THE pebble PARTNERSHIP

Pre-Permitting Environmental / Socio-Economic Data Report Series

Report Series D-
Groundwater Hydrology Data

Report D-4A (Data)
Geotechnical Response Data

July 2004 - September 2006
Submitted to the Pebble Limited Partnership June 2008

2004 Site Investigation Falling Head (Hvorslev) Test Data
2005 Open Pit Lugeon Test Data
2005 Site Investigation Lugeon Test Data
2005 Site Investigation Rising/Falling Head (Hvorslev) Test Data
2006 Site Investigation Lugeon Test Data
2006 Site Investigation Falling Head (Hvorslev) Test Data

Preliminary data. Do not cite or quote.

The Pebble Partnership is providing environmental and socio-economic baseline data collected to inform the development of the Pebble Project to state and federal agencies, project stakeholders and the general public prior to project permitting as part of its commitment to full and open disclosure.

A comprehensive Environmental Baseline Document (EBD) will subsequently be prepared and appended to future project permit applications. The EBD will also be made publicly available when complete.

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PRE-PERMITTING
ENVIRONMENTAL SOCIOECONOMIC DATA
REPORT SERIES

REPORT SERIES D:
GROUNDWATER HYDROLOGY

SECTION 4 – GEOTECHNICAL RESPONSE
TEST DATA

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Geotechnical Response Test Data

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SECTION 4 – GEOTECHNICAL RESPONSE TEST DATA

2004 OPEN PIT LUGEON TEST DATA

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-01

AREA: NORTH WALL OF PIT AREA

TEST NO: 1

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 20.5 m

TOP OF TEST INTERVAL: 58.80 m (DOWN HOLE)

DATE: July 29-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 80.20 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3074.10	3081.30	3088.50	3096.10	3103.30	3110.50				
		Take	litres		7.2	7.2	7.6	7.2	7.2				
20	1.38	Average Take	l/m		7.2	7.2	7.6	7.2	7.2			7.28	2.258
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3119.20	3127.90	3136.60	3145.30	3154.00	3162.70				
		Take	litres		8.7	8.7	8.7	8.7	8.7				
36	2.48	Average Take	l/m		8.7	8.7	8.7	8.7	8.7			8.70	2.000
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3172.90	3182.80	3193.00	3203.60	3213.80	3224.00				
		Take	litres		9.9	10.2	10.6	10.2	10.2				
51	3.52	Average Take	l/m		9.9	10.2	10.6	10.2	10.2			10.22	1.891
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3242.20	3251.30	3260.40	3269.40	3278.50	3287.30				
		Take	litres		9.1	9.1	9	9.1	8.8				
36	2.48	Average Take	l/m		9.1	9.1	9	9.1	8.8			9.02	2.074
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3302.80	3310.00	3317.10	3324.70	3331.90	3339.10				
		Take	litres		7.2	7.1	7.6	7.2	7.2				
20	1.38	Average Take	l/m		7.2	7.1	7.6	7.2	7.2			7.26	2.251

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-01

AREA: NORTH WALL OF PIT AREA

TEST NO: 2

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 20.5 m

TOP OF TEST INTERVAL: 86.30 m (DOWN HOLE)

DATE: July 29-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 113.70 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	4526.20	4527.70	4528.90	4530.40	4531.90	4533.40				
		Take	litres		1.5	1.2	1.5	1.5	1.5				
28	1.93	Average Take	l/m		1.5	1.2	1.5	1.5	1.5			1.44	0.380
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	4533.40	4536.40	4538.70	4541.00	4542.90	4545.10				
		Take	litres		3	2.3	2.3	1.9	2.2				
60	4.14	Average Take	l/m		3	2.3	2.3	1.9	2.2			2.34	0.388
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	4547.00	4549.70	4552.70	4555.40	4558.00	4560.60				
		Take	litres		2.7	3	2.7	2.6	2.6				
84	5.79	Average Take	l/m		2.7	3	2.7	2.6	2.6			2.72	0.352
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	4561.40	4563.70	4565.60	4567.80	4569.70	4572.00				
		Take	litres		2.3	1.9	2.2	1.9	2.3				
58	4.00	Average Take	l/m		2.3	1.9	2.2	1.9	2.3			2.12	0.360
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	4572.40	4573.90	4575.40	4576.90	4578.40	4580.00				
		Take	litres		1.5	1.5	1.5	1.5	1.6				
30	2.07	Average Take	l/m		1.5	1.5	1.5	1.5	1.6			1.52	0.387

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-01

AREA: NORTH WALL OF PIT AREA

TEST NO: 3

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 20.5 m

TOP OF TEST INTERVAL: 113.10 m (DOWN HOLE)

DATE: July 30-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 150.30 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	6398.50	6400.00	6401.90	6403.40	6405.30	6407.20				
		Take	litres		1.5	1.9	1.5	1.9	1.9				
30	2.07	Average Take	l/m		1.5	1.9	1.5	1.9	1.9			1.74	0.443
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	6408.30	6410.60	6412.80	6415.50	6417.80	6420.00				
		Take	litres		2.3	2.2	2.7	2.3	2.2				
47	3.24	Average Take	l/m		2.3	2.2	2.7	2.3	2.2			2.34	0.457
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	6421.90	6425.00	6427.60	6430.60	6433.70	6436.70				
		Take	litres		3.1	2.6	3	3.1	3				
62	4.27	Average Take	l/m		3.1	2.6	3	3.1	3			2.96	0.479
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	6437.50	6440.10	6442.80	6445.40	6448.10	6450.70				
		Take	litres		2.6	2.7	2.6	2.7	2.6				
50	3.45	Average Take	l/m		2.6	2.7	2.6	2.7	2.6			2.64	0.495
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	6453.30	6455.60	6457.50	6459.40	6461.70	6463.60				
		Take	litres		2.3	1.9	1.9	2.3	1.9				
28	1.93	Average Take	l/m		2.3	1.9	1.9	2.3	1.9			2.06	0.544

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-01

AREA: NORTH WALL OF PIT AREA

TEST NO: 4

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 20.5 m

TOP OF TEST INTERVAL: 147.30 m (DOWN HOLE)

DATE: July 31-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 196.00 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	6901.50	6909.10	6917.10	6924.60	6931.80	6939.40				
		Take	litres		7.6	8	7.5	7.2	7.6				
38	2.62	Average Take	l/m		7.6	8	7.5	7.2	7.6			7.58	1.688
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	6945.80	6957.60	6969.30	6980.70	6991.60	7002.60				
		Take	litres		11.8	11.7	11.4	10.9	11				
80	5.52	Average Take	l/m		11.8	11.7	11.4	10.9	11			11.36	1.526
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7014.30	7029.10	7043.90	7058.60	7072.60	7087.00				
		Take	litres		14.8	14.8	14.7	14	14.4				
122	8.41	Average Take	l/m		14.8	14.8	14.7	14	14.4			14.54	1.399
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7107.10	7117.30	7127.50	7138.10	7148.30	7158.60				
		Take	litres		10.2	10.2	10.6	10.2	10.3				
82	5.65	Average Take	l/m		10.2	10.2	10.6	10.2	10.3			10.30	1.358
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7165.80	7172.20	7178.60	7185.10	7191.10	7197.60				
		Take	litres		6.4	6.4	6.5	6	6.5				
40	2.76	Average Take	l/m		6.4	6.4	6.5	6	6.5			6.36	1.373

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-01

AREA: NORTH WALL OF PIT AREA

TEST NO: 5

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 20.5 m

TOP OF TEST INTERVAL: 196.00 m (DOWN HOLE)

DATE: August 1-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 235.60 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3732.03	3733.16	3734.30	3735.43	3736.38	3737.33			litres/min	
		Take	litres		1.14	1.14	1.14	0.95	0.95				
40	2.76	Average Take	l/m		1.14	1.14	1.14	0.95	0.95			1.06	0.229
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3739.60	3741.11	3743.00	3744.52	3746.03	3747.55			litres/min	
		Take	litres		1.51	1.89	1.51	1.51	1.51				
80	5.52	Average Take	l/m		1.51	1.89	1.51	1.51	1.51			1.59	0.214
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3751.71	3754.36	3756.82	3759.85	3762.88	3765.72			litres/min	
		Take	litres		2.65	2.46	3.03	3.03	2.84				
130	8.96	Average Take	l/m		2.65	2.46	3.03	3.03	2.84			2.80	0.256
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3770.07	3772.34	3774.23	3776.32	3778.40	3780.48			litres/min	
		Take	litres		2.27	1.89	2.08	2.08	2.08				
82	5.65	Average Take	l/m		2.27	1.89	2.08	2.08	2.08			2.08	0.275
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3781.61	3782.37	3784.08	3785.40	3786.54	3787.67			litres/min	
		Take	litres		0.76	1.70	1.32	1.14	1.14				
40	2.76	Average Take	l/m		0.76	1.70	1.32	1.14	1.14			1.21	0.262

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-01

AREA: NORTH WALL OF PIT AREA

TEST NO: 6

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 20.5 m

TOP OF TEST INTERVAL: 235.70 m (DOWN HOLE)

DATE: August 1-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 275.30 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	7673.00	7674.50	7676.40	7677.90	7679.80	7681.30			
		Take	litres		1.5	1.9	1.5	1.9	1.5			
46	3.17	Average Take	l/m		1.5	1.9	1.5	1.9	1.5		1.66	0.329
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	7684.40	7688.10	7691.60	7695.30	7698.70	7702.20			
		Take	litres		3.7	3.5	3.7	3.4	3.5			
93	6.41	Average Take	l/m		3.7	3.5	3.7	3.4	3.5		3.56	0.426
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	7710.90	7717.30	7723.70	7730.20	7736.60	7742.70			
		Take	litres		6.4	6.4	6.5	6.4	6.1			
144	9.93	Average Take	l/m		6.4	6.4	6.5	6.4	6.1		6.36	0.533
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	7745.70	7749.50	7753.60	7757.40	7761.60	7765.70			
		Take	litres		3.8	4.1	3.8	4.2	4.1			
88	6.07	Average Take	l/m		3.8	4.1	3.8	4.2	4.1		4.00	0.500
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	7767.60	7769.90	7772.60	7774.80	7777.50	7779.40			
		Take	litres		2.3	2.7	2.2	2.7	1.9			
46	3.17	Average Take	l/m		2.3	2.7	2.2	2.7	1.9		2.36	0.467

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-01

AREA: NORTH WALL OF PIT AREA

TEST NO: 7

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 20.5 m

TOP OF TEST INTERVAL: 279.90 m (DOWN HOLE)

DATE: August 2-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 319.50 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7789.60	7789.60	7789.60	7789.60	7789.60	7789.60				
		Take	litres		0	0	0	0	0				
50	3.45	Average Take	l/m		0	0	0	0	0			0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7790.40	7790.40	7790.40	7790.40	7790.50	7790.50				
		Take	litres		0	0	0	0.1	0				
102	7.03	Average Take	l/m		0	0	0	0.1	0			0.02	0.002
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7791.10	7791.10	7791.10	7791.30	7791.30	7791.50				
		Take	litres		0	0	0.2	0	0.2				
144	9.93	Average Take	l/m		0	0	0.2	0	0.2			0.08	0.007
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7791.50	7791.50	7791.70	7791.70	7791.90	7792.10				
		Take	litres		0	0.2	0	0.2	0.2				
97	6.69	Average Take	l/m		0	0.2	0	0.2	0.2			0.12	0.014
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7792.10	7792.10	7792.10	7792.20	7792.20	7792.20				
		Take	litres		0	0	0.1	0	0				
50	3.45	Average Take	l/m		0	0	0.1	0	0			0.02	0.004

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-01

AREA: NORTH WALL OF PIT AREA

TEST NO: 8

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 20.5 m

TOP OF TEST INTERVAL: 365.20 m (DOWN HOLE)

DATE: August 3-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 411.00 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7520.45	7521.21	7521.59	7521.97	7522.16	7522.54				
		Take	litres		0.76	0.38	0.38	0.19	0.38				
52	3.59	Average Take	l/m		0.76	0.38	0.38	0.19	0.38			0.42	0.076
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7525.00	7526.13	7526.89	7527.08	7528.02	7528.74				
		Take	litres		1.14	0.76	0.19	0.95	0.72				
100	6.89	Average Take	l/m		1.14	0.76	0.19	0.95	0.72			0.75	0.085
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7531.05	7532.57	7533.89	7535.29	7536.73	7537.87				
		Take	litres		1.5	1.3	1.4	1.4	1.1				
150	10.34	Average Take	l/m		1.5	1.3	1.4	1.4	1.1			1.36	0.110
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7538.62	7538.81	7539.38	7539.95	7540.52	7541.27				
		Take	litres		0.19	0.57	0.57	0.57	0.76				
100	6.89	Average Take	l/m		0.19	0.57	0.57	0.57	0.76			0.53	0.060
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	7541.65	7541.65	7541.65	7541.65	7541.65	7541.65				
		Take	litres		0	0	0	0	0				
50	3.45	Average Take	l/m		0	0	0	0	0			0.00	0.000

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-02

AREA: NORTHEAST WALL OF PIT AREA

TEST NO: 1

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 6.2 m

TOP OF TEST INTERVAL: 46.70 m (DOWN HOLE)

DATE: July 20-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 67.20 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	88.92	89.40	89.75	90.14	90.48	90.83		litres/min	
		Take	litres		0.48	0.35	0.39	0.34	0.35			
30	2.07	Average Take	l/m		0.48	0.35	0.39	0.34	0.35		0.38	0.142
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	91.87	92.76	93.65	94.40	95.16	95.86		litres/min	
		Take	litres		0.89	0.89	0.75	0.76	0.7			
52	3.59	Average Take	l/m		0.89	0.89	0.75	0.76	0.7		0.80	0.188
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	98.34	99.30	100.20	101.15	102.00	102.84		litres/min	
		Take	litres		0.96	0.9	0.95	0.85	0.84			
60	4.14	Average Take	l/m		0.96	0.9	0.95	0.85	0.84		0.90	0.188
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	104.08	104.62	105.18	105.74	106.28	106.80		litres/min	
		Take	litres		0.54	0.56	0.56	0.54	0.52			
50	3.45	Average Take	l/m		0.54	0.56	0.56	0.54	0.52		0.54	0.133
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	106.95	107.18	107.45	107.70	107.94	108.18		litres/min	
		Take	litres		0.23	0.27	0.25	0.24	0.24			
33	2.28	Average Take	l/m		0.23	0.27	0.25	0.24	0.24		0.25	0.085

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-02

AREA: NORTHEAST WALL OF PIT AREA

TEST NO: 2

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 6.2 m

TOP OF TEST INTERVAL: 119.80 m (DOWN HOLE)

DATE: July 21-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 144.20 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	398.50	413.40	428.20	442.50	457.00	471.30			
		Take	litres		14.9	14.8	14.3	14.5	14.3			
45	3.10	Average Take	l/m		14.9	14.8	14.3	14.5	14.3		14.56	3.889
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	510.50	532.50	555.50	578.00	600.50	623.00			
		Take	litres		22	23	22.5	22.5	22.5			
77	5.31	Average Take	l/m		22	23	22.5	22.5	22.5		22.50	3.754
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	669.00	703.00	738.00	772.00	806.50	840.50			
		Take	litres		34	35	34	34.5	34			
102	7.03	Average Take	l/m		34	35	34	34.5	34		34.30	4.425
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	884.50	911.00	937.00	963.00	989.50	1016.00			
		Take	litres		26.5	26	26	26.5	26.5			
80	5.52	Average Take	l/m		26.5	26	26	26.5	26.5		26.30	4.239
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	1051.80	1068.00	1083.80	1100.00	1115.80	1131.50			
		Take	litres		16.2	15.8	16.2	15.8	15.7			
44	3.03	Average Take	l/m		16.2	15.8	16.2	15.8	15.7		15.94	4.339

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-02

AREA: NORTHEAST WALL OF PIT AREA

TEST NO: 3

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 6.2 m

TOP OF TEST INTERVAL: 165.60 m (DOWN HOLE)

DATE: July 22-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 196.00 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	171.14	172.32	173.41	174.51	175.55	176.56		litres/min	
		Take	litres		1.18	1.09	1.1	1.04	1.01			
52	3.59	Average Take	l/m		1.18	1.09	1.1	1.04	1.01		1.08	0.256
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	184.10	187.50	191.00	194.40	197.70	200.00		litres/min	
		Take	litres		3.4	3.5	3.4	3.3	2.3			
96	6.62	Average Take	l/m		3.4	3.5	3.4	3.3	2.3		3.18	0.434
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	209.40	218.30	226.40	234.50	243.30	252.00		litres/min	
		Take	litres		8.9	8.1	8.1	8.8	8.7			
136	9.38	Average Take	l/m		8.9	8.1	8.1	8.8	8.7		8.52	0.840
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	257.00	260.10	263.30	266.90	270.20	273.50		litres/min	
		Take	litres		3.1	3.2	3.6	3.3	3.3			
96	6.62	Average Take	l/m		3.1	3.2	3.6	3.3	3.3		3.30	0.450
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	277.70	279.08	280.45	281.85	283.30	284.78		litres/min	
		Take	litres		1.38	1.37	1.4	1.45	1.48			
56	3.86	Average Take	l/m		1.38	1.37	1.4	1.45	1.48		1.42	0.313

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-02A

AREA: NORTH WALL OF PIT AREA | TEST NO: 1

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 0.5 m | TOP OF TEST INTERVAL: 27.00 m (DOWN HOLE)

DATE: August 7-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 55.50 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	9972.60	9990.40	10007.80	10024.90	10041.90	10058.90			
		Take	litres		17.8	17.4	17.1	17	17			
12	0.83	Average Take	l/m		17.8	17.4	17.1	17	17		17.26	18.554
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	10076.70	10106.60	10135.00	10162.70	10190.30	10217.60			
		Take	litres		29.9	28.4	27.7	27.6	27.3			
28	1.93	Average Take	l/m		29.9	28.4	27.7	27.6	27.3		28.18	13.712
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	10237.60	10270.90	10303.90	10336.80	10369.70	10402.30			
		Take	litres		33.3	33	32.9	32.9	32.6			
38	2.62	Average Take	l/m		33.3	33	32.9	32.9	32.6		32.94	11.942
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	10421.20	10447.70	10474.20	10500.30	10526.10	10552.60			
		Take	litres		26.5	26.5	26.1	25.8	26.5			
29	2.00	Average Take	l/m		26.5	26.5	26.1	25.8	26.5		26.28	12.364
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	10570.70	10587.00	10602.90	10619.20	10635.80	10652.10			
		Take	litres		16.3	15.9	16.3	16.6	16.3			
15	1.03	Average Take	l/m		16.3	15.9	16.3	16.6	16.3		16.28	14.266

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-02A

AREA: NORTHEAST WALL OF PIT AREA

TEST NO: 2

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.5 m

TOP OF TEST INTERVAL: 55.50 m (DOWN HOLE)

DATE: August 7-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 98.17 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	10775.14	10788.39	10801.26	10814.13	10826.24	10839.49			
		Take	litres		13.25	12.87	12.87	12.11	13.25			
20	1.38	Average Take	l/m		13.25	12.87	12.87	12.11	13.25		12.87	8.622
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	10871.67	10895.52	10918.99	10942.08	10965.55	10988.64			
		Take	litres		23.85	23.47	23.09	23.47	23.09			
42	2.90	Average Take	l/m		23.85	23.47	23.09	23.47	23.09		23.39	7.697
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11042.01	11083.65	11125.29	11166.93	11208.95	11250.21			
		Take	litres		41.64	41.64	41.64	42.02	41.26			
58	4.00	Average Take	l/m		41.64	41.64	41.64	42.02	41.26		41.64	9.999
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11297.53	11322.51	11346.36	11370.21	11394.05	11417.90			
		Take	litres		24.98	23.85	23.85	23.85	23.85			
40	2.76	Average Take	l/m		24.98	23.85	23.85	23.85	23.85		24.08	8.305
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11435.69	11448.94	11461.81	11475.82	11487.55	11500.42			
		Take	litres		13.25	12.87	14.01	11.73	12.87			
20	1.38	Average Take	l/m		13.25	12.87	14.01	11.73	12.87		12.95	8.673

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-02A

AREA: NORTHEAST WALL OF PIT AREA

TEST NO: 3

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.5 m

TOP OF TEST INTERVAL: 98.20 m (DOWN HOLE)

DATE: August 8-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 143.60 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11554.93	11557.58	11559.85	11562.13	11564.02	11565.91			
		Take	litres		2.65	2.27	2.27	1.89	1.89			
37	2.55	Average Take	l/m		2.65	2.27	2.27	1.89	1.89		2.20	0.817
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11570.83	11575.75	11580.67	11585.22	11589.76	11594.68			
		Take	litres		4.92	4.92	4.54	4.54	4.92			
82	5.65	Average Take	l/m		4.92	4.92	4.54	4.54	4.92		4.77	0.815
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11600.36	11607.55	11613.99	11620.04	11626.10	11632.16			
		Take	litres		7.19	6.44	6.06	6.06	6.06			
124	8.55	Average Take	l/m		7.19	6.44	6.06	6.06	6.06		6.36	0.722
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11637.46	11640.86	11644.65	11648.05	11651.46	11655.25			
		Take	litres		3.41	3.79	3.41	3.41	3.79			
80	5.52	Average Take	l/m		3.41	3.79	3.41	3.41	3.79		3.56	0.623
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11658.27	11659.79	11661.68	11663.95	11666.60	11668.87			
		Take	litres		1.51	1.89	2.27	2.65	2.27			
40	2.76	Average Take	l/m		1.51	1.89	2.27	2.65	2.27		2.12	0.731

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-02A

AREA: NORTHEAST WALL OF PIT AREA

TEST NO: 4

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.5 m

TOP OF TEST INTERVAL: 160.67 m (DOWN HOLE)

DATE: August 10-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 206.40 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11673.80	11673.80	11673.80	11673.80	11673.80	11673.80		litres/min	
		Take	litres		0	0	0	0	0			
37	2.55	Average Take	l/m		0	0	0	0	0		0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11673.80	11673.80	11673.80	11673.80	11673.80	11673.80		litres/min	
		Take	litres		0	0	0	0	0			
82	5.65	Average Take	l/m		0	0	0	0	0		0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11676.44	11677.01	11677.58	11678.34	11678.72	11679.28		litres/min	
		Take	litres		0.57	0.57	0.76	0.38	0.57			
124	8.55	Average Take	l/m		0.57	0.57	0.76	0.38	0.57		0.57	0.064
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11679.47	11679.47	11679.47	11679.47	11679.47	11679.66		litres/min	
		Take	litres		0	0	0	0	0.19			
80	5.52	Average Take	l/m		0	0	0	0	0.19		0.04	0.007
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11679.85	11679.85	11679.85	11679.85	11679.85	11679.85		litres/min	
		Take	litres		0	0	0	0	0			
40	2.76	Average Take	l/m		0	0	0	0	0		0.00	0.000

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-02A

AREA: NORTHEAST WALL OF PIT AREA

TEST NO: 5

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.5 m

TOP OF TEST INTERVAL: 206.40 m (DOWN HOLE)

DATE: August 10-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 252.13 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11684.77	11686.67	11688.37	11689.88	11691.59	11693.10			
		Take	litres		1.89	1.70	1.51	1.70	1.51			
46	3.17	Average Take	l/m		1.89	1.70	1.51	1.70	1.51		1.67	0.502
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11695.75	11698.02	11700.10	11701.81	11703.70	11705.97			
		Take	litres		2.27	2.08	1.70	1.89	2.27			
88	6.07	Average Take	l/m		2.27	2.08	1.70	1.89	2.27		2.04	0.326
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11710.51	11713.92	11716.95	11719.60	11722.06	11724.33			
		Take	litres		3.41	3.03	2.65	2.46	2.27			
142	9.79	Average Take	l/m		3.41	3.03	2.65	2.46	2.27		2.76	0.274
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11724.90	11726.60	11728.12	11729.82	11731.52	11733.04			
		Take	litres		1.70	1.51	1.70	1.70	1.51			
90	6.21	Average Take	l/m		1.70	1.51	1.70	1.70	1.51		1.63	0.254
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11733.60	11734.55	11735.50	11736.63	11737.58	11738.71			
		Take	litres		0.95	0.95	1.14	0.95	1.14			
44	3.03	Average Take	l/m		0.95	0.95	1.14	0.95	1.14		1.02	0.321

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-02A

AREA: NORTHEAST WALL OF PIT AREA

TEST NO: 6

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.5 m

TOP OF TEST INTERVAL: 252.13 m (DOWN HOLE)

DATE: August 11-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 297.86 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11744.20	11744.20	11744.20	11744.20	11744.20	11744.20		litres/min	
		Take	litres		0	0	0	0	0			
	0.00	Average Take	l/m		0	0	0	0	0		0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11744.58	11744.77	11744.96	11744.96	11745.15	11745.34		litres/min	
		Take	litres		0.19	0.19	0.00	0.19	0.19			
	0.00	Average Take	l/m		0.19	0.19	0.00	0.19	0.19		0.15	1.748
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11745.34	11745.34	11745.34	11745.34	11745.34	11745.34		litres/min	
		Take	litres		0	0	0	0	0			
	0.00	Average Take	l/m		0	0	0	0	0		0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11745.53	11745.53	11745.53	11745.53	11745.53	11745.53		litres/min	
		Take	litres		0	0	0	0	0			
	0.00	Average Take	l/m		0	0	0	0	0		0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11745.53	11745.53	11745.53	11745.53	11745.53	11745.53		litres/min	
		Take	litres		0	0	0	0	0			
	0.00	Average Take	l/m		0	0	0	0	0		0.00	0.000

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-02A

AREA: NORTHEAST WALL OF PIT AREA

TEST NO: 7

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.5 m

TOP OF TEST INTERVAL: 297.87 m (DOWN HOLE)

DATE: August 11-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 343.60 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11759.72	11759.72	11759.72	11759.72	11759.72			litres/min	
		Take	litres		0	0	0	0				
50	3.45	Average Take	l/m		0	0	0	0			0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11760.10	11760.10	11760.10	11760.10	11760.10			litres/min	
		Take	litres		0	0	0	0				
100	6.89	Average Take	l/m		0	0	0	0			0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11760.48	11760.48	11760.48	11760.48	11760.67			litres/min	
		Take	litres		0	0	0	0.19				
142	9.79	Average Take	l/m		0	0	0	0.19			0.05	0.005
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11760.48	11760.48	11760.48	11760.48	11760.48			litres/min	
		Take	litres		0	0	0	0				
100	6.89	Average Take	l/m		0	0	0	0			0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11760.48	11760.48	11760.48	11760.48	11760.48			litres/min	
		Take	litres		0	0	0	0				
50	3.45	Average Take	l/m		0	0	0	0			0.00	0.000

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-02A

AREA: NORTHEAST WALL OF PIT AREA

TEST NO: 8

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.5 m

TOP OF TEST INTERVAL: 343.60 m (DOWN HOLE)

DATE: August 12-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 404.57 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11761.99	11761.99	11761.99	11761.99	11761.99				
		Take	litres		0	0	0	0				
40	2.76	Average Take	l/m		0	0	0	0			0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11761.99	11761.99	11761.99	11761.99	11761.99				
		Take	litres		0	0	0	0				
68	4.69	Average Take	l/m		0	0	0	0			0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11762.18	11762.94	11763.89	11764.64	11765.40				
		Take	litres		0.76	0.95	0.76	0.76				
88	6.07	Average Take	l/m		0.76	0.95	0.76	0.76			0.80	0.128
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11765.59	11765.59	11765.78	11765.78	11765.78				
		Take	litres		0	0.19	0	0				
65	4.48	Average Take	l/m		0	0.19	0	0			0.05	0.010
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	11765.97	11765.97	11765.97	11765.97	11765.97				
		Take	litres		0	0	0	0				
43	2.96	Average Take	l/m		0	0	0	0			0.00	0.000

SHEET 1 OF

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA | TEST NO: 1

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 2.0 m | TOP OF TEST INTERVAL: 48.50 m (DOWN HOLE)

DATE: May 30-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 63.70 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	68401.00	68423.00	68441.00	68458.00	68476.00	68494.00				
		Take	litres		22	18	17	18	18				
30	2.07	Average Take	l/m		22	18	17	18	18			18.60	7.998
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	68520.00	68547.00	68575.00	68609.00	68632.00	68659.00				
		Take	litres		27	28	34	23	27				
50	3.45	Average Take	l/m		27	28	34	23	27			27.80	7.449
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	68736.00	68776.00	68815.00	68853.00	68894.00	68932.00				
		Take	litres		40	39	38	41	38				
85	5.86	Average Take	l/m		40	39	38	41	38			39.20	6.330
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	68943.00	68966.00	68988.00	69010.00	69033.00	69055.00				
		Take	litres		23	22	22	23	22				
50	3.45	Average Take	l/m		23	22	22	23	22			22.40	6.002
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	69062.00	69075.00	69088.00	69100.00	69112.00	69113.00				
		Take	litres		13	13	12	12	1				
30	2.07	Average Take	l/m		13	13	12	12	1			10.20	4.386

SHEET 1 OF

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA

TEST NO: 2

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 2.0 m

TOP OF TEST INTERVAL: 86.26 m (DOWN HOLE)

DATE: May 31-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 96.90 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	71273.60	71275.50	71277.40	71279.00	71280.70	71282.20				
		Take	litres		1.9	1.9	1.6	1.7	1.5				
25	1.72	Average Take	l/m		1.9	1.9	1.6	1.7	1.5			1.72	0.871
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	71286.30	71290.20	71293.90	71297.60	71301.30	71304.90				
		Take	litres		3.9	3.7	3.7	3.7	3.6				
50	3.45	Average Take	l/m		3.9	3.7	3.7	3.7	3.6			3.72	0.997
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	71311.20	71317.60	71324.20	71330.50	71337.00	71343.60				
		Take	litres		6.4	6.6	6.3	6.5	6.6				
80	5.52	Average Take	l/m		6.4	6.6	6.3	6.5	6.6			6.48	1.109
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	71348.00	71351.90	71355.80	71359.70	71363.70	71367.60				
		Take	litres		3.9	3.9	3.9	4	3.9				
50	3.45	Average Take	l/m		3.9	3.9	3.9	4	3.9			3.92	1.050
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	71370.10	71372.50	71374.80	71377.20	71379.50	71381.90				
		Take	litres		2.4	2.3	2.4	2.3	2.4				
25	1.72	Average Take	l/m		2.4	2.3	2.4	2.3	2.4			2.36	1.195

SHEET 1 OF

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA

TEST NO: 3

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 2.0 m

TOP OF TEST INTERVAL: 95.70 m (DOWN HOLE)

DATE: May 31-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 103.00 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	71995.20	71995.90	71996.50	71997.15	71997.80	71998.40				
		Take	litres		0.7	0.6	0.6	0.7	0.6				
40	2.76	Average Take	l/m		0.7	0.6	0.6	0.7	0.6			0.64	0.211
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72001.00	72003.40	72005.80	72007.90	72009.90	72011.90				
		Take	litres		2.4	2.4	2.1	2	2				
90	6.21	Average Take	l/m		2.4	2.4	2.1	2	2			2.18	0.333
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72014.70	72017.40	72020.10	72022.70	72025.10	72027.40				
		Take	litres		2.7	2.7	2.6	2.4	2.3				
120	8.27	Average Take	l/m		2.7	2.7	2.6	2.4	2.3			2.54	0.294
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72029.10	72030.60	72032.10	72033.50	72035.00	72036.40				
		Take	litres		1.5	1.5	1.4	1.5	1.4				
90	6.21	Average Take	l/m		1.5	1.5	1.4	1.5	1.4			1.46	0.223
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72037.00	72037.50	72038.10	72038.60	72039.20	72039.80				
		Take	litres		0.5	0.6	0.5	0.6	0.6				
40	2.76	Average Take	l/m		0.5	0.6	0.5	0.6	0.6			0.56	0.185

SHEET 1 OF

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA | TEST NO: 4

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 2.0 m | TOP OF TEST INTERVAL: 100.00 m (DOWN HOLE)

DATE: May 31-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 106.00 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72058.00	72058.50	72059.00	72059.50	72060.00					
		Take	litres		0.5	0.5	0.5	0.5					
50	3.45	Average Take	l/m		0.5	0.5	0.5	0.5				0.50	0.134
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72060.50	72061.80	72063.00	72064.10	72065.20					
		Take	litres		1.3	1.2	1.1	1.1					
100	6.89	Average Take	l/m		1.3	1.2	1.1	1.1				1.17	0.162
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72065.50	72066.90	72068.30	72069.60	72070.90					
		Take	litres		1.4	1.4	1.3	1.3					
140	9.65	Average Take	l/m		1.4	1.4	1.3	1.3				1.35	0.134
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72070.50	72071.40	72072.20	72073.00	72073.80					
		Take	litres		0.9	0.8	0.8	0.8					
100	6.89	Average Take	l/m		0.9	0.8	0.8	0.8				0.83	0.114
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72073.30	72073.70	72074.10	72074.55	72075.00					
		Take	litres		0.4	0.4	0.45	0.45					
50	3.45	Average Take	l/m		0.4	0.4	0.45	0.45				0.42	0.114

SHEET 1 OF

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA

TEST NO: 5

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 2.0 m

TOP OF TEST INTERVAL: 105.50 m (DOWN HOLE)

DATE: May 31-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 110.70 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72098.50	72099.40	72100.00	72100.50	72100.90	72101.30				
		Take	litres		0.9	0.6	0.5	0.4	0.4				
50	3.45	Average Take	l/m		0.9	0.6	0.5	0.4	0.4			0.56	0.150
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72103.40	72104.60	72104.60	72104.60						
		Take	litres		1.2	0	0						
100	6.89	Average Take	l/m		1.2	0	0					0.40	0.055
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72106.80	72111.80	72116.40	72122.00	72127.40	72134.40				
		Take	litres		5	4.6	5.6	5.4	7				
150	10.34	Average Take	l/m		5	4.6	5.6	5.4	7			5.52	0.513
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72134.40	72136.70	72139.30	72142.00	72144.80	72147.60				
		Take	litres		2.3	2.6	2.7	2.8	2.8				
100	6.89	Average Take	l/m		2.3	2.6	2.7	2.8	2.8			2.64	0.364
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72145.90	72146.00	72146.90	72147.80	72149.90	72150.00				
		Take	litres		0.1	0.9	0.9	2.1	0.1				
50	3.45	Average Take	l/m		0.1	0.9	0.9	2.1	0.1			0.82	0.220

SHEET 1 OF

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA

TEST NO: 6

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 2.0 m

TOP OF TEST INTERVAL: 110.70 m (DOWN HOLE)

DATE: June 1-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 119.80 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72169.90	72170.00	72170.00	72170.00	72170.00	72170.00				
		Take	litres		0.1	0	0	0	0				
50	3.45	Average Take	l/m		0.1	0	0	0	0			0.02	0.005
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72170.30	72171.20	72171.90	72172.50	72173.10	72173.60				
		Take	litres		0.9	0.7	0.6	0.6	0.5				
100	6.89	Average Take	l/m		0.9	0.7	0.6	0.6	0.5			0.66	0.091
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72175.30	72175.60	72177.50							
		Take	litres		0.3	1.9							
150	10.34	Average Take	l/m		0.3	1.9						1.10	0.102
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72182.60	72183.40	72184.10	72184.70	72185.30	72185.80				
		Take	litres		0.8	0.7	0.6	0.6	0.5				
100	6.89	Average Take	l/m		0.8	0.7	0.6	0.6	0.5			0.64	0.088
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	72185.80	72186.00	72186.20	72186.40	72186.50	72186.70				
		Take	litres		0.2	0.2	0.2	0.1	0.2				
50	3.45	Average Take	l/m		0.2	0.2	0.2	0.1	0.2			0.18	0.048

SHEET 1 OF

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA | TEST NO: 7

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 2.0 m | TOP OF TEST INTERVAL: 175.60 m (DOWN HOLE)

DATE: June 1-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 180.70 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	2413.00	2416.20	2419.20	2422.00	2424.90	2427.60				
		Take	litres		3.2	3	2.8	2.9	2.7				
50	3.45	Average Take	l/m		3.2	3	2.8	2.9	2.7			2.92	0.782
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	2432.70	2437.20	2441.50	2445.40	2449.40	2453.10				
		Take	litres		4.5	4.3	3.9	4	3.7				
100	6.89	Average Take	l/m		4.5	4.3	3.9	4	3.7			4.08	0.563
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	2456.00	2461.00	2466.10	2470.70	2475.20	2479.70				
		Take	litres		5	5.1	4.6	4.5	4.5				
150	10.34	Average Take	l/m		5	5.1	4.6	4.5	4.5			4.74	0.440
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	72374.4	2482.90	2485.60	2488.30	2491.00	2493.60	2496.10				
		Take	litres		2.7	2.7	2.7	2.6	2.5				
100	6.89	Average Take	l/m		2.7	2.7	2.7	2.6	2.5			2.64	0.364
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	2498.50	2499.90	2501.00	2502.40	2503.70	2505.00				
		Take	litres		1.4	1.1	1.4	1.3	1.3				
50	3.45	Average Take	l/m		1.4	1.1	1.4	1.3	1.3			1.30	0.348

SHEET 1 OF

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA | TEST NO: 8

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 2.0 m | TOP OF TEST INTERVAL: 181.40 m (DOWN HOLE)

DATE: June 2-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 186.80 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	2544.70	2546.80	2548.80	2550.80	2552.70	2554.50			litres/min	
		Take	litres		2.1	2	2	1.9	1.8				
50	3.45	Average Take	l/m		2.1	2	2	1.9	1.8			1.96	0.525
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	2557.80	2561.40	2565.10	2568.60	2572.00	2575.30			litres/min	
		Take	litres		3.6	3.7	3.5	3.4	3.3				
100	6.89	Average Take	l/m		3.6	3.7	3.5	3.4	3.3			3.50	0.483
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	2580.10	2584.90	2589.40	2594.00	2598.60	2602.70			litres/min	
		Take	litres		4.8	4.5	4.6	4.6	4.1				
150	10.34	Average Take	l/m		4.8	4.5	4.6	4.6	4.1			4.52	0.420
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	72374.4	2606.00	2609.00	2612.00	2614.90	2617.80	2620.60			litres/min	
		Take	litres		3	3	2.9	2.9	2.8				
100	6.89	Average Take	l/m		3	3	2.9	2.9	2.8			2.92	0.403
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	2622.50	2624.30	2626.00	2627.70	2629.50	2631.20			litres/min	
		Take	litres		1.8	1.7	1.7	1.8	1.7				
50	3.45	Average Take	l/m		1.8	1.7	1.7	1.8	1.7			1.74	0.466

SHEET 1 OF

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA | TEST NO: 9

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 2.0 m | TOP OF TEST INTERVAL: 200.00 m (DOWN HOLE)

DATE: June 4-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 214.30 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	978.30	978.38	978.40	978.48	978.55	978.60			litres/min	
		Take	litres		0.075	0.025	0.075	0.075	0.05				
50	3.45	Average Take	l/m		0.075	0.025	0.075	0.075	0.05			0.06	0.016
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	979.00	979.20	979.35	979.50	979.65	979.80			litres/min	
		Take	litres		0.2	0.15	0.15	0.15	0.15				
100	6.89	Average Take	l/m		0.2	0.15	0.15	0.15	0.15			0.16	0.022
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	980.35	980.55	980.75	980.93	981.10	981.30			litres/min	
		Take	litres		0.2	0.2	0.18	0.17	0.2				
150	10.34	Average Take	l/m		0.2	0.2	0.18	0.17	0.2			0.19	0.018
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	72374.4	981.15	981.25	981.35	981.45	981.60	981.70			litres/min	
		Take	litres		0.1	0.1	0.1	0.15	0.1				
100	6.89	Average Take	l/m		0.1	0.1	0.1	0.15	0.1			0.11	0.015
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	981.58	981.65	981.67	981.70	981.75	981.80			litres/min	
		Take	litres		0.07	0.02	0.03	0.05	0.05				
50	3.45	Average Take	l/m		0.07	0.02	0.03	0.05	0.05			0.04	0.012

SHEET 1 OF

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA | TEST NO: 10

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 2.0 m | TOP OF TEST INTERVAL: 211.80 m (DOWN HOLE)

DATE: June 4-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 232.60 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3018.30	3020.50	3022.30	3023.80	3025.20	3026.50				
		Take	litres		2.2	1.8	1.5	1.4	1.3				
50	3.45	Average Take	l/m		2.2	1.8	1.5	1.4	1.3			1.64	0.439
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3028.30	3030.30	3032.90	3034.20	3034.40	3035.60				
		Take	litres		2	2.6	1.3	0.2	1.2				
100	6.89	Average Take	l/m		2	2.6	1.3	0.2	1.2			1.46	0.201
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3037.60	3039.60	3041.30	3042.80	3044.20	3045.40				
		Take	litres		2	1.7	1.5	1.4	1.2				
150	10.34	Average Take	l/m		2	1.7	1.5	1.4	1.2			1.56	0.145
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	72374.4	3045.80	3046.50	3047.30	3048.00	3048.70	3049.40				
		Take	litres		0.7	0.8	0.7	0.7	0.7				
100	6.89	Average Take	l/m		0.7	0.8	0.7	0.7	0.7			0.72	0.099
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	3049.40	3049.70	3050.10	3050.40	3050.80	3051.10				
		Take	litres		0.3	0.4	0.3	0.4	0.3				
50	3.45	Average Take	l/m		0.3	0.4	0.3	0.4	0.3			0.34	0.091

SHEET 1 OF

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA

TEST NO: 11

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 2.0 m

TOP OF TEST INTERVAL: 233.50 m (DOWN HOLE)

DATE: June 6-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 281.30 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	207.15	207.33	207.50	207.65	207.80	207.95				
		Take	litres		0.175	0.175	0.15	0.15	0.15				
50	3.45	Average Take	l/m		0.175	0.175	0.15	0.15	0.15			0.16	0.043
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	208.78	209.15	209.50	209.85	210.20	210.50				
		Take	litres		0.375	0.35	0.35	0.35	0.3				
100	6.89	Average Take	l/m		0.375	0.35	0.35	0.35	0.3			0.34	0.048
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	211.40	211.95	212.40	212.90	213.30	213.80				
		Take	litres		0.55	0.45	0.5	0.4	0.5				
150	10.34	Average Take	l/m		0.55	0.45	0.5	0.4	0.5			0.48	0.045
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	72374.4	213.70	213.90	214.10	214.30	214.45	214.65				
		Take	litres		0.2	0.2	0.2	0.15	0.2				
100	6.89	Average Take	l/m		0.2	0.2	0.2	0.15	0.2			0.19	0.026
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	214.45	214.45	214.45	214.45	214.45	214.45				
		Take	litres		0	0	0	0	0				
50	3.45	Average Take	l/m		0	0	0	0	0			0.00	0.000

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA | TEST NO: 12

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 2.0 m | TOP OF TEST INTERVAL: 350.00 m (DOWN HOLE)

DATE: June 10-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 411.00 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	39.40	39.80	40.24	40.63	41.04	41.40			litres/min	
		Take	litres		0.4	0.44	0.39	0.41	0.36				
40	2.76	Average Take	l/m		0.4	0.44	0.39	0.41	0.36			0.40	0.132
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	44.15	44.98	45.78	46.55	47.31	48.05			litres/min	
		Take	litres		0.83	0.8	0.77	0.76	0.74				
80	5.52	Average Take	l/m		0.83	0.8	0.77	0.76	0.74			0.78	0.134
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	51.40	52.65	53.80	54.95	56.05	57.10			litres/min	
		Take	litres		1.25	1.15	1.15	1.1	1.05				
130	8.96	Average Take	l/m		1.25	1.15	1.15	1.1	1.05			1.14	0.122
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	72374.4	57.10	57.50	58.00	58.45	58.90	59.40			litres/min	
		Take	litres		0.4	0.5	0.45	0.45	0.5				
80	5.52	Average Take	l/m		0.4	0.5	0.45	0.45	0.5			0.46	0.079
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	59.54	59.70	59.85	60.00	60.15	60.31			litres/min	
		Take	litres		0.16	0.15	0.15	0.15	0.16				
40	2.76	Average Take	l/m		0.16	0.15	0.15	0.15	0.16			0.15	0.051

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-04

AREA: EAST WALL OF PIT AREA | TEST NO: 13

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 2.0 m | TOP OF TEST INTERVAL: 342.40 m (DOWN HOLE)

DATE: June 13-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 473.50 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	391.70	393.70	395.40	396.90	398.30	399.70				
		Take	litres		2	1.7	1.5	1.4	1.4				
50	3.45	Average Take	l/m		2	1.7	1.5	1.4	1.4			1.60	0.429
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	403.20	406.20	408.30	410.50	412.50	414.40				
		Take	litres		3	2.1	2.2	2	1.9				
100	6.89	Average Take	l/m		3	2.1	2.2	2	1.9			2.24	0.309
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	418.50	421.70	424.50	427.30	429.90	432.40				
		Take	litres		3.2	2.8	2.8	2.6	2.5				
150	10.34	Average Take	l/m		3.2	2.8	2.8	2.6	2.5			2.78	0.258
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	72374.4	432.40	433.60	435.00	436.20	437.30	438.50				
		Take	litres		1.2	1.4	1.2	1.1	1.2				
100	6.89	Average Take	l/m		1.2	1.4	1.2	1.1	1.2			1.22	0.168
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	438.30	438.50	438.70	439.00	439.40	439.80				
		Take	litres		0.2	0.2	0.3	0.4	0.4				
50	3.45	Average Take	l/m		0.2	0.2	0.3	0.4	0.4			0.30	0.080

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-05A

AREA: SOUTH WALL OF PIT AREA

TEST NO: 1

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.5 m

TOP OF TEST INTERVAL: 190.80 m (DOWN HOLE)

DATE: August 18-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 242.70 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	18098.00	18098.94	18099.51	18100.65	18101.40				
		Take	litres		0.95	0.57	1.14	0.76				
22	1.52	Average Take	l/m		0.95	0.57	1.14	0.76			0.85	0.521
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	18103.30	18104.81	18106.14	18107.46	18108.60				
		Take	litres		1.51	1.32	1.32	1.14				
40	2.76	Average Take	l/m		1.51	1.32	1.32	1.14			1.32	0.457
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	18112.76	18116.55	18120.33	18124.12	18127.90				
		Take	litres		3.79	3.79	3.79	3.79				
88	6.07	Average Take	l/m		3.79	3.79	3.79	3.79			3.79	0.603
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	18130.93	18131.12	18132.07	18132.82	18133.58				
		Take	litres		0.19	0.95	0.76	0.76				
40	2.76	Average Take	l/m		0.19	0.95	0.76	0.76			0.66	0.229
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	18133.77	18133.77	18133.96	18134.34	18134.72				
		Take	litres		0.00	0.19	0.38	0.38				
22	1.52	Average Take	l/m		0.00	0.19	0.38	0.38			0.24	0.145

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-05A

AREA: SOUTH WALL OF PIT AREA | TEST NO: 2

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 0.5 m | TOP OF TEST INTERVAL: 236.20 m (DOWN HOLE)

DATE: August 20-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 266.30 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	204.79	208.01	211.04	214.06	216.90	219.55			
		Take	litres		3.22	3.03	3.02	2.84	2.65			
60	4.14	Average Take	l/m		3.22	3.03	3.02	2.84	2.65		2.95	0.686
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	223.72	228.07	232.42	236.21	239.62	243.40			
		Take	litres		4.35	4.35	3.79	3.41	3.78			
104	7.17	Average Take	l/m		4.35	4.35	3.79	3.41	3.78		3.94	0.532
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	254.16	259.11	264.22	269.14	273.87	278.42			
		Take	litres		4.95	5.11	4.92	4.73	4.55			
150	10.34	Average Take	l/m		4.95	5.11	4.92	4.73	4.55		4.85	0.456
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	280.88	283.34	285.80	288.07	290.34	292.61			
		Take	litres		2.46	2.46	2.27	2.27	2.27			
98	6.76	Average Take	l/m		2.46	2.46	2.27	2.27	2.27		2.35	0.336
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	294.50	295.56	296.59	297.53	298.48	299.43			
		Take	litres		1.06	1.03	0.94	0.95	0.95			
56	3.86	Average Take	l/m		1.06	1.03	0.94	0.95	0.95		0.99	0.245

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-05A

AREA: SOUTH WALL OF PIT AREA | TEST NO: 3

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 0.5 m | TOP OF TEST INTERVAL: 282.30 m (DOWN HOLE)

DATE: August 21-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 343.30 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	309.49	310.33	311.20	311.95	312.79	313.58			
		Take	litres		0.84	0.87	0.75	0.84	0.79			
70	4.83	Average Take	l/m		0.84	0.87	0.75	0.84	0.79		0.82	0.163
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	315.78	316.84	317.86	318.92	319.90	320.89			
		Take	litres		1.06	1.02	1.06	0.98	0.99			
100	6.89	Average Take	l/m		1.06	1.02	1.06	0.98	0.99		1.02	0.144
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	323.92	325.43	326.87	328.35	329.75	331.22			
		Take	litres		1.51	1.44	1.48	1.4	1.47			
148	10.20	Average Take	l/m		1.51	1.44	1.48	1.4	1.47		1.46	0.139
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	332.81	333.68	334.59	335.42	336.26	336.71			
		Take	litres		0.87	0.91	0.83	0.84	0.45			
102	7.03	Average Take	l/m		0.87	0.91	0.83	0.84	0.45		0.78	0.107
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	338.23	338.76	339.29	339.85	340.38	340.88			
		Take	litres		0.53	0.53	0.56	0.53	0.50			
74	5.10	Average Take	l/m		0.53	0.53	0.56	0.53	0.50		0.53	0.100

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-05A

AREA: SOUTH WALL OF PIT AREA | TEST NO: 4

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 0.5 m | TOP OF TEST INTERVAL: 337.20 m (DOWN HOLE)

DATE: August 22-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 396.80 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	352.87	353.03	353.18	353.33	353.48	353.59			
		Take	litres		0.16	0.15	0.15	0.15	0.11			
98	6.76	Average Take	l/m		0.16	0.15	0.15	0.15	0.11		0.14	0.021
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	354.28	354.62	354.88	355.18	355.45	355.75			
		Take	litres		0.34	0.26	0.3	0.27	0.3			
118	8.14	Average Take	l/m		0.34	0.26	0.3	0.27	0.3		0.29	0.035
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	357.27	358.06	358.93	359.84	360.75	361.69			
		Take	litres		0.79	0.87	0.91	0.91	0.94			
152	10.48	Average Take	l/m		0.79	0.87	0.91	0.91	0.94		0.88	0.082
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	362.60	363.02	363.66	364.19	364.76	365.25			
		Take	litres		0.42	0.64	0.53	0.57	0.49			
122	8.41	Average Take	l/m		0.42	0.64	0.53	0.57	0.49		0.53	0.061
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	365.93	366.31	366.73	367.11	367.45	367.87			
		Take	litres		0.38	0.42	0.38	0.34	0.42			
104	7.17	Average Take	l/m		0.38	0.42	0.38	0.34	0.42		0.39	0.052

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-06

AREA: SOUTHWEST WALL OF PIT AREA

TEST NO: 1

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 54.90 m (DOWN HOLE)

DATE: June 22-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 100.60 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	3606.20	3626.10	3645.20	3663.70	3681.90	3699.60			
		Take	litres		19.9	19.1	18.5	18.2	17.7			
30	2.07	Average Take	l/m		19.9	19.1	18.5	18.2	17.7		18.68	8.678
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	3734.40	3778.50	3821.20	3862.00	3902.50	3942.00			
		Take	litres		44.1	42.7	40.8	40.5	39.5			
60	4.14	Average Take	l/m		44.1	42.7	40.8	40.5	39.5		41.52	9.743
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	4014.00	4063.50	4114.00	4162.00	4209.50	4257.00			
		Take	litres		49.5	50.5	48	47.5	47.5			
80	5.52	Average Take	l/m		49.5	50.5	48	47.5	47.5		48.60	8.575
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	4423.50	4456.50	4489.50	4522.00	4553.50	4585.50			
		Take	litres		33	33	32.5	31.5	32			
60	4.14	Average Take	l/m		33	33	32.5	31.5	32		32.40	7.603
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	4632.80	4649.50	4662.50	4675.50	4689.00	4702.50			
		Take	litres		16.7	13	13	13.5	13.5			
30	2.07	Average Take	l/m		16.7	13	13	13.5	13.5		13.94	6.476

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-06

AREA: SOUTHWEST WALL OF PIT AREA

TEST NO: 2

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 102.70 m (DOWN HOLE)

DATE: June 22-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 138.70 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	4713.00	4724.00	4733.00	4739.90	4746.90	4753.80			
		Take	litres		11	9	6.9	7	6.9			
45	3.10	Average Take	l/m		11	9	6.9	7	6.9		8.16	2.544
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	4768.80	4783.90	4799.00	4813.80	4829.90	4843.50			
		Take	litres		15.1	15.1	14.8	16.1	13.6			
95	6.55	Average Take	l/m		15.1	15.1	14.8	16.1	13.6		14.94	2.222
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	4891.80	4916.60	4940.50	4963.80	4986.80	5008.90			
		Take	litres		24.8	23.9	23.3	23	22.1			
145	10.00	Average Take	l/m		24.8	23.9	23.3	23	22.1		23.42	2.288
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	5023.00	5034.60	5046.10	5058.00	5069.50	5080.90			
		Take	litres		11.6	11.5	11.9	11.5	11.4			
90	6.21	Average Take	l/m		11.6	11.5	11.9	11.5	11.4		11.58	1.818
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	5086.90	5091.90	5097.80	5101.80	5105.90	5109.50			
		Take	litres		5	5.9	4	4.1	3.6			
40	2.76	Average Take	l/m		5	5.9	4	4.1	3.6		4.52	1.583

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-06

AREA: SOUTHWEST WALL OF PIT AREA

TEST NO: 3

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 138.70 m (DOWN HOLE)

DATE: June 23-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 181.40 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	288.50	297.50	306.00	314.50	323.00	331.00			
		Take	litres		9	8.5	8.5	8.5	8			
50	3.45	Average Take	l/m		9	8.5	8.5	8.5	8		8.50	2.389
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	345.00	360.50	376.00	391.00	406.00	420.50			
		Take	litres		15.5	15.5	15	15	14.5			
100	6.89	Average Take	l/m		15.5	15.5	15	15	14.5		15.10	2.135
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	439.50	460.00	480.00	499.50	519.00	538.00			
		Take	litres		20.5	20	19.5	19.5	19			
135	9.31	Average Take	l/m		20.5	20	19.5	19.5	19		19.70	2.066
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	551.00	565.00	578.00	591.00	604.50	618.00			
		Take	litres		14	13	13	13.5	13.5			
100	6.89	Average Take	l/m		14	13	13	13.5	13.5		13.40	1.894
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	624.00	630.50	637.00	644.00	650.50	657.50			
		Take	litres		6.5	6.5	7	6.5	7			
50	3.45	Average Take	l/m		6.5	6.5	7	6.5	7		6.70	1.883

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-06

AREA: SOUTHWEST WALL OF PIT AREA

TEST NO: 4

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 181.40 m (DOWN HOLE)

DATE: June 23-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 211.90 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	619.20	620.20	621.00	621.80	622.50	623.30			
		Take	litres		1	0.8	0.8	0.7	0.8			
50	3.45	Average Take	l/m		1	0.8	0.8	0.7	0.8		0.82	0.230
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	627.00	629.40	631.40	633.20	635.10	636.80			
		Take	litres		2.4	2	1.8	1.9	1.7			
100	6.89	Average Take	l/m		2.4	2	1.8	1.9	1.7		1.96	0.277
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	643.60	648.40	653.20	657.80	662.70	667.40			
		Take	litres		4.8	4.8	4.6	4.9	4.7			
150	10.34	Average Take	l/m		4.8	4.8	4.6	4.9	4.7		4.76	0.450
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	667.20	669.50	672.20	674.80	677.50	680.00			
		Take	litres		2.3	2.7	2.6	2.7	2.5			
100	6.89	Average Take	l/m		2.3	2.7	2.6	2.7	2.5		2.56	0.362
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	679.30	680.20	681.30	682.40	683.50	684.70			
		Take	litres		0.9	1.1	1.1	1.1	1.2			
50	3.45	Average Take	l/m		0.9	1.1	1.1	1.1	1.2		1.08	0.303

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-06

AREA: SOUTHWEST WALL OF PIT AREA

TEST NO: 5

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 213.40 m (DOWN HOLE)

DATE: June 25-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 250.00 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	725.00	726.50	727.80	729.10	730.40	731.60				
		Take	litres		1.5	1.3	1.3	1.3	1.2				
40	2.76	Average Take	l/m		1.5	1.3	1.3	1.3	1.2			1.32	0.462
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	735.70	739.00	742.30	745.50	748.60	751.70				
		Take	litres		3.3	3.3	3.2	3.1	3.1				
80	5.52	Average Take	l/m		3.3	3.3	3.2	3.1	3.1			3.20	0.565
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	762.60	768.10	773.50	778.90	784.20	789.40				
		Take	litres		5.5	5.4	5.4	5.3	5.2				
135	9.31	Average Take	l/m		5.5	5.4	5.4	5.3	5.2			5.36	0.562
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	794.30	796.30	798.70	801.10	803.60	806.20				
		Take	litres		2	2.4	2.4	2.5	2.6				
80	5.52	Average Take	l/m		2	2.4	2.4	2.5	2.6			2.38	0.420
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	litres	807.80	809.00	810.00	811.20	812.50	813.80				
		Take	litres		1.2	1	1.2	1.3	1.3				
50	3.45	Average Take	l/m		1.2	1	1.2	1.3	1.3			1.20	0.337

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-06

AREA: SOUTHWEST WALL OF PIT AREA

TEST NO: 6

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 315.50 m (DOWN HOLE)

DATE: June 27-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 352.10 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	835.80	836.70	838.40	840.10	841.60	843.10			
		Take	litres		0.9	1.7	1.7	1.5	1.5			
50	3.45	Average Take	l/m		0.9	1.7	1.7	1.5	1.5		1.46	0.410
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	848.40	854.80	861.50	868.90	874.30	880.50			
		Take	litres		6.4	6.7	7.4	5.4	6.2			
100	6.89	Average Take	l/m		6.4	6.7	7.4	5.4	6.2		6.42	0.908
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	890.70	898.40	905.90	913.50	920.90	928.40			
		Take	litres		7.7	7.5	7.6	7.4	7.5			
140	9.65	Average Take	l/m		7.7	7.5	7.6	7.4	7.5		7.54	0.763
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	973.20	977.60	981.40	985.10	988.90	992.30			
		Take	litres		4.4	3.8	3.7	3.8	3.4			
100	6.89	Average Take	l/m		4.4	3.8	3.7	3.8	3.4		3.82	0.540
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	993.90	995.40	997.00	998.80	1000.30	1002.00			
		Take	litres		1.5	1.6	1.8	1.5	1.7			
60	4.14	Average Take	l/m		1.5	1.6	1.8	1.5	1.7		1.62	0.380

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-06

AREA: SOUTHWEST WALL OF PIT AREA

TEST NO: 7

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 352.10 m (DOWN HOLE)

DATE: June 30-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 391.80 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	6073.00	6093.90	6112.70	6130.60	6145.70	6160.00			
		Take	litres		20.9	18.8	17.9	15.1	14.3			
50	3.45	Average Take	l/m		20.9	18.8	17.9	15.1	14.3		17.40	4.890
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	6220.00	6238.50	6273.00	6306.20	6337.50	6366.00			
		Take	litres		18.5	34.5	33.2	31.3	28.5			
100	6.89	Average Take	l/m		18.5	34.5	33.2	31.3	28.5		29.20	4.128
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	6415.00	6474.00	6529.00	6574.00	6619.00	6662.00			
		Take	litres		59	55	45	45	43			
150	10.34	Average Take	l/m		59	55	45	45	43		49.40	4.665
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	6699.00	6721.60	6748.00	6773.50	6799.80	6825.00			
		Take	litres		22.6	26.4	25.5	26.3	25.2			
100	6.89	Average Take	l/m		22.6	26.4	25.5	26.3	25.2		25.20	3.562
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	6811.70	6816.30	6823.30	6831.70	6840.40	6849.90			
		Take	litres		4.6	7	8.4	8.7	9.5			
45	3.10	Average Take	l/m		4.6	7	8.4	8.7	9.5		7.64	2.382

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-08

AREA: WEST WALL OF PIT AREA

TEST NO: 1

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 89.30 m (DOWN HOLE)

DATE: June 5-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 113.70 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	3606.20	3626.10	3645.20	3663.70	3681.90	3699.60			
		Take	litres		19.9	19.1	18.5	18.2	17.7			
30	2.07	Average Take	l/m		19.9	19.1	18.5	18.2	17.7		18.68	8.678
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	3734.40	3778.50	3821.20	3862.00	3902.50	3942.00			
		Take	litres		44.1	42.7	40.8	40.5	39.5			
60	4.14	Average Take	l/m		44.1	42.7	40.8	40.5	39.5		41.52	9.743
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	4014.00	4063.50	4114.00	4162.00	4209.50	4257.00			
		Take	litres		49.5	50.5	48	47.5	47.5			
80	5.52	Average Take	l/m		49.5	50.5	48	47.5	47.5		48.60	8.575
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	4423.50	4456.50	4489.50	4522.00	4553.50	4585.50			
		Take	litres		33	33	32.5	31.5	32			
60	4.14	Average Take	l/m		33	33	32.5	31.5	32		32.40	7.603
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	4632.80	4649.50	4662.50	4675.50	4689.00	4702.50			
		Take	litres		16.7	13	13	13.5	13.5			
30	2.07	Average Take	l/m		16.7	13	13	13.5	13.5		13.94	6.476

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-08

AREA: WEST WALL OF PIT AREA

TEST NO: 2

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 104.60 m (DOWN HOLE)

DATE: June 5-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 138.70 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	2575.00	2601.70	2627.10	2651.30	2675.10	2699.30			
		Take	litres		26.7	25.4	24.2	23.8	24.2			
35	2.41	Average Take	l/m		26.7	25.4	24.2	23.8	24.2		24.86	9.928
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	2748.00	2791.00	2833.00	2875.00	2920.00	2966.00			
		Take	litres		43	42	42	45	46			
80	5.52	Average Take	l/m		43	42	42	45	46		43.60	7.693
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	3035.00	3089.00	3142.00	3195.00	3248.00	3300.00			
		Take	litres		54	53	53	53	52			
110	7.58	Average Take	l/m		54	53	53	53	52		53.00	6.815
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	3330.00	3373.00	3415.00	3458.00	3500.00	3542.00			
		Take	litres		43	42	43	42	42			
80	5.52	Average Take	l/m		43	42	43	42	42		42.40	7.481
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	3561.00	3586.70	3611.80	3638.00	3663.00	3690.00			
		Take	litres		25.7	25.1	26.2	25	27			
35	2.41	Average Take	l/m		25.7	25.1	26.2	25	27		25.80	10.303

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-08

AREA: WEST WALL OF PIT AREA | TEST NO: 3

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 0.0 m | TOP OF TEST INTERVAL: 148.80 m (DOWN HOLE)

DATE: June 7-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 188.40 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	4982.00	5026.00	5073.00	5122.00	5168.00	5213.00			
		Take	litres		44	47	49	46	45			
20	1.38	Average Take	l/m		44	47	49	46	45		46.20	31.875
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	5272.00	5333.00	5395.00	5457.00	5518.00	5580.00			
		Take	litres		61	62	62	61	62			
32	2.21	Average Take	l/m		61	62	62	61	62		61.60	26.863
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	5694.00	5770.00	5846.00	5923.00	6001.00	6077.00			
		Take	litres		76	76	77	78	76			
44	3.03	Average Take	l/m		76	76	77	78	76		76.60	24.420
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	6087.00	6146.00	6205.00	6263.00	6321.00	6380.00			
		Take	litres		59	59	58	58	59			
32	2.21	Average Take	l/m		59	59	58	58	59		58.60	25.555
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	6408.00	6449.00	6491.00	6533.00	6574.00	6615.00			
		Take	litres		41	42	42	41	41			
20	1.38	Average Take	l/m		41	42	42	41	41		41.40	28.563

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-08

AREA: WEST WALL OF PIT AREA | TEST NO: 4

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 0.0 m | TOP OF TEST INTERVAL: 183.80 m (DOWN HOLE)

DATE: June 7-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 223.50 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	7584.50	7591.80	7598.90	7602.30	7606.40				
		Take	litres		7.3	7.1	3.4	4.1				
35	2.41	Average Take	l/m		7.3	7.1	3.4	4.1			5.47	2.186
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	7622.00	7628.80	7635.80	7640.40	7645.90				
		Take	litres		6.8	7	4.6	5.5				
45	3.10	Average Take	l/m		6.8	7	4.6	5.5			5.97	1.863
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	7671.80	7679.80	7687.60	7695.00	7702.20				
		Take	litres		8	7.8	7.4	7.2				
60	4.14	Average Take	l/m		8	7.8	7.4	7.2			7.60	1.783
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	7652.50	7671.90	7680.10	7685.00	7690.00				
		Take	litres		19.4	8.2	4.9	5				
52	3.59	Average Take	l/m		19.4	8.2	4.9	5			9.38	2.534
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	7682.50	7685.40	7687.20	7689.00	7691.00				
		Take	litres		2.9	1.8	1.8	2				
38	2.62	Average Take	l/m		2.9	1.8	1.8	2			2.13	0.783

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-08

AREA: WEST WALL OF PIT AREA

TEST NO: 5

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 200.60 m (DOWN HOLE)

DATE: June 8-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 231.10 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	42.95	43.15	43.33	43.52	43.68	43.85			
		Take	litres		0.2	0.18	0.19	0.16	0.17			
68	4.69	Average Take	l/m		0.2	0.18	0.19	0.16	0.17		0.18	0.037
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	44.40	44.75	45.10	45.38	45.73	46.03			
		Take	litres		0.35	0.35	0.28	0.35	0.3			
96	6.62	Average Take	l/m		0.35	0.35	0.28	0.35	0.3		0.33	0.048
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	46.95	47.55	48.14	48.70	49.30	49.80			
		Take	litres		0.6	0.59	0.56	0.6	0.5			
144	9.93	Average Take	l/m		0.6	0.59	0.56	0.6	0.5		0.57	0.056
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	50.40	50.60	50.78	50.96	51.13	51.30			
		Take	litres		0.2	0.18	0.18	0.17	0.17			
98	6.76	Average Take	l/m		0.2	0.18	0.18	0.17	0.17		0.18	0.026
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	51.34	51.43	51.52	51.60	51.70	51.79			
		Take	litres		0.09	0.09	0.08	0.1	0.09			
70	4.83	Average Take	l/m		0.09	0.09	0.08	0.1	0.09		0.09	0.018

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT | PROJECT NO: VA101-176/8 | DRILLHOLE: KP-08

AREA: WEST WALL OF PIT AREA | TEST NO: 6

INCLINATION: 60 ° (FROM HORIZONTAL) | DEPTH TO GROUNDWATER: 0.0 m | TOP OF TEST INTERVAL: 232.60 m (DOWN HOLE)

DATE: June 10-2004 | GAUGE HEIGHT ABOVE GROUND: 0.5 m | BOTTOM OF TEST INTERVAL: 277.70 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	73.35	73.40	73.40	73.45	73.45	73.45			
		Take	litres		0.05	0	0.05	0	0			
50	3.45	Average Take	l/m		0.05	0	0.05	0	0		0.02	0.006
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	73.90	74.00	74.10	74.20	74.30	74.40			
		Take	litres		0.1	0.1	0.1	0.1	0.1			
100	6.89	Average Take	l/m		0.1	0.1	0.1	0.1	0.1		0.10	0.014
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	74.90	75.00	75.10	75.20	75.30	75.40			
		Take	litres		0.1	0.1	0.1	0.1	0.1			
145	10.00	Average Take	l/m		0.1	0.1	0.1	0.1	0.1		0.10	0.010
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	75.20	75.25	75.30	75.40	75.45	75.45			
		Take	litres		0.05	0.05	0.1	0.05	0			
105	7.24	Average Take	l/m		0.05	0.05	0.1	0.05	0		0.05	0.007
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	75.20	75.25	75.25	75.30	75.30	75.30			
		Take	litres		0.05	0	0.05	0	0			
55	3.79	Average Take	l/m		0.05	0	0.05	0	0		0.02	0.005

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-08

AREA: WEST WALL OF PIT AREA

TEST NO: 7

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 279.90 m (DOWN HOLE)

DATE: June 11-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 319.50 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	683.30	684.20	685.00	685.70	686.50	687.20			
		Take	litres		0.9	0.8	0.7	0.8	0.7			
50	3.45	Average Take	l/m		0.9	0.8	0.7	0.8	0.7		0.78	0.219
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	687.90	689.40	690.60	691.80	693.00	694.10			
		Take	litres		1.5	1.2	1.2	1.2	1.1			
103	7.10	Average Take	l/m		1.5	1.2	1.2	1.2	1.1		1.24	0.170
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	695.90	697.90	699.90	701.80	703.70	705.60			
		Take	litres		2	2	1.9	1.9	1.9			
150	10.34	Average Take	l/m		2	2	1.9	1.9	1.9		1.94	0.183
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	706.00	707.20	708.40	709.50	710.70	711.80			
		Take	litres		1.2	1.2	1.1	1.2	1.1			
100	6.89	Average Take	l/m		1.2	1.2	1.1	1.2	1.1		1.16	0.164
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	712.00	712.40	712.90	713.30	713.80	714.20			
		Take	litres		0.4	0.5	0.4	0.5	0.4			
50	3.45	Average Take	l/m		0.4	0.5	0.4	0.5	0.4		0.44	0.124

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE PROJECT

PROJECT NO: VA101-176/8

DRILLHOLE: KP-08

AREA: WEST WALL OF PIT AREA

TEST NO: 8

INCLINATION: 60 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.0 m

TOP OF TEST INTERVAL: 353.00 m (DOWN HOLE)

DATE: July 13-2004

GAUGE HEIGHT ABOVE GROUND: 0.5 m

BOTTOM OF TEST INTERVAL: 426.20 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	509.90	510.80	511.90	512.90	513.80	514.80			
		Take	litres		0.9	1.1	1	0.9	1			
48	3.31	Average Take	l/m		0.9	1.1	1	0.9	1		0.98	0.287
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	517.50	519.90	521.70	523.30	524.90	526.40			
		Take	litres		2.4	1.8	1.6	1.6	1.5			
94	6.48	Average Take	l/m		2.4	1.8	1.6	1.6	1.5		1.78	0.268
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	529.80	533.20	536.30	539.60	542.80	545.90			
		Take	litres		3.4	3.1	3.3	3.2	3.1			
140	9.65	Average Take	l/m		3.4	3.1	3.3	3.2	3.1		3.22	0.326
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	549.20	550.60	552.00	553.50	554.90	556.30			
		Take	litres		1.4	1.4	1.5	1.4	1.4			
96	6.62	Average Take	l/m		1.4	1.4	1.5	1.4	1.4		1.42	0.209
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	556.10	556.70	557.40	557.90	558.40	559.00			
		Take	litres		0.6	0.7	0.5	0.5	0.6			
46	3.17	Average Take	l/m		0.6	0.7	0.5	0.5	0.6		0.58	0.177

SECTION 4 – GEOTECHNICAL RESPONSE TEST DATA

2004 OPEN PIT RISING HEAD (HVORSLEV) TEST DATA

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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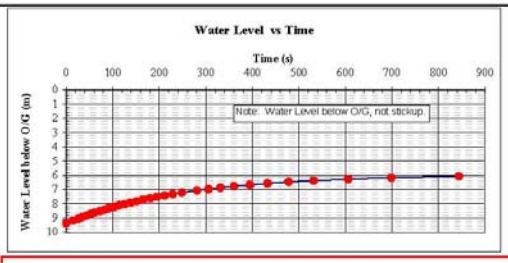
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

			Test Interval		
Project No.	101-176/8				
Borehole No.	I-125 (4171)		**20.00** m	to	**24.40** m
Borehole Elevation			307.33	m	
Borehole Inclination			90	deg	
Date:			11/Sep/04		
Test No.			1		
Hole diameter, D		D =	0.096	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			20.00	m	
Bottom of test interval			24.40	m	
Length of test interval, L		L =	4.40	m	
Stickup of piezometer or rods above ground surface			0.12		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			5.98	m	
Static water level, H **(below top of piezo or drill rod)**		H =	5.98	m	
Static water level, **(below ground surface)**			5.86	m	
Elevation of static water level **(below ground surface)**		El. =	301.47	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			9.50	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	9.50	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	9.50	9.50	9.38	1.00	0.37
16	9.30	9.30	9.18	0.94	0.37
27	9.17	9.17	9.05	0.91	0.37
35	9.05	9.05	8.93	0.87	0.37
45	8.95	8.95	8.83	0.84	0.37
53	8.85	8.85	8.73	0.82	0.37
61	8.75	8.75	8.63	0.79	0.37
72	8.65	8.65	8.53	0.76	0.37
82	8.55	8.55	8.43	0.73	0.37
91	8.45	8.45	8.33	0.70	0.37
104	8.35	8.35	8.23	0.67	0.37
114	8.25	8.25	8.13	0.64	0.37
126	8.15	8.15	8.03	0.62	0.37
139	8.05	8.05	7.93	0.59	0.37
152	7.95	7.95	7.83	0.56	0.37
166	7.85	7.85	7.73	0.53	0.37
181	7.75	7.75	7.63	0.50	0.37
196	7.65	7.65	7.53	0.47	0.37
212	7.55	7.55	7.43	0.45	0.37
229	7.45	7.45	7.33	0.42	0.37
249	7.35	7.35	7.23	0.39	0.37
281	7.20	7.20	7.08	0.35	0.37
306	7.10	7.10	6.98	0.32	0.37
332	7.00	7.00	6.88	0.29	0.37
361	6.90	6.90	6.78	0.26	0.37
395	6.80	6.80	6.68	0.23	0.37
433	6.70	6.70	6.58	0.20	0.37
478	6.60	6.60	6.48	0.18	0.37
532	6.50	6.50	6.38	0.15	0.37
606	6.40	6.40	6.28	0.12	0.37
699	6.30	6.30	6.18	0.09	0.37
844	6.20	6.20	6.08	0.06	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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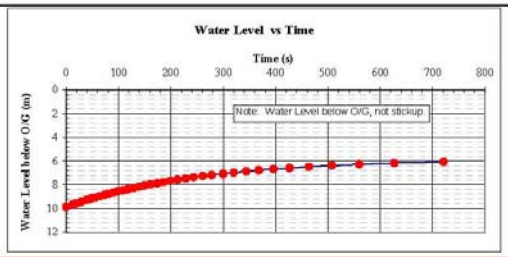
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8				
Borehole No.	I-125 (4171)				
			Test Interval		
			20.00 m	to	24.40 m
Borehole Elevation			307.33	m	
Borehole Inclination			90	deg	
Date:			11/Sep/04		
Test No.			2		
Hole diameter, D		D =	0.096	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			20.00	m	
Bottom of test interval			24.40	m	
Length of test interval, L		L =	4.40	m	
Stickup of piezometer or rods above ground surface			0.12		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			5.98	m	
Static water level, H **(below top of piezo or drill rod)**		H =	5.98	m	
Static water level, **(below ground surface)**			5.86	m	
Elevation of static water level **(below ground surface)**		El. =	301.47	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			10.00	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	10.00	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	10.00	10.00	9.88	1.00	0.37
13	9.80	9.80	9.68	0.95	0.37
19	9.70	9.70	9.58	0.93	0.37
29	9.55	9.55	9.43	0.89	0.37
40	9.40	9.40	9.28	0.85	0.37
48	9.30	9.30	9.18	0.83	0.37
56	9.20	9.20	9.08	0.80	0.37
64	9.10	9.10	8.98	0.78	0.37
73	9.00	9.00	8.88	0.75	0.37
81	8.90	8.90	8.78	0.73	0.37
91	8.80	8.80	8.68	0.70	0.37
99	8.70	8.70	8.58	0.68	0.37
108	8.60	8.60	8.48	0.65	0.37
118	8.50	8.50	8.38	0.63	0.37
129	8.40	8.40	8.28	0.60	0.37
139	8.30	8.30	8.18	0.58	0.37
150	8.20	8.20	8.08	0.55	0.37
161	8.10	8.10	7.98	0.53	0.37
174	8.00	8.00	7.88	0.50	0.37
186	7.90	7.90	7.78	0.48	0.37
199	7.80	7.80	7.68	0.45	0.37
213	7.70	7.70	7.58	0.43	0.37
229	7.60	7.60	7.48	0.40	0.37
244	7.50	7.50	7.38	0.38	0.37
261	7.40	7.40	7.28	0.35	0.37
278	7.30	7.30	7.18	0.33	0.37
300	7.20	7.20	7.08	0.30	0.37
320	7.10	7.10	6.98	0.28	0.37
344	7.00	7.00	6.88	0.25	0.37
368	6.90	6.90	6.78	0.23	0.37
396	6.80	6.80	6.68	0.20	0.37
427	6.70	6.70	6.58	0.18	0.37
464	6.60	6.60	6.48	0.15	0.37
508	6.50	6.50	6.38	0.13	0.37
560	6.40	6.40	6.28	0.10	0.37
627	6.30	6.30	6.18	0.08	0.37
721	6.2	6.2	6.08	0.05	0.37



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PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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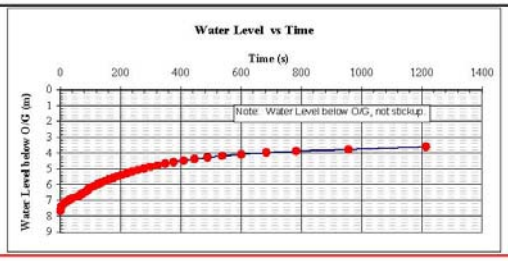
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8		
Borehole No.	I-172 (4172)		
		Test Interval	
		34.80 m to	39.10 m
Borehole Elevation		312.9	m
Borehole Inclination		90	deg
Date:		9/Sep/04	
Test No.		1	
Hole diameter, D	D =	0.076	m
Interior diameter of piezometer or drill rods, d	d =	0.051	m
Top of test interval		34.80	m
Bottom of test interval		39.10	m
Length of test interval, L	L =	4.30	m
Stickup of piezometer or rods above ground surface		0.23	
Measured static water depth in piezo **(below top of piezo or drill rod,)**		3.08	m
Static water level, H **(below top of piezo or drill rod)**	H =	3.08	m
Static water level, **(below ground surface)**		2.85	m
Elevation of static water level **(below ground surface)**	El. =	310.05	m
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**		7.88	m
Water level at start of test, Ho **(below top of piezo or drill rod)**	Ho =	7.88	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	7.88	7.88	7.65	1.00	0.37
4	7.60	7.60	7.37	0.94	0.37
13	7.40	7.40	7.17	0.90	0.37
23	7.30	7.30	7.07	0.88	0.37
30	7.20	7.20	6.97	0.86	0.37
40	7.10	7.10	6.87	0.84	0.37
57	7.00	7.00	6.77	0.82	0.37
65	6.90	6.90	6.67	0.80	0.37
74	6.80	6.80	6.57	0.78	0.37
83	6.70	6.70	6.47	0.75	0.37
92	6.60	6.60	6.37	0.73	0.37
93	6.50	6.50	6.27	0.71	0.37
103	6.40	6.40	6.17	0.69	0.37
114	6.30	6.30	6.07	0.67	0.37
125	6.20	6.20	5.97	0.65	0.37
137	6.10	6.10	5.87	0.63	0.37
149	6.00	6.00	5.77	0.61	0.37
162	5.90	5.90	5.67	0.59	0.37
176	5.80	5.80	5.57	0.57	0.37
190	5.70	5.70	5.47	0.55	0.37
205	5.60	5.60	5.37	0.53	0.37
221	5.50	5.50	5.27	0.50	0.37
238	5.40	5.40	5.17	0.48	0.37
258	5.30	5.30	5.07	0.46	0.37
278	5.20	5.20	4.97	0.44	0.37
299	5.10	5.10	4.87	0.42	0.37
324	5.00	5.00	4.77	0.40	0.37
349	4.90	4.90	4.67	0.38	0.37
377	4.80	4.80	4.57	0.36	0.37
410	4.70	4.70	4.47	0.34	0.37
446	4.60	4.60	4.37	0.32	0.37
489	4.50	4.50	4.27	0.30	0.37
538	4.40	4.40	4.17	0.28	0.37
601	4.30	4.30	4.07	0.25	0.37
684	4.20	4.20	3.97	0.23	0.37
783	4.10	4.10	3.87	0.21	0.37
957	4	4	3.77	0.19	0.37
1214	3.82	3.82	3.59	0.15	0.37



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PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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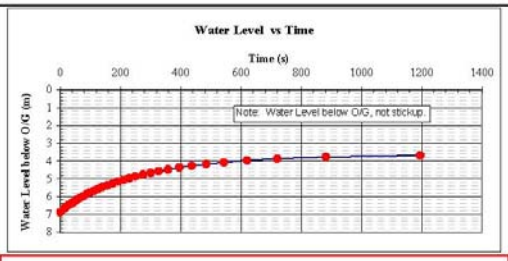
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8			
Borehole No.	I-172 (4172)			
		Test Interval		
		34.80 m	to	39.10 m
Borehole Elevation			312.9	m
Borehole Inclination			90	deg
Date:			9/Sep/04	
Test No.			2	
Hole diameter, D		D =	0.076	m
Interior diameter of piezometer or drill rods, d		d =	0.051	m
Top of test interval			34.80	m
Bottom of test interval			39.10	m
Length of test interval, L		L =	4.30	m
Stickup of piezometer or rods above ground surface			0.23	
Measured static water depth in piezo **(below top of piezo or drill rod,)**			3.08	m
Static water level, H **(below top of piezo or drill rod)**		H =	3.08	m
Static water level, **(below ground surface)**			2.85	m
Elevation of static water level **(below ground surface)**		El. =	310.05	m
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			7.11	m
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	7.11	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	7.11	7.11	6.88	1.00	0.37
14	6.90	6.90	6.67	0.95	0.37
21	6.80	6.80	6.57	0.92	0.37
28	6.70	6.70	6.47	0.90	0.37
38	6.60	6.60	6.37	0.87	0.37
49	6.50	6.50	6.27	0.85	0.37
57	6.40	6.40	6.17	0.82	0.37
66	6.30	6.30	6.07	0.80	0.37
77	6.20	6.20	5.97	0.77	0.37
88	6.10	6.10	5.87	0.75	0.37
100	6.00	6.00	5.77	0.72	0.37
113	5.90	5.90	5.67	0.70	0.37
126	5.80	5.80	5.57	0.67	0.37
140	5.70	5.70	5.47	0.65	0.37
156	5.60	5.60	5.37	0.63	0.37
174	5.50	5.50	5.27	0.60	0.37
191	5.40	5.40	5.17	0.58	0.37
211	5.30	5.30	5.07	0.55	0.37
229	5.20	5.20	4.97	0.53	0.37
249	5.10	5.10	4.87	0.50	0.37
275	5.00	5.00	4.77	0.48	0.37
300	4.90	4.90	4.67	0.45	0.37
327	4.80	4.80	4.57	0.43	0.37
358	4.70	4.70	4.47	0.40	0.37
395	4.60	4.60	4.37	0.38	0.37
437	4.50	4.50	4.27	0.35	0.37
485	4.40	4.40	4.17	0.33	0.37
543	4.30	4.30	4.07	0.30	0.37
620	4.20	4.20	3.97	0.28	0.37
720	4.10	4.10	3.87	0.25	0.37
882	4.00	4.00	3.77	0.23	0.37
1195	3.90	3.90	3.67	0.20	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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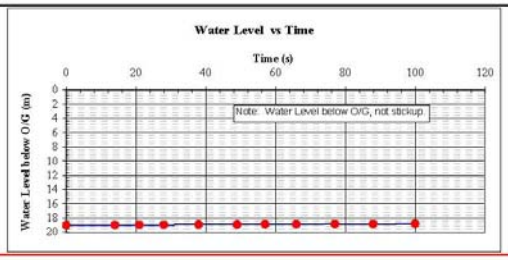
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8				
Borehole No.	I-201 (4210)				
		Test Interval	43.10 m	to	47.60 m
Borehole Elevation			320.65	m	
Borehole Inclination			90	deg	
Date:			9/Sep/04		
Test No.			1		
Hole diameter, D		D =	0.096	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			43.10	m	
Bottom of test interval			47.60	m	
Length of test interval, L		L =	4.50	m	
Stickup of piezometer or rods above ground surface			0.23		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			19.04	m	
Static water level, H **(below top of piezo or drill rod)**		H =	19.04	m	
Static water level, **(below ground surface)**			18.81	m	
Elevation of static water level **(below ground surface)**		El. =	301.84	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			19.26	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	19.26	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	19.26	19.26	19.03	1.00	0.37
14	19.23	19.23	19.00	0.86	0.37
21	19.21	19.21	18.98	0.77	0.37
28	19.20	19.20	18.97	0.73	0.37
38	19.18	19.18	18.95	0.64	0.37
49	19.16	19.16	18.93	0.55	0.37
57	19.14	19.14	18.91	0.45	0.37
66	19.12	19.12	18.89	0.36	0.37
77	19.10	19.10	18.87	0.27	0.37
88	19.08	19.08	18.85	0.18	0.37
100	19.06	19.06	18.83	0.09	0.37



Test by : CNH
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PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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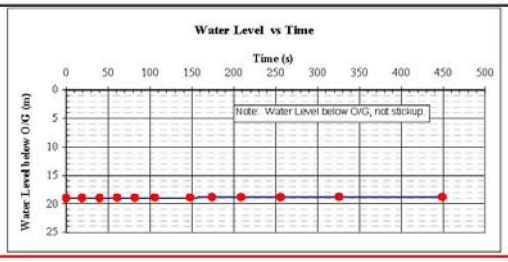
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8				
Borehole No.	I-201 (4210)				
		Test Interval	43.10 m	to	47.60 m
Borehole Elevation			320.65	m	
Borehole Inclination			90	deg	
Date:			9/Sep/04		
Test No.			2		
Hole diameter, D		D =	0.096	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			43.10	m	
Bottom of test interval			47.60	m	
Length of test interval, L		L =	4.50	m	
Stickup of piezometer or rods above ground surface			0.23		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			19.04	m	
Static water level, H **(below top of piezo or drill rod)**		H =	19.04	m	
Static water level, **(below ground surface)**			18.81	m	
Elevation of static water level **(below ground surface)**		El. =	301.84	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			19.29	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	19.29	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	19.29	19.29	19.06	1.00	0.37
19	19.27	19.27	19.04	0.92	0.37
40	19.24	19.24	19.01	0.80	0.37
61	19.22	19.22	18.99	0.72	0.37
82	19.20	19.20	18.97	0.64	0.37
106	19.18	19.18	18.95	0.56	0.37
148	19.16	19.16	18.93	0.48	0.37
174	19.14	19.14	18.91	0.40	0.37
209	19.12	19.12	18.89	0.32	0.37
256	19.10	19.10	18.87	0.24	0.37
326	19.08	19.08	18.85	0.16	0.37
449	19.06	19.06	18.83	0.08	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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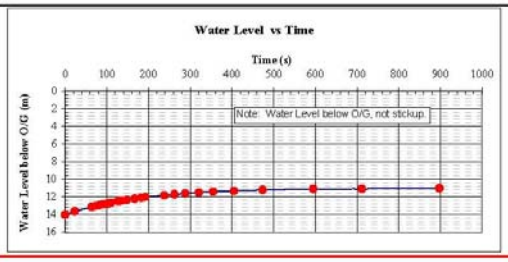
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8		Test Interval		
Borehole No.	M-21 (4222)		23.00 m	to	28.00 m
Borehole Elevation			371.58	m	
Borehole Inclination			90	deg	
Date:			7/Sep/04		
Test No.			1		
Hole diameter, D		D =	0.076	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			23.00	m	
Bottom of test interval			28.00	m	
Length of test interval, L		L =	5.00	m	
Stickup of piezometer or rods above ground surface			0.08		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			10.99	m	
Static water level, H **(below top of piezo or drill rod)**		H =	10.99	m	
Static water level, **(below ground surface)**			10.91	m	
Elevation of static water level **(below ground surface)**		El. =	360.67	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			14.10	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	14.10	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	14.10	14.10	14.02	1.00	0.37
23	13.72	13.72	13.64	0.88	0.37
64	13.20	13.20	13.12	0.71	0.37
74	13.11	13.11	13.03	0.68	0.37
83	13.02	13.02	12.94	0.65	0.37
92	12.91	12.91	12.83	0.62	0.37
103	12.86	12.86	12.78	0.60	0.37
110	12.76	12.76	12.68	0.57	0.37
127	12.59	12.59	12.51	0.51	0.37
134	12.53	12.53	12.45	0.50	0.37
148	12.45	12.45	12.37	0.47	0.37
167	12.30	12.30	12.22	0.42	0.37
183	12.20	12.20	12.12	0.39	0.37
192	12.10	12.10	12.02	0.36	0.37
238	11.90	11.90	11.82	0.29	0.37
262	11.80	11.80	11.72	0.26	0.37
288	11.70	11.70	11.62	0.23	0.37
321	11.60	11.60	11.52	0.20	0.37
355	11.50	11.50	11.42	0.16	0.37
405	11.40	11.40	11.32	0.13	0.37
474	11.30	11.30	11.22	0.10	0.37
595	11.20	11.20	11.12	0.07	0.37
712	11.15	11.15	11.07	0.05	0.37
898	11.10	11.10	11.02	0.04	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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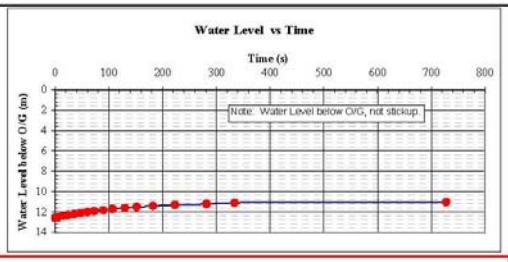
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8			
Borehole No.	M-21 (4222)			
			Test Interval	
			23.00 m to 28.00 m	
Borehole Elevation			371.58	m
Borehole Inclination			90	deg
Date:			9/Sep/04	
Test No.			2	
Hole diameter, D		D =	0.076	m
Interior diameter of piezometer or drill rods, d		d =	0.051	m
Top of test interval			23.00	m
Bottom of test interval			28.00	m
Length of test interval, L		L =	5.00	m
Stickup of piezometer or rods above ground surface			0.08	
Measured static water depth in piezo **(below top of piezo or drill rod,)**			11.03	m
Static water level, H **(below top of piezo or drill rod)**		H =	11.03	m
Static water level, **(below ground surface)**			10.95	m
Elevation of static water level **(below ground surface)**		El. =	360.63	m
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			12.67	m
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	12.67	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	12.67	12.67	12.59	1.00	0.37
6	12.60	12.60	12.52	0.96	0.37
15	12.50	12.50	12.42	0.90	0.37
24	12.40	12.40	12.32	0.84	0.37
36	12.30	12.30	12.22	0.77	0.37
48	12.20	12.20	12.12	0.71	0.37
60	12.10	12.10	12.02	0.65	0.37
73	12.00	12.00	11.92	0.59	0.37
90	11.90	11.90	11.82	0.53	0.37
107	11.80	11.80	11.72	0.47	0.37
130	11.70	11.70	11.62	0.41	0.37
152	11.60	11.60	11.52	0.35	0.37
182	11.50	11.50	11.42	0.29	0.37
223	11.40	11.40	11.32	0.23	0.37
282	11.30	11.30	11.22	0.16	0.37
334	11.20	11.20	11.12	0.10	0.37
728	11.12	11.12	11.04	0.05	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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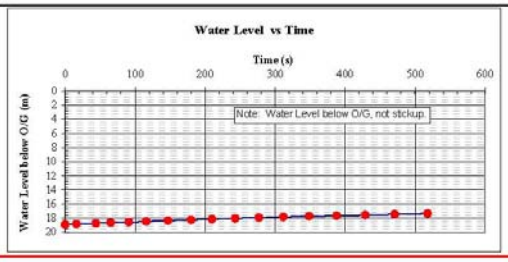
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

			Test Interval		
Project No.	101-176/8				
Borehole No.	M-110 (4235)		25.50 m	to	31.10 m

Borehole Elevation		360.32	m
Borehole Inclination		90	deg
Date:		9/Sep/04	
Test No.		1	
Hole diameter, D	D =	0.076	m
Interior diameter of piezometer or drill rods, d	d =	0.051	m
Top of test interval		25.50	m
Bottom of test interval		31.10	m
Length of test interval, L	L =	5.60	m
Stickup of piezometer or rods above ground surface		0.14	m
Measured static water depth in piezo **(below top of piezo or drill rod,)**		16.04	m
Static water level, H **(below top of piezo or drill rod)**	H =	16.04	m
Static water level, **(below ground surface)**		15.90	m
Elevation of static water level **(below ground surface)**	El. =	344.42	m
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**		19.05	m
Water level at start of test, Ho **(below top of piezo or drill rod)**	Ho =	19.05	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	19.05	19.05	18.91	1.00	0.37
16	19.00	19.00	18.86	0.98	0.37
44	18.90	18.90	18.76	0.95	0.37
65	18.80	18.80	18.66	0.92	0.37
91	18.70	18.70	18.56	0.88	0.37
116	18.60	18.60	18.46	0.85	0.37
147	18.50	18.50	18.36	0.82	0.37
180	18.40	18.40	18.26	0.78	0.37
210	18.30	18.30	18.16	0.75	0.37
243	18.20	18.20	18.06	0.72	0.37
277	18.10	18.10	17.96	0.68	0.37
312	18.00	18.00	17.86	0.65	0.37
349	17.90	17.90	17.76	0.62	0.37
388	17.80	17.80	17.66	0.58	0.37
429	17.70	17.70	17.56	0.55	0.37
471	17.60	17.60	17.46	0.52	0.37
518	17.50	17.50	17.36	0.49	0.37
567	17.40	17.40	17.26	0.45	0.37
619	17.30	17.30	17.16	0.42	0.37
676	17.20	17.20	17.06	0.39	0.37
714	17.10	17.10	16.96	0.35	0.37
801	17.00	17.00	16.86	0.32	0.37
872	16.90	16.90	16.76	0.29	0.37
953	16.80	16.80	16.66	0.25	0.37
1046	16.70	16.70	16.56	0.22	0.37
1148	16.60	16.60	16.46	0.19	0.37
1272	16.50	16.50	16.36	0.15	0.37
1427	16.40	16.40	16.26	0.12	0.37
1633	16.30	16.30	16.16	0.09	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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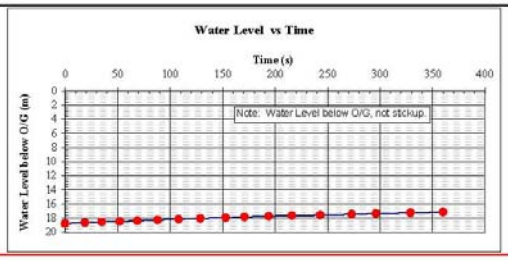
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8				
Borehole No.	M-110 (4235)				
		Test Interval	25.50 m	to	31.10 m
Borehole Elevation			360.32	m	
Borehole Inclination			90	deg	
Date:			9/Sep/04		
Test No.			2		
Hole diameter, D		D =	0.076	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			25.50	m	
Bottom of test interval			31.10	m	
Length of test interval, L		L =	5.60	m	
Stickup of piezometer or rods above ground surface			0.14	m	
Measured static water depth in piezo **(below top of piezo or drill rod,)**			16.04	m	
Static water level, H **(below top of piezo or drill rod)**		H =	16.04	m	
Static water level, **(below ground surface)**			15.90	m	
Elevation of static water level **(below ground surface)**		El. =	344.42	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			18.93	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	18.93	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	18.93	18.93	18.79	1.00	0.37
19	18.80	18.80	18.66	0.96	0.37
35	18.70	18.70	18.56	0.92	0.37
52	18.60	18.60	18.46	0.89	0.37
69	18.50	18.50	18.36	0.85	0.37
88	18.40	18.40	18.26	0.82	0.37
108	18.30	18.30	18.16	0.78	0.37
129	18.20	18.20	18.06	0.75	0.37
153	18.10	18.10	17.96	0.71	0.37
171	18.00	18.00	17.86	0.68	0.37
194	17.90	17.90	17.76	0.64	0.37
216	17.80	17.80	17.66	0.61	0.37
243	17.70	17.70	17.56	0.57	0.37
273	17.60	17.60	17.46	0.54	0.37
296	17.50	17.50	17.36	0.51	0.37
329	17.40	17.40	17.26	0.47	0.37
360	17.30	17.30	17.16	0.44	0.37
392	17.20	17.20	17.06	0.40	0.37
429	17.10	17.10	16.96	0.37	0.37
467	17.00	17.00	16.86	0.33	0.37
511	16.90	16.90	16.76	0.30	0.37
562	16.80	16.80	16.66	0.26	0.37
613	16.70	16.70	16.56	0.23	0.37
680	16.60	16.60	16.46	0.19	0.37
755	16.50	16.50	16.36	0.16	0.37
835	16.40	16.40	16.26	0.12	0.37
966	16.30	16.30	16.16	0.09	0.37
1138	16.20	16.20	16.06	0.06	0.37



Test by : CNH
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PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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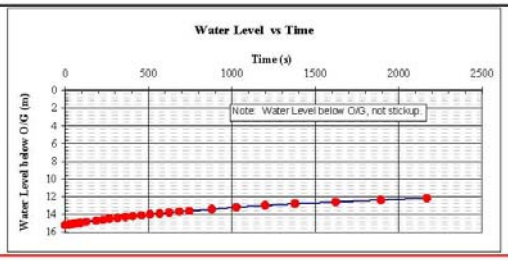
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8		Test Interval		
Borehole No.	PQ-04 (4297M)		36.10 m	to	40.78 m
Borehole Elevation			392.8	m	
Borehole Inclination			90	deg	
Date:			21/Sep/04		
Test No.			1		
Hole diameter, D		D =	0.123	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			36.10	m	
Bottom of test interval			40.78	m	
Length of test interval, L		L =	4.68	m	
Stickup of piezometer or rods above ground surface			0.21		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			11.74	m	
Static water level, H **(below top of piezo or drill rod)**		H =	11.74	m	
Static water level, **(below ground surface)**			11.53	m	
Elevation of static water level **(below ground surface)**		El. =	381.27	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			15.42	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	15.42	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	15.42	15.42	15.21	1.00	0.37
12	15.38	15.38	15.17	0.99	0.37
28	15.33	15.33	15.12	0.98	0.37
39	15.30	15.30	15.09	0.97	0.37
50	15.27	15.27	15.06	0.96	0.37
65	15.22	15.22	15.01	0.95	0.37
91	15.15	15.15	14.94	0.93	0.37
127	15.05	15.05	14.84	0.90	0.37
186	14.90	14.90	14.69	0.86	0.37
228	14.80	14.80	14.59	0.83	0.37
266	14.70	14.70	14.49	0.80	0.37
314	14.60	14.60	14.39	0.78	0.37
362	14.50	14.50	14.29	0.75	0.37
405	14.40	14.40	14.19	0.72	0.37
458	14.30	14.30	14.09	0.70	0.37
510	14.20	14.20	13.99	0.67	0.37
567	14.10	14.10	13.89	0.64	0.37
625	14.00	14.00	13.79	0.61	0.37
685	13.90	13.90	13.69	0.59	0.37
745	13.80	13.80	13.59	0.56	0.37
880	13.60	13.60	13.39	0.51	0.37
1027	13.40	13.40	13.19	0.45	0.37
1199	13.20	13.20	12.99	0.40	0.37
1379	13.00	13.00	12.79	0.34	0.37
1623	12.80	12.80	12.59	0.29	0.37
1893	12.60	12.60	12.39	0.23	0.37
2170	12.40	12.40	12.19	0.18	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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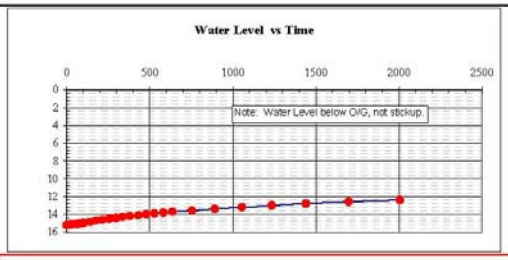
M:\1\01\00176\08\A\Report\2-Rev 0\Appendices\C\C4\[Rising Head Tests.xls]PQ-04 (4297M) #2 Rev'd Oct/25/04

BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8		Test Interval		
Borehole No.	PQ-04 (4297M)		36.10 m	to	40.78 m
Borehole Elevation			392.8	m	
Borehole Inclination			90	deg	
Date:			21/Sep/04		
Test No.			2		
Hole diameter, D		D =	0.123	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			36.10	m	
Bottom of test interval			40.78	m	
Length of test interval, L		L =	4.68	m	
Stickup of piezometer or rods above ground surface			0.21		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			11.74	m	
Static water level, H **(below top of piezo or drill rod)**		H =	11.74	m	
Static water level, **(below ground surface)**			11.53	m	
Elevation of static water level **(below ground surface)**		El. =	381.27	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			15.42	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	15.42	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	15.42	15.42	15.21	1.00	0.37
14	15.38	15.38	15.17	0.99	0.37
28	15.33	15.33	15.12	0.98	0.37
50	15.30	15.30	15.09	0.97	0.37
68	15.27	15.27	15.06	0.96	0.37
86	15.22	15.22	15.01	0.95	0.37
103	15.15	15.15	14.94	0.93	0.37
141	15.05	15.05	14.84	0.90	0.37
176	14.90	14.90	14.69	0.86	0.37
216	14.80	14.80	14.59	0.83	0.37
256	14.70	14.70	14.49	0.80	0.37
298	14.60	14.60	14.39	0.78	0.37
337	14.50	14.50	14.29	0.75	0.37
381	14.40	14.40	14.19	0.72	0.37
432	14.30	14.30	14.09	0.70	0.37
480	14.20	14.20	13.99	0.67	0.37
528	14.10	14.10	13.89	0.64	0.37
582	14.00	14.00	13.79	0.61	0.37
637	13.90	13.90	13.69	0.59	0.37
755	13.80	13.80	13.59	0.56	0.37
892	13.60	13.60	13.39	0.51	0.37
1054	13.40	13.40	13.19	0.45	0.37
1234	13.20	13.20	12.99	0.40	0.37
1441	13.00	13.00	12.79	0.34	0.37
1697	12.80	12.80	12.59	0.29	0.37
2006	12.60	12.60	12.39	0.23	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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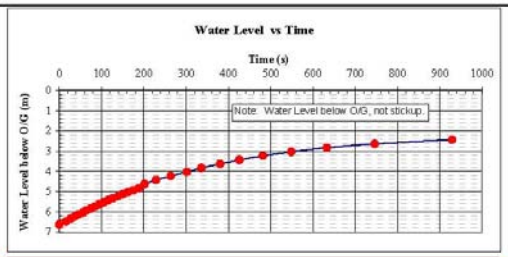
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8				
Borehole No.	PQ-08 (4269M)		Test Interval		
			25.50 m	to	31.10 m
Borehole Elevation			318.8	m	
Borehole Inclination			90	deg	
Date:			15/Sep/04		
Test No.			1		
Hole diameter, D		D =	0.123	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			25.50	m	
Bottom of test interval			31.10	m	
Length of test interval, L		L =	5.60	m	
Stickup of piezometer or rods above ground surface			0.17		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			2.42	m	
Static water level, H **(below top of piezo or drill rod)**		H =	2.42	m	
Static water level, **(below ground surface)**			2.25	m	
Elevation of static water level **(below ground surface)**		El. =	316.55	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			6.80	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	6.80	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	6.80	6.80	6.63	1.00	0.37
16	6.65	6.65	6.48	0.97	0.37
27	6.50	6.50	6.33	0.93	0.37
37	6.40	6.40	6.23	0.91	0.37
46	6.30	6.30	6.13	0.89	0.37
56	6.20	6.20	6.03	0.86	0.37
64	6.10	6.10	5.93	0.84	0.37
75	6.00	6.00	5.83	0.82	0.37
85	5.90	5.90	5.73	0.79	0.37
95	5.80	5.80	5.63	0.77	0.37
106	5.70	5.70	5.53	0.75	0.37
116	5.60	5.60	5.43	0.73	0.37
127	5.50	5.50	5.33	0.70	0.37
139	5.40	5.40	5.23	0.68	0.37
151	5.30	5.30	5.13	0.66	0.37
163	5.20	5.20	5.03	0.63	0.37
176	5.10	5.10	4.93	0.61	0.37
189	5.00	5.00	4.83	0.59	0.37
202	4.80	4.80	4.63	0.54	0.37
229	4.60	4.60	4.43	0.50	0.37
264	4.40	4.40	4.23	0.45	0.37
302	4.20	4.20	4.03	0.41	0.37
336	4.00	4.00	3.83	0.36	0.37
381	3.80	3.80	3.63	0.32	0.37
426	3.60	3.60	3.43	0.27	0.37
482	3.40	3.40	3.23	0.22	0.37
549	3.20	3.20	3.03	0.18	0.37
633	3.00	3.00	2.83	0.13	0.37
746	2.80	2.80	2.63	0.09	0.37
929	2.60	2.60	2.43	0.04	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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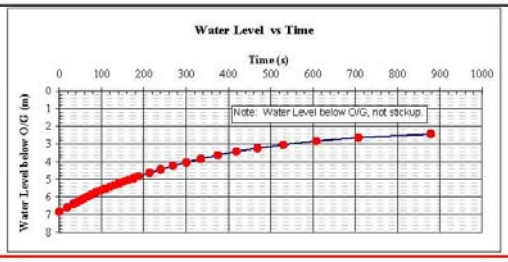
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8				
Borehole No.	PQ-08 (4269M)		Test Interval		
			25.50 m	to	31.10 m
Borehole Elevation			318.8	m	
Borehole Inclination			90	deg	
Date:			15/Sep/04		
Test No.			2		
Hole diameter, D		D =	0.123	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			25.50	m	
Bottom of test interval			31.10	m	
Length of test interval, L		L =	5.60	m	
Stickup of piezometer or rods above ground surface			0.17		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			2.42	m	
Static water level, H **(below top of piezo or drill rod)**		H =	2.42	m	
Static water level, **(below ground surface)**			2.25	m	
Elevation of static water level **(below ground surface)**		El. =	316.55	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			7.00	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	7.00	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	7.00	7.00	6.83	1.00	0.37
19	6.75	6.75	6.58	0.95	0.37
34	6.55	6.55	6.38	0.90	0.37
43	6.45	6.45	6.28	0.88	0.37
51	6.35	6.35	6.18	0.86	0.37
59	6.25	6.25	6.08	0.84	0.37
68	6.15	6.15	5.98	0.81	0.37
76	6.05	6.05	5.88	0.79	0.37
87	5.90	5.90	5.73	0.76	0.37
99	5.80	5.80	5.63	0.74	0.37
110	5.70	5.70	5.53	0.72	0.37
120	5.60	5.60	5.43	0.69	0.37
130	5.50	5.50	5.33	0.67	0.37
142	5.40	5.40	5.23	0.65	0.37
153	5.30	5.30	5.13	0.63	0.37
164	5.20	5.20	5.03	0.61	0.37
177	5.10	5.10	4.93	0.59	0.37
188	5.00	5.00	4.83	0.56	0.37
214	4.80	4.80	4.63	0.52	0.37
240	4.60	4.60	4.43	0.48	0.37
269	4.40	4.40	4.23	0.43	0.37
301	4.20	4.20	4.03	0.39	0.37
335	4.00	4.00	3.83	0.34	0.37
375	3.80	3.80	3.63	0.30	0.37
419	3.60	3.60	3.43	0.26	0.37
469	3.40	3.40	3.23	0.21	0.37
530	3.20	3.20	3.03	0.17	0.37
608	3.00	3.00	2.83	0.13	0.37
708	2.80	2.80	2.63	0.08	0.37
879	2.60	2.60	2.43	0.04	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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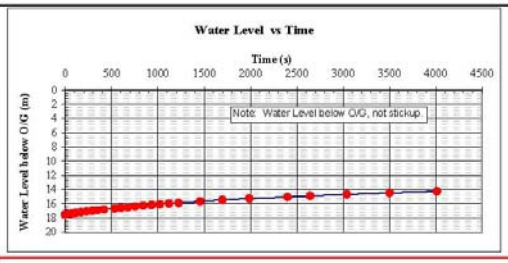
M:\1\01\00176\08\A\Report\2-Rev 0\Appendices\C\C4\[Rising Head Tests.xls]SRK#2 (4251) #1 Rev'd Oct/25/04

BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8			
Borehole No.	SRK-2 (4251)			
		Test Interval		
		58.00 m	to	70.00 m
Borehole Elevation		303.5	m	
Borehole Inclination		90	deg	
Date:		15/Sep/04		
Test No.		1		
Hole diameter, D	D =	0.096	m	
Interior diameter of piezometer or drill rods, d	d =	0.051	m	
Top of test interval		58.00	m	
Bottom of test interval		70.00	m	
Length of test interval, L	L =	12.00	m	
Stickup of piezometer or rods above ground surface		0.12		
Measured static water depth in piezo **(below top of piezo or drill rod,)**		10.27	m	
Static water level, H **(below top of piezo or drill rod)**	H =	10.27	m	
Static water level, **(below ground surface)**		10.15	m	
Elevation of static water level **(below ground surface)**	El. =	293.35	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**		17.65	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**	Ho =	17.65	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	17.65	17.65	17.53	1.00	0.37
18	17.60	17.60	17.48	0.99	0.37
40	17.55	17.55	17.43	0.99	0.37
65	17.50	17.50	17.38	0.98	0.37
114	17.40	17.40	17.28	0.97	0.37
173	17.30	17.30	17.18	0.95	0.37
231	17.20	17.20	17.08	0.94	0.37
293	17.10	17.10	16.98	0.93	0.37
352	17.00	17.00	16.88	0.91	0.37
420	16.90	16.90	16.78	0.90	0.37
534	16.80	16.80	16.68	0.88	0.37
603	16.70	16.70	16.58	0.87	0.37
681	16.60	16.60	16.48	0.86	0.37
759	16.50	16.50	16.38	0.84	0.37
843	16.40	16.40	16.28	0.83	0.37
934	16.30	16.30	16.18	0.82	0.37
1022	16.20	16.20	16.08	0.80	0.37
1121	16.10	16.10	15.98	0.79	0.37
1224	16.00	16.00	15.88	0.78	0.37
1457	15.80	15.80	15.68	0.75	0.37
1699	15.60	15.60	15.48	0.72	0.37
1987	15.40	15.40	15.28	0.70	0.37
2399	15.20	15.20	15.08	0.67	0.37
2646	15.00	15.00	14.88	0.64	0.37
3040	14.80	14.80	14.68	0.61	0.37
3502	14.60	14.60	14.48	0.59	0.37
4012	14.40	14.40	14.28	0.56	0.37



Test by : CNH
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PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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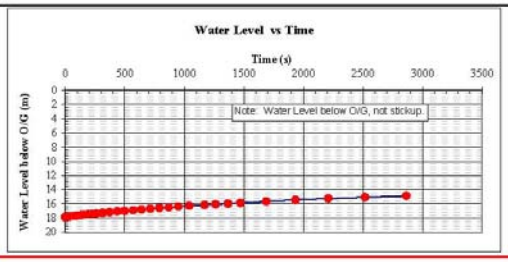
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8		
Borehole No.	SRK-2 (4251)		
		Test Interval	
		58.00 m to	70.00 m
Borehole Elevation		303.5	m
Borehole Inclination		90	deg
Date:		15/Sep/04	
Test No.		2	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.051	m
Top of test interval		58.00	m
Bottom of test interval		70.00	m
Length of test interval, L	L =	12.00	m
Stickup of piezometer or rods above ground surface		0.12	
Measured static water depth in piezo **(below top of piezo or drill rod,)**		10.27	m
Static water level, H **(below top of piezo or drill rod)**	H =	10.27	m
Static water level, **(below ground surface)**		10.15	m
Elevation of static water level **(below ground surface)**	El. =	293.35	m
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**		18.01	m
Water level at start of test, Ho **(below top of piezo or drill rod)**	Ho =	18.01	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	18.01	18.01	17.89	1.00	0.37
19	17.96	17.96	17.84	0.99	0.37
37	17.92	17.92	17.80	0.99	0.37
50	17.89	17.89	17.77	0.98	0.37
72	17.85	17.85	17.73	0.98	0.37
90	17.80	17.80	17.68	0.97	0.37
116	17.75	17.75	17.63	0.97	0.37
142	17.70	17.70	17.58	0.96	0.37
167	17.65	17.65	17.53	0.95	0.37
194	17.60	17.60	17.48	0.95	0.37
231	17.55	17.55	17.43	0.94	0.37
261	17.50	17.50	17.38	0.93	0.37
315	17.40	17.40	17.28	0.92	0.37
375	17.30	17.30	17.18	0.91	0.37
438	17.20	17.20	17.08	0.90	0.37
501	17.10	17.10	16.98	0.88	0.37
572	17.00	17.00	16.88	0.87	0.37
641	16.90	16.90	16.78	0.86	0.37
717	16.80	16.80	16.68	0.84	0.37
793	16.70	16.70	16.58	0.83	0.37
870	16.60	16.60	16.48	0.82	0.37
951	16.50	16.50	16.38	0.80	0.37
1044	16.40	16.40	16.28	0.79	0.37
1170	16.30	16.30	16.18	0.78	0.37
1263	16.20	16.20	16.08	0.77	0.37
1368	16.10	16.10	15.98	0.75	0.37
1471	16.00	16.00	15.88	0.74	0.37
1690	15.80	15.80	15.68	0.71	0.37
1935	15.60	15.60	15.48	0.69	0.37
2210	15.40	15.40	15.28	0.66	0.37
2519	15.20	15.20	15.08	0.64	0.37
2864	15.00	15.00	14.88	0.61	0.37
3262	14.80	14.80	14.68	0.59	0.37
3710	14.60	14.60	14.48	0.56	0.37
4250	14.40	14.40	14.28	0.53	0.37



Test by : CNH
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PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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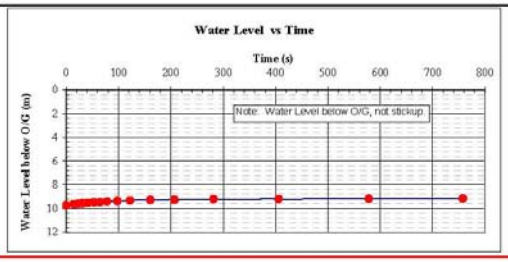
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8			
Borehole No.	SRK-3 (4250)			
			Test Interval	
			18.80 m to 23.10 m	
Borehole Elevation			313.65	m
Borehole Inclination			90	deg
Date:			9/Sep/04	
Test No.			1	
Hole diameter, D		D =	0.076	m
Interior diameter of piezometer or drill rods, d		d =	0.051	m
Top of test interval			18.80	m
Bottom of test interval			23.10	m
Length of test interval, L		L =	4.30	m
Stickup of piezometer or rods above ground surface			0.08	
Measured static water depth in piezo **(below top of piezo or drill rod,)**			9.23	m
Static water level, H **(below top of piezo or drill rod)**		H =	9.23	m
Static water level, **(below ground surface)**			9.15	m
Elevation of static water level **(below ground surface)**		El. =	304.50	m
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			9.82	m
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	9.82	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	9.82	9.82	9.74	1.00	0.37
15	9.72	9.72	9.64	0.83	0.37
23	9.68	9.68	9.60	0.76	0.37
32	9.64	9.64	9.56	0.69	0.37
42	9.60	9.60	9.52	0.63	0.37
54	9.56	9.56	9.48	0.56	0.37
65	9.53	9.53	9.45	0.51	0.37
78	9.50	9.50	9.42	0.46	0.37
98	9.46	9.46	9.38	0.39	0.37
122	9.42	9.42	9.34	0.32	0.37
161	9.38	9.38	9.30	0.25	0.37
207	9.35	9.35	9.27	0.20	0.37
282	9.32	9.32	9.24	0.15	0.37
406	9.30	9.30	9.22	0.12	0.37
578	9.28	9.28	9.20	0.08	0.37
758	9.26	9.26	9.18	0.05	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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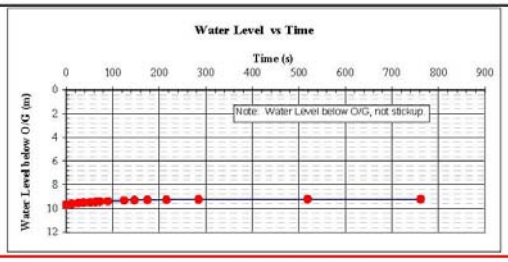
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8				
Borehole No.	SRK-3 (4250)				
			Test Interval		
			18.80 m	to	23.10 m
Borehole Elevation			313.65	m	
Borehole Inclination			90	deg	
Date:			9/Sep/04		
Test No.			2		
Hole diameter, D		D =	0.076	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			18.80	m	
Bottom of test interval			23.10	m	
Length of test interval, L		L =	4.30	m	
Stickup of piezometer or rods above ground surface			0.08		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			9.23	m	
Static water level, H **(below top of piezo or drill rod)**		H =	9.23	m	
Static water level, **(below ground surface)**			9.15	m	
Elevation of static water level **(below ground surface)**		El. =	304.50	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			9.79	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	9.79	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	9.79	9.79	9.71	1.00	0.37
12	9.70	9.70	9.62	0.84	0.37
27	9.63	9.63	9.55	0.71	0.37
38	9.59	9.59	9.51	0.64	0.37
52	9.55	9.55	9.47	0.57	0.37
64	9.52	9.52	9.44	0.52	0.37
73	9.50	9.50	9.42	0.48	0.37
90	9.47	9.47	9.39	0.43	0.37
125	9.42	9.42	9.34	0.34	0.37
147	9.40	9.40	9.32	0.30	0.37
175	9.38	9.38	9.30	0.27	0.37
216	9.36	9.36	9.28	0.23	0.37
285	9.34	9.34	9.26	0.20	0.37
519	9.32	9.32	9.24	0.16	0.37
762	9.31	9.31	9.23	0.14	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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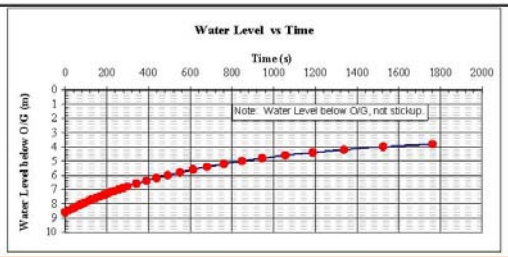
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8		
Borehole No.	SRK-5 (4272)		
		Test Interval	
		33.00 m to	37.80 m
Borehole Elevation		323.7	m
Borehole Inclination		90	deg
Date:		11/Sep/04	
Test No.		1	
Hole diameter, D	D =	0.076	m
Interior diameter of piezometer or drill rods, d	d =	0.051	m
Top of test interval		33.00	m
Bottom of test interval		37.80	m
Length of test interval, L	L =	4.80	m
Stickup of piezometer or rods above ground surface		0.2	
Measured static water depth in piezo **(below top of piezo or drill rod,)**		3.21	m
Static water level, H **(below top of piezo or drill rod)**	H =	3.21	m
Static water level, **(below ground surface)**		3.01	m
Elevation of static water level **(below ground surface)**	El. =	320.69	m
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**		8.80	m
Water level at start of test, Ho **(below top of piezo or drill rod)**	Ho =	8.80	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	8.80	8.80	8.60	1.00	0.37
17	8.67	8.67	8.47	0.98	0.37
34	8.55	8.55	8.35	0.96	0.37
48	8.45	8.45	8.25	0.94	0.37
62	8.35	8.35	8.15	0.92	0.37
77	8.25	8.25	8.05	0.90	0.37
92	8.15	8.15	7.95	0.88	0.37
115	8.00	8.00	7.80	0.86	0.37
130	7.90	7.90	7.70	0.84	0.37
148	7.80	7.80	7.60	0.82	0.37
166	7.70	7.70	7.50	0.80	0.37
183	7.60	7.60	7.40	0.79	0.37
201	7.50	7.50	7.30	0.77	0.37
219	7.40	7.40	7.20	0.75	0.37
238	7.30	7.30	7.10	0.73	0.37
259	7.20	7.20	7.00	0.71	0.37
279	7.10	7.10	6.90	0.70	0.37
299	7.00	7.00	6.80	0.68	0.37
342	6.80	6.80	6.60	0.64	0.37
390	6.60	6.60	6.40	0.61	0.37
438	6.40	6.40	6.20	0.57	0.37
493	6.20	6.20	6.00	0.53	0.37
551	6.00	6.00	5.80	0.50	0.37
614	5.80	5.80	5.60	0.46	0.37
681	5.60	5.60	5.40	0.43	0.37
762	5.40	5.40	5.20	0.39	0.37
849	5.20	5.20	5.00	0.36	0.37
945	5.00	5.00	4.80	0.32	0.37
1056	4.80	4.80	4.60	0.28	0.37
1187	4.60	4.60	4.40	0.25	0.37
1338	4.40	4.40	4.2	0.21	0.37
1526	4.20	4.20	4	0.18	0.37
1763	4.00	4.00	3.8	0.14	0.37



Test by : CNH
Reviewed by: DAY

PEBBLE PROJECT - 2004 OPEN PIT GEOTECNICAL INVESTIGATIONS

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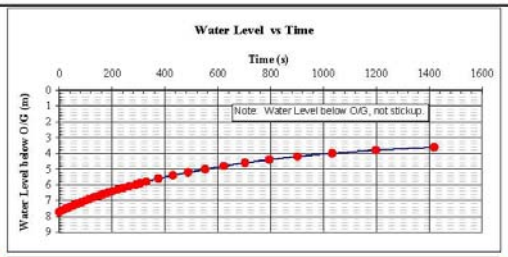
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	101-176/8				
Borehole No.	SRK-5 (4272)				
			Test Interval		
			33.00 m	to	37.80 m
Borehole Elevation			323.7	m	
Borehole Inclination			90	deg	
Date:			11/Sep/04		
Test No.			1		
Hole diameter, D		D =	0.076	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			33.00	m	
Bottom of test interval			37.80	m	
Length of test interval, L		L =	4.80	m	
Stickup of piezometer or rods above ground surface			0.2		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			3.21	m	
Static water level, H **(below top of piezo or drill rod)**		H =	3.21	m	
Static water level, **(below ground surface)**			3.01	m	
Elevation of static water level **(below ground surface)**		El. =	320.69	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			7.92	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	7.92	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	7.92	7.92	7.72	1.00	0.37
9	7.83	7.83	7.63	0.98	0.37
19	7.75	7.75	7.55	0.96	0.37
26	7.70	7.70	7.50	0.95	0.37
34	7.65	7.65	7.45	0.94	0.37
40	7.60	7.60	7.40	0.93	0.37
54	7.50	7.50	7.30	0.91	0.37
69	7.40	7.40	7.20	0.89	0.37
84	7.30	7.30	7.10	0.87	0.37
99	7.20	7.20	7.00	0.85	0.37
115	7.10	7.10	6.90	0.83	0.37
132	7.00	7.00	6.80	0.80	0.37
152	6.90	6.90	6.70	0.78	0.37
166	6.80	6.80	6.60	0.76	0.37
185	6.70	6.70	6.50	0.74	0.37
202	6.60	6.60	6.40	0.72	0.37
222	6.50	6.50	6.30	0.70	0.37
242	6.40	6.40	6.20	0.68	0.37
264	6.30	6.30	6.10	0.66	0.37
289	6.20	6.20	6.00	0.63	0.37
306	6.10	6.10	5.90	0.61	0.37
329	6.00	6.00	5.80	0.59	0.37
376	5.80	5.80	5.60	0.55	0.37
430	5.60	5.60	5.40	0.51	0.37
488	5.40	5.40	5.20	0.46	0.37
552	5.20	5.20	5.00	0.42	0.37
623	5.00	5.00	4.80	0.38	0.37
703	4.80	4.80	4.60	0.34	0.37
795	4.60	4.60	4.40	0.30	0.37
902	4.40	4.40	4.20	0.25	0.37
1033	4.20	4.20	4	0.21	0.37
1198	4.00	4.00	3.8	0.17	0.37
1419	3.80	3.80	3.6	0.13	0.37



Test by : CNH
Reviewed by: DAY

SECTION 4 – GEOTECHNICAL RESPONSE TEST DATA

2004 SITE INVESTIGATION LUGEON TEST DATA

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE GEOTECHNICAL SITE INVESTIGATION

PROJECT NO: VA101-176/8

DRILLHOLE: GH04-26

AREA: Mill Site

TEST NO: 1

INCLINATION: 90 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 1.5 m

TOP OF TEST INTERVAL: 10.67 m (DOWN HOLE)

DATE: 07/02/04

GAUGE HEIGHT ABOVE GROUND: 1.5 m

BOTTOM OF TEST INTERVAL: 41.15 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	294502.10	294535.42	294573.66	294598.65	294626.67	294658.10			
		Take	litres		33.32	38.24	24.99	28.02	31.43			
5	0.34	Average Take	l/m		33.32	38.24	24.99	28.02	31.43		31.20	47.739
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	294716.40	294758.05	294789.86	294822.80	294860.28	294891.33			
		Take	litres		41.65	31.80	32.94	37.48	31.05			
10	0.69	Average Take	l/m		41.65	31.80	32.94	37.48	31.05		34.98	34.809
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	294936.38	294990.91	295035.20	295078.37	295120.39	295167.72			
		Take	litres		54.52	44.30	43.16	42.03	47.33			
18	1.24	Average Take	l/m		54.52	44.30	43.16	42.03	47.33		46.27	29.517
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	295195.36	295239.28	295272.98	295306.30	295336.97	295365.74			
		Take	litres		43.92	33.70	33.32	30.67	28.78			
10	0.69	Average Take	l/m		43.92	33.70	33.32	30.67	28.78		34.08	33.905
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	295382.40	295411.93	295440.33	295471.00	295501.67	295531.96			
		Take	litres		29.53	28.40	30.67	30.67	30.29			
5	0.34	Average Take	l/m		29.53	28.40	30.67	30.67	30.29		29.91	45.769

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE GEOTECHNICAL SITE INVESTIGATION

PROJECT NO: VA101-176/8

DRILLHOLE: GH04-27

AREA: Mill Site

TEST NO: 2

INCLINATION: 90 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 3.7 m

TOP OF TEST INTERVAL: 16.76 m (DOWN HOLE)

DATE: 07/04/04

GAUGE HEIGHT ABOVE GROUND: 1.2 m

BOTTOM OF TEST INTERVAL: 38.10 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	305100.15	305121.74	305134.61	305155.81	305173.99	305189.13			
		Take	litres		21.58	12.87	21.20	18.17	15.14			
8	0.55	Average Take	l/m		21.58	12.87	21.20	18.17	15.14		17.80	16.957
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	305192.92	305228.13	305244.79	305264.48	305285.30	305305.37			
		Take	litres		35.21	16.66	19.69	20.82	20.07			
17	1.17	Average Take	l/m		35.21	16.66	19.69	20.82	20.07		22.49	13.370
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	305326.95	305353.83	305376.17	305401.92	305423.50	305447.73			
		Take	litres		26.88	22.34	25.75	21.58	24.23			
28	1.93	Average Take	l/m		26.88	22.34	25.75	21.58	24.23		24.16	9.837
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	305467.04	305483.32	305499.22	305516.26	305533.30	305549.96			
		Take	litres		16.28	15.90	17.04	17.04	16.66			
17	1.17	Average Take	l/m		16.28	15.90	17.04	17.04	16.66		16.58	9.858
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	305559.42	305571.16	305582.52	305593.88	305609.40	305618.49			
		Take	litres		11.74	11.36	11.36	15.52	9.09			
8	0.55	Average Take	l/m		11.74	11.36	11.36	15.52	9.09		11.81	11.256

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE GEOTECHNICAL SITE INVESTIGATION

PROJECT NO: VA101-176/8

DRILLHOLE: GH04-28

AREA: SW of Frying Pan Lake

TEST NO: 1

INCLINATION: 90 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 10.0 m

TOP OF TEST INTERVAL: 13.72 m (DOWN HOLE)

DATE: 07/06/04

GAUGE HEIGHT ABOVE GROUND: 1.2 m

BOTTOM OF TEST INTERVAL: 44.20 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	318154.72	318203.94	318292.53	318343.65	318390.60	318451.93			
		Take	litres		49.22	88.60	51.11	46.95	61.34			
7	0.48	Average Take	l/m		49.22	88.60	51.11	46.95	61.34		59.44	36.827
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	318529.17	318593.54	318669.64	318752.56	318835.48	318911.20			
		Take	litres		64.37	76.10	82.92	82.92	75.72			
14	0.97	Average Take	l/m		64.37	76.10	82.92	82.92	75.72		76.41	36.275
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	319045.24	319153.90	319264.84	319376.15	319472.32	319583.64			
		Take	litres		108.66	110.94	111.32	96.17	111.32			
24	1.65	Average Take	l/m		108.66	110.94	111.32	96.17	111.32		107.68	38.329
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	319663.53	319744.56	319809.30	319877.07	319948.63	320016.79			
		Take	litres		81.03	64.74	67.77	71.56	68.15			
14	0.97	Average Take	l/m		81.03	64.74	67.77	71.56	68.15		70.65	33.543
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	320057.30	320102.35	320150.06	320197.39	320247.37	320299.62			
		Take	litres		45.06	47.71	47.33	49.98	52.25			
7	0.48	Average Take	l/m		45.06	47.71	47.33	49.98	52.25		48.46	30.025

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE GEOTECHNICAL SITE INVESTIGATION

PROJECT NO: VA101-176/8

DRILLHOLE: GH04-31

AREA: South of Frying Pan Lake

TEST NO: 1

INCLINATION: 90 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 16.3 m

TOP OF TEST INTERVAL: 28.96 m (DOWN HOLE)

DATE: 07/09/04

GAUGE HEIGHT ABOVE GROUND: 1.1 m

BOTTOM OF TEST INTERVAL: 59.44 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	331883.98	331887.39	331890.04	331893.45	331895.72	331898.37			
		Take	litres		3.41	2.65	3.41	2.27	2.65			
14	0.97	Average Take	l/m		3.41	2.65	3.41	2.27	2.65		2.88	1.057
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	331902.91	331906.32	331909.73	331912.76	331915.41	331917.68			
		Take	litres		3.41	3.41	3.03	2.65	2.27			
28	1.93	Average Take	l/m		3.41	3.41	3.03	2.65	2.27		2.95	0.797
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	331924.87	331927.90	331932.45	331937.37	331942.67	331949.11			
		Take	litres		3.03	4.54	4.92	5.30	6.44			
48	3.31	Average Take	l/m		3.03	4.54	4.92	5.30	6.44		4.85	0.948
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	331952.51	331956.68	331960.84	331964.63	331968.80	331972.58			
		Take	litres		4.16	4.16	3.79	4.16	3.79			
28	1.93	Average Take	l/m		4.16	4.16	3.79	4.16	3.79		4.01	1.083
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	331976.37	331978.64	331981.67	331984.70	331986.97	331989.62			
		Take	litres		2.272	3.029	3.029	2.272	2.650			
14	0.97	Average Take	l/m		2.272	3.029	3.029	2.272	2.650		2.65	0.974

FLOW VERSUS PRESSURE PLOT

STAGE PRESSURE VERSUS LUGEON VALUE

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE GEOTECHNICAL SITE INVESTIGATION

PROJECT NO: VA101-176/8

DRILLHOLE: GH04-41

AREA: South of Frying Pan Lake

TEST NO: 1

INCLINATION: 90 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 12.5 m

TOP OF TEST INTERVAL: 7.60 m (DOWN HOLE)

DATE: 08/04/04

GAUGE HEIGHT ABOVE GROUND: 1.2 m

BOTTOM OF TEST INTERVAL: 38.00 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	7629.26	7704.99	7778.82	7854.55	7928.38	8004.10			
		Take	litres		75.72	73.83	75.72	73.83	75.72			
4	0.28	Average Take	l/m		75.72	73.83	75.72	73.83	75.72		74.97	45.401
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	8004.10	8083.61	8168.80	8253.99	8337.29	8422.48			
		Take	litres		79.51	85.19	85.19	83.30	85.19			
8	0.55	Average Take	l/m		79.51	85.19	85.19	83.30	85.19		83.68	43.300
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	8422.48	8522.82	8626.94	8727.27	8831.39	8933.62			
		Take	litres		100.34	104.12	100.34	104.12	102.23			
13	0.90	Average Take	l/m		100.34	104.12	100.34	104.12	102.23		102.23	44.759
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	8933.62	9024.49	9113.47	9202.45	9291.42	9380.40			
		Take	litres		90.87	88.98	88.98	88.98	88.98			
8	0.55	Average Take	l/m		90.87	88.98	88.98	88.98	88.98		89.36	46.239
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	9380.40	9458.02	9531.85	9607.57	9681.40	9757.13			
		Take	litres		77.62	73.83	75.72	73.83	75.72			
4	0.28	Average Take	l/m		77.62	73.83	75.72	73.83	75.72		75.35	45.630

FLOW VERSUS PRESSURE PLOT

STAGE PRESSURE VERSUS LUGEON VALUE

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE GEOTECHNICAL SITE INVESTIGATION

PROJECT NO: VA101-176/8

DRILLHOLE: GH04-45A

AREA: SW of Frying Pan Lake

TEST NO: 1

INCLINATION: 90 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 25.3 m

TOP OF TEST INTERVAL: 38.10 m (DOWN HOLE)

DATE: 08/14/04

GAUGE HEIGHT ABOVE GROUND: 1.2 m

BOTTOM OF TEST INTERVAL: 68.60 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	13461.96	13526.33	13577.44	13620.98	13653.17	13683.45			
		Take	litres		64.37	51.11	43.54	32.18	30.29			
19	1.31	Average Take	l/m		64.37	51.11	43.54	32.18	30.29		44.30	11.114
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	13683.45	13764.86	13844.37	13910.63	13971.21	14026.11			
		Take	litres		81.40	79.51	66.26	60.58	54.90			
38	2.62	Average Take	l/m		81.40	79.51	66.26	60.58	54.90		68.53	12.878
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	14026.11	14130.23	14260.86	14357.40	14453.95	14544.82			
		Take	litres		104.12	130.63	96.55	96.55	90.87			
63	4.34	Average Take	l/m		104.12	130.63	96.55	96.55	90.87		103.74	14.654
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	14544.82	14569.43	14594.04	14628.12	14662.20	14696.27			
		Take	litres		24.61	24.61	34.08	34.08	34.08			
38	2.62	Average Take	l/m		24.61	24.61	34.08	34.08	34.08		30.29	5.692
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	14658.41	14667.88	14679.23	14690.59	14701.95	14713.31			
		Take	litres		9.47	11.36	11.36	11.36	11.36			
19	1.31	Average Take	l/m		9.47	11.36	11.36	11.36	11.36		10.98	2.755

FLOW VERSUS PRESSURE PLOT

STAGE PRESSURE VERSUS LUGEON VALUE

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE GEOTECHNICAL SITE INVESTIGATION

PROJECT NO: VA101-176/8

DRILLHOLE: GH04-46

AREA: Northeast of Frying Pan Lake

TEST NO: 1

INCLINATION: 90 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 10.6 m

TOP OF TEST INTERVAL: 10.70 m (DOWN HOLE)

DATE: 08/15/04

GAUGE HEIGHT ABOVE GROUND: 1.3 m

BOTTOM OF TEST INTERVAL: 41.10 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	14704.98	14742.09	14779.19	14816.30	14854.16	14893.16			
		Take	litres		37.10	37.11	37.11	37.86	39.00			
5	0.34	Average Take	l/m		37.10	37.11	37.11	37.86	39.00		37.64	24.414
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	14893.16	14933.29	14975.32	15010.53	15050.29	15086.26			
		Take	litres		40.13	42.03	35.21	39.76	35.97			
11	0.76	Average Take	l/m		40.13	42.03	35.21	39.76	35.97		38.62	19.670
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	15086.26	15131.69	15173.34	15216.88	15260.42	15303.96			
		Take	litres		45.43	41.65	43.54	43.54	43.54			
18	1.24	Average Take	l/m		45.43	41.65	43.54	43.54	43.54		43.54	17.732
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	15303.96	15345.61	15385.37	15425.12	15466.77	15508.42			
		Take	litres		41.65	39.76	39.76	41.65	41.65			
11	0.76	Average Take	l/m		41.65	39.76	39.76	41.65	41.65		40.89	20.827
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	15508.42	15545.15	15583.01	15620.87	15659.11	15697.35			
		Take	litres		36.73	37.86	37.86	38.24	38.24			
5	0.34	Average Take	l/m		36.73	37.86	37.86	38.24	38.24		37.79	24.512

FLOW VERSUS PRESSURE PLOT

STAGE PRESSURE VERSUS LUGEON VALUE

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE GEOTECHNICAL SITE INVESTIGATION

PROJECT NO: VA101-176/8

DRILLHOLE: GH04-47

AREA: North of Frying Pan Lake

TEST NO: 1

INCLINATION: 90 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 0.3 m

TOP OF TEST INTERVAL: 56.40 m (DOWN HOLE)

DATE: 08/15/04

GAUGE HEIGHT ABOVE GROUND: 1.2 m

BOTTOM OF TEST INTERVAL: 82.30 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	15898.40	15987.38	16061.21	16138.83	16216.45	16294.06			
		Take	litres		88.98	73.83	77.62	77.62	77.61			
28	1.93	Average Take	l/m		88.98	73.83	77.62	77.62	77.61		79.13	37.343
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	16294.06	16401.97	16513.67	16621.57	16735.16	16835.50			
		Take	litres		107.91	111.70	107.90	113.59	100.34			
56	3.86	Average Take	l/m		107.91	111.70	107.90	113.59	100.34		108.29	26.492
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	17070.24	17189.51	17310.67	17428.04	17547.31	17666.57			
		Take	litres		119.27	121.16	117.37	119.27	119.26			
65	4.48	Average Take	l/m		119.27	121.16	117.37	119.27	119.26		119.27	25.266
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	17666.57	17766.91	17871.03	17977.05	18083.06	18189.08			
		Take	litres		100.34	104.12	106.02	106.01	106.02			
56	3.86	Average Take	l/m		100.34	104.12	106.02	106.01	106.02		104.50	25.566
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	18189.08	18266.69	18338.63	18408.68	18480.62	18533.62			
		Take	litres		77.61	71.94	70.05	71.94	53.00			
28	1.93	Average Take	l/m		77.61	71.94	70.05	71.94	53.00		68.91	32.518

FLOW VERSUS PRESSURE PLOT

STAGE PRESSURE VERSUS LUGEON VALUE

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE GEOTECHNICAL SITE INVESTIGATION

PROJECT NO: VA101-176/8

DRILLHOLE: GH04-38

AREA: South Fork Koktuli River

TEST NO: 1

INCLINATION: 90 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 15.2 m

TOP OF TEST INTERVAL: 28.96 m (DOWN HOLE)

DATE: 07/21/04

GAUGE HEIGHT ABOVE GROUND: 1.2 m

BOTTOM OF TEST INTERVAL: 57.91 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	337472.85	337572.42	337698.13	337794.68	337885.55	337978.31			
		Take	litres		99.58	125.70	96.55	90.87	92.76			
14	0.97	Average Take	l/m		99.58	125.70	96.55	90.87	92.76		101.09	38.434
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	338186.55	338334.21	338464.84	338586.00	338710.94	338847.25			
		Take	litres		147.66	130.63	121.16	124.95	136.30			
28	1.93	Average Take	l/m		147.66	130.63	121.16	124.95	136.30		132.14	36.558
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	339265.63	339453.05	339625.32	339803.27	339981.23	340159.18			
		Take	litres		187.42	172.27	177.95	177.95	177.95			
48	3.31	Average Take	l/m		187.42	172.27	177.95	177.95	177.95		178.71	35.595
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	340231.12	340359.85	340516.98	340604.06	340723.33	340846.38			
		Take	litres		128.73	157.13	87.08	119.27	123.05			
28	1.93	Average Take	l/m		128.73	157.13	87.08	119.27	123.05		123.05	34.044
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	340912.64	340995.94	341081.13	341164.43	341249.62	341332.91			
		Take	litres		83.30	85.19	83.30	85.19	83.30			
14	0.97	Average Take	l/m		83.30	85.19	83.30	85.19	83.30		84.05	31.956

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE GEOTECHNICAL SITE INVESTIGATION

PROJECT NO: VA101-176/8

DRILLHOLE: GH04-40A

AREA: South Fork Koktuli River

TEST NO: 1

INCLINATION: 90 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 41.5 m

TOP OF TEST INTERVAL: 59.00 m (DOWN HOLE)

DATE: 07/19/04

GAUGE HEIGHT ABOVE GROUND: 1.1 m

BOTTOM OF TEST INTERVAL: 77.74 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	7629.26	7704.99	7778.82	7854.55	7928.38	8004.10			
		Take	litres		75.73	73.83	75.73	73.83	75.72			
29	2.00	Average Take	l/m		75.73	73.83	75.73	73.83	75.72		74.97	11.902
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	8004.10	8083.61	8168.80	8253.99	8337.29	8422.48			
		Take	litres		79.51	85.19	85.19	83.3	85.19			
58	4.00	Average Take	l/m		79.51	85.19	85.19	83.3	85.19		83.68	10.036
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	8422.48	8522.82	8626.94	8727.27	8831.39	8933.62			
		Take	litres		100.34	104.12	100.33	104.12	102.23			
97	6.69	Average Take	l/m		100.34	104.12	100.33	104.12	102.23		102.23	9.227
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	8933.62	9024.49	9113.47	9202.45	9291.42	9380.40			
		Take	litres		90.87	88.98	88.98	88.97	88.98			
58	4.00	Average Take	l/m		90.87	88.98	88.98	88.97	88.98		89.36	10.717
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	litres	9380.40	9458.02	9531.85	9607.57	9681.40	9757.13			
		Take	litres		77.62	73.83	75.72	73.83	75.73			
29	2.00	Average Take	l/m		77.62	73.83	75.72	73.83	75.73		75.35	11.962

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: PEBBLE GEOTECHNICAL SITE INVESTIGATION

PROJECT NO: VA101-176/8

DRILLHOLE: GH04-25

AREA: Area 'G'

TEST NO: 1

INCLINATION: 90 ° (FROM HORIZONTAL)

DEPTH TO GROUNDWATER: 14.8 m

TOP OF TEST INTERVAL: 38.10 m (DOWN HOLE)

DATE: 07/02/04

GAUGE HEIGHT ABOVE GROUND: 1.5 m

BOTTOM OF TEST INTERVAL: 56.39 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	292668.43	292677.89	292718.41	292760.81	292800.19	292807.00			
		Take	litres		9.47	40.51	42.41	39.38	6.82			
20	1.38	Average Take	l/m		9.47	40.51	42.41	39.38	6.82		27.72	9.123
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	292906.20	292960.73	293025.85	293072.04	293123.91	293173.89			
		Take	litres		54.52	65.12	46.19	51.87	49.98			
35	2.41	Average Take	l/m		54.52	65.12	46.19	51.87	49.98		53.54	13.081
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	293234.47	293319.66	293390.84	293458.99	293530.55	293605.90			
		Take	litres		85.19	71.18	68.15	71.56	75.35			
60	4.14	Average Take	l/m		85.19	71.18	68.15	71.56	75.35		74.29	12.698
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	293649.06	293705.86	293756.21	293827.39	293862.23	293898.20			
		Take	litres		56.79	50.36	71.18	34.83	35.97			
35	2.41	Average Take	l/m		56.79	50.36	71.18	34.83	35.97		49.83	12.175
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	litres	293925.08	293962.56	294000.05	294032.99	294068.58	294102.28			
		Take	litres		37.48	37.48	32.94	35.59	33.70			
20	1.38	Average Take	l/m		37.48	37.48	32.94	35.59	33.70		35.44	11.665

SECTION 4 – GEOTECHNICAL RESPONSE TEST DATA

2004 SITE INVESTIGATION RISING HEAD (HVORSLEV) TEST DATA

2004 PEBBLE SITE INVESTIGATIONS

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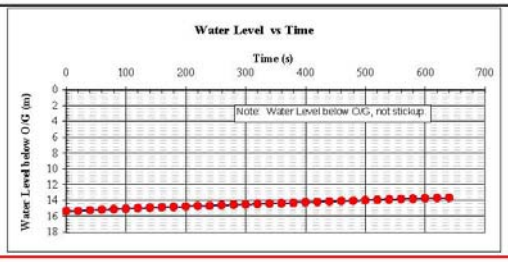
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8				
Borehole No.	GH04-28				
		Test Interval	13.72 m	to	18.29 m
Borehole Elevation			353	m	
Borehole Inclination			90	deg	
Date:			19/Aug/04		
Test No.			1		
Hole diameter, D		D =	0.096	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			13.72	m	
Bottom of test interval			18.29	m	
Length of test interval, L		L =	4.57	m	
Stickup of piezometer or rods above ground surface			0.15		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			12.93	m	
Static water level, H **(below top of piezo or drill rod)**		H =	12.93	m	
Static water level, **(below ground surface)**			12.78	m	
Elevation of static water level **(below ground surface)**		El. =	340.22	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			15.50	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	15.50	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	15.50	15.50	15.35	1.00	0.37
20	15.46	15.46	15.31	0.98	0.37
40	15.37	15.37	15.22	0.95	0.37
60	15.31	15.31	15.16	0.93	0.37
80	15.25	15.25	15.10	0.90	0.37
100	15.18	15.18	15.03	0.88	0.37
120	15.12	15.12	14.97	0.85	0.37
140	15.05	15.05	14.90	0.82	0.37
160	15.00	15.00	14.85	0.81	0.37
180	14.95	14.95	14.80	0.79	0.37
200	14.89	14.89	14.74	0.76	0.37
220	14.84	14.84	14.69	0.74	0.37
240	14.79	14.79	14.64	0.72	0.37
260	14.73	14.73	14.58	0.70	0.37
280	14.69	14.69	14.54	0.68	0.37
300	14.64	14.64	14.49	0.67	0.37
320	14.59	14.59	14.44	0.65	0.37
340	14.54	14.54	14.39	0.63	0.37
360	14.49	14.49	14.34	0.61	0.37
380	14.44	14.44	14.29	0.59	0.37
400	14.38	14.38	14.23	0.56	0.37
420	14.34	14.34	14.19	0.55	0.37
440	14.29	14.29	14.14	0.53	0.37
460	14.23	14.23	14.08	0.51	0.37
480	14.18	14.18	14.03	0.49	0.37
500	14.12	14.12	13.97	0.46	0.37
520	14.05	14.05	13.90	0.44	0.37
540	14.02	14.02	13.87	0.42	0.37
560	13.98	13.98	13.83	0.41	0.37
580	13.93	13.93	13.78	0.39	0.37
600	13.89	13.89	13.74	0.37	0.37
620	13.85	13.85	13.7	0.36	0.37
640	13.81	13.81	13.66	0.34	0.37



Test by:	JEM/DF
Reviewed by:	DAY

Rev. 0: Issued for Report

2004 PEBBLE SITE INVESTIGATIONS

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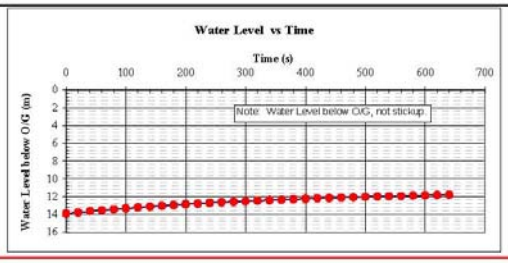
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8					
Borehole No.	GH04-46					
				Test Interval		
			19.51	m to	26.67	m
Borehole Elevation				337.72	m	
Borehole Inclination				90	deg	
Date:				19/Aug/04		
Test No.				1		
Hole diameter, D		D =		0.096	m	
Interior diameter of piezometer or drill rods, d		d =		0.051	m	
Top of test interval				19.51	m	
Bottom of test interval				26.67	m	
Length of test interval, L		L =		7.16	m	
Stickup of piezometer or rods above ground surface				0.15		
Measured static water depth in piezo **(below top of piezo or drill rod,)**				10.74	m	
Static water level, H **(below top of piezo or drill rod)**		H =		10.74	m	
Static water level, **(below ground surface)**				10.59	m	
Elevation of static water level **(below ground surface)**		El. =		327.13	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**				14.05	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =		14.05	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	14.05	14.05	13.90	1.00	0.37
20	13.94	13.94	13.79	0.97	0.37
40	13.78	13.78	13.63	0.92	0.37
60	13.70	13.70	13.55	0.89	0.37
80	13.59	13.59	13.44	0.86	0.37
100	13.49	13.49	13.34	0.83	0.37
120	13.38	13.38	13.23	0.80	0.37
140	13.28	13.28	13.13	0.77	0.37
160	13.20	13.20	13.05	0.74	0.37
180	13.12	13.12	12.97	0.72	0.37
200	13.02	13.02	12.87	0.69	0.37
220	12.95	12.95	12.80	0.67	0.37
240	12.85	12.85	12.70	0.64	0.37
260	12.8	12.80	12.65	0.62	0.37
280	12.74	12.74	12.59	0.60	0.37
300	12.69	12.69	12.54	0.59	0.37
320	12.63	12.63	12.48	0.57	0.37
340	12.57	12.57	12.42	0.55	0.37
360	12.51	12.51	12.36	0.53	0.37
380	12.46	12.46	12.31	0.52	0.37
400	12.41	12.41	12.26	0.50	0.37
420	12.36	12.36	12.21	0.49	0.37
440	12.31	12.31	12.16	0.47	0.37
460	12.27	12.27	12.12	0.46	0.37
480	12.23	12.23	12.08	0.45	0.37
500	12.19	12.19	12.04	0.44	0.37
520	12.15	12.15	12.00	0.43	0.37
540	12.12	12.12	11.97	0.42	0.37
560	12.09	12.09	11.94	0.41	0.37
580	12.05	12.05	11.90	0.40	0.37
600	12.02	12.02	11.87	0.39	0.37
620	12	12	11.85	0.38	0.37
640	11.97	11.97	11.82	0.37	0.37



Test by:	JEM/DF
Reviewed by:	DAY

Rev. 0: Issued for Report

2004 PEBBLE SITE INVESTIGATIONS

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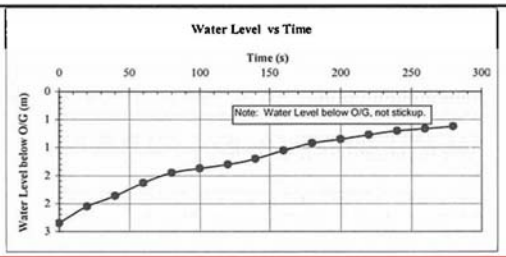
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8			
Borehole No.	GH04-20			
		Test Interval		
		0.30 m to 7.32 m		
Borehole Elevation			374	m
Borehole Inclination			90	deg
Date:			21/Aug/04	
Test No.			1	
Hole diameter, D		D =	0.096	m
Interior diameter of piezometer or drill rods, d		d =	0.051	m
Top of test interval			0.30	m
Bottom of test interval			7.32	m
Length of test interval, L		L =	7.02	m
Stickup of piezometer or rods above ground surface			0.15	
Measured static water depth in piezo (below top of piezo or drill rod,)			0.43	m
Static water level, H (below top of piezo or drill rod)		H =	0.43	m
Static water level, (below ground surface)			0.28	m
Elevation of static water level (below ground surface)		El. =	373.72	m
Measured water depth in piezo at start of test (below top of piezo or drill rod)			2.50	m
Water level at start of test, Ho (below top of piezo or drill rod)		Ho =	2.50	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	2.50	2.50	2.35	1.00	0.37
20	2.20	2.20	2.05	0.86	0.37
40	2.01	2.01	1.86	0.76	0.37
60	1.78	1.78	1.63	0.65	0.37
80	1.60	1.60	1.45	0.57	0.37
100	1.52	1.52	1.37	0.53	0.37
120	1.45	1.45	1.30	0.49	0.37
140	1.35	1.35	1.20	0.44	0.37
160	1.20	1.20	1.05	0.37	0.37
180	1.07	1.07	0.92	0.31	0.37
200	1.00	1.00	0.85	0.28	0.37
220	0.92	0.92	0.77	0.24	0.37
240	0.85	0.85	0.70	0.20	0.37
260	0.81	0.81	0.66	0.18	0.37
280	0.77	0.77	0.62	0.16	0.37



Test by: JEM/DF
Reviewed by: DAY

G5-1

Rev. 0: Issued for Report

SECTION 4 – GEOTECHNICAL RESPONSE TEST DATA

2004 SITE INVESTIGATION FALLING HEAD (HVORSLEV) TEST DATA

2004 PEBBLE SITE INVESTIGATIONS

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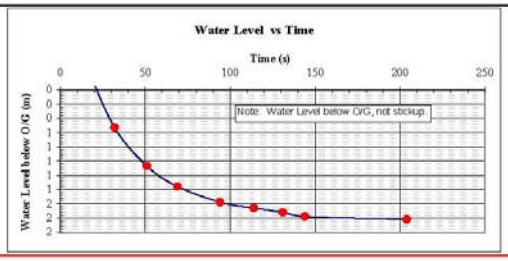
BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8			
Borehole No.	GH04-24			
		Test Interval		
		9.69 m	to	35.59 m
Borehole Elevation			342	m
Borehole Inclination			90	deg
Date:			28/Jun/04	
Test No.			1	
Hole diameter, D		D =	0.096	m
Interior diameter of piezometer or drill rods, d		d =	0.0778	m
Top of test interval			9.69	m
Bottom of test interval			35.59	m
Length of test interval, L		L =	25.90	m
Stickup of piezometer or rods above ground surface			1.22	
Measured static water depth in piezo **(below top of piezo or drill rod,)**			3.09	m
Static water level, H **(below top of piezo or drill rod)**		H =	3.09	m
Static water level, **(below ground surface)**			1.87	m
Elevation of static water level **(below ground surface)**		El. =	340.13	m
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			0.00	m
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	0.00	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	0.00	0.00	-1.22	1.00	0.37
15	0.85	0.85	-0.37	0.72	0.37
32	1.75	1.75	0.53	0.43	0.37
51	2.29	2.29	1.07	0.26	0.37
69	2.58	2.58	1.36	0.17	0.37
94	2.80	2.80	1.58	0.09	0.37
114	2.88	2.88	1.66	0.07	0.37
131	2.94	2.94	1.72	0.05	0.37
144	3.00	3.00	1.78	0.03	0.37
204	3.04	3.04	1.82	0.02	0.37



Test by: CNH
Reviewed by: DAY

Rev. 0: Issued for Report

2004 PEBBLE SITE INVESTIGATIONS

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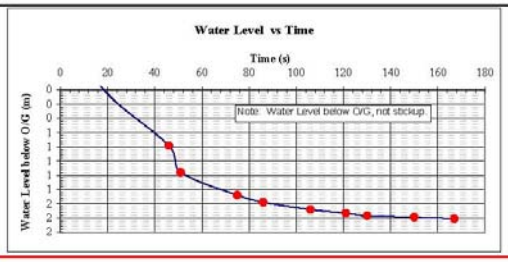
BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8			
Borehole No.	GH04-24			
		Test Interval		
		9.69 m	to	35.59 m
Borehole Elevation			342	m
Borehole Inclination			90	deg
Date:			28/Jun/04	
Test No.			2	
Hole diameter, D		D =	0.096	m
Interior diameter of piezometer or drill rods, d		d =	0.0778	m
Top of test interval			9.69	m
Bottom of test interval			35.59	m
Length of test interval, L		L =	25.90	m
Stickup of piezometer or rods above ground surface			1.22	
Measured static water depth in piezo **(below top of piezo or drill rod,)**			3.09	m
Static water level, H **(below top of piezo or drill rod)**		H =	3.09	m
Static water level, **(below ground surface)**			1.87	m
Elevation of static water level **(below ground surface)**		El. =	340.13	m
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			0.00	m
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	0.00	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	0.00	0.00	-1.22	1.00	0.37
4	0.30	0.30	-0.92	0.90	0.37
18	1.20	1.20	-0.02	0.61	0.37
46	2.00	2.00	0.78	0.35	0.37
51	2.38	2.38	1.16	0.23	0.37
75	2.70	2.70	1.48	0.13	0.37
86	2.80	2.80	1.58	0.09	0.37
106	2.90	2.90	1.68	0.06	0.37
121	2.95	2.95	1.73	0.05	0.37
130	2.99	2.99	1.77	0.03	0.37
150	3.01	3.01	1.79	0.03	0.37
167	3.03	3.03	1.81	0.02	0.37



Test by: CNH
Reviewed by: DAY

Rev. 0: Issued for Report

2004 PEBBLE SITE INVESTIGATIONS

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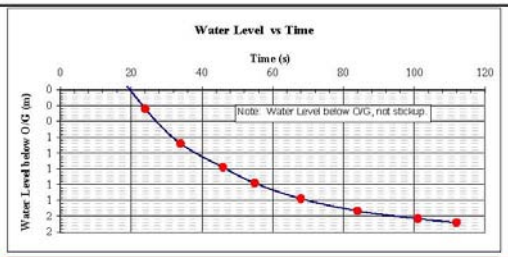
BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8				
Borehole No.	GH04-24				
			Test Interval		
			9.69 m to 35.59 m		
Borehole Elevation			342	m	
Borehole Inclination			90	deg	
Date:			28/Jun/04		
Test No.			3		
Hole diameter, D		D =	0.096	m	
Interior diameter of piezometer or drill rods, d		d =	0.0778	m	
Top of test interval			9.69	m	
Bottom of test interval			35.59	m	
Length of test interval, L		L =	25.90	m	
Stickup of piezometer or rods above ground surface			1.22		
Measured static water depth in piezo **(below top of piezo or drill rod,)**			3.09	m	
Static water level, H **(below top of piezo or drill rod)**		H =	3.09	m	
Static water level, **(below ground surface)**			1.87	m	
Elevation of static water level **(below ground surface)**		El. =	340.13	m	
Measured water depth in piezo at start of test **(below top of piezo or drill rod)**			0.00	m	
Water level at start of test, Ho **(below top of piezo or drill rod)**		Ho =	0.00	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	0.00	0.00	-1.22	1.00	0.37
4	0.30	0.30	-0.92	0.90	0.37
24	1.46	1.46	0.24	0.53	0.37
34	1.90	2.00	0.68	0.35	0.37
46	2.20	2.20	0.98	0.29	0.37
55	2.40	2.40	1.18	0.22	0.37
68	2.60	2.60	1.38	0.16	0.37
84	2.75	2.75	1.53	0.11	0.37
101	2.85	2.85	1.63	0.08	0.37
112	2.90	2.90	1.68	0.06	0.37



Test by: CNH
Reviewed by: DAY

Rev. 0: Issued for Report

SECTION 4 – GEOTECHNICAL RESPONSE TEST DATA

2005 OPEN PIT LUGEON TEST DATA

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble Project	PROJECT NO:	101/176/8	DRILLHOLE:	5326
AREA:	Southeast wall of Open Pit			TEST NO:	1
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	10.0 m	TOP OF TEST INTERVAL:	23.8 m (DOWN HOLE)
DATE:	11-Jul-05	GAUGE HEIGHT ABOVE GROUND:	1.5 m	BOTTOM OF TEST INTERVAL:	32.9 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	14500.00	14560.00	14610.00	14670.00	14725.00	14785.00			
		Take	litres		60.00	50.00	60.00	55.00	60.00			
11	0.76	Average Take	l/m		60.00	50.00	60.00	55.00	60.00		57.00	35.209

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	14900.00	14995.00	15071.00	15148.00	15224.00	15300.00			
		Take	litres		95.00	76.00	77.00	76.00	76.00			
22	1.52	Average Take	l/m		95.00	76.00	77.00	76.00	76.00		80.00	34.386

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	16000.00	16081.00	16158.00	16233.00	16312.00	16389.00			
		Take	litres		81.00	77.00	75.00	79.00	77.00			
30	2.07	Average Take	l/m		81.00	77.00	75.00	79.00	77.00		77.80	27.383

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	16439.00	16495.00	16553.00	16608.00	16668.00	16712.00			
		Take	litres		56.00	58.00	55.00	60.00	44.00			
22	1.52	Average Take	l/m		56.00	58.00	55.00	60.00	44.00		54.60	23.468

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	16731.00	16745.00	16747.00	16756.00	16765.00	16775.00			
		Take	litres		14.00	2.00	9.00	9.00	10.00			
11	0.76	Average Take	l/m		14.00	2.00	9.00	9.00	10.00		8.80	5.436

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble	PROJECT NO:	101/176/8	DRILLHOLE:	5326
AREA:	Southeast wall of Open Pit			TEST NO:	2
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	10.0 m	TOP OF TEST INTERVAL:	32.9 m (DOWN HOLE)
DATE:	11-Jul-05	GAUGE HEIGHT ABOVE GROUND:	1.5 m	BOTTOM OF TEST INTERVAL:	39.0 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	17300.00	17361.00	17421.00	17478.00	17484.00	17489.00				
		Take	litres		61.00	60.00	57.00	6.00	5.00				
14	0.97	Average Take	l/m		61.00	60.00	57.00	6.00	5.00			37.80	31.242
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	17494.00	17500.00	17502.00	17503.00	17504.00	17504.00				
		Take	litres		6.00	2.00	1.00	1.00	0.00				
29	2.00	Average Take	l/m		6.00	2.00	1.00	1.00	0.00			2.00	1.079
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	17507.00	17508.00	17509.00	17510.00	17511.00	17512.00				
		Take	litres		1.00	1.00	1.00	1.00	1.00				
48	3.31	Average Take	l/m		1.00	1.00	1.00	1.00	1.00			1.00	0.374
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	17512.00	17513.00	17513.00	17514.00	17514.00	17515.00				
		Take	litres		1.00	0.00	1.00	0.00	1.00				
29	2.00	Average Take	l/m		1.00	0.00	1.00	0.00	1.00			0.60	0.324
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	17515.00	17515.00	17515.00	17515.00	17515.00	17515.00				
		Take	litres		0.00	0.00	0.00	0.00	0.00				
14	0.97	Average Take	l/m		0.00	0.00	0.00	0.00	0.00			0.00	0.000

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble	PROJECT NO:	101/176/8	DRILLHOLE:	5326
AREA:	Southeast wall of Open Pit			TEST NO:	3
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	10.0 m	TOP OF TEST INTERVAL:	39.0 m (DOWN HOLE)
DATE:	11-Jul-05	GAUGE HEIGHT ABOVE GROUND:	1.5 m	BOTTOM OF TEST INTERVAL:	45.1 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20097.00	20104.00	20110.00	20116.00	20121.00	20126.00				
		Take	litres		7.00	6.00	6.00	5.00	5.00				
17	1.17	Average Take	l/m		7.00	6.00	6.00	5.00	5.00			5.80	4.339
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20131.00	20140.00	20148.00	20156.00	20164.00	20172.00				
		Take	litres		9.00	8.00	8.00	8.00	8.00				
34	2.34	Average Take	l/m		9.00	8.00	8.00	8.00	8.00			8.20	3.970
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20180.00	20194.00	20206.00	20218.00	20229.00	20242.00				
		Take	litres		14.00	12.00	12.00	11.00	13.00				
56	3.86	Average Take	l/m		14.00	12.00	12.00	11.00	13.00			12.40	4.121
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20248.00	20256.00	20264.00	20273.00	20282.00	20291.00				
		Take	litres		8.00	8.00	9.00	9.00	9.00				
34	2.34	Average Take	l/m		8.00	8.00	9.00	9.00	9.00			8.60	4.163
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20293.00	20297.00	20301.00	20306.00	20312.00	20318.00				
		Take	litres		4.00	4.00	5.00	6.00	6.00				
17	1.17	Average Take	l/m		4.00	4.00	5.00	6.00	6.00			5.00	3.741

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble	PROJECT NO:	101/176/8	DRILLHOLE:	5326
AREA:	Southeast wall of Open Pit			TEST NO:	4
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	10.0 m	TOP OF TEST INTERVAL:	51.2 m (DOWN HOLE)
DATE:	11-Jul-05	GAUGE HEIGHT ABOVE GROUND:	1.5 m	BOTTOM OF TEST INTERVAL:	57.3 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20433.00	20433.00	20434.00	20434.00	20435.00	20436.00				
		Take	litres		0.00	1.00	0.00	1.00	1.00				
22	1.52	Average Take	l/m		0.00	1.00	0.00	1.00	1.00			0.60	0.387
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20437.00	20439.00	20440.00	20442.00	20443.00	20445.00				
		Take	litres		2.00	1.00	2.00	1.00	2.00				
44	3.03	Average Take	l/m		2.00	1.00	2.00	1.00	2.00			1.60	0.641
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20447.00	20450.00	20452.00	20455.00	20457.00	20459.00				
		Take	litres		3.00	2.00	3.00	2.00	2.00				
74	5.10	Average Take	l/m		3.00	2.00	3.00	2.00	2.00			2.40	0.635
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20460.00	20461.00	20462.00	20464.00	20465.00	20466.00				
		Take	litres		1.00	1.00	2.00	1.00	1.00				
44	3.03	Average Take	l/m		1.00	1.00	2.00	1.00	1.00			1.20	0.481
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20466.00	20467.00	20468.00	20468.00	20469.00	20470.00				
		Take	litres		1.00	1.00	0.00	1.00	1.00				
22	1.52	Average Take	l/m		1.00	1.00	0.00	1.00	1.00			0.80	0.516

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble	PROJECT NO:	101/176/8	DRILLHOLE:	5326
AREA:	Southeast wall of Open Pit			TEST NO:	5
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	10.0 m	TOP OF TEST INTERVAL:	57.3 m (DOWN HOLE)
DATE:	11-Jul-05	GAUGE HEIGHT ABOVE GROUND:	1.5 m	BOTTOM OF TEST INTERVAL:	63.4 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20549.00	20552.00	20555.00	20558.00	20561.00	20563.00				
		Take	litres		3.00	3.00	3.00	3.00	2.00				
27	1.86	Average Take	l/m		3.00	3.00	3.00	3.00	2.00			2.80	1.586
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20565.00	20569.00	20573.00	20577.00	20581.00	20585.00				
		Take	litres		4.00	4.00	4.00	4.00	4.00				
55	3.79	Average Take	l/m		4.00	4.00	4.00	4.00	4.00			4.00	1.348
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20593.00	20603.00	20613.00	20623.00	20633.00	20643.00				
		Take	litres		10.00	10.00	10.00	10.00	10.00				
91	6.27	Average Take	l/m		10.00	10.00	10.00	10.00	10.00			10.00	2.217
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20649.00	20652.00	20656.00	20660.00	20665.00	20669.00				
		Take	litres		3.00	4.00	4.00	5.00	4.00				
55	3.79	Average Take	l/m		3.00	4.00	4.00	5.00	4.00			4.00	1.348
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	20669.00	20669.00	20670.00	20671.00	20672.00	20674.00				
		Take	litres		0.00	1.00	1.00	1.00	2.00				
27	1.86	Average Take	l/m		0.00	1.00	1.00	1.00	2.00			1.00	0.566

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble	PROJECT NO:	101/176/8	DRILLHOLE:	5326
AREA:	Southeast wall of Open Pit			TEST NO:	6
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	10.0 m	TOP OF TEST INTERVAL:	72.6 m (DOWN HOLE)
DATE:	12-Jul-05	GAUGE HEIGHT ABOVE GROUND:	1.5 m	BOTTOM OF TEST INTERVAL:	81.7 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	22450.00	22469.00	22489.00	22509.00	22528.00	22548.00			
		Take	litres		19.00	20.00	20.00	19.00	20.00			
38	2.62	Average Take	l/m		19.00	20.00	20.00	19.00	20.00		19.60	5.873
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	22575.00	22608.00	22636.00	22666.00	22698.00	22725.00			
		Take	litres		33.00	28.00	30.00	32.00	27.00			
76	5.24	Average Take	l/m		33.00	28.00	30.00	32.00	27.00		30.00	5.201
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	22767.00	22816.00	22866.00	22915.00	22962.00	23010.00			
		Take	litres		49.00	50.00	49.00	47.00	48.00			
126	8.69	Average Take	l/m		49.00	50.00	49.00	47.00	48.00		48.60	5.420
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	23026.00	23061.00	23098.00	23131.00	23168.00	23203.00			
		Take	litres		35.00	37.00	33.00	37.00	35.00			
76	5.24	Average Take	l/m		35.00	37.00	33.00	37.00	35.00		35.40	6.137
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	23225.00	23250.00	23275.00	23302.00	23325.00	23351.00			
		Take	litres		25.00	25.00	27.00	23.00	26.00			
38	2.62	Average Take	l/m		25.00	25.00	27.00	23.00	26.00		25.20	7.551

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble	PROJECT NO:	101/176/8	DRILLHOLE:	5326
AREA:	Southeast wall of Open Pit			TEST NO:	7
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	10.0 m	TOP OF TEST INTERVAL:	106.1 m (DOWN HOLE)
DATE:	12-Jul-05	GAUGE HEIGHT ABOVE GROUND:	1.5 m	BOTTOM OF TEST INTERVAL:	121.3 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	25111.00	25129.00	25147.00	25166.00	25185.00	25204.00				
		Take	litres		18.00	18.00	19.00	19.00	19.00				
44	3.03	Average Take	l/m		18.00	18.00	19.00	19.00	19.00			18.60	2.992
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	25227.00	25253.00	25279.00	25305.00	25327.00	25353.00				
		Take	litres		26.00	26.00	26.00	22.00	26.00				
88	6.07	Average Take	l/m		26.00	26.00	26.00	22.00	26.00			25.20	2.308
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	25486.00	25525.00	25565.00	25606.00	25646.00	25687.00				
		Take	litres		39.00	40.00	41.00	40.00	41.00				
147	10.14	Average Take	l/m		39.00	40.00	41.00	40.00	41.00			40.20	2.334
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	25710.00	25738.00	25768.00	25799.00	25828.00	25857.00				
		Take	litres		28.00	30.00	31.00	29.00	29.00				
88	6.07	Average Take	l/m		28.00	30.00	31.00	29.00	29.00			29.40	2.693
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	25892.00	25913.00	25934.00	25955.00	25976.00	25998.00				
		Take	litres		21.00	21.00	21.00	21.00	22.00				
44	3.03	Average Take	l/m		21.00	21.00	21.00	21.00	22.00			21.20	3.411

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble	PROJECT NO:	101/176/8	DRILLHOLE:	5326
AREA:	Southeast wall of Open Pit			TEST NO:	8
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	10.0 m	TOP OF TEST INTERVAL:	121.3 m (DOWN HOLE)
DATE:	12-Jul-05	GAUGE HEIGHT ABOVE GROUND:	1.5 m	BOTTOM OF TEST INTERVAL:	136.6 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	26140.00	26141.00	26142.00	26143.00	26143.00	26144.00				
		Take	litres		1.00	1.00	1.00	0.00	1.00				
52	3.59	Average Take	l/m		1.00	1.00	1.00	0.00	1.00			0.80	0.112
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	26144.00	26145.00	26145.00	26145.00	26146.00	26146.00				
		Take	litres		1.00	0.00	0.00	1.00	0.00				
104	7.17	Average Take	l/m		1.00	0.00	0.00	1.00	0.00			0.40	0.031
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	26146.00	26147.00	26148.00	26148.00	26149.00	26149.00				
		Take	litres		1.00	1.00	0.00	1.00	0.00				
173	11.93	Average Take	l/m		1.00	1.00	0.00	1.00	0.00			0.60	0.030
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	26149.00	26150.00	26150.00	26150.00	26150.00	26151.00				
		Take	litres		1.00	0.00	0.00	0.00	1.00				
104	7.17	Average Take	l/m		1.00	0.00	0.00	0.00	1.00			0.40	0.031
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	26151.00	2615.00	26151.00	26151.00	26151.00	26152.00				
		Take	litres		-23536.00	23536.00	0.00	0.00	1.00				
52	3.59	Average Take	l/m		-23536.00	23536.00	0.00	0.00	1.00			0.20	0.028

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble	PROJECT NO:	101/176/8	DRILLHOLE:	5326
AREA:	Southeast wall of Open Pit			TEST NO:	9
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	10.0 m	TOP OF TEST INTERVAL:	136.6 m (DOWN HOLE)
DATE:	13-Jul-05	GAUGE HEIGHT ABOVE GROUND:	1.5 m	BOTTOM OF TEST INTERVAL:	151.8 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	26440.00	26475.00	26508.00	26540.00	26573.00	26605.00			
		Take	litres		35.00	33.00	32.00	33.00	32.00			
45	3.10	Average Take	l/m		35.00	33.00	32.00	33.00	32.00		33.00	5.206
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	26681.00	26730.00	26784.00	26835.00	26887.00	26935.00			
		Take	litres		49.00	54.00	51.00	52.00	48.00			
90	6.21	Average Take	l/m		49.00	54.00	51.00	52.00	48.00		50.80	4.552
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	27200.00	27253.00	27308.00	27362.00	27417.00	27471.00			
		Take	litres		53.00	55.00	54.00	55.00	54.00			
110	7.58	Average Take	l/m		53.00	55.00	54.00	55.00	54.00		54.20	4.074
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	27500.00	27550.00	27600.00	27650.00	27700.00	27780.00			
		Take	litres		50.00	50.00	50.00	50.00	80.00			
90	6.21	Average Take	l/m		50.00	50.00	50.00	50.00	80.00		56.00	5.017
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	27781.00	27813.00	27850.00	27881.00	27914.00	27946.00			
		Take	litres		32.00	37.00	31.00	33.00	32.00			
45	3.10	Average Take	l/m		32.00	37.00	31.00	33.00	32.00		33.00	5.206

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble | PROJECT NO: 101/176/8 | DRILLHOLE: 5326

AREA: Southeast wall of Open Pit | TEST NO: 10

DIPS: 60 ° (FROM HORIZONTAL) | DEPTH GROUNDWATER: 10.0 m | TOP OF TEST INTERVAL: 151.8 m (DOWN HOLE)

DATE: 13-Jul-05 | GAUGE HEIGHT ABOVE GROUND: 1.5 m | BOTTOM OF TEST INTERVAL: 167.0 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	28358.00	28362.00	28368.00	28374.00	28378.00	28388.00			
		Take	litres		4.00	6.00	6.00	4.00	10.00			
45	3.10	Average Take	l/m		4.00	6.00	6.00	4.00	10.00		6.00	0.949
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	28392.00	28400.00	28409.00	28417.00	28425.00	28433.00			
		Take	litres		8.00	9.00	8.00	8.00	8.00			
90	6.21	Average Take	l/m		8.00	9.00	8.00	8.00	8.00		8.20	0.737
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	28475.00	28482.00	28491.00	28500.00	28509.00	28518.00			
		Take	litres		7.00	9.00	9.00	9.00	9.00			
150	10.34	Average Take	l/m		7.00	9.00	9.00	9.00	9.00		8.60	0.490
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	28523.00	28528.00	28535.00	28542.00	28547.00	28554.00			
		Take	litres		5.00	7.00	7.00	5.00	7.00			
90	6.21	Average Take	l/m		5.00	7.00	7.00	5.00	7.00		6.20	0.557
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	28557.00	28563.00	28568.00	28573.00	28578.00	28584.00			
		Take	litres		6.00	5.00	5.00	5.00	6.00			
45	3.10	Average Take	l/m		6.00	5.00	5.00	5.00	6.00		5.40	0.854

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M:\1\01\00176\08\A\Data\2005 Pit SI\Field Tests\Packer Test\[Packer Test - 5326corr.xls]Lugeon Test (13) Rev'd Nov/18/05

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble	PROJECT NO:	101/176/8	DRILLHOLE:	5326
AREA:	Southeast wall of Open Pit			TEST NO:	11
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	10.0 m	TOP OF TEST INTERVAL:	167.0 m (DOWN HOLE)
DATE:	13-Jul-05	GAUGE HEIGHT ABOVE GROUND:	1.5 m	BOTTOM OF TEST INTERVAL:	182.3 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	28827.00	28829.00	28832.00	28835.00	28837.00	28840.00			
		Take	litres		2.00	3.00	3.00	2.00	3.00			
45	3.10	Average Take	l/m		2.00	3.00	3.00	2.00	3.00		2.60	0.410
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	28844.00	28849.00	28853.00	28858.00	28863.00	28868.00			
		Take	litres		5.00	4.00	5.00	5.00	5.00			
90	6.21	Average Take	l/m		5.00	4.00	5.00	5.00	5.00		4.80	0.430
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	28880.00	28888.00	28898.00	28906.00	28914.00	28921.00			
		Take	litres		8.00	10.00	8.00	8.00	7.00			
150	10.34	Average Take	l/m		8.00	10.00	8.00	8.00	7.00		8.20	0.466
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	28925.00	28930.00	28936.00	28941.00	28947.00	28952.00			
		Take	litres		5.00	6.00	5.00	6.00	5.00			
90	6.21	Average Take	l/m		5.00	6.00	5.00	6.00	5.00		5.40	0.484
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	28954.00	28957.00	28961.00	28963.00	28967.00	28971.00			
		Take	litres		3.00	4.00	2.00	4.00	4.00			
45	3.10	Average Take	l/m		3.00	4.00	2.00	4.00	4.00		3.40	0.536

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: 5327

AREA: East Wall of Open Pit

TEST NO: 1

DIPS: 60 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 0.4 m

TOP OF TEST INTERVAL: 93.6 m (DOWN HOLE)

DATE: 07/24/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 99.7 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	29530.00	29565.00	29599.00	29633.00	29668.00	29704.00			
		Take	litres		35.00	34.00	34.00	35.00	36.00			
39	2.69	Average Take	l/m		35.00	34.00	34.00	35.00	36.00		34.80	19.227

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	30050.00	30100.00	30147.00	30201.00	30244.00	30293.00			
		Take	litres		50.00	47.00	54.00	43.00	49.00			
78	5.38	Average Take	l/m		50.00	47.00	54.00	43.00	49.00		48.60	13.955

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	30660.00	30725.00	30788.00	30849.00	30912.00	30977.00			
		Take	litres		65.00	63.00	61.00	63.00	65.00			
130	8.96	Average Take	l/m		65.00	63.00	61.00	63.00	65.00		63.40	11.098

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	31005.00	31045.00	31089.00	31130.00	31172.00	31215.00			
		Take	litres		40.00	44.00	41.00	42.00	43.00			
78	5.38	Average Take	l/m		40.00	44.00	41.00	42.00	43.00		42.00	12.060

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	31235.00	31261.00	31288.00	31314.00	31339.00	31364.00			
		Take	litres		26.00	27.00	26.00	25.00	25.00			
39	2.69	Average Take	l/m		26.00	27.00	26.00	25.00	25.00		25.80	14.255

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble Project	PROJECT NO:	101/176/8	DRILLHOLE:	5327
AREA:	East Wall of Open Pit			TEST NO:	2
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	1.0 m	TOP OF TEST INTERVAL:	108.8 m (DOWN HOLE)
DATE:	07/24/05	GAUGE HEIGHT ABOVE GROUND:	2.2 m	BOTTOM OF TEST INTERVAL:	114.9 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	31431.00	31437.00	31442.00	31450.00	31455.00	31461.00			
		Take	litres		6.00	5.00	8.00	5.00	6.00			
45	3.10	Average Take	l/m		6.00	5.00	8.00	5.00	6.00		6.00	2.860
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	31480.00	31489.00	31498.00	31507.00	31515.00	31524.00			
		Take	litres		9.00	9.00	9.00	8.00	9.00			
90	6.21	Average Take	l/m		9.00	9.00	9.00	8.00	9.00		8.80	2.185
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	31570.00	31583.00	31596.00	31608.00	31620.00	31632.00			
		Take	litres		13.00	13.00	12.00	12.00	12.00			
150	10.34	Average Take	l/m		13.00	13.00	12.00	12.00	12.00		12.40	1.879
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	31639.00	31647.00	31654.00	31663.00	31671.00	31679.00			
		Take	litres		8.00	7.00	9.00	8.00	8.00			
90	6.21	Average Take	l/m		8.00	7.00	9.00	8.00	8.00		8.00	1.986
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	31684.00	31689.00	31694.00	31699.00	31703.00	31708.00			
		Take	litres		5.00	5.00	5.00	4.00	5.00			
45	3.10	Average Take	l/m		5.00	5.00	5.00	4.00	5.00		4.80	2.288

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: 5327

AREA: East Wall of Open Pit

TEST NO: 3

DIPS: 60 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 1.0 m

TOP OF TEST INTERVAL: 124.1 m (DOWN HOLE)

DATE: 07/24/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 127.1 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	31830.00	31835.00	31840.00	31847.00	31852.00	31858.00			
		Take	litres		5.00	5.00	7.00	5.00	6.00			
30	2.07	Average Take	l/m		5.00	5.00	7.00	5.00	6.00		5.60	7.725

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	31866.00	31876.00	31887.00	31897.00	31907.00	31915.00			
		Take	litres		10.00	11.00	10.00	10.00	8.00			
60	4.14	Average Take	l/m		10.00	11.00	10.00	10.00	8.00		9.80	7.174

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	31926.00	31941.00	31955.00	31967.00	31982.00	31996.00			
		Take	litres		15.00	14.00	12.00	15.00	14.00			
100	6.89	Average Take	l/m		15.00	14.00	12.00	15.00	14.00		14.00	6.303

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	32005.00	32012.00	32019.00	32026.00	32033.00	32040.00			
		Take	litres		7.00	7.00	7.00	7.00	7.00			
58	4.00	Average Take	l/m		7.00	7.00	7.00	7.00	7.00		7.00	5.290

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	32045.00	32049.00	32052.00	32056.00	32060.00	32064.00			
		Take	litres		4.00	3.00	4.00	4.00	4.00			
30	2.07	Average Take	l/m		4.00	3.00	4.00	4.00	4.00		3.80	5.242

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble Project	PROJECT NO:	101/176/8	DRILLHOLE:	5327
AREA:	East Wall of Open Pit			TEST NO:	4
DIPS:	60 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	1.5 m	TOP OF TEST INTERVAL:	142.3 m (DOWN HOLE)
DATE:	07/25/05	GAUGE HEIGHT ABOVE GROUND:	2.1 m	BOTTOM OF TEST INTERVAL:	148.4 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	32530.00	32586.00	32637.00	32691.00	32742.00	32798.00			
		Take	litres		56.00	51.00	54.00	51.00	56.00			
45	3.10	Average Take	l/m		56.00	51.00	54.00	51.00	56.00		53.60	25.311
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	33050.00	33140.00	33229.00	33316.00	33403.00	33492.00			
		Take	litres		90.00	89.00	87.00	87.00	89.00			
90	6.21	Average Take	l/m		90.00	89.00	87.00	87.00	89.00		88.40	21.847
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	34920.00	35037.00	35155.00	35273.00	35394.00	35510.00			
		Take	litres		117.00	118.00	118.00	121.00	116.00			
120	8.27	Average Take	l/m		117.00	118.00	118.00	121.00	116.00		118.00	22.130
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	35570.00	35662.00	35755.00	35850.00	35942.00	36034.00			
		Take	litres		92.00	93.00	95.00	92.00	92.00			
90	6.21	Average Take	l/m		92.00	93.00	95.00	92.00	92.00		92.80	22.935
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	36080.00	36134.00	36193.00	36247.00	36305.00	36362.00			
		Take	litres		54.00	59.00	54.00	58.00	57.00			
45	3.10	Average Take	l/m		54.00	59.00	54.00	58.00	57.00		56.40	26.634

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: 5327

AREA: East Wall of Open Pit

TEST NO: 5

DIPS: 60 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 1.4 m

TOP OF TEST INTERVAL: 157.6 m (DOWN HOLE)

DATE: 07/25/05

GAUGE HEIGHT ABOVE GROUND: 2.1 m

BOTTOM OF TEST INTERVAL: 163.7 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	36625.00	36629.00	36633.00	36637.00	36641.00	36646.00			
		Take	litres		4.00	4.00	4.00	4.00	5.00			
45	3.10	Average Take	l/m		4.00	4.00	4.00	4.00	5.00		4.20	1.988
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	36660.00	36669.00	36679.00	36688.00	36696.00	36704.00			
		Take	litres		9.00	10.00	9.00	8.00	8.00			
90	6.21	Average Take	l/m		9.00	10.00	9.00	8.00	8.00		8.80	2.177
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	36740.00	36761.00	36782.00	36801.00	36820.00	36838.00			
		Take	litres		21.00	21.00	19.00	19.00	18.00			
120	8.27	Average Take	l/m		21.00	21.00	19.00	19.00	18.00		19.60	3.679
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	36840.00	36846.00	36853.00	36860.50	36868.00	36871.00			
		Take	litres		6.00	7.00	7.50	7.50	3.00			
90	6.21	Average Take	l/m		6.00	7.00	7.50	7.50	3.00		6.20	1.534
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	36875.00	36878.50	36883.00	36886.50	36890.00	36894.00			
		Take	litres		3.50	4.50	3.50	3.50	4.00			
45	3.10	Average Take	l/m		3.50	4.50	3.50	3.50	4.00		3.80	1.798

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: 5327

AREA: East Wall of Open Pit

TEST NO: 6

DIPS: 60 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 1.0 m

TOP OF TEST INTERVAL: 188.1 m (DOWN HOLE)

DATE: 07/26/05

GAUGE HEIGHT ABOVE GROUND: 2.1 m

BOTTOM OF TEST INTERVAL: 194.2 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	36921.00	36927.00	36932.00	36938.00	36944.00	36949.00				
		Take	litres		6.00	5.00	6.00	6.00	5.00				
45	3.10	Average Take	l/m		6.00	5.00	6.00	6.00	5.00			5.60	2.676
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	36967.00	36976.00	36985.00	36993.00	37002.00	37010.00				
		Take	litres		9.00	9.00	8.00	9.00	8.00				
90	6.21	Average Take	l/m		9.00	9.00	8.00	9.00	8.00			8.60	2.139
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	37030.00	37043.00	37056.00	37068.00	37081.00	37094.00				
		Take	litres		13.00	13.00	12.00	13.00	13.00				
150	10.34	Average Take	l/m		13.00	13.00	12.00	13.00	13.00			12.80	1.942
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	37105.00	37112.00	37119.00	37127.00	37134.00	37142.00				
		Take	litres		7.00	7.00	8.00	7.00	8.00				
90	6.21	Average Take	l/m		7.00	7.00	8.00	7.00	8.00			7.40	1.840
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	37150.00	37154.00	37158.00	37162.00	37166.00	37170.00				
		Take	litres		4.00	4.00	4.00	4.00	4.00				
50	3.45	Average Take	l/m		4.00	4.00	4.00	4.00	4.00			4.00	1.734

SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: 5327

AREA: East Wall of Open Pit

TEST NO: 7

DIPS: 60 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 1.0 m

TOP OF TEST INTERVAL: 206.3 m (DOWN HOLE)

DATE: 07/26/05

GAUGE HEIGHT ABOVE GROUND: 2.1 m

BOTTOM OF TEST INTERVAL: 212.4 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	37407.00	37407.00	37408.00	37409.00	37409.00	37409.00			
		Take	litres		0.00	1.00	1.00	0.00	0.00			
45	3.10	Average Take	l/m		0.00	1.00	1.00	0.00	0.00		0.40	0.191
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	37409.00	37409.00	37409.00	37409.00	37409.00	37409.00			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
100	6.89	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	37409.00	37410.00	37410.00	37410.00	37410.00	37410.00			
		Take	litres		1.00	0.00	0.00	0.00	0.00			
150	10.34	Average Take	l/m		1.00	0.00	0.00	0.00	0.00		0.20	0.030
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	37410.00	37410.00	37410.00	37410.00	37410.00	37410.00			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
100	6.89	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	37410.00	37410.00	37410.00	37410.00	37410.00	37410.00			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
50	3.45	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble Project	PROJECT NO:	101/176/8	DRILLHOLE:	5328
AREA:	South Wall of Open Pit			TEST NO:	1
DIPS:	65 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	5.2 m	TOP OF TEST INTERVAL:	66.5 m (DOWN HOLE)
DATE:	08/09/05	GAUGE HEIGHT ABOVE GROUND:	1.0 m	BOTTOM OF TEST INTERVAL:	72.6 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	USGAL									
		Flowmeter	litres	37653.00	37653.00	37653.00	37653.00	37653.00	37653.00			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
30	2.07	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	USGAL									
		Flowmeter	litres	37654.00	37654.00	37654.20	37654.50	37654.90	37655.00			
		Take	litres		0.00	0.20	0.30	0.40	0.10			
62	4.27	Average Take	l/m		0.00	0.20	0.30	0.40	0.10		0.20	0.067
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	USGAL									
		Flowmeter	litres	37655.00	37655.20	37655.80	37656.00	37656.20	37656.50			
		Take	litres		0.20	0.60	0.20	0.20	0.30			
108	7.45	Average Take	l/m		0.20	0.60	0.20	0.20	0.30		0.30	0.060
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	USGAL									
		Flowmeter	litres	37656.50	37656.80	37657.00	37657.10	37657.20	37657.20			
		Take	litres		0.30	0.20	0.10	0.10	0.00			
68	4.69	Average Take	l/m		0.30	0.20	0.10	0.10	0.00		0.14	0.043
GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	USGAL									
		Flowmeter	litres	37657.80	37657.80	37657.80	37657.80	37657.80	37657.80			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
38	2.62	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble Project	PROJECT NO:	101/176/8	DRILLHOLE:	5328
AREA:	South Wall of Open Pit			TEST NO:	2
DIPS:	65 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	5.2 m	TOP OF TEST INTERVAL:	103.0 m (DOWN HOLE)
DATE:	08/09/05	GAUGE HEIGHT ABOVE GROUND:	1.0 m	BOTTOM OF TEST INTERVAL:	109.1 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	38125.00	38125.00	38125.00	38125.00	38125.00	38125.00				
		Take	litres		0.00	0.00	0.00	0.00	0.00				
50	3.45	Average Take	l/m		0.00	0.00	0.00	0.00	0.00			0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	38128.00	38128.00	38128.00	38128.00	38128.00	38128.00				
		Take	litres		0.00	0.00	0.00	0.00	0.00				
100	6.89	Average Take	l/m		0.00	0.00	0.00	0.00	0.00			0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	38128.00	38129.00	38129.00	38129.00	38129.00	38130.00				
		Take	litres		1.00	0.00	0.00	0.00	1.00				
150	10.34	Average Take	l/m		1.00	0.00	0.00	0.00	1.00			0.40	0.059
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	38130.00	38130.00	38130.00	38130.00	38130.00	38130.00				
		Take	litres		0.00	0.00	0.00	0.00	0.00				
120	8.27	Average Take	l/m		0.00	0.00	0.00	0.00	0.00			0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)											AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5				
		Flowmeter	USGAL										
		Flowmeter	litres	38130.00	38130.00	38130.00	38130.00	38130.00	38130.00				
		Take	litres		0.00	0.00	0.00	0.00	0.00				
60	4.14	Average Take	l/m		0.00	0.00	0.00	0.00	0.00			0.00	0.000

SECTION 4 – GEOTECHNICAL RESPONSE TEST DATA

2005 SITE INVESTIGATION TEST DATA

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-51

AREA: Southwest Embankment

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 0.4 m

TOP OF TEST INTERVAL: 93.0 m (DOWN HOLE)

DATE: 08/25/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 120.4 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	USGAL	514.88	515.57	516.24	516.91	517.60	518.27			
		Flowmeter	litres	1930.03	1932.61	1935.13	1937.64	1940.22	1942.74			
		Take	litres		2.59	2.51	2.51	2.59	2.51			
45	3.10	Average Take	l/m		2.59	2.51	2.51	2.59	2.51		2.54	0.271

GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	USGAL	518.25	519.14	520.03	502.90	521.79	522.79			
		Flowmeter	litres	1942.66	1946.00	1949.33	1885.12	1955.93	1959.68			
		Take	litres		3.34	3.34	-64.21	70.81	3.75			
90	6.21	Average Take	l/m		3.34	3.34	-64.21	70.81	3.75		3.40	0.189

GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	USGAL	522.85	524.16	525.50	526.80	528.09	529.09			
		Flowmeter	litres	1959.90	1964.81	1969.84	1974.71	1979.55	1983.29			
		Take	litres		4.91	5.02	4.87	4.84	3.75			
150	10.34	Average Take	l/m		4.91	5.02	4.87	4.84	3.75		4.68	0.158

GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	USGAL	529.07	530.00	530.96	531.93	532.90	533.90			
		Flowmeter	litres	1983.22	1986.71	1990.30	1993.94	1997.58	2001.32			
		Take	litres		3.49	3.60	3.64	3.64	3.75			
90	6.21	Average Take	l/m		3.49	3.60	3.64	3.64	3.75		3.62	0.201

GAUGE P (psi)	GAUGE P (BAR)	Time	min	0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Flowmeter	USGAL	533.22	533.91	534.60	535.30	535.99	536.99			
		Flowmeter	litres	1998.78	2001.36	2003.95	2006.57	2009.16	2012.91			
		Take	litres		2.59	2.59	2.62	2.59	3.75			
45	3.10	Average Take	l/m		2.59	2.59	2.62	2.59	3.75		2.83	0.301

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-52

AREA: Southwest Embankment

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 30.5

TOP OF TEST INTERVAL: 63.1 m (DOWN HOLE)

DATE: 08/30/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 93.6 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	538.91	538.95	539.01	539.05	539.10	539.15			
		Flowmeter	litres	2020.10	2020.25	2020.48	2020.63	2020.82	2021.00			
		Take	litres		0.15	0.22	0.15	0.19	0.19			
32	2.21	Average Take	l/m		0.15	0.22	0.15	0.19	0.19		0.18	0.011
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	539.21	539.28	539.35	539.41	539.48	539.54			
		Flowmeter	litres	2021.23	2021.49	2021.75	2021.98	2022.24	2022.47			
		Take	litres		0.26	0.26	0.22	0.26	0.22			
64	4.41	Average Take	l/m		0.26	0.26	0.22	0.26	0.22		0.25	0.010
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	539.62	539.75	539.86	539.97	540.08	540.18			
		Flowmeter	litres	2022.77	2023.25	2023.67	2024.08	2024.49	2024.86			
		Take	litres		0.49	0.41	0.41	0.41	0.37			
105	7.24	Average Take	l/m		0.49	0.41	0.41	0.41	0.37		0.42	0.013
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	540.21	540.28	540.34	540.39	540.44	540.50			
		Flowmeter	litres	2024.98	2025.24	2025.46	2025.65	2025.84	2026.06			
		Take	litres		0.26	0.22	0.19	0.19	0.22			
64	4.41	Average Take	l/m		0.26	0.22	0.19	0.19	0.22		0.22	0.009
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	540.50	540.54	540.57	540.60	540.63	540.66			
		Flowmeter	litres	2026.06	2026.21	2026.33	2026.44	2026.55	2026.66			
		Take	litres		0.15	0.11	0.11	0.11	0.11			
32	2.21	Average Take	l/m		0.15	0.11	0.11	0.11	0.11		0.12	0.007

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-53

AREA: Northeast Saddle Embankment

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 2.5

TOP OF TEST INTERVAL: 10.7 m (DOWN HOLE)

DATE: 08/31/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 41.2 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	553.11	553.20	553.29	553.39	553.48	553.57			
		Flowmeter	litres	2073.33	2073.67	2074.01	2074.38	2074.72	2075.06			
		Take	litres		0.34	0.34	0.37	0.34	0.34			
8	0.55	Average Take	l/m		0.34	0.34	0.37	0.34	0.34		0.34	0.110
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	553.90	554.22	554.53	554.82	555.12	555.41			
		Flowmeter	litres	2076.29	2077.49	2078.66	2079.74	2080.87	2081.95			
		Take	litres		1.20	1.16	1.09	1.12	1.09			
16	1.10	Average Take	l/m		1.20	1.16	1.09	1.12	1.09		1.13	0.233
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	555.86	556.32	556.77	557.23	557.67	558.10			
		Flowmeter	litres	2083.64	2085.37	2087.05	2088.78	2090.43	2092.04			
		Take	litres		1.72	1.69	1.72	1.65	1.61			
25	1.72	Average Take	l/m		1.72	1.69	1.72	1.65	1.61		1.68	0.247
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	558.37	558.61	558.86	559.12	559.37	559.62			
		Flowmeter	litres	2093.05	2093.95	2094.89	2095.86	2096.80	2097.74			
		Take	litres		0.90	0.94	0.97	0.94	0.94			
16	1.10	Average Take	l/m		0.90	0.94	0.97	0.94	0.94		0.94	0.193
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	559.75	559.85	559.95	560.04	560.12	560.21			
		Flowmeter	litres	2098.22	2098.60	2098.97	2099.31	2099.61	2099.95			
		Take	litres		0.37	0.37	0.34	0.30	0.34			
8	0.55	Average Take	l/m		0.37	0.37	0.34	0.30	0.34		0.34	0.110

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-54

AREA: North Embankment - East abutment

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 2.5

TOP OF TEST INTERVAL: 7.6 m (DOWN HOLE)

DATE: 08/31/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 38.1 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	573.44	574.45	575.46	576.48	577.58	578.68			
		Flowmeter	litres	2149.54	2153.33	2157.11	2160.94	2165.06	2169.18			
		Take	litres		3.79	3.79	3.82	4.12	4.12			
8	0.55	Average Take	l/m		3.79	3.79	3.82	4.12	4.12		3.93	0.250
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	581.30	583.10	584.85	586.67	588.48	590.18			
		Flowmeter	litres	2179.00	2185.75	2192.31	2199.13	2205.92	2212.29			
		Take	litres		6.75	6.56	6.82	6.78	6.37			
15	1.03	Average Take	l/m		6.75	6.56	6.82	6.78	6.37		6.66	1.434
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	594.40	596.70	599.00	601.30	603.25	605.52			
		Flowmeter	litres	2228.11	2236.73	2245.35	2253.97	2261.28	2269.79			
		Take	litres		8.62	8.62	8.62	7.31	8.51			
25	1.72	Average Take	l/m		8.62	8.62	8.62	7.31	8.51		8.34	1.229
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	610.75	612.51	614.20	615.90	617.60	619.28			
		Flowmeter	litres	2289.40	2295.99	2302.33	2308.70	2315.07	2321.37			
		Take	litres		6.60	6.33	6.37	6.37	6.30			
15	1.03	Average Take	l/m		6.60	6.33	6.37	6.37	6.30		6.39	1.378
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	620.08	621.25	622.38	623.52	624.66	625.80			
		Flowmeter	litres	2324.37	2328.76	2332.99	2337.26	2341.54	2345.81			
		Take	litres		4.39	4.24	4.27	4.27	4.27			
8	0.55	Average Take	l/m		4.39	4.24	4.27	4.27	4.27		4.29	1.365

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-55

AREA: Northwest Saddle Embankment

TEST NO: 1

DIPS: 90° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 2.5

TOP OF TEST INTERVAL: 7.6 m (DOWN HOLE)

DATE: 09/01/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 38.1 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	630.65	630.65	630.65	630.65	630.65	630.65			
		Flowmeter	litres	2363.99	2363.99	2363.99	2363.99	2363.99	2363.99			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
8	0.55	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	632.05	632.35	632.65	632.97	633.28	633.60			
		Flowmeter	litres	2369.24	2370.36	2371.49	2372.69	2373.85	2375.05			
		Take	litres		1.12	1.12	1.20	1.16	1.20			
15	1.03	Average Take	l/m		1.12	1.12	1.20	1.16	1.20		1.16	0.250
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	635.84	637.32	638.49	639.54	640.57	641.59			
		Flowmeter	litres	2383.45	2388.99	2393.38	2397.32	2401.18	2405.00			
		Take	litres		5.55	4.39	3.94	3.86	3.82			
25	1.72	Average Take	l/m		5.55	4.39	3.94	3.86	3.82		4.31	0.635
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	640.30	640.38	640.46	640.55	640.65	640.75			
		Flowmeter	litres	2400.16	2400.46	2400.76	2401.10	2401.48	2401.85			
		Take	litres		0.30	0.30	0.34	0.37	0.37			
15	1.03	Average Take	l/m		0.30	0.30	0.34	0.37	0.37		0.34	0.073
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	640.50	640.50	640.50	640.50	640.50	640.50			
		Flowmeter	litres	2400.91	2400.91	2400.91	2400.91	2400.91	2400.91			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
8	0.55	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-56

AREA: North Embankment - West abutment

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 2.5

TOP OF TEST INTERVAL: 13.7 m (DOWN HOLE)

DATE: 09/01/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 44.2 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)			0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	651.04	651.17	651.29	651.41	651.53	651.65			
		Flowmeter	litres	2440.42	2440.91	2441.36	2441.81	2442.26	2442.71			
		Take	litres		0.49	0.45	0.45	0.45	0.45			
8	0.55	Average Take	l/m		0.49	0.45	0.45	0.45	0.45		0.46	0.146
GAUGE P (psi)	GAUGE P (BAR)			0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Time	min									
		Flowmeter	USGAL	651.80	651.95	652.10	652.24	652.39	652.55			
		Flowmeter	litres	2443.27	2443.83	2444.40	2444.92	2445.48	2446.08			
		Take	litres		0.56	0.56	0.52	0.56	0.60			
15	1.03	Average Take	l/m		0.56	0.56	0.52	0.56	0.60		0.56	0.121
GAUGE P (psi)	GAUGE P (BAR)			0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Time	min									
		Flowmeter	USGAL	652.73	652.93	653.11	653.31	653.51	653.71			
		Flowmeter	litres	2446.76	2447.51	2448.18	2448.93	2449.68	2450.43			
		Take	litres		0.75	0.67	0.75	0.75	0.75			
25	1.72	Average Take	l/m		0.75	0.67	0.75	0.75	0.75		0.73	0.108
GAUGE P (psi)	GAUGE P (BAR)			0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Time	min									
		Flowmeter	USGAL	653.86	653.99	654.13	654.27	654.41	654.54			
		Flowmeter	litres	2450.99	2451.48	2452.01	2452.53	2453.06	2453.54			
		Take	litres		0.49	0.52	0.52	0.52	0.49			
15	1.03	Average Take	l/m		0.49	0.52	0.52	0.52	0.49		0.51	0.110
GAUGE P (psi)	GAUGE P (BAR)			0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Time	min									
		Flowmeter	USGAL	654.77	654.86	654.97	655.08	655.19	655.30			
		Flowmeter	litres	2454.41	2454.74	2455.16	2455.57	2455.98	2456.39			
		Take	litres		0.34	0.41	0.41	0.41	0.41			
8	0.55	Average Take	l/m		0.34	0.41	0.41	0.41	0.41		0.40	0.126

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-57

AREA: Campsite

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 2.1

TOP OF TEST INTERVAL: 7.6 m (DOWN HOLE)

DATE: 09/03/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 38.1 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)			0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	650.14	650.32	650.50	650.68	650.86	651.03			
		Flowmeter	litres	2437.05	2437.72	2438.40	2439.07	2439.75	2440.39			
		Take	litres		0.67	0.67	0.67	0.67	0.64			
8	0.55	Average Take	l/m		0.67	0.67	0.67	0.67	0.64		0.67	0.221
GAUGE P (psi)	GAUGE P (BAR)			0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Time	min									
		Flowmeter	USGAL	666.28	666.54	666.82	667.09	667.36	667.62			
		Flowmeter	litres	2497.55	2498.53	2499.57	2500.59	2501.60	2502.57			
		Take	litres		0.97	1.05	1.01	1.01	0.97			
15	1.03	Average Take	l/m		0.97	1.05	1.01	1.01	0.97		1.00	0.222
GAUGE P (psi)	GAUGE P (BAR)			0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Time	min									
		Flowmeter	USGAL	668.21	668.59	668.96	669.33	669.70	670.07			
		Flowmeter	litres	2504.79	2506.21	2507.60	2508.98	2510.37	2511.76			
		Take	litres		1.42	1.39	1.39	1.39	1.39			
25	1.72	Average Take	l/m		1.42	1.39	1.39	1.39	1.39		1.39	0.209
GAUGE P (psi)	GAUGE P (BAR)			0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Time	min									
		Flowmeter	USGAL	670.34	670.54	670.75	670.96	671.17	671.38			
		Flowmeter	litres	2512.77	2513.52	2514.31	2515.09	2515.88	2516.67			
		Take	litres		0.75	0.79	0.79	0.79	0.79			
15	1.03	Average Take	l/m		0.75	0.79	0.79	0.79	0.79		0.78	0.172
GAUGE P (psi)	GAUGE P (BAR)			0	1	2	3	4	5		AVERAGE FLOW litres/min	LUGEON
		Time	min									
		Flowmeter	USGAL	671.46	671.59	671.72	671.85	671.99	672.12			
		Flowmeter	litres	2516.97	2517.46	2517.94	2518.43	2518.95	2519.44			
		Take	litres		0.49	0.49	0.49	0.52	0.49			
8	0.55	Average Take	l/m		0.49	0.49	0.49	0.52	0.49		0.49	0.164

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-58

AREA: Millsite

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 1.5

TOP OF TEST INTERVAL: 16.8 m (DOWN HOLE)

DATE: 09/04/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 47.3 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	684.10	684.15	684.22	684.28	684.34	684.40			
		Flowmeter	litres	2564.35	2564.54	2564.80	2565.02	2565.25	2565.47			
		Take	litres		0.19	0.26	0.22	0.22	0.22			
8	0.55	Average Take	l/m		0.19	0.26	0.22	0.22	0.22		0.22	0.079
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	684.54	684.62	684.70	684.78	684.85	684.91			
		Flowmeter	litres	2566.00	2566.30	2566.60	2566.90	2567.16	2567.39			
		Take	litres		0.30	0.30	0.30	0.26	0.22			
15	1.03	Average Take	l/m		0.30	0.30	0.30	0.26	0.22		0.28	0.064
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	685.03	685.13	685.24	685.35	685.45	685.55			
		Flowmeter	litres	2567.83	2568.21	2568.62	2569.03	2569.41	2569.78			
		Take	litres		0.37	0.41	0.41	0.37	0.37			
25	1.72	Average Take	l/m		0.37	0.41	0.41	0.37	0.37		0.39	0.060
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	685.60	685.60	685.74	685.81	685.87	685.93			
		Flowmeter	litres	2569.97	2569.97	2570.50	2570.76	2570.98	2571.21			
		Take	litres		0.00	0.52	0.26	0.22	0.22			
15	1.03	Average Take	l/m		0.00	0.52	0.26	0.22	0.22		0.25	0.057
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	685.95	685.99	686.03	686.08	686.12	686.16			
		Flowmeter	litres	2571.28	2571.43	2571.58	2571.77	2571.92	2572.07			
		Take	litres		0.15	0.15	0.19	0.15	0.15			
8	0.55	Average Take	l/m		0.15	0.15	0.19	0.15	0.15		0.16	0.055

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-59

AREA: Road / Conveyor Conditions

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 11.0

TOP OF TEST INTERVAL: 29.0 m (DOWN HOLE)

DATE: 09/06/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 53.4 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	695.48	696.46	697.46	698.45	699.41	700.37			
		Flowmeter	litres	2607.01	2610.68	2614.43	2618.14	2621.74	2625.34			
		Take	litres		3.67	3.75	3.71	3.60	3.60			
15	1.03	Average Take	l/m		3.67	3.75	3.71	3.60	3.60		3.67	0.634
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	701.58	702.90	704.27	705.62	706.95	708.28			
		Flowmeter	litres	2629.87	2634.82	2639.96	2645.02	2650.00	2654.99			
		Take	litres		4.95	5.14	5.06	4.99	4.99			
30	2.07	Average Take	l/m		4.95	5.14	5.06	4.99	4.99		5.02	0.601
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	709.20	711.17	713.26	715.55	717.91	720.27			
		Flowmeter	litres	2658.44	2665.82	2673.66	2682.24	2691.09	2699.93			
		Take	litres		7.38	7.83	8.58	8.85	8.85			
50	3.45	Average Take	l/m		7.38	7.83	8.58	8.85	8.85		8.30	0.704
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	721.30	723.24	725.15	727.03	728.95	730.86			
		Flowmeter	litres	2703.79	2711.07	2718.22	2725.27	2732.47	2739.63			
		Take	litres		7.27	7.16	7.05	7.20	7.16			
30	2.07	Average Take	l/m		7.27	7.16	7.05	7.20	7.16		7.17	0.857
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	731.61	733.05	734.45	735.86	737.27	738.68			
		Flowmeter	litres	2742.44	2747.84	2753.09	2758.37	2763.66	2768.94			
		Take	litres		5.40	5.25	5.29	5.29	5.29			
15	1.03	Average Take	l/m		5.40	5.25	5.29	5.29	5.29		5.30	0.916

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-60

AREA: Crusher Foundation

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 0.0

TOP OF TEST INTERVAL: 44.2 m (DOWN HOLE)

DATE: 09/07/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 74.7 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	744.65	744.79	744.91	745.05	745.19	745.32			
		Flowmeter	litres	2791.32	2791.85	2792.30	2792.82	2793.34	2793.83			
		Take	litres		0.52	0.45	0.52	0.52	0.49			
23	1.59	Average Take	l/m		0.52	0.45	0.52	0.52	0.49		0.50	0.090
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	745.50	745.82	746.06	746.30	746.54	746.78			
		Flowmeter	litres	2794.51	2795.71	2796.61	2797.51	2798.41	2799.30			
		Take	litres		1.20	0.90	0.90	0.90	0.90			
45	3.10	Average Take	l/m		1.20	0.90	0.90	0.90	0.90		0.96	0.093
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	747.27	747.75	748.21	748.67	749.11	749.57			
		Flowmeter	litres	2801.14	2802.94	2804.67	2806.39	2808.04	2809.76			
		Take	litres		1.80	1.72	1.72	1.65	1.72			
75	5.17	Average Take	l/m		1.80	1.72	1.72	1.65	1.72		1.72	0.103
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	749.68	749.91	750.15	750.40	750.64	750.89			
		Flowmeter	litres	2810.18	2811.04	2811.94	2812.87	2813.77	2814.71			
		Take	litres		0.86	0.90	0.94	0.90	0.94			
45	3.10	Average Take	l/m		0.86	0.90	0.94	0.90	0.94		0.91	0.088
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	750.98	751.09	751.21	751.32	751.43	751.54			
		Flowmeter	litres	2815.05	2815.46	2815.91	2816.32	2816.74	2817.15			
		Take	litres		0.41	0.45	0.41	0.41	0.41			
23	1.59	Average Take	l/m		0.41	0.45	0.41	0.41	0.41		0.42	0.075

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-61

AREA: North Embankment Foundation (West)

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 0.3

TOP OF TEST INTERVAL: 62.5 m (DOWN HOLE)

DATE: 09/11/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 93.0 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	752.49	752.53	752.58	752.61	752.65	752.69			
		Flowmeter	litres	2820.71	2820.86	752.61	2821.16	2821.31	2821.46			
		Take	litres		0.15	-2068.25	2068.55	0.15	0.15			
30	2.07	Average Take	l/m		0.15	-2068.25	2068.55	0.15	0.15		0.15	0.021
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	752.75	752.82	752.89	752.95	753.00	753.08			
		Flowmeter	litres	2821.68	2821.95	2822.21	2822.43	2822.62	2822.92			
		Take	litres		0.26	0.26	0.22	0.19	0.30			
60	4.14	Average Take	l/m		0.26	0.26	0.22	0.19	0.30		0.25	0.018
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	753.17	753.30	753.40	753.50	753.60	753.70			
		Flowmeter	litres	2823.26	2823.75	2824.12	2824.49	2824.87	2825.24			
		Take	litres		0.49	0.37	0.37	0.37	0.37			
100	6.89	Average Take	l/m		0.49	0.37	0.37	0.37	0.37		0.40	0.018
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	753.72	753.75	753.80	753.84	753.88	753.93			
		Flowmeter	litres	2825.32	2825.43	2825.62	2825.77	2825.92	2826.11			
		Take	litres		0.11	0.19	0.15	0.15	0.19			
60	4.14	Average Take	l/m		0.11	0.19	0.15	0.15	0.19		0.16	0.012
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	753.93	753.95	753.97	753.99	754.01	754.03			
		Flowmeter	litres	2826.11	2826.18	2826.26	2826.33	2826.41	2826.48			
		Take	litres		0.07	0.07	0.07	0.07	0.07			
30	2.07	Average Take	l/m		0.07	0.07	0.07	0.07	0.07		0.07	0.010

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-63

AREA: North Embankment Foundation (East)

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 0.0

TOP OF TEST INTERVAL: 10.7 m (DOWN HOLE)

DATE: 09/14/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 41.2 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)			1	2	3	4	5	AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	775.00	775.88	775.77	775.66	775.55	775.45			
		Flowmeter	litres	2905.09	2908.39	2907.97	2907.56	2907.15	2906.77			
		Take	litres		3.30	-0.41	-0.41	-0.41	-0.37			
8	0.55	Average Take	l/m		3.30	-0.41	-0.41	-0.41	-0.37		0.84	0.142
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	775.50	775.72	775.89	776.05	776.22	776.38			
		Flowmeter	litres	2906.96	2907.79	2908.42	2909.02	2909.64	2910.26			
		Take	litres		0.82	0.64	0.60	0.62	0.62			
15	1.03	Average Take	l/m		0.82	0.64	0.60	0.62	0.62		0.66	0.170
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	776.60	777.12	777.63	778.14	778.64	779.14			
		Flowmeter	litres	2911.09	2913.03	2914.95	2916.86	2918.73	2920.61			
		Take	litres		1.95	1.91	1.91	1.87	1.87			
25	1.72	Average Take	l/m		1.95	1.91	1.91	1.87	1.87		1.90	0.316
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	779.40	779.58	779.76	779.92	780.10	780.28			
		Flowmeter	litres	2921.58	2922.26	2922.93	2923.53	2924.20	2924.88			
		Take	litres		0.67	0.67	0.60	0.67	0.67			
15	1.03	Average Take	l/m		0.67	0.67	0.60	0.67	0.67		0.66	0.170
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	780.32	780.19	780.05	779.91	779.77	779.62			
		Flowmeter	litres	2925.03	2924.54	2924.02	2923.49	2922.97	2922.41			
		Take	litres		-0.49	-0.52	-0.52	-0.52	-0.56			
8	0.55	Average Take	l/m		-0.49	-0.52	-0.52	-0.52	-0.56		0.52	0.221

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project

PROJECT NO: 101/176/8

DRILLHOLE: GH05-64

AREA: Topsoil Stockpile

TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL)

DEPTH GROUNDWATER: 6.0

TOP OF TEST INTERVAL: 25.9 m (DOWN HOLE)

DATE: 09/15/05

GAUGE HEIGHT ABOVE GROUND: 2.2 m

BOTTOM OF TEST INTERVAL: 56.4 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	786.10	786.10	786.10	786.10	786.10	786.11			
		Flowmeter	litres	2946.70	2946.70	2946.71	2946.71	2946.71	2946.71			
		Take	litres		0.00	0.01	0.00	0.00	0.01			
14	0.97	Average Take	l/m		0.00	0.01	0.00	0.00	0.01		0.00	0.001
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	786.12	786.14	786.16	786.18	786.20	786.22			
		Flowmeter	litres	2946.77	2946.85	2946.92	2947.00	2947.07	2947.15			
		Take	litres		0.07	0.07	0.07	0.07	0.07			
27	1.86	Average Take	l/m		0.07	0.07	0.07	0.07	0.07		0.07	0.009
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	786.27	786.32	786.36	786.40	786.45	786.50			
		Flowmeter	litres	2947.33	2947.50	2947.67	2947.82	2947.99	2948.18			
		Take	litres		0.17	0.17	0.15	0.17	0.19			
45	3.10	Average Take	l/m		0.17	0.17	0.15	0.17	0.19		0.17	0.014
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	786.52	786.55	786.58	786.60	786.63	786.66			
		Flowmeter	litres	2948.27	2948.38	2948.50	2948.57	2948.68	2948.78			
		Take	litres		0.11	0.11	0.07	0.11	0.09			
27	1.86	Average Take	l/m		0.11	0.11	0.07	0.11	0.09		0.10	0.012
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL	786.67	786.69	786.70	786.71	786.73	786.74			
		Flowmeter	litres	2948.83	2948.89	2948.94	2948.99	2949.04	2949.09			
		Take	litres		0.06	0.06	0.05	0.04	0.06			
14	0.97	Average Take	l/m		0.06	0.06	0.05	0.04	0.06		0.05	0.010

SECTION 4 – GEOTECHNICAL RESPONSE TEST DATA

2005 SITE INVESTIGATION RISING/FALLING HEAD (HVORSLEV) TEST DATA

2005 PEBBLE SITE INVESTIGATIONS

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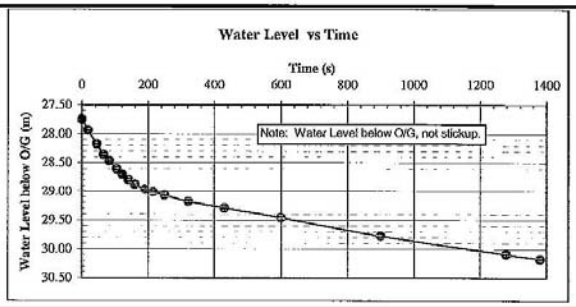
BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8		Test Interval		
Borehole No.	GH05-52		28.96 m	to	35.05 m

Borehole Elevation		311.8	m
Date:		16-Oct-06	
Test No.		1	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.051	m
Top of test interval		28.96	m
Bottom of test interval		35.05	m
Length of test interval, L	L =	6.09	m
Stickup of piezometer or rods above ground surface		0.4	m
Static water level, H (below ground surface)		31.57	m
Elevation of Static Water Level (below ground surface)	El. =	280.23	m
Static water level, H (below starting point - top of piezo or drill rod)	H =	31.97	m
Water level at start of test, Ho (below top of piezo or drill rods)	Ho =	28.15	m

TEST DATA

Elapsed Time (sec)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	28.15	27.75	1.00	0.37
18	28.34	27.94	0.95	0.37
45	28.58	28.18	0.89	0.37
65	28.76	28.36	0.84	0.37
83	28.87	28.47	0.81	0.37
105	29.01	28.61	0.78	0.37
122	29.10	28.70	0.75	0.37
140	29.19	28.79	0.73	0.37
160	29.27	28.87	0.71	0.37
191	29.37	28.97	0.68	0.37
215	29.41	29.01	0.67	0.37
250	29.47	29.07	0.65	0.37
321	29.58	29.18	0.63	0.37
430	29.70	29.30	0.60	0.37
600	29.86	29.46	0.55	0.37
900	30.18	29.78	0.47	0.37
1278	30.50	30.10	0.39	0.37
1380	30.58	30.18	0.36	0.37



Test by: JV/KF
Reviewed by: DY

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2005 PEBBLE SITE INVESTIGATIONS

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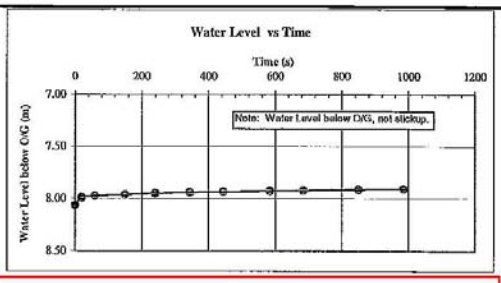
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8		Test Interval		
Borehole No.	GH05-54		5.49 m to 14.33 m		
Borehole Elevation			609.6	m	
Borehole Inclination			90	deg	
Date:			11-Oct-06		
Test No.			1		
Hole diameter, D		D =	0.096	m	
Interior diameter of piezometer or drill rods, d		d =	0.051	m	
Top of test interval			5.49	m	
Bottom of test interval			14.33	m	
Length of test interval, L		L =	8.84	m	
Stickup of piezometer or rods above ground surface			0.4	m	
Measured static water depth in piezo (below top of piezo or drill rod,)			8.30	m	
Static water level, H (below top of piezo or drill rod)		H =	8.30	m	
Static water level, (below ground surface)			7.90	m	
Elevation of static water level (below ground surface)		El. =	601.70	m	
Measured water depth in piezo at start of test (below top of piezo or drill rod)			8.47	m	
Water level at start of test, Ho (below top of piezo or drill rod)		Ho =	8.47	m	

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	8.47	8.47	8.07	0.97	0.37
20	8.39	8.39	7.99	0.53	0.37
60	8.37	8.37	7.97	0.44	0.37
150	8.36	8.36	7.96	0.37	0.37
240	8.35	8.35	7.95	0.30	0.37
345	8.34	8.34	7.94	0.25	0.37
445	8.33	8.33	7.93	0.20	0.37
585	8.33	8.33	7.93	0.17	0.37
685	8.32	8.32	7.92	0.13	0.37
850	8.31	8.31	7.91	0.08	0.37
985	8.31	8.31	7.91	0.04	0.37



Test by: JV/KF
Reviewed by: DY

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2005 PEBBLE SITE INVESTIGATIONS

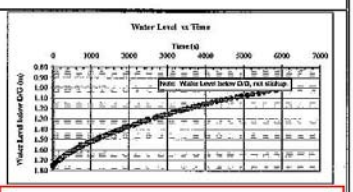
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8	Test Interval		
Borehole No.	GH05-55	0.91 m	to	9.14 m

Borehole Elevation		484.9	m
Borehole Inclination		90	deg
Date:		21-Oct-06	
Test No.		1	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.051	m
Top of test interval		0.91	m
Bottom of test interval		9.14	m
Length of test interval, L	L =	8.23	m
Stickup of piezometer or rods above ground surface		0.4	m
Measured static water depth in piezo (below top of piezo or drill rod,)		1.00	m
Static water level, H (below top of piezo or drill rod)	H =	1.00	m
Static water level, (below ground surface)		0.60	m
Elevation of static water level (below ground surface)	El =	484.30	m
Measured water depth in piezo at start of test (below top of piezo or drill rod)		2.15	m
Water level at start of test, Ho (below top of piezo or drill rod)	Ho =	2.15	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below GLS (m)	(H-h)/(H-Ho)	
0	2.15	2.15	1.75	1.00	0.37
36	2.14	2.14	1.74	0.99	0.37
65	2.13	2.13	1.73	0.98	0.37
155	2.10	2.10	1.70	0.96	0.37
186	2.09	2.09	1.69	0.95	0.37
225	2.09	2.09	1.69	0.94	0.37
255	2.08	2.08	1.68	0.94	0.37
295	2.06	2.06	1.66	0.93	0.37
342	2.05	2.05	1.65	0.91	0.37
390	2.04	2.04	1.64	0.90	0.37
405	2.04	2.04	1.64	0.90	0.37
435	2.03	2.03	1.63	0.90	0.37
480	2.03	2.02	1.62	0.89	0.37
525	2.01	2.01	1.61	0.88	0.37
570	2.00	2.00	1.60	0.87	0.37
600	1.99	1.99	1.59	0.86	0.37
630	1.98	1.98	1.58	0.85	0.37
690	1.97	1.97	1.57	0.84	0.37
774	1.96	1.96	1.56	0.84	0.37
836	1.95	1.95	1.55	0.83	0.37
885	1.94	1.94	1.54	0.83	0.37
945	1.93	1.93	1.53	0.81	0.37
1000	1.92	1.92	1.52	0.80	0.37
1050	1.91	1.91	1.51	0.79	0.37
1139	1.90	1.90	1.50	0.78	0.37
1193	1.89	1.89	1.49	0.77	0.37
1251	1.88	1.88	1.48	0.77	0.37
1319	1.87	1.87	1.47	0.76	0.37
1360	1.86	1.86	1.46	0.75	0.37
1440	1.85	1.85	1.45	0.74	0.37
1515	1.84	1.84	1.44	0.73	0.37
1589	1.83	1.83	1.43	0.72	0.37
1653	1.82	1.82	1.42	0.71	0.37
1724	1.81	1.81	1.41	0.70	0.37
1795	1.80	1.80	1.40	0.70	0.37
1865	1.79	1.79	1.39	0.69	0.37
1933	1.78	1.78	1.38	0.68	0.37
1991	1.77	1.77	1.37	0.67	0.37
2125	1.76	1.76	1.36	0.66	0.37
2166	1.75	1.75	1.35	0.65	0.37
2250	1.74	1.74	1.34	0.64	0.37
2325	1.73	1.73	1.33	0.64	0.37
2425	1.72	1.72	1.32	0.63	0.37
2515	1.71	1.71	1.31	0.62	0.37
2591	1.70	1.70	1.30	0.61	0.37
2680	1.69	1.69	1.29	0.60	0.37
2754	1.68	1.68	1.28	0.59	0.37
2865	1.67	1.67	1.27	0.58	0.37
2958	1.66	1.66	1.26	0.57	0.37
3050	1.65	1.65	1.25	0.57	0.37
3127	1.64	1.64	1.24	0.56	0.37
3225	1.63	1.63	1.23	0.55	0.37
3352	1.62	1.62	1.22	0.54	0.37
3434	1.61	1.61	1.21	0.53	0.37
3540	1.60	1.60	1.20	0.52	0.37
3658	1.59	1.59	1.19	0.51	0.37
3765	1.58	1.58	1.18	0.51	0.37
3840	1.57	1.57	1.17	0.50	0.37
3945	1.56	1.56	1.16	0.49	0.37
4060	1.55	1.55	1.15	0.48	0.37
4172	1.54	1.54	1.14	0.47	0.37
4300	1.53	1.53	1.13	0.46	0.37
4418	1.52	1.52	1.12	0.45	0.37
4546	1.51	1.51	1.11	0.44	0.37
4669	1.50	1.50	1.10	0.44	0.37
4834	1.49	1.49	1.09	0.43	0.37
4937	1.48	1.48	1.08	0.42	0.37
5409	1.47	1.47	1.07	0.41	0.37
5747	1.46	1.46	1.06	0.40	0.37
5999	1.45	1.45	1.05	0.39	0.37
5539	1.44	1.44	1.04	0.38	0.37
5654	1.43	1.43	1.03	0.36	0.37
5853	1.42	1.42	1.02	0.37	0.37



Test by: JV/RF
Reviewed by: DY

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2005 PEBBLE SITE INVESTIGATIONS

Fri Jul 11/22/06 9:44

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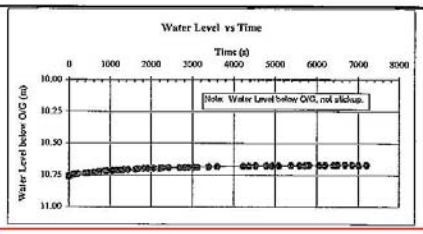
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8			
Borehole No.	GH05-56		Test Interval 0.90 m to 18.90 m	
Borehole Elevation			413.9	m
Borehole Inclination			90	deg
Date:			21-Oct-06	
Test No.			1	
Hole diameter, D		D =	0.096	m
Interior diameter of piezometer or drill rods, d		d =	0.051	m
Top of test interval			0.90	m
Bottom of test interval			18.90	m
Length of test interval, L		L =	18.00	m
Stickup of piezometer or rods above ground surface			0.25	m
Measured static water depth in piezo (below top of piezo or drill rod,)			10.87	m
Static water level, H (below top of piezo or drill rod)		H =	10.87	m
Static water level, (below ground surface)			10.62	m
Elevation of static water level (below ground surface)		El. =	403.28	m
Measured water depth in piezo at start of test (below top of piezo or drill rod)			11.01	m
Water level at start of test, Ho (below top of piezo or drill rod)		Ho =	11.01	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	11.01	11.01	10.76	1.00	0.37
67	11.00	11.00	10.75	0.95	0.37
109	11.00	11.00	10.75	0.91	0.37
155	11.00	11.00	10.75	0.90	0.37
225	10.99	10.99	10.74	0.88	0.37
405	10.99	10.99	10.74	0.83	0.37
498	10.98	10.98	10.73	0.81	0.37
600	10.98	10.98	10.73	0.78	0.37
715	10.98	10.98	10.73	0.76	0.37
785	10.97	10.97	10.72	0.74	0.37
868	10.97	10.97	10.72	0.73	0.37
930	10.97	10.97	10.72	0.71	0.37
1065	10.97	10.97	10.72	0.69	0.37
1165	10.97	10.97	10.72	0.68	0.37
1268	10.96	10.96	10.71	0.66	0.37
1332	10.96	10.96	10.71	0.65	0.37
1438	10.96	10.96	10.71	0.63	0.37
1626	10.96	10.96	10.71	0.61	0.37
1688	10.95	10.95	10.70	0.58	0.37
1819	10.95	10.95	10.70	0.57	0.37
1930	10.95	10.95	10.70	0.56	0.37
2067	10.95	10.95	10.70	0.55	0.37
2216	10.95	10.95	10.70	0.55	0.37
2280	10.95	10.95	10.70	0.54	0.37
2430	10.94	10.94	10.69	0.51	0.37
2500	10.94	10.94	10.69	0.50	0.37
2620	10.94	10.94	10.69	0.50	0.37
2907	10.94	10.94	10.69	0.50	0.37
3045	10.94	10.94	10.69	0.48	0.37
3133	10.94	10.94	10.69	0.47	0.37
3402	10.94	10.94	10.69	0.47	0.37
3610	10.93	10.93	10.68	0.45	0.37
4237	10.93	10.93	10.68	0.42	0.37
4372	10.93	10.93	10.68	0.42	0.37
4538	10.93	10.93	10.68	0.42	0.37
4798	10.93	10.93	10.68	0.41	0.37
4944	10.93	10.93	10.68	0.41	0.37
5095	10.93	10.93	10.68	0.40	0.37
5390	10.93	10.93	10.68	0.40	0.37
5596	10.93	10.93	10.68	0.40	0.37
5733	10.93	10.93	10.68	0.40	0.37
5825	10.93	10.93	10.68	0.39	0.37
6062	10.92	10.92	10.67	0.38	0.37
6205	10.92	10.92	10.67	0.38	0.37
6408	10.92	10.92	10.67	0.38	0.37
6509	10.92	10.92	10.67	0.37	0.37
6685	10.92	10.92	10.67	0.37	0.37
6856	10.92	10.92	10.67	0.37	0.37
7016	10.92	10.92	10.67	0.37	0.37
7205	10.92	10.92	10.67	0.37	0.37



Test by: JV/KF
Reviewed by: DY

B5-4

2005 PEBBLE SITE INVESTIGATIONS

Print 11/22/06 9:44

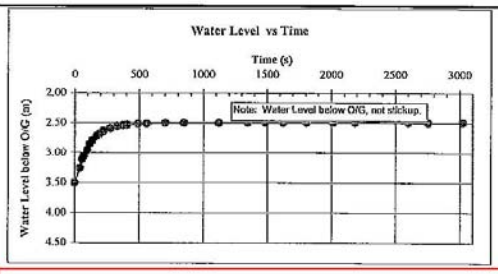
M:\P0\P0017608\A\Data\2005 WMF SI\Field Tests GH05-51 to GH05-65 (Rising-Falling Head)\Rising Head Tests (Performed Oct 06)\[Rising Head Test GH05-57.xls]GH05-57 Rev'd 11/15/06

BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8			
Borehole No.	GH05-57			
		Test Interval		
		2.70 m	to	12.80 m
Borehole Elevation			429.2	m
Borehole Inclination			90	deg
Date:			11-Oct-06	
Test No.			1	
Hole diameter, D		D =	0.096	m
Interior diameter of piezometer or drill rods, d		d =	0.051	m
Top of test interval			2.70	m
Bottom of test interval			12.80	m
Length of test interval, L		L =	10.10	m
Stickup of piezometer or rods above ground surface			0.4	m
Measured static water depth in piezo (below top of piezo or drill rod,)			2.86	m
Static water level, H (below top of piezo or drill rod)		H =	2.86	m
Static water level, (below ground surface)			2.46	m
Elevation of static water level (below ground surface)		El. =	426.74	m
Measured water depth in piezo at start of test (below top of piezo or drill rod)			3.90	m
Water level at start of test, Ho (below top of piezo or drill rod)		Ho =	3.90	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	3.90	3.90	3.50	1.00	0.37
40	3.66	3.66	3.26	0.77	0.37
57	3.52	3.52	3.12	0.63	0.37
70	3.47	3.47	3.07	0.58	0.37
97	3.36	3.36	2.96	0.48	0.37
115	3.26	3.26	2.86	0.38	0.37
137	3.20	3.20	2.80	0.32	0.37
172	3.12	3.12	2.72	0.24	0.37
193	3.08	3.08	2.68	0.21	0.37
225	3.04	3.04	2.64	0.17	0.37
278	2.99	2.99	2.59	0.12	0.37
330	2.96	2.96	2.56	0.09	0.37
376	2.94	2.94	2.54	0.07	0.37
405	2.93	2.93	2.53	0.07	0.37
491	2.92	2.92	2.52	0.05	0.37
557	2.91	2.91	2.51	0.05	0.37
702	2.90	2.90	2.50	0.04	0.37
848	2.90	2.90	2.50	0.03	0.37
1121	2.90	2.90	2.50	0.03	0.37
1349	2.89	2.89	2.49	0.03	0.37
1485	2.89	2.89	2.49	0.03	0.37
1626	2.89	2.89	2.49	0.03	0.37
1809	2.89	2.89	2.49	0.03	0.37
2016	2.89	2.89	2.49	0.03	0.37
2190	2.89	2.89	2.49	0.03	0.37
2602	2.89	2.89	2.49	0.03	0.37
2755	2.89	2.89	2.49	0.03	0.37
3024	2.89	2.89	2.49	0.03	0.37



Test by: JV/KF
Reviewed by: DY

BS-5

2005 PEBBLE SITE INVESTIGATIONS

Print 11/22/06 9:44
Rev'd 11/15/06

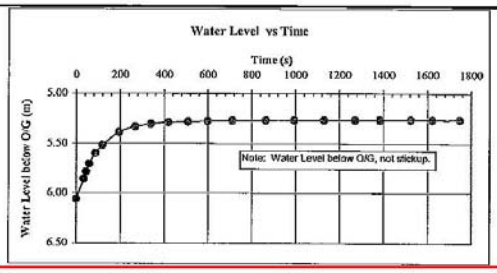
M:\NDI\0017600\BA\Data\2005 WMF SI\Field Tests GH05-51 to GH05-65 (Rising-Falling Head)\Rising Head Tests (Performed Oct 06)\[Rising Head Test GH05-58.xls]GH05-58

BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8			
Borehole No.	GH05-58			
		Test Interval		
		2.70 m	to	12.80 m
Borehole Elevation			458.7	m
Borehole Inclination			90	deg
Date:			11-Oct-06	
Test No.			1	
Hole diameter, D		D =	0.096	m
Interior diameter of piezometer or drill rods, d		d =	0.051	m
Top of test interval			2.70	m
Bottom of test interval			12.80	m
Length of test interval, L		L =	10.10	m
Stickup of piezometer or rods above ground surface			0.3	m
Measured static water depth in piezo (below top of piezo or drill rod,)			5.54	m
Static water level, H (below top of piezo or drill rod)		H =	5.54	m
Static water level, (below ground surface)			5.24	m
Elevation of static water level (below ground surface)		El. =	453.46	m
Measured water depth in piezo at start of test (below top of piezo or drill rod)			6.36	m
Water level at start of test, Ho (below top of piezo or drill rod)		Ho =	6.36	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	6.36	6.36	6.06	1.00	0.37
34	6.16	6.16	5.86	0.76	0.37
45	6.09	6.09	5.79	0.67	0.37
60	6.01	6.01	5.71	0.58	0.37
88	5.91	5.91	5.61	0.45	0.37
120	5.82	5.82	5.52	0.34	0.37
195	5.69	5.69	5.39	0.19	0.37
267	5.64	5.64	5.34	0.12	0.37
340	5.61	5.61	5.31	0.09	0.37
420	5.59	5.59	5.29	0.07	0.37
510	5.58	5.58	5.28	0.06	0.37
600	5.58	5.58	5.28	0.05	0.37
712	5.58	5.58	5.28	0.05	0.37
865	5.57	5.57	5.27	0.04	0.37
995	5.57	5.57	5.27	0.04	0.37
1130	5.57	5.57	5.27	0.04	0.37
1272	5.57	5.57	5.27	0.04	0.37
1384	5.57	5.57	5.27	0.04	0.37
1525	5.57	5.57	5.27	0.04	0.37
1623	5.57	5.57	5.27	0.04	0.37
1749	5.56	5.56	5.26	0.03	0.37



Test by: JV/KF
Reviewed by: DY

B5-6

Rev. 0 - Issued for Report

2005 PEBBLE SITE INVESTIGATIONS

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M:\\01\0017608\A\Data\2005 WMP SI\Field Tests GH05-51 to GH05-65 (Rising-Falling Head)\Rising Head Tests (Performed Oct 06)\[Rising Head Test GH05-59.xls]GH05-59 Rev'd 11/15/06

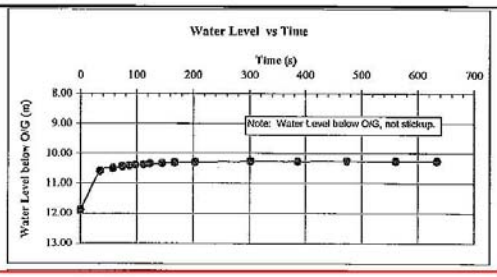
BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

		Test Interval			
Project No.	VA101-176/8				
Borehole No.	GH05-59	19.20	m	to	25.00 m

Borehole Elevation		360.9	m
Borehole Inclination		90	deg
Date:		11-Oct-06	
Test No.		1	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.051	m
Top of test interval		19.20	m
Bottom of test interval		25.00	m
Length of test interval, L	L =	5.80	m
Stickup of piezometer or rods above ground surface		0.4	m
Measured static water depth in piezo (below top of piezo or drill rod,)		10.67	m
Static water level, H (below top of piezo or drill rod)	H =	10.67	m
Static water level, (below ground surface)		10.27	m
Elevation of static water level (below ground surface)	El. =	350.63	m
Measured water depth in piezo at start of test (below top of piezo or drill rod)		12.29	m
Water level at start of test, Ho (below top of piezo or drill rod)	Ho =	12.29	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	12.29	12.29	11.89	1.000	0.37
35	11.00	11.00	10.60	0.206	0.37
58	10.90	10.90	10.50	0.144	0.37
75	10.85	10.85	10.45	0.113	0.37
87	10.82	10.82	10.42	0.095	0.37
98	10.80	10.80	10.40	0.083	0.37
113	10.78	10.78	10.38	0.070	0.37
124	10.76	10.76	10.36	0.058	0.37
146	10.74	10.74	10.34	0.046	0.37
168	10.72	10.72	10.32	0.033	0.37
204	10.70	10.70	10.30	0.021	0.37
302	10.68	10.68	10.28	0.009	0.37
387	10.67	10.67	10.27	0.005	0.37
474	10.67	10.67	10.27	0.004	0.37
561	10.67	10.67	10.27	0.002	0.37
634	10.67	10.67	10.27	0.002	0.37



Test by: JV/KF
Reviewed by: DY

B5-7

2005 PEBBLE SITE INVESTIGATIONS

Print 11/22/06 9:45
Rev'd 11/15/06

M:\001\00176\08\A\Data\2005 WMP SI\Field Tests GH05-51 to GH05-65 (Rising-Falling Head)\Rising Head Tests (Performed Oct 06)\[Rising Head Test GH05-64.xls]GH05-64

BOREHOLE PERMEABILITY USING RISING HEAD TEST (HVORSLEV METHOD)

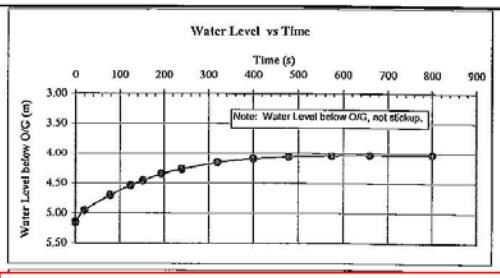
Test Interval

Project No.	VA101-176/8				
Borehole No.	GH05-64	10.70	m	to	20.40 m

Borehole Elevation		310.9	m
Borehole Inclination		90	deg
Date:		11-Oct-06	
Test No.		1	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.051	m
Top of test interval		10.70	m
Bottom of test interval		20.40	m
Length of test interval, L	L =	9.70	m
Stickup of piezometer or rods above ground surface		0.15	m
Measured static water depth in piezo (below top of piezo or drill rod,)		4.19	m
Static water level, H (below top of piezo or drill rod)	H =	4.19	m
Static water level, (below ground surface)		4.04	m
Elevation of static water level (below ground surface)	El. =	306.87	m
Measured water depth in piezo at start of test (below top of piezo or drill rod)		5.30	m
Water level at start of test, Ho (below top of piezo or drill rod)	Ho =	5.30	m

TEST DATA

Elapsed Time (sec)	Measured Water Depth Below Stickup (m)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	5.30	5.30	5.15	1.00	0.37
21	5.11	5.11	4.96	0.83	0.37
79	4.85	4.85	4.70	0.60	0.37
125	4.69	4.69	4.54	0.45	0.37
153	4.61	4.61	4.46	0.38	0.37
195	4.50	4.50	4.35	0.28	0.37
240	4.42	4.42	4.27	0.21	0.37
320	4.30	4.30	4.15	0.11	0.37
401	4.25	4.25	4.10	0.05	0.37
480	4.21	4.21	4.06	0.02	0.37
575	4.19	4.19	4.04	0.01	0.37
660	4.18	4.18	4.03	0.00	0.37
801	4.18	4.18	4.03	0.00	0.37



Test by: JV/KF
Reviewed by: DY

B5-8

SECTION 4 – GEOTECHNICAL RESPONSE TEST DATA

2006 SITE INVESTIGATION LUGEON TEST DATA

Print 12/13/07 9:30

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SHEET 1 OF 2

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble Project	PROJECT NO:	VA101-176/8	DRILLHOLE:	GH06-66
AREA:	Site G Embankment			TEST NO:	1
DIPS:	90 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	3.0 m	TOP OF TEST INTERVAL:	7.3 m (DOWN HOLE)
DATE:	08/25/06	GAUGE HEIGHT ABOVE GROUND:	0.1 m	BOTTOM OF TEST INTERVAL:	21.0 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.2030	64.2030	64.2030	64.2030	64.2030	64.2030			
		Flowmeter	litres	64203.0	64203.0	64203.0	64203.0	64203.0	64203.0			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
12	0.83	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.2030	64.2030	64.2030	64.2030	64.2030	64.2030			
		Flowmeter	litres	64203.0	64203.0	64203.0	64203.0	64203.0	64203.0			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
24	1.65	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.2030	64.2030	64.2030	64.2030	64.2030	64.2030			
		Flowmeter	litres	64203.0	64203.0	64203.0	64203.0	64203.0	64203.0			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
35	2.41	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.2030	64.2030	64.2030	64.2030	64.2030	64.2030			
		Flowmeter	litres	64203.0	64203.0	64203.0	64203.0	64203.0	64203.0			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
24	1.65	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.2030	64.2030	64.2030	64.2030	64.2030	64.2030			
		Flowmeter	litres	64203.0	64203.0	64203.0	64203.0	64203.0	64203.0			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
12	0.83	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

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Rev'd 01-Dec-06

SHEET 2 OF 2

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project | PROJECT NO: VA101-176/8 | DRILLHOLE: GH06-66

AREA: Site G Embankment | TEST NO: 2

DIPS: 90 ° (FROM HORIZONTAL) | DEPTH GROUNDWATER: 3.0 m | TOP OF TEST INTERVAL: 21.0 m (DOWN HOLE)

DATE: 08/25/06 | GAUGE HEIGHT ABOVE GROUND: 0.1 m | BOTTOM OF TEST INTERVAL: 26.8 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m³	64.2220	64.2220	64.2220	64.2220	64.2220	64.2220			
		Flowmeter	litres	64222.0	64222.0	64222.0	64222.0	64222.0	64222.0			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
15	1.03	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m³	64.2220	64.2220	64.2220	64.2220	64.2220	64.2220			
		Flowmeter	litres	64222.0	64222.0	64222.0	64222.0	64222.0	64222.0			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
30	2.07	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m³	64.2220	64.2220	64.2220	64.2220	64.2220	64.2220			
		Flowmeter	litres	64222.0	64222.0	64222.0	64222.0	64222.0	64222.0			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
45	3.10	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m³	64.2220	64.2220	64.2220	64.2220	64.2220	64.2220			
		Flowmeter	litres	64222.0	64222.0	64222.0	64222.0	64222.0	64222.0			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
30	2.07	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m³	64.2220	64.2220	64.2220	64.2220	64.2220	64.2220			
		Flowmeter	litres	64222.0	64222.0	64222.0	64222.0	64222.0	64222.0			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
15	1.03	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project | PROJECT NO: VA101-176/8 | DRILLHOLE: GH06-67

AREA: Site G Embankment | TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL) | DEPTH GROUNDWATER: 0.5 m | TOP OF TEST INTERVAL: 20.7 m (DOWN HOLE)

DATE: 08/24/06 | GAUGE HEIGHT ABOVE GROUND: 0.2 m | BOTTOM OF TEST INTERVAL: 37.5 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.1510	64.1510	64.1510	64.1520	64.1520	64.1520			
		Flowmeter	litres	64151.0	64151.0	64151.0	64152.0	64152.0	64152.0			
		Take	litres		0.00	0.00	1.00	0.00	0.00			
20	1.38	Average Take	l/m		0.00	0.00	1.00	0.00	0.00		0.20	0.009

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.1530	64.1540	64.1540	64.1550	64.1560	64.1570			
		Flowmeter	litres	64153.0	64154.0	64154.0	64155.0	64156.0	64157.0			
		Take	litres		1.00	0.00	1.00	1.00	1.00			
40	2.76	Average Take	l/m		1.00	0.00	1.00	1.00	1.00		0.80	0.017

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.1570	64.1580	64.1600	64.1610	64.1620	64.1630			
		Flowmeter	litres	64157.0	64158.0	64160.0	64161.0	64162.0	64163.0			
		Take	litres		1.00	2.00	1.00	1.00	1.00			
60	4.14	Average Take	l/m		1.00	2.00	1.00	1.00	1.00		1.20	0.017

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.1630	64.1640	64.1650	64.1650	64.1660	64.1670			
		Flowmeter	litres	64163.0	64164.0	64165.0	64165.0	64166.0	64167.0			
		Take	litres		1.00	1.00	0.00	1.00	1.00			
40	2.76	Average Take	l/m		1.00	1.00	0.00	1.00	1.00		0.80	0.017

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.1670	64.1670	64.1680	64.1680	64.1690	64.1690			
		Flowmeter	litres	64167.0	64167.0	64168.0	64168.0	64169.0	64169.0			
		Take	litres		0.00	1.00	0.00	1.00	0.00			
20	1.38	Average Take	l/m		0.00	1.00	0.00	1.00	0.00		0.40	0.017

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project | PROJECT NO: VA101-176/8 | DRILLHOLE: GH06-68

AREA: Site G Embankment | TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL) | DEPTH GROUNDWATER: 0.5 m | TOP OF TEST INTERVAL: 16.5 m (DOWN HOLE)

DATE: 08/21/06 | GAUGE HEIGHT ABOVE GROUND: 0.2 m | BOTTOM OF TEST INTERVAL: 25.6 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	62.9860	62.9885	62.9910	62.9930	62.9955	62.9975			
		Flowmeter	litres	62986.0	62988.5	62991.0	62993.0	62995.5	62997.5			
		Take	litres		2.50	2.50	2.00	2.50	2.00			
15	1.03	Average Take	l/m		2.50	2.50	2.00	2.50	2.00		2.30	0.243

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	63.0020	63.0070	63.0130	63.0175	63.0220	63.0260			
		Flowmeter	litres	63002.0	63007.0	63013.0	63017.5	63022.0	63026.0			
		Take	litres		5.00	6.00	4.50	4.50	4.00			
30	2.07	Average Take	l/m		5.00	6.00	4.50	4.50	4.00		4.80	0.254

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	63.0310	63.0400	63.0470	63.0540	63.0610	63.0675			
		Flowmeter	litres	63031.0	63040.0	63047.0	63054.0	63061.0	63067.5			
		Take	litres		9.00	7.00	7.00	7.00	6.50			
50	3.45	Average Take	l/m		9.00	7.00	7.00	7.00	6.50		7.30	0.232

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	63.0760	63.0800	63.0840	63.0880	63.0920	63.0960			
		Flowmeter	litres	63076.0	63080.0	63084.0	63088.0	63092.0	63096.0			
		Take	litres		4.00	4.00	4.00	4.00	4.00			
30	2.07	Average Take	l/m		4.00	4.00	4.00	4.00	4.00		4.00	0.212

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	63.1000	63.1020	63.1040	63.1060	63.1080	63.1100			
		Flowmeter	litres	63100.0	63102.0	63104.0	63106.0	63108.0	63110.0			
		Take	litres		2.00	2.00	2.00	2.00	2.00			
15	1.03	Average Take	l/m		2.00	2.00	2.00	2.00	2.00		2.00	0.211

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble Project	PROJECT NO:	VA101-176/8	DRILLHOLE:	GH06-68
AREA:	Site G Embankment			TEST NO:	2
DIPS:	90 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	0.5 m	TOP OF TEST INTERVAL:	25.6 m (DOWN HOLE)
DATE:	08/21/06	GAUGE HEIGHT ABOVE GROUND:	0.2 m	BOTTOM OF TEST INTERVAL:	36.3 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	63.1390	63.1400	63.1410	63.1430	63.1440	63.1450			
		Flowmeter	litres	63139.0	63140.0	63141.0	63143.0	63144.0	63145.0			
		Take	litres		1.00	1.00	2.00	1.00	1.00			
20	1.38	Average Take	l/m		1.00	1.00	2.00	1.00	1.00		1.20	0.081
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	63.1480	63.1500	63.1520	63.1540	63.1560	63.1580			
		Flowmeter	litres	63148.0	63150.0	63152.0	63154.0	63156.0	63158.0			
		Take	litres		2.00	2.00	2.00	2.00	2.00			
40	2.76	Average Take	l/m		2.00	2.00	2.00	2.00	2.00		2.00	0.068
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	63.1600	63.1630	63.1660	63.1680	63.1710	63.1730			
		Flowmeter	litres	63160.0	63163.0	63166.0	63168.0	63171.0	63173.0			
		Take	litres		3.00	3.00	2.00	3.00	2.00			
60	4.14	Average Take	l/m		3.00	3.00	2.00	3.00	2.00		2.60	0.059
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	63.1750	63.1770	63.1790	63.1810	63.1830	63.1850			
		Flowmeter	litres	63175.0	63177.0	63179.0	63181.0	63183.0	63185.0			
		Take	litres		2.00	2.00	2.00	2.00	2.00			
40	2.76	Average Take	l/m		2.00	2.00	2.00	2.00	2.00		2.00	0.068
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	63.1850	63.1860	63.1870	63.1880	63.1890	63.1900			
		Flowmeter	litres	63185.0	63186.0	63187.0	63188.0	63189.0	63190.0			
		Take	litres		1.00	1.00	1.00	1.00	1.00			
20	1.38	Average Take	l/m		1.00	1.00	1.00	1.00	1.00		1.00	0.067

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project | PROJECT NO: VA101-176/8 | DRILLHOLE: GH06-69

AREA: Site G Embankment | TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL) | DEPTH GROUNDWATER: 0.3 m | TOP OF TEST INTERVAL: 24.4 m (DOWN HOLE)

DATE: 08/27/06 | GAUGE HEIGHT ABOVE GROUND: 0.1 m | BOTTOM OF TEST INTERVAL: 39.3 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.2660	64.2670	64.2690	64.2700	64.2710	64.2720			
		Flowmeter	litres	64266.0	64267.0	64269.0	64270.0	64271.0	64272.0			
		Take	litres		1.00	2.00	1.00	1.00	1.00			
22	1.52	Average Take	l/m		1.00	2.00	1.00	1.00	1.00		1.20	0.053
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.2720	64.2750	64.2780	64.2810	64.2840	64.2860			
		Flowmeter	litres	64272.0	64275.0	64278.0	64281.0	64284.0	64286.0			
		Take	litres		3.00	3.00	3.00	3.00	2.00			
43	2.96	Average Take	l/m		3.00	3.00	3.00	3.00	2.00		2.80	0.063
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.2920	64.2960	64.3010	64.3060	64.3100	64.3140			
		Flowmeter	litres	64292.0	64296.0	64301.0	64306.0	64310.0	64314.0			
		Take	litres		4.00	5.00	5.00	4.00	4.00			
65	4.48	Average Take	l/m		4.00	5.00	5.00	4.00	4.00		4.40	0.066
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.3140	64.3170	64.3190	64.3210	64.3240	64.3260			
		Flowmeter	litres	64314.0	64317.0	64319.0	64321.0	64324.0	64326.0			
		Take	litres		3.00	2.00	2.00	3.00	2.00			
43	2.96	Average Take	l/m		3.00	2.00	2.00	3.00	2.00		2.40	0.054
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.3260	64.3270	64.3280	64.3295	64.3310	64.3320			
		Flowmeter	litres	64326.0	64327.0	64328.0	64329.5	64331.0	64332.0			
		Take	litres		1.00	1.00	1.50	1.50	1.00			
22	1.52	Average Take	l/m		1.00	1.00	1.50	1.50	1.00		1.20	0.053

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble Project	PROJECT NO:	VA101-176/8	DRILLHOLE:	GH06-69
AREA:	Site G Embankment			TEST NO:	2
DIPS:	90 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	0.3 m	TOP OF TEST INTERVAL:	39.6 m (DOWN HOLE)
DATE:	08/27/06	GAUGE HEIGHT ABOVE GROUND:	0.1 m	BOTTOM OF TEST INTERVAL:	48.8 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.3380	64.3380	64.3380	64.3380	64.3380	64.3380			
		Flowmeter	litres	64338.0	64338.0	64338.0	64338.0	64338.0	64338.0			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
27	1.86	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.3380	64.3385	64.3390	64.3395	64.3400	64.3405			
		Flowmeter	litres	64338.0	64338.5	64339.0	64339.5	64340.0	64340.5			
		Take	litres		0.50	0.50	0.50	0.50	0.50			
53	3.65	Average Take	l/m		0.50	0.50	0.50	0.50	0.50		0.50	0.015
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.3405	64.3410	64.3415	64.3420	64.3425	64.3430			
		Flowmeter	litres	64340.5	64341.0	64341.5	64342.0	64342.5	64343.0			
		Take	litres		0.50	0.50	0.50	0.50	0.50			
80	5.52	Average Take	l/m		0.50	0.50	0.50	0.50	0.50		0.50	0.010
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.3430	64.3431	64.3432	64.3433	64.3434	64.3435			
		Flowmeter	litres	64343.0	64343.1	64343.2	64343.3	64343.4	64343.5			
		Take	litres		0.10	0.10	0.10	0.10	0.10			
53	3.65	Average Take	l/m		0.10	0.10	0.10	0.10	0.10		0.10	0.003
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	64.3435	64.3435	64.3435	64.3435	64.3435	64.3435			
		Flowmeter	litres	64343.5	64343.5	64343.5	64343.5	64343.5	64343.5			
		Take	litres		0.00	0.00	0.00	0.00	0.00			
27	1.86	Average Take	l/m		0.00	0.00	0.00	0.00	0.00		0.00	0.000

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LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project | PROJECT NO: VA101-176/8 | DRILLHOLE: GH06-74

AREA: Site G Embankment | TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL) | DEPTH GROUNDWATER: 6.5 m | TOP OF TEST INTERVAL: 25.9 m (DOWN HOLE)

DATE: 09/20/06 | GAUGE HEIGHT ABOVE GROUND: 0.0 m | BOTTOM OF TEST INTERVAL: 42.7 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	69.8250	69.8260	69.8270	69.8290	69.8310	69.8320			
		Flowmeter	litres	69825.0	69826.0	69827.0	69829.0	69831.0	69832.0			
		Take	litres		1.00	1.00	2.00	2.00	1.00			
12.75	0.88	Average Take	l/m		1.00	1.00	2.00	2.00	1.00		1.40	0.091

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	69.8340	69.8380	69.8430	69.8480	69.8530	69.8580			
		Flowmeter	litres	69834.0	69838.0	69843.0	69848.0	69853.0	69858.0			
		Take	litres		4.00	5.00	5.00	5.00	5.00			
25.5	1.76	Average Take	l/m		4.00	5.00	5.00	5.00	5.00		4.80	0.159

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	69.8640	69.8740	69.8860	69.8980	69.9090	69.9180			
		Flowmeter	litres	69864.0	69874.0	69886.0	69898.0	69909.0	69918.0			
		Take	litres		10.00	12.00	12.00	11.00	9.00			
42.5	2.93	Average Take	l/m		10.00	12.00	12.00	11.00	9.00		10.80	0.217

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	69.9230	69.9330	69.9390	69.9460	69.9530	69.9600			
		Flowmeter	litres	69923.0	69933.0	69939.0	69946.0	69953.0	69960.0			
		Take	litres		10.00	6.00	7.00	7.00	7.00			
25.5	1.76	Average Take	l/m		10.00	6.00	7.00	7.00	7.00		7.40	0.246

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	69.9630	69.9680	69.9740	69.9800	69.9860	69.9910			
		Flowmeter	litres	69963.0	69968.0	69974.0	69980.0	69986.0	69991.0			
		Take	litres		5.00	6.00	6.00	6.00	5.00			
12.75	0.88	Average Take	l/m		5.00	6.00	6.00	6.00	5.00		5.60	0.364

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT: Pebble Project | PROJECT NO: VA101-176/8 | DRILLHOLE: GH06-76

AREA: Site G Embankment | TEST NO: 1

DIPS: 90 ° (FROM HORIZONTAL) | DEPTH GROUNDWATER: 23.1 m | TOP OF TEST INTERVAL: 65.5 m (DOWN HOLE)

DATE: 10/08/06 | GAUGE HEIGHT ABOVE GROUND: 1.0 m | BOTTOM OF TEST INTERVAL: 83.7 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	70.3630	70.3640	70.3670	70.3690	70.3710	70.3730			
		Flowmeter	litres	70363.0	70364.0	70367.0	70369.0	70371.0	70373.0			
		Take	litres		1.00	3.00	2.00	2.00	2.00			
32	2.21	Average Take	l/m		1.00	3.00	2.00	2.00	2.00		2.00	0.047
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	70.3800	70.3860	70.3930	70.3990	70.4070	70.4130			
		Flowmeter	litres	70380.0	70386.0	70393.0	70399.0	70407.0	70413.0			
		Take	litres		6.00	7.00	6.00	8.00	6.00			
64	4.41	Average Take	l/m		6.00	7.00	6.00	8.00	6.00		6.60	0.080
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	70.4290	70.4470	70.4640	70.4810	70.4980	70.5150			
		Flowmeter	litres	70429.0	70447.0	70464.0	70481.0	70498.0	70515.0			
		Take	litres		18.00	17.00	17.00	17.00	17.00			
105	7.24	Average Take	l/m		18.00	17.00	17.00	17.00	17.00		17.20	0.129
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	70.5240	70.5350	70.5470	70.5570	70.5680	70.5780			
		Flowmeter	litres	70524.0	70535.0	70547.0	70557.0	70568.0	70578.0			
		Take	litres		11.00	12.00	10.00	11.00	10.00			
64	4.41	Average Take	l/m		11.00	12.00	10.00	11.00	10.00		10.80	0.131
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	m^3	70.5810	70.5880	70.5950	70.6030	70.6100	70.6180			
		Flowmeter	litres	70581.0	70588.0	70595.0	70603.0	70610.0	70618.0			
		Take	litres		7.00	7.00	8.00	7.00	8.00			
32	2.21	Average Take	l/m		7.00	7.00	8.00	7.00	8.00		7.40	0.174

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SHEET 1 OF 1

LUGEON TEST FIELD DATA SHEET

Knight Piésold CONSULTING

PROJECT:	Pebble Project	PROJECT NO:	VA101-00176/8	DRILLHOLE:	GH06 - 80
AREA:	East Pit			TEST NO:	1
DIPS:	90 ° (FROM HORIZONTAL)	DEPTH GROUNDWATER:	4.2 m	TOP OF TEST INTERVAL:	57.5 m (DOWN HOLE)
DATE:	10/19/06	GAUGE HEIGHT ABOVE GROUND:	1.8 m	BOTTOM OF TEST INTERVAL:	66.1 m (DOWN HOLE)

GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	903.00	905.00	906.00	907.00	907.50	908.00			
		Take	litres		2.00	1.00	1.00	0.50	0.50			
28.5	1.96	Average Take	l/m		2.00	1.00	1.00	0.50	0.50		1.00	0.385
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	910.00	916.00	920.00	924.00	926.00	928.00			
		Take	litres		6.00	4.00	4.00	2.00	2.00			
57	3.93	Average Take	l/m		6.00	4.00	4.00	2.00	2.00		3.60	0.782
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	932.00	940.00	948.00	955.00	960.50	964.00			
		Take	litres		8.00	8.00	7.00	5.50	3.50			
95	6.55	Average Take	l/m		8.00	8.00	7.00	5.50	3.50		6.40	0.880
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	966.00	967.00	968.00	969.00	970.00				
		Take	litres		1.00	1.00	1.00	1.00				
57	3.93	Average Take	l/m		1.00	1.00	1.00	1.00			1.00	0.217
GAUGE P (psi)	GAUGE P (BAR)										AVERAGE FLOW litres/min	LUGEON
		Time	min	0	1	2	3	4	5			
		Flowmeter	USGAL									
		Flowmeter	litres	970.50	971.00	971.50	972.00	972.25	972.50			
		Take	litres		0.50	0.50	0.50	0.25	0.25			
28.5	1.96	Average Take	l/m		0.50	0.50	0.50	0.25	0.25		0.40	0.154

SECTION 4 – GEOTECHNICAL RESPONSE TEST DATA

2006 SITE INVESTIGATION FALLING HEAD (HVORSLEV) TEST DATA

2006 PEBBLE SITE INVESTIGATIONS

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BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

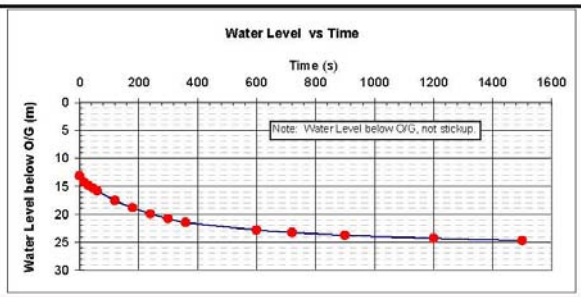
Project No. VA101-176/8
Borehole No. GH06-65

Test Interval: 21.03 m to 30.48 m

Borehole Elevation		502.6	m
Date:		31-Aug-06	
Test No.		1	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.027	m
Top of test interval		21.03	m
Bottom of test interval		30.48	m
Length of test interval, L	L =	9.45	m
Stickup of piezometer or rods above ground surface		0.38	m
Static water level, H **(below ground surface)**		26.27	m
Elevation of Static Water Level **(below ground surface)**	El. =	476.31	m
Static water level, H **(below starting point - top of piezo or drill rod)**	H =	26.65	m
Water level at start of test, Ho **(below top of piezo or drill rods)**	Ho =	13.5	m

TEST DATA

Elapsed Time (sec)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	13.50	13.12	1.00	0.37
15	14.63	14.25	0.91	0.37
30	15.20	14.82	0.87	0.37
45	15.70	15.32	0.83	0.37
60	16.17	15.79	0.80	0.37
120	17.90	17.52	0.67	0.37
180	19.25	18.87	0.56	0.37
240	20.32	19.94	0.48	0.37
300	21.15	20.77	0.42	0.37
360	21.85	21.47	0.37	0.37
600	23.19	22.81	0.26	0.37
720	23.65	23.27	0.23	0.37
900	24.13	23.75	0.19	0.37
1200	24.66	24.28	0.15	0.37
1500	25.03	24.65	0.12	0.37



Test By: DAY/LS
Reviewed By: LS

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2006 PEBBLE SITE INVESTIGATIONS

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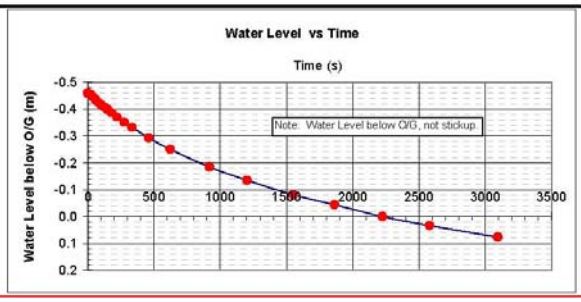
BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8			
Borehole No.	GH06-66			
		Test Interval		
		7.92 m	to	14.63 m

Borehole Elevation		477.1	m
Date:		16-Oct-06	
Test No.		1	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.025	m
Top of test interval		7.92	m
Bottom of test interval		14.63	m
Length of test interval, L	L =	6.71	m
Stickup of piezometer or rods above ground surface		0.66	m
Static water level, H **(below ground surface)**		0.34	m
Elevation of Static Water Level **(below ground surface)**	El. =	476.79	m
Static water level, H **(below starting point - top of piezo or drill rod)**	H =	1.00	m
Water level at start of test, Ho **(below top of piezo or drill rods)**	Ho =	0.2	m

TEST DATA

Elapsed Time (sec)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	0.20	-0.46	1.00	0.37
20	0.21	-0.46	0.99	0.37
40	0.22	-0.45	0.98	0.37
60	0.23	-0.44	0.97	0.37
80	0.24	-0.43	0.96	0.37
102	0.24	-0.42	0.95	0.37
125	0.25	-0.41	0.94	0.37
150	0.26	-0.40	0.93	0.37
180	0.27	-0.39	0.91	0.37
220	0.29	-0.37	0.89	0.37
275	0.31	-0.35	0.86	0.37
335	0.33	-0.33	0.84	0.37
460	0.37	-0.29	0.79	0.37
623	0.41	-0.25	0.74	0.37
919	0.48	-0.19	0.66	0.37
1201	0.53	-0.14	0.59	0.37
1553	0.58	-0.08	0.53	0.37
1862	0.62	-0.04	0.48	0.37
2225	0.66	0.00	0.43	0.37
2580	0.69	0.03	0.38	0.37
3094	0.74	0.08	0.33	0.37



Test By:	JV/KF/TT
Reviewed By;	ALS

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2006 PEBBLE SITE INVESTIGATIONS

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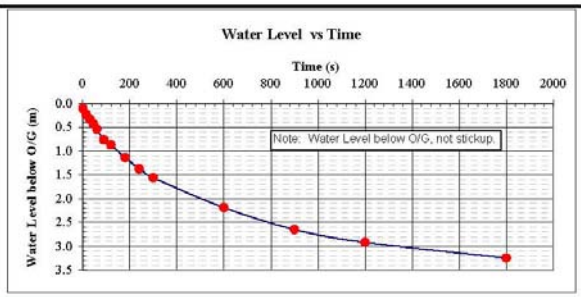
BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8		
Borehole No.	GH06-67		
Test Interval	7.01 m to 13.72 m		
Borehole Elevation		451.7	m
Date:		31-Aug-06	
Test No.		1	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.025	m
Top of test interval		7.01	m
Bottom of test interval		13.72	m
Length of test interval, L	L =	6.71	m
Stickup of piezometer or rods above ground surface		0.5	m
Static water level, H **(below ground surface)**		3.75	m
Elevation of Static Water Level **(below ground surface)**	El. =	447.96	m
Static water level, H **(below starting point - top of piezo or drill rod)**	H =	4.25	m
Water level at start of test, Ho **(below top of piezo or drill rods)**	Ho =	0.6	m

TEST DATA

Elapsed Time (sec)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	0.60	0.10	1.00	0.37
15	0.73	0.23	0.96	0.37
30	0.83	0.33	0.94	0.37
45	0.92	0.42	0.91	0.37
60	1.04	0.54	0.88	0.37
90	1.26	0.76	0.82	0.37
120	1.37	0.87	0.79	0.37
180	1.64	1.14	0.72	0.37
240	1.87	1.37	0.65	0.37
300	2.06	1.56	0.60	0.37
600	2.69	2.19	0.43	0.37
900	3.15	2.65	0.30	0.37
1200	3.42	2.92	0.23	0.37
1800	3.75	3.25	0.14	0.37



Test By: DAY/LS
Reviewed By: LS

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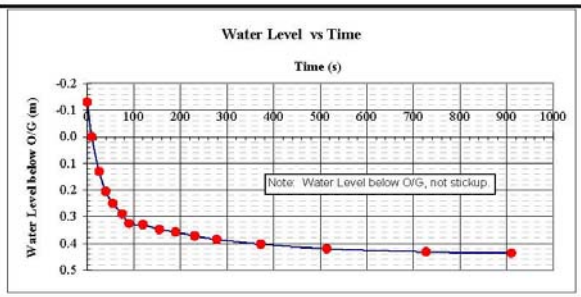
BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8		
Borehole No.	GH06-68		
Test Interval	26.21 m to 36.27 m		
Borehole Elevation		370.1	m
Date:		16-Oct-06	
Test No.		1	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.025	m
Top of test interval		26.21	m
Bottom of test interval		36.27	m
Length of test interval, L	L =	10.06	m
Stickup of piezometer or rods above ground surface		0.35	m
Static water level, H **(below ground surface)**		0.44	m
Elevation of Static Water Level **(below ground surface)**	El. =	369.65	m
Static water level, H **(below starting point - top of piezo or drill rod)**	H =	0.79	m
Water level at start of test, Ho **(below top of piezo or drill rods)**	Ho =	0.22	m

TEST DATA

Elapsed Time (sec)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	0.22	-0.13	1.00	0.37
10	0.35	0.00	0.77	0.37
26	0.48	0.13	0.54	0.37
40	0.56	0.21	0.41	0.37
55	0.60	0.25	0.33	0.37
75	0.64	0.29	0.26	0.37
90	0.68	0.33	0.20	0.37
120	0.68	0.33	0.19	0.37
155	0.70	0.35	0.16	0.37
190	0.71	0.36	0.14	0.37
231	0.72	0.37	0.12	0.37
278	0.74	0.39	0.10	0.37
373	0.75	0.40	0.06	0.37
514	0.77	0.42	0.04	0.37
727	0.78	0.43	0.01	0.37
910	0.79	0.44	0.01	0.37



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Reviewed By: ALS

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BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8
Borehole No.	GH06-68

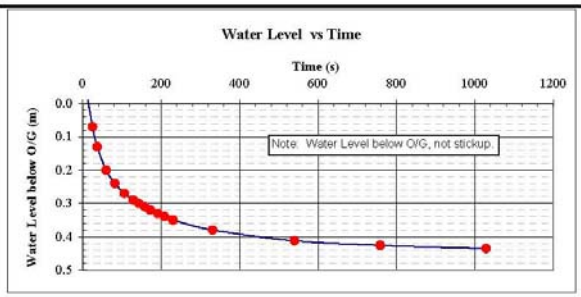
Test Interval

26.21 m to 36.27 m

Borehole Elevation		370.1	m
Date:		16-Oct-06	
Test No.		2	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.025	m
Top of test interval		26.21	m
Bottom of test interval		36.27	m
Length of test interval, L	L =	10.06	m
Stickup of piezometer or rods above ground surface		0.35	m
Static water level, H **(below ground surface)**		0.44	m
Elevation of Static Water Level **(below ground surface)**	El. =	369.65	m
Static water level, H **(below starting point - top of piezo or drill rod)**	H =	0.79	m
Water level at start of test, Ho **(below top of piezo or drill rods)**	Ho =	0.21	m

TEST DATA

Elapsed Time (sec)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	0.21	-0.14	1.00	0.37
8	0.30	-0.05	0.85	0.37
25	0.42	0.07	0.64	0.37
37	0.48	0.13	0.54	0.37
60	0.55	0.20	0.42	0.37
82	0.59	0.24	0.35	0.37
106	0.62	0.27	0.30	0.37
129	0.64	0.29	0.26	0.37
143	0.65	0.30	0.25	0.37
159	0.66	0.31	0.23	0.37
172	0.67	0.32	0.21	0.37
191	0.68	0.33	0.19	0.37
209	0.69	0.34	0.18	0.37
230	0.70	0.35	0.16	0.37
331	0.73	0.38	0.11	0.37
540	0.76	0.41	0.05	0.37
759	0.78	0.43	0.03	0.37
1029	0.79	0.44	0.01	0.37



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Reviewed By:	ALS

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2006 PEBBLE SITE INVESTIGATIONS

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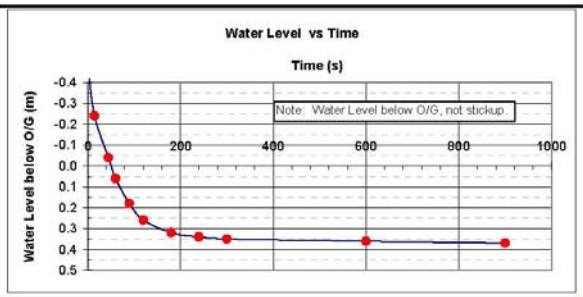
BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8		Test Interval	
Borehole No.	GH06-69		12.07 m to 18.29 m	
Borehole Elevation			456.2	m
Date:			31-Aug-06	
Test No.			1	
Hole diameter, D		D =	0.096	m
Interior diameter of piezometer or drill rods, d		d =	0.025	m
Top of test interval			12.07	m
Bottom of test interval			18.29	m
Length of test interval, L		L =	6.22	m
Stickup of piezometer or rods above ground surface			0.84	m
Static water level, H **(below ground surface)**			0.38	m
Elevation of Static Water Level **(below ground surface)**		El. =	455.78	m
Static water level, H **(below starting point - top of piezo or drill rod)**		H =	1.22	m
Water level at start of test, Ho **(below top of piezo or drill rods)**		Ho =	0.35	m

TEST DATA

Elapsed Time (sec)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	0.35	-0.49	1.00	0.37
15	0.60	-0.24	0.71	0.37
45	0.80	-0.04	0.48	0.37
60	0.90	0.06	0.37	0.37
90	1.02	0.18	0.23	0.37
120	1.10	0.26	0.14	0.37
180	1.16	0.32	0.07	0.37
240	1.18	0.34	0.05	0.37
300	1.19	0.35	0.03	0.37
600	1.20	0.36	0.02	0.37
900	1.21	0.37	0.01	0.37



Test By: DAY/LS
Reviewed By: LS

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2006 PEBBLE SITE INVESTIGATIONS

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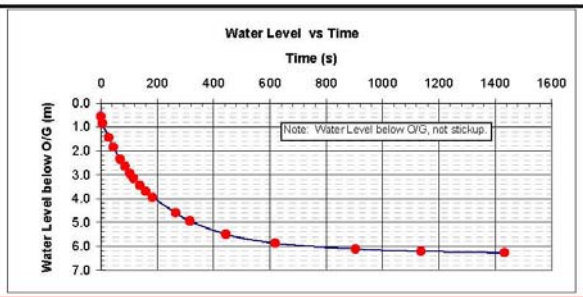
BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8		
Borehole No.	GH06-74		
Test Interval	9.45 m to 13.41 m		
Borehole Elevation		364.9	m
Date:		16-Oct-06	
Test No.		1	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.025	m
Top of test interval		9.45	m
Bottom of test interval		13.41	m
Length of test interval, L	L =	3.96	m
Stickup of piezometer or rods above ground surface		0.55	m
Static water level, H **(below ground surface)**		9.68	m
Elevation of Static Water Level **(below ground surface)**	El. =	355.23	m
Static water level, H **(below starting point - top of piezo or drill rod)**	H =	10.23	m
Water level at start of test, Ho **(below top of piezo or drill rods)**	Ho =	1.1	m

TEST DATA

Elapsed Time (sec)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	1.10	0.55	1.00	0.37
5	1.40	0.85	0.97	0.37
28	2.00	1.45	0.90	0.37
44	2.40	1.85	0.86	0.37
68	2.90	2.35	0.80	0.37
85	3.20	2.65	0.77	0.37
103	3.50	2.95	0.74	0.37
116	3.70	3.15	0.72	0.37
138	4.00	3.45	0.68	0.37
159	4.25	3.70	0.65	0.37
183	4.50	3.95	0.63	0.37
265	5.15	4.60	0.56	0.37
316	5.50	4.95	0.52	0.37
444	6.05	5.50	0.46	0.37
619	6.43	5.88	0.42	0.37
904	6.67	6.12	0.39	0.37
1136	6.76	6.21	0.38	0.37
1433	6.82	6.27	0.37	0.37



Test By: JV/KF/TT
Reviewed By: ALS

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BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8
Borehole No.	GH06-76

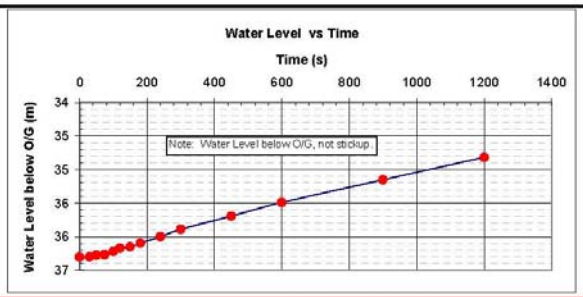
Test Interval

31.24 m to 37.49 m

Borehole Elevation		301.3	m
Date:		8-Oct-06	
Test No.		1	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.025	m
Top of test interval		31.24	m
Bottom of test interval		37.49	m
Length of test interval, L	L =	6.25	m
Stickup of piezometer or rods above ground surface		0.71	m
Static water level, H **(below ground surface)**		34.55	m
Elevation of Static Water Level **(below ground surface)**	El. =	266.74	m
Static water level, H **(below starting point - top of piezo or drill rod)**	H =	35.26	m
Water level at start of test, Ho **(below top of piezo or drill rods)**	Ho =	37.02	m

TEST DATA

Elapsed Time (sec)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	37.02	36.31	1.00	0.37
30	37.01	36.30	1.00	0.37
50	36.99	36.28	0.98	0.37
75	36.98	36.27	0.98	0.37
100	36.93	36.22	0.95	0.37
120	36.88	36.17	0.92	0.37
150	36.86	36.15	0.91	0.37
180	36.81	36.10	0.88	0.37
240	36.71	36.00	0.83	0.37
300	36.60	35.89	0.76	0.37
450	36.41	35.70	0.65	0.37
600	36.20	35.49	0.54	0.37
900	35.86	35.15	0.34	0.37
1200	35.53	34.82	0.15	0.37



Test By: JV/KF/TT
Reviewed By: ALS

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2006 PEBBLE SITE INVESTIGATIONS

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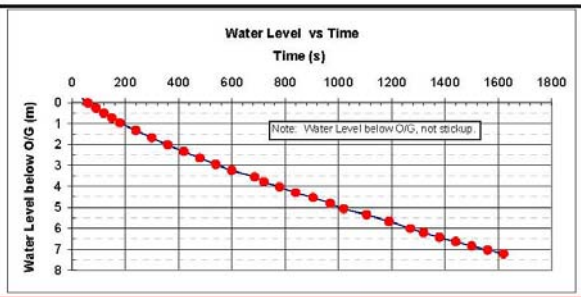
BOREHOLE PERMEABILITY USING FALLING HEAD TEST (HVORSLEV METHOD)

Project No.	VA101-176/8		
Borehole No.	GH06-80		
Test Interval	10.97 m to 15.24 m		
Borehole Elevation		309.9	m
Date:		20-Oct-06	
Test No.		1	
Hole diameter, D	D =	0.096	m
Interior diameter of piezometer or drill rods, d	d =	0.025	m
Top of test interval		10.97	m
Bottom of test interval		15.24	m
Length of test interval, L	L =	4.27	m
Stickup of piezometer or rods above ground surface		0.74	m
Static water level, H **(below ground surface)**		11.98	m
Elevation of Static Water Level **(below ground surface)**	El. =	297.94	m
Static water level, H **(below starting point - top of piezo or drill rod)**	H =	12.72	m
Water level at start of test, Ho **(below top of piezo or drill rods)**	Ho =	0.21	m

TEST DATA

Elapsed Time (sec)	Water Level Below Stickup, h (m)	Water Level Below O/G (m)	(H-h)/(H-Ho)	
0	0.21	-0.53	1.00	0.37
15	0.36	-0.38	0.99	0.37
30	0.40	-0.34	0.98	0.37
45	0.63	-0.11	0.97	0.37
60	0.76	0.02	0.96	0.37
90	1.01	0.27	0.94	0.37
120	1.25	0.51	0.92	0.37
150	1.49	0.75	0.90	0.37
180	1.72	0.98	0.88	0.37
240	2.08	1.34	0.85	0.37
300	2.43	1.69	0.82	0.37
360	2.77	2.03	0.80	0.37
420	3.08	2.34	0.77	0.37
480	3.40	2.66	0.75	0.37
540	3.69	2.95	0.72	0.37
600	3.98	3.24	0.70	0.37
686	4.30	3.56	0.67	0.37
720	4.52	3.78	0.66	0.37
780	4.77	4.03	0.64	0.37
840	5.04	4.30	0.61	0.37
905	5.28	4.54	0.59	0.37
969	5.56	4.82	0.57	0.37
1020	5.81	5.07	0.55	0.37
1106	6.09	5.35	0.53	0.37
1190	6.42	5.68	0.50	0.37
1270	6.76	6.02	0.48	0.37
1320	6.96	6.22	0.46	0.37
1380	7.18	6.44	0.44	0.37
1440	7.38	6.64	0.43	0.37
1500	7.58	6.84	0.41	0.37
1560	7.77	7.03	0.40	0.37
1620	7.96	7.22	0.38	0.37



Test By: JV/KF/TT
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