

J003720 Bunbury Street Soil Investigation Amended (09/05/22)

Prepared for: Maribyrnong City Council February 2022



Dago 1 of 11

15 February 2022

Attention: Ms Chelsea Scanes Maribyrnong City Council PO Box 58 West Footscray VIC 3012

Dear Chelsea,

Re: Bunbury Street Soil Investigation

1 Introduction

SESL Australia Pty Ltd (SESL) was engaged by the Maribyrnong City Council to undertake an assessment of the soils along Bunbury Street, Footscray. Bunbury Street is an elm tree lined street that runs eastward from the Footscray train station down to the Maribyrnong River. There is an arched train tunnel that runs the length of the street not far under the asphalt of the street itself. There are wide nature strips that run down either side of the road. There has been some die back in some of the older elm trees and some older elms have recently been removed.

The Maribyrnong City Council requires a detailed soil investigation to help plan for future development of the street. The investigation is not necessarily for immediate soil remediation works but rather to help with decisions during the development of the site over the coming years and to gain an understanding of the soil conditions around the train tunnel and help to identify any other potential soil issues in the redevelopment of the streetscape/

The purpose of the assessment was to determine the physical, chemical and biological characteristics of the top and subsoils along the street between Cowper Street and Whitehall Street, and whether soil is suitable to sustain large and healthy tree growth. Specifically, the client required a soil chemistry report, a nutrient profile, a microbiological profile, soil physical characteristics and the soil contamination status and a letter report detailing our investigation of the soil that supports large healthy tree growth. This report details the findings of the field investigation, the results of laboratory analysis and provide soil management strategies and amelioration advice to improve the soil condition of the site, based on the level of contaminants, and the physical, chemical, and nutritional properties of the material.

2 Site Investigation

SESL's qualified Senior Soil Scientist attended the site on Monday, 20 December 2021 and again on Monday, 21 January 2022 to undertake this investigation and to collect top and subsoil samples for further laboratory analysis. Several sites were identified along a transect across Bunbury Street and at two sites on intersecting streets by the client (Figure 1). A hand auger and stainless-steel spade were

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used for the purpose of collecting soil samples, a stainless-steel ring was used to collect bulk density samples and a double-ring infiltrometer was utilized to collect hydraulic conductivity measurements (Table 1). After clearance from a services locator four 1 m deep auger holes were drilled by hand into the turfed areas in a transect across Bunbury Street (test sites 2, 3, 4 and 5). All sample points were backfilled, and disturbed turf (where relevant) was replaced after sampling to minimise disturbance and trip hazards. All samples were transported to SESL's accredited laboratory (NATA #15633) for analysis.

Historic photos of the site, tunnel excavation and re-construction were provided by the Council to help in the analysis of the soil near the site.



Figure 1 Sample test sites along Bunbury Street Footscray

Table 1 Tests undertaken at each test site along Bunbury Street Footscra	зу
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Test site	SESL code	Investigations
Test site 1	S-01 A	Topsoil and subsoil chemistry
Cowper Street median strip	BH-01 SS	 Hydraulic conductivity Bulk density Microbiology assessment
Test site 2 Bunbury Street transect	S-02 A BH-02 SS	 Soil profile down to 900 mm rejection Topsoil and subsoil chemistry Hydraulic conductivity Bulk density
Test site 3	S-05 A	 Soil profile down to 900 mm rejection Topsoil chamistry
Bunbury Street transect		Hydraulic conductivity

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		Microbiology assessment
Test site 4	S-03 A	 Soil profile down to 1 m Topsoil chemistry
Bunbury Street transect	BH-03 SS	Hydraulic conductivityBulk density
Test site 5	S-04 A	 Soil profile down to 800 mm rejection Topsoil and subsoil chemistry
Bunbury Street transect		 Hydraulic conductivity Bulk density Microbiology assessment
Test site 6	S-06 A	Topsoil and subsoil chemistry
Whitehall Street median strip	BH-04 SS	Bulk densityMicrobiology assessment
Test site 7 Tunnel silt	S-07	Topsoil chemistry

3 Data collection

3.1 BULK DENSITY

Bulk density samples were collected by first clearing away the top 50 mm of soil and turf. The bulk density sample was then collected by punching a stainless-steel ring into the soil. The soil sample was then retrieved as an intact soil core. The sample core was dried and weighed. The soil bulk density was calculated by dividing the soil mass by the internal volume of the stainless-steel ring.

3.2 HYDRAULIC CONDUCTIVITY

Hydraulic conductivity was measured using a double-ring infiltrometer. The infiltrometer was inserted into the soil until the lip of the device was flush with the surface of the soil. The device was filled with water twice and allowed to drain or until a steady state level of water infiltration was reached. The device was filled and the speed at which the water drained from the device was recorded.

3.3 SOIL PROFILE

A hand auger was used to investigate the soil profile. The auger was twisted into the soil in approximately 10 cm increments. After each increment the auger was lifted out of the hole and the soil contents placed on a white plastic sheet for examination. The hole was drilled down to 1 m or until rejection.

3.4 SOIL SAMPLES

Topsoil samples were collected from between 50 to 100 mm depth in the soil. Subsoil samples were collected from below 300 mm depth. Samples for contamination testing were collected with a stainless-

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steel spade, placed in suitable sampling jars and then stored and transported in an esky with ice.

A single sample of silty soil collected from the tunnel was provided by the Maribrynong City Council for a chemical analysis.

4 Laboratory Analysis

Topsoil samples were submitted to SESL's NATA accredited laboratory (#15633) for assessment of the following physical and chemical characteristics:

- pH
- Electrical conductivity
- Effective cation exchange capacity
- Total organic carbon/organic matter
- Plant available/exchangeable nutrients (nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), sulfur (S), magnesium (Mg), iron (Fe), zinc (Zn), copper (Cu), boron (B), manganese (Mn))
- Texture, structure, permeability, wettability, large particles, and visible contaminants

Subsoil samples were assessed for the following physical and chemical characteristics:

- pH
- Electrical conductivity
- Exchangeable cations
- Chloride and sodium
- Subsoil texture and structure

Selected samples also underwent an analysis for soil contaminants to EPA VIC 1828.2 Waste disposal categories - characteristics and thresholds (Table 3):

- Heavy metals: arsenic, cadmium, chromium VI, copper, lead, mercury, molybdenum, nickel, tin, selenium, silver, and zinc
- Anions: cyanide and fluoride

Thornleigh NSW 2120

- Organic species: (phenols, monocyclic aromatic hydrocarbons, benzene, polycyclic aromatic hydrocarbons, benzo(a) pyrene, C6 -C9 and C10 C36 petroleum hydrocarbons, polychlorinated biphenyls, and chlorinated biphenyls
- Pesticides: OCP, aldrin + dieldrin, DDT + DDD + DDE, chlordane, Heptachlor, and other organochlorine pesticides.

Selected samples were also analysed for microbial abundance and composition.

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5 Results and discussion

5.1 **PROFILE DESCRIPTIONS**

Four auger holes to 1 m deep (or rejection) were dug in a transect across Bunbury Street (TS-2, TS-3, TS-4 and TS-5). Two holes were dug on each side of the street, on the southside a hole was dug on either side of the drainage channel.

The soil profiles were similar in each hole (Figure 2). There was approximately 120 to 150 mm of a dark grey loamy material on top. This horizon appeared to be high in organic matter (where is a dense turf layer at each location) and was friable and reasonably easy to dig into. Directly under this topsoil was dense and hard packed material with significant gravel, rubble and debris. This would be consistent with imported fill material placed in position post tunnel construction or after some other construction activity. This layer was approximately 200 to 300 mm deep.

Directly under this layer the soil changed to a more natural looking yellow to brown clay. The soil became much denser and wetter, even in the middle of summer (it was/is an unusually wet summer). This is the clay soil that has been analysed in the subsoil investigation. The soil in this layer was moldable, plastic and smooth. It was mottled in places, indicative of intermittent waterlogging.



Figure 2 Soil profiles of 4 samples from a transect across Bunbury Street. TS-2 is most northern location, and TS-5 is most southern location.

5.2 TOPSOIL PHYSICAL CHARACTERISTICS

Most physical and chemical characteristics of the topsoil tested all similar. The topsoil at each testing spot had a testing point had a similar texture with an approximate clay content of 20 – 30%. It is likely that the top 10 – 20 cm of the topsoil at each testing site is an imported soil as the texture is not one that would be expected in that part of Melbourne. The subsoils are more typical of the area's natural soils.

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Hydraulic conductivity measurements ranged from slow at 4.3 mm/hr up to moderately slow at 14.2 mm/hr (Table 2). At these rates of infiltration, the soils would accept approximately slight to moderate rainfall events without overland run-off or excessive pooling of water. These rates of infiltration are within the range of what might be expected of urban soils with the texture and use of these soils.

The bulk density measurements are within the 1.3 to 1.6 g/cm³ range (Table 2). Bulk density measurements over 1.2 g/m³ have been shown to start restricting root growth of susceptible plants, particularly in clay soils. However, the literature shows that a bulk density of 1.4 g/cm³ can be considered a critical point where root penetration of plants growing in the affected loam and clay soils soil may be severely affected. A reduction of the soil bulk density would improve the hydraulic conductivity of the soil as a reduction in bulk density increases the total porosity of the soil which in turn allows for increased water and air movement into and through the soil. Unfortunately, most methods of reducing soil bulk density involve mechanical lifting and dumping of soil and this would be detrimental to the tree root systems.

Characteristic	TS-1	TS-2	TS-3	TS-4	TS-5	TS-6	TS-7
Hydraulic infiltration	7.3	12.0	13.7	4.4	4.3	14.2	N/A
(mm/hr)	Moderately slow	Moderately slow	Moderately slow	slow	slow	Moderately slow	
Bulk density	1.4	1.5	1.4	1.4	1.6	1.3	N/A
(g/cm ³⁾							
Texture	Fine sandy clay loam	Sandy clay Ioam	Fine sandy clay loam	Light sandy clay loam	Light sandy clay loam	Light sandy clay loam	Fine sandy clay loam
Organic matter	Very high	Very high	Very high	moderate	moderate	high	very low
pH (CaCl ₂)	6.33	6.15	6.81	7.14	6.03	7.03	8.05
EC (dS/m)	0.13	0.09	0.12	0.29	0.05	0.1	0.08
eCEC	24.2	21.2	23.5	19.8	7.6	16.8	13.7
Exchangeable cation %	magnesic	balanced	balanced	balanced	balanced	magnesic	magnesic

Table 2 Topsoil physical and chemical properties

5.3 TOPSOIL CHEMICAL CHARACTERISTICS

The pH (CaCl₂) of the topsoil at the testing sites are all within 6.03 to 7.14 (Table 2). An ideal range of pH for a garden bed is 5.2 to 6.5, therefore, the soil is within or close to an ideal range for garden beds and would not require manipulation. Salinity, sodicity and chloride levels at each test site are mostly very low to low with some mild sodium levels in the two samples closest to, and on either side of, Bunbury Street. These slightly elevated measurements are not of great concern.

The cation exchange capacity of the samples is generally in the moderate range. This indicates that the topsoil has a good ability to store plant available nutrients. The cation exchange complex of each sample is also generally balanced with the percentages of exchangeable cations in good ratios. Samples TS-1 and TS-6 have elevated magnesium levels, but these are not excessively high and only marginally outside

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the recommended range.

Nutrient levels are variable. With the notable exception of sample TS-4, nitrogen levels are very low, phosphorus levels vary from low to high and potassium levels similarly range from low to high. There doesn't seem to be an apparent pattern to the distribution of plant nutrients, which can be typical of urban soils.

The tunnel silt sample has a high pH, perhaps because of water migration through concrete or mortar, otherwise it has similar characteristics to the other soil samples. Major nutrients are very low, salinity is very low and the organic carbon levels are very low.

5.4 SUBSOIL CHARACTERISTICS

The subsoils are more typical of what could be expected in subsoils to the west of Melbourne, even though these subsoils would have been disturbed during the historic rail tunnel construction (Table 3).

The soil texture is noticeably heavier than the topsoil with the subsoils either light clay or sandy clay. Soils with these textures have a clay content of 35 – 45 %. When soils of this clay content are also impacted by elevated sodium levels there can be a significant issue of soil compaction and reduced air and water movement. These issues can lead to erosion, perched water tables or waterlogged soils in winter and subsoils that bake hard in summer and become impermeable to root, water and air movement.

The pH (CaCl₂) of the subsoil is higher than the topsoil, but not excessively so. Typically, the subsoils show some element of sodicity, low calcium levels and high magnesium levels. These figures would be expected in undisturbed subsoil in this area. The Ca:Mg ratio of each sample shows a deficiency of calcium.

Characteristic	BH-01 SS	BH-02 SS	BH-03 SS	BH-04 SS
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Texture	Light clay	Sandy clay	Sandy clay	Light clay
pH (CaCl₂)	7.39	7.43	7.46	7.13
EC (dS/m)	0.63	0.26	0.36	0.27
Sodium mg/kg)	1140	495	512	336
Chloride (mg/kg)	456	114	155	128
Exchangeable cation %	magnesic	magnesic	Moderate sodicity	magnesic

Table 3 Subsoil physical and chemical properties

5.5 MICROBIAL ANALYSIS

Samples from the test sites underwent a microbial analysis. The analysis examined the composition and diversity of microbes within the soil and the abundance of the various microbial types. The topsoil only was examined.

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6.4.4



It is not unexpected that given the similarity of the soils between the test sites that the microbial analysis of the soil at those sites shows a similar pattern. Most soil indicators are good, including the total mass of microorganisms and total fungi within the soil. Total bacteria levels were fair. Microbial diversity was fair, fungi: bacteria levels are fair, and the bacteria stress indicator is good.

Protozoa levels are good. They play an important role in the transfer of nutrients into a form suitable for plant uptake. Protozoa can be sensitive to agrochemicals, particularly herbicides. True anaerobes are elevated which is an indication of recent waterlogging. This is consistent with the wet period prior to sampling but also indicative of soils that do not drain freely.

Management activities should focus on building the microbial diversity of the soil.

Analyte	Guide	TS-1	TS-2	TS-3	TS-4	TS-5	TS-6
Total microorganisms	50.0	52.4	73.1	46.0	40.3	64.2	65.7
Total bacteria	15.0	12.4	15.5	8.5	6.8	15.0	11.2
Total fungi	33.8	37.8	53.0	35.7	30.8	45.8	51.2
Microbial diversity	80.0	37.1	33.4	35.6	33.9	41.1	32.2
Fungi: bacteria	2.3	3.0	3.4	4.2	4.5	3.1	4.6
Bacterial stress	< 0.5	0.5	0.5	0.4	0.3	0.4	0.2

 Table 4 Results of microbial analysis of field samples from Bunbury Street Footscray

5.6 CONTAMINATION ASSESSMENT

Samples from the Bunbury Street transect were analysed for soil chemical contaminants. The results of the contamination analysis were compared against two sets of regulations or guidelines:

- 1. Vic EPA 1828.2: Waste disposal categories characteristics and thresholds
- 2. National Environmental Protection (Assessment of Site Contamination) Amended Measure 2013 (NO.1), NEPM.

5.6.1 Vic EPA 1828.2

The Victorian EPA 1828.2 regulations provide a method of categorising waste materials, such as excavated soils, that are moved off site. Waste material is categorised in a gradient from Fill Material (low levels of contaminants) up to Category B (increasing levels of contamination). If soil that is not moved off site would not require an EPA 1828.2 categorisation.

TS-2: This sample has detections of zinc, polycyclic aromatic hydrocarbons (PAHs) and Benzo(a) pyrene above the upper limit for Fill Material. The zinc and Benzo(a) pyrene would need further leachate testing to be conducted to be formally categorised.

TS-3: This sample has no chemical contaminant detections above the upper limit for Fill Material.

TS-4: This sample has no chemical contaminant detections above the upper limit for Fill Material.

TS-5: This sample has a detection of zinc above the upper limit for Fill Material. The zinc would need further leachate testing to be conducted to be formally categorised.

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5.6.2 NEPM (2013)

NEPM provides a framework for the use of investigation and screening levels for the protection of human health, ecosystems, groundwater resources and aesthetics. Investigation levels and screening levels are applicable to the site assessment. The adopted investigation and screening levels for the site are outlined below:

- Health Investigation Levels (HILs);
- Health Screening Levels (HSLs):
- Ecological Investigation Levels (EILs); and
- Ecological Screening Levels (ESLs).

Considering the assessment area is part of a streetscape, SESL considers that the most appropriate approach is to consider the site as Residential C. This level of assessment is used for parks, playgrounds, secondary schools and footpaths.

All tested samples have met all criteria for HIL C, and as such, will not require special management if the soil remains on site.

6 Conclusion

The soil within the investigation site was examined for its physical, chemical, biological and contamination characteristics. Generally, the soils are of a reasonable quality without being excellent. The bulk density and infiltration measurements, profile observations, augering issues and soil texture classes indicate that there are some clear issues around soil porosity which may be hampering the performance of the trees along the street by restricting root soil exploitation and water infiltration.

The top and subsoil investigated from the testing sites along Bunbury Street and in the median strips of Cowper and Whitehall strip display consistent physical, chemical and biological characteristics. This could be helpful during redevelopment of the streetscape as it will minimise the need to be overly individually targeted in soil remediation efforts.

Historic photos of the site show the large-scale soil disturbance that took place during the tunnel construction. Of particular interest is the proximity of what appear to be young tree to the excavation itself. Given the long-time gap between the tunnel construction and the present time, it appears that the trees were able to cope with the disturbance and adapt to the new soil conditions. Also shown in the photos is the large space along the eastern side of Bunbury Road where no excavation was conducted (approximately near the middle drain swale). We could expect that the soil in this region is as undisturbed as a normal urban soil.

It is probably wise not to draw too many inferences from the tunnel silt sample. The origin of the material is unknown as is the hydrologic water movement. In any event the texture and some of the chemical characteristics of the material are similar to those tested along the Bunbury Street transect.

Nutrient levels in the soils are mixed. The greatest concern is the low the nitrogen levels of the soil in most samples. An application of Urea at 8 g/m² will help to improve this measurement (except for TS-4). SESL Australia would also recommend a leaf nutrient analysis to further confirm the nutritional status of the trees.

The biggest barrier to more successful tree growth appears to be soil compaction. This results in decreased soil porosity which in turn increases soil bulk density and decreases water infiltration and air movement into and out of the soil. These are typically remediated by mechanical loosening of the soil, often with the addition of ameliorants such as gypsum, organic matter (compost) and plant nutrients.

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Mechanical loosening of soil is difficult and probably not recommended near large established trees due to the risk of damage to the root architecture. Possible methods of improving soil porosity (and therefore bulk density and infiltration) include radial trenching, particularly with an air-spade, and soil fracturing with high pressure gas injections. Unfortunately, neither method has been conclusively proven. Soil bulk density can improve organically over time if compacting influences are minimised. Human and vehicular traffic are two major drivers of soil compaction. Replacing sections of the turf on the wide nature strips of the street with a suitable mulch layer can improve the function of the soil, discourage foot traffic, improve the biological diversity of the soil and further improve key physical and chemical properties. The mulch layer will also decrease the competition for soil resources for the trees.

Areas where soil nutrients are low could be targeted with selected fertilisers.

SESL AUSTRALIA PTY LIMITED

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Peter Somerville Senior Soil Scientist M Urban Hort, PhD

Attachments:

- 1. Site photographs
- 2. NATA/ISO certificates

interto

Simon Leake Principal Soil Scientist B Sc (Ag) Hons, ASSSI, CPSS

Limitations of This Report:

SESL has performed an investigation and consulting services for this project, as outlined in our discussions and in accordance with current professional and industry standards for environmental site assessment. The findings of this report are the result of discrete/specific methodologies used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of this site and do not represent the actual state of the site at all points. Should materials or conditions be encountered other than those which have been described, these will require additional assessment.

The SESL assessment is based on the result of limited site investigation. SESL cannot provide unqualified warranties nor assume any liability for site conditions not observed, accessible during the time of the investigations. Despite all reasonable care and diligence, the ground conditions encountered, and the concentrations of contaminants measured, may not be representative of conditions between the

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locations samples and investigated. In addition, site characteristics may change as a result of soil heterogeneity, chemical reactions and other events. These changes may occur subsequent to SESL investigation and assessment.

This report, associated documentation and the information herein, have been prepared solely for the use of the named Client and any relevant authority. Any reliance assumed by third parties on this report shall be at such parties' own risk. Any ensuring liability resulting from use of the report by a third party cannot be transferred to SESL.

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Mehlich 3 - Multi-nutrient Extractant

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ès	Mailing Address:	PO Box 357 Pennant Hills NSW 1715	Em: Web:	info@sesl.com.au www.sesl.com.au	
	Sample Drop Off:	16 Chilvers Road Thornleigh NSW 2120	Tel: Fax:	1300 30 40 80 1300 64 46 89	

onsult - VIC	Project Name:	Bunbury Street Soil Assesme	ent	
	SESL Quote N°	Q 12757		
omerville	Sample Name:	S-01 A		
	Description:	Soil		
ers Road igh_NSW_2120	Test Type:	FSC_Plus, MWSS		
	onsult - VIC omerville rers Road igh NSW 2120	onsult - VIC Project Name: SESL Quote N° Sample Name: Description: rers Road Test Type: igh NSW 2120	Description: Soil Peroject Name: Bunbury Street Soil Assessme SESL Quote N°: Q 12757 Sample Name: S-01 A Description: Soil rers Road Test Type: FSC_Plus, MWSS igh NSW 2120 FSC_Plus, MWSS	Description: Project Name: Bunbury Street Soil Assesment SESL Quote N°: Q 12757 Sample Name: S-01 A Description: Soil rers Road Test Type: FSC_Plus, MWSS igh NSW 2120 FSC_Plus, MWSS

RECOMMENDATIONS

Please see report for full result, interpretations and recommendations



24.2 Moderate



CATION RATIOS

Ratio		Result	Target Range					
Ca:Mg	I	2.5 4.1 – 6.0)			
Comment: Calcium low								
Mg:K		3.4	2	2.6 – 5.0)			
Comment: Balanced								
K/(Ca+	⊦Mg)	0.08	< 0.07					
Comment: High								
K:Na		7.8	N/A					
EXC	HANGEA	BLE CA	TIONS (cmol(+)	/kg)			
Na:	K:	Ca:	Mg:	H:	AI:			
0.24	1.86	15.75	6.37	-	-			
eCEC does not include correction for soluble salts as standard. Where exchangeable calcium exceeds 80 % of eCEC and/or salinity exceeds 0.75 dS/m, alternative methods are recommended to determine true eCEC. The units of eCEC <i>cmol(+)/kg</i> are the SI unit and are equivalent to <i>meq/100g</i> .								



A member of the Australian Soil and Plant Analysis Council (ASPAC) This laboratory participates in, and is awarded certification based on results of the scores returned in, ASPAC inter-laboratory proficiency rounds. For detailed current certification based and a shared in the ASPAC inter-laboratory proficiency using programs, see the ASPAC website: http://www.aspac-australasia.com



Mehlich 3 - Multi-nutrient Extractant

Mailing Address:

Sample Drop Off: 16 Chilvers Road Thornleigh NSW 2120 PO Box 357

Tel: 1300 30 40 80 Fax: 1300 64 46 89 Em: info@sesl.com.au Pennant Hills NSW 1715 Web: www.sesl.com.au

Batch N°: 61964

Sample N°: 1

Date Received: 22/12/21

Report Status: Draft

			PLANT	AVAI	LABLE	NUTRIEN	TS			
EFFECTIVE AME		N DEPTH	(mm): () 100	O 150	O 20	DESIRED FE		ASS: O LOV	w O Mode	rate O Hig
Major Nutrients	Unit	Result	Very Low	Low	Margi	nal <u> </u> Adequ	ate 📕 High	Result (g/sqm)	Desirable (g/sqm)	Adjustment (g/sqm)
Nitrate-N (NO ₃)	mg N/kg	2.5						0.5	-	Maintenance
Phosphorus (P)	mg P/kg	110						21.9	12.6	Drawdown
Potassium (K)	mg/kg	728						145.2	69	Drawdown
Sulfur (S)	mg S/kg	20						4	13.6	9.6
Calcium (Ca)	mg/kg	3160						630.4	491.6	Drawdown
Magnesium (Mg)	mg/kg	774						154.4	51.3	Drawdown
Iron (Fe)	mg/kg	138						27.5	110.1	82.6
Manganese (Mn)	mg/kg	16					//	3.2	8.8	5.6
Zinc (Zn)	mg/kg	145						28.9	1	Drawdown
Copper (Cu)	mg/kg	20						4	1.3	Drawdown
Boron (B)	mg/kg	4						0.8	0.5	Drawdown
Growth is likely to be severely depressed and deficiency symptoms present. Large application for soil building purposes are usually recommendee Potential response to nutrient addition is >90 %	Potential "I hunger", o deficiency, is response t addition is d.	₩ hidden r sub-clinical . Potential to nutrient 60 to 90 %.	Marginal Supply of this nutrient is barely adequate for the plant, and build-up is still recommended. Potential response to nutrient addition is 30 to 60 %.	Supply adequa and an mainte rates a Potent nutrien 30 %.	Adequate v of this nutrier ate for the plar d only nance applica re recommenc ial response to t addition is 5	t is t, may be detriin growth (i.e. p may contributed. growth (i.e. p may contributed. prawdown is brawdown i brawdown i	excessive and mental to plant hytotoxic) and te to pollution of surface waters. recommended. ponse to nutrient 2 %.	elemental applica the Adequate baa economic efficien environment. Drawdown: The e utilise residual so reason to apply fe Adequate. • g/sqm measurer 1.33 tonne/m ³ and	tion to shift the soil nd, which maximise cy, and minimises ir objective nutrient m il nutrients. There is ertiliser when soil tes ments are based on d effective ameliorat	test level to within sprowth/vield, and mpact on the anagement is to no agronomic st levels exceed soil bulk density of ion depth.
Phosphorus Sa	turation In	dex	Exchangeabl	e Acidi	ty		Lime App	lication Rate	e (g/sqm)	
0.15 0.06 Adequate 0 mm 0.15 Adequate 0 mm 0.15 Adequate 0 mm 0.15	nol/kg 23 environmental th P management to npoint P pollution	≥0.4 – areshold. o reduce n.	Adams-Evans B Sum of Base Ca Eff. Cation Exch Base Saturation Exchangeable A Exchangeable A	uffer pH ations (cn . Capacit (%): acidity (cr acidity (%	(BpH): nol(+)/kg): ty (eCEC): nol(+)/kg): .):	- 24.2 24.2 100 -	– to achiev – to neutra Calculate (g/sqm) to The CGA effective a Lime addit	ve pH 6.0: alise Al: d Gypsum A achieve 67. AR is corre amelioration tion to achiev	Application I 5 % exch. Ca ected for t depth (m re pH 6.0.	0 - Rate (CGAR) a: 0 he selected m) and any
			PH	YSICA	L DESC	RIPTION				
Texture: Estimated clay cor Tactually gravelly: Tactually organic: Calculated EC _{SE} (c – Non-saline. Sali are mostly neglig	Fine Sandy Intent: N N IS/m): nity effects ible.	Clay Loam 20 - 30% lot gravelly lot Organic 1.1 on plants	Munsell Color Structure Size Structural Org Structural Un Potential infilt Est. Permeab Additional con	ur: ອ: ganisatio it: ration rat pility Clas mments:	Medium n: Ped te: s (mm/hr):	a (11 - 25mm) al - Moderate Crumb Moderate 20 - 60	Organic Ca Organic Ma Est. Field C Est. Perma Est. Plant A Est. Plant A	rbon (OC %) atter (OM %): apacity (% w nent Wilting I wailable Wat	vater): Point (% wat er (% water) er (mm/m):	Very High - 5 8.5 28 er): 15 : 13 130
								Date Repo	rt Generated	16/02/2022
ultant: Peter Som	erville	,	Authorised Sigr	natory:	Simon Lea	ake	METHOD REI pH (15 H ₂ O) - SESL pH (15 CaC ₂) - SES EC (15) - SESL CM Chloride, Rayment & Nitrate - Rayment & P, K. S. Ca, Mg, Na, Buffer pH and Hydrog Texture/Situcture(Co "Northcode" (1992), S	FERENCES: CM0002; Rayment & Lyc L CM0002; Rayment & Lyons 3 Lyons 5A2a-2011 yons 7B1a-2011 M0007; Rayment & Lyons 5 yons 7B1a-2011 M0007; Rayment & Lyons F, Mh. Zh, Cu, B SESL yon - PM0003 (Texture Turdure - Murphy (199	ons 4A1-2011 yors 4B4-2011 A1-2011 : 15A1-2011 : CM0007, Rayment & Ly oil Analysis 2007, P1 3, C 1), Colour, "Munsell" (20 dad an 2 dicturad comme	rons 18F1-2011 2h 17: Adams-Evans (1962) 00)) Jus therefore is only 2

Co

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Disclaimer Tests are performed under a quality system complying with 150 9001: 2008. Results are based on the analysis of the samples collected or received by SESL. Due to the spatial and temporal variability of soils within a given site, and the variability of sampling techniques, environmental conditions and managerial factors, SESL does not accept any liability for a lack of general compliance or performance based on the interpretation and recommendations given (where applicable). This document must not be reproduced except in full.

"Structure analysed in the laboratory is conducted on a disturbed sample, therefore is only a representation of the macro-structures that may be present in the field, which provide an indication of the soil physical characteristics and behaviours that may exist.



SESL Consult - VIC

16 Chilvers Road

Thornleigh NSW 2120

Client Contact: Peter Somerville

Batch N°: 61964

Client Name:

Client Order N°:

Address:

Soil Chemistry Profile

Mehlich 3 - Multi-nutrient Extractant

A ces	Sample Drop Off: Mailing Address:	16 Chilvers Road Thornleigh NSW 2120 PO Box 357 Pennant Hills NSW 1715	Tel: Fax: Em: Web:	1300 30 40 80 1300 64 46 89 info@sesl.com.au www.sesl.com.au					
Date Received: 22/12/21 Report Status:									
	Project Name SESL Quote Sample Name	: Bunbury Street Soil A N°: Q 12757 e: S-02 A	Assesm	ent					

FSC_Plus, MWSS, VIC_IWRG621-Std

-- -- ---

RECOMMENDATIONS

Soil

Description:

Test Type:

Please see report for full result, interpretations and recommendations

Sample N°: 3





CATION RATIOS

Ratio	1	Result	t Target Range					
Ca:Mg	Ca:Mg 3.4			1.1 – 6.0)			
Comment: Calcium low								
Mg:K		9.5	2	2.6 – 5.0)			
Comment: Potassium low								
K/(Ca-	⊦Mg)	0.02	< 0.07					
Comment: Acceptable								
K:Na		1.8	N/A					
EXC	HANGEA	BLE CA	TIONS (cmol(+)	/kg)			
Na:	K:	Ca:	Mg:	H:	AI:			
0.27	0.49	15.83	4.63	-	-			
eCEC do standard of eCEC methods The units equivale	0.27 0.49 15.83 4.63 - eCEC does not include correction for soluble salts as standard. Where exchangeable calcium exceeds 80 % of eCEC and/or salinity exceeds 0.75 dS/m, alternative methods are recommended to determine true eCEC. The units of eCEC cmol(+)/kg are the SI unit and are equivalent to methods							



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Mehlich 3 - Multi-nutrient Extractant

Mailing Address:

Sample Drop Off: 16 Chilvers Road Thornleigh NSW 2120 PO Box 357

Pennant Hills NSW 1715

Tel: 1300 30 40 80 Fax: 1300 64 46 89 Em: info@sesl.com.au Web: www.sesl.com.au

Batch N°: 61964

Sample N°: 3

Date Received: 22/12/21

Report Status: Draft

					A661 O 1		
Major Nutrients	Unit	Result	Very low low Marginal Adequa	ate High	Result	Desirable	Adjustmen
•				// · · · · · · · · · · · · · · · · · ·	(g/sqm)	(g/sqm)	(g/sqm)
Nitrate-N (NO ₃)	mg N/kg	2.4		//	0.5	-	Maintenance
Phosphorus (P)	mg P/kg	38		<u>//</u>	7.6	12.6	5
Potassium (K)	mg/kg	192		<u>//</u>	38.3	69	30.7
Sulfur (S)	mg S/kg	13		//	2.6	13.6	11
Calcium (Ca)	mg/kg	3170			632.4	491.6	Drawdown
Magnesium (Mg)	mg/kg	563			112.3	51.3	Drawdown
Iron (Fe)	mg/kg	153			30.5	110.1	79.6
Manganese (Mn)	mg/kg	17		/	3.4	8.8	5.4
Zinc (Zn)	mg/kg	73			14.6	1	Drawdown
Copper (Cu)	mg/kg	19			3.8	1.3	Drawdown
Boron (B)	mg/kg	2.3		/	0.5	0.5	0
Growth is likely to be severely depressed and deficiency symptoms present. Large application for soil building purposes are usually recommended Potential response to nutrient addition is >90 %.	Potential " hunger", o deficiency s response addition is	hidden r sub-clinical . Potential to nutrient 60 to 90 %.	Supply of this nutrient Supply of this nutrient is barely adequate for the plant, and and and only adapted to the plant, and and and only build-up is still maintenance application recommended. The level is e point-up is still maintenance application recommended. maintenance application may be defined in the plant, and and only interval addition is 30 Dread and and only and and only and and only and and only interval addition is 5 to plant, and and only and and only and and only interval addition is 5 to addition is 5 to addition is <2	xcessive and nental to plant nytotoxic) and e to pollution of urface waters. recommended. oonse to nutrient %.	environment. Drawdown: The utilise residual soi reason to apply fe Adequate. • g/sqm measurer 1.33 tonne/m ³ and	objective nutrient ma I nutrients. There is rtiliser when soil tes nents are based on d effective ameliorat	anagement is to no agronomic ti levels exceed soil bulk density of ion depth.
Phosphorus Sat	turation In	dex	Exchangeable Acidity	Lime App	lication Rate	e (g/sqm)	
0.15			Adams-Evans Buffer pH (BpH): -	 to achiev 	ve pH 6.0:		0
0.11 High			Sum of Base Cations (cmol(+)/kg): 21.2	– to neutra	lise Al:		-
0.06	Excessive	N N	Eff. Cation Exch. Capacity (eCEC): 21.2 Base Saturation (%): 100	Calculated	d Gypsum A	pplication I	Rate (CGAR)
Low		>0.4	Exchangeable Acidity (cmol(+)/kg): -	(g/sqm) to	achieve 67.8	5 % exch. Ca	a: O
mm	ol/kg		Exchangeable Acidity (%):	The CGA	R is corre	ected for t	he selected
0.0 Adequate. Economic application recommended)9 response to P ui maintaining cur	nlikely. P rent P level.		effective a Lime addit	amelioration ion to achiev	depth (mi re pH 6.0.	m) and any
			PHYSICAL DESCRIPTION				
Texture: Estimated clay con Tactually gravelly: Tactually organic: Calculated EC _{SE} (d – Non-saline. Sali are mostly neglig	Sandy tent: N S/m): nity effects ible.	Clay Loam 20 - 30% lot gravelly lot Organic 0.9 on plants	Munsell Colour:-Structure Size:Medium (11 - 25mm)Structural Organisation:Pedal - ModerateStructural Unit:CrumbPotential infiltration rate:ModerateEst. Permeability Class (mm/hr):20 - 60Additional comments:	Organic Ca Organic Ma Est. Field C Est. Permar Est. Plant A Est. Plant A	rbon (OC %) tter (OM %): apacity (% w hent Wilting I vailable Wat vailable Wat	: Ve vater): Point (% wat rer (% water) er (mm/m):	ry High - 4.5 7.7 26 er): 15 : 11 110
			1		Date Repo	rt Generated	16/02/2022

pH (1:5 CaCk) - SESI. CM0002; Rayment & Lyons 484-2011 EO (1:5) - SESI. CM0001; Rayment & Lyons 3A1-2011 Dilutate- Rayment & Lyons 3A1-2011 Alumnium - SESI. CM0007; Rayment & Lyons 15A1-2011 P. K. S. Ca. Mg, Na. Fe. Mn. Zr. Ou. B - SESI. CM0007; Rayment & Lyons 18F1-2011 Buffer pH and Hydrogen - SSSA Methods of Soli Analysis 2007, Pt 3, Ch 17; Adams-Evans (1962) TextureStructureColour - PM0003 (Texture "Northcote" (1992), Structure" - "Murphy" (1991), Colour- "Munsell" (2000))

"Structure analysed in the laboratory is conducted on a disturbed sample, therefore is only a representation of the macro-structures that may be present in the field, which provide an indication of the soil physical characteristics and behaviours that may exist.



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SESL Consult - VIC

16 Chilvers Road

Thornleigh NSW 2120

Client Contact: Peter Somerville

Batch N°: 61964

Client Name:

Client Order N°:

Address:

Soil Chemistry Profile

Mehlich 3 - Multi-nutrient Extractant

~	Sample Drop Off:	16 Chilvers RoadTel:Thornleigh NSW 2120Fax:PO Box 357Em:Pennant Hills NSW 1715Web:		1300 30 40 80 1300 64 46 89		
ces	Mailing Address:			info@sesl.com.au www.sesl.com.au		
	Date Receiv		Report Status: Dra	aft		
	Project Name	Bunbury Street Soil A	Assesm	nent		
	SESL Quote	N°: Q 1275 7				
	Sample Nam	e: S-03 A				

FSC_Plus, MWSS, VIC_IWRG621-Std

RECOMMENDATIONS

Soil

Description:

Test Type:

Please see report for full result, interpretations and recommendations

Sample N°: 5





CATION RATIOS

Ratio		Result	t Target Range					
Ca:Mg		3.5	4	.1 – 6.0)			
Comm	ent: Cal	cium lo	w					
Mg:K		5.5	2	2.6 – 5.0)			
Comm	ent: Pot	assium	low					
K/(Ca+	-Mg)	0.04		< 0.07				
Comment: Acceptable								
K:Na	1.5 N/A							
EXCHANGEABLE CATIONS (cmol(+)/kg)								
Na:	K:	Ca:	Mg:	H:	AI:			
0.48	0.74	14.47	4.1	-	-			
0.48 0.74 14.47 4.1 - - eCEC does not include correction for soluble salts as standard. Where exchangeable calcium exceeds 80 % of eCEC and/or salinity exceeds 0.75 dS/m, alternative methods are recommended to determine true eCEC. The units of eCEC cmol(+)/kg are the SI unit and are equivalent to med/100g.								



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Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off: 16 Chilvers Road

Mailing Address:

Thornleigh NSW 2120 PO Box 357

Tel: 1300 30 40 80 Fax: 1300 64 46 89 Em: info@sesl.com.au Pennant Hills NSW 1715 Web: www.sesl.com.au

Batch N°: 61964

Sample N°: 5

Date Received: 22/12/21

Report Status: Draft

EFFECTIVE AME	LIORATIC				Result	N O Moder	Adjustmen
Major Nutrients	Unit	Result	Very Low Low Marginal 💋 Adequ	ate 📕 High	(g/sqm)	(g/sqm)	(g/sqm)
Nitrate-N (NO ₃)	mg N/kg	110			21.9	-	Maintenand
Phosphorus (P)	mg P/kg	32			6.4	12.6	6.2
Potassium (K)	mg/kg	290			57.9	60.6	2.7
Sulfur (S)	mg S/kg	18		1	3.6	13.6	10
Calcium (Ca)	mg/kg	2900			578.6	431.7	Drawdown
Magnesium (Mg)	mg/kg	498			99.4	44.9	Drawdown
Iron (Fe)	mg/kg	165			32.9	110.1	77.2
Manganese (Mn)	mg/kg	34		//	6.8	8.8	2
Zinc (Zn)	mg/kg	22			4.4	1	Drawdown
Copper (Cu)	mg/kg	4.5			0.9	1.3	0.4
Boron (B)	mg/kg	2.1		//	0.4	0.5	0.1
denciency symptoms present. Large application for soil building purposes are usually recommended Potential response to nutrient addition is >90 %.	addition is	60 to 90 %.	the plant, and build-up is still recommended. Potential response to nutrient addition is 30 nutrient addition is 30 nutrient addition is 5 to 30 %.	Invitoxic) and te to pollution of surface waters. recommended. ponse to nutrient 2 %.	utilise residual soi reason to apply fe Adequate. • g/sqm measurer 1.33 tonne/m ³ and	I nutrients. There is ertiliser when soil tes ments are based on d effective ameliorat	no agronomic st levels exceed soil bulk density of ion depth.
Phosphorus Sat	turation Ir	Idex	Exchangeable Acidity	Lime Appl	ication Rate	e (g/sqm)	
0.15			Sum of Base Cations (cmol(+)/kg): 19.8	– to active	lise Al:		-
0.06 High	Excessive		Eff. Cation Exch. Capacity (eCEC): 19.8 Base Saturation (%): 100 Exchangeable Acidity (cmol(±)/kg):	Calculated (g/sqm) to	I Gypsum A achieve 67.5	pplication I 5 % exch. Ca	Rate (CGAR) a: 0
0 mm 0.0 Adequate. Economic application recommended	ool/kg D6 response to P u I maintaining cu	I ≥0.4 nlikely. P rrent P level.	Exchangeable Acidity (%): -	The CGA effective a Lime addit	R is corre melioration ion to achiev	ected for t depth (m re pH 6.0.	he selected m) and any
			PHYSICAL DESCRIPTION				
Texture: L Estimated clay con Tactually gravelly: Tactually gravelly: Tactually organic: Calculated EC _{SE} (d Slightly saline. plant species is a	ight Sandy itent: IS/m): Growth on s ffected.	Clay Loam 25% Gravelly lot Organic 2.8 sensitive	Munsell Colour:-Structure Size:Medium (11 - 25mm)Structural Organisation:Pedal - ModerateStructural Unit:CrumbPotential infiltration rate:RapidEst. Permeability Class (mm/hr):>120Additional comments:	Organic Car Organic Ma Est. Field C Est. Permar Est. Plant A Est. Plant A	bon (OC %) tter (OM %): apacity (% w ent Wilting I vailable Wat vailable Wat	: M vater): Point (% wat er (% water) er (mm/m):	oderate - 1.8 3.1 26 er): 12 : 14 140
					Date Repo	rt Generated	16/02/2022
ultant: Peter Some	erville		Authorised Signatory: Simon Leake	METHOD REF pH (1:5 H ₂ O) - SESL pH (1:5 CaCl ₂) - SESL EC (1:5) - SESL CMO Chloride - Rayment & Nitrate - Rayment & L	ERENCES: CM0002; Rayment & Lyc CM0002; Rayment & Lyons 3 Lyons 5A2a-2011 ons 7B1a-2011	ons 4A1-2011 yons 4B4-2011 A1-2011	

Nutate - Rayment & Lyters Yol 3-201 Express 164-2011 Aurminium - Stop May Rev May Rev Mark Strand Rev Mark Strand Stra

*Structure analysed in the laboratory is conducted on a disturbed sample, therefore is only a representation of the macro-structures that may be present in the field, which provide an indication of the soil physical characteristics and behaviours that may exist.



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		' 	P. Soil Chemistry Profile Mehlich 3 - Multi-nutrient Extractant							
			Sample Drop Off:	16 Chilvers Road Thornleigh NSW 2	Tel: 120 Fax :	1300 30 40 8 1300 64 46 8	80 89			
	AUSIR/ Environment & Sc	ALIA il Sciences	Mailing Address:	PO Box 357 Pennant Hills NSW	Em: / 1715 Web:	info@sesl.co www.sesl.co	m.au m.au			
Batch N°: 61964	Sample N°	: 6	Date Receiv	ved: 22/12/21		Report St	atus: Drat	ft		
Client Name:	SESL Consult - VIC		Project Name SESL Quote	e: Bunbury Stree	et Soil Assesm	ient				
Client Contact:	Peter Somerville		Sample Nam	e: S-04 A						
Client Order N°:			Description:	Soil						
Address:	16 Chilvers Road Thornleigh NSW 212	0	Test Type:	FSC_Plus, MV	VSS, VIC_IWR	G621-Std				
		pH and	ELECTRIC	AL CONDUC	ΓΙVITY					
	Extreme Very	Strong Strong	Medium Slight	V. Slight Neutral	Slight	Moderate	Strong	Very S	trong	
	Acidity Acidity Acidity Acidity	5.0 5.5	Acidity Acidity 5 6.0	6.5 7.0	Alkalinity 7.5 8.0	Alkalinity 8.5	Alkalinity 9.0	9.5	nity ≥10	
pH in H₂O	(1:5)		//////	6.79						
pH in CaCl	(1:5)		6.03							
1 2	0.001	0.01	10	0.100		1.000			10.000	
Salinity (EC 1:5	dS/m) 0.05 - Very lov	v								
Sodium (Na)	ma/ka) 27 Very Low									
		V								

Sodium (Na) (mg/kg) Chloride (Cl) (mg/kg) **CATION BALANCE EXCHANGEABLE CATION PERCENTAGE** Note: Hydrogen only determined when pH in CaCl₂ \leq 5.5 Al only determined if pH in CaCl₂ is \leq 5.2 Extractable Extractable Extractable Magnesium (Mg) Calcium (Ca) Exchangeable Extractable Sodium (Na) Potassium (K) Extractable Aluminium* (Al) Na < 5% Na 1.6% Not sodic, normal Mg 12 - 25% Mg 18.2% Ca Ca 77.6% 57 - 78% Normal Normal K 3 - 11% K 2.6% Low H < 10% AI (N/A) for pH in CaCl2 >5.2 Al < 1% ACTUAL IDEAL EFFECTIVE CATION EXCHANGE CAPACITY (eCEC) (cmol(+)/kg) 10 20 100 0 50

CATION RATIOS

Ratio		Result	Tar	get Rar	nge			
Ca:Mg		4.3	4	.1 – 6.0)			
Comm	ent: Bal	anced						
Mg:K		6.9	2	2.6 – 5.0)			
Comm	ent: Pot	tassium	low					
K/(Ca+	-Mg)	0.03		< 0.07				
Comment: Acceptable								
K:Na		1.7	N/A					
EXCHANGEABLE CATIONS (cmol(+)/kg)								
Na:	K:	Ca:	Mg:	H:	AI:			
0.12	0.2	5.9	1.38	-	-			
0.12 0.2 0.39 1.30 - - eCEC does not include correction for soluble salts as standard. Where exchangeable calcium exceeds 80 % of eCEC and/or salinity exceeds 0.75 dS/m, alternative methods are recommended to determine true eCEC. The units of eCEC cmol(+)/kg are the SI unit and are equivalent to meq/100g.								



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7.6 Low



Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off: 16 Chilvers Road

Thornleigh NSW 2120 Mailing Address: PO Box 357

Tel: 1300 30 40 80 Fax: 1300 64 46 89 Em: info@sesl.com.au Pennant Hills NSW 1715 Web: www.sesl.com.au

Batch N°: 61964

Sample N°: 6

Date Received: 22/12/21

Report Status: Draft

Unit ng N/kg ng P/kg ng S/kg mg/kg mg/kg mg/kg mg/kg	Result 0.48 23 79.8 9.8 1180 168 213	Very Low	Low [Marginal	Adequa	te	High	Result (g/sqm) 0.1	Desirable (g/sqm)	Adjustmer (g/sqm) Maintenand
ng N/kg ng P/kg mg/kg ng S/kg mg/kg mg/kg mg/kg	0.48 23 79.8 9.8 1180 168 213							0.1	-	Maintenand
mg P/kg mg/kg mg S/kg mg/kg mg/kg mg/kg	23 79.8 9.8 1180 168 213							4.6	10.6	
mg/kg mg S/kg mg/kg mg/kg mg/kg mg/kg	79.8 9.8 1180 168 213							4.0	12.0	8
mg S/kg mg/kg mg/kg mg/kg mg/kg	9.8 1180 168 213							15.9	43.9	28
mg/kg mg/kg mg/kg mg/kg	1180 168 213							2	13.6	11.6
mg/kg mg/kg mg/kg	168 213							235.4	312.4	77
mg/kg mg/kg	213							33.5	32.5	Drawdowr
mg/kg								42.5	110.1	67.6
	5.9							1.2	8.8	7.6
mg/kg	17					//		3.4	1	Drawdowr
mg/kg	2.2		1			8		0.4	1.3	0.9
mg/kg	0.6							0.1	0.5	0.4
hunger", or deficiency. F response to addition is 6	sub-clinical Potential nutrient 50 to 90 %.	is bárély adequate for the plant, and build-up is still recommended. Potential response to nutrient addition is 30 to 60 %.	adèquate and and o maintenar rates are r Potential r nutrient ac 30 %.	for the plant, nly ice application ecommended. esponse to Idition is 5 to	may be detrim growth (i.e. ph may contribut ground and su Drawdown is u Potential resp addition is <2	ental to pla sytotoxic) and to pollutio inface wate ecommence onse to nut %.	int nd rs. led. rient	Drawdown: The o utilise residual soil reason to apply fer Adequate. • g/sqm measurem 1.33 tonne/m ³ and	bjective nutrient ma nutrients. There is tiliser when soil tes nents are based on effective ameliorati	anagement is to no agronomic t levels exceed soil bulk density of ion depth.
ration Inc	lex					Lime	Appli	ication Rate	(g/sqm)	
		Adams-Evans But	ter pH (B)	рн): - (+)/ka): 7	6	– to i	neutral	ise Al:		0
xcessive g ponse to P unli aintaining curre	≥0.4 ikely. P ent P level.	Eff. Cation Exch. (Base Saturation (⁹ Exchangeable Aci Exchangeable Aci	Capacity (%): dity (cmo dity (%):	(+)/kg): -	7.6 00	Calc (g/sq The effec Lime	ulated m) to a CGA tive a additio	Gypsum A achieve 67.5 R is corre melioration on to achieve	pplication F 5 % exch. Ca cted for ti depth (mi e pH 6.0.	Rate (CGAR a: 0 he selected m) and any
		PHY	SICAL	DESCR	IPTION					
mt Sandy C nt: No No m): y effects c e.	Clay Loam 25% ot gravelly ot Organic 0.5 on plants	Munsell Colour Structure Size: Structural Orga Structural Unit: Potential infiltra Est. Permeabili Additional com	tion rate: ty Class (ments:	Medium (1 Pedal mm/hr):	- 1 - 25mm) Moderate Crumb Rapid >120	Organ Organ Est. F Est. P Est. P Est. P	ic Car ic Mat ield Ca erman lant Av lant Av	bon (OC %): ter (OM %): apacity (% w ent Wilting F vailable Wate vailable Wate	ater): Point (% water) er (% water) er (mm/m):	oderate - 1.7 2.9 20 er): 12 : 14 140
	ranges: mg/kg ranges: Low Potential th hunger, or deficiency response addition is c ation Inc cessive g xonse to P unl intaining curred nt Sandy (it: No n): y effects (e.	mg/kg 2.2 mg/kg 0.6 ranges: Low Potential "hidden hunger, or sub-clinical deficiency, Potential response to nutrient, addition is 60 to 90 %. ration Index cessive g ≥0.4 g xonse to P unlikely. P intaining current P level. nt Sandy Clay Loam nt: xot gravelly Not Organic n): 0.5 y effects on plants e.	Initiging 2.2 mg/kg 0.6 ranges: Marginal Low Marginal Potential "hidden deficiency. Potential response to nutrient addition is 60 to 90%. Marginal addition is 60 to 90%. Exchangeable addition is 60 to 90%. Exchangeable Adams-Evans Buf Sum of Base Cation Eff. Cation Exch. 0 Base Saturation (9 Exchangeable Aci Exchangeable Cai Exchangeable Cai Exchangeable Cai Exchangeable Aci Exchangeable Aci Ex	Inights 2.2 mg/kg 0.6 ranges: Marginal Low Marginal Potential indeen addition is 60 to 90 %. Marginal ation Index Exchangeable Acidity ation Index Exchangeable Acidity addition is 60 to 90 %. Exchangeable Acidity ation Index Exchangeable Acidity addition is 60 to 90 %. Potential response to nutrient addition is 30 to 60 %. Potential response to nutrient addition is 30 ation Index Exchangeable Acidity Adams-Evans Buffer pH (B) Sum of Base Cations (cmol Eff. Cation Exch. Capacity (Base Saturation (%): e. Exchangeable Acidity (cmo Exchangeable Acidity (cmo Exchangeable Acidity (%): onse to P unlikely. P intaining current P level. Munsell Colour: structure Size: Structure Size: Not gravelly Not Organic Structural Organisation: n): 0.5 Structural Unit: Potential infiltration rate: Est. Permeability Class (Additional comments:	Indextor 2.2 mg/kg 0.6 ranges: Marginal Defension Protential Thidden torget, or sub-clinical deformery, or sub-clinical deformer, or sub-	Inging 2.2 mg/kg 0.6 ranges: Adequate Dential Thidden Tresponse to Duttient addition is 60 to 90%. Marginal Supply of this nutrient is addition is 30 Adequate Supply of this nutrient is dresponse to nutrient addition is 30 Imgh Supply of this nutrient is dresponse to nutrient addition is 50 ation Index Exchangeable Acidity Adams-Evans Buffer pH (BpH): - Sum of Base Cations (cmol(+)/kg): 7.6 Eff. Cation Exch. Capacity (eCEC): 7.6 Base Saturation (%): 100 Exchangeable Acidity (cmol(+)/kg): - g Sum of Base Cations (cmol(+)/kg): - g Not gravelly Not gravelly Not organic Munsell Colour: - n1: 25% Munsell Colour: - Structural Organisation: Pedal - Moderate Not gravelly Not Organic Structural Organisation: Pedal - Moderate Structural Unit: Crumb Potential infiltration rate: Rapid g. 0.5 Structural Comments: >	Imp/Rg 2.2 mg/kg 0.6 ranges: Adequate Low Marginal Potential midden Supply of this nutrient addition is 60 to 90 %. Marginal Sum of Base Cations addition is 60 to 90 %. Marginal Adequate of ball-up is 50 to 60 %. Adequate of the plant, and prometed addition is 50 to 60 %. High attom Index Exchangeable Acidity Immeted prometed addition is 50 to 60 %. Line addition is 60 to 90 %. Line addition is 50 to 60 %. attom Index Exchangeable Acidity Line addition is 50 to 60 %. Line addition is 52 %. attom Index Exchangeable Acidity Line addition is 52 %. Line addition is 52 %. attom Index Exchangeable Acidity Line addition is 52 %. Line addition is 52 %. attom Index Exchangeable Acidity (cmol(+)/kg): 7.6 - to 53 g Sum of Base Cations (cmol(+)/kg): - The effect Line g Sum of Base Cations (cmol(+)/kg): - Oto 7.6 Catc Base Saturation (%): Oto 7.6 g Not gravelly Not gravelly Not organic Munsell Colour: Structural Organisation: Pedal - Moderate Rapid Organ Structural Organisation: Pedal - Moderate St. P St. P	Implied 2.2 mg/kg 0.6 ranges: Low Polential "hidden there or value-clinical deficiency, Potential addition is 60 to 50%. Marginal Supply of this nutrient is barey accurate for ball-up is accessive and outling addition is 5 to to 60 %. Adequate Supply of this nutrient and and only mathemarks application outling addition is 5 to 30 %. The level is excessive and mark there application outling addition is 5 to 30 %. ation Index Exchangeable Acidity Lime Application outling addition is 5 to 30 %. Lime Application addition is 5 to 30 %. ation Index Exchangeable Acidity Lime Application outling addition is 5 to 30 %. Lime Application addition is 5 to 30 %. ation Index Exchangeable Acidity to achieve addition is 5 to 30 %. Lime Application addition is 5 to 30 %. ation Index Exchangeable Acidity (cmol(+)/kg): 7.6 - to neutral effective a Lime addition is 5 to 30 %. Calculated (g/sqm) to a effective a Lime addition (g/sqm) to a effective a Lime additio	Ingrid 2.2 0.4 mg/kg 0.6 0.1 ranges: 0.4 0.1 Low Marginal Supply of this nutient is basicy adequate for begins, and only of the plant, and only or the plant, and the pl	Ingris 2.2 0.4 1.3 mg/kg 0.6 0.1 0.5 ranges: Low Potential indeen addition is 60 to 80 %. Bupty of this nutrient is plant and the plant and the plant addition is 60 to 80 %. Adequate Supply of this nutrient is plant and the plant and the plant addition is 60 to 80 %. Adequate Supply of this nutrient is plant and the plant and the plant addition is 60 to 80 %. Adequate Supply of this nutrient is plant and the plant and the plant addition is 60 to 80 %. Adequate Supply of this nutrient is plant and the plant and the plant addition is 60 to 80 %. Adequate Supply of this nutrient is plant and the plant and the plant addition is 60 to 80 %. Adams-Evans Buffer pH (BpH): - Sum of Base Cations (cmol(+)/kg): 7.6 Eff. Cation Exch. Capacity (eCEC): 7.6 Base Saturation (%): Exchangeable Acidity (cmol(+)/kg): - Exchangeable Acidity (%): - The CGAR is corrected for the effective amelioration depth (mu Lime addition to achieve pH 6.0. Mussell Colour: Structure Size: Medium (11 - 25mm) Structure Size:

 METHOD REFERENCES:

 pH (15 Hq.) - SESL CM0002; Rayment & Lyons 4A1-2011

 pH (15 GaC)_ - SESL CM0002; Rayment & Lyons 4B4-2011

 EC (15) - SESL CM0001; Rayment & Lyons 3A1-2011

 Nitrate - Rayment & Lyons 3A1-2011

 Nitrate - Rayment & Lyons 3A1-2011

 Nitrate - Rayment & Lyons 3A1-2011

 Auminum - SESL CM0007; Rayment & Lyons 1A1-2011

 Auminum - SESL CM0007; Rayment & Lyons 1A1-2011

 Buffer pH and Hydrogen - SSSA Methods of Soil Analysis 2007, P1 3, Ch 17; Adams-Evans (1962)

 Texture/Structure/Colour - PM0003 (Texture - "Northods" (1992), Structure - "Murphy" (1991), Colour - "Munself" (2000))

*Structure analysed in the laboratory is conducted on a disturbed sample, therefore is only a representation of the macro-structures that may be present in the field, which provide an indication of the soil physical characteristics and behaviours that may exist.



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SESL Consult - VIC

16 Chilvers Road

Thornleigh NSW 2120

Client Contact: Peter Somerville

Batch N°: 61964

Client Name:

Client Order N°:

Address:

Soil Chemistry Profile

Mehlich 3 - Multi-nutrient Extractant

^	Sample Drop Off:	16 Chilvers Road Thornleigh NSW 2120	Tel: Fax:	1300 30 40 80 1300 64 46 89	
Ances	Mailing Address:	PO Box 357 Pennant Hills NSW 1715	Em: Web:	info@sesl.com.au www.sesl.com.au	
	Date Receiv	ed: 22/12/21		Report Status:	Draft
	Project Name	Bunbury Street Soil	Assesm	ent	
	SESL Quote I	N°∶ Q 1275 7			
	Sample Name	e: S-05 A			
	Description:	Soil			

FSC_Plus, MWSS, VIC_IWRG621-Std

RECOMMENDATIONS

Test Type:

Please see report for full result, interpretations and recommendations

Sample N°: 7





CATION RATIOS

Ratio	1	Result	Tar	get Rar	nge			
Ca:Mg	I	3.6	4	l.1 – 6.0)			
Comm	ent: Ca	lcium lo	w					
Mg:K		3	2.6 - 5.0					
Comm	ent: Bal	anced						
K/(Ca-	⊦Mg)	0.07		< 0.07				
Comment: High								
K:Na		3.4	N/A					
EXCHANGEABLE CATIONS (cmol(+)/kg)								
Na:	K:	Ca:	Mg:	H:	AI:			
0.45	1.54	16.83	4.69	-	-			
eCEC does not include correction for soluble salts as standard. Where exchangeable calcium exceeds 80 % of eCEC and/or salinity exceeds 0.75 dS/m, alternative methods are recommended to determine true eCEC. The units of eCEC <i>cmol(+)/kg</i> are the SI unit and are equivalent to <i>meq/100g</i> .								



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Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off: 16 Chilvers Road Thornleigh NSW 2120 Mailing Address: PO Box 357

Tel: 1300 30 40 80 Fax: 1300 64 46 89 Em: Pennant Hills NSW 1715

info@sesl.com.au Web: www.sesl.com.au

Batch N°: 61964

Sample N°: 7

Date Received: 22/12/21

Report Status: Draft

			(mm): 0 400 4	$\bigcirc 150 \bigcirc 20$			ASS: ()		
Major Nutrients	Unit	Result	Very Low	Low Mar	ginal <u> </u> Adequ	iate High	Result	Desirable	Adjustmen
Nitrate-N (NO)	ma N/ka	3.5					0.7	-	Maintenanc
Phosphorus (P)	ma P/ka	74					14.8	12.6	Drawdown
Potassium (K)	ma/ka	601		/		/	119.9	69	Drawdown
Sulfur (S)	ma S/ka	13			, 		2.6	13.6	11
Calcium (Ca)	ma/ka	3370					672.3	491.6	Drawdown
Magnesium (Mg)	ma/ka	570					113.7	51.3	Drawdown
Iron (Fe)	ma/ka	131					26.1	110.1	84
Manganese (Mn)	ma/ka	54					10.8	8.8	Drawdown
	ma/ka	55					11	1	Drawdown
	ma/ka	10					2	13	Drawdown
	mg/kg	24					0.5	0.5	
Boron (B)	iiig/ikg	2.4					0.5	0.5	0
Potential response to nutrient addition is >90 %.	turation In	60 to 90 %.	Potential response to nutrient addition is 30 to 60 %.	Acidity	to Drawdown i 5 to Potential re- addition is <	s recommended. sponse to nutrient 2 %.	Adequate. • g/sqm measurei 1.33 tonne/m³ and	ments are based on d effective ameliorat	soil bulk density of tion depth.
0.45			Adams-Evans But	ffer pH (BpH):	-	– to achiev	e pH 6.0:	• (9, • 9,)	0
0.15			Sum of Base Cati	ons (cmol(+)/kg)	23.5	– to neutra	lise Al:		-
0.06 Adequate	Excessive	≥0.4	Eff. Cation Exch. (Base Saturation (Exchangeable Ac	Capacity (eCEC %): idity (cmol(+)/kg): 23.5 100): -	Calculated (g/sqm) to	d Gypsum A achieve 67.9	Application I 5 % exch. Ca	Rate (CGAR) a: 0
0. Excessive. Exceeds of Implement improved F potential for not	15 environmental th P management to npoint P pollution	reshold. o reduce n.	Exchangeable Ac	uity (70).	-	effective a Lime addit	amelioration ion to achiev	depth (m. /e pH 6.0.	m) and any
			PHY	SICAL DES	CRIPTION				
Texture: Estimated clay con Tactually gravelly: Tactually organic: Calculated EC_{SE} (d – Non-saline. Sali are mostly negligi	Fine Sandy tent: N S/m): nity effects ible.	Clay Loam 20 - 30% lot gravelly lot Organic 1 on plants	Munsell Colour Structure Size: Structural Orga Structural Unit: Potential infiltra Est. Permeabil Additional com	Mediu anisation: Pe ation rate: ity Class (mm/hr ments:	m (11 - 25mm) dal - Moderate Crumb Moderate): 20 - 60	Organic Car Organic Ma Est. Field C Est. Permar Est. Plant A Est. Plant A	rbon (OC %) tter (OM %): apacity (% w nent Wilting l vailable Wat vailable Wat): Ve vater): Point (% wat ter (% water) ter (mm/m):	ery High - 3.1 5.3 28 eer): 15): 13 130
							Date Repo	rt Generated	16/02/2022
Itant: Peter Some	erville		Authorised Signa	atory: Simon L	eake	METHOD REF	ERENCES: CM0002; Rayment & Lyd	ons 4A1-2011	

pH (15 H,Q) - SESL CM0002; Rayment & Lyons 4A1-2011 pH (15 CaC) - SESL CM0002; Rayment & Lyons 8A4-2011 EC (15) - SESL CM0007; Rayment & Lyons SA1-2011 Chindre - Rayment & Lyons SA2-2011 Nitrate - Rayment & Lyons 781a-2011 Mitrate - Rayment & Lyons 781a-2011 Auminium - SESL CM0007; Rayment & Lyons 15A1-2011 P, K, S, Ca, Mg, Na, Fe, Mn, Zn, Cu, B - SESL CM0007; Rayment & Lyons 18F1-2011 Euter pSt and typicare - PM0007 (Feb J and Sala Analysis 2007, Pt 3, Ch 17, Adams-Evans (1962) "Northcote" (1992), Structure" - "Murphy" (1991), Colour- "Munsell" (2000))

"Structure analysed in the laboratory is conducted on a disturbed sample, therefore is only a representation of the macro-structures that may be present in the field, which provide an indication of the soil physical characteristics and behaviours that may exist.



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Batch N°: 61964

Soil Chemistry Profile

Mehlich 3 - Multi-nutrient Extractant

	Date Receiv	ed: 22/12/21		Report Status:	Draft
es	Mailing Address:	PO Box 357 Pennant Hills NSW 1715	Em: Web:	info@sesl.com.au www.sesl.com.au	
	Sample Drop Off:	16 Chilvers Road Thornleigh NSW 2120	Tel: Fax:	1300 30 40 80 1300 64 46 89	

Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil Assesment	
		SESL Quote N°	Q 12757	
Client Contact:	Peter Somerville	Sample Name:	S-06 A	
Client Order N°:	:	Description:	Soil	
Address:	16 Chilvers Road	Test Type:	FSC_Plus, MWSS	
	Thornleigh NSW 2120			

RECOMMENDATIONS

Please see report for full result, interpretations and recommendations

Sample N°: 8





CATION RATIOS

Ratio		Result	Tar	get Rar	nge			
Ca:Mg		2.2	4	.1 – 6.0)			
Comm	ent: Ca	lcium lo	w					
Mg:K		4.5	2	2.6 – 5.0)			
Comm	ent: Bal	anced						
K/(Ca+	-Mg)	0.07		< 0.07				
Comm	Comment: High							
K:Na		2.5	N/A					
EXCHANGEABLE CATIONS (cmol(+)/kg)								
Na:	K:	Ca:	Mg:	H:	AI:			
0.42	1.07	10.5	4.78	-	-			
eCEC does not include correction for soluble salts as standard. Where exchangeable calcium exceeds 80 % of eCEC and/or salinity exceeds 0.75 dS/m, alternative methods are recommended to determine true eCEC. The units of eCEC <i>cmol</i> (+)/kg are the SI unit and are equivalent to <i>meq/100g</i> .								



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Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off: 16 Chilvers Road

Mailing Address:

Thornleigh NSW 2120 PO Box 357

Tel: Fax: Em: Pennant Hills NSW 1715

1300 30 40 80 1300 64 46 89 info@sesl.com.au Web: www.sesl.com.au

Batch N°: 61964

Sample N°: 8

Date Received: 22/12/21

Report Status: Draft

						rata 🔿 📖
Unit	Result	Very Low Low Marginal Adequa	ate 📕 High	Result (g/sqm)	Desirable (g/sqm)	Adjustmer (g/sqm)
mg N/kg	1.8		//	0.4	-	Maintenan
ma P/ka	46		//	9.2	12.6	3.4
mg/kg	418			83.4	60.6	Drawdowr
mg S/kg	8.6		//	1.7	13.6	11.9
ma/ka	2100		/	419	431.7	12.7
mg/kg	580		<u>// </u>	115.7	44.9	Drawdowr
mg/kg	183		/	36.5	110.1	73.6
mg/kg	45		%	9	8.8	Drawdowr
ma/ka	53	110		10.6	1	Drawdowr
ma/ka	13			2.6	13	Drawdowr
ma/ka	1.8		//	0.4	0.5	0.1
Excessive backgroups to Pure turation In Excessive to//kg 09 response to P un maintaining cur	niden Potential o nutrient 60 to 90 %. dex ≥0.4 – nlikely. P rent P level.	Supply of this nutrient is barely adequate for the plant, and and only maintenance application recommended. Intel events, and and only maintenance application growth (i.e. plant, and and only maintenance application nutrient addition is 50 of 0%. Exchangeable Acidity Addams-Evans Buffer pH (BpH): - Sum of Base Cations (cmol(+)/kg): 16.8 Eff. Cation Exch. Capacity (eCEC): 16.8 Base Saturation (%): 100 Exchangeable Acidity (cmol(+)/kg): - Exchangeable Acidity (cmol(+)/kg): - Exchangeable Acidity (%): -	Keessive and Instal to plant hytotoxic) and to plant of the plant hytotoxic) and inface waters. Lime Appl – to achiev – to neutra Calculated (g/sqm) to The CGA effective a Lime additi	brawdown: The c United set of the set of th	bejective nutrient ma Inutrients. There is nents are based on effective ameliorat (g/sqm) (g/sqm) (b) (g/sqm) (c) (g/sqm) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c)	anagement is to no agronomic stevels exceed soil bulk density of ion depth. 0 - Rate (CGAR a: 0 he selected m) and any
.ight Sandy Itent: N IS/m): nity effects	Clay Loam 25% Gravelly lot Organic 1 on plants	PHYSICAL DESCRIPTION Munsell Colour: - Structure Size: Medium (11 - 25mm) Structural Organisation: Pedal - Moderate Structural Organisation: Pedal - Moderate Structural Unit: Crumb Potential infiltration rate: Rapid Est. Permeability Class (mm/hr): >120 Additional comments:	Organic Car Organic Ma Est. Field C Est. Permar Est. Plant A Est. Plant A	rbon (OC %) tter (OM %): apacity (% w hent Wilting F vailable Wat vailable Wat	: Pater): Point (% wat er (% water) er (mm/m):	High - 2. 3. 20 er): 1: 5: 14
	LIOKATIC Unit mg N/kg mg P/kg mg P/kg mg/k	Unit Result mg N/kg 1.8 mg P/kg 46 mg/kg 418 mg S/kg 8.6 mg/kg 2100 mg/kg 580 mg/kg 183 mg/kg 13 mg/kg 13 mg/kg 1.8 mg/kg 13 mg/kg 1.8 mg/kg 1.9 mg/kg 1.8 mg/kg 1.9 mg/kg 1.1 mg/kg 1.2 mg/	Unit Result Very Low Low Marginal Adequation mg N/kg 1.8 mg N/kg 46 mg N/kg 46 mg N/kg 418 mg N/kg 418 mg N/kg 46 mg N/kg 418 mg N/kg 418 mg N/kg 418 mg N/kg 2100 mg/kg 580 mg/kg 418 mg/kg 580 mg/kg 45 mg/kg 45 mg/kg 1.8 mg/kg 1.8 mg/kg 45 mg/kg 1.8 mg/kg 1.8 mg/kg 1.8 potential "bidely of this nutrient is bally actuate to the ball actuates to the ball actuates to the ball actuate to the ball actuate to the ball actuate to the ball actuate	Lock at took at took bept H (mm): Q 100 O 120 Q 20 Deskted P Fektilit TV CL Unit Result Very Low Low Marginal Adequate High mg N/kg 1.8 Image N/kg 46 Image N/kg High mg N/kg 418 Image N/kg 46 Image N/kg High mg/kg 418 Image N/kg 183 Image N/kg High mg/kg 183 Image N/kg 183 Image N/kg High mg/kg 183 Image N/kg Image N/kg High Image N/kg mg/kg 1.8 Image N/kg Image N/kg Image N/kg Image N/kg mg/kg 1.8 Image N/kg Image N/kg Image N/kg Image N/kg mg/kg 1.8 Image N/kg	Unit Result Very Low Low Marginal Adequate High Result (g/sqm) mg N/kg 1.8 0.4 9.2 mg/kg 46 9.2 mg/kg 46 9.2 mg/kg 46 9.2 mg/kg 46 9.2 mg/kg 580 1.7 mg/kg 580 2.6 mg/kg 1.8 9 mg/kg 1.8 9 mg/kg 1.8 9 mg/kg 1.8 0.4 mg/kg <td>Low Marginal Adequate High Result Over Low Marginal mg N/kg 1.8 0.4 -</td>	Low Marginal Adequate High Result Over Low Marginal mg N/kg 1.8 0.4 -

pH (15. Hy,O) - SESL CM0002; Rayment & Lyons 4A1-2011 pH (15. GCG) - SESL CM0002; Rayment & Lyons 4A4-2011 EC (15.) - SESL CM0007; Rayment & Lyons SA1-2011 Chindre - Rayment & Lyons SA2-2011 Nitrate - Rayment & Lyons 78-2011 Auminium, - SESL CM0007; Rayment & Lyons 15A1-2011 Auminium, - SESL CM0007; Rayment & Lyons 15A1-2011 P, K.; SH, My, Na, Fe, MK, SK, Ottelmols at CM0007; Rayment & Lyons 18F1-2011 P, K.; SH, My, Na, Fe, MK, SK, Ottelmols at CM Analysis 2007, Pt 3, Ch 17, Adams-Evans (1962) TeatureSimutureColour - PM0002; Teature -"Northcote" (1992), Structure" - "Murphy" (1991), Colour - "Munsell" (2000))

"Structure analysed in the laboratory is conducted on a disturbed sample, therefore is only a representation of the macro-structures that may be present in the field, which provide an indication of the soil physical characteristics and behaviours that may exist.



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Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off:	16 Chilvers Road Thornleigh NSW 2120	Tel: Fax:	1300 30 40 80 1300 64 46 89
Mailing Address:	PO Box 357 Pennant Hills NSW 1715	Em: Web:	info@sesl.com.au www.sesl.com.au





Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off: 16 Chilvers Road

Thornleigh NSW 2120 Mailing Address: PO Box 357

Tel: 1300 30 40 80 Fax: 1300 64 46 89 info@sesl.com.au Em: Pennant Hills NSW 1715 Web: www.sesl.com.au

Batch N°: 62625

Sample N°: 1

Date Received: 21/4/22

Report Status: Draft

			PLANT			UTRIENT	S				
EFFECTIVE AME	LIORATIO	N DEPTH	(mm):	0?	()? D		RTILIT	Y CL	ASS: O Lo	Moder	at O High
Major Nutrients	Unit	Result	Very Low	Low	Marginal	💋 Adequat	e	High	Result (g/sqm)	Desirable (g/sqm)	Adjustmen (g/sqm)
Nitrate-N (NO ₃)	mg N/kg	1.2							0.2	4	3.8
Phosphorus (P)	mg P/kg	6.6							0.9	8.4	7.5
Potassium (K)	mg/kg	123							16.4	34.8	18.4
Sulfur (S)	mg S/kg	5.5							0.7	9	8.3
Calcium (Ca)	mg/kg	1710							227.4	248	20.6
Magnesium (Mg)	mg/kg	532							70.8	25.8	Drawdown
Iron (Fe)	mg/kg	38.8							5.2	73.4	68.2
Manganese (Mn)	mg/kg	12							1.6	5.9	4.3
Zinc (Zn)	mg/kg	34						1	4.5	0.7	Drawdown
Copper (Cu)	mg/kg	0.9							0.1	0.8	0.7
Boron (B)	mg/kg	0.7							0.1	0.4	0.3
Growth is likely to be severely depressed and deficiency symptoms present. Large application for soil building purposes are usually recommended Potential response to nutrient addition is >90 %.	Potential " hunger", o deficiency, sresponse t addition is d.	w hidden r sub-clinical . Potential to nutrient 60 to 90 %.	Marginal Supply of this nutrier is barely adequate to build-up is still recommended. Potential response to nutrient addition is 30 to 60 %.	ot Supply or adequi and ar mainte rates a 0 Potent 0 nutrier 30 %.	Adequate y of this nutrient is ate for the plant, nd only mance application are recommended. tial response to nt addition is 5 to	High The level is exc may be detrime growth (i.e, phy may contribute ground and sur Drawdown is re Potential respoi addition is <2 %	cessive ar ental to play totoxic) a to pollution face wate commen nse to nu 6.	nd ant on of ers. ded. trient	elemental applica the Adequate ba economic efficien environment. Drawdown: The utilise residual so reason to apply fe Adequate. • g/sqm measuret 1.33 tonne/m ³ and	tion to shift the soil i nd, which maximises cy, and minimises ir objective nutrient ma il nutrients. There is rtiliser when soil tes ments are based on d effective ameliorat	test level to winnin s growth/yield, and mpact on the anagement is to no agronomic st levels exceed soil bulk density of ion depth.
Phosphorus Sat	turation In	dex	Exchangeab	le Acidi	ty		Lime	e Appl	ication Rate	e (g/sqm)	
0.15			Adams-Evans E	Buffer pH	(BpH): -		– to	achiev	e pH 6.0:		0
0.06 Adequate 0 mm 0.1 Low. Plant respons	Excessive nol/kg 03 se to applied P is	≥0.4 likely.	Sum of Base C Eff. Cation Excf Base Saturatior Exchangeable / Exchangeable /	ations (cr n. Capaci n (%): Acidity (cı Acidity (%	nol(+)/kg): 1 ty (eCEC): 1 1 mol(+)/kg): - 5): -	3.7 3.7 00	– to Calc (g/so The effec Lime	ctive ard	Ise AI: I Gypsum A achieve 67. R is corre melioration o on to achiev	Application I 5 % exch. Ca ected for t depth (100 r re pH 6.0.	- Rate (CGAR) a: 80 he selected nm) and any
			PH	YSICA		IPTION					
Texture: Estimated clay con Tactually gravelly: Tactually organic: Calculated EC _{SE} (d – Non-saline. Sali are mostly neglig	Fine Sandy Intent: N N S/m): Inity effects Ible.	Clay Loam 20 - 30% lot gravelly lot Organic 0.7 on plants	Munsell Colc Structure Siz Structural Or Structural Ur Potential infil Est. Permeal Additional co	our: ganisatio nit: tration ra bility Clas	Coarse on: Pedal - te: te: ss (mm/hr):	e (>25mm) Moderate Crumb Moderate 20 - 60	Orgar Orgar Est. F Est. F Est. F Est. F	nic Car nic Mat Field Ca Perman Plant Av Plant Av	bon (OC %) ter (OM %): apacity (% w ent Wilting I vailable Wat vailable Wat	vater): Point (% wat er (% water) er (mm/m):	/ery low - 0.1 0.2 28 er): 15 : 13 130
									Date Repo	ort Generated	d 9/05/2022

Consultant: Peter Somerville

Authorised Signatory: Simon Leake

 METHOD REFERENCES:

 pH (15 H,0) - SESI. CM0002; Rayment & Lyons 4A1-2011

 pH (15 CaC)) - SESI. CM0002; Rayment & Lyons 3A1-2011

 EC (15) - SESI. CM0007; Rayment & Lyons 3A1-2011

 Chorder - Rayment & Lyons 3A2-2011

 Nitrate - Rayment & Lyons 3A2-2011

 Nitrate - Rayment & Lyons 781a-2011

 Aurnitum - SeSI. CM0007; Rayment & Lyons 15A1-2011

 P, K. S., Ca, Mg, Na, Fe, Mn, Zr, Cu, B - SESI. CM0007; Rayment & Lyons 18F1-2011

 P, K. S., Ca, Mg, Na, Fe, Mn, Zr, Cu, B - SESI. CM0007; Rayment & Lyons 18F1-2011

 P, K. S., Ca, Mg, Na, Fe, Mn, Zr, Cu, B - SESI. CM0007; Rayment & Lyons 18F1-2011

 P, K. S., Ca, Mg, S., Structure^{*} - "Murphy" (1991), Colour- "Munself" (2000))

*Structure analysed in the laboratory is conducted on a disturbed sample, therefore is only a representation of the macro-structures that may be present in the field, which provide an indication of the soil physical characteristics and behaviours that may exist.



A member of the Australian Soil and Plant Analysis Council (ASPAC) This laboratory participates in, and is awarded certification based on results of the scores returned in, ASPAC inter-laboratory proficiency routes. For detailed current certification based and are information on the ASPAC inter-laboratory proficiency testing programs, see the ASPAC website: http://www.aspac-australasia.com



Sample N°: 1

Soil Chemistry Profile

Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 8
	Thornleigh NSW 2120	Fax:	1300 64 46 8
Mailing Address:	PO Box 357	Em:	info@sesl.co
	Pennant Hills NSW 1715	Web:	www.sesl.cor

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Batch N°: 62107

Date Received: 1/2/22

Report Status: Draft

Client Name: **SESL Consult - VIC** Project Name: **Bunbury St** SESL Quote N°: Peter Somerville Client Contact: Sample Name: BH-01 SS Client Order N°: Description: Soil Address: 16 Chilvers Road Test Type: SSCP Thornleigh NSW 2120

RECOMMENDATIONS

see report for full interpretations and recommendations







standard. Where exchangeable calcium exceeds 80 % of eCEC and/or salinity exceeds 0.75 dS/m, alternative methods are recommended to determine true eCEC.

The units of eCEC *cmol(+)/kg* are the SI unit and are equivalent to *meq/100g*.



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38.1 High



Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off: 16 Chilvers Road Mailing Address:

Thornleigh NSW 2120 PO Box 357 Pennant Hills NSW 1715

Tel: 1300 30 40 80 1300 64 46 89 Fax: info@sesl.com.au Em: Web: www.sesl.com.au

Batch N°: 62107

Sample N°: 1

Date Received: 1/2/22

Report Status: Draft

EFFECTIVE AMELIORATION DEPTH (mm): ? 0? 0?



EXCHANGEABLE ACIDITY

Adams-Evans Buffer pH (BpH):	-
Sum of Base Cations (cmol(+)/kg):	38.1
Eff. Cation Exch. Capacity (eCEC):	38.1
Base Saturation (%):	100
Exchangeable Acidity (cmol(+)/kg):	-
Exchangeable Acidity (%):	-

LIME APPLICATION RATE

- to achieve pH 6.0 (g/sqm): 0
- to neutralise Al (g/sqm):

CALCULATED GYPSUM APPLICATION RATE

- to achieve 67.5% exchangeable Calcium (g/sqm): 1363

The CGAR is corrected for the selected effective amelioration depth (100 mm) and any Lime addition to achieve pH 6.0.

PHYSICAL DESCRIPTION

Texture:	Light Clay	Munsell Colour:	-	Est. Field Capacity (% water):	38
Estimated clay content:	35 - 40%	Structure Size:	Medium (11 - 25mm)	Est. Permanent Wilting Point (% water):	23
Tactually gravelly:	Not gravelly	Structural Organisation:	Pedal - Moderate	Est. Plant Available Water (% water):	15
Tactually organic:	Not Organic	Structural Unit:	Polyhedral	Est. Plant Available Water (mm/m):	150
Calculated EC _{SE} (dS/m):	5.4	Potential infiltration rate:	Slow		
- Moderate saline. Growth	on many	Est. Permeability Class	(mm/hr): 2.5 - 5		
plant species is affected.		Additional comments:			

Consultant: Peter Somerville

Authorised Signatory: Simon Leake

Date Report Generated 9/02/2022

METHOD REFERENCES: pH(15 Hy0)- SESL CM0002; Rayment & Lyons 4A1-2011 pH(15 CaC)- SESL CM0002; Rayment & Lyons 4A1-2011 EC (15) - SESL CM0007; Rayment & Lyons 3A1-2011 K, Ca, Mg, Na - SESL CM0007; Rayment & Lyons 1547-2011 K, Ca, Mg, Na - SESL CM0007; Rayment & Lyons 1547-2011 Edutarbilistic and the Methods of Sol Analysis 2007, Pt 3, Ch 17; Adams-Evans (1962) TextuneSincular/EC/2015, Shuchure - Muthopy (1991), Colour- "Munsell" (2000))

*Structure analysed in the laboratory is conducted on a disturbed sample, therefore is only a representation of the macro-structures that may be present in the field, which provide an indication of the soil physical characteristics and behaviours that may exist.



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Disclaim



Sample N°: 2

Soil Chemistry Profile

Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 8
	Thornleigh NSW 2120	Fax:	1300 64 46 8
Mailing Address:	PO Box 357	Em:	info@sesl.co
	Pennant Hills NSW 1715	Web:	www.sesl.cor

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Batch N°: 62107	
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Address:

Date Received: 1/2/22

Report Status: Draft

Client Name: **SESL Consult - VIC** Project Name: **Bunbury St** SESL Quote N°: Client Contact: Peter Somerville Sample Name: BH-02 SS Client Order N°: Description: Soil 16 Chilvers Road Test Type: SSCP Thornleigh NSW 2120

RECOMMENDATIONS

see report for full interpretations and recommendations





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Disclaime



Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off: 16 Chilvers Road Mailing Address:

Thornleigh NSW 2120 PO Box 357 Pennant Hills NSW 1715

Tel: 1300 30 40 80 1300 64 46 89 Fax: Em: info@sesl.com.au Web: www.sesl.com.au

Batch N°: 62107

Sample N°: 2

Date Received: 1/2/22

Report Status: Draft

EFFECTIVE AMELIORATION DEPTH (mm): ? 0? 0?



EXCHANGEABLE ACIDITY

Adams-Evans Buffer pH (BpH): Sum of Base Cations (cmol(+)/kg): 47.2 Eff. Cation Exch. Capacity (eCEC): 47.2 Base Saturation (%): 100 Exchangeable Acidity (cmol(+)/kg): -Exchangeable Acidity (%):

LIME APPLICATION RATE

- to achieve pH 6.0 (g/sqm): 0
- to neutralise Al (g/sqm):

CALCULATED GYPSUM APPLICATION RATE

- to achieve 67.5% exchangeable Calcium (g/sqm): 0

The CGAR is corrected for the selected effective amelioration depth (100 mm) and any Lime addition to achieve pH 6.0.

PHYSICAL DESCRIPTION

I	Texture:	Sandv Clav	Munsell Colour:	-	Est. Field Capacity (% water):	29
	Estimated clay content:	35 - 45%	Structure Size:	Medium (11 - 25mm)	Est. Permanent Wilting Point (% water):	19
	Tactually gravelly:	Not gravelly	Structural Organisation:	Pedal - Moderate	Est. Plant Available Water (% water):	10
	Tactually organic:	Not Organic	Structural Unit:	Polyhedral	Est. Plant Available Water (mm/m):	100
	Calculated EC _{se} (dS/m):	2.2	Potential infiltration rate:	Slow		
	- Slightly saline. Growth or	n sensitive	Est. Permeability Class	(mm/hr): 2.5 - 5		
	plant species is affected.		Additional comments:			
I						

Consultant: Peter Somerville

Authorised Signatory: Simon Leake

Date Report Generated 9/02/2022

METHOD REFERENCES: pH(15 Hy0)- SESL CM0002; Rayment & Lyons 4A1-2011 pH(15 CaC)- SESL CM0002; Rayment & Lyons 4A1-2011 EC (15) - SESL CM0007; Rayment & Lyons 3A1-2011 K, Ca, Mg, Na - SESL CM0007; Rayment & Lyons 1547-2011 K, Ca, Mg, Na - SESL CM0007; Rayment & Lyons 1547-2011 Edutarbilistic and the Methods of Sol Analysis 2007, Pt 3, Ch 17; Adams-Evans (1962) TextuneSincular/EC/2015, Shuchure - Muthopy (1991), Colour- "Munsell" (2000))

*Structure analysed in the laboratory is conducted on a disturbed sample, therefore is only a representation of the macro-structures that may be present in the field, which provide an indication of the soil physical characteristics and behaviours that may exist.



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Sample N°: 3

Soil Chemistry Profile

Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 8
	Thornleigh NSW 2120	Fax:	1300 64 46 8
Mailing Address:	PO Box 357	Em:	info@sesl.co
	Pennant Hills NSW 1715	Web:	www.sesl.cor

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Batch N°: 62107

Date Received: 1/2/22

Report Status: Draft

Client Name: **SESL Consult - VIC** Project Name: **Bunbury St** SESL Quote N°: Client Contact: Peter Somerville Sample Name: BH-03 SS Client Order N°: Description: Soil Address: 16 Chilvers Road Test Type: SSCP Thornleigh NSW 2120

RECOMMENDATIONS

see report for full interpretations and recommendations



EFFECTIVE CATION EXCHANGE CAPACITY (eCEC) (cmol(+)/kg)

0	0 10 20	50 ⁻	100
	36.8 H	igh	

Disclaime

Disclaimer Tests are performed under a quality system complying with ISO 9001: 2008. Results are based on the analysis of the samples collected or received by SESL. Due to the spatial and temporal variability of soils within a given site, and the variability of sampling techniques, environmental conditions and managerial factors, SESL does not accept any liability for a lack of general compliance or performance based on the interpretation and recommendations given (where applicable). This document must not be reproduced except in full.

eCEC does not include correction for soluble salts as standard. Where exchangeable calcium exceeds 80 % of eCEC and/or salinity exceeds 0.75 dS/m, alternative

methods are recommended to determine true eCEC. The units of eCEC *cmol(+)/kg* are the SI unit and are equivalent to *meq/100g*.



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Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off: 16 Chilvers Road Mailing Address:

Thornleigh NSW 2120 PO Box 357 Pennant Hills NSW 1715

Tel: 1300 30 40 80 1300 64 46 89 Fax: Em: info@sesl.com.au Web: www.sesl.com.au

Batch N°: 62107

Sample N°: 3

Date Received: 1/2/22

Report Status: Draft

EFFECTIVE AMELIORATION DEPTH (mm): ? 0? 0?

EXCHANGEABLE ACIDITY

36.8

100

-



form for profile reconstruction. For in-situ profiles analysis enables insight for management

Base Saturation (%):

Exchangeable Acidity (%):

Adams-Evans Buffer pH (BpH):

Sum of Base Cations (cmol(+)/kg):

Exchangeable Acidity (cmol(+)/kg):

Eff. Cation Exch. Capacity (eCEC): 36.8



LIME APPLICATION RATE

- to achieve pH 6.0 (g/sqm): 0
- to neutralise Al (g/sqm):

CALCULATED GYPSUM APPLICATION RATE

- to achieve 67.5% exchangeable Calcium (g/sqm): 0

The CGAR is corrected for the selected effective amelioration depth (100 mm) and any Lime addition to achieve pH 6.0.

PHYSICAL DESCRIPTION

Texture:	Sandy Clay	Munsell Colour:	-	Est. Field Capacity (% water):	29
Estimated clay content:	35 - 45%	Structure Size:	Medium (11 - 25mm)	Est. Permanent Wilting Point (% water):	19
Tactually gravelly:	Not gravelly	Structural Organisation:	Pedal - Moderate	Est. Plant Available Water (% water):	10
Tactually organic:	Not Organic	Structural Unit:	Crumb	Est. Plant Available Water (mm/m):	100
Calculated EC _{SE} (dS/m):	3.1	Potential infiltration rate:	Slow		
- Slightly saline. Growth c	on sensitive	Est. Permeability Class ((mm/hr): 2.5 - 5		
plant species is affected.		Additional comments:			

Consultant: Peter Somerville

Authorised Signatory: Simon Leake

Date Report Generated 9/02/2022

METHOD REFERENCES: pH(15 Hy0)- SESL CM0002; Rayment & Lyons 4A1-2011 pH(15 CaC)- SESL CM0002; Rayment & Lyons 4A1-2011 EC (15) - SESL CM0007; Rayment & Lyons 3A1-2011 K, Ca, Mg, Na - SESL CM0007; Rayment & Lyons 1547-2011 K, Ca, Mg, Na - SESL CM0007; Rayment & Lyons 1547-2011 Edutarbilistic and the Methods of Sol Analysis 2007, Pt 3, Ch 17; Adams-Evans (1962) TextuneSincular/EC/2015, Shuchure - Muthopy (1991), Colour- "Munsell" (2000))

*Structure analysed in the laboratory is conducted on a disturbed sample, therefore is only a representation of the macro-structures that may be present in the field, which provide an indication of the soil physical characteristics and behaviours that may exist.



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Sample N°: 4

Soil Chemistry Profile

Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 8
	Thornleigh NSW 2120	Fax:	1300 64 46 8
Mailing Address:	PO Box 357	Em:	info@sesl.cor
	Pennant Hills NSW 1715	Web:	www.sesl.con

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Batch N°: 62107

Date Received: 1/2/22

Report Status: Draft

Client Name: **SESL Consult - VIC** Project Name: **Bunbury St** SESL Quote N°: Client Contact: Peter Somerville Sample Name: BH-04 SS Client Order N°: Description: Soil Address: 16 Chilvers Road Test Type: SSCP Thornleigh NSW 2120

RECOMMENDATIONS

see report for full interpretations and recommendations







The units of eCEC *cmol(+)/kg* are the SI unit and are equivalent to *meq/100g*.



A member of the Australian Soil and Plant Analysis Council (ASPAC) ed in ASPA ory proficiency rounds. For detailed current certification status and for more information on the ASPAC ory proficiency testing programs, see the ASPAC website: http://www.aspac-australasia.com



Mehlich 3 - Multi-nutrient Extractant

Sample Drop Off: 16 Chilvers Road Mailing Address:

Thornleigh NSW 2120 PO Box 357 Pennant Hills NSW 1715

Tel: 1300 30 40 80 1300 64 46 89 Fax: Em: info@sesl.com.au Web: www.sesl.com.au

Batch N°: 62107

Sample N°: 4

100

-

Date Received: 1/2/22

Report Status: Draft

EFFECTIVE AMELIORATION DEPTH (mm): ? 0? 0?



CALCULATED GYPSUM APPLICATION RATE

- to achieve 67.5% exchangeable Calcium (g/sqm): 531

The CGAR is corrected for the selected effective amelioration depth (100 mm) and any Lime addition to achieve pH 6.0.

PHYSICAL DESCRIPTION

	Texture:	Light Clay	Munsell Colour:	-	Est. Field Capacity (% water):	38
I	Estimated clay content:	35 - 40%	Structure Size:	Medium (11 - 25mm)	Est. Permanent Wilting Point (% water):	23
I	Tactually gravelly:	Not gravelly	Structural Organisation:	Pedal - Moderate	Est. Plant Available Water (% water):	15
I	Tactually organic:	Not Organic	Structural Unit:	Crumb	Est. Plant Available Water (mm/m):	150
I	Calculated EC _{SE} (dS/m):	2.3	Potential infiltration rate:	Slow		
I	- Slightly saline. Growth o	n sensitive	Est. Permeability Class ((mm/hr): 2.5 - 5		
I	plant species is affected.		Additional comments:			
I						

Consultant: Peter Somerville

Base Saturation (%):

Exchangeable Acidity (%):

Exchangeable Acidity (cmol(+)/kg):

Authorised Signatory: Simon Leake

Date Report Generated 9/02/2022

METHOD REFERENCES: pH(15 Hy0)- SESL CM0002; Rayment & Lyons 4A1-2011 pH(15 CaC)- SESL CM0002; Rayment & Lyons 4A1-2011 EC (15) - SESL CM0007; Rayment & Lyons 3A1-2011 K, Ca, Mg, Na - SESL CM0007; Rayment & Lyons 1547-2011 K, Ca, Mg, Na - SESL CM0007; Rayment & Lyons 1547-2011 Edutarbilistic and the Methods of Sol Analysis 2007, Pt 3, Ch 17; Adams-Evans (1962) TextuneSincular/EC/2015, Shuchure - Muthopy (1991), Colour- "Munsell" (2000))

*Structure analysed in the laboratory is conducted on a disturbed sample, therefore is only a representation of the macro-structures that may be present in the field, which provide an indication of the soil physical characteristics and behaviours that may exist.



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Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills NSW 1715	Web:	www.sesl.com.au

Batch N°: 6196	54 Sample N°: 1	Date Instructions	Received: 22/12/21	Report Status:	Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil Assesm	nent	
		SESL Quote N°	Q 12757		
Client Contact:	Peter Somerville	Sample Name:	S-01 A		
Client Order N°:		Description:	Soil		
Address:	16 Chilvers Road Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS		

Analysis	Unit	Guideline values	Results
Total Microorganisms	mg/kg	50	52.4
Total Bacteria	mg/kg	15	12.4
Total Fungi	mg/kg	33.8	37.8
Bacteria	-		
Pseudomonas	mg/kg	1	1.219
Actinomycetes	mg/kg	1	2.117
Gram positive	mg/kg	4	6.999
Gram negative	mg/kg	11	5.407
Methane oxidisers	mg/kg	0.5	0.000
Sulphur reducers	mg/kg	<0.005	0.000
True anaerobes	mg/kg	<0.005	1.257
Eukaryotes			
Protozoa	mg/kg	1.25	2.232
Mycorrhizal fungi	mg/kg	10	14.498
Microbial diversity	-	80	37.1
Fungi: bacteria ratio	-	2.3	3.0



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills NSW 1715	Web:	www.sesl.com.au

Batch N°: 6196	64 Sample N°: 3	Date Instructions	Received: 22/12/21	Report Status:	Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil Assesm	ent	
		SESL Quote N°	: Q 12757		
Client Contact:	Peter Somerville	Sample Name:	S-02 A		
Client Order N°:		Description:	Soil		
Address:	16 Chilvers Road Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS, VIC_IWRO	3621-Std	

Analysis	Unit	Guideline values	Results
Total Microorganisms	mg/kg	50	73.1
Total Bacteria	mg/kg	15	15.5
Total Fungi	mg/kg	33.8	53.0
Bacteria	-		
Pseudomonas	mg/kg	1	1.531
Actinomycetes	mg/kg	1	2.102
Gram positive	mg/kg	4	7.640
Gram negative	mg/kg	11	7.823
Methane oxidisers	mg/kg	0.5	0.000
Sulphur reducers	mg/kg	<0.005	0.000
True anaerobes	mg/kg	<0.005	2.016
Eukaryotes			
Protozoa	mg/kg	1.25	4.614
Mycorrhizal fungi	mg/kg	10	21.147
Microbial diversity	-	80	33.4
Fungi: bacteria ratio	-	2.3	3.4



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills NSW 1715	Web:	www.sesl.com.au

Batch N°: 6196	54 Sample N°: 5	Date Instructions	Received: 22/12/21	Report Status:	Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil Assesm	ent	
		SESL Quote N°	C Q 12757		
Client Contact:	Peter Somerville	Sample Name:	S-03 A		
Client Order N°:		Description:	Soil		
Address:	16 Chilvers Road Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS, VIC_IWR0	G621-Std	

Analysis	Unit	Guideline values	Results
Total Microorganisms	mg/kg	50	46.0
Total Bacteria	mg/kg	15	8.5
Total Fungi	mg/kg	33.8	35.7
Bacteria	-		
Pseudomonas	mg/kg	1	1.117
Actinomycetes	mg/kg	1	1.080
Gram positive	mg/kg	4	4.504
Gram negative	mg/kg	11	4.026
Methane oxidisers	mg/kg	0.5	0.000
Sulphur reducers	mg/kg	<0.005	0.000
True anaerobes	mg/kg	<0.005	0.297
Eukaryotes			
Protozoa	mg/kg	1.25	1.759
Mycorrhizal fungi	mg/kg	10	9.040
Microbial diversity	-	80	35.6
Fungi: bacteria ratio	<u> </u>	2.3	4.2



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills NSW 1715	Web:	www.sesl.com.au

Batch N°: 6196	54 Sample N°: 6	Date Instructions	Received: 22/12/21	Report Status:	Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil Assesm	ent	
		SESL Quote N°	: Q 12757		
Client Contact:	Peter Somerville	Sample Name:	S-04 A		
Client Order N°:		Description:	Soil		
Address:	16 Chilvers Road Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS, VIC_IWRO	3621-Std	

Analysis	Unit	Guideline values	Results
Total Microorganisms	mg/kg	50	40.3
Total Bacteria	mg/kg	15	6.8
Total Fungi	mg/kg	33.8	30.8
Bacteria	-		
Pseudomonas	mg/kg	1	0.794
Actinomycetes	mg/kg	1	0.882
Gram positive	mg/kg	4	3.391
Gram negative	mg/kg	11	3.424
Methane oxidisers	mg/kg	0.5	0.000
Sulphur reducers	mg/kg	<0.005	0.000
True anaerobes	mg/kg	<0.005	0.171
Eukaryotes			
Protozoa	mg/kg	1.25	2.698
Mycorrhizal fungi	mg/kg	10	13.543
Microbial diversity	-	80	33.9
Fungi: bacteria ratio	-	2.3	4.5



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills NSW 1715	Web:	www.sesl.com.au

Batch N°: 6196	54 Sample N°: 7	Date Instructions	Received: 22/12/21	Report Status:	Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil Assesm	ent	
		SESL Quote N°	: Q 12757		
Client Contact:	Peter Somerville	Sample Name:	S-05 A		
Client Order N°:		Description:	Soil		
Address:	16 Chilvers Road	Test Type:	FSC_Plus, MWSS, VIC_IWRC	G621-Std	
	i nornieign NSW 2120				

Analysis	Unit	Guideline values	Results
Total Microorganisms	mg/kg	50	64.2
Total Bacteria	mg/kg	15	15.0
Total Fungi	mg/kg	33.8	45.8
Bacteria	-		
Pseudomonas	mg/kg	1	1.646
Actinomycetes	mg/kg	1	2.646
Gram positive	mg/kg	4	8.968
Gram negative	mg/kg	11	6.012
Methane oxidisers	mg/kg	0.5	0.000
Sulphur reducers	mg/kg	<0.005	0.000
True anaerobes	mg/kg	<0.005	0.480
Eukaryotes			
Protozoa	mg/kg	1.25	3.382
Mycorrhizal fungi	mg/kg	10	14.039
Microbial diversity	-	80	41.1
Fungi: bacteria ratio	-	2.3	3.1



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills NSW 1715	Web:	www.sesl.com.au

Batch N°: 6196	54 Sample N°: 8	Date Instructions	Received: 22/12/21	Report Status:	Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil Assesm	nent	
		SESL Quote N°	Q 12757		
Client Contact:	Peter Somerville	Sample Name:	S-06 A		
Client Order N°:		Description:	Soil		
Address:	16 Chilvers Road Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS		

Analysis	Unit	Guideline values	Results
Total Microorganisms	mg/kg	50	65.7
Total Bacteria	mg/kg	15	11.2
Total Fungi	mg/kg	33.8	51.1
Bacteria	-		
Pseudomonas	mg/kg	1	1.874
Actinomycetes	mg/kg	1	1.343
Gram positive	mg/kg	4	5.569
Gram negative	mg/kg	11	5.614
Methane oxidisers	mg/kg	0.5	0.000
Sulphur reducers	mg/kg	<0.005	0.000
True anaerobes	mg/kg	<0.005	0.809
Eukaryotes			
Protozoa	mg/kg	1.25	3.468
Mycorrhizal fungi	mg/kg	10	17.154
Microbial diversity	-	80	32.2
Fungi: bacteria ratio	-	2.3	4.6



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills_NSW_1715	Web:	www.sesl.com.au

Tests are performed under a quality system certified as complying with ISO 9001: 2008. Results and conclusions assume that sampling is representative. This document shall not be reproduced except in full.

Batch N°: 6196	4 Sample N°: 3	Date Received:	22/12/21	Report Status: Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil As	ssesment
Client Contact:	Peter Somerville	-	-	
Client Job N°:		SESL Quote N°	Q 12757	
Client Order N°:		Sample Name:	S-02 A	
Address:	16 Chilvers Road	Sample Type:	Soil	
	Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS, VIC	_IWRG621-Std
	-			

REPORT SUMMARY

Material Type:
 Soil
 Other

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The results of laboratory testing conducted on this material indicate the presence of a range of contaminants commonly encountered in the natural and urban areas. This assessment was conducted to provide a soil hazard categorisation for waste management, based on the Vic EPA 1828.2 Waste disposal categories - characteristics and thresholds (March 2021). Comparison of the laboratory analysis results with the criteria indicates the material is considered to be within the <u>Category D</u> classification and as a result of this process, it can be managed in accordance with the Environmental Protection 1828.2 Regulation 2013.

pH (in H₂O): 6.8

CONTA	MINANT	TC: (mg/kg)	ASLP: (mg/L)	CATEGORY
INORGANIC SP	PECIES			
Arsenic	(As)	6	-	Fill Material
Cadmium	(Cd)	<1	-	Fill Material
Chromium VI	(CrVI)	<0.5	-	Fill Material
Copper	(Cu)	52	-	Fill Material
Lead	(Pb)	173	-	Fill Material
Mercury	(Hg)	<0.1	-	Fill Material
Molybdenum	(Mo)	<2	-	Fill Material
Nickel	(Ni)	46	-	Fill Material
Tin	(Sn)	<5	N/A	Fill Material
Selenium	(Se)	<5	-	Fill Material
Silver	(Ag)	<2	-	Fill Material
Zinc	(Zn)	223	-	Needs ASLP
ANIONS		1	I I	
Cyanide	(CN)	1	-	Fill Material
Fluoride	(F)	220	-	Fill Material
ORGANIC SPE	CIES	1	<u> </u>	
Phenols (haloge	enated)	<0.03	-	Fill Material
Phenols (non-ha	alogenated)	<1	-	Fill Material
Monocyclic aron	natic hydrocarbons	<0.2	N/A	Fill Material
Benzene	-	<0.2	-	Fill Material
Polycyclic arom	atic hydrocarbons	30.2	N/A	Category D
Benzo(a)pyrene	}	3.3	-	Needs ASLP
C6 - C9 petroleu	um hydrocarbons	<10	N/A	Fill Material
C10 - C36 petro	leum hydrocarbons	380	N/A	Fill Material
Polychlorinated	biphenyls	<0.1	N/A	Fill Material
Chlorinated hyd	rocarbons	<0.5	N/A	Fill Material
PESTICIDES		·		
Organochlorine	pesticides	<0.05	N/A	Fill Material



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills NSW 1715	Web:	www.sesl.com.au

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Batch N°: 6196	64 Sample N°: 3	Date Received:	: 22/12/21	Report Status:	Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil Asse	esment	
Client Contact:	Peter Somerville				
Client Job N°:		SESL Quote N°	: Q 12757		
Client Order N°	:	Sample Name:	S-02 A		
Address:	16 Chilvers Road	Sample Type:	Soil		
	Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS, VIC_IV	VRG621-Std	

DETAILED SUMMARY

Soil Hazard Categerisation and Management publication IWRG621 (VIC EPA June, 2009) Abbreviations: ND - Not Determined (Analyte not tested) TC - Total Concentration ASLP - Australian Standard Leaching Procedure

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Consultant:

Peter Somerville

Authorised Signatory:

Simon Leake

All analyses performed by a NATA accredited sub-contracting laboratory.

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TEST_CALC



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
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Batch N°: 6196	4 Sample N°: 5	Date Received:	22/12/21	Report Status: Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil As	ssesment
Client Contact:	Peter Somerville	·	-	
Client Job N°:		SESL Quote N°	Q 12757	
Client Order N°:		Sample Name:	S-03 A	
Address:	16 Chilvers Road	Sample Type:	Soil	
	Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS, VIC	_IWRG621-Std
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REPORT SUMMARY

Material Type:
 Soil
 Other

The results of laboratory testing conducted on this material indicate the presence of a range of contaminants commonly encountered in the natural and urban areas. This assessment was conducted to provide a soil hazard categorisation for waste management, based on the Vic EPA 1828.2 Waste disposal categories - characteristics and thresholds (March 2021). Comparison of the laboratory analysis results with the criteria indicates the material is considered to be within the <u>Fill Material</u> classification and as a result of this process, it can be managed in accordance with the Environmental Protection 1828.2 Regulation 2013.

pH (in H₂O): 7.7

CONTA	MINANT	TC: (mg/kg)	ASLP: (mg/L)	CATEGORY
INORGANIC SP	ECIES			
Arsenic	(As)	9	-	Fill Material
Cadmium	(Cd)	<1	-	Fill Material
Chromium VI	(CrVI)	<0.5	-	Fill Material
Copper	(Cu)	17	-	Fill Material
Lead	(Pb)	31	-	Fill Material
Mercury	(Hg)	<0.1	-	Fill Material
Molybdenum	(Mo)	<2	-	Fill Material
Nickel	(Ni)	38	-	Fill Material
Tin	(Sn)	<5	N/A	Fill Material
Selenium	(Se)	<5	-	Fill Material
Silver	(Ag)	<2	-	Fill Material
Zinc	(Zn)	56	-	Fill Material
ANIONS		1	11	
Cyanide	(CN)	1	-	Fill Material
Fluoride	(F)	300	-	Fill Material
ORGANIC SPE	CIES	1		
Phenols (haloge	enated)	< 0.03	-	Fill Material
Phenols (non-ha	alogenated)	<1	-	Fill Material
Monocyclic aron	natic hydrocarbons	<0.2	N/A	Fill Material
Benzene		<0.2	-	Fill Material
Polycyclic arom	atic hydrocarbons	<1	N/A	Fill Material
Benzo(a)pyrene		<0.5	-	Fill Material
C6 - C9 petroleu	Im hydrocarbons	<10	N/A	Fill Material
C10 - C36 petro	leum hydrocarbons	<100	N/A	Fill Material
Polychlorinated	biphenyls	<0.1	N/A	Fill Material
Chlorinated hydrocarbons		<0.5	N/A	Fill Material
PESTICIDES				·
Organochlorine	pesticides	<0.05	N/A	Fill Material



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills NSW 1715	Web:	www.sesl.com.au

Tests are performed under a quality system certified as complying with ISO 9001: 2008. Results and conclusions assume that sampling is representative. This document shall not be reproduced except in full

Batch N°: 6190	64 Sample N°: 5	Date Received:	: 22/12/21	Report Status:	Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil Asses	ment	
Client Contact:	Peter Somerville				
Client Job N°:		SESL Quote N°	: Q 12757		
Client Order N°	:	Sample Name:	S-03 A		
Address:	16 Chilvers Road	Sample Type:	Soil		
	Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS, VIC_IWI	RG621-Std	

DETAILED SUMMARY

Soil Hazard Categerisation and Management publication IWRG621 (VIC EPA June, 2009) Abbreviations: ND - Not Determined (Analyte not tested) TC - Total Concentration ASLP - Australian Standard Leaching Procedure

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Consultant:

Peter Somerville

Authorised Signatory:

Simon Leake

All analyses performed by a NATA accredited sub-contracting laboratory.

TEST_CALC 1

Soil Hazard Categorisation and Management



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
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	Pennant Hills_NSW_1715	Web:	www.sesl.com.au

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Batch N°: 6196	4 Sample N°: 6	Date Received:	22/12/21	Report Status: Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil A	ssesment
Client Contact:	Peter Somerville	·	-	
Client Job N°:		SESL Quote N°	Q 12757	
Client Order N°:		Sample Name:	S-04 A	
Address:	16 Chilvers Road	Sample Type:	Soil	
	Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS, VIC	C_IWRG621-Std
				-

REPORT SUMMARY

Material Type:
 Soil
 Other

The results of laboratory testing conducted on this material indicate the presence of a range of contaminants commonly encountered in the natural and urban areas. This assessment was conducted to provide a soil hazard categorisation for waste management, based on the Vic EPA 1828.2 Waste disposal categories - characteristics and thresholds (March 2021). Comparison of the laboratory analysis results with the criteria indicates the material is considered to be within the Fill Material classification and as a result of this process, it can be managed in accordance with the Environmental Protection 1828.2 Regulation 2013.

pH (in H₂O): 6.8

CONTA	MINANT	TC: (mg/kg)	ASLP: (mg/L)	CATEGORY
INORGANIC SP	PECIES			
Arsenic	(As)	<5	-	Fill Material
Cadmium	(Cd)	<1	-	Fill Material
Chromium VI	(CrVI)	<0.5	-	Fill Material
Copper	(Cu)	6	-	Fill Material
Lead	(Pb)	17	-	Fill Material
Mercury	(Hg)	<0.1	-	Fill Material
Molybdenum	(Mo)	<2	-	Fill Material
Nickel	(Ni)	6	-	Fill Material
Tin	(Sn)	<5	N/A	Fill Material
Selenium	(Se)	<5	-	Fill Material
Silver	(Ag)	<2	-	Fill Material
Zinc	(Zn)	39	-	Fill Material
ANIONS		1	I I	
Cyanide	(CN)	1	-	Fill Material
Fluoride	(F)	160	-	Fill Material
ORGANIC SPE	CIES	1	· ·	
Phenols (haloge	enated)	< 0.03	-	Fill Material
Phenols (non-ha	alogenated)	<1	-	Fill Material
Monocyclic aror	natic hydrocarbons	<0.2	N/A	Fill Material
Benzene		<0.2	-	Fill Material
Polycyclic arom	atic hydrocarbons	<1	N/A	Fill Material
Benzo(a)pyrene	•	<0.5	-	Fill Material
C6 - C9 petrole	um hydrocarbons	<10	N/A	Fill Material
C10 - C36 petro	leum hydrocarbons	<100	N/A	Fill Material
Polychlorinated biphenyls		<0.1	N/A	Fill Material
Chlorinated hydrocarbons		<0.5	N/A	Fill Material
PESTICIDES				
Organochlorine	pesticides	<0.05	N/A	Fill Material



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills NSW 1715	Web:	www.sesl.com.au

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Batch N°: 6196	64 Sample N°: 6	Date Received:	: 22/12/21	Report Status:	Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil Asse	esment	
Client Contact:	Peter Somerville				
Client Job N°:		SESL Quote N°	: Q 12757		
Client Order N°	:	Sample Name:	S-04 A		
Address:	16 Chilvers Road	Sample Type:	Soil		
	Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS, VIC_IV	VRG621-Std	

DETAILED SUMMARY

Soil Hazard Categerisation and Management publication IWRG621 (VIC EPA June, 2009) Abbreviations: ND - Not Determined (Analyte not tested) TC - Total Concentration ASLP - Australian Standard Leaching Procedure

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Consultant:

Peter Somerville

Authorised Signatory:

Simon Leake

All analyses performed by a NATA accredited sub-contracting laboratory.

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Soil Hazard Categorisation and Management



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills_NSW_1715	Web:	www.sesl.com.au

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Batch N°: 6196	54 Sample N°: 7	Date Received:	: 22/12/21	Report Status: Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soi	I Assesment
Client Contact:	Peter Somerville	-	-	
Client Job N°:		SESL Quote N°: Q 12757		
Client Order N°:		Sample Name:	S-05 A	
Address:	16 Chilvers Road	Sample Type:	Soil	
	Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS, V	VIC_IWRG621-Std
		Test Type.	FSC_Plus, WWSS, V	VIC_IWRG621-Std

REPORT SUMMARY

Material Type:
 Soil
 Other

The results of laboratory testing conducted on this material indicate the presence of a range of contaminants commonly encountered in the natural and urban areas. This assessment was conducted to provide a soil hazard categorisation for waste management, based on the Vic EPA 1828.2 Waste disposal categories - characteristics and thresholds (March 2021). Comparison of the laboratory analysis results with the criteria indicates the material is considered to be within the <u>Category D</u> classification and as a result of this process, it can be managed in accordance with the Environmental Protection 1828.2 Regulation 2013.

pH (in H₂O): 7.6

CONTAMINANT		TC: (mg/kg)	ASLP: (mg/L)	CATEGORY
INORGANIC SF	PECIES			
Arsenic	(As)	6	-	Fill Material
Cadmium	(Cd)	<1	-	Fill Material
Chromium VI	(CrVI)	<0.5	-	Fill Material
Copper	(Cu)	40	-	Fill Material
Lead	(Pb)	167	-	Fill Material
Mercury	(Hg)	<0.1	-	Fill Material
Molybdenum	(Mo)	<2	-	Fill Material
Nickel	(Ni)	47	-	Fill Material
Tin	(Sn)	15	N/A	Fill Material
Selenium	(Se)	<5	-	Fill Material
Silver	(Ag)	<2	-	Fill Material
Zinc	(Zn)	205	-	Needs ASLP
ANIONS		1	I I	
Cyanide	(CN)	1	-	Fill Material
Fluoride	(F)	200	-	Fill Material
ORGANIC SPECIES				
Phenols (haloge	enated)	<0.03	-	Fill Material
Phenols (non-halogenated)		<1	-	Fill Material
Monocyclic aror	natic hydrocarbons	<0.2	N/A	Fill Material
Benzene		<0.2	-	Fill Material
Polycyclic aromatic hydrocarbons		<1	N/A	Fill Material
Benzo(a)pyrene		<0.5	-	Fill Material
C6 - C9 petroleum hydrocarbons		<10	N/A	Fill Material
C10 - C36 petroleum hydrocarbons		<100	N/A	Fill Material
Polychlorinated biphenyls		<0.1	N/A	Fill Material
Chlorinated hydrocarbons		<0.5	N/A	Fill Material
PESTICIDES				
Organochlorine	pesticides	<0.05	N/A	Fill Material



Sample Drop Off:	16 Chilvers Road	Tel:	1300 30 40 80
	Thornleigh NSW 2120	Fax:	1300 64 46 89
Mailing Address:	PO Box 357	Em:	info@sesl.com.au
	Pennant Hills NSW 1715	Web:	www.sesl.com.au

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Batch N°: 6196	64 Sample N°: 7	Date Received:	: 22/12/21	Report Status:	Draft
Client Name:	SESL Consult - VIC	Project Name:	Bunbury Street Soil Asses	ment	
Client Contact:	Peter Somerville				
Client Job N°:		SESL Quote N°	: Q 12757		
Client Order N°:	:	Sample Name:	S-05 A		
Address:	16 Chilvers Road	Sample Type:	Soil		
	Thornleigh NSW 2120	Test Type:	FSC_Plus, MWSS, VIC_IWF	RG621-Std	

DETAILED SUMMARY

Soil Hazard Categerisation and Management publication IWRG621 (VIC EPA June, 2009) Abbreviations: ND - Not Determined (Analyte not tested) TC - Total Concentration ASLP - Australian Standard Leaching Procedure

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Consultant:

Peter Somerville

Authorised Signatory:

Simon Leake

All analyses performed by a NATA accredited sub-contracting laboratory.

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Soil Hazard Categorisation and Management