

Peter Davidson-8456

From: Nicholas Ward [Nick.Ward@pdp.co.nz]
Sent: Tuesday, 9 September 2008 12:19 p.m.
To: Peter Davidson-8456
Subject: Jim Graham's new wells at Redwood Hills
Attachments: C02132500D001 Fig_1.pdf

GW 390

Dear Peter,

Thank you for your call the other day. As suggested here are the details on Mr Graham's new wells.

Between 3 April and 13 June 2008 John Butt drilled six new water wells on Mr Graham's property at Redwood Hills. A site location map is attached to this email. The well details are summarized below:

Well number	Screened depth (m bgl)
1	24.23-29.93
2	26.93-30.55
3	27.36-30.1
4	25.4-30.35
5	28.37-31.95
6	27.38-31.1

The wells were developed in turn and the final drawdowns were recorded. The details are summarized in the following table:

Well	Duration of pumping (hours)	Pumping rate (L/s)	Drawdown at end of pumping (m)	Finished static water level (m)
1	6	1.5	16.65	2.91
2	4	5	4.32	8.3
3	4	2.4	18.55	4.25
4	1	1.1	10.35	3.05
5	3	2.4	16.98	4.62
6	120	2.7 ¹	13.1	8.65

¹test rate altered as well dried up at original pumping rate

Mr Graham currently holds a half share in consent U020433 to store 175,000 m³ in a dam. He is looking to abstract water from the six wells to

1. increase reliability of supply when surface water is scarce
2. to increase the area of potential irrigation, and
3. for domestic supply.

↑ = 58 ha vines approx

Specifically, Mr. Graham is seeking to abstract at the following rates:

Well(s)	Use	Peak abstraction rate (L/s) ¹	Total daily abstraction (m ³ /day)
1, 3, 5, 6	Irrigation	6	432
2	Irrigation	5.3	384
4	Domestic	0.63	46 X too much

¹based on 20 hours pumping

Since the principal use of the water is for irrigation, a class C categorization would be unhelpful. Based on this information I would be very pleased to have your initial feedback on what would need to be established to ensure a more reliable water take.

I look forward to working with you and Val Wadsworth,

Regards

9/09/2008

Nick

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Notes:

- 1. Cadastral Information derived from LINZ data.
- 2. Map derived from Google Earth Pro.



KEY

- Pumped Well
- Well

APPROX. SCALE 1:5000 (A4)

Figure 1: Site Plan at Redwood Hills

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	Well Number	Owner	Well Depth (m)	Diameter (mm)	Yield (m3/hr/m)	Drilling Firm	Driller	Drill Date	Easting	Northing	File
3	P28w_4883	Jim Graham	30.5	150	0.46469002	Butt J.	Rob Millard	10/04/2008	2597475	5951527	O:\Wells\DrillersLogs\P28w4883.pdf
4	P28w_4884	Jim Graham	30.95	150	0.37487922	Butt J.	Rob Millard	26/05/2008	2597537	5951401	O:\Wells\DrillersLogs\P28w4884.pdf
1	P28w_4842	Jim Graham	30.33	150	0.32432432	Butt J.	Rob Millard	3/04/2008	2597555	5951296	O:\Wells\DrillersLogs\P28w4842.pdf
2	P28w_4841	Jim Graham	31.95	150	4.16898148	Butt J.	Rob Millard	8/04/2008	2596752	5951166	O:\Wells\DrillersLogs\P28w4841.pdf



4 Springswood Grove
 BLENHEIM
 Telephone 021-343 089
 After hours 0-3-578 8270
 Facsimile 0-3-578 8166



WATER WELL ENGINEERS TO MARLBOROUGH

Log No 1219

Well Owner Mr J Graham
 Renners Road
 R.D.4
 Blenheim

Contact Name Jim

u080471

FA8W/4884

Driller Rob Millard

Map Sheet No




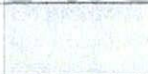




Altitude (m):

Drilling Date 26/05/2008

Grid Ref East:

South

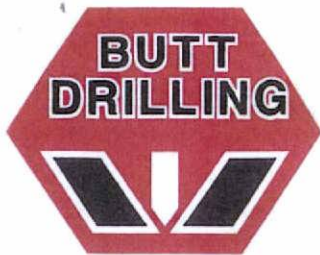
Locality Dumgree Road Grid ref 2597537-5951401

Depth To Strata Top (m)	Strata Bottom (m)	Strata Thickness (m)	Static Level (m)	Strata Description	Strata Picture
0.00	2.60	2.60		Grey cobble, some coarse sand	
2.60	3.00	0.40		Yellow clay	
3.00	8.40	5.40		Grey medium gravels and grey clay	
8.40	11.00	2.60		Grey clay	
11.00	17.00	6.00		Grey medium gravels and grey clay	
17.00	19.30	2.30		Grey clay	
19.30	32.30	13.00		Grey coarse gravel, some grey clay, water bearing	
32.30	63.00	30.70		Grey clay (Papa)	



15/06/2008 5:25:07 p.m.

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WATER WELL ENGINEERS TO MARLBOROUGH

Finished Static
Water Level: 3.05

Test Pumping: 1.00 Hours

Draw Down (m): 10.35 Below Static Water Level

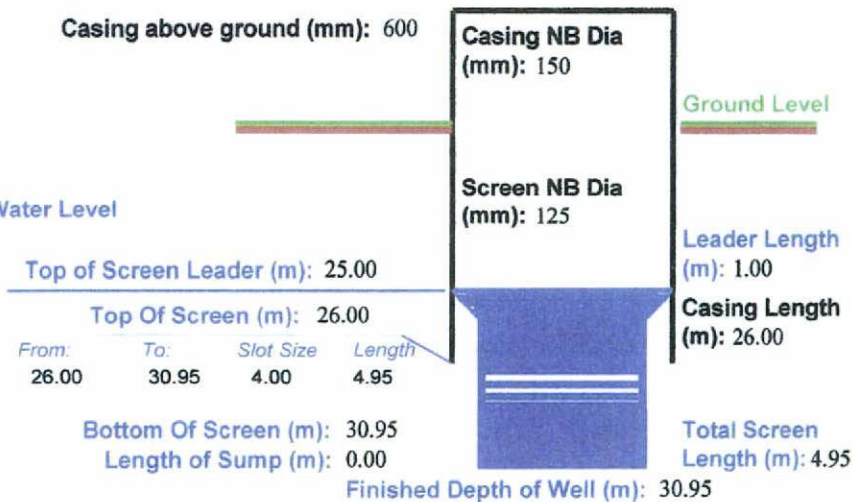
Flow Rate: 3.88 cubic mph

Step Test By:

No: 1 Screen Type slotted 125mm pvc

Remarks:

Flanged ready for pump.



PLEASE NOTE:

Test pumping flow rates, static levels, and water level draw down are as recorded at the time of test pumping. These figures could change at a later time due to influences beyond our control (e.g. seasonal variations).



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 Facsimile 0-3-578 8166



WATER WELL ENGINEERS TO MARLBOROUGH

Log No 1202

Well Owner Mr J Graham
 Renners Road
 R.D.4
 Blenheim

Contact Name Jim

u080266
 P28w/4842

Driller Rob Millard

Map Sheet No

Altitude (m):

Drilling Date 03/04/2008

Grid Ref East:

South

Locality Dumgree Road Grid ref 2597555-5951296 No1

Depth To Strata Top (m)	Strata Bottom (m)	Strata Thickness (m)	Static Level (m)	Strata Description	Strata Picture
0.00	4.80	4.80		Grey medium gravels to medium sand, yellow clay bound	
4.80	8.50	3.70		Yellow clay	
8.50	20.00	11.50		Grey medium gravels and grey clay	
20.00	30.50	10.50		Grey coarse gravel, some grey clay, water bearing	
30.50	38.30	7.80		Grey clay	

Casing above ground (mm): 400

Finished Static Water Level: 2.91

Test Pumping: 6.00 Hours

Draw Down (m): 16.65 Below Static Water Level

Flow Rate: 5.40 cubic mph

Step Test By:

No: 1 Screen Type slotted 125mm Pvc

Remarks:
 Flanged ready for pump installation.

15/06/2008 5:24:34 p.m.

Top of Screen Leader (m): 24.23

Top Of Screen (m): 24.63

From:	To:	Slot Size	Length
24.63	30.33	4.00	5.70

Bottom Of Screen (m): 30.33

Length of Sump (m): 0.00

Casing NB Dia (mm): 150

Screen NB Dia (mm): 125

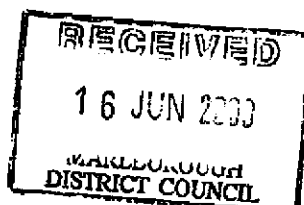
Finished Depth of Well (m): 30.33

Ground Level

Leader Length (m): 0.40

Casing Length (m): 24.63

Total Screen Length (m): 5.70





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WATER WELL ENGINEERS TO MARLBOROUGH

Log No 1203

Well Owner Mr J Graham
 Renners Road
 R.D.4
 Blenheim

Contact Name Jim

U080266
 P28W/4841

Driller Rob Millard

Map Sheet No







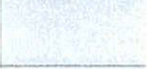
Altitude (m):

Drilling Date 08/04/2008

Grid Ref East:

South

Locality Dumgree Road Grid ref 2596752-5951166 No2

Depth To Strata Top (m)	Strata Bottom (m)	Strata Thickness (m)	Static Level (m)	Strata Description	Strata Picture
0.00	1.10	1.10		Brown stoney topsoil	
1.10	16.20	15.10		Yellow clay, some grey medium gravels	
16.20	18.70	2.50		Grey coarse gravels, grey clay bound	
18.70	22.10	3.40		Grey clay	
22.10	27.40	5.30		Grey coarse gravel, grey clay, poor water bearing	
27.40	32.50	5.10		Grey cobble to medium sand, some grey clay, water bearing	
32.50	35.20	2.70		Grey clay	

15/06/2008 5:24:38 p.m.



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WATER WELL ENGINEERS TO MARLBOROUGH

Finished Static
 Water Level: 8.30

Test Pumping: 4.00 Hours

Draw Down (m): 4.32 Below Static Water Level

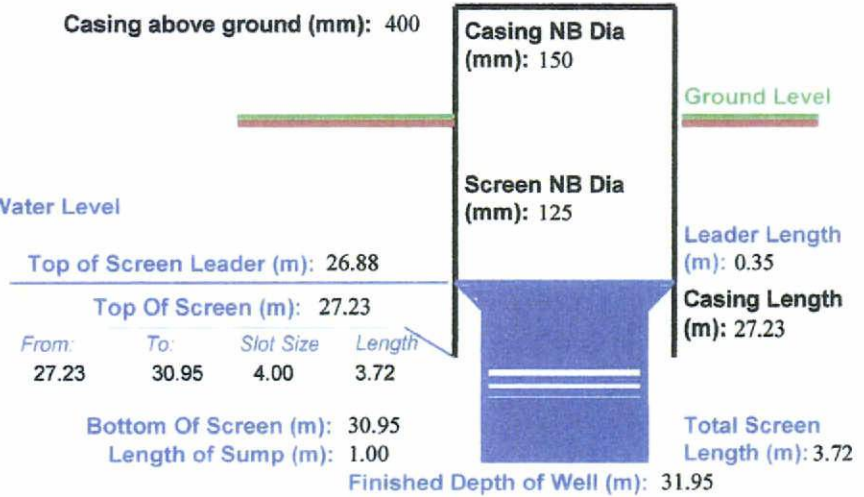
Flow Rate: 18.01 cubic mph

Step Test By:

No: 1 Screen Type 125mm slotted Pvc

Remarks:

Flanged ready for pump installation.



PLEASE NOTE:

Test pumping flow rates, static levels, and water level draw down are as recorded at the time of test pumping. These figures could change at a later time due to influences beyond our control (e.g. seasonal variations).



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 Facsimile 0-3-578 8166



WATER WELL ENGINEERS TO MARLBOROUGH

Log No 1204

Well Owner Mr J Graham
 Renners Road
 R.D.4
 Blenheim

Contact Name Jim

u080471
 P28w 14883

Driller Rob Millard

Map Sheet No




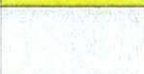




Altitude (m):

Drilling Date 10/04/2008

Grid Ref East:

South

Locality Dumgree Road Grid ref 2597475-5951527 No3

Depth To Strata Top (m)	Strata Bottom (m)	Strata Thickness (m)	Static Level (m)	Strata Description	Strata Picture
0.00	0.80	0.80		Black topsoil	
0.80	2.10	1.30		Grey coarse gravel	
2.10	2.40	0.30		Yellow clay	
2.40	8.00	5.60		Grey clay	
8.00	14.00	6.00		Yellow clay, some grey medium gravels	
14.00	16.50	2.50		Grey clay, very sticky	
16.50	23.40	6.90		Grey clay, some grey medium gravels	
23.40	30.70	7.30		Grey coarse gravels to medium sand, water bearing	

15/06/2008 5:24:39 p.m.



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WATER WELL ENGINEERS TO MARLBOROUGH

Finished Static
Water Level: 4.25

Test Pumping: 4.00 Hours

Draw Down (m): 18.55 Below Static Water Level

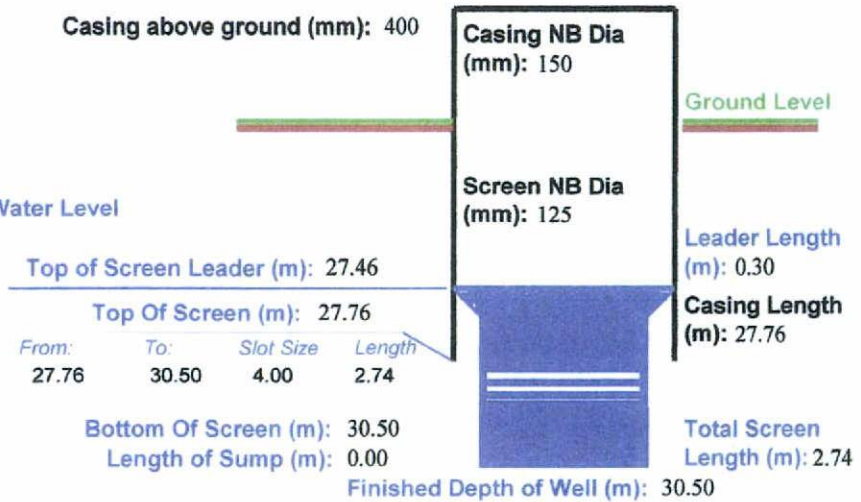
Flow Rate: 8.62 cubic mph

Step Test By:

No: 1 Screen Type 125mm slotted Pvc

Remarks:

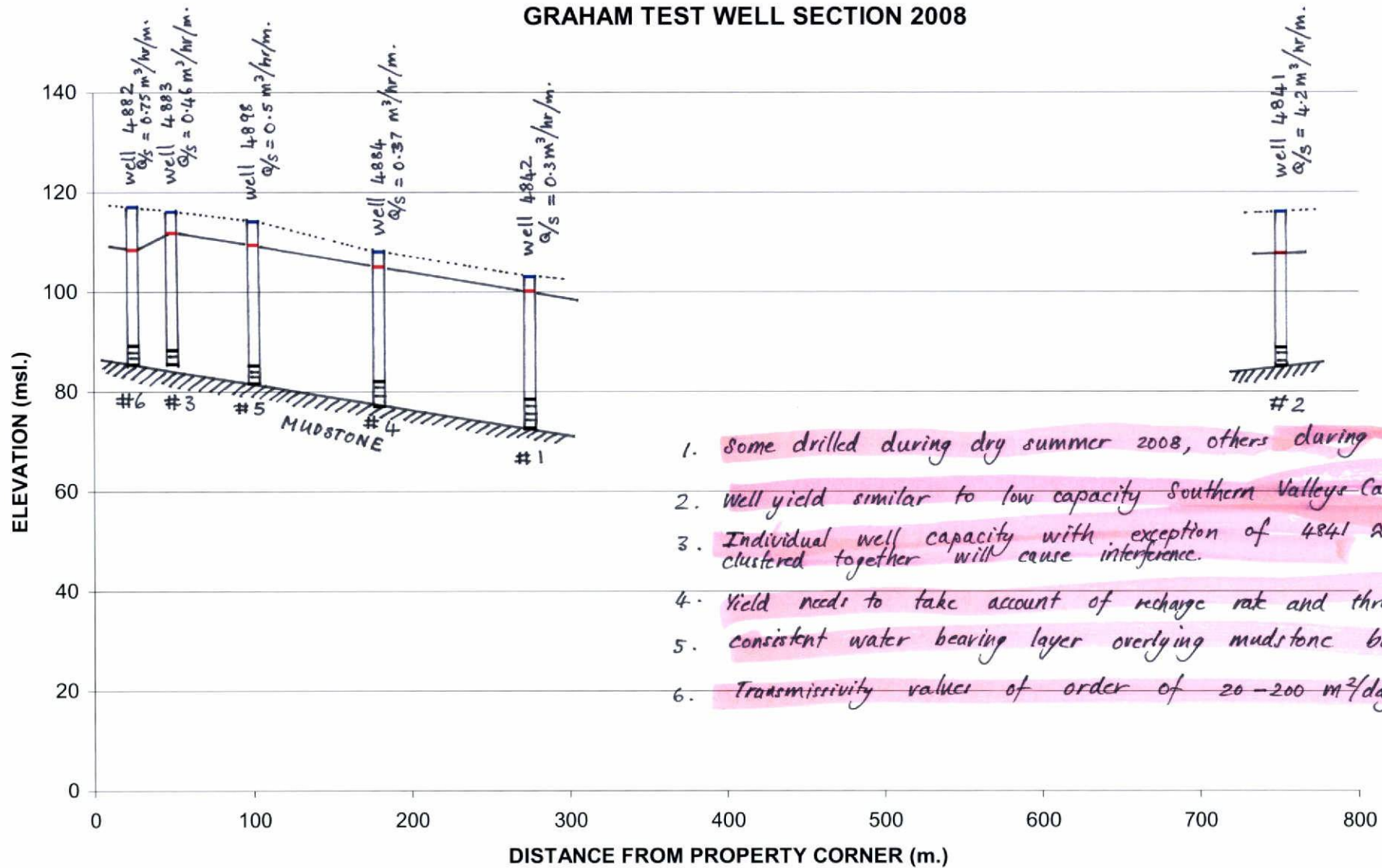
Flanged ready for pump installation.



PLEASE NOTE:

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GRAHAM TEST WELL SECTION 2008



1. Some drilled during dry summer 2008, others during wet winter.
2. Well yield similar to low capacity Southern Valleys Catchment terrane.
3. Individual well capacity with exception of 4841 \approx 50 m³/day but clustered together will cause interference.
4. Yield needs to take account of recharge rate and throughflow.
5. consistent water bearing layer overlying mudstone basement.
6. Transmissivity values of order of 20-200 m²/day.

