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GEOTECHNICAL INVESTIGATION FOR PROPOSED TOWNSHIP ESTABLISHMENT PURPOSES OF REIGER PARK - PARCELS 1, 2, 3, 5, 6, 7, 8

IR859

INTRACONSULT
P.O. BOX 604,
FOURWAYS, 2055
TEL: (011) 469-0854
FAX: (011) 469-0961
e-mail: intrac@mweb.co.za

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Consulting Engineering Geologists & Engineers **Intraconsult**

Intraconsult Associates

P.O. Box 604,
Fourways 2055
Johannesburg

Telephone :
Direct : (011) 469 0854

Fax : (011) 469 0961
Email: intrac@mweb.co.za

URBAN DYNAMICS
P.O. BOX 291803
MELVILLE
2109

ATTENTION: MR H. POTGIETER

Your reference	Our reference	Date
	IR859	12 November 2007

GEOTECHNICAL INVESTIGATION FOR PROPOSED TOWNSHIP OF REIGER PARK - PARCELS 1, 2, 3, 5, 6, 7, 8

SUMMARY

Intraconsult have been appointed to carry out a geotechnical (Phase 1) investigation for the Proposed Township comprising seven land parcels, numbered 1-3 and 5-8, in the Reiger Park environs. The project site is situated in the Reiger Park / Delmore Park environs of Boksburg, Gauteng Province, south-west of the East Rand Mall.

The site to be developed evidently comprises old mining land presumably largely owned by ERPM, which exhibits the typical features of mining ground, including a recently reclaimed slimes dam, derelict mine infrastructure, water storage dams, etc. At the time of the investigation, much of the ground appeared to be disturbed in some form or another, with shallow excavations and large-scale uncontrolled dumping being rife, and several informal settlements recently emerging. Only the central-southern land parcel appears to be a greenfields site, albeit potentially locally contaminated by tailings spillages from the nearby reclamation pipelines. The brownfields portions of the project site as well as the areas of extensive dumping remain largely unexplored due to access constraints.

The intention of this Phase 1 geotechnical investigation is to provide sufficient information for township planning and design purposes and has been carried out in accordance with the prescribed requirements as set out in the standard document for these procedures, the *Geotechnical Site Investigations for Housing Developments* as published by the National Department of Housing (Project Linked Greenfield Subsidy Project Developments – GFSH-2), with provision for site coverage and classification made in terms of NHBRC (National Home Builders Registration Council) guidelines.

The bulk of the site (with the exception of the watercourses) is zoned as being developable, however, with moderate to severe precautions in view of the potentially problematic soil horizons which blanket the site. These soils will generally preclude the use of conventional un-reinforced strip foundations, and necessitate modified solutions, details of which are provided.

1. INTRODUCTION AND TERMS OF REFERENCE

The scope of work includes the following:

- to determine, in broad terms, the nature, distribution and engineering properties of the near surface soils and rocks as they affect the proposed development;
- classification of the site into zones according to the guidelines referred to above;
- to give general foundation recommendations for the proposed development;
- to comment on excavation characteristics and classification for the installation of services;
- provide a rudimentary assessment of the in situ materials for earthworks purposes, and
- to appraise groundwater conditions particularly pertaining to shallow groundwater or seepage.

2. SITE LOCATION AND DESCRIPTION

The project site is situated in the Reiger Park / Delmore Park environs of Boksburg, Gauteng Province, south-west of the East Rand Mall, and comprises the following seven land parcels, as depicted on Figure 1 (see also Figure 2):

- Site 1: A Portion of the farm 682-IR
- Site 2: A Portion of the farm 682-IR
- Site 3: A Portion of the farm 682-IR
- Site 5: Portion 396 of the farm Driefontein: 85-IR
- Site 6: Portion 394 of the farm Driefontein: 85-IR
- Site 7: Portion 397 of the farm Driefontein: 85-IR
- Site 8: Portion 399 of the farm Driefontein: 85-IR

The site, as a whole, is located to the south of the Wit Deep Gold Mine on the north-west boundary and the ERPM Gold Mine on the north-east, the larger boundaries of which are loosely formed by:

- the east-west oriented railway line on the north
- Delmore Park and South Germiston Extension 9 on the west
- Reiger Park Extension 5 and the Farm Klippoortje: 112-IR on the south
- the site tapering to a point on the east

A fairly significant Y-shaped drainage line with associated floodplain passes roughly north-south through the western half of the site which will impose floodline restrictions on the development of the lower-lying portions of the site.

The following salient features are relevant to the various land portions comprising the project site:

- Site 1: This portion comprises:
  - The west-facing hill slope which drains from the eastern boundary formed by Elsburg Road towards the floodplain of the Elsburg Dam in the west;
  - Various pipelines along the verge of Elsburg Road;
  - Land which is dominated by a large informal settlement which has colonised the western half and south-eastern sector of the site;
  - The informal settlement has ignored a large tract on the eastern half of the site which is buried beneath uncontrolled fill and sporadic dumping.
  - Access to this parcel was greatly restricted.
  - Judged to be poor quality ground and relatively expensive to develop, particularly in view of relocation logistics.

- Site 2: This portion comprises:
  - The most unconstrained and undeveloped land parcel of the seven selected.
  - A hillcrest which drains southwards from a large pipeline / railway embankment at the crest of the hill adjacent to Commissioner Street towards the floodplain which skirts the south-eastern and south-western extremities.
  - Several servitudes traverse the parcel, most importantly east-west powerline servitude through the centre of the site and the afore-mentioned railway-pipeline servitude on the northern boundary.
  - Vegetation is very sparse and limited to veldgrass and localised scrub.
  - The extreme north-western sector is dominated by extensive rock outcrop which peters out gradually downslope, with the exception of a prominent exposure just south of the powerlines.
  - There are several visible spillages of tailings material from the pipeline which may require rehabilitation prior to development.
  - Judged to be the best land for development which is relatively inexpensive to develop, with the exception of areas of rock outcrop and tailings contamination.

- Site 3: This portion comprises:
  - A narrow strip of very derelict ground between Simon Bekker Road and the Elsburg Dam floodplain.
  - Although well-vegetated with kikuyu grass, the ground surface is very hummocky, indicative of widespread uncontrolled dumping with numerous excavations noted.
  - Judged to be very poor quality ground and expensive to develop.

- Site 5: This portion comprises:
  - A small land parcel on the north of Commissioner Street bordered by the powerline servitude in the south and Delmore Park X2 in the north.
  - The ground surface drains south-eastwards towards the floodplain
  - An extensive fill mound dominating the north-eastern sector.
  - Judged to be reasonable quality ground with the exception of the large fill deposit which will be expensive to rehabilitate.

- Site 6 together with the western portion of Site 7 comprise:
  - A fairly low-lying region to the west of the afore-mentioned drainage line.
  - A large relatively open tract of hummocky ground, which appears to have once hosted a mine tailings dump.
  - A sizeable informal settlement in the north-eastern sector.
  - A significant earth-rock berm colonised by large bluegum trees along the south-eastern boundary, which become more sporadic along the southern boundary.
  - A significant zone falling below the 1:100 year floodline.
  - Moderately sloped topography draining from both the east and west towards this drainage line.
  - Sporadic remains of mine workings in the southern sector
  - Judged to be reasonable quality ground which has been preconsolidated by the weight of a mine dump, but possibly contaminated thereby. Mine workings will need to be investigated for safety constraints, and the large berm will prove expensive to remove and needs to be incorporated into the township layout.

- Site 7 on the east side of the floodplain is characterised by:
  - Low-lying, poorly drained ground which is waterlogged in large tracts in which reed colonies have become established.
  - A significant formal dam in the south-western sector, with an informal pond north thereof.
  - Associated low-lying basin characterised by reed colonisation and generally water-logged conditions in the periphery around the dam.
  - Sporadic hummocky ground suggesting sporadic uncontrolled fill deposits.
  - Relatively open virgin ground free of vegetation in the south-eastern sector.
  - Judged to be relatively poor quality ground and expensive to develop and constrained by waterlogged and potentially expansive clay deposits, except for the extreme north-western and south-eastern sectors upstream of the dam which is the best available land.

- Site 8 comprising the extreme eastern sector of the site is characterised by:
  - Partly open virgin ground with sporadic clusters of bluegum trees.
  - A large railway embankment passing midway through the land parcel.
  - A small village of single-storey formal residential structures in the western half of the parcel.
  - Sporadic pockets of derelict ground in which widespread dumping has occurred, typically masked by dense vegetation on the eastern half.

- Sporadic excavations and disturbed ground hosting north-south oriented tailings pipelines to the west of the embankment.
- Judged to be reasonable quality ground to the west of the embankment, but poor quality, disturbed ground to the east which will be moderately expensive to rehabilitate.

3. NATURE OF INVESTIGATION

3.1 Fieldwork

The fieldwork for this geotechnical investigation was undertaken in several stages, by means of several geotechnical specialists, and involved the inspection of some 100 test pits to supplement the 44 existing test pits profiled by others.

All of the test pits were excavated by means of a Bell 315.SG TLB supplied by Geoid Earthworks Services during September and October 2007, and profiled in situ by a geotechnical specialist, using standard profiling techniques, during which time representative soil samples were retrieved for laboratory testing. Copies of the soil profiles, which graphically represent the soil conditions encountered in the test pits, are presented in Appendix A.

Given the above, it is judged that the test pits excavated provide reasonable coverage of the project site, based on the profile observed, although they may not necessarily encompass the full variation in soil conditions which may be encountered. The *GPS surveyed positions* of the test pits are annotated on the site plan (see Figure 2).

3.2 Laboratory Testing

Laboratory tests for foundation engineering purposes were conducted on selected soil samples taken from the soil horizons encountered in the test pits. These tests include the following:

- Grading and Atterberg limit tests to determine the basic engineering properties of the in situ soils and for classification purposes.
- Natural moisture content tests to determine the in situ moisture regime.
- Modified oedometer tests on undisturbed samples to determine the compressibility and collapse potential of the soil under saturation and loading, for the purpose of site classification and foundation selection.

- Basic chemistry (pH and conductivity) tests to assess the corrosive potential of the soils and associated groundwater towards buried ferrous services.

- Soil moisture-density compaction tests at Mod AASHTO compaction, to assess the quality of the soils for both embankment and road construction applications.

Copies of the laboratory tests are presented in Appendix B, and summarized in Table 1.

4. GEOLOGY AND SOIL PROFILE

4.1 Mapped Geology

Available geological maps (see Figure 3) indicate that the project site principally straddles the contact between the quartzitic and conglomerate rocks of the Johannesburg and Turffontein Subgroups of the Witwatersrand Supergroup, which are locally separated by a narrow east-west oriented band shale of Booysens Formation. The extreme north-eastern perimeter is shown to be underlain by diamictite and shale of the Dwyka Formation, Karoo Supergroup.

4.2 Site Geology

Field observations generally confirm the above regional geology, exposing residual soils and parent bedrock consistent with the mapped geology, buried beneath variable deposits of transported soils.

The site is generally characterized by one of three natural soil profiles, provided below in order of prevalence:

- Thick, open-textured, aeolian deposits overlying ferricrete and/or relatively deep residual quartzite (and very locally shale).
- Very thin, porous, colluvial deposits overlying shallow quartzitic bedrock which outcrops intermittently.
- Thick lacustrine, alluvial and gullywash deposits comprising the full depth of the observed profile.

Reference should be made to the appended soil profiles for detailed descriptions of the in situ soils encountered during the investigation. Table 2 summarizes the base depth of the various soil horizons encountered in the test holes, from which the inferred horizon thickness can be obtained. It should, however, be noted that not all of the soil horizons tabulated necessarily occur throughout the site.

5. GEOTECHNICAL EVALUATION

5.1 Geotechnical Site Classification

Given the size of the project site which encompasses seven separate land parcels which straddle variable topography and geomorphology, the soil profile exposed in the test pits on this site is, in our opinion, characterised by the following seven site class zones which exhibit similar geotechnical characteristics, depicted on Figure 4:

- **Zone 1: 2 / C2 / locally P (trees; uncontrolled fill; mining debris)**
- **Zone 2: 2-3 / H1-H2 / locally W (waterlogged) / locally P (fill)**
- **Zone 3: 3 / W (water-bodies)**
- **Zone 4: 2 / C1-C2 / R (sub-outcrop) / locally P (uncontrolled fill / tailings)**
- **Zone 5: 2-3 / P (uncontrolled fill) / P (excavations) / R (sub-outcrop)**
- **Zone 6: 2-3 / Existing Informal Settlement**
- **Zone 7: 2-3 / C / R (outcrop / sub-outcrop) / locally W (ponding)**

5.2 Evaluation of Founding Conditions

Throughout this site, in its natural state, the soil profile encountered will generally preclude the use of conventional un-reinforced strip foundations and necessitate modified foundations to accommodate *mainly collapse settlement* movement but also local differential settlement and heave-shrinkage movement in the lower lying areas near the water bodies.

Extensive quartzite bedrock occurs on the south-western flank of the site which will have a large bearing on founding in this zone.

Large portions of the site are covered with uncontrolled fill deposits which need to be rehabilitated prior to development.

5.3 Foundation Recommendations

5.3.1 Conventional Single-Storey Masonry Structures

The influence of these problematic transported soils is dependent on:

- the depth at which foundations are installed
- moisture ingress and
- foundation pressures.

The alternative (ticked) founding options presented in Table 3 are considered appropriate in respect of *single-storey residential structures* for this property, with bearing pressure limitations, foundation stiffness, masonry reinforcement and structure articulation to be detailed consistent with the structures under consideration and the guidelines given in the NHBRC's Home Building Manual.

In addition to the recommended founding solutions, surface drainage, services and plumbing precautions given in Appendix D should be also adopted in respect of the potentially highly compressible and collapsible transported aeolian soils.

5.3.2 Multi-Storey Masonry Units

For multi-storey structures which may be envisaged for this site, the following founding recommendations may be considered:

Horizon	Consistency	Depth Range Below NGL	Allowable Bearing Pressure (kPa)
Residual Quartzite	Medium dense through dense	Highly variable	200kPa – 300kPa
Quartzite Bedrock	Very soft rock	Highly variable	400kPa – 500kPa

In light of these observations, we are of the opinion that it may be viable to found double and even lightly-loaded triple-storey structures on shallow bases in Parcel 2 on proven dense residual quartzite, with a bearing pressure limitation of around 300kPa.

For structures in excess of triple-storey, a pier or even pile foundation solution will, most probably, be required, the depth of which may be gauged from the refusal depth of the test pits (see Table 2).

5.4 Excavation Classification

The excavation characteristics of the in situ soils / rocks are evaluated according to the *SABS 1200D: Earthworks Specification* on the basis of the test pits, excavated by a Bell 315.SG TLB, and are presented in Table 4.

- *Soft excavation*, generally possible using pick and shovel and light earthmoving equipment (TLB and the like), prevails throughout the transported, as well as the upper reworked residual soil horizons (except where this is well ferruginized). This is prevalent to depths in the order of 1.5m throughout Parcels 6-8 where aeolian and lacustrine deposits are often in excess of 1.5m, but thins out rapidly southwards of Parcel 5, where transported soil cover is thinnest.

- *Intermediate excavation*, which will become very onerous by hand and even light earth-moving equipment, frequently occurs from the surface in Parcels 1-5, where very dense residual quartzite is superficially encountered, as well as areas of very dense ferricrete which typically occurs at depth beneath the aeolian deposits. This class of excavation should be anticipated within services trenches throughout Parcels 1-5, but only sporadically in Parcels 6-8. Trenching in this material will necessitate heavier plant and potentially also ground-engaging-tools.

- *Hard excavation,* necessitating drill-and-blast operations, should be extensively anticipated from ground surface and within the depth of trenching on the south side of Commissioner Street, particularly in Parcels 2 and 3, but only sporadically in the remaining Parcels.

- *Boulder class* excavation was generally not encountered, with the exception for the extreme north-western sector of Parcel 2. The large uncontrolled fill deposits and areas of mine infrastructure may, however, contain large concrete slabs and blocks which may necessitate heavier plant, and even fragmenting operations, to deal with effectively.

5.5 Earthworks Materials

On the basis of index test results alone, the following TRH14 classification is provided for the in situ soils, applicable to road and fill terrace construction, subject to verification by means of CBR tests.

Horizon	TRH14 Classification	Application
Aeolian	Sub-G7	Bulk fill / low-end selected layerworks
Hillwash	Sub-G6 – Sub-G7	Selected layerworks
Alluvium	Sub-G7 - Sub-G8	Bulk fill
Lacustriine	Sub-G8	Avoid for earthworks applications
Ferricrete	Sub-G6 – Sub-G7	Bulk fill / low-end selected layerworks
Residual Quartzite	G6 – Sub-G6	Sub-base / selected layerworks

With careful selection of materials, limited sub-base and relatively freely available selected layerworks can be harvested on site, obviating the need for importing these materials.

5.6 Slope Stability

The moderate slope of the site will probably necessitate minor terracing to provide level platforms in Parcels 1-5, with the more gradual slopes in Parcels 6-8 generally precluding terracing. As a provisional measure, in the absence of more detailed shear strength information, terracing for larger structures or any temporary slopes formed during construction should be excavated to angles not exceeding 3H:2V (34°) in the transported soils and 1H:1V (45°) in the residual soils, failing which a rigorous slope stability analysis should be conducted.

Services trenches in the low-lying areas adjacent to the floodplain and water-bodies exhibit a high risk of collapse and will be particularly sensitive to surcharging, particularly by construction vehicles.

Local raveling and erosion of excavated slopes will occur at these angles which should be maintained and repaired on an on-going basis. Surface water should be controlled at the crest of excavated slopes to reduce slope erosion.

Excavations deeper than 1,5m should be individually assessed by a geotechnical engineer. However, the responsibility of all temporary excavations must remain with the contractor, who is in the best position to assess conditions during construction.

TABLES

TABLE 1: SUMMARY OF SOIL INDEX AND MATERIAL PROPERTIES

Test Pit No	Depth (m)	Origin	LL	PI (425)	LS	GM	NMC	PI (whole)	425	075	002	TRH14
					Raiger Park – Parcels 6-8							
TP12	1.3-1.5	Reworked Quartzite	27	8	4	1.19	5.84	5	57.65	51	4	sub G6
TP12	2.3-2.5	Transported?	19	6	3	0.47	14.99	5	80.21	71	13	sub G6
TP13	1.0-1.5	Alluvium	41	19	9	0.58	17.14	15	78.20	71	3	sub G8
TP14	1.0-1.35	Ferruginous Transported	31	11	6	1.59	10.42	5	44.39	38	4	G6
TP17	3.0-3.5	Transported?	31	15	8	0.74	16.77	12	78	60	2	sub G7
TP19	0.5-0.9	Alluvium	NP	NP	1	0.63	18.64	NP	71.63	62	4	sub G7
TP19	1.0-1.5	Alluvium	27	14	7	0.61	9.37	10	75.24	60	5	sub G7
TP20	0.35-0.65	Mine Tailings	25	4	2	0.84	20.32	3	71.01	55	4	sub G6
TP23	2.0-2.3	Reworked Lava	40	17	9	1.02	19.51	11	84.92	58	22	sub G7
TP20	1.8	Aeolian	NP	NP	1	0.91	3.95	NP	62.23	48	4	sub G6
TP28	1.4-1.7	Reworked Lava	48	23	12	0.67	24.06	17	76.54	69	12	sub G8
TP29	0.5-0.8	Lacustrine	42	21	11	0.48	20.27	17	83.57	62	3	sub G8
TP30	1.3-1.6	Lacustrine	41	21	10	0.77	17.83	16	74.52	60	4	sub G8
TP32		Transported?	26	9	5	1.63	10.97	4	43.29	38	7	G6
TP38	0.35-1.35	Aeolian	26	12	6	0.51	8.27	10	80.29	70	20	sub G7
TP38	1.35-1.8	Ferricrete	28	13	7	1.22	7.54	7	57.53	51	20	sub G6
TP39	0.1-0.5	Aeolian	21	8	4	0.58	5.15	7	78.23	60	3	sub G6
TP39	0.35-1.8	Ferruginous Aeolian	26	15	7	0.38	8.54	13	84.78	78	20	sub G8
TP42	1.0-1.1	Ferruginous Aeolian	33	16	9	0.39	26.75	16	85.64	75	12	sub G8
TP45	1.5-1.8	Ferruginous Alluvium	30	13	7	0.42	23.7	11	82.59	74	7	sub G7
TP50	0.3-0.75	Aeolian	NP	NP	1	0.69	5.18	NP	73.23	50	4	sub G7
TP50	0.75-1.5	Aeolian	28	13	7	0.52	8.33	10	80.26	72	20	sub G7
					Raiger Park – Parcel 2							
TP2-02	0.3	Hillwash	NP	NP	1	0.96	9.64	NP	68.01	37	2	sub G6
TP2-02	0.8	Residual Conglomerate	18	5	2	2.2	3.29	1	26.20	12	1	G6
TP2-04	0.3	Hillwash	NP	NP	1	0.71	7.64	NP	75.45	45	2	sub G7
TP2-08	0.2	Hillwash	16	7	3	0.93	10.49	5	70	32	3	sub G6
TP2-13	0.5	Hillwash	17	6	2	0.8	8.2	4	75.70	42	1	sub G6
TP2-13	0.5	Hillwash	NP	NP	1	1.59	4.93	NP	40.39	22	1	G5
TP2-14	0.2	Hillwash	NP	NP	1	0.88	8.71	NP	73.76	33	1	sub G6
TP2-14	0.9	Conglomerate	20	5	2	1.65	1.9	2	36.57	24	1	G6
TP2-15	0.4	Reworked Quartzite	NP	NP	1	1.34	2.54	NP	47.32	30	2	G6
TP2-21	0.2	Hillwash	NP	NP	1	0.81	9.79	NP	73.66	40	2	sub G6
TP2-25	0.2	Quartzite	NP	NP	1	2.4	3.85	NP	16.73	10	0	G5
TP2-28	0.2	Hillwash	NP	NP	1	0.89	9.42	NP	72.84	32	1	sub G6
					Raiger Park – Parcel 5							
TP01	0.3	Hillwash	17	5	2	0.77	11.09	4	77.06	43	4	sub G6
TP02	0.6	Quartzite	NP	NP	0	1.53	3.25	NP	39.21	14	1	G5
TP05	0.8	Quartzite	23	4	2	1.56	6.42	2	43.90	33	3	G6
TP09	0.8	Hillwash	16	5	2	0.69	4.8	4	77.11	51	8	sub G6
TP09	1.0	Pebble Marker	22	6	3	1.58	5.29	3	45.04	35	1	G6
TP11	0.2	Fill	NP	NP	1	0.26	16 18	NP	91.44	75	4	sub G7
TP12	0.3	Hillwash	NP	NP	1	0.93	7.58	NP	69.91	32	1	sub G6
					Raiger Park – Parcel 1							
TP1-2	0.5	Hillwash	21	3	2	2.39	6.09	1	18.31	10	0	G6
TP1-4	0.5	Hillwash	17	5	2	0.85	8.55	4	74.91	34	2	sub G6
TP7	0.2	Hillwash	NP	NP	1	0.82	9.96	NP	73.87	40	2	sub G6
TP3-1	0.5	Tailings	NP	NP	1	0.96	6.47	NP	65.95	37	1	sub G6

KEY

LL: Liquid limit
PI (425): Plasticity index of sample fines portion
CBR: California Bearing Ratio
LS: Linear shrinkage
GM: Grading modulus
NMC (%): Natural moisture content
PI (whole): Plasticity index of whole sample
TRH14: Road Building Material classification

425 (%): Percent passing 425 µm sieve
075 (%): Percent passing 75 µm sieve
002 (%): Percent passing 2µm sieve
Cond (S/m): Electrical conductivity of soil
pH: Acidity / Alkalinity index of soil
NP: Non-plastic
*: Tentative Value subject to CBR verification

TABLE 2: DEPTH AND INFERRED THICKNESSES OF THE SOILS / ROCKS UNDERLYING THE SITE

Hole Number	Depth of Test Hole (m)	Depth (m) to Base of Horizon								Depth to top of Rock (m)	Depth to Ground Water (m)
		Fill / Mine Tailings	Aeolian / Hillwash	Alluvium / Gullywash	Lacustrine	Pebble Marker	Ferricrete	Residual Quartzite	Reworked Lava		
					REIGER PARK PARCEL 1						
TP1-01	0.4		0.4							0.3	NE
TP1-02	0.5		0.2							0.2	NE
TP1-03	1.5		0.9			1.0		1.5		1.5	NE
TP1-04	1.0		0.7					1.0		1.0	NE
					REIGER PARK PARCEL 2						
TP2-01	0.8		0.1					0.8		0.8	NE
TP2-02	1.2		0.5			0.6		0.9[2]		0.9	NE
TP2-03	1.0		0.2					1.0		1.0	NE
TP2-04	1.0		0.6			0.7		1.0		1.0	NE
TP2-05	1.3		0.7			0.9		1.3		1.3	NE
TP2-06	1.4		0.7			0.9		1.4		1.4	NE
TP2-07	1.0		0.7					0.8[12]		0.8	NE
TP2-08	0.8		0.6							0.8	NE
TP2-09	1.2		0.6					0.8		0.8	NE
TP2-10	1.5		0.2					1.5		1.5	NE
TP2-11	1.6		0.3			0.5		1.1		1.1	NE
TP2-12	0.4		0.1							0.1	NE
TP2-13	1.3		0.6			0.8				0.8	NE
TP2-14	1.0		0.2			0.3		1.0[2]		1.0	NE
TP2-15	1.5		0.2			0.5				0.5	NE
TP2-16	0.3		0.1							0.1	NE
TP2-17	1.1		0.2					0.5		0.5	NE
TP2-18	0.2		0.1							0.1	NE
TP2-19	0.4		0.1							0.1	NE
TP2-20	0.2							0.2		0.2	NE
TP2-21	1.3		0.6			0.7				0.7	NE
TP2-22	0.3		0.1							0.1	NE
TP2-23	1.3		0.4			0.5				0.5	NE
TP2-24	0.3		0.1							0.1	NE
TP2-25	0.3		0.1							0.1	NE
TP2-26	0.1									0.1	NE
TP2-27	0.2		0.1							0.1	NE
TP2-28	2.0		0.3					1.2		1.2	NE
					REIGER PARK PARCEL 3						
TP3-1	1.1	0.7	0.8					1.1		1.1	NE
TP3-2	0.3		0.1					0.3		0.3	NE
TP3-3	0.7		0.1							0.1	NE
TP3-4	1.0		0.2							0.2	NE
TP3-5	0.5		0.3							0.3	NE
					REIGER PARK PARCEL 5						
TP01	1.3		0.8			1.1		1.1		1.3	NE
TP02	0.9		0.1					0.9		0.9	NE
TP03	0.5		0.3					0.5		0.5?	NE
TP04	1.0		0.4					1.0		1.0	NE
TP05	0.8		0.3			0.5		0.8		0.8	NE
TP06	1.2		0.5			0.6		1.2		1.2	NE
TP07	1.0		0.4					1.0		1.0	NE
TP08	1.0		0.8					0.9		0.9	NE
TP09	1.5		0.8			1.1		1.5		1.5	NE
TP10	0.4		0.2					0.4		0.4	NE

Hole Number	Depth of Test Hole (m)	Depth (m) to Base of Horizon								Depth to top of Rock (m)	Depth to Ground Water (m)
		Fill / Mine Tailings	Aeolian / Hillwash	Alluvium / Gullywash	Lacustrine	Pebble Marker	Ferricrete	Residual Quartzite	Reworked Lava		
TP11	1.4	0.3	0.6			0.7		1.4		1.4	NE
TP12	2.0		0.6					2.0+		NP	NE
TP13	1.0		0.4			0.6		1.0		1.0	NE
					REIGER PARK PARCELS 6 - 8						
TP01	1.9		0.8			1.0		1.9		1.9	NE
TP02	1.9	0.1	1.45				1.9	1.9+		NP	NE
TP03	1.25		0.15			0.9		1.25		1.25	NE
TP05	2.1		1.8				2.1+			NP	NE
TP06	1.2		0.3					1.2		1.2	NE
TP08	1.85	1.3	1.85				1.85+			NP	NE
TP11	1.2	0.15	0.5					1.2		1.2	NE
TP12	1.5		1.0					1.5+		NP	NE
TP13	2.3	0.2	0.6	2.3						NP	NE
TP14	1.65	0.4	1.30.7	1.65[1]						NP	NE
TP15	1.8		1.5				1.8+			NP	NE
TP16	1.75	0.25	1.25				1.75+			NP	NE
TP17	2.6	0.5	1.8	2.6[1]						NP	NE
TP18	1.7		1.6					1.7+		NP	NE
TP19	2.5	0.4		2.5+						NP	NE
TP20	2.0	1.2	2.0+							NP	NE
TP21	2.2		2.2+							NP	NE
TP22	1.2		0.7					1.2		1.2	NE
TP23	2.6		0.5	2.0					2.6+	NP	NE
TP24	1.0		0.4				1.0+			NP	NE
TP28	2.3			0.45		0.5	1.4		2.3	NP	NE
TP29	2.2				2.2+					NP	NE
TP30	2.4	0.35			2.4+					NP	NE
TP31	1.6	0.2	1.6[1]				1.6+			NP	NE
TP32	1.3	0.5						1.3		1.3	NE
TP37	2.4	0.1	1.5[1]				2.4+	2.4		NP	NE
TP38	1.8	0.1	1.35				1.8+			NP	NE
TP39	2.4		.2.4[1]				2.4+			NP	NE
TP41	1.9		1.35				1.9+			NP	NE
TP42	2.3		1.8					2.3+		NP	NE
TP45	1.8		1.8[1]+							NP	NE
TP46	1.8		1.6[1]				1.8+			NP	NE
TP47	2.2		1.7				2.2+			NP	NE
TP48	0.9		0.8[1]					0.9		0.9	NE
TP49	1.7	0.4	1.7[1]				1.7+			NP	NE
TP50	1.6	0.3	1.6				1.6+			NP	NE

Notes:
1: Ferruginous
2: Conglomerate
NE: Not Encountered
NP: Not Proven

TABLE 3: APPROPRIATE FOUNDATION SOLUTIONS FOR SINGLE STOREY STRUCTURES OF MASONRY CONSTRUCTION

Table 6.4: Appropriate Foundation Solutions for Each Geotechnical Zone								
Available Foundation Solutions		Geotechnical Site Class Zone						
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5[5]	Zone 6[5]	Zone 7
Normal (Strip footing / slab on the ground)		E	E	E	E	E	E	E
Structural Solutions	Modified Normal (Reinforced Strip Footing)[3]	E	E	E	T	E	?	E
	Stiffened Strip Footings / Cellular Raft	T	T	E	T	E	?	T
	Piled / Pier Foundation	T	T	E	E	T	E	E
Geotechnical Solutions	Compaction of Soil Below Individual Footings	E	E	E	E	E	E	E
	Deep Strip Foundations (Excavated to, *but not through* the competent ferricrete where present)	E	E	E	T	T	?	E
	Engineered Soil Raft[4] *(Soil Mattress)*	T	T	E	T	T	?	T

KEY	
T	Foundation solution recommended
E	Foundation solution not recommended or not appropriate
1	Where both yielding & unyielding materials occur (rock & soil), the foundation design should be submitted to the Geotechnical Engineer for review and approval.
2	All foundation solutions should employ appropriate services / draining measures (Appendix D).
3	Only where the site classifies as C1.
4	With foundation/ masonry reinforcement and possible structure articulation.
5	Would need further site-specific and detailed investigation.

Table 4: Excavation Classification at each Exploratory Position according to SABS 1200D: Earthworks

Test Pit Number	Depth of Test Pit	Depth (m) to Base of		Boulder Excavation	Hard Excavation from (m)	Depth to Ground Water (m)	Material at Base of the Test Pit
		Soft Excavation	Intermediate Excavation				
				REIGER PARK PARCEL 1			
TP1-01	0.4	0.3	0.4	-	0.4	NE	Soft Rock QUARTZITE
TP1-02	0.5	0.2	0.5	-	0.5	NE	Soft Rock QUARTZITE
TP1-03	1.5	1.0	1.5	-	1.5	NE	Very Soft Rock QUARTZITE
TP1-04	1.0	0.7	1.0	-	1.0	NE	Very Soft Rock QUARTZITE
				REIGER PARK PARCEL 2			
TP2-01	0.8	0.1	0.8	-	0.8	NE	Soft Rock QUARTZITE
TP2-02	1.2	0.9	1.2	-	1.2	NE	Medium Hard Rock QUARTZITE
TP2-03	1.0	0.2	1.0	-	1.0	NE	Very Soft Rock QUARTZITE
TP2-04	1.0	0.7	1.0	-	1.0	NE	Soft Rock QUARTZITE
TP2-05	1.3	1.3	NE	-	1.3	NE	Soft Rock QUARTZITE
TP2-06	1.4	0.9	1.4	-	1.4	NE	Very Soft Rock QUARTZITE
TP2-07	1.0	0.8	1.0	-	1.0	NE	Soft Rock CONGLOMERATE
TP2-08	0.8	0.6	0.8	-	0.8	NE	Soft Rock CONGLOMERATE
TP2-09	1.2	0.8	1.2	-	1.2	NE	Soft Rock QUARTZITE
TP2-10	1.5	0.2	1.5	YES	1.5	NE	Very Soft Rock QUARTZITE
TP2-11	1.6	1.1	1.6	YES	1.6	NE	Very Soft Rock QUARTZITE
TP2-12	0.4	0.1	0.4	-	0.4	NE	Soft Rock QUARTZITE
TP2-13	1.3	0.8	1.3	-	1.3	NE	Soft Rock QUARTZITE
TP2-14	1.0	0.3	1.0	-	1.0	NE	Very Soft Rock QUARTZITE / CONGLOMERATE
TP2-15	1.5	0.5	1.5	-	0.5	NE	Very Soft Rock QUARTZITE
TP2-16	0.3	0.1	0.3	-	0.3	NE	Soft Rock QUARTZITE
TP2-17	1.1	0.5	1.1	-	1.1	NE	Soft Rock QUARTZITE
TP2-18	0.2	0.1	0.2	-	0.2	NE	Soft Rock QUARTZITE
TP2-19	0.4	0.1	0.4	-	0.4	NE	Soft Rock QUARTZITE
TP2-20	0.2	0.2	NE	-	0.2	NE	Soft Rock QUARTZITE
TP2-21	1.3	0.7	1.3	-	1.3	NE	Soft Rock QUARTZITE
TP2-22	0.3	0.1	0.3	-	0.3	NE	Soft Rock QUARTZITE
TP2-23	1.3	0.5	1.3	-	1.3	NE	Soft Rock QUARTZITE
TP2-24	0.3	0.1	0.3	-	0.3	NE	Soft Rock QUARTZITE
TP2-25	0.3	0.1	0.3	-	0.3	NE	Soft Rock QUARTZITE
TP2-26	0.1	NE	0.1	-	0.1	NE	Soft Rock QUARTZITE
TP2-27	0.2	0.1	0.2	-	0.2	NE	Soft Rock QUARTZITE
TP2-28	2.0	1.2	2.0	-	2.0	NE	Very Soft Rock QUARTZITE
				REIGER PARK PARCEL 3			
TP3-1	1.1	0.8	1.1	-	1.1	NE	Soft Rock QUARTZITE
TP3-2	0.3	0.1	0.3	-	0.3	NE	Soft Rock QUARTZITE
TP3-3	0.7	0.1	0.7	-	0.7	NE	Soft Rock QUARTZITE
TP3-4	1.0	0.2	1.0	-	1.0	NE	Soft Rock QUARTZITE
TP3-5	0.5	0.3	0.5	-	0.5	NE	Soft Rock QUARTZITE
				REIGER PARK PARCEL 5			
TP01	1.3	1.1	1.3	-	1.3	NE	Very Soft Rock QUARTZITE
TP02	0.9	0.1	0.9	-	0.9	NE	Very Soft Rock QUARTZITE
TP03	0.5	0.3	0.5	-	0.5?	NE	Very Soft Rock QUARTZITE
TP04	1.0	0.4	1.0	-	1.0	NE	Very Soft Rock QUARTZITE
TP05	0.8	0.8	NE	YES	0.8	NE	Very Soft Rock QUARTZITE
TP06	1.2	0.8	1.2	-	1.2	NE	Very Soft Rock QUARTZITE
TP07	1.0	1.0	NE	-	1.0	NE	Very Soft Rock QUARTZITE
TP08	1.0	0.9	1.0	-	1.0	NE	Very Soft Rock QUARTZITE
TP09	1.5	1.5	NE	YES	1.5	NE	Very Soft Rock QUARTZITE
TP10	0.4	0.2	0.4	-	0.4	NE	Very Soft Rock QUARTZITE

Test Pit Number	Depth of Test Pit	Depth (m) to Base of		Boulder Excavation	Hard Excavation from (m)	Depth to Ground Water (m)	Material at Base of the Test Pit
		Soft Excavation	Intermediate Excavation				
TP11	1.4	0.7	1.4	-	1.4	NE	Very Soft Rock QUARTZITE
TP12	2.0	2.0	2.0+	YES	NP	NE	Very Dense RESIDUAL QUARTZITE
TP13	1.0	0.6	1.0	-	1.0	NE	Very Soft Rock QUARTZITE
				REIGER PARK PARCELS 6 - 8			
TP01	1.9	1.9	NE	YES	1.9	NE	Soft Rock QUARTZITE
TP02	1.9	1.9	1.9+	-	NP	NE	Dense RESIDUAL QUARTZITE
TP03	1.25	1.25	NE	-	1.25	NE	Very Soft Rock QUARTZITE
TP05	2.1	2.1	2.1+	YES	NP	NE	Dense FERRICRETE
TP06	1.2	1.2	NE	-	1.2	NE	Very Soft Rock QUARTZITE
TP08	1.85	1.85	1.85+	-	NP	NE	Very Dense FERRICRETE
TP11	1.2	1.2	NE	YES	1.2	NE	Very Soft Rock QUARTZITE
TP12	1.5	1.0	1.5+	-	NP	NE	Very Dense REWORKED RESIDUAL QUARTZITE
TP13	2.3	2.3+	NE	-	NP	NE	Soft ALLUVIUM
TP14	1.65	1.35	1.65+	-	NP	NE	Very Dense TRANSPORTED SOILS
TP15	1.8	1.5	1.8+	-	NP	NE	Very Dense FERRICRETE
TP16	1.75	1.75	1.75+	-	NP	NE	Very Dense FERRICRETE
TP17	2.6	2.6+	NE	-	NP	NE	Soft FERRUGINISED TRANSPORTED SOILS
TP18	1.7	1.7	1.7+	-	NP	NE	Very Dense REWORKED RESIDUAL QUARTZITE
TP19	2.5	2.5+	NE	-	NP	NE	Soft ALLUVIUM
TP20	2.0	2.0+	NE	-	NP	NE	Loose AEOLIAN
TP21	2.2	2.2+	NE	-	NP	NE	Medium Dense AEOLIAN
TP22	1.2	2.2	2.2+	YES	NP	NE	Very Soft Rock QUARTZITE
TP23	2.6	2.6+	NE	YES	NP	NE	Soft Reworked RESIDUAL LAVA
TP24	1.0	1.0	1.0+	-	NP	NE	Very Dense FERRICRETE
TP28	2.3	2.3+	NE	-	NP	NE	Firm Reworked RESIDUAL LAVA
TP29	2.2	2.2+	NE	-	NP	NE	Soft LACUSTRINE
TP30	2.4	2.4+	NE	-	NP	NE	Soft LACUSTRINE
TP31	1.6	1.6	1.6+	-	NP	NE	Very Dense FERRICRETE
TP32	1.3	1.3	NE	YES	1.3	NE	Very Soft Rock QUARTZITE
TP37	2.4	2.4	2.4+	-	NP	NE	Very Dense FERRICRETE
TP38	1.8	1.8	1.8+	YES	NP	NE	Very Dense FERRICRETE
TP39	2.4	2.4	2.4+	-	NP	NE	Very Dense FERRICRETE
TP41	1.9	1.9	1.9+	-	NP	NE	Very Dense FERRICRETE
TP42	2.3	2.3	2.3+	-	NP	NE	Dense REWORKED RESIDUAL QUARTZITE
TP45	1.8	1.8+	NE	-	NP	NE	Soft ALLUVIUM
TP46	1.8	1.8	1.8+	YES	NP	NE	Very Dense FERRICRETE
TP47	2.2	2.2	2.2+	-	NP	NE	Very Dense FERRICRETE
TP48	0.9	0.9	NE	YES	0.9	NE	Soft Rock QUARTZITE
TP49	1.7	1.7	1.7+	-	NP	NE	Very Dense FERRICRETE
TP50	1.6	1.6	1.6+	-	NP	NE	Very Dense FERRICRETE

Notes:
NE: Not Encountered
NP: Not Proven

APPENDICES

APPENDIX A
TEST PIT SOIL PROFILES

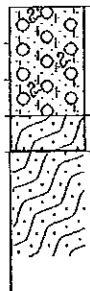
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP1-01
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with scattered quartzite gravel and abundant roots.

HILLWASH

0.30 Orange blotched white highly weathered closely jointed soft rock.

QUARTZITE

0.40 Refusal on soft rock QUARTZITE.

NOTES

1) Refusal on the above.

2) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP1-01

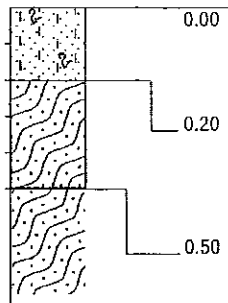
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP1-02
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.20 Orange blotched white highly weathered closely jointed soft rock.

QUARTZITE

0.50 Refusal on soft rock QUARTZITE.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

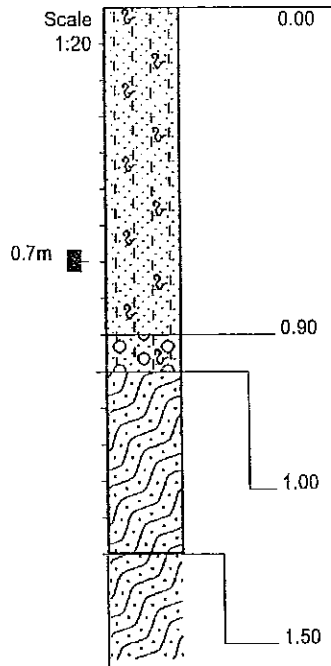
HOLE No: TP1-02

INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP1-03
Sheet 1 of 1

JOB NUMBER:



0.00 Very moist becoming dry below 0.6m reddish-brown loose intact silty sand with roots.

HILLWASH

0.90 Closely packed fine angular quartzite gravel supported in a matrix as above, medium dense friable..

PEBBLE MARKER

1.00 White blotched orange and yellow completely weathered closely jointed very soft rock.

QUARTZITE

1.50 Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

2) Undisturbed sample taken at 0.7m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP1-03

D048 Stuart Morgan

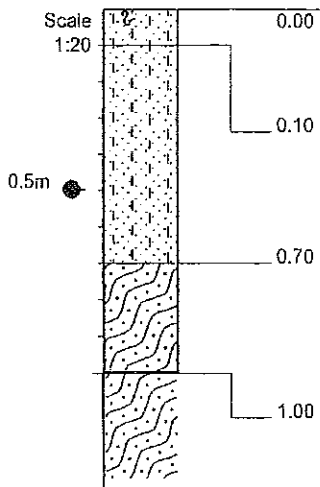
dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP1-04
Sheet 1 of 1

JOB NUMBER:



Very moist dark brown loose intact silty sand with roots.

HILLWASH

Moist yellow brown loose intact silty sand.

HILLWASH

Pale red blotched white and yellow completely weathered widely jointed very soft rock.

QUARTZITE

Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

2) Disturbed sample taken at 0.5m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP1-04

D04B Stuart Morgan

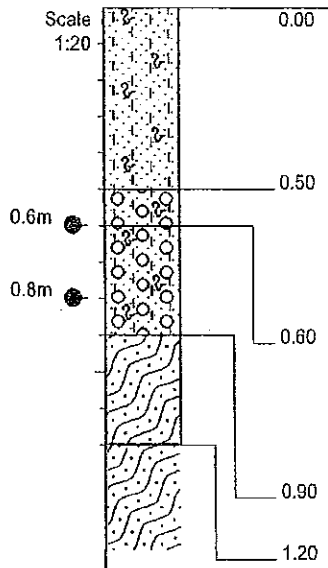
dot PLOT 5004 J&W

INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-02
Sheet 1 of 1

JOB NUMBER:



0.00 — Very moist brown loose intact silty sand with roots to 0.1m.

HILLWASH

0.50 —

Closely packed medium ands fine sub-rounded quartz gravel, clast-supported with a matrix as above, loose friable.

PEBBLE MARKER

0.60 —

Closely packed medium and fine sub-rounded quartz gravel, clast-supported with a dry orange brown silty sand matrix, contains scattered fine roots, dense friable.

RESIDUAL CONGLOMERATE

0.90 —

Orange blotched white highly weathered massive medium hard rock QUARTZITE.

1.20 —

Refusal on the above.

NOTES

1) No water encountered.

2) Disturbed samples taken at 0.6m and 0.8m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-02

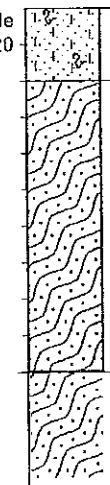
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-03
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.20 Orange blotched white and yellow highly to completely weathered closely jointed and thinly bedded very soft rock.

QUARTZITE

1.00 Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

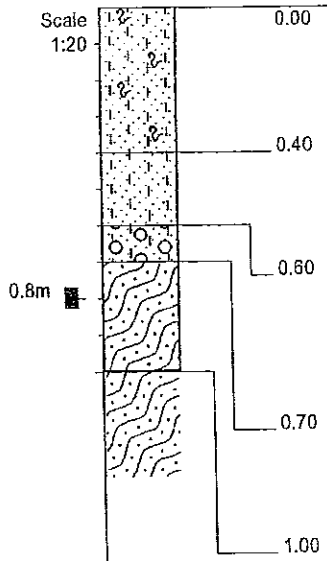
HOLE No: TP2-03

INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-04
Sheet 1 of 1

JOB NUMBER:



0.00 — Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.40 — Slightly moist orange brown loose intact silty sand.

HILLWASH

0.60 — As above with scattered medium and fine sub-rounded and sub-angular quartz gravel, medium dense friable.

PEBBLE MARKER

0.70 — White blotched orange completely weathered closely jointed very soft to soft rock.

QUARTZITE.

1.00 — Refusal on the above.

NOTES

1) No water encountered.

2) Undisturbed sample taken at 0.8m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-04

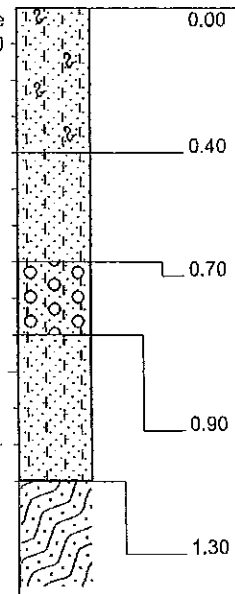
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-05
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist orange brown loose intact silty sand with roots to 0.1m.

HILLWASH

0.40 Dry orange brown medium dense intact silty sand.

HILLWASH

0.70 Closely packed fine sub-rounded and sub-angular quartz gravel, clast-supported with a matrix as above, loose friable.

PEBBLE MARKER

0.90 Slightly moist orange brown blotched white and orange relict jointed silty sand.

RESIDUAL QUARTZITE

1.30 Refusal on soft rock QUARTZITE.

NOTES

1) No water encountered.

2) Disturbed sample taken at 1.2m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER-1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-05

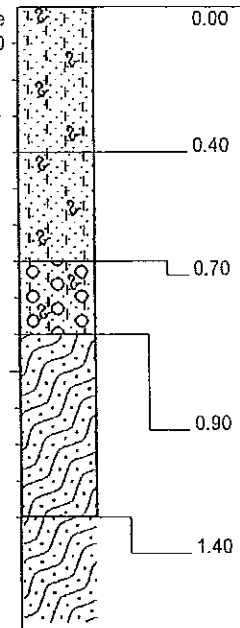
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-06
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.40 Moist orange brown loose intact silty sand with scattered fine roots.

HILLWASH

0.70 As above with abundant loosely packed coarse medium and fine sub-rounded and sub-angular quartz and quartzite gravel, matrix supported, medium dense friable.

PEBBLE MARKER

0.90 White blotched orange completely weathered closely jointed very soft rock.

QUARTZITE

1.40 Refusal on the above.

NOTES

1) No water encountered.

2) Undisturbed sample taken at 0.3m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-06

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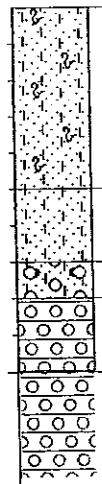
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-07
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist yellow brown loose intact silty sand with roots.

HILLWASH

0.50

Dry yellow brown medium dense intact silty sand.

HILLWASH

0.70

Dry yellow brown mottled orange dense friable silty sand with abundant medium and fine ferruginisedangular quartzite gravel.

Slightly ferruginised RESIDUAL QUARTZITE

0.80

White blotched orange highly weathered closely jointed soft rock.

CONGLOMERATE

1.00

Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-07

D04B Stuart Morgan

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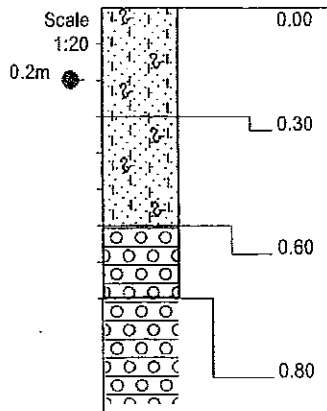
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-08
Sheet 1 of 1

JOB NUMBER:



0.00 Very moist dark grey brown loose intact silty sand with roots.

HILLWASH

0.30 Very moist yellow brown loose intact silty sand with scattered roots.

HILLWASH

0.60 White blotched orange highly weathered closely jointed soft rock.

CONGLOMERATE

0.80 Refusal on the above.

NOTES

1) No water encountered.

2) Disturbed sample taken at 0.2m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-08

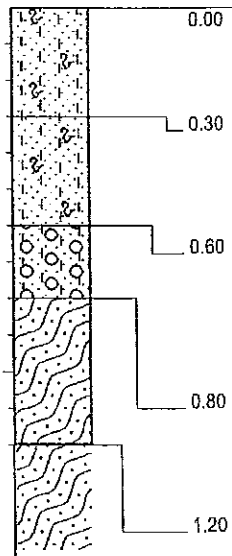
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-09
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark grey brown loose intact silty sand with roots.

HILLWASH

0.30 Very moist orange brown loose intact silty sand with scattered roots.

HILLWASH

0.60 Moist orange brown blotched orange medium dense friable silty sand with numerous medium and fine angular quartzite gravel.

Reworked RESIDUAL QUARTZITE

0.80 White blotched orange highly weathered closely jointed soft rock.

QUARTZITE

1.20 Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-09

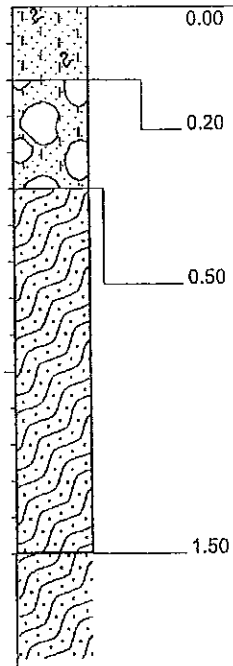
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-10
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.20 Moist orange blotched dark brown closely jointed very soft rock quartzite with joint infill from above and zones of medium dense friable silty sand.

RESIDUAL QUARTZITE

0.50 Orange blotched white completely weathered very closely jointed very soft rock.

QUARTZITE

1.50 Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

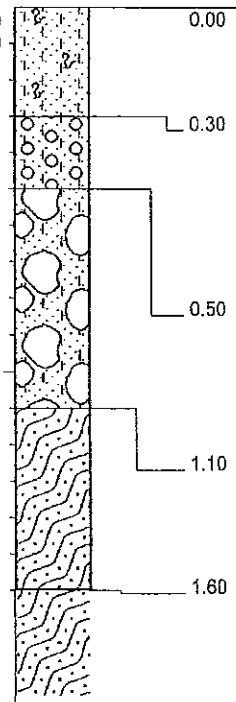
HOLE No: TP2-10

INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-11
Sheet 1 of 1

JOB NUMBER:



Very moist dark reddish brown loose intact silty sand with roots.

HILLWASH

Dry reddish brown medium dense friable silty sand with abundant loosely packed coarse medium and fine sub-rounded and sub-angular quartz and quartzite gravel, clast-supported.

PEBBLE MARKER

Dry orange blotched reddish brown and white dense relict jointed silty sand with pockets of highly weathered very soft rock.

RESIDUAL QUARTZITE

White blotched orange highly weathered closely jointed very soft rock.

QUARTZITE

Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-11

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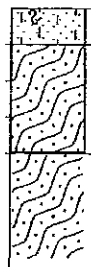
REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-12
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.10 White blotched and pale red highly weathered closely jointed soft rock.

QUARTZITE

0.40 Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

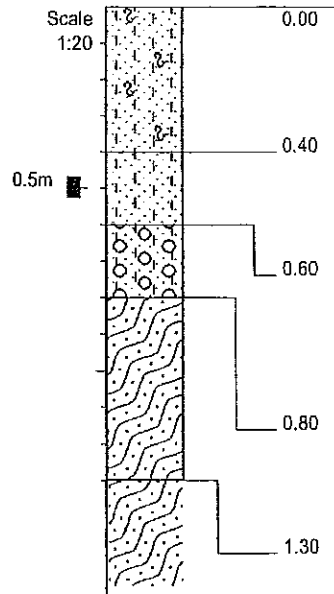
HOLE No: TP2-12

INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-13
Sheet 1 of 1

JOB NUMBER:



0.00 Very moist dark orange brown loose intact silty sand with roots.

HILLWASH

0.40

Dry orange brown medium dense intact silty sand.

HILLWASH

0.60

Closely packed medium and fine sub-rounded quartz gravel, clast-supported with a matrix as above, medium dense friable.

PEBBLE MARKER

0.80

White blotched orange highly weathered closely jointed soft rock.

QUARTZITE

1.30

Refusal on the above.

NOTES

1) No water encountered.

2) Undisturbed sample taken at 0.5m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-13

D04B Stuart Morgan

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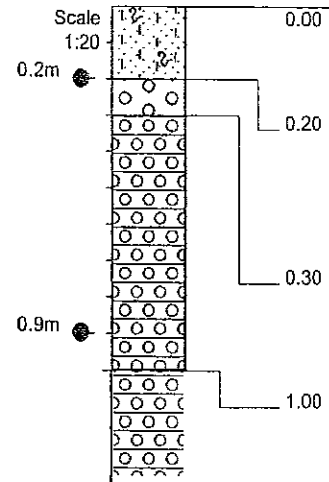
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-14
Sheet 1 of 1

JOB NUMBER:



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.20 As above with abundant loosely packed medium and fine sub-rounded quartz gravel, matrix supported.

PEBBLE MARKER

0.30 White blotched orange completely weathered closely jointed very soft rock.

QUARTZITE with CONGLOMERATE bands

1.00 Refusal on the above.

NOTES

1) No water encountered.

2) Disturbed samples taken at 0.2m and 0.9m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-14

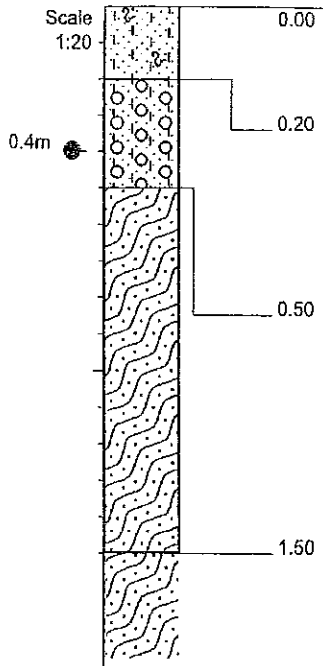
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-15
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark orange brown loose intact silty sand with roots.

HILLWASH

0.20 Slightly moist dark brown blotched orange loose friable silty sand with abundant loosely packed coarse medium and fine sub-rounded and sub-angular quartzite and quartz gravel, clast-supported.

Reworked RESIDUAL QUARTZITE and PEBBLE MARKER

0.50 Orange blotched white highly weathered very closely jointed and thinly bedded very soft rock.

QUARTZITE

1.50 Refusal on the above.

NOTES

1) No water encountered.

2) Disturbed sample taken at 0.4m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-15

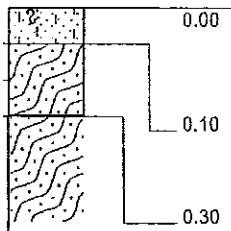
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-16
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.10 White blotched orange stained dark brown highly weathered closely jointed thinly bedded soft rock QUARTZITE.

0.30 Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-16

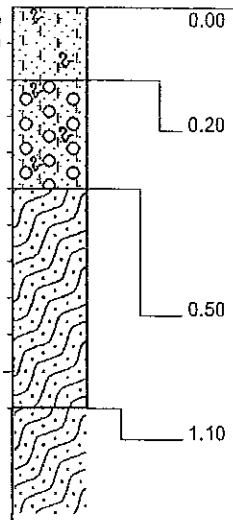
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-17
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.20 Dry dark brown loose friable silty sand with abundant loosely packed coarse medium and fine angular, sub-angular and sub-rounded quartz and quartzite gravel, clast-supported with scattered fine roots.

Reworked RESIDUAL QUARTZITE

0.50 White blotched orange and yellow highly weathered closely jointed soft rock.

QUARTZITE

1.10 Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-17

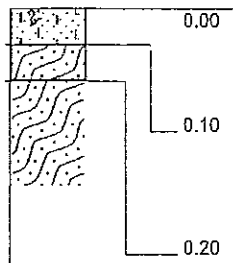
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-18
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.10 White blotched orange and yellow highly weathered closely jointed soft rock.

QUARTZITE

0.20 Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Beli 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-18

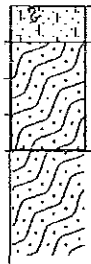
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-19
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00	Very moist dark brown loose intact silty sand with roots.
	HILLWASH
0.10	White blotched yellow and orange stained dark brown highly weathered closely jointed and thinly bedded soft rock QUARTZITE.
0.40	Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-19

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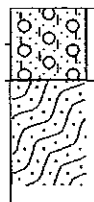
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-20
Sheet 1 of 1

JOB NUMBER: .

Scale 1:20



0.00 Very moist dark brown blotched orange medium dense jointed and friable closely packed coarse medium and fine sub-angular and angular quartzite gravel and slabs with a dark brown silty sand matrix, clast-supported.

RESIDUAL QUARTZITE

0.20 Refusal on soft rock QUARTZITE.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

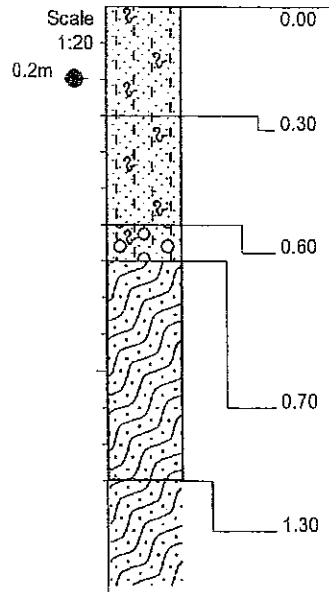
HOLE No: TP2-20

INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-21
Sheet 1 of 1

JOB NUMBER:



0.00 – 0.30: Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.30 – 0.60: Very moist yellow brown loose intact silty sand with scattered roots.

HILLWASH

0.60 – 0.70: As above with abundant loosely packed medium and fine sub-rounded quartz gravel, matrix supported.

PEBBLE MARKER

0.70 – 1.30: Pale red blotched orange and white highly weathered closely jointed soft rock.

QUARTZITE

1.30: Refusal on the above.

NOTES

1) No water encountered.

2) Disturbed sample taken at 0.2m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-21

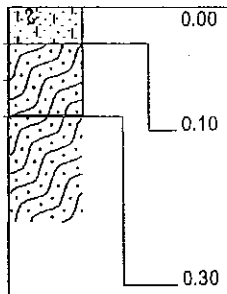
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-22
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.10 White blotched yellow and orange stained dark brown highly weathered closely jointed and thinly bedded soft rock.

QUARTZITE

0.30 Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-22

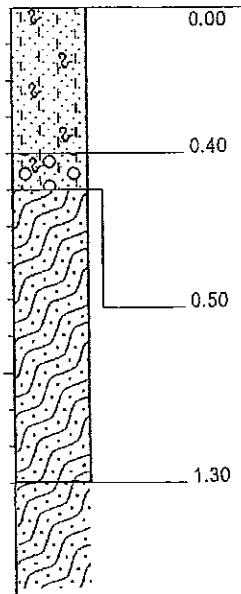
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-23
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark orange brown loose intact silty sand with roots.

HILLWASH

0.40

As above with abundant loosely packed medium and fine sub-rounded quartz gravel, matrix supported.

PEBBLE MARKER

0.50

Orange blotched white and pale red highly weathered closely jointed soft rock.

QUARTZITE

1.30

Refusal on the above.

NOTES

1) No water encountered.

2) Mine slime spill from pipeline at surface.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-23

D04B Stuart Morgan

dot.PLOT 5004 J&W

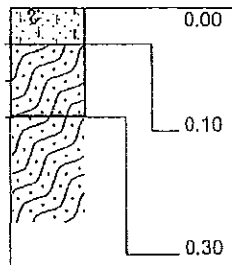
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-24
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.10 Orange blotched white and pale red highly weathered closely jointed soft rock.

QUARTZITE

0.30 Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-24

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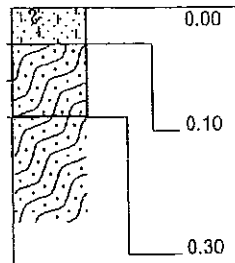
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-25
Sheet 1 of 1

JOB NUMBER:



Very moist dark brown loose intact silty sand with roots.

HILLWASH

Orange blotched white and pale red highly weathered closely jointed soft rock.

QUARTZITE

Refusal on the above.

NOTES

1) No water encountered.

2) Disturbed sample taken at 0.2m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-25

INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-26
Sheet 1 of 1

JOB NUMBER:

Scale 1:20

0.00

White blotched yellow and orange stained dark brown highly weathered closely jointed and thinly bedded soft rock.

QUARTZITE

0.10

Refusal on the above.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-26

D04B Stuart Morgan

dot.PLOT 5004 J&W

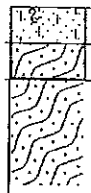
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-27
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.10

Orange blotched white and pale red highly weathered closely jointed soft rock.

QUARTZITE

0.20

Refusal on the above.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-27

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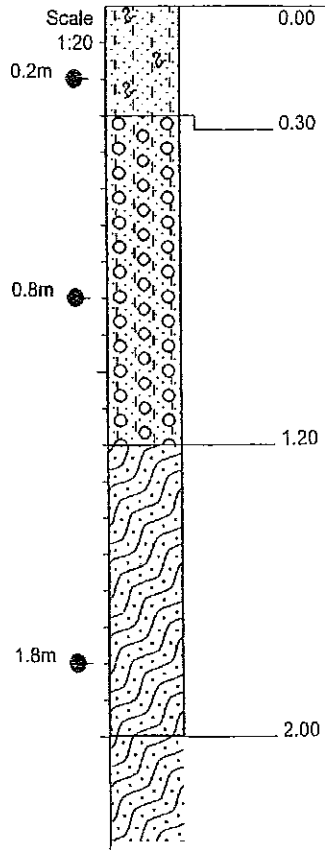
INTRACONSULT

REIGER PARK [PARCEL 1] R/85-IR
Urban Dynamics

HOLE No: TP2-28
Sheet 1 of 1

JOB NUMBER:



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.30

Dry orange brown blotched orange and white loose relict jointed friable silty sand with abundant closely packed sub-rounded and angular quartzite gravel, clast-supported.

RESIDUAL QUARTZITE

1.20

Orange blotched white and yellow highly weathered closely jointed and thinly bedded very soft rock.

QUARTZITE

2.00

Refusal on the above.

NOTES

1) No water encountered.

2) Disturbed samples taken from 0.2m; 0.8m and 1.8m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2-28

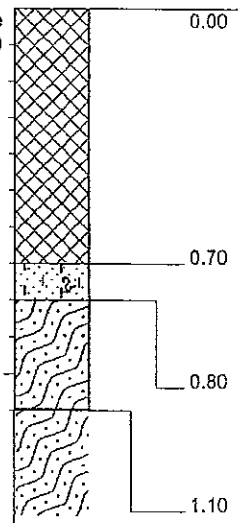
INTRACONSULT

REIGER PARK [PARCEL 3] 760/87 IR
Urban Dynamics

HOLE No: TP3-1
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 — Very moist orange medium dense intact silty sand with scattered medium and fine sub-angular quartzite gravel overlying dry grey brown speckled orange and grey medium dense intact silty sand.

MINE SLIMES and LAYERED FILL

0.70 — Dry dark brown loose intact silty sand with scattered roots.

HILLWASH

0.80 — White blotched orange and dusky red completely weathered medium jointed soft rock.

QUARTZITE

1.10 — Refusal on soft rock QUARTZITE.

NOTES

1) No water encountered.

2) Disturbed sample taken at 0.5m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE . 06/11/07 17:34
TEXT . ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP3-1

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INTRACONSULT

REIGER PARK [PARCEL 3] 760/87 IR
Urban Dynamics

HOLE No: TP3-2
Sheet 1 of 1

JOB NUMBER:

Scale 1:20

0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.10 Pale red blotched orange and white completely weathered closely jointed soft rock.

QUARTZITE

0.30 Refusal on soft rock QUARTZITE.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP3-2

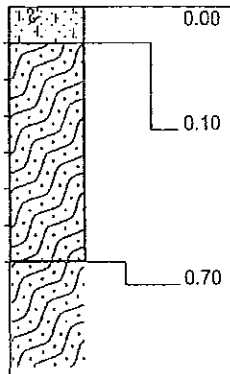
INTRACONSULT

REIGER PARK [PARCEL 3] 760/87 IR
Urban Dynamics

HOLE No: TP3-3
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.10 Yellow blotched white highly weathered closely jointed thinly bedded soft to medium hard rock.

QUARTZITE

0.70 Refusal on soft rock QUARTZITE.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP3-3

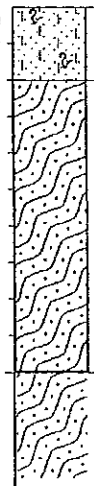
INTRACONSULT

REIGER PARK [PARCEL 3] 760/87 IR
Urban Dynamics

HOLE No: TP3-4
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.20 Orange blotched white highly weathered closely jointed soft rock QUARTZITE.

1.00 Refusal on soft rock QUARTZITE.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 05/11/07 21:12
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP3-4

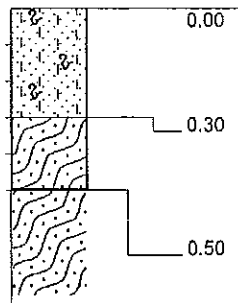
INTRACONSULT

REIGER PARK [PARCEL 3] 760/87 IR
Urban Dynamics

HOLE No: TP3-5
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.30 Yellow blotched white highly weathered closely jointed thinly bedded soft rock.

QUARTZITE

0.50 Refusal on soft rock QUARTZITE.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

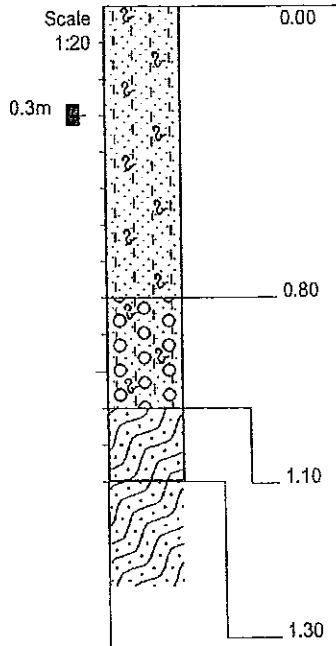
HOLE No: TP3-5

INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP01
Sheet 1 of 1

JOB NUMBER:



0.00 Moist becoming dry below 0.6m reddish-brown loose intact silty medium and fine sand with scattered fine roots.

HILLWASH

0.80 Loosely packed coarse medium and fine sub-round and sub-angular quartz and quartzite gravel and cobbles, clast-supported with silty sand as above, medium dense friable.

PEBBLE MARKER

1.10 Off-white blotched grey, orange and reddish-brown completely weathered closely jointed and thinly bedded very soft rock.

QUARTZITE

1.30 Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

2) Undisturbed sample taken at 0.3m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP01

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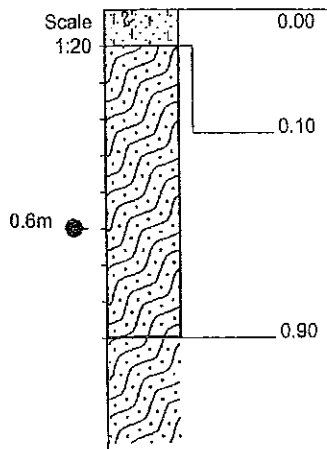
INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP02
Sheet 1 of 1

JOB NUMBER: .



0.00 Very moist dark brown loose intact silty medium and fine sand with roots.

HILLWASH

0.10 Reddish-orange blotched white and yellow completely weathered medium and closely jointed very soft rock.

QUARTZITE (joint infill to 0.4m)

0.90 Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

2) Disturbed sample taken at 0.6m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP02

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INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP03
Sheet 1 of 1

JOB NUMBER:

Scale 1:20

0.00 Very moist dark reddish-brown medium dense intact silty medium and fine sand with scattered fine roots.

HILLWASH

0.30

Reddish-orange blotched white and yellow completely weathered very closely jointed and thinly bedded very soft rock.

QUARTZITE

0.50

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP03

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INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP04
Sheet 1 of 1

JOB NUMBER:

Scale 1:20

0.00 Very moist dark reddish-brown loose intact silty medium and fine sand with roots.

HILLWASH

0.40 Orange blotched white completely weathered medium jointed very soft rock.

QUARTZITE

1.00 Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

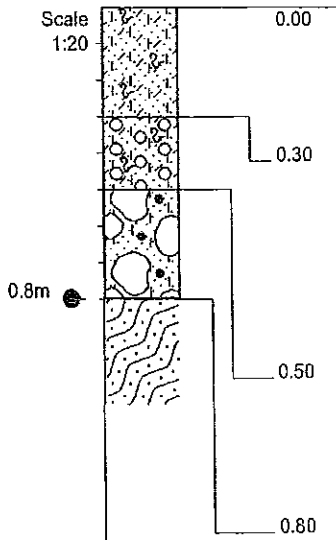
HOLE No: TP04

INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP05
Sheet 1 of 1

JOB NUMBER:



0.00 — Very moist orange brown medium dense intact clayey silty medium and fine sand with scattered roots.

HILLWASH

0.30 — Very moist yellowish-orange brown mottled reddish-orange dense weakly cemented clayey silty sand with abundant loosely packed medium and fine sub-round and sub-angular quartz and quartzite gravel, clast-supported in a matrix as above, medium dense friable.

PEBBLE MARKER

0.50 — Moist yellow brown mottled reddish-brown dense relict jointed silty sand with pockets of very soft rock quartzite.

Ferruginised reworked RESIDUAL QUARTZITE

0.80 — Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

2) Disturbed sample taken at 0.8m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP05

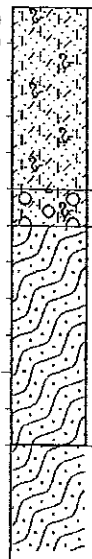
INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP06
Sheet 1 of 1

JOB NUMBER: .

Scale 1:20



0.00 Very moist dark reddish-brown becoming reddish-brown with depth medium dense intact slightly clayey silty sand with scattered roots to 0.1m.

HILLWASH

0.50

Closely packed medium and fine sub-round and sub-angular quartz and quartzite gravel, clast-supported in a matrix as above, medium dense friable.

PEBBLE MARKER

0.60

Reddish-orange blotched white completely weathered very closely jointed very soft rock.

QUARTZITE.

1.20

Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP06

D04B Stuart Morgan

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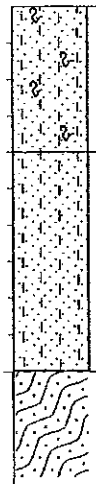
REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP07
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 — Very moist dark orange brown medium dense intact silty sand with roots to 0.1m.

HILLWASH

0.40 —

Moist reddish-orange blotched white and yellow dense jointed silty sand.

RESIDUAL QUARTZITE

1.00 —

Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

2) Disturbed sample taken at 0.2m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

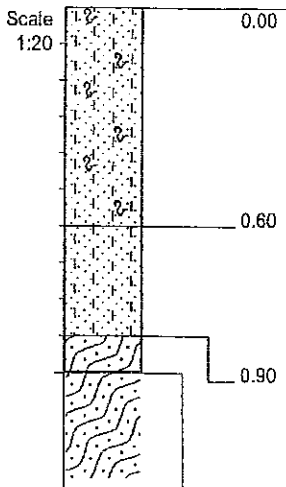
HOLE No: TP07

INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP08
Sheet 1 of 1

JOB NUMBER: .



0.00 Moist dark orange brown medium dense intact silty sand with roots.

HILLWASH

0.60 Dry yellow blotched reddish-orange and white dense very closely jointed and thinly bedded silty sand.

RESIDUAL QUARTZITE

0.90 Yellow blotched reddish-orange and white completely weathered very closely jointed and thinly bedded very soft rock.

QUARTZITE

1.00 Refusal on very soft rock QUARTZITE.

NOTES

1) Refusal on the above.

2) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP08

D04B Stuart Morgan

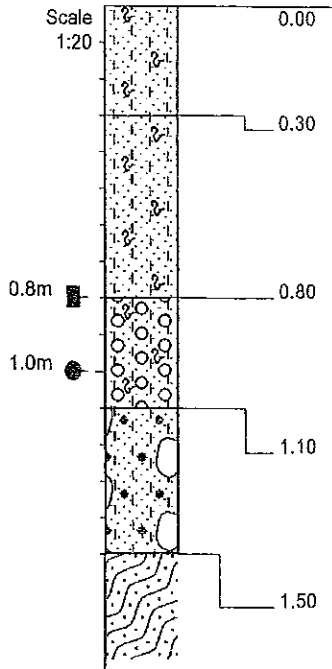
dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP09
Sheet 1 of 1

JOB NUMBER:



0.00 — Very moist dark reddish-brown loose intact silty sand with roots.

HILLWASH

0.30 — Dry orange brown loose intact silty sand with scattered roots.

HILLWASH

0.80 — Closely packed medium and fine sub-angular and angular quartz and quartzite gravel, clast-supported with a matrix as above, medium dense friable.

PEBBLE MARKER

1.10 — Dry orange blotched yellow and reddish-brown dense relict jointed silty sand with pockets of very soft rock quartzite.

Slightly ferruginised and reworked RESIDUAL QUARTZITE

1.50 — Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

2) Undisturbed sample taken at 0.8m.

3) Disturbed sample taken at 1.0m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP09

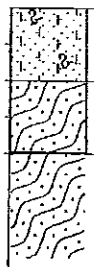
INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP10
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist dark brown loose intact silty sand with roots.

HILLWASH

0.20 Orange blotched off-white completely weathered very closely jointed very soft rock.

QUARTZITE.

0.40 Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP10

D04B Stuart Morgan

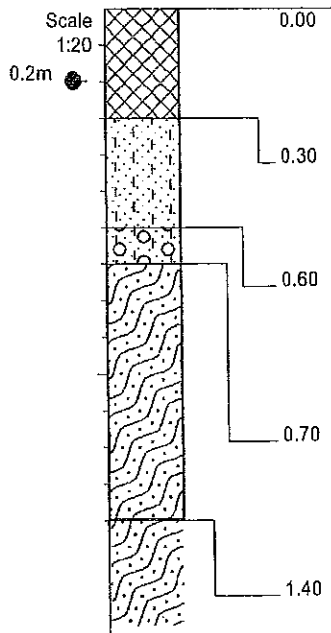
dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP11
Sheet 1 of 1

JOB NUMBER:



Moist dark brown becoming yellow brown medium dense layered silty sand; mine sand and topsoil

FILL

Dry orange brown dense intact silty sand.

HILLWASH

Loosely packed medium and fine sub-angular quartz and quartzite gravel supported in a matrix as above, dense friable.

PEBBLE MARKER

Slightly moist reddish-orange and white completely weathered very closely jointed and thinly bedded very dense to very soft rock.

QUARTZITE

Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

2) Disturbed sample taken at 0.2m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP11

D04B Stuart Morgan

dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP12
Sheet 1 of 1

JOB NUMBER: .

0.00

Very moist dark reddish-brown becoming reddish-brown with depth medium dense intact slightly clayey silty sand with scattered roots to 0.1m.

HILLWASH

0.60

Dry reddish-brown blotched yellow and white dense jointed and friable silty sand with abundant closely packed angular quartzite slabs and boulders, clast-supported and slightly ferruginised in places.

RESIDUAL QUARTZITE

2.00

Refusal on very dense RESIDUAL QUARTZITE.

NOTES

1) No water encountered.

2) Undisturbed sample taken at 0.3m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP12

D04B Stuart Morgan

dot.PLOT 5004 J&W

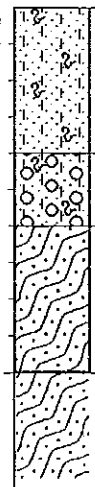
INTRACONSULT

REIGER PARK - PARCEL 5 - 396/85IR
Urban Dynamics

HOLE No: TP13
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist brown medium dense intact silty sand with roots.

HILLWASH

0.40 Closely packed medium and fine sub-angular quartz gravel supported in a matrix as above, medium dense friable.

PEBBLE MARKER

0.60 Reddish-orange blotched off-white completely weathered very closely jointed and thinly bedded very soft rock

QUARTZITE

1.00 Refusal on very soft rock QUARTZITE.

NOTES

1) No water encountered.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY : Phillip
PROFILED BY : B. Bolitho

TYPE SET BY : CSM
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m trench Hole Number: TP01
DATE : 10 September 2007
DATE : 10 September 2007

DATE : 06/11/07 17:34
TEXT : ..C:\PROFILES\REIGER~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP13

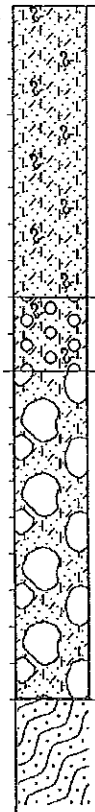
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP01
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Slightly moist, brownish-orange, medium dense becoming loose, porous, clayey silty sand with fine roots.

AEOLIAN

0.80 Abundant clast supported sub-rounded gravels in a sparse matrix as above.

PEBBLE MARKER

1.00 Slightly moist to moist, orange brown mottled orange and pale yellow, loose to medium dense, porous, clayey silty sand with highly weathered relict blocks of quartzite.

Reworked RESIDUAL QUARTZITE

1.90 End of hole abrupt refusal on highly weathered QUARTZITE.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number: TP01
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP01

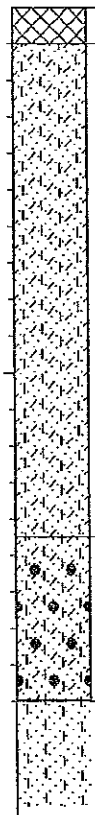
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP02
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Slightly moist, brown mottled pale yellow, soft, porous, silt.

FILL from tailings

0.10

Slightly moist to moist, reddish-brown, loose to medium dense, porous, clayey silty sand.

AEOLIAN

1.45

Slightly moist to moist, reddish-brown blotched orange brown, medium dense through dense, mass ferruginised, clayey silty sand.

FERRICRETE

1.90

End of hole practical refusal on light orange, dense, relict-structured, silty sand, RESIDUAL QUARTZITE.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number: TP02
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082~~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP02

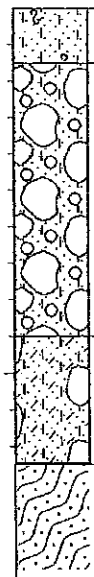
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP03
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Slightly moist to moist, dark brown, very loose, very porous, silty fine sand with roots.

TOPSOIL

0.15 Slightly moist, orange and reddish-brown blotched and mottled pale grey, off white and black, loose, porous, silty sand with abundant sub-round and sun-angular quartzite and quartz gravels and boulders.

PEBBLE MARKER

0.90 Slightly moist to moist, orange and reddish-brown blotched and mottled pale grey and off white, loose to medium dense, relict-structured, vertically jointed, slightly clayey silty sand with scattered pockets of very soft rock quartzite.

Reworked RESIDUAL QUARTZITE

1.25 End of hole refusal on pale khaki, off white, pale grey and reddish-brown very soft rock. QUARTZITE.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP03

D04B Stuart Morgan

dot.PLOT 5004 J&W

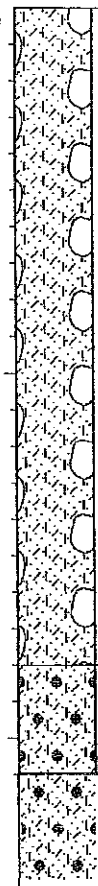
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP05
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Slightly moist, brownish-orange, dense, clayey silty sand with occasional boulders.

AEOLIAN

1.80

Dry to slightly moist, orange brown blotched dusky-red, medium dense, clayey silty sand with abundant ferricrete nodules.

Ferruginised AEOLIAN

2.10

End of hole nearing refusal on material as above.

NOTES

1) No seepage or water table encountered.

2) Undisturbed sample U05/1 taken at 0.5m for void ratio.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number: TP05
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP05

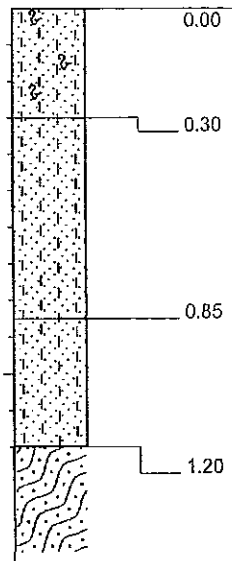
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP06
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Slightly moist, brownish-orange, loose, porous, silty fine sand with roots.

AEOLIAN

0.30 Slightly moist, dusky-red mottled pale pink and mauve blotched brown, overall medium dense with loose pockets, friable, porous, silty sand.

Reworked RESIDUAL QUARTZITE

0.85 Slightly moist to moist, pale orange blotched dusky-red, mustard- yellow and dusky-pink, medium dense though dense, relict-structured, silty sand.

Reworked RESIDUAL QUARTZITE

1.20 Practical refusal on very soft rock QUARTZITE.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP06

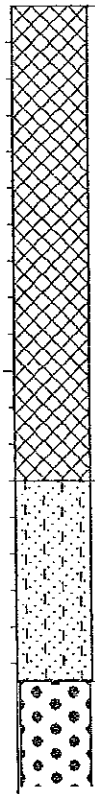
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP08
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00

Bands of slightly moist to moist reddish-brown and predominantly mustard- yellow, firm becoming soft, clayey sand through silt.

FILL from tailing

1.30

Moist, reddish-brown, loose, porous, fine silty sand.

AEOLIAN

1.85

End of hole practical refusal on very dense FERRICRETE.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

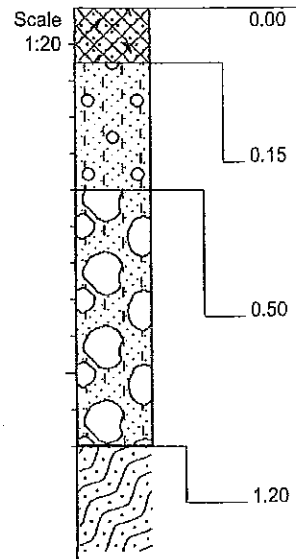
HOLE No: TP08

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP11
Sheet 1 of 1

JOB NUMBER:



Slightly moist, pale grey blotched and mottled grey, off white and black, loose, porous, silty sand with crusher run gravels.

FILL

Slightly moist, brown and yellowish-brown blotched and mottled reddish-brown, loose, porous, silty sand with scattered quartz boulders.

HILLWASH

Clast supported boulders in a matrix of slightly moist to moist, brown blotched and mottled yellowish-brown, pale khaki, reddish-brown and black, dense, porous and relict-structured silty sand.

Reworked RESIDUAL QUARTZITE

End of hole refusal on very soft rock, QUARTZITE.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number: TP11
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP11

D04B Stuart Morgan

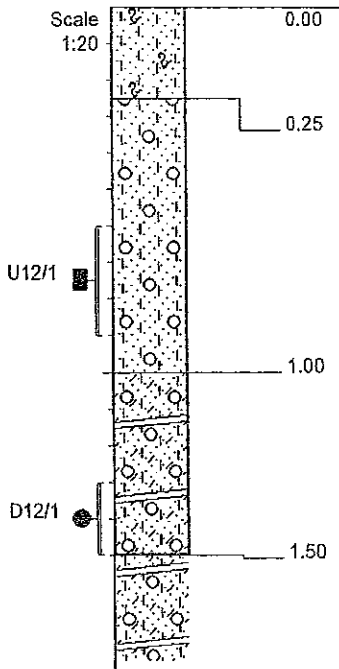
dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP12
Sheet 1 of 1

JOB NUMBER:



0.00 – 0.25: Slightly moist, pale brown, loose, porous, silty fine sand with roots.

TOPSOIL

0.25 – 1.00: Slightly moist, orange brown loose to medium dense, porous, silty fine sand with scattered quartz gravels.

AEOLIAN

1.00 – 1.50: Slightly moist, orange brown blotched and mottled pale khaki and reddish-brown, medium dense, porous, slightly leached, slightly clayey silty sand with scattered quartz gravels and pockets of very soft rock quartzite.

Reworked RESIDUAL QUARTZITE

1.50: End of hole refusal on very dense RESIDUAL QUARTZITE.

NOTES

1) No seepage or water table encountered.

2) Disturbed sample D12/1 taken at 1,3m--1,5m

3) Undisturbed sample U12/1 taken at 0,6m--0,9m

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007
DATE : 15/09/2007
DATE : 05/11/07 20:16
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

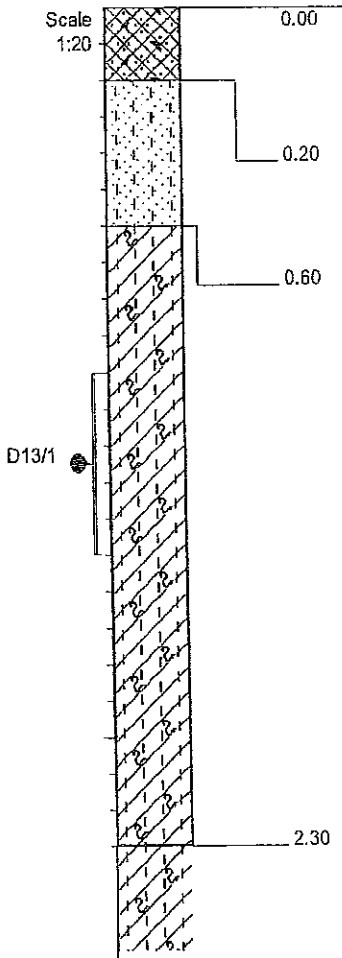
HOLE No: TP12

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP13
Sheet 1 of 1

JOB NUMBER:



Slightly moist, pale grey blotched and mottled grey and black, loose, porous, silty sand with crusher run gravels.

FILL

Slightly moist, orange brown, dense, cemented silty fine sand.

AEOLIAN

Moist, blotched and mottled orange brown and pale grey, soft, leached, silty clay with scattered roots.

ALLUVIUM

End of hole not at refusal - continues as above.

NOTES

1) No seepage or water table encountered.

2) Disturbed sample D13/1 taken at 1,0m--1,5m

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
TP-COORD :

HOLE No: TP13

D04B Stuart Morgan

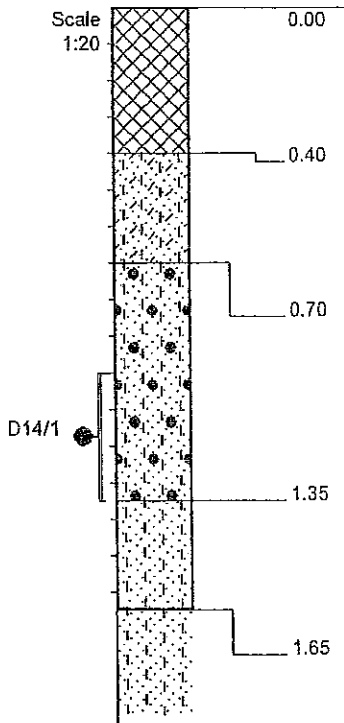
dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP14
Sheet 1 of 1

JOB NUMBER:



0.00 – 0.40: Slightly moist, yellow blotched and mottled pale pink and black, very loose, very porous, laminated, silty sand.

FILL from tailings

0.40 – 0.70: Slightly moist, orange and reddish-brown blotched and mottled off white, very dense, porous, slightly clayey silty sand.

HILLWASH

0.70 – 1.35: Slightly moist, blotched and mottled mustard- yellow, reddish-brown and black, medium dense, porous, silty sand with abundant ferricrete nodules.

Ferruginised TRANSPORTED

1.35 – 1.65: Slightly moist, blotched and mottled pale grey, reddish-brown and black, dense to very dense, leached, silty sand.

TRANSPORTED

1.65: End of hole at nominal refusal on very dense TRANSPORTED.

NOTES

1) No seepage or water table encountered.

2) Disturbed sample D14/1 taken at 1,0m--1,35m

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number: TP14
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP14

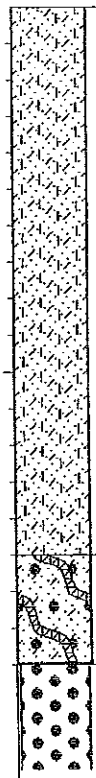
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP15
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Dry to slightly moist, brownish-orange, dense to very dense, clayey silty sand ferruginised near base.

AEOLIAN

1.50 Highly weathered off white, highly fractured vein quartz in a matrix of light brown blotched dusky-red, well ferruginised clayey fine sand.

FERRICRETE

1.80 End of hole practical refusal on very dense FERRICRETE.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP15

D048 Stuart Morgan

dot.PLOT 5004 J&W

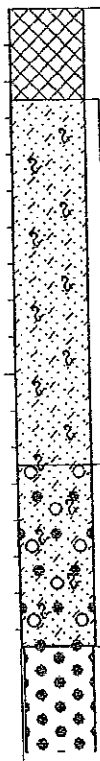
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP16
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Dry to slightly moist, brown blotched off white, very loose, porous, mixed soil and debris.

FILL

0.25 Dry to slightly moist, brownish-orange, medium dense, porous, clayey fine sand, fine roots.

AEOLIAN

1.25 Matrix as above with abundant ferricrete nodules and scattered quartz cobbles.

Ferruginised AEOLIAN

1.75 End of hole practical refusal on very dense FERRICRETE.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE . 13/09/2007 Hole number:
DATE . 15/09/2007

DATE . 06/11/07 17:19
TEXT . ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP16

D04B Stuart Morgan

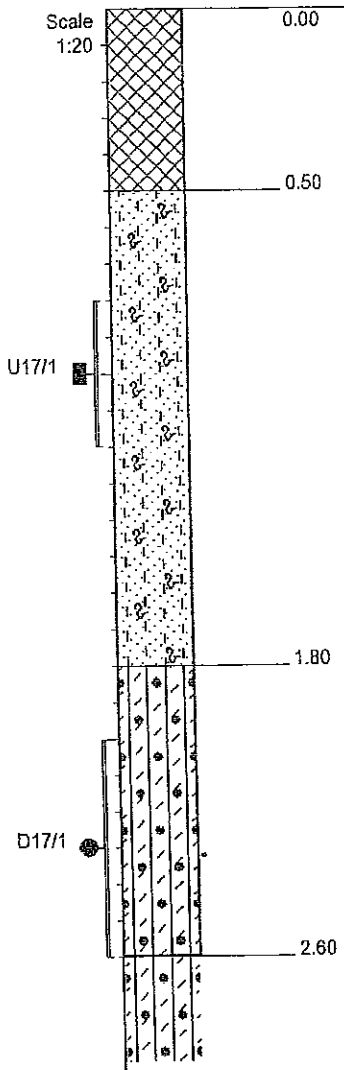
dot PLOT 5004 J&W

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP17
Sheet 1 of 1

JOB NUMBER:



0.00 — Slightly moist, mustard- yellow and black, very loose, very porous, silty sand with roots.

FILL from tailings

0.50 — Slightly moist, reddish-brown, dense, porous, silty sand with scattered fine roots.

AEOLIAN

Becoming loose below 0.7m.

1.80 — Slightly moist, reddish-brown blotched black and mustard- yellow, soft, clayey silt with ferricrete nodules.

Ferruginised TRANSPORTED

2.60 — End of hole not at refusal - continues as above.

NOTES

1) No seepage or water table encountered.

2) Undisturbed sample U17/1 taken at 0,8m--1,2m.

3) Disturbed sample D17/1 taken at 2,0m--2,6m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP17

D04B Stuart Morgan

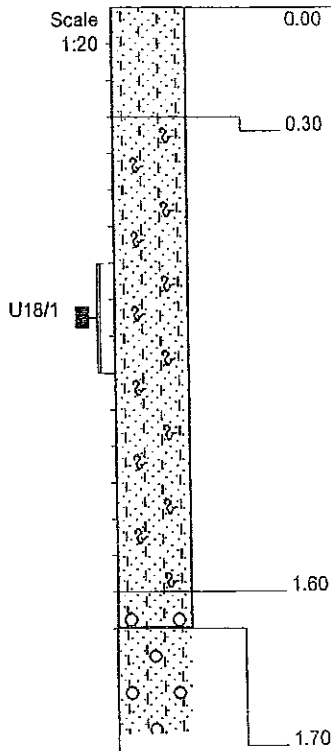
dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP18
Sheet 1 of 1

JOB NUMBER:



0.00 Slightly moist, orange brown, loose, porous, silty sand.

TOPSOIL

0.30 Slightly moist, reddish-brown, dense, porous, silty fine sand with scattered roots.

AEOLIAN

1.60 Slightly moist, reddish-brown blotched and mottled yellowish-brown, dense, leached, porous, silty sand with scattered quartz gravels.

Reworked RESIDUAL QUARTZITE

1.70 End of hole refusal on very dense reworked RESIDUAL QUARTZITE.

NOTES

1) No seepage or water table encountered.

2) Undisturbed sample U18/1 taken at 0,7m--1,0m

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP18

D04B Stuart Morgan

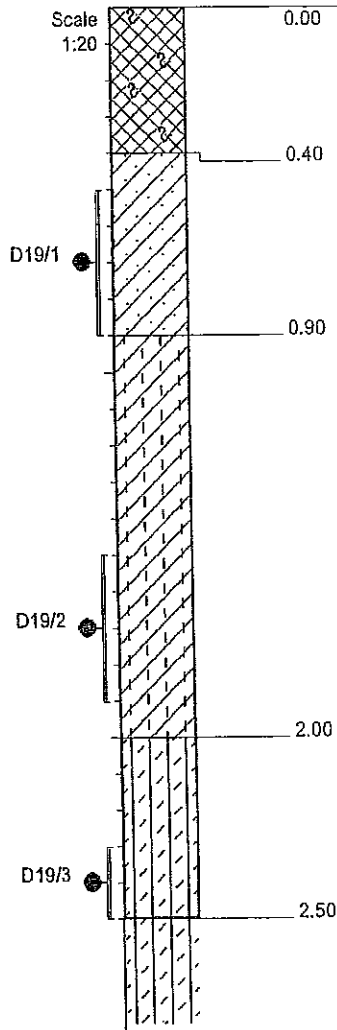
dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP19
Sheet 1 of 1

JOB NUMBER:



0.00 Slightly moist, pale khaki blotched and mottled mustard- orange, very loose, very porous, silty sand with roots.

FILL (from tailings)

0.40 Slightly moist, blotched and mottled pale grey, dark grey and mustard- orange, firm to stiff, slightly shattered, leached, sandy clay.

ALLUVIUM

0.90 Slightly moist, orange brown, firm to stiff, shattered and leached, silty clay.

ALLUVIUM

2.00 Moist, pale grey blotched and mottled mustard- orange, soft, leached, clayey silt.

ALLUVIUM

2.50 End of hole not at refusal - continues as above.

NOTES

1) No seepage or water table encountered.

2) Disturbed sample D19/1 taken at 0,5m--0,9m.

3) Disturbed sample D19/2 taken at 1,9m--1,5m.

4) Disturbed sample D19/3 taken at 2,3m--2,5m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP19

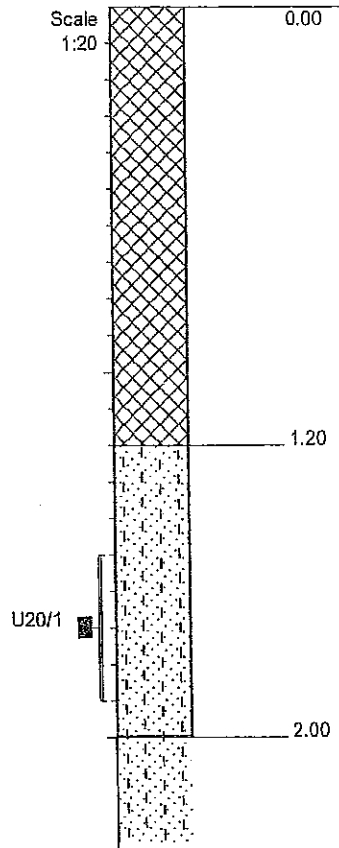
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP20
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Slightly moist, yellow, very loose, very porous, silty sand.

FILL (from tailings)

1.20

Slightly moist, reddish-brown, loose, porous, silty fine sand.

AEOLIAN

2.00

End of hole not at refusal - continues as above.

NOTES

1) No seepage or water table encountered.

2) Undisturbed sample U20/1 taken at 1,5m--1,9m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP20

D04B Stuart Morgan

dot.PLOT 5004 J&W

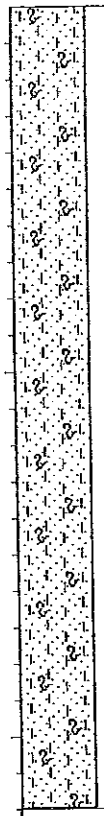
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP21
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00

Dry to slightly moist, reddish-brown through brownish-orange, loose through medium dense, porous, silty sand with scattered roots.

AEOLIAN

2.20

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

D04B Stuart Morgan

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP21

dot.PLOT 5004 J&W

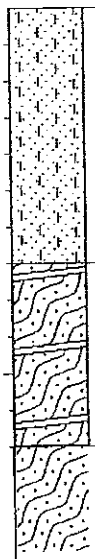
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP22
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Slightly moist, pale orange, loose to medium dense, porous, silty sand.

AEOLIAN

0.70 Off-white, mottled pale yellow, highly weathered, very soft rock with fines from above.

Highly weathered QUARTZITE

1.20 End of hole - refusal on QUARTZITE.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP22

D04B Stuart Morgan

dot.PLOT 5004 J&W

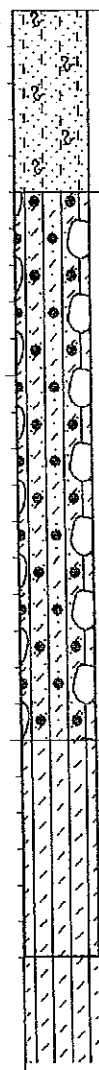
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP23
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Slightly moist, grey to brown, loose to medium dense silty sand with roots.

HILLWASH/AEOLIAN

0.50

Moist, mottled and blotched pale grey and mustard- orange, slightly clayey sandy silt with ferricrete nodules and soft rock cobbles.

ALLUVIUM

2.00

Moist, mustard- orange, mottled grey, soft, slickensided, clayey silt.

Reworked RESIDUAL LAVA?

2.60

End of hole not at refusal - continues as above.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
TP43COORD :

HOLE No: TP23

D04B Stuart Morgan

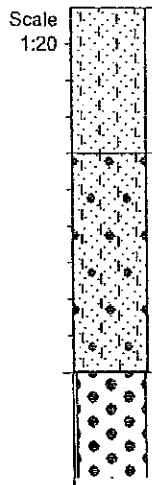
dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP24
Sheet 1 of 1

JOB NUMBER:



Slightly moist brown loose intact silty sand.

AEOLIAN

Slightly moist light yellowish-brown, medium dense, voided silty sand with ferricrete nodules.

FERRUGINISED AEOLIAN

Refusal on strongly cemented very dense FERRICRETE.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP24

D04B Stuart Morgan

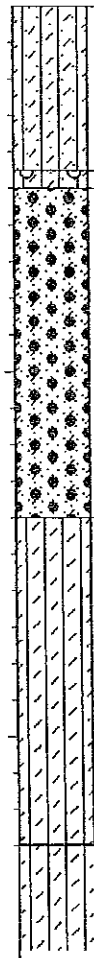
dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP28
Sheet 1 of 1

JOB NUMBER:



0.00 Slightly moist, khaki brown, firm, porous, sandy clayey silt.

HILLWASH / GULLYWASH

0.45 Scattered quartzite gravels in a matrix as above.

PEBBLE MARKER

0.50 Slightly moist to moist, pale orange blotched black and red, medium dense to dense, gravely clayey sand in honeycomb ferricrete.

FERRICRETE

1.40 Moist, orange mottled yellow black and red, firm, relict-structured, slightly clayey silt.

Reworked RESIDUAL LAVA

2.30 End of hole not at refusal - continues as above.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number: TP28
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP28

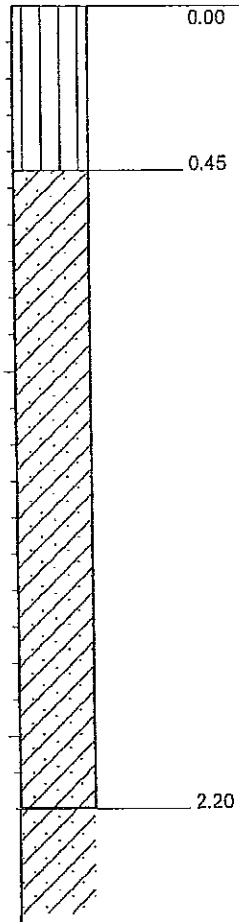
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP29
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Slightly moist, light khaki, soft, laminated silt.

MINE TAILINGS

0.45 Moist, black to light grey blotched off-white, soft, slightly cemented, sandy clay.

LACUSTRINE

2.20 End of hole - not at refusal.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07062~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP29

D04B Stuart Morgan

dot.PLOT 5004 J&W

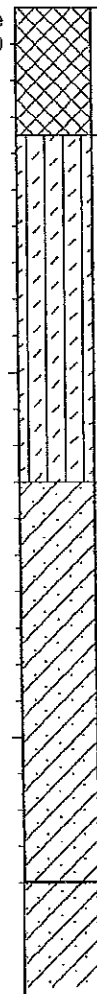
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP30
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Dry to slightly moist, dusty red blotched grey, loose, porous, sand with gravel.

FILL

0.35

Very moist, mottled and blotched grey, black and mustard-yellow, soft, slickensided, slightly clayey silt with abundant organic matter.

LACUSTRINE

1.30

Moist, mottled and blotched grey mustard- orange, soft, slickensided, sandy clay.

LACUSTRINE

2.40

End of hole not at refusal - continues as above.

NOTES

1) No seepage or water table encountered.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number: TP30
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP30

D04B Stuart Morgan

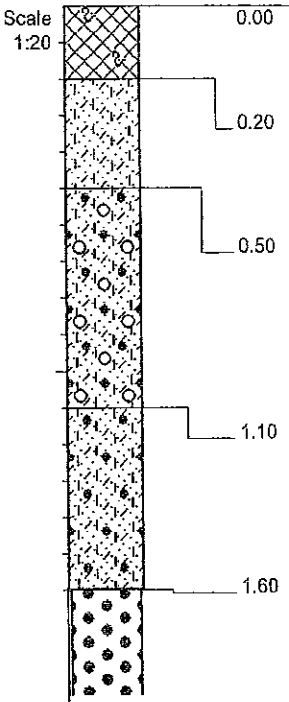
dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP31
Sheet 1 of 1

JOB NUMBER:



Dry brown mottled white loose intact silty sand with abundant roots and ash.

FILL

Slightly moist dark brown mottled brown medium dense intact clayey silty sand.

AEOLIAN

Slightly moist yellow brown mottled and blotched reddish-brown black and grey medium dense to dense voided clayey silty sand with friable ferricrete nodules and scattered cobbles.

FERRUGINISED AEOLIAN

Moist reddish-brown mottled and blotched black yellow brown and orange dense intact clayey silty sand.

FERRUGINISED AEOLIAN

Near refusal on strongly cemented very dense FERRICRETE.

NOTES

1) No samples taken.

2) Stable sidewalls.

3) No groundwater seepage.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number: TP45
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP31

D04B Stuart Morgan

dot.PLOT 5004 J&W

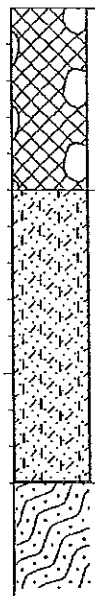
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP32
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Very moist, khaki, loose, porous, silty fine sand with scattered blast rock.

TAILINGS

0.50

Very moist, grey blotched red and mustard-yellow, loose through dense, porous, slightly clayey silty sand.

Ferruginised reworked RESIDUAL QUARTZITE

1.30

Abrupt refusal on grey blotched mustard- yellow, highly weathered, very soft rock QUARTZITE.

NOTES

1) No seepage or water table encountered. encountered, but profile becoming water logged.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

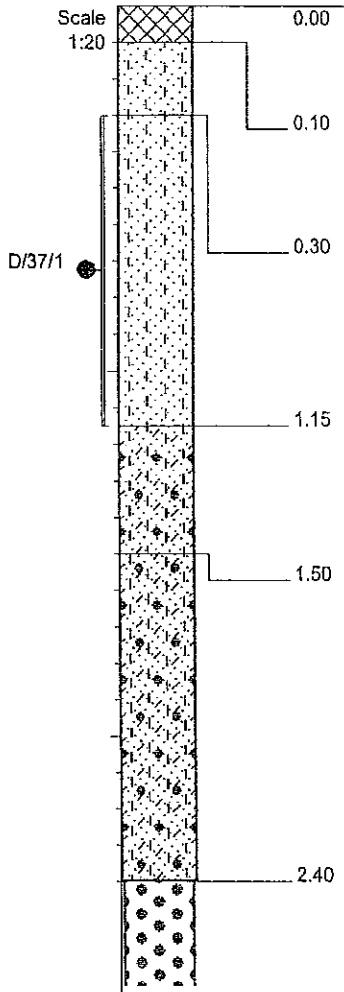
HOLE No: TP32

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP37
Sheet 1 of 1

JOB NUMBER:



0.00 – 0.10: Dry dark brown loose intact silty sand with abundant gravel and cobbles.

FILL

0.10 – 0.30: Slightly moist reddish-brown dense intact silty sand.

AEOLIAN

0.30 – 1.15: Slightly moist reddish-brown medium dense to dense voided silty sand.

AEOLIAN

1.15 – 1.50: Moist reddish-brown mottled dark reddish-brown mottled grey black and brown medium dense clayey silty sand with friable ferricrete nodules.

FERRUGINISED AEOLIAN

1.50 – 2.40: Moist reddish-brown mottled grey black and brown mottled grey black and brown medium dense clayey silty sand with friable ferricrete nodules.

Reworked RESIDUAL QUARTZITE

2.40: Refusal on strongly cemented very dense FERRICRETE.

NOTES

1) Disturbed sample D/37/1 at 0.3m--1.15m.

2) Stable sidewalls.

3) No groundwater seepage.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
TP-COORD :

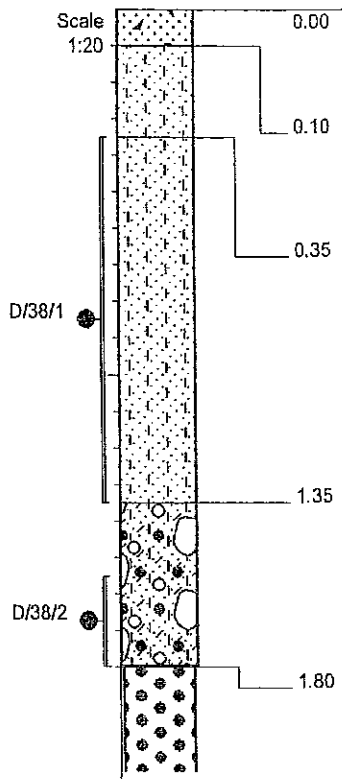
HOLE No: TP37

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP38
Sheet 1 of 1

JOB NUMBER:



0.00 – Fill comprising dark grey silty sand and crushed stone.

IMPORTED FILL FOR ROADS

0.10 – Slightly moist reddish-brown dense intact silty sand.

AEOLIAN

0.35 – Slightly moist reddish-brown medium dense to dense voided silty sand.

AEOLIAN

1.35 – Slightly moist reddish-brown mottled brown black orange and grey medium dense intact clayey silty sand with scattered quartzite gravel cobbles and boulders and closely packed ferricrete nodules.

FERRICRETE (transported)

1.80 – Refusal on strongly cemented very dense FERRICRETE.

NOTES

1) Disturbed sample D/38/1 at 0.35m--1.35 m and D/38/2 at 1.55m--1.8m.

2) Stable sidewalls.

3) No groundwater seepage.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan

TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007

DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082--1.TXT

ELEVATION :
X-COORD :
Y-COORD :

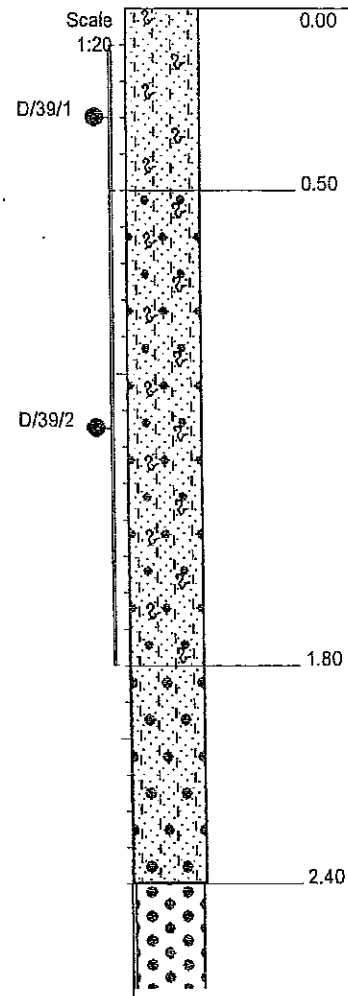
HOLE No: TP38

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP39
Sheet 1 of 1

JOB NUMBER:



0.00

Slightly moist grey mottled orange dense intact silty sand with scattered roots.

AEOLIAN

0.50

Slightly moist yellowish-brown mottled orange black and grey dense but voided silty sand with scattered friable ferricrete nodules and scattered roots.

AEOLIAN

1.80

Slightly moist brown mottled orange black and yellowish-brown dense but voided silty sand with closely packed and cemented ferricrete nodules.

FERRUGINISED AEOLIAN

2.40

Refusal on strongly cemented very dense FERRICRETE.

NOTES

1) Disturbed sample D/39/1 at 0.1m--0.5m and D/39/2 at 0.5m--1.8m.

2) Stable sidewalls.

3) No groundwater seepage.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number: TP39
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP39

D04B Stuart Morgan

dot.PLOT 5004 J&W

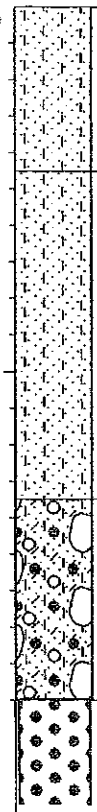
INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP41
Sheet 1 of 1

JOB NUMBER:

Scale 1:20



0.00 Slightly moist reddish-brown dense intact silty sand.

AEOLIAN

0.45

Slightly moist reddish-brown medium dense to dense voided silty sand.

AEOLIAN

1.35

Slightly moist reddish-brown mottled brown black orange and grey medium dense intact clayey silty sand with scattered quartzite gravel cobbles and boulders and closely packed ferricrete nodules.

FERRICRETE (transported)

1.90

Refusal on strongly cemented very dense FERRICRETE.

NOTES

1) No samples taken.

2) Stable sidewalls.

3) No groundwater seepage.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP41

D04B Stuart Morgan

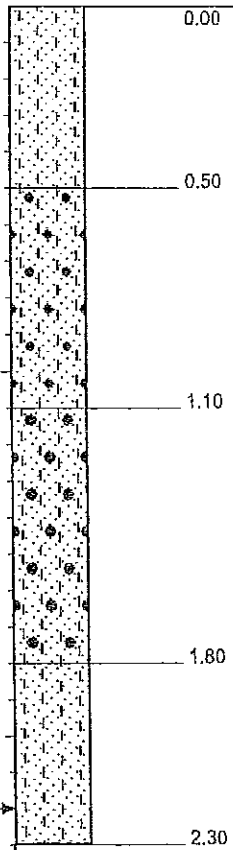
dot.PLOT 5004 J&W

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP42
Sheet 1 of 1

JOB NUMBER:



0.00	Slightly moist brown loose intact silty sand. AEOLIAN
0.50	Slightly moist, mustard-yellow, medium dense, voided silty sand with ferricrete nodules. FERRUGINISED AEOLIAN
1.10	Slightly moist, mustard-yellow blotched red, medium dense, voided silty sand with ferricrete nodules. FERRUGINISED AEOLIAN
1.80	Slightly moist, grey blotched red, medium dense, leached silty sand. Reworked RESIDUAL QUARTZITE
2.30	Near refusal on reworked RESIDUAL QUARTZITE.

NOTES

1) Water seepage at 2,2m.

2) No samples taken.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : CS Morgan
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 15/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

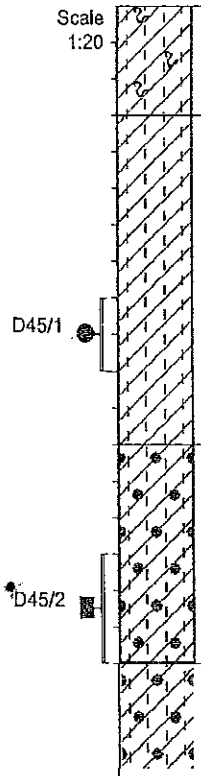
HOLE No: TP42

INTRACONSULT

REIGER PARK - Parcels 6, 7A, 7B & 8
Urban Dynamics

HOLE No: TP45
Sheet 1 of 1

JOB NUMBER:



0.00 Slightly moist, orange brown, blotched and mottled red grey and mustard- yellow, soft, intact, silty clay with roots.

TOPSOIL

0.30 Slightly moist, pale grey becoming dark grey mottled mustard- yellow, soft, slightly shattered, silty clay.

ALLUVIUM

1.20 Slightly moist, black mottled mustard- red, pale grey and mustard- yellow, soft, ferruginised, silty clay.

FERRUGINISED ALLUVIUM

1.80 End of hole not at refusal - continues as above.

NOTES

1) Seepage from 1,8m.

2) Disturbed sample D45/1 taken at 0,8m--1,0m.

3) Undisturbed sample D45/2 taken at 1,5m--1,8m.

CONTRACTOR : Geoid Earthworks Services
MACHINE : Bell 315.SG
DRILLED BY :
PROFILED BY : J. Sibisi
TYPE SET BY : Craig
SETUP FILE : INTRA.SET

INCLINATION :
DIAM : 0.75m x 3,0m trench
DATE : 13/09/2007 Hole number:
DATE : 13/09/2007
DATE : 06/11/07 17:19
TEXT : ..C:\PROFILES\07082-~1.TXT

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP45

D04B Stuart Morgan

dot.PLOT 5004 J&W