

6596090

Received by hand
16.6.97.

To: District Engineer
Rotorua District Council
Private Bag
ROTORUA

FILE

STATEMENT OF PROFESSIONAL OPINION AS TO SUITABILITY OF LAND
FOR BUILDING DEVELOPMENT

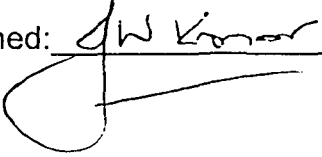
Subdivision: Part Kawaha 3^E Block Lots 1 - 4
Owner / Developer: Mr G. Harper
Location: Gemini Place, Rotorua

I, John William Kronast of BSK Consulting Engineers Ltd, 144 Hinemoa Street Rotorua, hereby confirm that -

- (1) I am a Registered Engineer experienced in the field of soils engineering and was retained by the owner / developer as the Soils Engineer on the above subdivision.
- (2) The extent of my inspections during construction, and the results of all tests carried out are described in my report dated 13/6/97.
- (3) In my professional opinion, not to be construed as a guarantee, I certify that -

The filled ground, on Lots 1, 2, 3 and 4 shown on Phipps Hawley Ltd Drawing No. 2237 S/7, is suitable for the erection thereon of residential buildings not requiring specific design in terms of NZ Building Act 1991 and NZ Building Regulations 1992, and related documents.

- (4) This professional opinion is furnished to the Council and the owner / developer for their purposes alone on the express condition that it will not be relied upon by any other person and does not remove the necessity for the normal inspection of foundation conditions at the time of erection of the dwelling.

Signed: 

13/6/97

13 June 1997

The Resource Engineer
Rotorua District Council
Private Bag RO 3029
ROTORUA

Dear Sir,

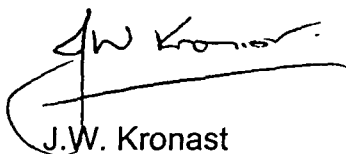
**RE: G. HARPER, GEMINI PLACE, ROTORUA
SUBDIVISION OF PART KAWAHA 3^E BLOCK**

OUR REF: 9648

We confirm that we have visited the above site at the completion of excavation works on Lots 1-4 of this development, and have carried out six Scala Penetrometer tests randomly placed around those four lots at the completion of placing hardfill to bring the area up to the required levels. The site was completely excavated to clean sandy subsoils prior to placing of pumice fill to a depth of approximately 1.0 - 1.5 metres. The Scala Penetrometer tests were all consistent with allowable bearing pressures of 100KPa and better, which is in accordance with the requirements of NZS 3604: 1990.

We trust this provides the information that you require at this time. Please contact the writer should you require any additional information regarding this matter.

Yours faithfully



J.W. Kronast
BSK CONSULTING ENGINEERS LTD

DIRECTORS

E. Don Stotter

C.Eng., M.I.C.E.,

M.I.P.E.N.Z

Reg. Engineer

John W Kronast

B.E., M.I.P.E.N.Z



FILE

6596 090



Inquires to: J P O'Connor

27-Jun-97

hsk Consulting Engineers Ltd
P O Box 23,
ROTORUA

Project No: 287030.00
Dossier No: 97/384

Attention Mr J Kronast

Dear Sir

DENSITY TESTING OF PART KAWAHA 3E BLOCK SUBDIVISION FILLS.

Please find attached results for density testing carried out on Lots 1,2,3 4 & 15 of the Kawaha 3E Block subdivision. Testing was carried out on the 26 of June 1997.

Spot density tests were carried out and samples were taken for standard compaction in the laboratory. Results attached show field density result as a percentage of that obtained in the laboratory. Laboratory Water Contents were used for calculations.

Testing was carried out in accordance with specification NZS 4407:1991.

Yours Faithfully

OPUS INTERNATIONAL CONSULTANTS

J P O'Connor

LABORATORY MANAGER

Page 1 of 5

**INSITU DENSITY/ LAB DENSITY
COMPARISION TESTING**

Field Test by J O'Connor
Date Tested 26/6/97

Project Number 287030
Dossier Number 97/384
Lab Test by J O'Connor
Date Tested 26/6/97

Sample # 1

refer plan for location

Light brown fine SAND & SILT with some pumice Stone.

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)	1.599	1.658
Moisture Content (%)	38.4	38.4
Dry Density (t/m3)	1.155	1.200

Percentage of Proctor 96.3 %**Sample # 2**

refer attached plan for test location

Light brown fine SAND & SILT with some pumice Stone.

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)	1.598	1.655
Moisture Content (%)	44.0	44.0
Dry Density (t/m3)	1.110	1.150

Percentage of Proctor 96.5 %**Sample # 3**

refer attached plan for test location

Light brown fine SAND & SILT with some pumice Stone.

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)	1.687	1.683
Moisture Content (%)	34.7	34.7
Dry Density (t/m3)	1.252	1.250

Percentage of Proctor 100.2 %**Sample # 4**

refer attached plan for test locations

Light brown fine SAND & SILT with some pumice Stone.

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)	1.614	1.697
Moisture Content (%)	37.2	37.2
Dry Density (t/m3)	1.176	1.240

Percentage of Proctor 94.8 %**Test Methods**

Nuclear Densometer Field Testing: NZS 4407:1991 Test 4.2.1

Proctor Compaction: NZS 4402:1986 Test 4.1.1 (in part)

Reported by:

Checked by:

Date

27-Jun-97

Approved Signatory

Designation

Lab Manager

Page 3 of 5

**INSITU DENSITY/ LAB DENSITY
COMPARISION TESTING**Field Test by
Date TestedJ O'Connor
26/6/97Project Number
Dossier Number
Lab Test by
Date Tested287030
97/384
J O'Connor
26/6/97**Sample # 5**

refer plan for location

Light brown fine SAND & SILT with some pumice Stone.

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)	1.664	1.701
Moisture Content (%)	35.3	35.3
Dry Density (t/m3)	1.230	1.260
Percentage of Proctor		97.6 %

Sample # 6

refer attached plan for test location

Light brown fine SAND & SILT with some pumice Stone.

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)	1.698	1.728
Moisture Content (%)	32.8	32.8
Dry Density (t/m3)	1.279	1.301
Percentage of Proctor		98.3 %

Sample # 7 Suspect reading due to depth of meter in hole

refer attached plan for test location

Light brown fine SAND & SILT with some pumice Stone.

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)	1.630	1.774
Moisture Content (%)	31.5	31.5
Dry Density (t/m3)	1.240	1.349
Percentage of Proctor		91.9 %

Sample # 8

refer attached plan for test locations

Light brown fine SAND & SILT with some pumice Stone.

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)	1.539	1.646
Moisture Content (%)	38.3	38.3
Dry Density (t/m3)	1.113	1.190
Percentage of Proctor		93.5 %

Test Methods


Nuclear Densometer Field Testing: NZS 4407:1991 Test 4.2.1

Proctor Compaction: NZS 4402:1986 Test 4.1.1 (in part)

Reported by:



Checked by:




Date

27-Jun-97

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Designation


Lab Manager

**INSITU DENSITY/ LAB DENSITY
COMPARISION TESTING**Field Test by J O'Connor
Date Tested 26/6/97Project Number 287030
Dossier Number 97/384
Lab Test by J OConnor
Date Tested 26/6/97**Sample # 9**

refer plan for location

Light brown fine SAND & SILT with some pumice Stone.

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)	1.583	1.648
Moisture Content (%)	38.8	38.8
Dry Density (t/m3)	1.140	1.187

Percentage of Proctor 96.0 %

Sample # 10

refer attached plan for test location

Crushed Ignimbrite rock

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)	1.693	1.757
Moisture Content (%)	26.0	26.0
Dry Density (t/m3)	1.344	1.394

Percentage of Proctor 96.4 %

Sample # 11

refer attached plan for test location

Crushed Ignimbrite rock

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)	1.703	1.760
Moisture Content (%)	26.2	26.2
Dry Density (t/m3)	1.349	1.395

Percentage of Proctor 96.7 %

	Field (NDM)	Proctor (recompacted natural)
Wet Density (t/m3)		
Moisture Content (%)		
Dry Density (t/m3)		

%

Test Methods

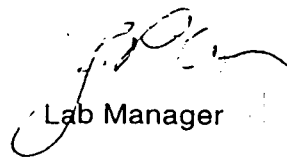
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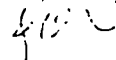
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Approved Signatory



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Designation

Lab Manager

Date

27-Jun-97

