

Appendix B - Borehole Logs

ORDER OF DESCRIPTION

Sols are described as follows:

A) MAIN SOIL TYPE & UNIFIED CLASSIFICATION SYMBOL (BLOCK LETTERS)

B) Plasticity (if fine grained or Particle Size Distribution and Grading (coarse grained

C) Particle Shape

D) Colour.

E) Secondary and Minor component(s); name, estimated proportion, plasticity, particle size, colour.

F) Moisture condition.

G) Consistency or density.

H) Grading (if coarse grained, ALLUVIUM, COLLUVIUM, RESIDUAL, etc.)

I) Grading (if fine grained, ALLUVIUM, COLLUVIUM, RESIDUAL, etc.)

J) Grading (if fine grained, ALLUVIUM, COLLUVIUM, RESIDUAL, etc.)

e.g. Silty SAND (SW) medium graded, poorly graded, rounded, yellow-brown, with a trace of fine grained subangular gravel, dry, loose. Quaternary Alluvium

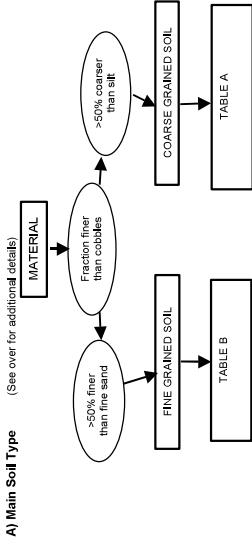


TABLE A: COARSE GRAINED SOILS more than half of the material less than 60mm is larger than 0.06mm

GRADATIONS		NATURE OF FINES	DRY STRENGTH	SYMBOL	TYPICAL NAME
Gravels more than 50% coarser than fine gravel	Good	Wide range in grain size	Clean materials (not enough fines to bind coarse grains)	GW	Well graded gravels and sand - gravel mixtures, little or no fines
	Poor	Predominantly one size or range of sizes		GP	Gravelly sand mixtures, little or no fines
Sands more than 50% finer than fine gravel	Good to Fair	"Dirty" Materials (excess of Fines)	Clean materials (not enough fines to bind coarse grains)	GM	Silty Gravels, gravel - sand mixtures
	Good	Wide range in grain size		GC	Clayey Gravels, gravel - sand - clay mixtures
Poor	Poor	Predominantly one size or range of sizes	Clean materials (not enough fines to bind coarse grains)	SW	Well graded sands, little or no fines
	Good to Fair	"Dirty" Materials (excess of Fines)		SP	Poorly graded sands and silty sands, little or no fines
Good	Good to Fair	Wide range in grain size	Fines are non-plastic	SM	Silty Sand, sand-silt mixtures
	Good	Predominantly one size or range of sizes		SC	Clayey Sand, sand-clay mixtures

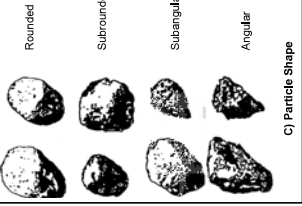
TABLE B: FINE GRAINED SOILS more than half of the material less than 60mm is smaller than 0.06mm

DRY STRENGTH	DILATANCY	TOUGHNESS	SYMBOL	TYPICAL NAME
None to Low	Quick to Slow	None	ML	Inorganic silts, very fine sands, rock flour, silt or clayey fine sands
Medium to high	None to Very Slow	Medium	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays etc
Low to medium	Slow	Low	OL	Organic silts and organic silt clays of low plasticity
Low to medium	Slow to none	Low to Medium	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
High to very high	None	High	CH	Inorganic clays of high plasticity
Medium to high	None to very slow	Low to Medium	OH	Organic clays of medium to high plasticity
Readily identified by colour, odour, spongy feel and generally by fibrous texture				
			Pt	Peat muck and other highly organic soils

Particle Size	Clw	IS	Gravel				Cobbles				Size (mm)
			fine	medium	coarse	fine	medium	coarse	fine	medium	
			0.002	0.06	0.2	0.6	2.0	6	20	60	200

B) Plasticity (fine grained soils) OR Grading (coarse grained soils)

DESCRIPTIVE TERM	LIQUID LIMIT (%)	DESCRIPTIVE TERM	DEFINITION
Of low plasticity	<35	Well graded	good representation of all particle size from largest to the smallest
Of medium plasticity	>35; <50	Poorly graded	one or more intermediate size poorly represented
Of high plasticity	>50	Gap Graded	one or more intermediate sizes absent
		Uniform	Essentially one size



D) Colour

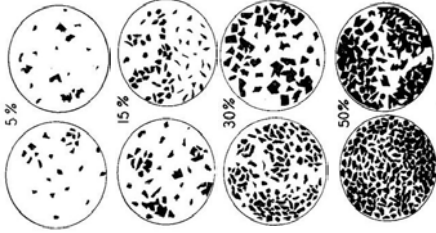
Described in the moist condition, using simple terms (eg black, white, grey, red, brown, yellow etc, modified as necessary by 'pale', 'dark' or 'mottled'. Borderline colours may be described as a combination of these colours; (eg dark grey, red-brown)

E) Proportion of Secondary & Minor Components

COARSE GRAINED SOILS		FINE GRAINED SOILS	
% fines	Modifier	% coarse	Modifier
<5	"with a trace of"	<15	"with a trace of"
>5 <15	"with some"	>15 <30	"with some"
>15	prefix silt with "silty, clayey, sandy, or clayey"	>30	prefix silt with "silty, clayey, sandy, or clayey"

F) Moisture Content

CONDITION	CRITERIA
Dry	Cohesive soils hard and friable, granular sands free running
Moist	Soils feel cool, darkened in colour, Cohesive soils can be moulded, Granular soils cohere
Wet	Soils feel cool, darkened in colour, Free water forms on hands when handling



Organic and Artificial Materials

PREFERRED TERMS	TYPE
Fibrous Peat	Organic Matter
Wood Fragments	
Roots (greater than 2mm dia)	
Root fibres (less than 2mm dia)	
Oil Bitumen	Waste Fill
Domestic Refuse	
Blockbats Refuse	
Concrete Refuse	
Wood pieces, shavings, sawdust	
Iron filings, dums, steel scrap	
Bottles, broken glass	
Leather	

G) Consistency or Density

GRAVEL/SAND (GW, GP, GM, GC)	
DESCRIPTION	FIELD TEST
Loosely Packed	Can be removed from exposure by hand or easily removed by shovel
Tightly Packed	Requires pick for removal, either as lumps or as disaggregated material

SAND (SW, SP, SM, SC)

DENSITY	FIELD TEST	PSP (blows/150mm)	SPT(Nvalue)	RELATIVE DENSITY (%)	CPT q _c (Mpa)
Very Loose	Easily penetrated with 13mm reinforcing rod pushed by hand	0 - 1	<4	<15	0-2
Loose	Can be excavated with a spade, 50mm wooden peg can be driven easily	1 - 3	4 - 10	15 - 35	2 - 5
Medium Dense	Easily penetrated with 13mm reinforcing rod pushed by hand	3 - 8	10 - 30	35 - 65	5 - 15
Dense	Can be excavated with a spade, 50mm wooden peg can be driven easily	8 - 15	30 - 50	65 - 85	15 - 25
Very Dense	Penetrated only 25 - 50mm with 13mm reinforcing rod driven with 2kg hammer - hard shovelling	>15	>50	>85	>25

SILT AND CLAY (ML, CL, OL, MH, CH, PH, Pt)

CONSISTENCY	FIELD TEST	DCP (blows/150mm)	SPT (N)	UNDRAINED SHEAR STRENGTH (kPa)	UCS (pocket penetrom.) (kPa)	CPT q _c (kPa)
Very Soft	Easily penetrated 40mm by thumb, Exposed sand and silt on fingers when squeezed	<1	<2	<12	<25	0 - 180
Soft	Easily penetrated 10mm by thumb, Can be moulded by light finger pressure	1 - 1.5	2 - 4	12 - 25	25 - 50	180 - 375
Firm	Impression made by thumb with moderate effort, Can be moulded by strong finger pressure	1.5 - 3	4 - 8	25 - 50	50 - 100	375 - 750
Stiff	Slight impression made by thumb, cannot be moulded by fingers	4 - 6	8 - 16	50 - 100	100 - 200	750 - 1500
Very Stiff	Very tough, Ready indented by thumbnail	7 - 12	16 - 32	100 - 200	200 - 400	1500 - 3000
Hard	Brittle, Indented with difficulty by thumbnail	>12	>32	>200	>400	>3000



DATA FOR DESCRIPTION AND CLASSIFICATION OF SOILS



Determination of Dry Strength, Dilatency, Toughness and Plasticity

1. Dry Strength (Crushing Characteristics)

After removing particles larger than 0.4mm sieve size, mould a pat of soil to the consistency of putty, adding of water if necessary. Allow the pat to dry completely by oven, sun or air drying, and then test its strength by breaking and crumbling between the fingers. The strength is a measure of the character and quantity of the colloidal fraction contained in the soil. The dry strength increases with increasing plasticity. High dry strength is characteristic for clays of the CH group. A typical inorganic silt possesses only very slight dry strength. Silty fine sands and silts have about the same slight dry strength, but can be distinguished by the feel when powdering the dried specimen. Fine sand feels gritty whereas a typical silt has the smooth feel of flour.

2. Dilatancy (Reaction to Shaking)

After removing particles larger than 0.4mm sieve size, prepare a pat of moist soil with a volume of about 8cm crumbled. Add enough water if necessary to make the soil soft but not sticky. Place the pat in the open palm of one hand and shake horizontally, striking vigorously against the other hand several times. A positive reaction consists of the appearance of water on the surface of the pat which changes to a livery consistency and becomes glossy. When the sample is squeezed between the fingers, the water and gloss disappear from the surface, the pat stiffens and finally it cracks or crumbles. The rapidity of appearance of water during shaking and of its disappearance during the squeezing assist in identifying the character of the fines in a soil. Very fine clean sands give the quickest and most distinct reaction whereas a plastic clay has no reaction. Inorganic silts, such as a typical rock flour, show a moderately quick reaction.

3. Toughness (Consistency near Plastic Limit)

After removing particles larger than the 0.4mm sieve size a specimen of soil about 12mm cube in size is moulded to the consistency of putty. If too dry, water must be added and if sticky, the specimen should be spread out in a thin layer and allowed to lose some moisture by evaporation. Then the specimen is rolled out by hand on a smooth surface or between the palms into a thread about 3mm in diameter. The thread is then folded and re-rolled repeatedly. During this manipulation the moisture content is gradually reduced and the specimen stiffens, finally loses its plasticity, and crumbles when the plastic limit is reached. After the thread crumbles, the pieces should be lumped together and a slight kneading action continued until the lump crumbles. The tougher the thread near the plastic limit and the stiffer the lump when it finally crumbles, the more potent is the colloidal clay fraction in the soil. Weakness of the thread at the plastic limit and quick loss of coherence of the lump below the plastic limit indicates either inorganic clay of low plasticity, or materials such as kaolin-type clays and organic clays which occur below the A-line. Highly organic clays have a very weak and spongy feel at the plastic limit.

4. Smear Test

A fragment of soil smeared between the thumb and forefinger or drawn across the thumbnail will, by the smoothness and sheen of the smear surface, indicate the plasticity of the soil. A soil of low plasticity will exhibit a rough textured, dull smear while a soil of high plasticity will exhibit a slick, waxy smear surface.

Graphic Symbols

Soils	
	Made ground
	Boulders and cobbles
	Gravel
	Sand
	Silt
	Clay
	Peat
NOTE: Composite soil types will be signified by combined symbols, e.g.,	
	Silty sand

Derivation of Soil Name

Soils are generally made up of more than one component. The soil name depends on the proportion of each component.

The soil name is based on the presence of more than 50% of either fine grained (silt, clay) or coarse grained (sand, gravel) components in the soil. When more than one component exists the smaller amount is placed first.

Example 1: 60% clay
35% sand
5% gravel

is Sandy CLAY, with a trace of Gravel

Example 2: 40% gravel } >50% coarse grained :
14% sand
46% silt

is Silty GRAVEL with some sand

The soil name can therefore be split into three fractions:

1. Secondary, 2. Major, and 3. Minor



Rock Material is described as follows:

A) MAIN ROCK TYPE (BLOCK LETTERS)

B) Strength

C) Weathering

D) Colour e.g. black, white, grey, red, brown, orange, yellow, green, or blue - using pale, dark or mottled.

E) Fabric (spacing and development)

F) Particle Size (if coarse grained)

G) Inclusions or minor components

H) Degree of Fracturing (drill core) or Defect spacing (outcrop)

Geological Name (optional)

eg. GRANODIORITE, very high strength, slightly weathered, light pink-grey, massive, coarse sand sized, jointing widely spaced. *Mowamba Granodiorite*

- flow banding (igneous)
- schistosity or foliation (metamorphic)

Typical rock fabrics include but are not limited to:

- bedding, cross bedding (sedimentary)
- flow banding (igneous)
- schistosity or foliation (metamorphic)

TERM	SEPARATION OF STRATIFICATION PLANES
Sedimentary	igneous/metamorphic
Thinly laminated	Thinly isolated
Laminated	Foliated
Very finely bedded	Very finely layered
Thinly bedded	Thinly layered
Medially bedded	Medially layered
Thickly bedded	Thickly layered
Very thickly bedded	Very thickly layered

Massive	No obvious fabric – rock appears homogeneous
Poorly developed	Fabric is barely obvious as faint mineralogical layering or grain size banding.
Well developed	Fabric is apparent as distinct layers or lines marked by mineralogical or grain size layering.
Very well developed	Fabric is often marked by a distinct colour banding as well as by mineralogical or grain size layering.

0.2		0.6		2.0		6		20		60		200		Size (mm)	Boulders
fine	medium	medium	coarse	coarse	fine	fine	medium	coarse	coarse	coarse	coarse	coarse	Cobbles		

Sedimentary rocks:

Metamorphic and Igneous Rocks

Sandstone - Use sand terms
Conglomerate - Use gravel terms.
Shale Siltstone

Claystone - No description of grain size is

Any isolated minor components within the rock material may be described using the appropriate terms. Some examples are given in the table below.

Sedimentary Rocks	Igneous Rocks
Concretions	Vesicles
Ironstone Band	Xenoliths
Tree leaf structure	Phenocrysts

Degree of Fracturing (borehole core)

TERM	DESCRIPTION
Fragmented	The core is composed primarily of fragments of length less than 20mm, and mostly of width less than the length.
Highly Fractured	Core lengths are generally less than 20mm, 40mm (with occasional fragments)
Fractured	Core lengths are mostly 30 – 100mm with occasional shorter and longer sections.
Slightly Fractured	Core lengths are generally 300–1000mm with occasional longer sections and occasional sections between 100 to 300mm.
Unbroken	The core does not contain any fractures

TERM	SYS- BOL	DEFINITION
Extremely Weathered	EW	Rock substance affected by weathering to the extent that the rock exhibits soil properties as it can be remoulded and can be classified according to the United Soil Classification System, but the texture of the rock is still evident
Highly Weathered	HW	Rock substance affected by weathering to the extent that limonite staining or bleaching affects the rock substance and other signs of chemical or physical decomposition are evident. Porosity and strength may be increased or decreased compared to the fresh rock usually as a result of iron leaching or deposition. The colour and strength of the fresh rock are no longer recognisable.
Moderately Weathered	MW	Rock substance affected by weathering to the extent that staining extends throughout the whole of the rock and the original colour of the rock is no longer recognisable.
Slightly Weathered	SW	Rock substance affected by weathering to the extent that partial staining or discolouration of the rock substance, usually by limonite, has taken place. The colour and texture of the fresh rock is recognisable, strength properties are essentially those of the fresh rock substance
Fresh	FR	Rock substance unaffected by weathering

1. Defect Type		Description
Abbreviation	Map Symbol	
FL		Fault - fracture along which displacement is recognisable.
SH		Shear - a fracture along which movement has taken place but no displacement is recognisable. Evidence for movement may be slickensides, polishing and/or day gouge.
SZ		Sheared Zone - zone of multiple closely spaced fracture planes with roughly parallel planar bounding surfaces for long blocks of tectonic or tectonic shaped intact material. Fractures are typically smooth, polished or striated, and curved.
BG		Bedding parting - arrangement in layers of mineral grains or crystals parallel to surface of deposition along which a continuous observable parting occurs.
BSH		Bedding plane shear - a shear formed along a bedding plane
JN		Joint - a single fracture across which rock has little or no tensile strength and is not obviously related to rock fabric.
CN		Contact - surface between two lithologies.
FO		Foliation - a planar arrangement of textural or structural features in any type of rock, especially the planar orientation of platy minerals.
CV		Cleavage - plane of mechanical fracture in a rock normally sufficiently closely spaced to form parallel-sided slots.
CZ		Crushed Zone - zone with roughly parallel, planar boundaries (commonly slickensided) containing disoriented usually angular rock fragments of variable size often in a soil matrix.
VN		Vein - fracture in which a tabular or sheet-like body of minerals have been intruded.
DZ		Deformed Zone - zone of low shear but commonly with parallel boundaries containing moderately to extremely weathered rock, typically with gradational boundaries into fresher rock.
FZ		Fracture Zone - a zone of closely spaced defects (mainly joints, bedding, cleavage and/or schistosity) comprised of core lengths in the order of 50mm or less.

measured as dip/direction in exposure

Symbol	Term	Description
Pi	Planar	Forms a continuous plane without variation in orientation
Cu	Curved	Has a gradual change in orientation
Wa	Wavy	Has a wavy surface shape
St	Stepped	Has one or more well defined ridges
Ir	Irregular	Many changes of orientation

3. Defect Shape

Spol	Slackness of polished	Visual evidence of striations or a smooth glassy finish
S	Smooth	Surface appears smooth and feels so to the touch
Sr	Slightly Rough	Asperities on the defect are distinguishable and can be felt
R	Rough	Some ridges and angle steps are evident, asperities are clearly visible and surface feels very abrasive
Vr	Very Rough	Near right angle steps and ridges occur on the surface

Symbol	KL	Ca	Ch	Ch	Lm	Oz	Su	Rf	Rc
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TERM	SPACING (mm)
Extremely closely spaced	<20
Very closely spaced	20 - 60mm
Closely spaced	60 - 200mm
Moderately spaced	200 - 600mm
Widely spaced	600mm + 2m

DATA FOR DESCRIPTION AND CLASSIFICATION OF SOILS

A) Main Rock Type

Igneous Rocks

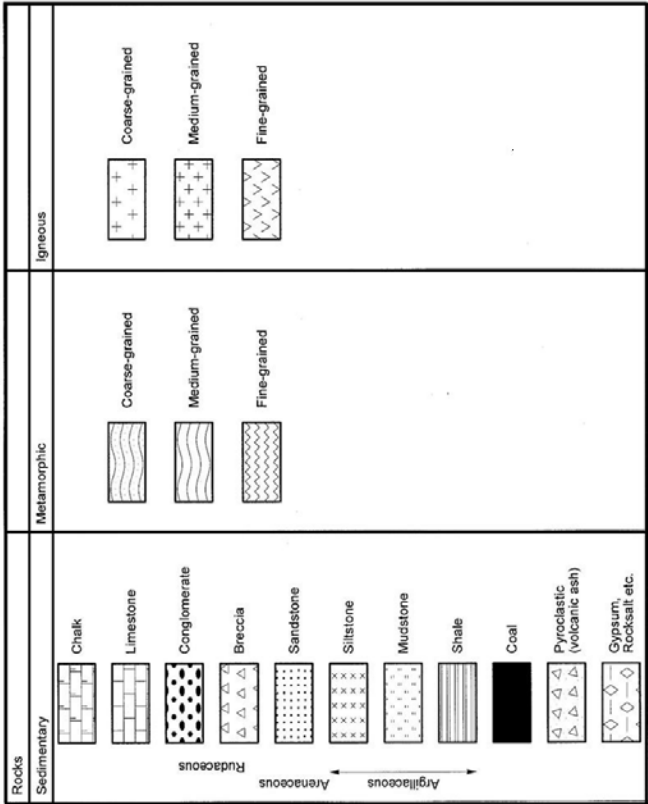
Pyroclastic	Igneous				Dark minerals	Composition	Predominant Grain Size (mm)
	Quartz, feldspars, micas dark minerals		Feldspar, dark minerals				
	Acid	Intermediate	Basic	Ultrabasic			
Rounded grains AGGLOMERATE Angular grains VOLCANIC BRECCIA	PEGMATITE				Pyroxenite Peridotite Serpentinite	Very Coarse Grained	60
						GRANITE	DIORITE
TUFF	RHYOLITE	ANDESITE	BASALT	Medium Grained			
				Fine grained TUFF		Very Fine Grained TUFF	VOLCANIC GLASS (OBSIDIAN)
Glassy Amorphous							

Metamorphic Rocks

Foliated		Massive	
Quartz, feldspars, micas dark minerals		Quartz, feldspars, micas dark minerals, carbonates	
MIGMATITE		TECTONIC BRECCIA	HORNFELS MARBLE GRANULITE QUARTZITE AMPHIBOLITE
GNEISS			
SCHIST	MYLONITE		
PHYLLITE			
SLATE			
		Very Coarse Grained	60
		Coarse Grained	2
		Medium Grained	0.06
		Fine Grained	0.002
		Very Fine Grained	
		Predominant Grain Size (mm)	

Sedimentary Rocks

Detrital Sedimentary	Grains of rock, quartz, feldspar and clay minerals		At least 50% of the grains are of carbonate	Chemical/ Organic	Composition	Predominant Grain Size (mm)
Rudaceous	Grains are typically rock fragments		CALCI- -RUDITE	Saline Rocks HALITE ANHYDRITE GYPSUM	Very Coarse Grained	60
					Coarse Grained	2
	Grains are typically mineral fragments		CALC- -ARENITE	Calcareous Rocks LIMESTONE DOLOMITE	Medium Grained	
Arenaceous	SANDSTONE		CALCI- -SILTITE	Siliceous Rocks CHERT FLINT	Fine Grained	0.06
					Very Fine Grained	0.002
Argillaceous	MUDSTONE SHALE (fissile mudstone)	SILTSTONE: 50% fine grained particles	CALCI- -LUTITE	Carbonaceous Rocks LIGNITE COAL		
		CLAYSTONE: 50% very fine grained particles				



EXCAVATION - GEOLOGICAL LOG

PIT NO : GPTP01

PROJECT : Grafton Correctional Facility
LOCATION : Grafton

FILE / JOB NO : IA101200
SHEET : 1 OF 1

POSITION : E: 505538.600, N: 6710626.000 (MGA94 Zone 56)	SURFACE ELEVATION : 21 (Approximate) (AHD)
EQUIPMENT TYPE : 8t Excavator	METHOD : Excavator
DATE EXCAVATED : 2/10/16	LOGGED BY : JP
CHECKED BY : SGR	
EXCAVATION DIMENSIONS : 0.60 m WIDE	

DRILLING				MATERIAL							
VE PENETRATION E F H	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO- METER	STRUCTURE & Other Observations
				0.0		CL	SILTY CLAY Pale grey, low plasticity, with some gravel, sand and rootlets (Topsoil)			100	
				0.15m						200	
				0.40m						300	
			D-ES	0.50m				M	St	400	
				0.5		CH	SILTY CLAY Pale grey, predominantly mottled orange and red, high plasticity clay, traces of gravel (Colluvium)				
				0.80m							
				1.0			SILTSTONE Light grey and light brown, fine grained, extremely weathered, very low strength, occasional boulder size fragments being recovered by bucket (Recovered as gravel)				
				1.30m							
			B-x2	1.50m				D	VD		
				2.0							
				2.10m							
							GPTP01 terminated due to excavator refusal at 2.1m Note: Sample between 1.3 - 1.5m produced coarse to fine gravel with some sand and silt/clay. Fines from excavator bucket				
				2.5							

PHOTOGRAPHS
NOTES ☐ YES ☐ NO

METHOD N Natural Exposure X Existing Excavation BH Backhoe Bucket B Bulldozer Blade R Ripper SUPPORT T Timbering	PENETRATION WATER 10 Oct., 73 Water Level on Date shown water inflow water outflow	SAMPLES & FIELD TESTS U - Undisturbed Sample D - Disturbed Sample B - Bulk Disturbed Sample MC - Moisture Content HP - Hand Penetrometer (UCS kPa) VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa) PBT - Plate Bearing Test	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION Based on Unified Classification System MOISTURE D - Dry M - Moist W - Wet	CONSISTENCY/ RELATIVE DENSITY VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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See Explanatory Notes for
details of abbreviations
& basis of descriptions.

SKM\JB-101200-LOGS.GPJ 21/03/2016 16:44 63301003 Digital Lab and In Situ Tool - DGD [Lib: SKM-101200-2015-06-17 Proj: SKM-101200-04-06



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP01, 2.1 m		
			Project No.:	IA101200	figure no:	

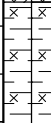
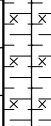
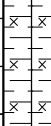
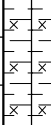
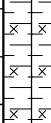
EXCAVATION - GEOLOGICAL LOG

PIT NO : GPTP02

PROJECT : Grafton Correctional Facility
LOCATION : Grafton

FILE / JOB NO : IA101200
SHEET : 1 OF 1

POSITION : E: 506176.000, N: 6710545.000 (MGA94 Zone 56)	SURFACE ELEVATION : 23 (Approximate) (AHD)
EQUIPMENT TYPE : 8t Excavator	METHOD : Excavator
DATE EXCAVATED : 2/10/16	LOGGED BY : JP
CHECKED BY : SGR	
EXCAVATION DIMENSIONS : 0.60 m WIDE	

DRILLING				MATERIAL							
VE PENETRATION E F H	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO- METER kPa METER 100 200 300 400	STRUCTURE & Other Observations
				0.0		CL	SILT CLAY Pale grey, low plasticity, with some gravel, sand and rootlets (Topsoil)	M			
				0.25m							
				0.50m			SILT CLAY Grey, mottled light brown, high plasticity (Mainly colluvium)				
			D-ES	0.60m							
				1.0		CH	Becoming grey, mottled red and light brown with occasional fine gravel	VSt - H			
				1.40m							
			D-ES	1.50m				D			
				1.90m			GRAVELLY CLAY Pale grey, high plasticity, fine and medium, sub angular and angular gravel fragments				
				2.0		CH	Increasing in reddish colour, trace organics (Mainly colluvium possibly grading to residual soils with depth)				
				2.5			GPTP02 terminated at Target Depth, difficult digging condition				

PHOTOGRAPHS
NOTES ☐ YES ☐ NO

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT

T Timbering

PENETRATION

No Resistance

WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION

Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP02, 2.5m		
			Project No.:	IA101200	figure no:	

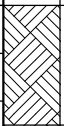
EXCAVATION - GEOLOGICAL LOG

PIT NO : GPTP03

PROJECT : Grafton Correctional Facility
LOCATION : Grafton

FILE / JOB NO : IA101200
SHEET : 1 OF 1

POSITION :	SURFACE ELEVATION : 26 (Approximate) (AHD)
EQUIPMENT TYPE : 8t Excavator	METHOD : Excavator
DATE EXCAVATED : 2/10/16	LOGGED BY : JP
EXCAVATION DIMENSIONS : 0.60 m WIDE	CHECKED BY : SGR

DRILLING				MATERIAL							
VE PENETRATION E F H	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO- METER	STRUCTURE & Other Observations
				0.0		CL	SILTY CLAY Grey, low plasticity, traces of sand and gravel, with rootlets (Topsoil)	M		100 200 300 400	
			0.30m D-ES				SILTY CLAY Light brown and reddish, high plasticity (Residual soil? or colluvium)				0.25: HP In-situ >600 kPa
			0.50m	0.5							0.60: HP In-situ =420 kPa
			0.80m B								
			1.00m	1.0				D	H		1.00: HP In-situ =420 kPa
							WEATHERED AND FRACTURED BASALT BEDROCK? Grey, fine to coarse grained, moderately weathered, medium to high strength, intermixed with yellow clay, recovered as gravel.				
				1.5							

PHOTOGRAPHS
NOTES ☐ YES ☐ NO

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT

T Timbering

PENETRATION

VE
U
F
H
No Resistance

WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION

Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP03, 1.9m		
			Project No.:	IA101200	figure no:	

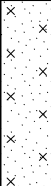
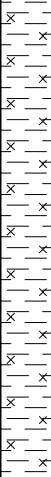
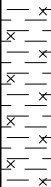
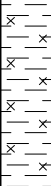
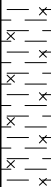
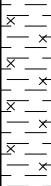
EXCAVATION - GEOLOGICAL LOG

PIT NO : GPTP04

PROJECT : Grafton Correctional Facility
LOCATION : Grafton

FILE / JOB NO : IA101200
SHEET : 1 OF 1

POSITION : E: 505626.100, N: 6710324.000 (MGA94 Zone 56)	SURFACE ELEVATION : 14 (Approximate) (AHD)
EQUIPMENT TYPE : 8t Excavator	METHOD : Excavator
DATE EXCAVATED : 2/9/16	LOGGED BY : JP
CHECKED BY : SGR	
EXCAVATION DIMENSIONS : 0.60 m WIDE	

DRILLING						MATERIAL									
VE E PENETRATION F H			SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Partide Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	HAND PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations	
			Not Encountered	D-ES	0.40m		SM	SILTY SAND Pale grey, fine and medium sand, with low plasticity fines and rounded gravel (Topsoil)	M						
					0.50m		CH	SILTY CLAY Light brown mottled orange-brown, high plasticity (Colluvium)	D						
															
															
															
															
															
															
															
				D-ES	1.50m		CH	Becoming light grey brown mottled orange brown, high plasticity	D					1.00: HP In-situ =280 kPa	
					1.60m										
															
															
															
															
					2.40m			GPTP04 terminated at 2.4 m.							
					2.5										
															

PHOTOGRAPHS NOTES ☐ YES ☐ NO

METHOD N Natural Exposure X Existing Excavation BH Backhoe Bucket B Bulldozer Blade R Ripper SUPPORT T Timbering	PENETRATION  WATER 10 Oct., 73 Water Level on Date shown water inflow water outflow	SAMPLES & FIELD TESTS U - Undisturbed Sample D - Disturbed Sample B - Bulk Disturbed Sample MC - Moisture Content HP - Hand Penetrometer (UCS kPa) VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa) PBT - Plate Bearing Test	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION Based on Unified Classification System MOISTURE D - Dry M - Moist W - Wet	CONSISTENCY/ RELATIVE DENSITY VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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See Explanatory Notes for details of abbreviations & basis of descriptions.



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP04, 2.4m		
			Project No.:	IA101200	figure no:	

EXCAVATION - GEOLOGICAL LOG

PIT NO : GPTP05

PROJECT : Grafton Correctional Facility
LOCATION : Grafton

FILE / JOB NO : IA101200
SHEET : 1 OF 1

POSITION : E: 505965.400, N: 6710279.000 (MGA94 Zone 56)	SURFACE ELEVATION : 22 (Approximate) (AHD)
EQUIPMENT TYPE : 8t Excavator	METHOD : Excavator
DATE EXCAVATED : 2/10/16	LOGGED BY : JP
EXCAVATION DIMENSIONS : 0.60 m WIDE	CHECKED BY : SGR

DRILLING				MATERIAL							
VE PENETRATION E F H	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Partide Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO- METER 100 200 300 400	STRUCTURE & Other Observations
				0.0		CL	SILTY CLAY Pale grey, low plasticity fines, with gravel and rootlets. (Topsoil)	M			
			0,30m D-ES								
			0,50m	0.5			SILTY CLAY Light brown, medium to high plasticity (Mainly colluvium)				
				1.0		CL-CH					0.60: HP In-situ =480 kPa
											0.80: HP In-situ =330 kPa
											1.10: HP In-situ =390 kPa
				1.5							
			1,80m B								1.40: HP In-situ =540 kPa
			2,00m	2.0			WEATHERED SILTSTONE BEDROCK Light brown, fine grained, extremely weathered rock, residual soil strength (Recovered as gravel)				
				2.5							
				2.50m			GPTP05 terminated at 2,5m				

PHOTOGRAPHS
NOTES ☐ YES ☐ NO

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT

T Timbering

PENETRATION

VE
E
F
H
No Resistance

WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION

Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP05, 2.5m		
			Project No.:	IA101200	figure no:	



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP06, 2.4m		
			Project No.:	IA101200	figure no:	

EXCAVATION DIMENSIONS : 0,60 m WIDE

PHOTOGRAPHS ☐ YES ☐ NO

See Explanatory Notes for details of abbreviations & basis of descriptions.



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP07, 2.2m		
			Project No.:	IA101200	figure no:	

EXCAVATION - GEOLOGICAL LOG

PIT NO : GPTP08

PROJECT : Grafton Correctional Facility
LOCATION : Grafton

FILE / JOB NO : IA101200
SHEET : 1 OF 1

POSITION : E: 505935.600, N: 6709868.000 (MGA94 Zone 56)

SURFACE ELEVATION : 21 (Approximate) (AHD)

EQUIPMENT TYPE : 8t Excavator

METHOD : Excavator

DATE EXCAVATED : 2/9/16

LOGGED BY : JP

CHECKED BY : SGR

EXCAVATION DIMENSIONS : 0.60 m WIDE

DRILLING					MATERIAL						
VE PENETRATION E F H	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Partide Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO- METER 100 200 300 400	STRUCTURE & Other Observations
				0.0		CL-Cl	SILTY CLAY Pale grey, low to medium plasticity fines, with fine and medium sand and rootlets (Topsoil)	M			0.20: HP In-situ >600 kPa
				0.40m							
			0.50m D-ES	0.5		CH	SILTY CLAY Dark brown, lightly mottled orange-brown, high plasticity fines, traces of black gravel fragments (Mainly colluvium soil)				0.60: HP In-situ >600 kPa
			0.60m								
				1.0							1.00: HP In-situ =360 kPa
			1.20m D-ES			CH	GRAVELLY SILTY CLAY Dark brown, mottled orange brown, high plasticity clay, red, sub angular and angular gravel, traces of charcoal (Residual soil)				
			1.30m B-x2								
			1.50m	1.5							1.40: HP In-situ =360 kPa
			1.80m D-ES			CH					
			1.90m								
				2.0			WEATHERED SILTSTONE BEDROCK Light brown yellowish, fine grained, highly weathered, low strength				
				2.10m							
							GPTP08 terminated at 2.1 m due to refusal.				
				2.5							

PHOTOGRAPHS
NOTES ☐ YES ☐ NO

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT

T Timbering

PENETRATION

No Resistance

WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION

Based on Unified Classification System

MOISTURE

D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP08, 2.1m		
			Project No.:	IA101200	figure no:	

EXCAVATION - GEOLOGICAL LOG

PIT NO : GPTP09

PROJECT : Grafton Correctional Facility
LOCATION : Grafton

FILE / JOB NO : IA101200
SHEET : 1 OF 1

POSITION : E: 506280.100, N: 6709826.000 (MGA94 Zone 56)	SURFACE ELEVATION : 25 (Approximate) (AHD)
EQUIPMENT TYPE : 8t Excavator	METHOD : Excavator
DATE EXCAVATED : 2/10/16	LOGGED BY : JP
CHECKED BY : SGR	
EXCAVATION DIMENSIONS : 0.60 m WIDE	

DRILLING				MATERIAL									
VE PENETRATION E F H			SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Partide Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations
			Not Encountered	D-ES	0.50m 0.60m	0.0		CL	SILTY CLAY Pale grey, low plasticity fines, with fine and medium sand and rootlets (Topsoil)	M			
						0.20m		SILTY CLAY Light brown, mottled orange-brown, high plasticity fines (Mainly colluvium)					
						0.5		CH					
						0.60m							
						0.80m		WEATHERED SANDSTONE BEDROCK Light brown, fine to coarse grained, extremely weathered, extremely low to low strength, with some clay	VSt - H				
						1.0		VS					
						1.10m							
						1.30m							
						1.5							
						1.60m		GPTP09 terminated due to slow excavation					
		Note: Sample recovered between 1.1 - 1.3m produced coarse to fine gravel with some sand and silt and clay fines from excavator bucket											

PHOTOGRAPHS
NOTES ☐ YES ☐ NO

METHOD	PENETRATION	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION Based on Unified Classification System	CONSISTENCY/ RELATIVE DENSITY
N Natural Exposure X Existing Excavation BH Backhoe Bucket B Bulldozer Blade R Ripper	 WATER 10 Oct., 73 Water Level on Date shown water inflow water outflow	U - Undisturbed Sample D - Disturbed Sample B - Bulk Disturbed Sample MC - Moisture Content HP - Hand Penetrometer (UCS kPa) VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa) PBT - Plate Bearing Test	D - Dry M - Moist W - Wet	VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
SUPPORT T Timbering				

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

SKM:UB-1012.GLB Log IS AU TEST PRT 2 IN101200_LOGSGPFI <Drawing> 21/03/2016 16:44 6330103 Digital Label and In Situ Tool - DSD [Lib: SKM-1012.2015-04-17 Proj: SKM-1011.2013-04-06]



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP09, 1.6m		
			Project No.:	IA101200	figure no:	

EXCAVATION - GEOLOGICAL LOG

PIT NO : GPTP10

PROJECT : Grafton Correctional Facility
LOCATION : Grafton

FILE / JOB NO : IA101200
SHEET : 1 OF 1

POSITION : E: 505768.400, N: 6709293.000 (MGA94 Zone 56)	SURFACE ELEVATION : 16 (Approximate) (AHD)
EQUIPMENT TYPE : 8t Excavator	METHOD : Excavator
DATE EXCAVATED : 2/9/16	LOGGED BY : JP
EXCAVATION DIMENSIONS : 0.60 m WIDE	CHECKED BY : SGR

DRILLING				MATERIAL							
VE PENETRATION E F H	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO- METER 100 200 300 400	STRUCTURE & Other Observations
				0.0		CH	SILTY CLAY Pale grey, high plasticity fines, with fine and medium sand and rootlets (Topsoil)	M			
				0.30m							
				0.5		CL-CH	SILTY CLAY Grey and mottled orange-brown, medium to high plasticity, traces of red clay (Mainly colluvium)			X	0.35: HP In-situ =140 kPa
			0.60m D-ES								
			0.70m							X	0.60: HP In-situ =520 kPa
				1.0							
			1.10m B							X	1.10: HP In-situ =240 kPa
			1.30m								
				1.5			Becoming white-greyish				
			1.50m D-ES								
			1.60m								
				1.70m							
				2.0		CL	GRAVELLY CLAY Red-brown, low plasticity fines, fine to coarse, sub angular and angular gravel				
				2.10m							
				2.40m			WEATHERED SILTSTONE BEDROCK Pale grey, fine grained, extremely weathered, very low strength (Recovered as a gravel)				
				2.5			GPTP10 terminated at 2.4 m				

PHOTOGRAPHS
NOTES ☐ YES ☐ NO

METHOD	PENETRATION	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION Based on Unified Classification System	CONSISTENCY/ RELATIVE DENSITY
N Natural Exposure X Existing Excavation BH Backhoe Bucket B Bulldozer Blade R Ripper	 WATER 10 Oct., 73 Water Level on Date shown water inflow water outflow	U - Undisturbed Sample D - Disturbed Sample B - Bulk Disturbed Sample MC - Moisture Content HP - Hand Penetrometer (UCS kPa) VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa) PBT - Plate Bearing Test		VS - Very Soft S - Soft F - Firm St - Stiff VSst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
SUPPORT T Timbering			MOISTURE D - Dry M - Moist W - Wet	

See Explanatory Notes for
details of abbreviations
& basis of descriptions.

SKM:UB:1012.GLB Log: IS AU TEST:PTT 2: IA101200_LOGSG:GPTP10: <Drawing> 21/03/2016 16:44 6330103: Digital Lab and In Situ Tool - DGD [Lib: SKM:1012.2015-04-17 Proj: SKM:1011.2015-04-16]



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP10, 2.4m		
			Project No.:	IA101200	figure no:	



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP11, 1.8m		
			Project No.:	IA101200	figure no:	

EXCAVATION - GEOLOGICAL LOG

PIT NO : GPTP12

PROJECT : Grafton Correctional Facility
LOCATION : Grafton

FILE / JOB NO : IA101200
SHEET : 1 OF 1

POSITION : E: 505895.700, N: 6709032.000 (MGA94 Zone 56)	SURFACE ELEVATION : 21 (Approximate) (AHD)
EQUIPMENT TYPE : 8t Excavator	METHOD : Excavator
DATE EXCAVATED : 2/9/16	LOGGED BY : JP
CHECKED BY : SGR	
EXCAVATION DIMENSIONS : 0.60 m WIDE	

DRILLING				MATERIAL							
VE PENETRATION E F H	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO- METER 100 200 300 400	STRUCTURE & Other Observations
				0.0		CH	SILTY CLAY Dark brown, high plasticity fines, with fine and medium sand and rootlets (Topsoil)				
						0.30m					
				0.40m			SILTY CLAY Dark brown, high plasticity fines, traces of fine and medium sand (Mainly colluvium)			X	0.40: HP In-situ =220 kPa
			D-ES	0.50m			Becoming dark brown and mottled orange-brown				
				0.5						X	0.60: HP In-situ =120 kPa
				1.00m		CH					
			B	1.20m						X	1.00: HP In-situ =140 kPa
				1.40m							
			D-ES	1.50m							
				1.60m							
						CH	GRAVELLY CLAY Becoming off white and mottled orange-brown, high plasticity, with red angular and sub-angular gravel				
				1.80m							
			D-ES	1.90m							
			B	2.0			WEATHERED SILTSTONE BEDROCK Red, fine grained, extremely low to low strength, with clay (Residual soil and recovered as a clayey gravel)				
				2.10m							
				2.5							
						2.50m	GTP12 terminated at target depth				

PHOTOGRAPHS
NOTES ☐ YES ☐ NO

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT

T Timbering

PENETRATION

No Resistance

WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION

Based on Unified
Classification System

MOISTURE

D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for
details of abbreviations
& basis of descriptions.



Drawn:	JP		Client:	Infrastructure New South Wales			
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton			
Date:	23/02/16						
Scale:	NA		Title:	GPTP12, 2.5m			
			Project No.:	IA101200	figure no:		

EXCAVATION - GEOLOGICAL LOG

PIT NO : GPTP13

PROJECT : Grafton Correctional Facility
LOCATION : Grafton

FILE / JOB NO : IA101200
SHEET : 1 OF 1

POSITION : E: 505874.200, N: 6708779.000 (MGA94 Zone 56)

SURFACE ELEVATION : 22 (Approximate) (AHD)

EQUIPMENT TYPE : 8t Excavator

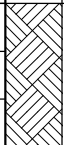
METHOD : Excavator

DATE EXCAVATED : 2/8/16

LOGGED BY : JP

CHECKED BY : SGR

EXCAVATION DIMENSIONS : 0.60 m WIDE

DRILLING							MATERIAL								
PENETRATION				SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	HAND PENETROMETER kPa 100 200 300 400	STRUCTURE & Other Observations
VE	E	F	H												
							0.0		CH	SILTY CLAY Dark brown, high plasticity fines, with fine and medium sand and rootlets (Topsoil)					
							0.30m								
							0.40m		D-ES	SILTY CLAY Light brown mottled orange-brown, high plasticity (Colluvium)					
							0.50m								
							0.80m		D-ES	Becoming off white-grey with laminated layer of red clay					
							1.00m		CH						
							1.50m		D-ES						
							1.60m								
							2.0								
							2.20m			GPTP13 terminated due to bucket refusal					
							2.5								

PHOTOGRAPHS
NOTES ☐ YES ☐ NO

METHOD

N Natural Exposure
X Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT

T Timbering

PENETRATION

No Resistance

WATER

10 Oct., 73 Water
Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS

U - Undisturbed Sample
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak,
R-Remoulded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION

Based on Unified Classification System

MOISTURE

D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP13, 2.2m		
			Project No.:	IA101200	figure no:	



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP14, 1.5m		
			Project No.:	IA101200	figure no:	

EXCAVATION - GEOLOGICAL LOG

PIT NO : GPTP15

PROJECT : Grafton Correctional Facility
LOCATION : Grafton

FILE / JOB NO : IA101200
SHEET : 1 OF 1

POSITION : E: 505898.300, N: 6709615.000 (MGA94 Zone 56)	SURFACE ELEVATION : 24 (Approximate) (AHD)
EQUIPMENT TYPE : 8t Excavator	METHOD : Excavator
DATE EXCAVATED : 2/9/16	LOGGED BY : JP
CHECKED BY : SGR	
EXCAVATION DIMENSIONS : 0.60 m WIDE	

DRILLING						MATERIAL									
VE E F H			SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Partide Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	HAND PENETRO- METER kPa 100 200 300 400	STRUCTURE & Other Observations	
Not Encountered						0.0		CH	SILTY CLAY Dark brown, high plasticity fines, with fine and medium sand and rootlets (Topsoil)	St					

PHOTOGRAPHS NOTES ☐ YES ☐ NO

METHOD N Natural Exposure X Existing Excavation BH Backhoe Bucket B Bulldozer Blade R Ripper SUPPORT T Timbering	PENETRATION WATER 10 Oct., 73 Water Level on Date shown water inflow water outflow	SAMPLES & FIELD TESTS U - Undisturbed Sample D - Disturbed Sample B - Bulk Disturbed Sample MC - Moisture Content HP - Hand Penetrometer (UCS kPa) VS - Vane Shear; P-Peak, R-Remoulded (uncorrected kPa) PBT - Plate Bearing Test	CLASSIFICATION SYMBOLS & SOIL DESCRIPTION Based on Unified Classification System MOISTURE D - Dry M - Moist W - Wet	CONSISTENCY/RELATIVE DENSITY VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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See Explanatory Notes for details of abbreviations & basis of descriptions.



Drawn:	JP		Client:	Infrastructure New South Wales		
Approved:	SGR		Project and Location:	Grafton Correctional Facility, Grafton		
Date:	23/02/16					
Scale:	NA		Title:	GPTP15, 2.5m		
			Project No.:	IA101200	figure no:	