			<u>†                                    </u>								
0.425		63		5u	1			1								
0.300		34		\$ 50												
0.150		18		TE P			- 1									
0.075		16		Percent Passing (%)	4-											
				a.	1		1									
				30	1		/									
					1	/										
				20	1	_	-									
				10	1											
					1											
				0	0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	2 4	26	37.5	3 9
					75	50	8	8 2				, b	3 C	2 01	on c	3 2
									AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6483

Location: Perth

Area Description: Test Procedures:

Sample Number

Component:

AS1289.3.6.1

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled **Date Tested** 25/08/2015

Material Source

Sample Location

08 9721 2348

**Test Request** Area

Material Type

Grey Silty SAND

5029/R/1782-1

A08 Sample 1 Depth 0.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SI	ZE DI	STRIB	UTIO	N GR	AP	H			
75.0		100		1	00				/	_	_						7
37.5		100			00			7									
19.0		100			90 -			- 1									
9.5		100			80			- [									
4.75		100			00												
2.36		100			70 -												
1.18		100						1									
0.600		93		Percent Passing (%)	60			1									
0.425		68		5	200			1									
0.300		32		255	50 -			_									_
0.150		9		11													
0.075		4		e) CB	40 -		-1										_
				d			- 1										
					30		1										
					- 1		/										
					20 -	-											
					14	/											
					10 -	1											
					0												
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	6.7	13,2	19.0	37.5	53.0	1000
					O.	-	-	J. C		leve Si	ia (min	5					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

AS1289.3.6.1

5029/S/6484

11/08/2015

25/08/2015

Client Sampled

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Sample Number

Sampling Method

Date Sampled

Sampled By

Date Tested

Component:

Sample Location

Internal Test Request:

Client Reference/s:

Report Date / Page:

Report Number:

Project Number:

Lot Number:

5029/R/1783-1

A08 Sample 2 Depth 0.2m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Tested As Received **Test Request** 

Area

Material Source Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		Ų.	PAR	TICL	E ST	ZE DIS	TRIB	OITL	V GR	APF	ł		
75.0		100		100	1				/	_	_	_			_	
37.5		100		-	-			1								
19.0		100		90				1								
9.5		100		80				/								
4.75		100		00				Î								
2.36		100		70												
1.18		100			-											
0.600		95		€ 60	1		_									
0.425		79		E E			- 1									
0.300		48		\$ 50	-											
0.150		21		11	1		1									
0.075		14		Percent Passing (%)	4-		1									
				-	1		/									
				30		-/										
				CKA		1										
				20		-										
				100	-											
				10												
				0	1											
				0	0	0	0	0 0	-	N.	4-	0 0	H :	÷ ≥	ω	Ú 74
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	6.7	13.2	26.5	7.5	2 75.0
					31	-	-	ų, u		eve Siz	e (mm	)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

enace, i Livini

Internal Test Request: 5029/T/1144
Client Reference/s: 61/32259

Report Date / Page: 05/09/2015

Sample Location

5029/R/1784-1

A08 Sample 3 Depth 0.5m

Page 1 of 1

5029/P/256

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6485

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

25/00/20

Material Source - Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	200		PAR	TICLE	SIZ	E DIS	TRIBU	JTION	GRA	PH		
75.0		100		100					1	_	_		7	_	
37.5		100		46				,							
19.0		100		90 -				1							
9.5		100		80 -											
4.75		100		.00				1							
2.36		100		70 -				1							
1.18		100						I							
0.600		90		≥ 60 -				-							
0.425		70		5			- 1								
0.300		41		% 50 -			-1								
0.150		20		int.			- 1								
0.075		16		90 Sercent Passing (%)	_	1	1								
				o -	0.075	- 0.150	0.300	0.600	AS Sie	2,36 eve Size	4.75 (mm)		19.0	26.5	75.0 53.0

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Report Number: 5029/R/1785-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A08 Sample 4 Depth 0.8m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6486

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 25/08/2015

Material Source Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	500	PAR	TICL	E ST	E DIS	TRIBU	NOITL	GR/	APH		
75.0		100		100 —				1	_	_		7	_	
37.5		100		46				/						
19.0		100		90 -				/						
9.5		100		90			1							
4.75		100		80 -			1							
2.36		100		70 -										
1.18		100												
0.600		85		Percent Passing (%)			1							
0.425		60		5			1							
0.300		31		\$ 50 -			_							
0.150		15		T THE E										
0.075		12		§ 40 -		-1								
				4										
				30 -		1								
				Csa.		/								
				20 -	1									
				10										
				10 -										
				0 1										
					0	0	0 0	-	N	4.79	2.6	2 5	22 33	57 74
				0.075	0.150	0.300	0.600	1.18	2,36	4.75	a ou	13.2	37.5 26.5	75.0 53.0
				-					eve Sizi	e (mm)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Area Description:

Material Source

Component:

5029/R/1831-1 Report Number:

Project Number: 5029/P/256

Lot Number: A08 Sample 5 Depth 1.0m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6487

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested

25/08/2015

Material Type

Area

**Test Request** 

Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	264	PAR	TICL	E SIZ	E DIS	TRIBU	NOITU	GR/	NPH		
75.0		100		100				1	_	_	7	_	_	
37.5		100		40				/						
19.0		100		90 -			1							
9.5		100		80 -										
4.75		100		00 -										
2.36		100		70 -			1							
1.18		100					f							
0.600		89		€ 60 -			_							
0.425		68		gi .										
0.300		38		\$ 50 -										
0.150		16		120		- 1								
0.075		12		Percent Passing (%)		-1								
				4		1								
				30 -		1								
						/								
				20 -		-								
				16										
				10 -										
				0.4										
				0 +	0	0	0 0	7	N	4	0 0	4.000	NW	01 7
				0.075	0.150	0.300	0.600	1.18	2,36	4.75	2.0	19.0	26.5	53.0
				O.	-	0	0, 0	AS Sie	we Size	e (mm)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Lot Number:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Component:

AS1289.3.6.1

Sample Number 5029/S/6488

Sampling Method Tested As Received 11/08/2015

Date Sampled Sampled By Client Sampled Date Tested 25/08/2015

Material Source

Report Date / Page: 05/09/2015

Sample Location

08 9721 2348

5029/R/1786-1

A08 Sample 6 Depth 1.2m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

**Test Request** 

Area

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-	P/	ARTICI	E SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		100 -	1			1	_	_				_	_
37.5		100		00											
19.0		100		90 -			1								
9.5		100		80											
4.75		100		00											
2.36		100		70 -			1								
1.18		100			-		I								
0.600		89		€ 60 -	1		1								
0.425		70		5											
0.300		43		50 -											
0.150		21		DE F	1										
0.075		15		(%) 60 - 60 - 50 - 40 - 30 - 20 - 10 - 10 - 60 - 60 - 60 - 60 - 60 - 6											
				0 -	0.075	0.300	0.600	1.18 AS Sie	2,36 ve Size	4.75 (mm)		13.0	26.5	37.5	53.0

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Material Source

Component:

Report Number: 5029/R/1787-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A08 Sample 8 Depth 1.8m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6490

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Sampled By Client Sampled 25/08/2015

**Date Tested** 

Sample Location

**Test Request** 

Area

Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICLE	SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		100	I				1	_	_				_	
37.5		100		00	-			1								
19.0		100		90				1								
9.5		100		80												
4.75		100		00												
2.36		100		70				1_								
1.18		100			+											
0.600		90		Percent Passing (%) 20 40	1		_									
0.425		72		5 mg			- 1									
0.300		45		6 50	-		-1									
0.150		21		INT.	1		1									
0.075		14		9 40	-		1									
					1		/									
				30	1	-/										
						1										
				20	1											
				10	-											
				10	4											
				0	1							********				
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	95	13.0	26.5	37.5	23.0
							13.1	10	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

\_..\_, \_..\_, \_\_.

Internal Test Request: 5029/T/1144
Client Reference/s: 61/32259

Report Number:

Project Number:

Lot Number:

Report Date / Page: 05/09/2015

5029/R/1789-1

A08 Sample 10 Depth 2.3m

Page 1 of 1

5029/P/256

08 9721 2348

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6492

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

Material Source -

Sample Location

Area

**Test Request** 

Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBU	TION	GRA	H		
75.0		100		1	.00				1	_	_		7	_	
37.5		100			-				/						
19.0		100			90 -			1							
9.5		100			80			- 1							
4.75		100			00										
2.36		100			70 -										
1.18		100			,0										
0.600		86		Percent Passing (%)	60										
0.425		54		5	7.										
0.300		24		55	50 -			I							
0.150		13		H P											
0.075		11		E CB	40 -			_							
				9											
				1	30 -		-1								
							J								
					20 -		/								
					W. 1	1									
				1.11	10 -										
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	19,0	37.5	75.0 53.0
					-		100		AS Sie	ve Size	(mm)				

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Area Description:

Material Source

Component:

Report Number: 5029/R/1832-1

Project Number: 5029/P/256

Lot Number: A08 Sample 11 Depth 2.5m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6493

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 25/08/2015 **Test Request** 

Area

Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	THE SEE SEE STOP HE STOP STOP
75.0		100		100
37.5		100		
19.0		100		90
9.5		100		80
4.75		100		.00
2.36		100		70 -
1.18		99		
0.600		81		€ 60
0.425		48		Di Control de Control
0.300		22		§ 50 -
0.150		11		2
0.075		9		(%) 60 - 60 - 60 - 60 - 60 - 60 - 60 - 60
				30
				Coa I
				20
				10
				10
				p 1,
				0 0 000 t b 400ttback
				75.0 53.0 37.5 26.5 19.0 13.2 9.5 6.7 4.75 2.36 0.425 0.300 0.150
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

08 9721 2348

5029/R/1790-1

A08 Sample 12 Depth 2.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:
Test Procedures:

Sample Number

. Feitii

Sample Location

Report Number:

Project Number:

Lot Number:

5029/S/6494

AS1289.3.6.1

Sampling Method Tested As Received

Date Sampled 11/08/2015 Sampled By Client Sampled

Date Tested 25/08/2015

Material Source -

Test Request

Internal Test Request:

Client Reference/s:

Report Date / Page:

Area

Material Type Grey Silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		1	.00				-	_	~	7	7	_		
37.5		100			40.7				/							
19.0		100		. 14	90				/							П
9.5		100			80			/								
4.75		100		- 8	00			1								Π
2.36		100			70 -			- 1								
1.18		99			,0											
0.600		79		Percent Passing (%)	60			_								
0.425		54		5				1								
0.300		26		SSE	50 -			I								
0.150		12		DE F	- 1			I								
0.075		10		S CB	40 -											
				4												
				- 13	30 -		- 1									
							1									
					20 -	1	/									
						1										
				1.0	10											
					0											
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	19,0	37.5	53.0	F 75.0
									AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

### PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1833-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A09 Sample 1 Depth 0.0m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6495

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested

25/08/2015

Material Source Grey Silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PART	TICL	E SIZ	E DIS	TRIBU	TION	GR	CAP	H			
75.0		100		1	00				/		_	7			_		7
37.5		100			00												
19.0		100			90 -												
9.5		100		1	80 -												
4.75		100			00			4									
2.36		100			70 -												
1.18		100															
0.600		96		100	60												
0.425		77		5	20												
0.300		42		988	50 -												
0.150		12		nt p			- 1										
0.075		6		Percent Passing (%)	40		1										
				P	1												
					30 -												
						1											
					20 -	_/											
					4												
				1.1	10												
					10												
					0 -	enja:	e mar	agrang-		P.S		N 45	mqn	11111111111111111111111111111111111111	torque	(D	
					0.075	0.150	0.300	0.600 0.425	1.18	2,36	4.75	7 10	32	9,0	37.5	53.0	5
				I	(f)	0	- 6	(1)		4.7	400		2	_	1.77	7.0	1

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1791-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A09 Sample 3 Depth 0.5m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6497

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

Material Source - Material Type Yellow silty SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-555	ď	PAR	TICL	E SIZ	E DIS	TRIBU	ITIO	V G	RAF	H			
75.0		100		100	I				-	_	~	_		7		_	_
37.5		100		22	+												
19.0		100		90	1			1									
9.5		100		00	-			- /									
4.75		100		80													
2.36		100		70													
1.18		99			-			1									-
0.600		89		60 50 40 (%)	1												
0.425		69		ē.	1			1									
0.300		41		50	1		_										
0.150		23		77	1		- 1										
0.075		16		8 40	4-		- }										
				4	1		/										
				30	+	1											
					1	1											
				20	1												
				10	1												
					1												
				0	0.1		0	66	1.18	2,36	4.75	6	13.2	19	26	37 0	3 7
					0.075	0.150	0,300	0.600	18	36	3	40	of to	ò	in i	in c	75.0
									AS Sie	ve Size	(mm)	1					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

5029

Accreditation Number:

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 08 9721 2348 Phone: Fax:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project:

5029/S/6499

Location: Perth

Area Description:

Sample Number

Component:

Keane Road Pressure Main

Client Reference/s: 61/32259 Report Date / Page: 05/09/2015

Internal Test Request:

Report Number:

Project Number:

Lot Number:

Page 1 of 1

5029/R/1792-1

A09 Sample 5 Depth 1.0m

5029/P/256

5029/T/1144

Sample Location

Test Procedures: AS1289.3.6.1

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 25/08/2015 Material Source

**Test Request** 

Area

Yellow SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	THE STEE STEE STOTE STATE
75.0		100		100
37.5		100		
19.0		100		90
9.5		100		80
4.75		100		.00
2.36		100		70 -
1.18		94		
0.600		86		€ 60
0.425		66		Di c
0.300		41		50 -
0.150		11		a la
0.075		3		(%) 60 - 50 - 40 - 40 - 60
				ā
				30 -
				20 -
				10
				10
				75.0 53.0 37.5 26.5 19.0 13.2 9.5 0.600 0.425 0.300 0.150
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

5029/S/6500

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

AS1289.3.6.1

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

Material Source -

Sample Location

Test Request Area

Material Type

Grey SAND

5029/R/1793-1

A09 Sample 6 Depth 1.4m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-		PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		100	1				1	_	_		7	_		-
37.5		100		44	-			-								
19.0		100		90				1								
9.5		100		80	-											
4.75		100		00												
2.36		100		70	1			1								
1.18		100			-			I								
0.600		90		Percent Passing (%) 40	1											
0.425		70		0												
0.300		45		% 50	1		_ /									
0.150		28		E	1		1									
0.075		23		8 40	4-		/									
				2	1	/										
				30	-	1										
					-											
				20	1											Ť
				-16	-											
				10	1											
				0	0.075	0.150	0.300	0.600	1.18	2,36	4.75	5.6	19.0	26.5	53.0	75.0
					O.	0		U U	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

. -----

AS1289.3.6.1

 Test Procedures:
 AS1289.3.6.1

 Sample Number
 5029/S/6501

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

Material Source -

Sample Location

Internal Test Request:

Client Reference/s:

Report Date / Page:

Test Request Area

Material Type Yellow SAND

Report Number:

Project Number:

Lot Number:

5029/R/1794-1

A09 Sample 7 Depth 1.6m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	- Print		PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		100	I				1	_	_		7	_		_
37.5		100		00	-			,								
19.0		100		90				1								
9.5		100		80	-			- /								
4.75		100		00												
2.36		100		70	1											
1.18		100			-			Î								
0.600		90		Percent Passing (%) 40	1			_								
0.425		69		8												
0.300		43		% 50	1		_ /									
0.150		26		E	1		- 1									
0.075		21		9 40	4-		1									
				2	1											
				30	-	_/										
				20	*											
				- 74	4											
				10	1											
					7											
				0	0.075	0.150	0.300	0.600	1.18	2,36	4.75	5.6	0.61	26.5	53.0	me/ 3
					-,			7	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax**:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Component:

AS1289.3.6.1

Sample Number 5029/S/6502

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

Material Source -

Sample Location

Internal Test Request:

Client Reference/s:

Report Date / Page:

Report Number:

Project Number:

Lot Number:

08 9721 2348

5029/R/1795-1

A09 Sample 8 Depth 1.8m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Test Request

Area

Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	- 5		PAR	TICL	E SIZ	E DIS	TRIBU	MOIT	GRA	PH			
75.0		100		1	00 —				1	_	_					_
37.5		100			00											
19.0		100			90 -			1								
9.5		100			80 -											
4.75		100			00											
2.36		100			70 -											
1.18		100														
0.600		88		Percent Passing (%)	60			I								
0.425		64		5				1								
0.300		33		388	50 -		-									
0.150		12		7	- 1		- 1									
0.075		6		B CB	40 -		-1									
					- 1		Į									
					30 -		1									
					20 -	- /	-									
						1										
					10											
					0											
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	2.5	19.0	26.5	53.0	1000
					O.	-	-	0, 0	AS SI	eve Size	(min)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

08 9721 2348

5029/R/1796-1

A09 Sample 9 Depth 2.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:
Test Procedures:

Sample Number

Dorth

AS1289.3.6.1 Sample Location

**Test Request** 

Area

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

Material Source - Material Type Grey SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	PARTICLE SIZE DISTRIBUTION GRAPH
75.0		100		100
37.5		100		00
19.0		100		90 -
9.5		100		80
4.75		100		00
2.36		100		70 -
1.18		100		7
0.600		90		60 - 60 - 40 - 40 - 40 - 40
0.425		68		8
0.300		42		50 -
0.150		24		E
0.075		19		8 40
				a /
				30
				20 -
				10
				75.0 53.0 37.5 26.5 19.0 13.2 9.5 6.7 4.75 0.600 0.425 0.300
				AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

g god-



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 08 9721 2348 Phone: Fax:

Report Number:

Lot Number:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Project Number:

Internal Test Request: 5029/T/1144 Client Reference/s: 61/32259

Sample Location

Report Date / Page: 05/09/2015 Page 1 of 1

A09 Sample 11 Depth 2.4m

5029/R/1797-1

5029/P/256

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6505

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 25/08/2015

Material Source

**Test Request** 

Area

Grey SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	China i		PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	PH			
75.0		100		100	I				1	_	_		7	_		_
37.5		100		-	-											
19.0		100		90	1			1								
9.5		100		80												
4.75		100		.00												
2.36		100		70												
1.18		100			-			Ī								
0.600		89		60 50 40 (%)	1			_								
0.425		69		5up												
0.300		43		\$ 50	1		- 1									
0.150		20		DE E	1		- 1									
0.075		15		8 40	4-		1									
					1		/									
				30	+	- /										
					1	/										
				20		1										
				16												
				10	1											
				0												
				0	0.075	0.150	0.300	0,600	1,18	2.36	4.75	5.6	19.0	26.5	53.0	N'C/ 3
					91	_	-	٠, ٠	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Component:

Area Description:

Material Source

5029/R/1837-1 Report Number:

08 9721 2348

Project Number: 5029/P/256

Lot Number: A10 Sample 1 Depth 0.0m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 07/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6507

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled 25/08/2015

Date Tested

**Test Request** 

Area

Yellow SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SI	ZE DIS	TRIBU	IOITU	V GF	RAP	H			
75.0		100			100					_	_	_		-	_	_	
37.5		100			425			1									
19.0		100			90			1									٦
9.5		100						1									
4.75		100		. 1	80 -			1									
2.36		100			70 -												_
1.18		100			70												
0.600		97		(%)	60 -												
0.425		83		E	-		- 1										1
0.300		50		355	50 -		1										
0.150		14		nt P													
0.075		2		Percent Passing (%)	40 -		_										4
				ď	1												
					30 -												-
						- /											
					20 -												1
					16	1											
					10 -												
					0												
						0	0	0 0	-	N.	4-	6 9	73	# J	yω	(J	77
					0.075	0.150	0.300	0.425	1.18	2.36	75	6.7	2	9.6	ת הי	3.0	5.0
					O.	-	-	J. C		eve Size							

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Lot Number:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Date / Page: 05/09/2015

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6508

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

Material Source -

Sample Location

5029/R/1798-1

A10 Sample 2 Depth 0.3m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

Area

**Test Request** 

Material Type Yellow SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBL	MOIT	GF	RAP	H			
75.0		100		1	00 —				/	_	_				_		
37.5		100			00												
19.0		100			90 -												
9.5		100			80 -												
4.75		100			00			1									
2.36		100			70 -												
1.18		100															
0.600		96		8	60												
0.425		79		5			- 1										
0.300		43		255	50 -		-1										
0.150		12		IL F	- 1		- 1										
0.075		2		Percent Passing (%)	40		- /										
							1										
					30 -		/										
					2.0	1											
					20 -	- /											
					10	1											
					10 -												
					0												
					0.075	0.150	0.300	0.600	1.18	2.36	4.75	7 5	13,2	19.0	37.5	53.0	
								4	AS SIA	ve Size	(mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

**Phone:** 08 9726 2187 **Fax:** 

08 9721 2348

5029/R/1799-1

A10 Sample 3 Depth 0.5m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Yellow SAND

Email: paul.kent@cardno.com

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:
Test Procedures:

Sample Number

Component:

Dorth

AS1289.3.6.1

5029/S/6509 Sample Location

Test Request

Area

Sampling Method Tested As Received

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

Material Source - Material Type

Specification Percent Specification PARTICLE SIZE DISTRIBUTION GRAPH AS Sieve (mm) Minimum Passing (%) Maximum 100 75.0 100 37.5 100 90 19.0 100 100 9.5 80 4.75 100 2.36 100 70 1.18 100 (%) 95 0.600 60 Percent Passing 0.425 72 0.300 32 50 7 0.150 0.075 40 30 20 10 0 0.075 AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

god



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: 08 9721 2348 Phone:

Report Number:

Project Number:

Lot Number:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

A10 Sample 4 Depth 0.8m Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259 Report Date / Page:

05/09/2015 Page 1 of 1

5029/R/1800-1

5029/P/256

Test Procedures: AS1289.3.6.1 Sample Number 5029/S/6510

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled

Date Tested 25/08/2015 Material Source

Sample Location

Area

**Test Request** 

Yellow SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	555	PARTICLE SIZE DISTRIBUTION GRAPH
75.0		100		100	
37.5		100		00	
19.0		100		90 -	
9.5		100		80 -	
4.75		100		00	
2.36		100		70 -	
1.18		100			
0.600		95		€ 60 -	
0.425		70		E .	
0.300		27		8 50	
0.150		7		=	1
0.075		3		Percent Passing (%)	
				7	
				30 -	1
				20 -	
				46	
				10 -	
				0	
				0.075	75.0 53.0 37.5 26.5 19.0 13.2 9.5 4.75 4.75 2.36 0.600 0.425 0.150
					AS Sieve Size (mm)

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 08 9721 2348 Phone: Fax:

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

5029/R/1801-1

A10 Sample 5 Depth 1.0m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Component:

AS1289.3.6.1 Sample Location

**Test Request** 

Area

Sample Number 5029/S/6511

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 25/08/2015

Material Source Yellow silty SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum		ino.	PAR	TICL	E SIZ	E DIS	TRIBL	TION	GRA	H		
75.0		100		1	100				/		_			_	
37.5		100			00			1							
19.0		100			90 -										
9.5		100			80 -										
4.75		100			00										
2.36		100			70 -										
1.18		100		_	,,,										
0.600		92		8	60			+							
0.425		62		5											
0.300		22		388	50 -										
0.150		4		T D				1							
0.075		2		Percent Passing (%)	40 -										
				a	1										
					30 -		-1								
							- 1								
					20 -		1								
					w 1										
					10 -	1									
						_									
					0 -	0	e min	o c	1	P.S	D 4	7 40 ₩		4 to	on
					0.075	0.150	0.300	0.600	1.18	2,36	4.75	9.5	19.0	7 7 7	53.0
					cri	0	0	0.0		eve Size					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

Approved Signatory: Janine Fischer

Form ID: W9Rep Rev 2



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 08 9721 2348 Phone: Fax:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description: Test Procedures:

Component:

Report Date / Page:

Internal Test Request:

Client Reference/s:

Report Number:

Project Number:

Lot Number:

5029/R/1802-1

A10 Sample 6 Depth 1.3m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

05/09/2015

AS1289.3.6.1 5029/S/6512

Sample Number

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested 25/08/2015

Material Source

Sample Location **Test Request** 

Area

Yellow SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TIC	E SIZ	E DIS	TRIBU	MOIT	GR	APF	1			
75.0		100		1	100				1	_	_	7			_		
37.5		100			40				/								
19.0		100			90			- 1									٦
9.5		100			90			- 1									
4.75		100		- 1	80 -												
2.36		100			70 -												
1.18		100		~	,,												1
0.600		90		8	60			4									
0.425		58		5				1									1
0.300		21		388	50 -												
0.150		4		H				1									
0.075		2		Percent Passing (%)	40 -			_									-
				ď	1												
					30 -		-1										-
							- 1										
				. 11	20 -		1										1
					J4 1		/										
				. 11	10 -	/											
					0	_											
					0 -	0	0	0.0	÷.	N	4- 0	0 0	22	15 22	ω	οī.	77
					0.075	0.150	30	0.600	1.18	2,36	4.75	1 2	13,2	26.5	5	8	75.0
					-	-		7, 4	AS SI	eve Size	(mm)						

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Fax: Phone:

08 9721 2348

5029/R/1834-1

A09 Sample 10 Depth 2.3m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

07/09/2015

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Keane Road Pressure Main Project:

Location: Perth

Component:

Area Description:

Test Procedures:

Sample Number

Sampling Method

Sample Location

Internal Test Request:

Client Reference/s:

Report Date / Page:

Report Number: Project Number:

Lot Number:

Tested As Received **Test Request** 

11/08/2015 **Date Sampled** Sampled By Client Sampled

AS1289.3.6.1

5029/S/6504

**Date Tested** 25/08/2015

Material Source **Grey SAND** Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICLE	SIZE	DIS	TRIBU	ITIO	V G	RAP	H			
75.0		100		100	1				1		_						
37.5		100		00				1									
19.0		100		90				1									
9.5		100		80													
4.75		100		00			11/										
2.36		100		70	1												
1.18		100			-		Î										
0.600		89		€ 60	1												
0.425		69		5	-												
0.300		44		\$ 50	1												
0.150		23		T. P	1		1										
0.075		18		60 50 40 (%)	4												
				8	1		/										
				30	-	-/											
					1	1											
				20	-												
				10	1												
				10	1												
					7												
				0	0	0	0 0	0	-	N	4-	0 40	000da	-	N G	o OI	11
					0.075	0.150	0.425	.60	18	2,36	73	6.7	1 2	9.6	26.5	1 3	3
					OI.	0	0.01	0	AS Sie	-							

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Email: paul.kent@cardno.com

# PARTICLE SIZE DISTRIBUTION REPORT

**Test Request** 

Area

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1803-1

08 9721 2348

Project Number: 5029/P/256

Lot Number: A11 Sample 1 Depth 0.0m

Sample Location

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015 Page 1 of 1

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6513

Sampling Method Tested As Received

11/08/2015 Date Sampled Sampled By Client Sampled Date Tested

25/08/2015

Material Source Yellow SAND Material Type

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum			PAR	TICL	E SIZ	E DIS	TRIBU	MOIT	GR	API	H		
75.0		100		- 1	.00					_	_	7			_	
37.5		100			40											
19.0		100			90			1								
9.5		100			00											
4.75		100		- 1	80 -			1								
2.36		100			70 -			1								
1.18		100		-	70			1								
0.600		96		8	60											
0.425		80		ē												
0.300		44		388	50 -											
0.150		9		nt P			- 1									
0.075		2		Percent Passing (%)	40 -		-I									
				4	1											
					30 -		/									
					20 -	_/	-									
					15	1										
					10 -	1										
					. /											
					0.075	0.150	0.30	0.600	1.18	2,36	4.75	100	13,2	19,0	37,5	53.0
					on	0	0	0.0	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029



Address: 72 McCombe Road. Davenport WA 6230 Laboratory: Geotech Bunbury

08 9726 2187 Phone: Fax:

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

Location: Perth

Area Description:

Component:

Report Number: 5029/R/1804-1

08 9721 2348

5029/P/256 Project Number:

Lot Number: A11 Sample 2 Depth 0.2m

Internal Test Request: 5029/T/1144

Client Reference/s: 61/32259

Report Date / Page: 05/09/2015 Page 1 of 1

Grey Silty SAND

Test Procedures: AS1289.3.6.1

Sample Number 5029/S/6514

Sampling Method Tested As Received

11/08/2015 **Date Sampled** Client Sampled Sampled By **Date Tested** 

25/08/2015

Material Source Material Type Sample Location

Test Request

Area

Specification Percent Specification PARTICLE SIZE DISTRIBUTION GRAPH AS Sieve (mm) Minimum Passing (%) Maximum 100 75.0 100 37.5 100 90 19.0 100 100 9.5 80 4.75 100 2.36 100 70 100 1.18 (%) 0.600 93 60 Percent Passing 0.425 72 0.300 43 50 23 0.150 0.075 20 40 30 20 10 0

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025

Accreditation Number:

5029

AS Sieve Size (mm)



Address: 72 McCombe Road, Davenport WA 6230 Laboratory: Geotech Bunbury

Report Number:

Project Number:

Internal Test Request:

Client Reference/s:

Report Date / Page:

Lot Number:

5029/R/1839-1

A11 Sample 3 Depth 0.5m

Page 1 of 1

5029/P/256

5029/T/1144

61/32259

07/09/2015

Email: paul.kent@cardno.com

## PARTICLE SIZE DISTRIBUTION REPORT

Client: GHD Pty Ltd

Client Address: GHD House, 239 Adelaide Terrace, PERTH

Project: Keane Road Pressure Main

AS1289.3.6.1

Location: Perth

Component:

Area Description:

Test Procedures:

Sample Number

5029/S/6515 Sample Location

Area

Sampling Method Tested As Received Test Request

Date Sampled 11/08/2015
Sampled By Client Sampled
Date Tested 25/08/2015

Material Source - Material Type Yellow SAND

AS Sieve (mm)	Specification Minimum	Percent Passing (%)	Specification Maximum	-	ď	PAR	TICLE	SIZ	E DIS	TRIBU	ITION	GR	RAPI	+		
75.0		100		100	1				-	_	~	_			_	
37.5		100			-			1								
19.0		100		90				1								
9.5		100		20	1											
4.75		100		80				7								
2.36		100		70			_/									
1.18		99			-											
0.600		94		€ 60	1		1									
0.425		80		5			/									
0.300		60		% 50	-		/									
0.150		37		E		/										
0.075		30		Percent Passing (%)	4-	-/-										
				2		1										
				30	-											
				20	1											
				.74	1											
				10												
					1											
				0	0	0	0 0	0 0	7	N	4	0 0	H	÷ N	ω	OI >
					0.075	0.150	30	0,600	1.18	2,36	73	6.5	13,2	26.5 19.0	7.5	53.0
					oi	0	0.0	n O	AS Sie	ve Size	(mm)					

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Accredited for compliance with ISO/IEC 17025

Accreditation Number: 5029

god