Appendix 2

Resource Consent Application

From: Hannah Osborne-Allen
To: info
Cc: Gareth Moran
Subject: External Sender: Attn Planning - 16A Wickham Street, Hamilton Resource Consent Application
Date: Thursday, 23 March 2023 2:55:31 pm

Good Afternoon,

Please find the attached resource consent application, on behalf of Industre Property Rua Ltd, for the concurrent land use consent at 16A Wickham Street, Frankton, Hamilton.

Please find attached here the application: 16A Wickham Street, Frankton, Hamilton

Included in this application is the application form, assessment of environmental effects, followed by the following information:

Appendix 1:	Record of Title
Appendix 2:	Site Plans
Appendix 3:	Integrated traffic assessment and Management Plan
Appendix 4:	Geotechnical Assessment
Appendix 5:	Preliminary Site Investigation & Detailed Site Investigation
Appendix 6:	Engineering Infrastructure Report
Appendix 7:	Waipa District Plan Rule Assessment
Appendix 8:	Hazardous Substances Assessment
Appendix 9:	Dangerous Goods Assessment

If you have any further questions or issues retrieving the documentation, please do not hesitate to contact me via email, or mobile as per below.

Ngā mihi | Kind regards,

Hannah Osborne-Allen
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Land Use consent for a light industrial development

16A Wickham Street, Frankton

Assessment of Environmental Effects and Statutory Analysis

24 March 2023

B&A
Urban & Environmental

Prepared for:
Industre Property Rua Ltd

B&A Reference:

19565

Status:

Final

Date:

24 March 2023

Prepared by:

Hannah Osborne-Allen

Graduate Planner, Barker & Associates Limited

Reviewed by:

Gareth Moran

Senior Associate, Barker & Associates Limited

Contents

Appendices

Appendix 1: Record of Title

Appendix 2: Site Plans

Appendix 3: Integrated traffic assessment and Management Plan

Appendix 4: Geotechnical Assessment

Appendix 5: Preliminary Site Investigation & Detailed Site Investigation

Appendix 6: Engineering Infrastructure Report

Appendix 7: Waipa District Plan Rule Assessment

Appendix 8: Hazardous Substances Assessment

Appendix 9: Dangerous Goods Assessment

1.0 Applicant and Property Details

To:	Waipa District Council
Site Address:	16A Wickham Street, Frankton
Applicant Name:	Industre Property Rua Ltd
Address for Service:	Barker & Associates Ltd Suite 5 47 Alpha Street Cambridge 3434 Attention: Gareth Moran
Legal Description:	LOT 1 DP 396081; LOT 1 DP 486522 (refer to Record of Title as **Appendix 1**)
Site Area:	2.0007ha
Site Owner:	Industre Property Rua Ltd
District Plan:	Waipa District Plan 'WDP'
WDP Zoning:	Rural
Designations:	HAIL site
Additional Limitations:	None
Locality Diagram:	Refer to **Figure 1**
Brief Description of Proposal:	Land Use consent to construct a storage and distribution facility and three warehouses and ancillary offices
Summary of Reasons for Consent:	Resource consent required as a **Non-Complying Activity.** National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health – **Controlled Activity.**

2.0 Summary

This report has been prepared on behalf of Industre Property Rua Ltd to undertaken the following staged development.

Stage 1

Stage 1 will involve the construction of a light industrial facility which will be operated and managed by Wattyl Ltd. The facility will be used for storage and distribution of paint and paint related products; in addition to an ancillary office and paint-mixing room.

Stage 2

Will involve the construction of three separate warehouses and ancillary offices. The tenants are currently unknown; however, it is the expectation that the warehouses will also be used for storage and distribution purposes.

Activities of this nature are not provided for in the Rural Zone, thus consent is required under the Waipa District Plan for a **Non-Complying Activity.**

A further resource consent is also required by virtue of Regulation 9(2)b of the National Environmental Standard for Managing Contaminants in Soil to Protect Human Health as a **Controlled Activity.**

This Assessment of Environmental Effects (AEE) has been prepared in accordance with the requirements of Section 88 of and Schedule 4 to the Resource Management Act 1991 (the Act) and is intended to provide the information necessary for a full understanding of the activity for which consent is sought and any actual or potential effects the proposal may have on the environment.

3.0 Site Context

3.1 Site Description

The site is located on the southern side of Wickham Street, on the boundary of Waipa District and Hamilton City (located to the north), and is under Waipa District Council jurisdiction. The site is rectangle in shape and covers an area of 2.0007 ha, and consists of existing and consented light industrial activities. The topography of the site has a gradual fall towards the north-west, with an overall cross fall of approximately 1.4 m over 230 m. The existing site surface consists largely of compacted metal with localised areas of asphalt paving, including the central accessway between the various yards. The site is bordered by the Waste Management site to the north, and farmland to the east and south (refer to **Figure 1** below). An extensive area of industrial zoned land containing a mixture of both industrial and industrial based activities are located to the north of the site within the Hamilton City Council boundaries.

Access to the site is via a vehicle crossing from Wickham Street at the point at which the legal extent of Wickham Street ends, with the site and other users sharing a common private accessway. The site is predominantly in hardstand, allowing vehicles to move freely throughout.

Figure 1: Locality plan.

Under the Waipa District Plan ('WDP') the site is zoned Rural, and identified to contain a HAIL activity.

3.2 Record of Title

The site is legally described as Lot 1 DP 396081 and comprised as Record of Title 704262 (Appendix 1).

The site is subject to the following relevant 'interests' registered on the title:

- Consent Notice restricting further subdivision by virtue of the previously Operative Waipa District Plan (1997);
- Easements: water, telephone services, sewage, stormwater, power and gas.
- Land Covenant- Burdened land

None of the above interests will prevent the proposal from proceeding.

3.3 Consent History

The site is subject to the existing resource consents, previously approved by Waipa District Council;

- Land use consent reference LU/0046/07, to construct and operate a site office and overnight storage of vehicles and asphalt material. Consent was approved 29 June 2007.

- Land use consent reference LU/0079/09, for a transportable house depot, construction of yard, offices and timber sales yard. Consent approved 24 June 2009.

It is our understanding that the above referenced consents have been *given effect to* and have therefore been referenced as part of the receiving environment and consented baseline in proceeding sections of this report.

4.0 Proposal

The Proposal is to establish the site for light industrial purposes in two separate stages as follows:

Stage 1

Stage 1 will involve the construction of the following buildings which will be operated and managed by Wattyl Ltd. The primary use of the buildings will be for storage and distribution of paint and paint related products; in addition to an ancillary office and paint-mixing room. The intricate details associated with the operation of the facility are identified below;

- **Dangerous Goods Building (DG) -** The DG building will be 1526m^2 and 13.97m tall and constructed on the north western side of the site, 41.15m from the north western boundary.

  The building will be used for the storage and distribution of flammable liquids and has been strategically positioned on the western extent of the site which is separated from the main warehouse and breezeway in-order to comply the specifications for storage and distribution of dangerous goods.

  The DG building is also designed to meet the specifications for A Type B store and will be framed with non-combustible cladding materials and with secondary containment capacity for 136,000 litres.

  All the flammable liquids held in DG store will be sealed in their closed containers. Any energy source capable of igniting flammable substances or incompatible substances will be excluded from DG store and its secondary containment.

- **Breezeway-** Is a covered 1590m^2 and 8.72m high building used as a transit area for deliveries and dispatch of product and the unloading and dispatchment of outwards goods of around 30,000 litres daily. In addition, the area will also temporarily hold hazardous paint related substances for periods up to 72 hours. The traffic flow will enter the breezeway from the northern side of the building, then traverse through the building and exist the site in a clockwise direction.

- **Warehouse-** The warehouse will be 3640m^2, 18.02m high building located on the eastern side of the breezeway. A caged area will be built within the main warehouse, designed to store up to 2,800 litres of Class 2.1.2A flammable aerosols. The cage is proposed to be located in the southwest corner of the main warehouse and will be segregated from any incompatible substances, specifically the Class 3 products proposed to be stored in the DG Store and western side of the breezeway.

- **Mixing Room-** A mixing room located on the western side of the breezeway against the DG building will be used for blending or repacking paints in containers (less than 20 litres units). When required, any damaged packages of paint will be decanted into other containers in the mixing room. The damaged package will be stored within the mixing room until it can be collected for disposal to an authorised hazardous waste facility.

  The mixing room will be designed to hold up to 450 litres of Class 3.1B and 3.1C flammable liquids. Providing the total quantity of hazardous substances is less than 1,000 litres, no secondary containment is required for the mixing room in accordance with AS/NZS 4114 Spray painting booths, designated spray-painting areas and paint mixing rooms (2020).

- **Office-** The proposed office building is a 300m^2 two storied building attached to the warehouse for general staff amenities. It will be used an ancillary office associated with the operation of wider Stage 1 facility.

An artist's impression of the external façade of the buildings are identified in **Figure 2 below.** The proposed site plans including elevations and artist's impression are identified below (Appendix 2).

Figure 2: Artists impression of the site.

All access to the site will be via the existing entrance connecting with Wickham Street. The entire site other than the landscaped area (depicted in green on the site plan) will be either concrete and asphaltic wearing surfaces over compacted basecourse. Yard areas will have reinforced concrete slabs to provide durable surfaces for trucking and container laydown.

The peripheries of the site will be landscaped with a mixture of trees and shrubs that will grow to a minimum height of 1.8m; depicted by the green areas in Figure 3 (below).

Staff and visitor car parking will be provided on the northern side of the main warehouse; and designated staff parking on the northern side of the DG building. The total number of car parks will consist of 19 including one assessable park.

The exact location and size of signage has yet to be determined. This will be reviewed once the buildings are constructed and the consent has been given effect to. A new resource consent will be applied for at this point in time if necessary.

The facility will be open to the public between 6am-6pm, seven days a week.

Stage 2

Stage 2 of the proposal will involve the construction of three independent warehouse buildings and ancillary offices and will commence following Stage 1 being given effect to.

Warehouse 1 is located adjacent to the southern boundary and will be 1800m^2 with a total height of 12.27m. The ancillary office will be located 3.97m from the eastern boundary and be 300m2. Eight designated car parks will be positioned on the northern side of the boundary.

Warehouses 2 and 3 will be located to the north of warehouse 1 and contain a total combined area of 1252m^2 with a total height of 11.74m. Two ancillary offices will be constructed on the western and eastern side of the warehouse. A total of 16 car parks will be designated for the use of warehouse 2 and 3.

As with Stage 1, the perimeters of the site will be landscaped to a minimum depth of three meters.

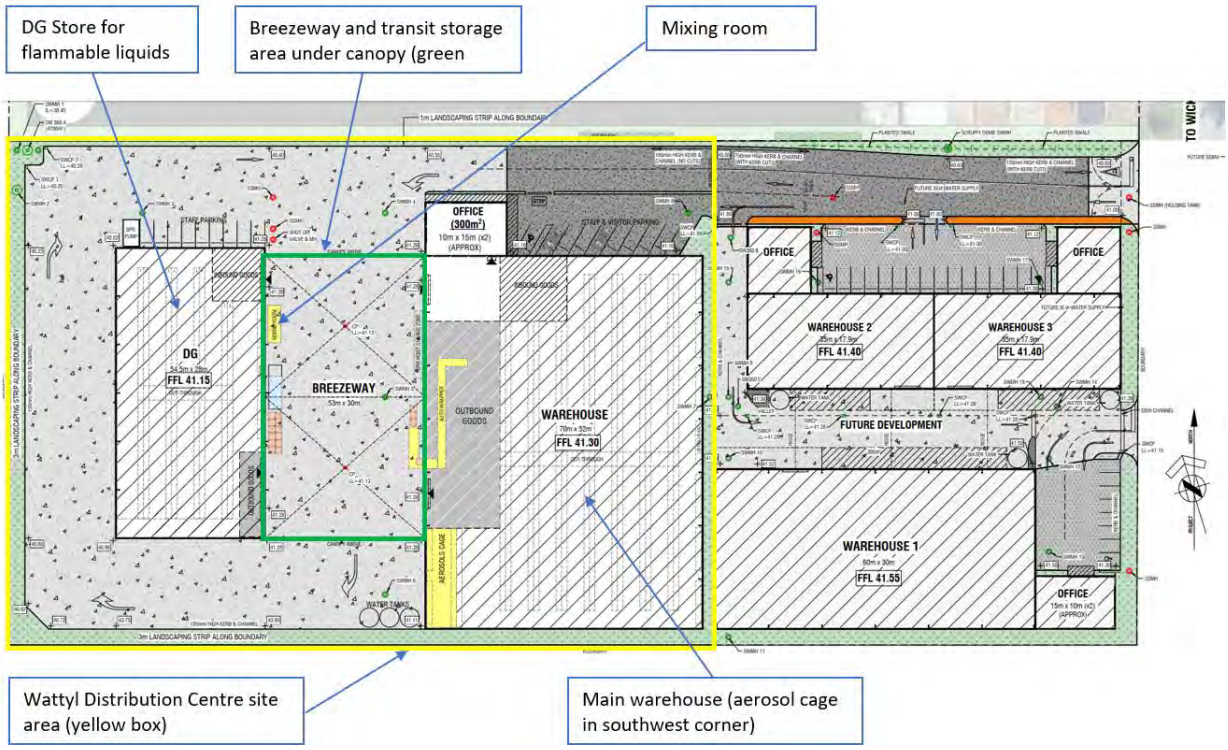


Figure 3: Proposed site plan showing locations (source: Tokin and Taylor Ltd assessment)

4.1.1.1 Information applicable to Stages 1 and 2

Traffic

CKL have were engaged to provide an Integrated Transportation Assessment (ITA) in order to understand any potential traffic effects associated with the proposal (refer to **Appendix 3**). Based on the findings of the CKL Report, the combined facilities (Stages 1 and 2) are anticipated to generate an average of 48 Heavy Commercial Vehicles (HCV) and 60 light vehicles per day, with a total of 117 trips between the Stage 1 and 2 development (Figure 4 below).

The trip generation of the proposed development has been assessed using information provided by the Applicant for the Stage 1 Wattyl activity, and generic rates for the Stage 2 warehouses because the tenants are not yet known. The Stage 2 warehouses have been assessed using the rates from *ITE 11th Edition* which are based on gross floor area (GFA) rather than site area.

This equates to a total of 14 vehicle movements per hour or 85 vehicle movements per day over and above what is currently generated on the site by way of the existing consented activities. These key figures are identified in Figure 4 below.

Activity	Peak Hour		Daily	
	Trip Rate	Trips (vph)	Trip Rate	Trips (vpd)
Existing				
Manufacturing	2.8/hectare	6	15.97/hectare	32
Proposed				
Wattyl	-	11	-	44
Warehouses	0.23/100 sqm GFA	9	1.84/100sqm GFA	73
Total	**0**	**20**	**-**	**117**
Change	**-**	**14**	**-**	**85**

Figure 4: Existing and Future Generated Traffic (source: Integrated Transportation Assessment)

The proposed development will have two accesses to the ROW, one near its northern boundary and one mid-way along the frontage. These both provide for two-way traffic movement and have been designed to accommodate heavy vehicles circulating through the Wattyl and warehouse areas. Semi-trailers can access the Stage 1 Wattyl area, arriving and departing via the northern access. Large rigid trucks can access the Stage 2 warehouse area, arriving via the northern access and leaving via the southern access.

Geotechnical Assessment

A geotechnical assessment for the proposed development has been completed by Mitchell Geocon Geotechnical (Ref: J4072.7, January 2023) found in Appendix 4. This assessment indicates that the site is underlain with compacted basecourse and sand filling materials followed by peat layers overlaying interbedded sand and silt/clay materials to deeper depths. The report provides preliminary foundation recommendations using piles for the proposed buildings. The liquefaction hazard assessment does not appear to be of a concern and provision for seismic-related liquefaction effects has not been required. In summary the report concludes that the site contains suitable foundations to enable the proposed development to proceed.

Contamination Investigation

Pattle Delamore Partners Ltd (PDP) has prepared a Preliminary (PSI) and Detailed Site Investigation (DSI). These reports assess the volume of potentially hazardous substances identified on site and provides recommendations on how these should be managed; as examined in later sections of our report. Both the PSI and DSI are attached in Appendix 5.

4.1.1.2 Proposed Infrastructure

An Engineering Infrastructure Report has been prepared by Stiff Hooker and is attached in Appendix 6. The findings of the report are broken down in the below subsections

Stormwater Drainage

The stormwater runoff will discharge to the current discharge location in the north-west corner of this site. The stormwater drainage for the proposed development will utilise a combination of piped reticulations including detention with treatment via stormwater 360 devices and grassed swales. For the building roof areas, piped reticulations conveying clean stormwater runoff will be connected to the rainwater harvesting tanks with the outflow draining to the underground detention system. The new carpark, road pavement and operation yard areas, the proposal low-impact design approach as per the Waikato Stormwater Management Guideline TR2018/01 has been adopted.

The climate change effect has been included, and a 33% and 12% increase has been calculated for the 2 and 10-year ARI events respectively. Through onsite detention, the max peak discharge has been limited to 80% of pre-development levels. This discharge is likely to be further reduced by the recharge ability of the swales adopted, and thus lessen the potential impacts on the receiving environment.

In summary the proposed development improves the site conditions by adding more landscaping areas. As a result, the calculated post-development stormwater peak flow rate, excluding the climate change effect, for the entire land parcel indicates slight improvement to that of the existing (pre-development) condition.

It is noted that Resource Consent is currently being sought from the Waikato Regional Council to authorise the existing and proposed discharge into the current discharge location. A copy of the application can be provided upon request.

Wastewater Drainage

As no wastewater infrastructure is available on site, all wastewater will drain to a central holding tank for later removal by a liquid waste contractor,

Water Supply

As no water supply infrastructure is available on site, all potable water will be provided by on-site rainwater harvesting tanks, treated as required. When additional water is required, this will be tinkered in to top up storage tanks.

Power and Telecommunication Supplies

New power and telecom connections for all buildings will be accessed within the ROW.

4.1.1.3 Construction

Sediment and Erosion Control

Sediment control will be established during the construction phase of the development, with the installation of a sediment control pond and silt fences designed in accordance to the Waikato Regional Council guidelines.

The sediment pond will be excavated into the existing natural ground and located at the lowest part of the site (northwest corner). Gravity contour drains on the northern and western boundaries will convey sediment laden runoff into the forebay pond.

A primary spillway will be provided with two floating T-bar decants, which discharge into the existing open channel to the north. This pond also incorporates an emergency spillway discharge in to the open channel, should a 100-year ARI rainfall event occur during the course of the earthworks.

As the existing site access is fully sealed and transits to metal surfaces, we do not envisage the need for a purpose-built stabilised entrance, which the existing surfacing and new site levels will require minimal removal to the existing metal pavement.

The proposed sediment and erosion control works are demonstrated on the site works drawings SD-RC06 to SD-RC09 as identified in **Appendix 6.**

Earthworks

Due to the relatively flat contour of the site the following earthworks volumes have been estimated that approximately 2,210m^3 total cut volume and a 1,200m^3 cut to fill will be required; across a total earthworks area of 20,005m^2.

5.0 Reasons for Consent

A rules assessment against the provisions of the Waipa District Plan ('WDC') is attached as **Appendix 7.** The site is within the Rural Zone. The proposal requires consent for the matters outlined below.

5.1 Waipa District Plan

A comprehensive assessment of the proposal against the relevant land use rules of the Waipa District Plan (WDC) has been completed and is attached to this report as **Appendix 7**.

In summary the proposed activities are not provided for within the Rural Zone and will therefore trigger a resource consent for a **Non-Complying Activity.**

5.2 NES Contaminated Soils

These regulations came into force on 1 January 2012 and apply when a person wants to undertake an activity described in regulation 5(2) to 5(6) on a "*piece of land"* described in regulation 5(7) or 5(8).

The NES-CS regulations apply to a *"piece of land"* on which an activity or industry described in the Hazardous Activities and Industries List (HAIL) has been undertaken in the past (or is more than likely than not to have been undertaken) or is currently present.

Pattle Delamore Partners Ltd (PDP) completed a Preliminary Site Investigation (PSI) and Detailed Site Investigation dated 21 March 2023 titled *"16A Wickham Street, Hamilton –*

Preliminary Site and Detailed Site Investigation" (found in **Appendix 4**) which concluded the site has a history of the following activities; all of which are recognised in the HAIL:

- Wood treatment or preservation of bulk storage of treated timber.
- Storage of fuel, oil and chemical containers
- Transport depots or yards including areas used for refuelling; and

Having established through the PSI that the site contains potential contamination; a Detailed Site Investigation (DSI) was also undertaken by PDP to extrapolate the extend of any potential contamination. The results of the report are as follows:

- One soil sample collected from within a stockpile in Yard 6 reported concentrations of arsenic.
- Heavy metals exceeded Waikato region background ranges across the site,
- Petroleum hydrocarbons were identified as greater than background across the site,

The PDP report concludes that the stockpile identified in Yard 6 can be removed as a Permitted Activity, given the minor extent of earthworks required. However, prior to its removal the stockpile should not be disturbed and ideally covered with an impermeable layer until disposal to an approved facility. The applicant is happy to proffer this requirement as a consent condition if deemed necessary from Council. In terms of the wider site which contains heavy metals and hydrocarbons above background levels, the PDP report concludes that a Controlled Activity Resource Consent will likely be required, given the volume of earthworks that could be required to remove the identified contamination. Given we are unsure of the exact volumes of earthworks required, we have taken a conservative approach and have applied for a **Controlled Activity** consent pursuant to Regulation 9(2)b.

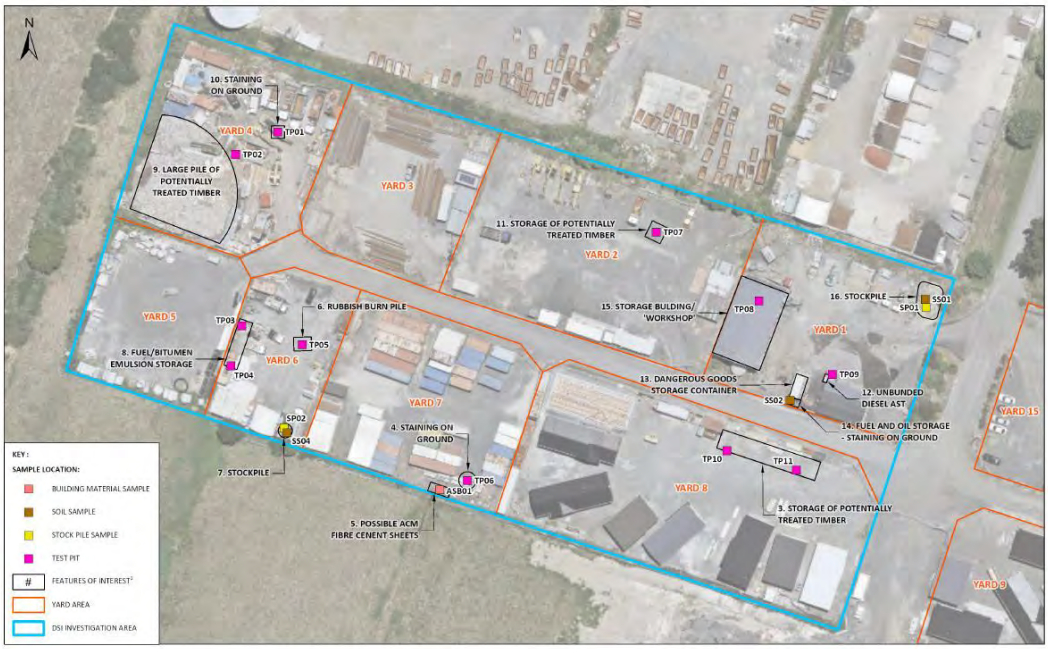


Figure 5: Proposed site plan showing locations (source: Pattle Delamore Partners Ltd Report)

5.3 Activity Status

Overall, this application is for a **non-complying activity**.

6.0 Public Notification Assessment (Sections 95A, 95C and 95D)

6.1 Assessment of Steps 1 to 4 (Sections 95A)

Section 95A specifies the steps the council is to follow to determine whether an application is to be publicly notified. These are addressed in statutory order below.

6.1.1 Step 1: Mandatory public notification is required in certain circumstances

Step 1 requires public notification where this is requested by the applicant; or the application is made jointly with an application to exchange of recreation reserved land under section 15AA of the Reserves Act 1977.

The above does not apply to the proposal.

6.1.2 Step 2: If not required by step 1, public notification precluded in certain circumstances.

Step 2 describes that public notification is precluded where all applicable rules and national environmental standards preclude public notification; or where the application is for a controlled activity; or a restricted discretionary, discretionary or non-complying boundary activity.

In this case, the proposal does not fall within the criteria identified above thus public notification is not precluded.

6.1.3 Step 3: If not required by step 2, public notification required in certain circumstances.

Step 3 describes that where public notification is not precluded by step 2, it is required if the applicable rules or national environmental standards require public notification, or if the activity is likely to have adverse effects on the environment that are more than minor.

As noted under step 2 above, public notification is not precluded, and an assessment in accordance with section 95A is required, which is set out in the sections below. As described below, it is considered that any adverse effects will be less than minor.

6.1.4 Step 4: Public notification in special circumstances

If an application is not required to be publicly notified as a result of any of the previous steps, then the council is required to determine whether special circumstances exist that warrant it being publicly notified.

Special circumstances are those that are:

- Exceptional or unusual, but something less than extraordinary; or
- Outside of the common run of applications of this nature; or

- Circumstances which make notification desirable, notwithstanding the conclusion that the adverse effects will be no more than minor.

There are no rules or a National Environmental Standard or the District Plan relevant to this proposal that preclude public notification.

It is considered that there is nothing noteworthy about the proposal. It is therefore considered that the application cannot be described as being out of the ordinary or giving rise to special circumstances.

6.2 Section 95D Statutory Matters

In determining whether to publicly notify an application, section 95D specifies a council must decide whether an activity will have, or is likely to have, adverse effects on the environment that are more than minor.

In determining whether adverse effects are more than minor:

- Adverse effects on persons who own or occupy the land within which the activity will occur, or any land adjacent to that land, must be disregarded.

The land to be excluded from the assessment is listed in section 6.3. below.

- Adverse effects permitted by a rule in a plan or national environmental standard (the 'permitted baseline') may be disregarded.

The permitted baseline is discussed further in section 6.3.1 of this report below.

- Trade competition must be disregarded.

This is not considered to be a relevant matter in this case.

- The adverse effects on those persons who have provided their written approval must be disregarded.

No written approval has been provided as the effects are assessed to be less than minor.

The sections below set out an assessment in accordance with section 95D, including identification of adjacent properties, and an assessment of adverse effects.

6.3 Land Excluded from the Assessment

In terms of the tests for public notification (but not for the purposes of limited notification or service of notice), the adjacent properties to be excluded from the assessment are shown in Figure 5 below.

Figure 5: Adjacent properties in relation to subject site. Land to be excluded in red. Source: E-maps.

6.3.1 Permitted Baseline

Pursuant to section 95D(b) of the Act a consent authority may disregard an adverse effect of an activity on the environment if the plan permits an activity with that effect (the 'permitted baseline' test). There are three categories to the permitted baseline test, these being:

(1) What lawfully exists on the site at present;

(2) Activities (being non-fanciful activities) which could be conducted on the site as of right; i.e. without having to obtain resource consent; and

(3) Activities which could be carried out under a granted, but as yet unexercised, resource consent.

Having regard to the above, the following points are considered relevant to the consideration of this application.

As identified in Section 3.3 of this report, the site has previously been consented for non-rural related activities, being a vehicle storage, transportable house depot, offices and timber sales. As such the consented non-rural use of the site forms a distinct consenting baseline which differentiates the site from other rural zoned properties and creates and elevated baseline level of effects particularly in relation to traffic movements and stormwater disposal over and above what could normally be expected from a stand rural zoned property.

6.4 Assessment of Effects on the Wider Environment

The following sections set out an assessment of wider effects of the proposal, and it is considered that effects in relation to the following matters are relevant:

- Character and Amenity
- Traffic
- Stormwater
- Construction
- Contamination
- Noise
- Cultural Effects

These matters are set out and discussed below.

6.4.1 Character and Amenity Effects

Amenity values is defined in section 2 of the Resource Management Act 1991 as "…those natural and physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence and recreational attributes." As such the amenity values of an area can be described as those special attributes, relating particularly to natural and physical characteristics that make an area or neighbourhood unique. Therefore, it is important to consider the effects that development may have on the various characteristics that contribute to the amenity and character of the receiving environment.

The existing character and amenity values of the area are dictated by the consented environment; in other words what other activities have been lawfully established in the area. In this instance the site has previously been developed for light industrial activities meaning the amenity of the surrounding area is slightly different than what could establish in the Rural Zone as a 'permitted activity'. It is also important to note that the Waste Management, Refuse and Recovery Park has recently been established on the adjoining site to the north, further solidifying the amenity values attributed to the site and wider environment. On this basis, the proposed activities will not result in any material difference in the overall amenity values of the wider area.

In terms of any potential amenity effects on the wider environment generated from the buildings and structures associated with the proposed warehouses and office building, the maximum anticipated height for buildings is 12 metres in addition to maximum site coverage requirement not exceeding 3%. In this instance the proposed consolidation building will be 18m high and total building coverage of 52%% (over the entire site).

These anticipated levels of acceptance pertaining to development in the Rural Zone have been identified in the District Plan in order to protect the rural soil resource, and prevent cluttered and over height developments that could have potential implications on rural amenity values.

Given the sites close proximity to Hamilton City Council, where the permitted baseline for building height is 20m, the height and bulk of the proposed buildings will not be out of character with what is existing and provided for within the immediate area.

When viewed from the wider Rural Zoned properties to the south, west and east of the site, the development will be viewed collectively with the background of the Waste Management Facility and also the Hamilton City Council Industrial Zone, thus the height and bulk of the proposed buildings will somewhat blend in with what has been anticipated within the surrounding environment.

Furthermore, the previously consented developments located on the site have not identified the requirement for any landscaping; whereas the proposed application will provide a landscaping strip around the peripheries of the site to further soften the appearance of the development when viewed from the surrounding environment, thus potentially resulting in a better result in terms of the visual appearance of the site than what is currently occurring.

Should this consent be approved, we would be happy to accept a consent condition requiring the implementation of a landscaping plan around the site's perimeters.

Based on our above analysis, we conclude the differentiation between the consented activities and the activities proposed will not contribute to any additional character and amenity effects over and above what currently occurs on site.

6.4.2 Traffic Effects

Firstly, as a means of comparison, it is important to assess the current traffic movements associated with the consented activities (with the proposed traffic movements generated by way of the proposed activities.

Based on the findings of the CKL report the proposed activities will only generate a marginal increase in traffic over and above what is currently generated through the daily operation of the consented activities. However, this is somewhat offset by the decreased number of traffic movements using Kahikatea Drive due to the recently completed Hamilton Bypass.

The CKL report then goes on to make the following conclusions:

The proposed redevelopment of the site is not expected to result in a material impact on the surrounding road network subject to a travel management plan (TMP) being implemented (for each tenant) to avoid or minimise right turns at the SH1c / Kahikatea Drive intersection in the short to medium term. A consent condition requiring this is recommended as follows:

- *The TMPs will be developed in consultation with HCC and remain in place until such time as the SH1c / Kahikatea Drive intersection is upgraded (or HCC agrees that it is no longer necessary for any other reason). The TMPs will include (but not be limited to) measures to avoid right turn demand from Kahikatea Drive onto SH1c. The requirement to provide this is offered as a resource consent condition.*
- *The proposed development is expected to result in a small increase in trips on the surrounding transport network. This can be managed by the proposed conditions to have a negligible effect on the wider road network.*

- *The long-term road network is assessed as able to accommodate the traffic demands associated with the site. The proposed development does not affect the land subject to the Southern Links designation.*
- *External access to the site will be maintained in the same location as for the current activity (via a ROW to the end of Wickham Street) Two points of access are proposed to the ROW.*
- *The overall site layout appropriately provides for the access, circulation, and parking needs of light and heavy vehicles.*

Based on the conclusions made within the CKL Report, the long-term road network can accommodate traffic associated with the proposed development; subject to the implementation of the above referenced travel management plan; which we would anticipate would form the basis of a resource consent condition (should consent be approved).

Based on the imposition and implementation of the key conclusions raised within the ITA as consent conditions; I conclude that the potential effects on the safety and functionality of the existing roading network will generate no additional effects over and above what has been recognised as part of the consented baseline.

6.4.3 Stormwater

Based on the findings of the Stiffe Hooker Report, we are able to conclude the proposed stormwater solution for the site represents an improvement to that of the existing pre-development condition as identified in the below extract.

> *In summary the proposed development improves the site conditions by adding more landscaping areas. As a result, the calculated post-development stormwater peak flow rate, excluding the climate change effect, for the entire land parcel indicates slight improvement to that of the existing (pre-development) condition.*

On this basis, we are able to conclude that any potential stormwater effects will be no more than minor.

6.4.4 Construction

As with any project, there is potential for adverse effects associated with the construction phase of the project. Such effects may include noise, dust and uncontrolled sediment runoff, and traffic.

In this case, the construction phase for this development will range from initial earthworks to the construction of the proposed buildings. Due to the varying activities involved during this process, the type of construction effects will change as the project develops. However, during this time, the applicant will implement on onsite measures to ensure that any silt and sediment run off is avoided, and that any construction noise will be in accordance with the construction noise NZ standards and that work is not undertaken at night. Traffic Management Plans will be implemented where necessary avoid and/or mitigate any potential construction related traffic effects.

Any effects associated with the construction phase of the project will be temporary in nature, and in the event that consent is granted, can be effectively managed through the imposition

of consent conditions dealing with a construction management plan and through the implementation of appropriate sediment control measures.

6.4.5 Hazardous Substances

A Hazardous Substances Assessment prepared by Tonkin and Taylor (Appendix 8). The report contains an assessment of effects which address the following matters;

- Effects on people and property,
- Effects on the environment
- Cumulative effects; and
- Transport.

Based on the above assessment, the report concludes the key risks associated with the hazardous substances on-site include:

- *risk of a fire at the DG store, breezeway, main warehouse (aerosols cage) or mixing room;*
- *risk of a spill of Class 3.1 substances during loading or unloading of vehicles in the breezeway or during decanting activities in the mixing room; and*
- *the risk of leakage of packages of the Class 3.1 substances in the DG store.*

Having extrapolated these key areas of risk; the following additional conclusions have been made in order to avoid and/or mitigate any adverse effects:

The risks to off-site people and property from a fire in all stores containing flammable substances has been assessed as low, and the proposed controls include selection of non-combustible or fire rated construction materials, installation of intrinsically safe electrical equipment, establishment of hazardous areas for control of ignition sources, provision of fire-fighting equipment and separation of hazardous goods stores from other buildings and the boundary.

Access to hazardous goods stores on site will be restricted to authorised staff trained in emergency response procedures.

To manage the risk to the environment from a package leak or spill of hazardous substances, the areas where hazardous liquids will be stored or used have been isolated from the stormwater network. The DG store and breezeway have been designed with provision for secondary containment to retain any spills on site in the event of an incident during unloading or loading of vehicles or during decanting in the mixing room. The site emergency planning will include spill response plans. Overall, the effects on the environment from the use and storage of hazardous substances on-site has been assessed as low and can be managed through the proposed structural and operational controls.

Potential effects associated with transporting hazardous substances to the site will be minimised by the availability of appropriate transport routes and compliance with the Land Transport Rules and have been assessed as low. A Dangerous Goods Report has been prepared to further assess health and safety which also includes the requirements for certification, such as site plan, emergency response and training (Appendix 9).

Based on the findings of the Tonkin and Taylor report, we are able to conclude that any potential effects associated with Hazardous Substances will be no more than minor.

6.4.6 Noise

The proposed development will be designed, constructed and operated to comply with the existing resource consent noise limits at the notional boundary of all dwellings, thus not generating any adverse effects over and above what has been anticipated in the District Plan. In addition, the noise received at adjacent sites used for industrial-commercial purposes would not cause adverse effects. As such, we conclude the effects of the proposal to be less than minor.

6.4.7 Cultural Effects

Given the highly modified environment, we would anticipate that any potential adverse effects on local iwi will be no more than minor. Notwithstanding, it is acknowledged that Council may forward the application onto Nga Iwi o Toopu Waipa (NITOW) for comment. Should NITOW raise any concerns through the processing of this consent, the applicant will work alongside NITOW to resolve any outstanding issues.

Overall, we conclude that any potential cultural effects will be no more than minor.

6.5 Summary of Effects

Based on our above assessment, we conclude that any potential adverse effects are no more than minor and public notification is not warranted.

6.6 Public Notification Conclusion

Having undertaken the section 95A public notification tests, the following conclusions are reached:

- Under step 1, public notification is not mandatory;
- Under step 2, public notification is not precluded;
- Under step 3, public notification is not required as it is considered that the activity will result in less than minor adverse effects; and
- Under step 4, there are no special circumstances.

Therefore, based on the conclusions reached under steps 3 and 4, it is recommended that this application be processed without public notification.

7.0 Limited Notification Assessment (Sections 95B, 95E to 95G)

7.1 Assessment of Steps 1 to 4 (Sections 95B)

If the application is not publicly notified under section 95A, the council must follow the steps set out in section 95B to determine whether to limited notify the application. These steps are addressed in the statutory order below.

7.1.1 Step 1: Certain affected protected customary rights groups must be notified

Step 1 requires limited notification where there are any affected protected customary rights groups or customary marine title groups; or affected persons under a statutory acknowledgement affecting the land.

The above does not apply to this proposal.

7.1.2 Step 2: Certain affected protected customary rights groups must be notified

Step 2 describes that limited notification is precluded where all applicable rules and national environmental standards preclude limited notification; or the application is for a controlled activity (other than the subdivision of land).

The above does not apply to the proposal, and therefore limited notification is not precluded.

7.1.3 Step 3: If not precluded by step 2, certain other affected persons must be notified

Step 3 requires that, where limited notification is not precluded under step 2 above, a determination must be made as to whether any of the following persons are affected persons:

- In the case of a boundary activity, an owner of an allotment with an infringed boundary;
- In the case of any other activity, a person affected in accordance with s95E.

The application is not solely a boundary activity, and therefore an assessment in accordance with section 95E is required and is set out below.

Overall, it is considered that any adverse effects on persons will be less than minor, and accordingly, that no persons are adversely affected.

7.1.4 Step 4: Further notification in special circumstances

In addition to the findings of the previous steps, the council is also required to determine whether special circumstances exist in relation to the application that warrant notification of the application to any other persons not already determined as eligible for limited notification.

In this instance, having regard to the assessment in section 6.1.4 above, it is considered that special circumstances do not apply.

7.2 Section 95E Statutory Matters

If the application is not publicly notified, a council must decide if there are any affected persons and give limited notification to those persons. A person is affected if the effects of the activity on that person are minor or more than minor (but not less than minor).

In deciding who is an affected person under section 95E:

- Adverse effects permitted by a rule in a plan or national environmental standard (the 'permitted baseline') may be disregarded;

- Only those effects that relate to a matter of control or discretion can be considered (in the case of controlled or restricted discretionary activities); and
- The adverse effects on those persons who have provided their written approval must be disregarded.

Having regard to the above provisions, an assessment is provided below.

7.3 Assessment of Effects on Persons

The adjacent properties to be considered in the limited notification assessment under section 95B and 95E are shown in **Figure 6** below:

Figure 6: Adjacent properties in relation to subject site. Affected persons to be excluded in red. Source: E-maps

Property Reference	Address	Owner/Occupoer
1	16 Wickham Street	Industre Property Rua Limited/Waste Managment
2	18 Wickham Street	Hamilton City Council/Hamilton Organic Centre
3	Lot 1 Deposited Plan 486522	Industre Property Rua Limited
4	160 Higgins Road	Southpark Agri Developments
5	Hamilton City Council	Hamilton City Council

7.3.1 Assessment of effects on adjacent properties

Property 1

Property 1 is located to the north of the site and is currently used as a Waste Refuse Centre operated by Waste Management; noting that the applicant (Industre Property Rua) is the owner of the property. Given the non-sensitive tenure of land use, we concluded the proposed Wattyl distribution warehouse and associated warehouse buildings will generate no additional effects over and above what has been recognised as part of the consented baseline. As such we conclude the effects on this property owner and occupier to be less than minor.

Property 2

Property 2 is located to the east of the site on the opposite side of an existing right of way and is currently used as an organic disposal centre. Given the non-sensitive tenure of landuse, we conclude the proposal will generate no additional effects over and above what has been recognised as part of the consented baseline. As such we conclude the effects on this property owner and occupier to be less than minor.

Property 3

Property 3 is located to the east of the site on the opposite side of the ROW. The site is currently used as a transportation company storage area, meaning it is a non-sensitive type of landuse which will not be directly impacted by another adjoining industrial activity. As concluded within Section 6.4 of this report, any potential effects associated with noise, dust, stormwater etc will be less than minor. On this basis we conclude that any potential effects on this property owner and occupier will be less than minor.

Property 4

Property 4 is comprised of the rural land located to the west, south west and south, east of the site and is currently owned and occupied by South Park Agi Developments. South Park Agri Developments formed part of the conglomerate of landowners located with the 'SL1' area, which submitted on the Future Proof Growth Strategy to have their land recognised for future industrial development. Since that date, Waipa District Council and Hamilton City Council have entered into an agreement for a boundary change which would result in the wider SL1 area being brought into the Hamilton City. As a further development the SL1 partners have signed a memorandum of understanding with Hamilton City regarding the terms and conditions associated with bringing the land into HCC and a future plan change process. On this basis, the owners and occupiers of this property are of the expectation that their site and the surrounding immediately surrounding area will at some point in time be rezoned from rural to industrial. With this in mind, it is our opinion that development of this nature would have been anticipate by the property owner; thus, should not generate any added environmental effects over and above what currently exists on the site. As such we conclude the effects on this property owner and occupier to be less than minor.

Property 5

As the facility will utilise Council's reticulated and roading infrastructure, the effects on Hamilton City Council (HCC) has been assessed as part of this proposal. We have already

initiated consultation with HCC as part of the consenting process. It is our opinion that any potential effects on HCC are restricted to potential effects on their roading and reticulated infrastructure. On this basis specialist reports have been provided from CKL (traffic) and Stiffe Hooker (infrastructure) which conclude that the proposal will have no additional effects on the HCC subject to various mitigation measures outlined in Section 6.4 of this report imposed and implemented as conditions of consent.

Summary of Effects

Overall, it is considered that any adverse effects on the owners and occupiers of the adjacent properties will be less than minor. Accordingly, there are no persons who are considered to be affected persons requiring limited notification.

7.4 Limited Notification Conclusion

Having undertaken the section 95B limited notification tests, the following conclusions are reached:

- Under step 1, limited notification is not mandatory;
- Under step 2, limited notification is not precluded;
- Under step 3, limited notification is not required as it is considered that the activity will not result in any adversely affected persons; and
- Under step 4, there are no special circumstances.

Therefore, it is recommended that this application be processed without limited notification.

8.0 Consideration of Applications (Section 104)

8.1 Statutory Matters

Subject to Part 2 of the Act, when considering an application for resource consent and any submissions received, a council must, in accordance with section 104(1) of the Act have regard to:

- Any actual and potential effects on the environment of allowing the activity;
- Any relevant provisions of a national environmental standard, other regulations, national policy statement, a New Zealand coastal policy statement, a regional policy statement or proposed regional policy statement; a plan or proposed plan; and
- Any other matter a council considers relevant and reasonably necessary to determine the application.

As a non-complying activity, section 104B of the Act states that a council:

(a) may grant or refuse the application; and

(b) if it grants the application, may impose conditions under section 108.

9.0 Effects on the Environment (Section 104(1)(A))

Having regard to the actual and potential effects on the environment of the activity resulting from the proposal, it was concluded in the assessment above that any wider adverse effects relating to the proposal will be less than minor and that no persons would be adversely affected by the proposal.

Section 104 also gives the processing planner the opportunity to identify any potential positive effects attributed to the development. In this instance it is concluded that the proposal generates the following key positive effects on the site and surrounding area:

In our view the proposed use of the site represents a positive outcome for the wider Waipa/Hamilton area, as it will enhance the productive potential of the site which will accelerate growth through the creation of additional employment opportunities and supplement residential growth currently occurring within the wider area.

The proposed development will also assist in curbing the non-consented industrial sprawl occurring at the end of Wickham Street by being more contained and setting a boundary which cannot be pushed out further into the pastural land adjacent to the site. Further, establishing a modern facility in place of the ad-hoc development currently occurring on site will have overall benefits in terms of the wider amenity values for the area. Also, a refined stormwater system will be established which will be an improvement to the exiting stormwater disposal system currently servicing the site.

The subject site is surrounded by land zoned industrial and rural and therefore it is considered that in terms of reverse sensitivity effects the site's proposed use is a more positive outcome in comparison to the site being developed for rural purposes.

Overall, it is considered that when taking into account the positive effects, the proposal represents and acceptable outcome for the site and surrounding environment.

10.0 District Plan and Statutory Documents (Section 104(1)(B))

10.1 Objectives and Policies of the Waipa District Plan

10.1.1 Section 4 – Rural Zone

The general themes of the Rural Zone objectives and policies revolve around the protection of the rural land resource or production purposes whilst at the same time avoiding or mitigating any potential amenity and reverse sensitivity effects. Given the site is currently used for non-farming purposes the introduction of the proposed activities onto the site will not result in the loss of any productive rural land. In terms protecting and enhancing the amenity values of the area, the perimeters of the site will be planted with vegetation that will achieve a minimum height of at least 1.8m which will soften the appearance of the facility from the surrounding environment.

Of particular relevance to this proposal is Objective 4.3.12 which provides for non-farming activities where they have a 'functional and compelling' reason to be located in the Rural Zone.

To put this into a context which fits within the context of this application, an activity not specifically provided for by the plan, is able to establish in this area, provided there is a "functional and compelling reason" to do so.

Given the site is currently used for industrial purposes (not rural related activities), has an existing underlaying resource consents which permits a wider baseline of effects, and is located within close proximity to the urban limits of Hamilton, in our opinion the site exhibits a unique feature which conclude it has a functional and compelling reason to be located in this location.

Overall, we conclude the proposal is not contrary to the key objectives and policies relating to the Rural Zone.

10.1.2 Section 19 – Hazardous Substances and Contaminated Land

Based on the conclusions made within Section 6.4 of this report we conclude that any potential risk of contaminants can be activity avoided, remedied or mitigated subject to the imposition and implementation of a suite of consent conditions. We therefore conclude that the proposal is not contrary with the above-mentioned objectives and policies.

10.2 Summary

It is concluded that the proposed development is generally in not contrary with objectives and policies of the Waipa District Plan.

10.3 Waikato Regional Policy Statement & Plan

Waikato Regional Policy Statement (RPS)

In accordance with section 74(2) of the RMA, when preparing or changing a district plan, a territorial authority shall have regard to its regional policy statement. The Waikato Regional Policy Statement (WRPS) was made operative in 2016. It provides an overview of resource management issues in the Waikato Region, and the ways in which integrated management of the regions natural and physical resources will be achieved. Together the objectives inform a policy framework that seeks to manage development and its associated effects in the Waikato Region, providing detail and direction on how the objectives are to be achieved. Given the site has already been developed for industrial related activities in accordance with approved resource consent applications; the future use of the site for industrial related activities has been solidified. On this basis, we are able to conclude that the proposal will not be contrary to the objectives and policies of the RPS.

Waikato Regional Plan

A supplementary consent has been lodged with the WRC to formalise the existing stormwater disposal solution. A copy of the consent application can be provided upon request.

10.4 National Policy Statement – Highly Productive Land

The NPS-HPL will require New Zealand's most productive land to be identified and managed to prevent inappropriate subdivision, use and development. A transitional definition of highly

productive land applies until councils complete the process of mapping highly productive land at a regional level. This means land that is zoned classed as Land Use Capability (LUC) 1, 2 or 3 is considered as highly productive land for the purpose of the NPS-HPL and requires consideration under the NPS-HPL. Given the site has already been established for consented industrial activities means the soil has already been compromised and it is unrealistic to think the site would ever be reinstated and converted back to rural production purposes. On this basis, we are satisfied that the proposal does not contravene the key directives of the NPS-HPL.

10.5 National Policy Statement – Urban Development

The NPS-UD 2020 requires councils to plan well for growth and ensure a well-functioning urban environment for all people, communities and future generations

The NPS-UD 2020 recognises the national significance of:

- Having well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and into the future.
- Providing sufficient development capacity to meet the different needs of people and communities.

Well-functioning urban environments as required by Policy 1 of the National Policy Statement for Urban Development (NPS-UD), are environments that, as a minimum have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport.

In our view the development of a underutilised section of land for refined light industrial purposes will contribute positively to the social, economic well-being of the wider Hamilton/Waipa area as demonstrated within Section 9 of our report.

11.0 Part 2 Matters

Section 5 of Part 2 identifies the purpose of the RMA as being the sustainable management of natural and physical resources. This means managing the use, development and protection of natural and physical resources in a way that enables people and communities to provide for their social, cultural and economic well-being and health and safety while sustaining those resources for future generations, protecting the life supporting capacity of ecosystems, and avoiding, remedying or mitigating adverse effects on the environment.

Section 6 of the Act sets out a number of matters of national importance including (but not limited to) the protection of outstanding natural features and landscapes and historic heritage from inappropriate subdivision, use and development.

Section 7 identifies a number of “other matters” to be given particular regard by Council and includes (but is not limited to) Kaitiakitanga, the efficient use of natural and physical resources, the maintenance and enhancement of amenity values, and maintenance and enhancement of the quality of the environment.

Section 8 requires Council to take into account the principles of the Treaty of Waitangi.

Overall, as the effects of the proposal are considered to be less than minor, and the proposal accords with the relevant Waipa District Plan objectives and policies, it is considered that the proposal will not offend against the general resource management principles set out in Part 2 of the Act.

12.0 Other Matters (Section 104(1)(c))

Precedence

Precedent is an important matter to considered under Section 104(1)(C). While not an environmental effect per say, for Council to approve an application they need to be mindful that an adverse precedent effect is not being made. Whilst the RMA tells us that each application has to be assessed on its individual merits, natural justice means that applications of a similar nature need to be treated in a comparable manner. In this instance the approval of a non-farming development in a rural zone could potentially create an unwanted precedent for other similar developments. As a result, in order to safeguard Council's position (should consent be approved), Council must be satisfied that the site has contains a set of unique characteristics that would differentiate it from other more traditional rural sites. As alluded to throughout this report, the site has previously been developed for non-farming purposes, so it has a different/unique set of amenity values as opposed to the wider Rural Zone. As a result, establishing the proposed facility on the subject site will be compatible with the consented land uses on the site, and the land tenures to the north, and will thus not detract or further erode the amenity values of the area. Based on the above analysis, we conclude that the potential approval of this resource consent application will not set an unwanted preceding for future developments within the district.

Alternative sites

The applicant has invested significant time and money scoping out the potential of alternative sites within the greater Waipa/Hamilton area. However, given the nature of the proposed activities and the amount of land area required means there are limited sites in the district that would be suitable. Given the site's close proximity to a major arterial, accessibility from residential areas and the fact that the site is surrounded by other 'non-sensitive' activities no other suitable sites were available at the date of lodging this application.

Joint Management Agreement Area – Waikato Tainui

The property is within the Waikato Tainui Joint Management Agreement Area and therefore the provisions of the Waikato Tainui Environment Management Plan are relevant. The Waikato-Tainui Environmental Plan provides high-level guidance on objectives and policies with respect to Waikato-Tainui's environmental aspirations. Section 25 of the Management Plan outlines the environmental issues, objectives and policies with regards to Land Use. Objective 25.3.2 seeks a planned approach to development in both the urban and rural environments that has positive cultural and social outcomes. In this instance the proposed

land use will not compromise the desired outcomes of the Waikato Tainui Environmental Management Plan.

Treaty Settlement Acts – Statutory Acknowledgement Area or Area of Interest

The property subject to this consent is not within, adjacent to, or directly affected by a statutory acknowledgment area. The property is within Ngāti Hauā's Areas of Interest. It is anticipated that Council will send a copy of our resource consent application to Ngāti Hauā and Raukawa as part of this application. Should any questions or areas of contention arise as part of this process we will be happy to consult directly with these parties; although given the residential environment I do not anticipate the proposal will have an adverse effect on the cultural, spiritual, historical, and traditional values specific to local iwi.

Future Proof Growth Strategy

The Future Proof Strategy is a 30-year growth management and implementation strategy that provides a framework to manage growth in a collaborative way for the benefit of the Future Proof sub-region both from a community and a physical perspective. The sub-regional approach implemented through the Future Proof Strategy is needed to manage growth in a staged and coordinated manner and to address complex planning issues, especially cross-boundary matters. As of today's date, Negotiations are currently being undertaken through a memorandum of understanding regarding a boundary agreement between Hamilton City Council and Waipa District Council to bring the land and the adjoining land to the south into Hamilton City boundaries. The memorandum of understanding will set the blue print for a future plan change. On this basis, we are able to conclude that the proposal will not contravene any matters identified in the Future Proof Strategy.

12.1.1 Section 104D- Gateway Test

To obtain consent, an applicant will need to demonstrate to Council in its application that either of the 'two' gateway tests under Section 104D of the Resource

Management Act 1991 are satisfied, being either that:

(a) The adverse effects of the application on the environment will be minor; or

(b) That the application will not be contrary to the objectives and policies of the relevant plan.

Throughout this report I have established that the adverse effects of the proposal are less than minor and that it is not contrary to the objectives and policies of the District Plan.

As such the proposal passes through the gateway test enabling the application to be approved.

13.0 Conclusion

The proposal involves establishing a Warehouses and offices at 16A Wickham Street, Hamilton, and has been assessed as a Non-Complying.

Based on the above report it is concluded that:

- The proposal passes through the Section 104D Gateway test and is able to be approved;
- The actual and potential adverse environmental effects are less than minor,

- The proposal has a functional and compelling reason to be established in this location,
- Public and limited notification is not required
- The proposal is not contrary to the relevant objectives and policies of the Waipa District Plan.
- The proposal is consistent with Part 2 of the Act.

It is therefore concluded that the proposal satisfies all matters the consent authority is required to assess, and that the application for resource consent can be granted on a non-notified basis.

FORM 9

Resource Consent Application Form

Section 88 of the Resource Management Act 1991 (RMA). This form provides us with your contact information and details about your proposal. Please print clearly and complete all sections.

Note to Applicant:

You must include all information required by this form. The information must be specified in sufficient detail to satisfy the purpose for which it is required.

To: Name of Council that is the consent authority for this application: Waipa District Council

Type of resource consent being applied for:

☑ Land use ☐ Subdivision ☐ Combined land use and subdivision

Activity Status

☐ Controlled ☐ Restricted Discretionary ☑ Discretionary ☐ Non-complying ☐ I don't know

Fast Track Resource Consent

The Resource Management Act 1991 provides for land use activities that have a controlled activity status to be fast tracked through the resource consent process and processed within 10 working days of the application being lodged with Council. Your consent may be fast tracked if you tick 'yes' to the first two questions below.

1. Is this application for a controlled activity (land use consent only)? ☐ Yes ☑ No

2. Have you provided an electronic address for this service? ☑ Yes ☐ No

If you wish to opt out of the fast track process, tick here: ☐

Applicant Name

Please provide the full name of the persons, company, society or trust applying for this resource consent. If the applicant is a trust, please provide the full name/s of all trustees of that trust.

Name: Industre Property Rua Ltd

V1 | 01/04/20

Applicant Contact Details

Postal Address:			
Post code:		Email:	echakravorty@rcp.co.nz
Phone:		Mobile:	

Agent Contact Details

If you have an agent or other person acting on your behalf, please complete the details below.

Agent:	Hannah Osborne-Allen		
Contact:			
Postal Address:	Suite 5, 47 Alpha Street, Cambridge		
Post code:	3432	Email:	HannahO@barker.co.nz
Phone:		Mobile:	0273120798

Location of Proposal

Please complete with as much detail as you can, so the site for your proposal is clearly identifiable. Include details such as unit number, street number, street name and town.

Property address:

16A Wickham Street, Frankton, Hamilton

Legal description:

LOT 1 DP 396081; LOT 1 DP 486522

V1 | 01/04/20

Owner/Occupier of Site

Landowner's full name, phone number and address:

Industre Property Rua Ltd

OR

☐ Same as applicant details

Occupiers full name, phone number and address:

OR

☐ Same as applicant details

Description of Proposal

Please provide a brief description of the proposal and the reasons why resource consent is required ie which rules in the district plan are infringed. If the space provided is insufficient, please attach additional pages.

Land Use consent to construct storage and distribution facility and three warehouses and ancillary offices

Other Consents

Please let us know of any other consents that you have applied for or know that you need to apply for related to this application. This includes any resource consents that may be required from a regional council under a regional plan.

☐ Other resource consents	Resource consent no. (if known)	
☐ Building consent	Building consent no. (if known)	
☐ Regional plan consent	Type of regional consent: *e.g. water discharge permit,* *water intake permit*	

National Environmental Standards (NES)*

Please let us know if you require consent under a National Environmental Standard. National Environmental Standards are regulatory documents that contain standards pertaining to certain matters eg management of contaminated land, telecommunications.

Is consent required under a NES? ☑ Yes ☐ No ☐ I don't know

Tick the following applicable NES:

- ☐ NES for Air Quality
- ☐ NES for Drinking Water
- ☐ NES for Telecommunication Services
- ☐ NES for Electricity Transmission Services
- ☑ NES for Assessing and Managing Contaminants in Soil to Protect Human Health
- ☐ NES for Plantation Forestry
- ☐ Other

* For further information about National Environmental Standards, their requirements and forms please refer to any other sheets provided with these application forms.

Assessment of Proposal

Please attach an assessment of your proposal's effects on the environment, an assessment against the relevant matters of Part 2 of the RMA and any relevant provisions of NES, regulations, national policy statement, regional policy statement, regional plan and district plan.

Please refer to report

Pre-application Information

We recommend that you have a pre-application discussion about your proposal with a Council planner.

Have you had a pre-application meeting with a Council planner? ☐ Yes ☑ No

Have you had any other conversations with any other Council staff? ☐ Yes ☑ No

Date of meeting:

Please provide the names of Council staff you have spoken with:

If notes of the meeting or other conversations were provided to you, please attach copies.

Have you attached any minutes/notes from the meeting? ☐ Yes ☐ No

Notification

The Resource Management Act 1991 allows applications to be notified for public submissions on request of the applicant.

Are you requesting that your application be publicly notified? ☐ Yes ☑ No

If you selected 'yes' to the above question, please attach a short summary outlining the details of your application.

Have you attached a summary? ☐ Yes ☐ No

Site Visit Requirements

☑ As landowner and with the consent of any occupiers or lessee, I am aware that Council staff or authorised consultants may visit the site which is the subject of this application, for the purposes of assessing this application, and agree to a site visit.

OR

☐ If the applicant is not the owner, I understand that Council staff or authorised consultants may visit the site, which is the subject of this application, for the purposes of assessing this application, and agree to a site visit.

Is there a locked gate or security system restricting access by Council staff?	☑ Yes	☐ No
Are there any dogs on the property?	☐ Yes	☑ No
Are there any hazards that may place a visitor at risk?	☑ Yes	☐ No

Provide details of any entry restrictions that Council staff should be aware of e.g. health and safety, organic farm etc.

Part of the site is a working industrial site, healthy and safety will need to be followed

Draft Conditions

When a consent is granted, Council can include conditions to manage any adverse effects.

Do you wish to see draft conditions prior to Council making a decision on the application?	☑ Yes	☐ No

☑ By ticking this box, I understand that the opportunity to review the draft conditions is an act of good faith by the Council intended to assist with identifying errors before consent is granted. I further understand that Council has the right to continue processing the application if too much time is taken in the review of draft conditions. By requesting draft conditions I agree to an extension of time under section 37 of the RMA.

Signature of the applicant(s)

Please read the information below before signing the application form.

Payment of fees and charges

You must pay the charges payable to Council for this application under the RMA. Please refer to Council's Fees and Charges on its website.

By submitting this application to Council, you agree to pay the charges set out in Council's Fees and Charges relevant to the application.

Privacy information

Council requires the information you have provided on this form to process your application under the RMA. Council will hold and store the information on a pubic register. The details may also be made available to the public on the Council's website. If you would like to request access to, or correction of any details, please contact the Council.

Information checklist

The information checklist provided with this form sets out the full set of information that Council requires for your application to be considered complete. Your application may be returned as incomplete if you do not provide adequate information. Your completed application should be submitted to Council with any supplementary forms and/or guidance as provided by Council.

Correspondence and Invoices

Please let us know where to send any correspondence and invoices. Where possible any correspondence will be sent by email.

All correspondence excluding invoices sent to: ☐ Applicant or ☑ Agent

All invoices sent to: ☑ Applicant or ☐ Agent

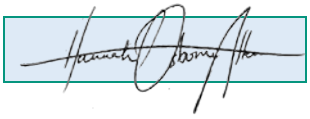
Confirmation by the applicant

☑ I/we confirm that I/we have read and understood the information and will comply with our obligations as set out above. *A signature is not required if you submit this form electronically.*

Applicant name:	Industre Property Rua Ltd	Signature:		Date:	24/03/2023
Applicant name:		Signature:		Date:	
Applicant name:		Signature:		Date:	

Confirmation by the agent authorised to sign on behalf of the applicant

As authorised agent for the applicant, I confirm that I have read and understood the above information and confirm that I have fully informed the applicant of their obligations in connection with this application, including for fees and other charges, and that I have the applicant's authority to sign this application on their behalf. (*A signature is not required if you submit this form electronically.)*

Agent's full name:	Hannah Osborne-Allen	Signature:		Date:	24/03/2023

Information Checklist for Resource Consent Application

All applications must include the following information:

☑ A description of the activity

☑ A description of the site where the activity will occur

☑ The full name and address of each owner or occupier of the site

☑ A description of any other activities that are part of the proposal to which this application relates

☑ A description of any other resource consent required for the proposal to which the application relates

☑ An assessment of the proposed activity's effects on the environment

☑ An assessment of the activity against Part 2 of the Resource Management Act 1991. This will need to address section 5 'Purpose', section 6 'Matters of national importance', section 7 'Other matters' and section 8 "Treaty of Waitangi'

☑ An assessment of the activity against any relevant objectives, policies or rules in the district plan

☑ An assessment of the activity against any relevant requirements, condition or permissions in any rules in a document listed in section 104(1)(b) of the RMA

☑ Record of title(s) for the subject site

This must be less than 3 months old. Please attach the title(s) and any consent notices, covenants, easements attached to the title(s)

☑ Site plan or scheme plan

Please provide at an appropriate scale (for example 1:100) showing the location of the building or activity in relation to all site boundaries. The site plan should include the following where relevant:

- North point
- Title or Reference No.
- Scale
- Date the plans were drawn
- Topographical information
- Natural features, including protected trees, indigenous vegetation, water courses
- Archaeological and/or cultural/heritage sites
- Record of Title boundaries/location of fence positions relative to boundaries
- Accessways and road frontages, including proposed crossing places/right of ways
- Onsite manoeuvring and existing and proposed car parking spaces
- Legal and physical roads
- Existing buildings
- Existing wells and/or effluent disposal systems
- Buildings on adjacent sites
- Layout and location of proposed buildings and activities in relation to legal site boundaries
- Earthworks design and contours/areas of excavation
- Landscaping
- Site coverage calculation
- Details of any signage (sign design, dimensions and location on buildings)
- Areas subject to hazards e.g. unstable slopes, areas of flooding, peat soils or fill
- Areas of potential or confirmed contamination

☑ Elevation plans

Please provide at an appropriate scale (for example 1:50, 1:100 or 1:200) and show all structures to be constructed or altered, showing the relationship and appearance of proposed buildings.

☑ Floor plans of proposed building or buildings to be used for the activity

Please clearly show the use of each area/buildings

☑ Engineering design plans for any water, wastewater and stormwater works

(Only concept engineering plans are required at this stage.)

☑ An assessment of the activity against any relevant provisions of a:

- National Environmental Standard
- National Policy Statement
- Regional Policy Statement
- Regional Plan

☑ A description of any part of the activity that is permitted under the district plan

☑ If a permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates it complies with the relevant requirements and conditions for that permitted activity (so that resource consent not required for that activity).

☑ An assessment of effects (AEE) of the activity

An AEE is an essential part of your application. If an AEE is not provided Council is unlikely to accept your application. The AEE should discuss all the actual and potential effects of your proposed activity on the environment. Schedule 4 of the RMA outlines all of the matters that must be addressed in your AEE. The amount of detail provided must reflect the scale and significance of the effects that the activity may have on the environment. For example, if there are major effects arising from the proposal, a detailed analysis and discussion of these effects must be included in the AEE. It may require the provision of information from specific experts (eg a traffic engineer). If the effects of the proposal are minor, then a less detailed AEE can be submitted. (*The Council has information available to assist you to prepare the AEE – please contact us if you have any questions.)*

All applications for subdivision consent must also include the following information:

☐ The position of all new boundaries

☐ A north arrow and the scale (1:2000)

☐ All proposed and existing easements (including private easements)

☐ Any amalgamations

☐ Stages (if proposed)

☐ Dimensions and sizes of existing and proposed new lots

☐ Legal and physical roads, accessways and rights of way including grades (if applicable)

☐ All existing buildings and structures, their distance to existing and proposed boundaries and the position of any eaves in relation to rights of way/accessways

☐ The areas of all new allotments, unless the subdivision involves a cross lease, company lease, or unit plan

☐ The locations and areas of new reserves to be created, including any esplanade reserves and esplanade strips

☐ The locations and areas of any existing esplanade reserves, esplanade strips, and access strips

☐ The locations and areas of any part of the bed of a river or lake to be vested in a territorial authority under section 237A

☐ The locations and areas of any land within the coastal marine area (which is to become part of the common marine and coastal area under section 237A)

☐ The locations and areas of land to be set aside as new roads

Other useful information

The following examples of information are not compulsory, but they will be useful in helping Council make an informed decision about your application. Submitting this information *if it is relevant to your proposal* may save time and costs further down the track.

☑ Locality plan or aerial photo

Please provide at an appropriate scale (for example 1:500). Please indicate the location of the site in relation to roads and other landmarks. Show the street number of the subject site and those of adjoining sites.

☑ Volume of any earthworks

This must include area and volume of soil removed/imported and depth of cut/fill

☑ Details of Hazardous Activities and Industries (HAIL) List activity

If you are unsure whether your site is on the HAIL list please contact Council for assistance

☐ Any written approvals including details of those sought but not obtained

Please include any signed written approval forms and signed plans if acquired.

☑ Specialist reports to support your application

This may include traffic impact studies, landscape and planting plans, acoustic design certificates etc.

☐ Details and outcome of any consultation undertaken with adjacent land owners and occupiers, and relevant bodies. For example, the Regional Council, Heritage New Zealand Pouhere Taonga, Transpower, KiwiRail, NZTA, Department of Conservation etc.

☐ Details of any consultation undertaken with iwi

If you are unsure whether your proposal may affect matters of interest to iwi, or who the relevant iwi groups might be, please discuss this with Council prior to lodging your application

☐ Any other information arising from specific district plan provisions

Other information to include in an application for subdivision consent if it is relevant to your proposal

Proposal details

☐ Site coverage calculations

☐ Existing and proposed crossing places and sight distances and separation distances between crossing places

☐ Building platforms for all allotments including shape factors

☐ Onsite manoeuvring and existing and proposed vehicle parking spaces (where required)

Network utility operations

☐ Existing high voltage electricity lines and gas lines

☐ Location of existing and proposed service connections (including connections to reticulated services) and/or systems ie water, wastewater, stormwater and any easements

☐ Onsite effluent treatment and disposal areas and fields

Natural features

☐ Significant trees, bush stands, protected trees (including their extent of their dripline), covenanted areas or other features

☐ Water bodies

Heritage

☐ Archaeological and/or cultural heritage sites

Hazards

☑ Areas of likely or confirmed contamination

- ☐ Areas subject to land hazards e.g. unstoppable slopes, areas of flooding, peat soils, fill
- ☐ Details of proposed stormwater management appropriate to the scale and nature of the subdivision
- ☐ Pipework and onsite stormwater systems
- ☐ Open drains (including ownership)
- ☐ Effect of subdivision and end use on existing overland flow paths
- ☐ Contours showing existing and finished ground level (levels to the relevant datum) at 0.5m intervals within the subdivision, and at 2 metre intervals on adjoining properties (to enable effects on those properties to be assessed). A separate plan may be needed to show these details.
- ☐ Areas of proposed or existing fill or excavation
- ☐ Any proposed retaining walls or embankments (note if retaining wall over 1m is proposed, a typical cross section is required.)
- ☐ In urban areas, details of the percentage of proposed and existing impermeable and permeable areas
- ☐ Natural hazards, e.g. unstable slopes, areas of flooding, ponding, peat soils
- ☐ Elevations (to scale) of buildings which are affected by the location of new boundaries (e.g. where height in relation to boundary rules apply)

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**704262**
Land Registration District	**South Auckland**
Date Issued	22 December 2015

Prior References
383221 383222

Estate	Fee Simple
Area	4.1774 hectares more or less
Legal Description	Lot 1 Deposited Plan 396081 and Lot 1 Deposited Plan 486522

Registered Owners
Industre Property Rua Limited

Interests

Appurtenant hereto is a drainage right created by Transfer S404790 - 29.5.1968 at 10:40 am

Appurtenant hereto is a right of way and a right to convey water supply, and telephone services, sewage, stormwater drainage, power and gas rights created by Transfer B063851.3 - 30.1.1992 at 10.45 am

The easements created by Transfer B063851.3 are subject to Section 309 (1) (a) Local Government Act 1974

Appurtenant hereto is a right of way and a right to convey water supply, and telephone services, sewage, stormwater drainage, power and gas rights created by Transfer B063851.4 - 30.1.1992 at 10.45 am

The easements created by Transfer B063851.4 are subject to Section 309 (1) (a) Local Government Act 1974

7878083.1 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 15.7.2008 at 9:00 am (Affects Lot 1 DP 396081)

Appurtenant to Lot 1 DP 396081 is a right of way, right to convey gas, water, electricity, telecommunications, computer media and right to drain water and sewage created by Easement Instrument 7878083.3 - 15.7.2008 at 9:00 am

The easements created by Easement Instrument 7878083.3 are subject to Section 243 (a) Resource Management Act 1991

10227683.3 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 22.12.2015 at 12:20 pm (Affects Lot 1 DP 486522)

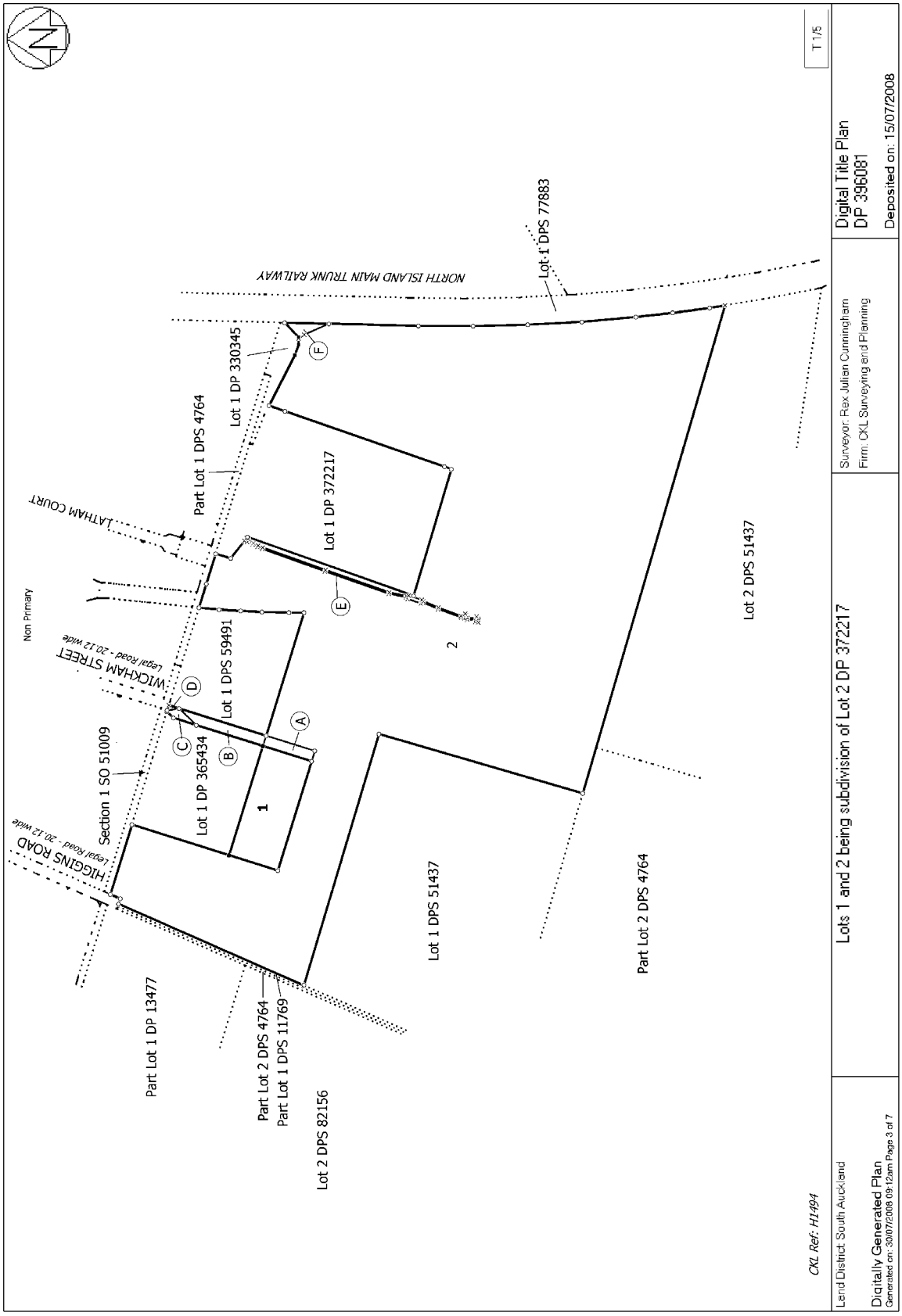
Subject to Section 241(2) Resource Management Act 1991 (affects DP 486522)

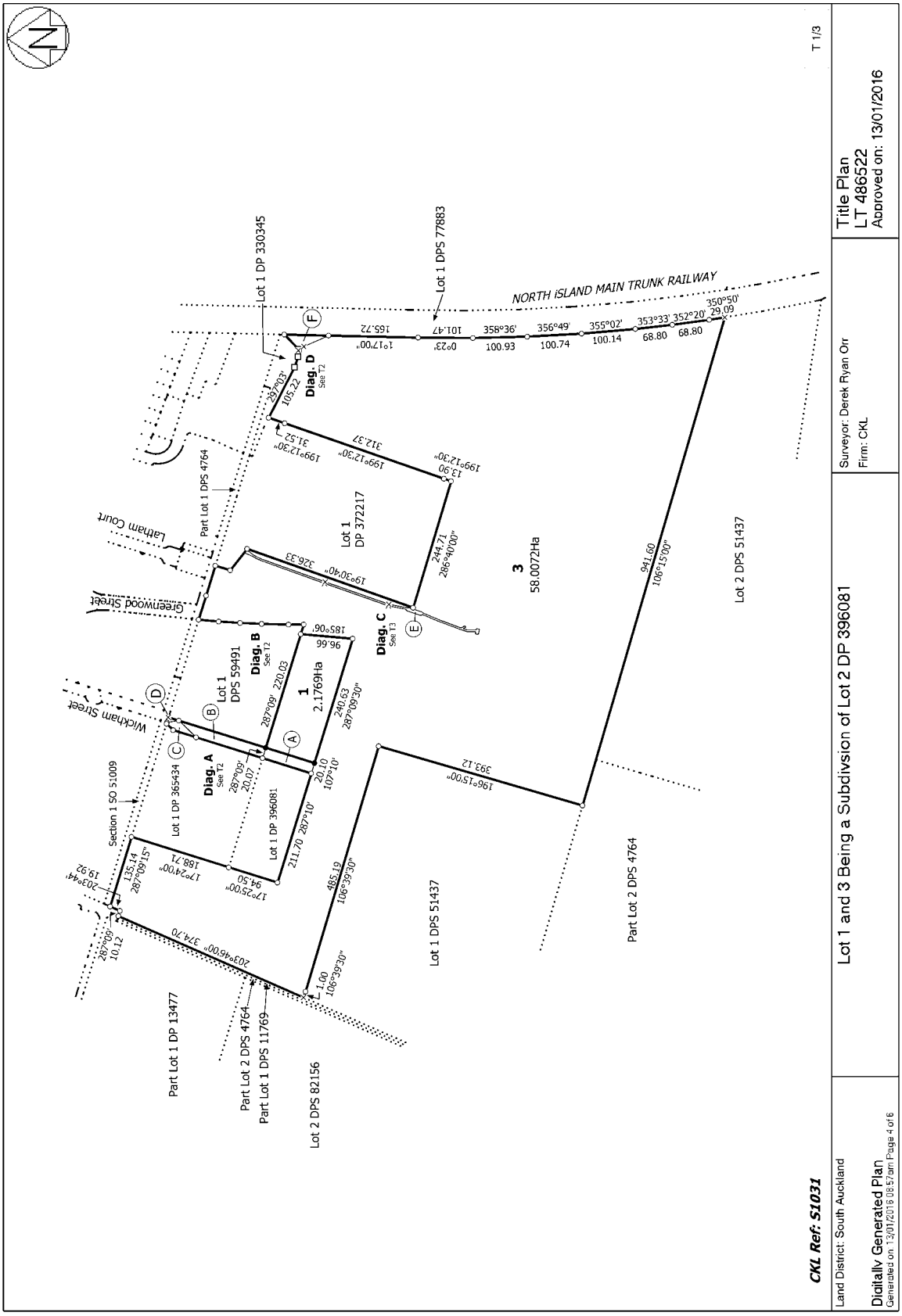
Appurtenant to Lot 1 DP 486522 is a right of way, a right to convey gas, water, electricity, telecommunications and computer media and a right to drain water and sewage created by Easement Instrument 10227683.7 - 22.12.2015 at 12:20 pm

The easements created by Easement Instrument 10227683.7 are subject to Section 243 (a) Resource Management Act 1991

Land Covenant in Covenant Instrument 11713595.3 - 1.4.2020 at 2:00 pm

12317925.3 Mortgage to ANZ Bank New Zealand Limited - 15.12.2021 at 2:47 pm


T 1/5
NORTH ISLAND MAIN TRUNK RAILWAY
Lot 1 DPS 77883
Lot 1 DP 330345
Part Lot 1 DPS 4764
LATHAM COURT
Lot 1 DP 372217
Lot 2 DPS 51437
Non Primary
Legal Road - 20.12 wide
WICKHAM STREET
Lot 1 DPS 59491
Lot 1 DP 365434
Section 1 SO 51009
Legal Road - 20.12 wide
HIGGINS ROAD
Part Lot 1 DP 13477
Part Lot 2 DPS 4764
Part Lot 1 DPS 11769
Lot 2 DPS 82156
Lot 1 DPS 51437
Part Lot 2 DPS 4764
CKL Ref: H1494
Lots 1 and 2 being subdivision of Lot 2 DP 372217
Lend District South Auckland
Digitally Generated Plan
Generated on: 30/07/2008 09:12am Page 3 of 7
Surveyor: Rex Julian Cunningham
Firm: CKL Surveying and Planning
Digital Title Plan
DP 396081
Deposited on: 15/07/2008


T 1/3
Title Plan
LT 486522
Approved on: 13/01/2016
Surveyor: Derek Ryan Orr
Firm: CKL
Lot 1 and 3 Being a Subdivsion of Lot 2 DP 396081
Land District: South Auckland
Digitally Generated Plan
Generated on 13/01/2016 08:57am Page 4 of 6
CKL Ref: S1031
NORTH ISLAND MAIN TRUNK RAILWAY
Lot 1 DP 330345
Lot 1 DPS 77883
Diag. D See T2
Diag. A See T2
Diag. B See T2
Diag. C See T3
Lot 1 DPS 59491
Lot 1 DP 372217
Lot 1 DP 365434
Lot 1 DP 396081
Section 1 SO 51009
Part Lot 1 DPS 4764
Lathom Court
Greenwood Street
Wickham Street
1
2.1769Ha
3
58.0072Ha
Lot 2 DPS 51437
Lot 1 DPS 51437
Part Lot 2 DPS 4764
Part Lot 1 DP 13477
Part Lot 2 DPS 4764
Part Lot 1 DPS 11769
Lot 2 DPS 82156

PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST
FOR
STRIDE PROPERTY

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ARCHITECTURAL DRAWING INDEX

No.	Name	Revision	Date	Description
001	COVER PAGE			
002	DRAWING INDEX			
RC01	OVERALL SITE PLAN-(16A WICKHAM ST)	1	21-03-2023	Resource Consent
RC02	EXISTING SITE PLAN-(16A WICKHAM ST-WEST)	1	21-03-2023	Resource Consent
RC03	PROPOSED SITE & GL PLAN-(16A WICKHAM ST-WEST)	1	21-03-2023	Resource Consent
RC04	PROPOSED ROOF PLAN-(16A WICKHAM ST-WEST)	1	21-03-2023	Resource Consent
RC05	WATTYL BUILDING ELEVATIONS	1	21-03-2023	Resource Consent
RC06	WATTYL BUILDING ELEVATIONS	1	21-03-2023	Resource Consent
RC07	WAREHOUSE 1, 2&3 ELEVATIONS	1	21-03-2023	Resource Consent
RC08	SECTIONS	1	21-03-2023	Resource Consent
RC09	3D VIEW-Wattyl Site (stage 1)	1	21-03-2023	Resource Consent
RC10	3D VIEW -Stage 2	1	21-03-2023	Resource Consent

PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST
FOR
STRIDE PROPERTY

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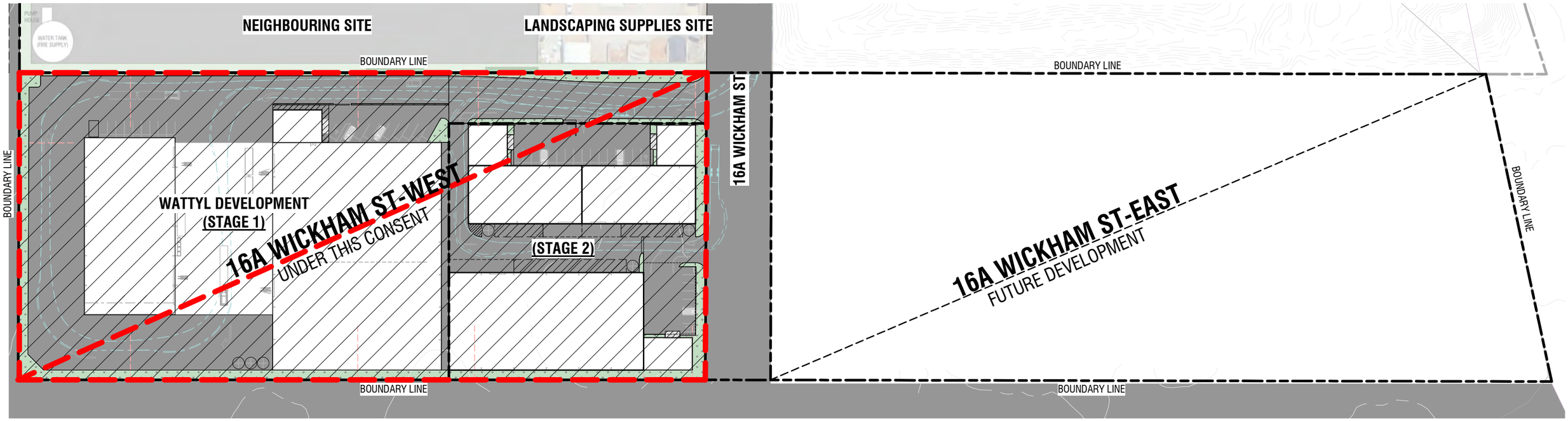

OVERALL SITE PLAN-(16A WICKHAM ST)

SCALE @ A1 1 : 600

Location Map 2

REV	DATE	DESCRIPTION
1	21-03-2023	Resource Consent

stiffe hooker ltd
architects - engineers - interiors
3a melrose street
newmarket
auckland
ph +64 9 520 4400
www.stiffehooker.co.nz

PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

FOR
STRIDE PROPERTY

DRAWING
OVERALL SITE PLAN-(16A WICKHAM ST)

CAD FILE
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JOB NO 10368

SCALE AT A1 As indicated
SCALE AT A3

SHEET RC01
REV 1

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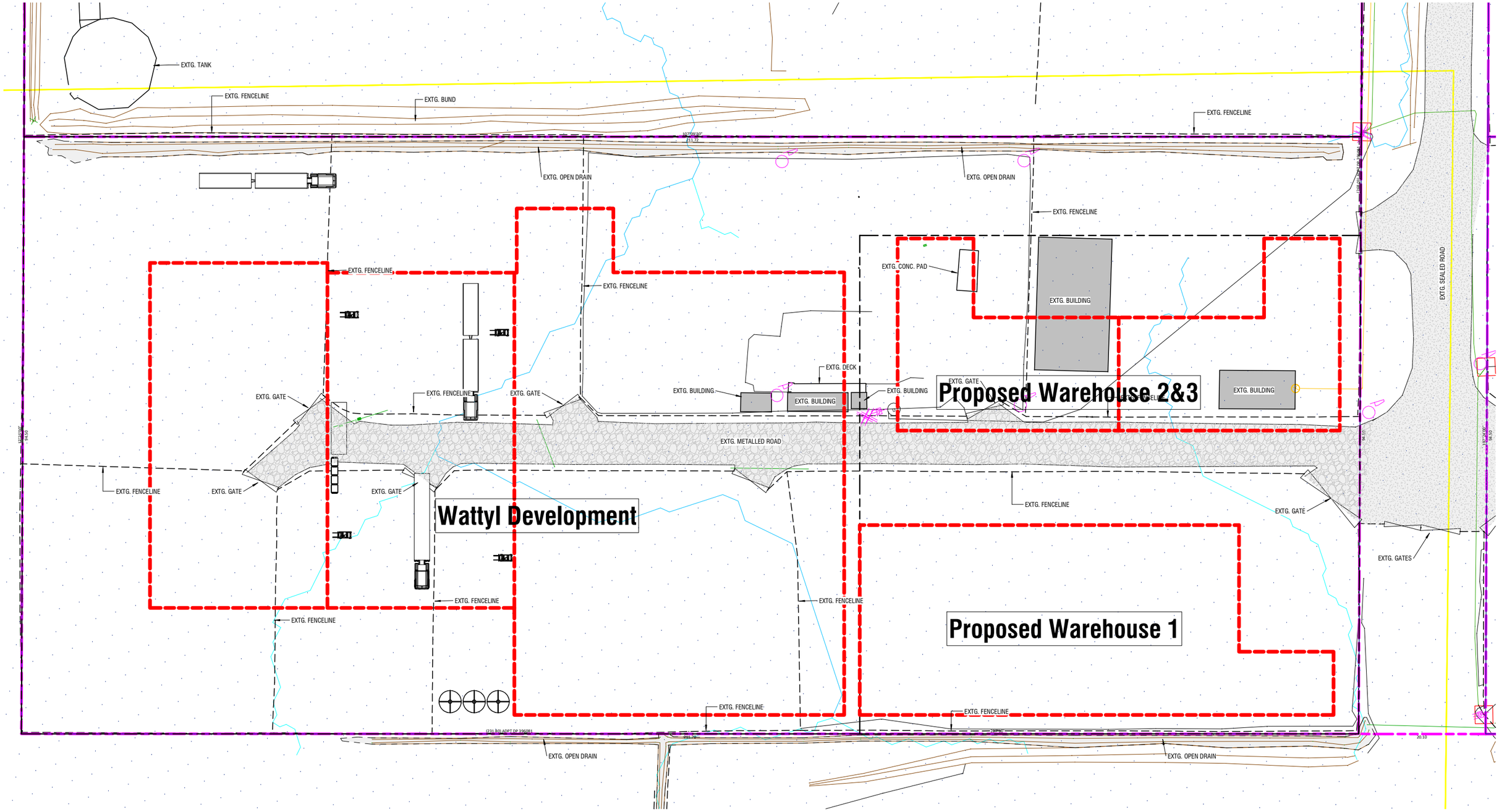

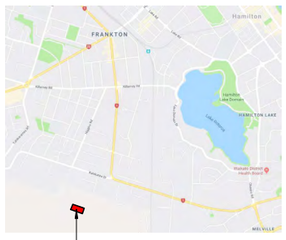

Proposed site

Location Map 1

Outline Of Proposed Building

EXISTING SITE PLAN-(16A WICKHAM ST WEST)

SCALE @ A1 1 : 300

0 50 100mm

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PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

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DRAWING
EXISTING SITE PLAN-(16A WICKHAM ST-WEST)

CAD FILE
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SCALE AT A3

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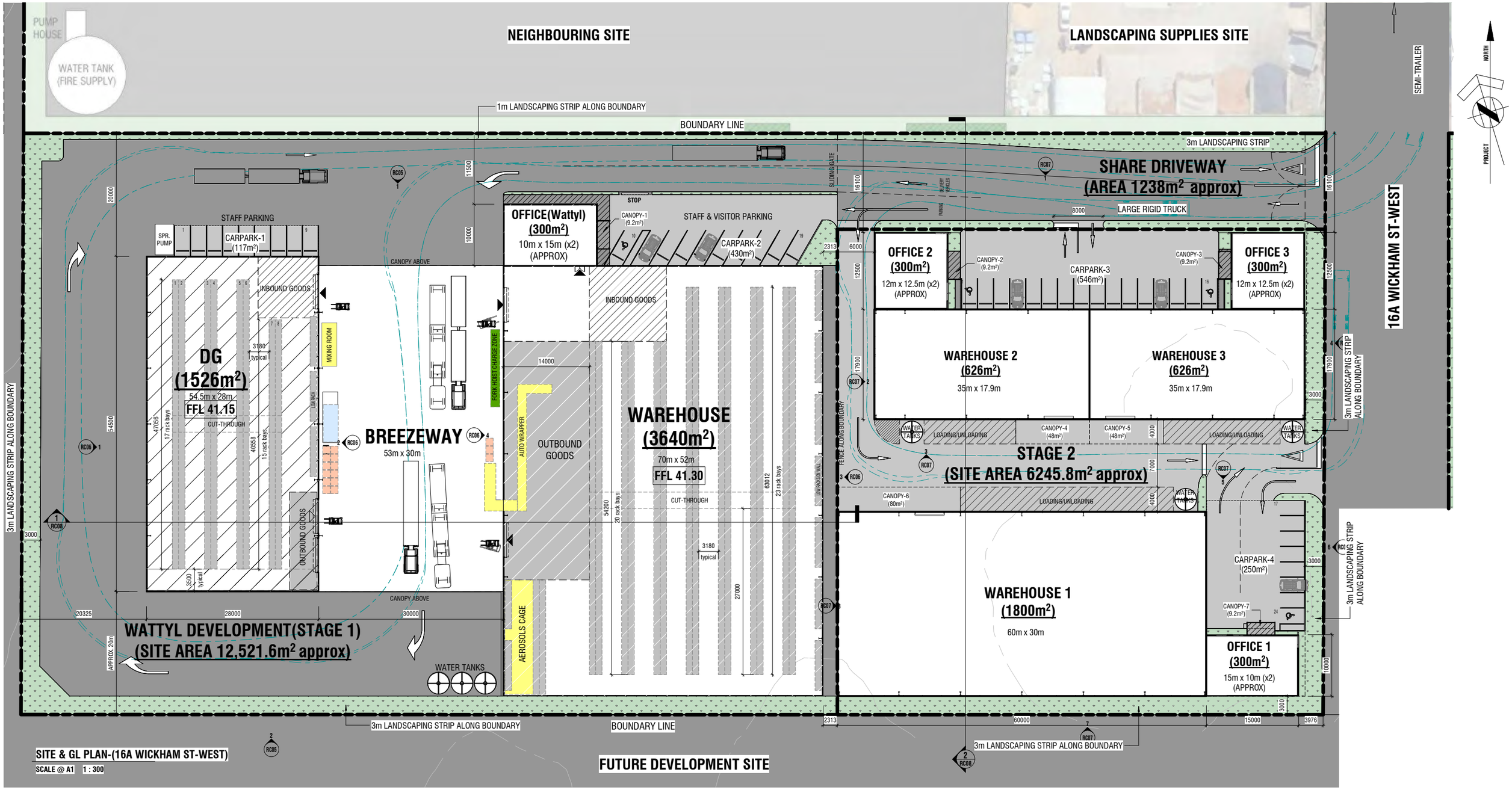

SITE & GL PLAN-(16A WICKHAM ST-WEST)
SCALE @ A1 1 : 300

LOT DESCRIPTION

16A WICKHAM STREET-WEST, HAMILTON

LOT 1 - DP 396081

SITE INFORMATION

TOTAL SITE AREA: 20,006.5 m²

AREA		SITE COVERAGE
TOTAL BUILDING AREA:	10,417m²	(52.0%)
TOTAL IMPERMEABLE AREA:	7,929m²	(39.7%)
TOTAL PERMEABLE AREA:	1,668m²	(8.3%)

WATTYL DEVELOPMENT (STAGE 1)

SITE AREA 12,521.6 m²

CARPARK SCHEDULE

CARPARK-1	9 SPACES	117m²
CARPARK-2	10 SPACES	430m²
TOTAL CARPARKS	**19**	**547m²**
CANOPY 1		9.2m²
BREEZEWAY		1590m²

GROSS FLOOR AREAS

WAREHOUSE	3,640m²
OFFICE	300m²
DANGEROUS GOODS	1,526m²
TOTAL	**5,466m²**

STAGE 2

SITE AREA 6,245.8 m²

CARPARK SCHEDULE

CARPARK-3	16 SPACES	546m²
CARPARK-4	8 SPACES	250m²
TOTAL CARPARKS	**24**	**796m²**
CANOPY 2		9.2m²
CANOPY 3		9.2m²
CANOPY 4		48m²
CANOPY 5		48m²
CANOPY 6		80m²
CANOPY 7		9.2m²
TOTAL		**203.6m²**

GROSS FLOOR AREAS

WAREHOUSE 1	1,800m²
OFFICE 1	300m²
TOTAL	**2,100m²**
WAREHOUSE 2	626m²
OFFICE 2	300m²
TOTAL	**926m²**
WAREHOUSE 3	626m²
OFFICE 3	300m²
TOTAL	**926m²**

SHARE DRIVEWAY

AREA 1238 m²

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PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

FOR
STRIDE PROPERTY

DRAWING
PROPOSED SITE & GL PLAN-(16A WICKHAM ST-WEST)

CAD FILE D:\Tommy Local\10368 - Wattyl Development- Wickham Street-Tommy Local_v22.rvt
JOB NO 10368

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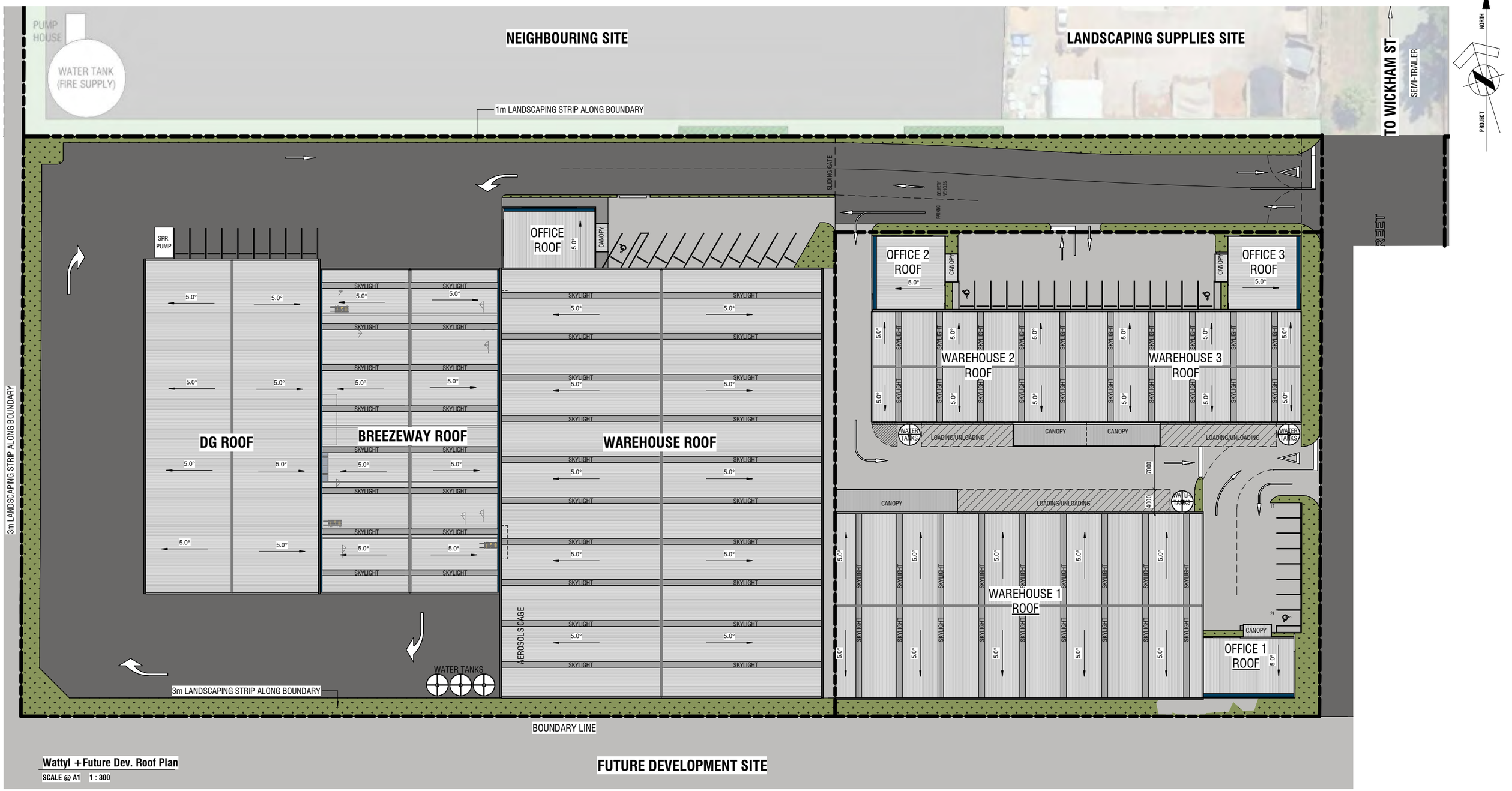

Wattyl +Future Dev. Roof Plan

SCALE @ A1 1 : 300

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PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

FOR
STRIDE PROPERTY

DRAWING
PROPOSED ROOF PLAN-(16A WICKHAM ST-WEST)

CAD FILE
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JOB NO **10368**

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SCALE AT A3

SHEET **RC04**
REV **1**

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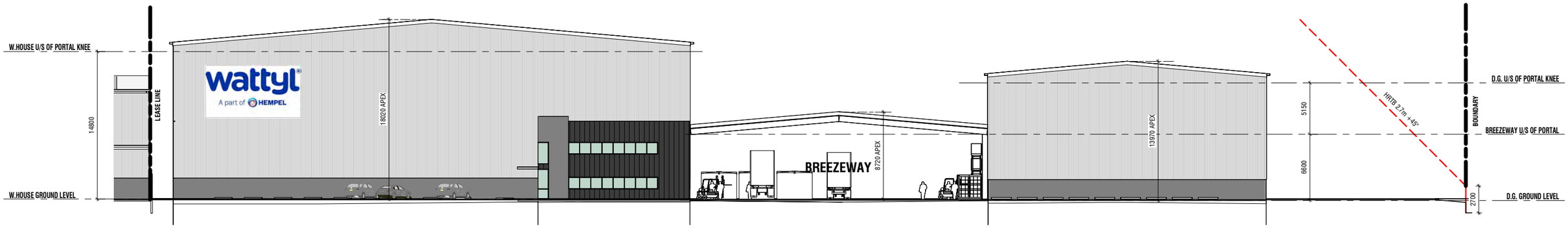
CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK
FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALE



NORTH ELEVATION

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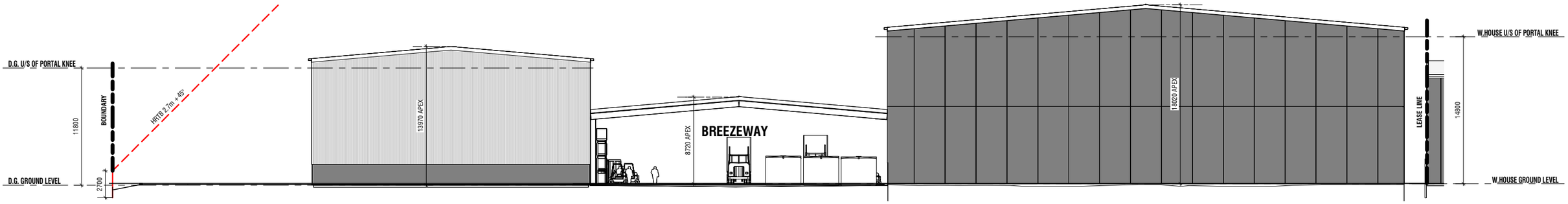

SOUTH ELEVATION

SCALE @ A1 1 : 200

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PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

FOR
STRIDE PROPERTY

DRAWING
WATTYL BUILDING ELEVATIONS

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JOB NO 10368

SCALE AT A1 1 : 200
SCALE AT A3

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REV 1

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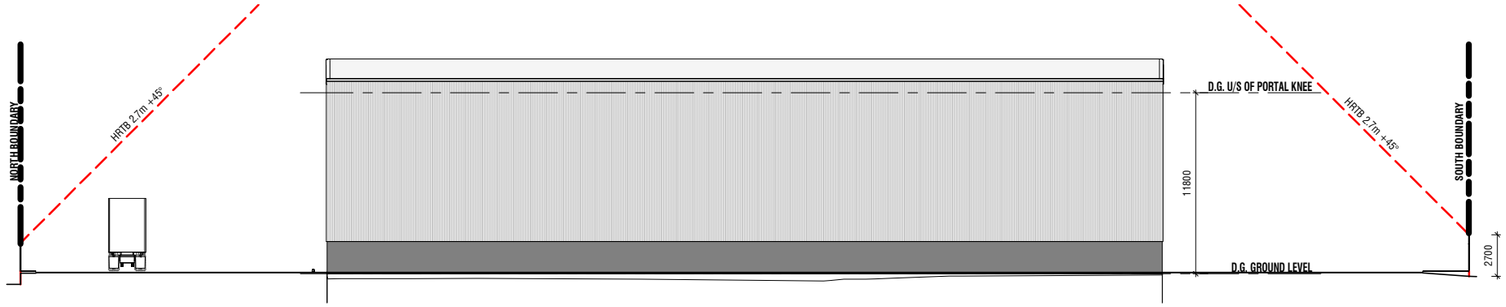

DANGEROUS GOOD EAST ELEVATION

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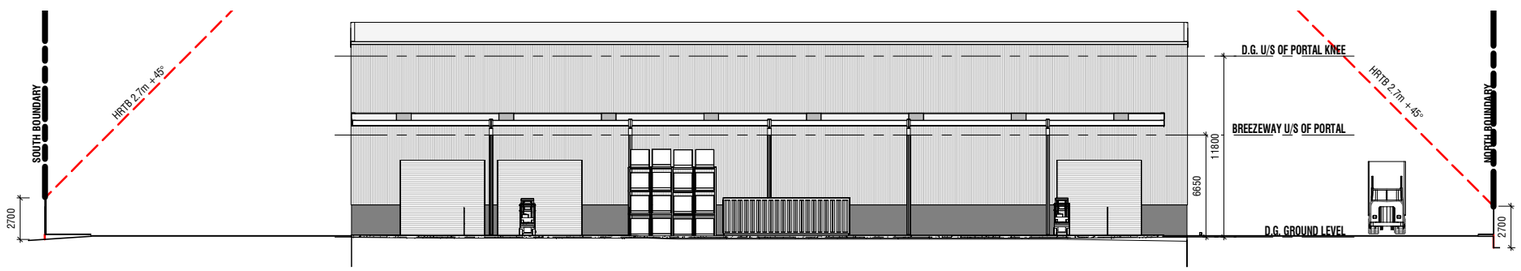

DANGEROUS GOOD WEST ELEVATION

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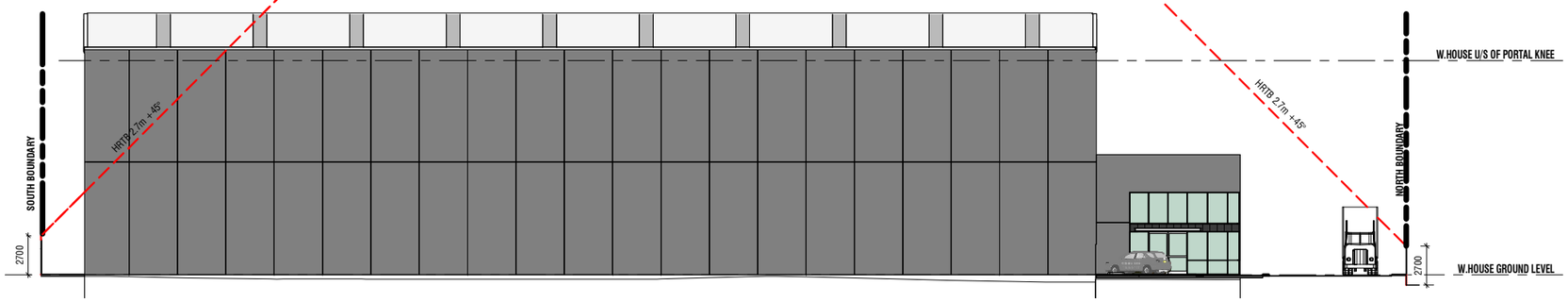

WAREHOUSE EAST ELEVATION

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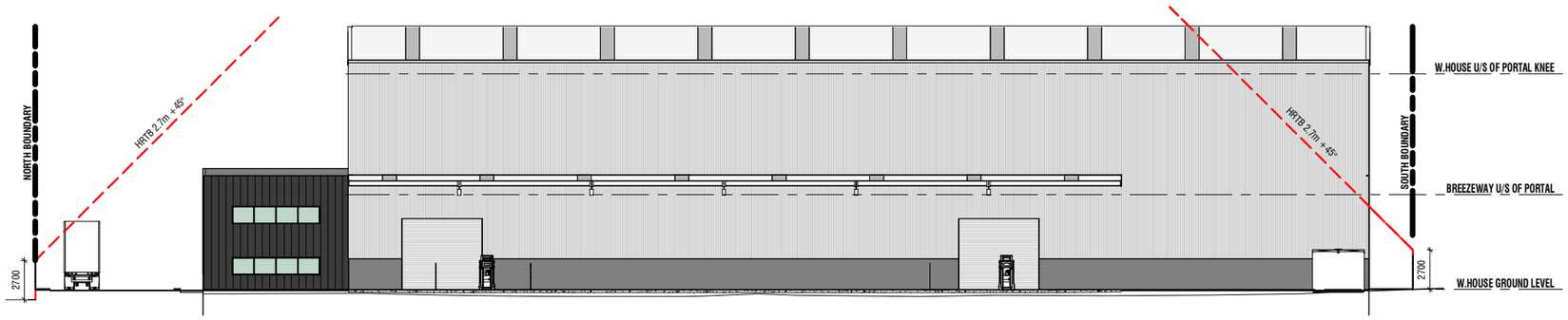

WAREHOUSE WEST ELEVATION

SCALE @ A1 1 : 200

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FOR
STRIDE PROPERTY

DRAWING
WATTYL BUILDING ELEVATIONS

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JOB NO 10368

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SCALE AT A3

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REV 1

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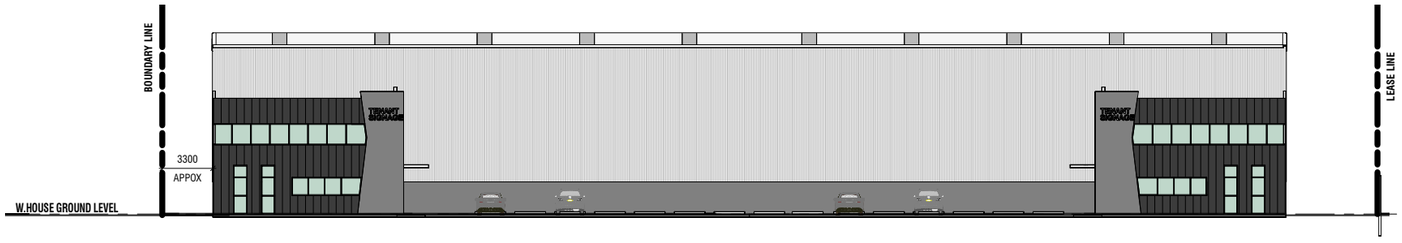

1 WH 2&3 NORTH ELEVATION

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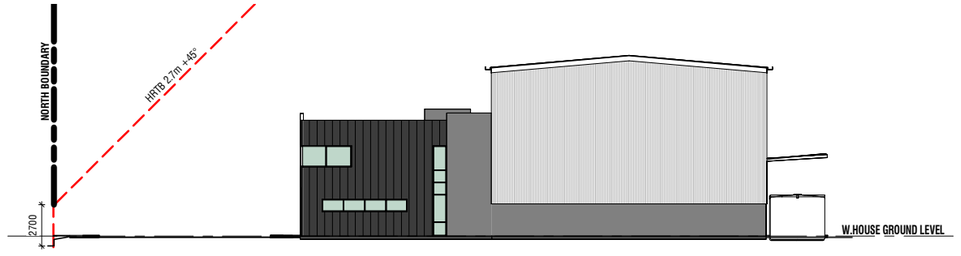

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3 WH 2&3 SOUTH ELEVATION

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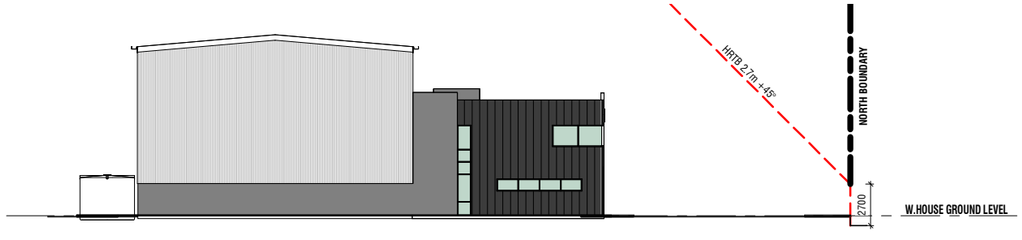

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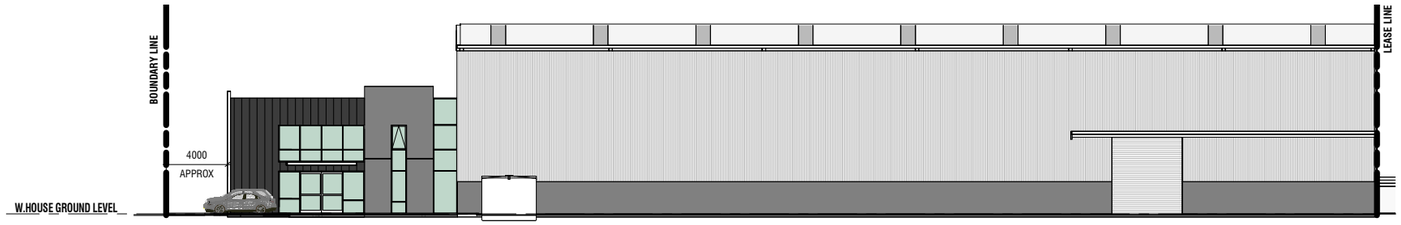

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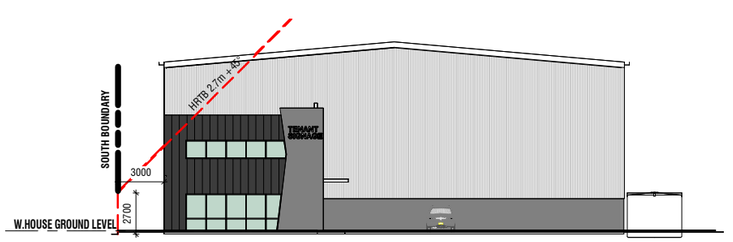

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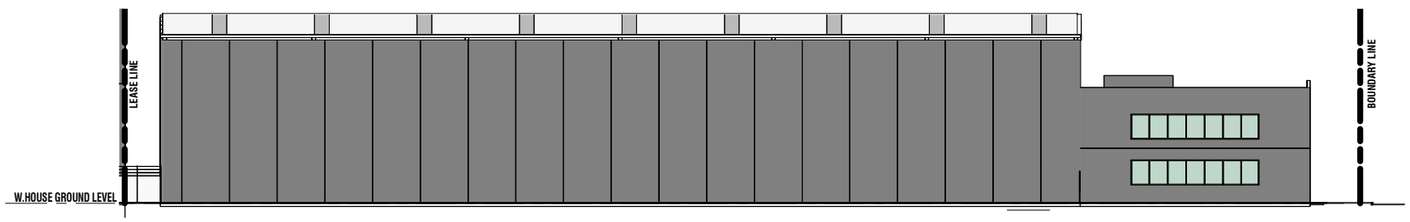

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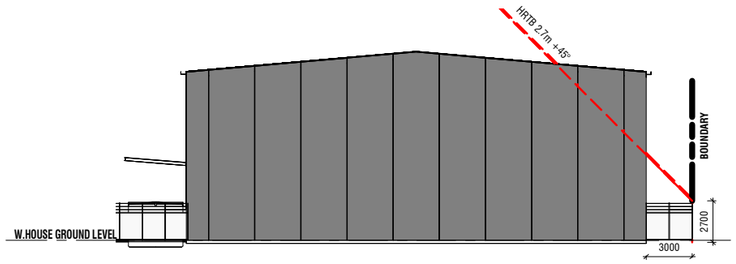

8 WH 1 WEST ELEVATION

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REV	DATE	DESCRIPTION
1	21-03-2023	Resource Consent

stiffe hooker ltd
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auckland
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www.stiffehooker.co.nz

PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

FOR
STRIDE PROPERTY

DRAWING
WAREHOUSE 1, 2&3 ELEVATIONS

CAD FILE
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JOB NO 10368

SCALE AT A1 1 : 200
SCALE AT A3

SHEET RC07
REV 1

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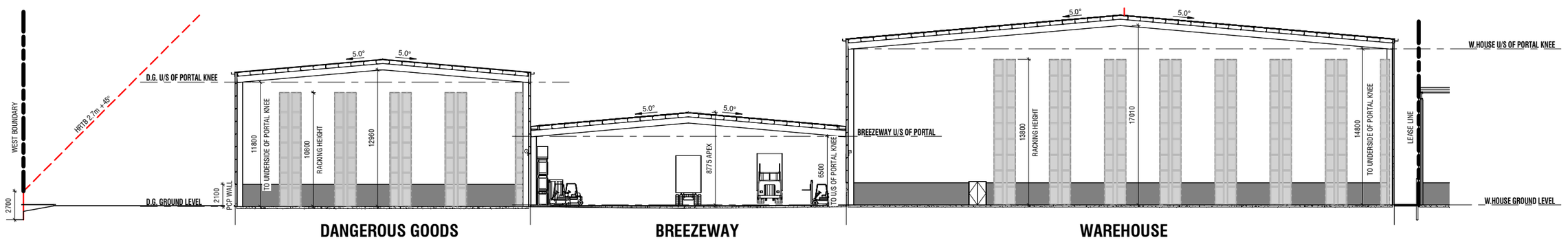
CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK
FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALE



SITE SECTION 1

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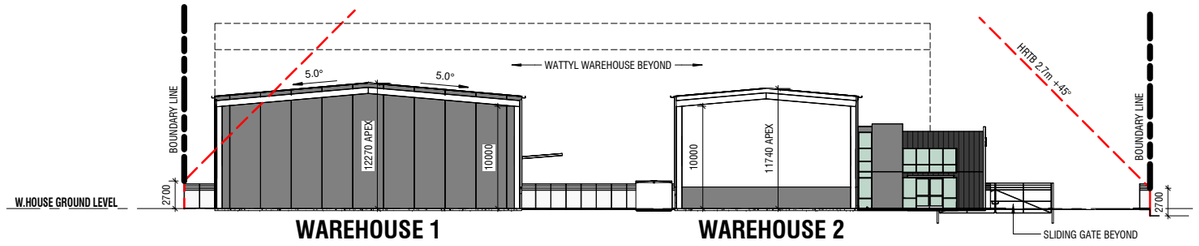

SITE SECTION 2

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REV	DATE	DESCRIPTION
1	21-03-2023	Resource Consent

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PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

FOR
STRIDE PROPERTY

DRAWING
SECTIONS

CAD FILE
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JOB NO 10368

SCALE AT A1 As indicated

SCALE AT A3

SHEET RC08

REV 1

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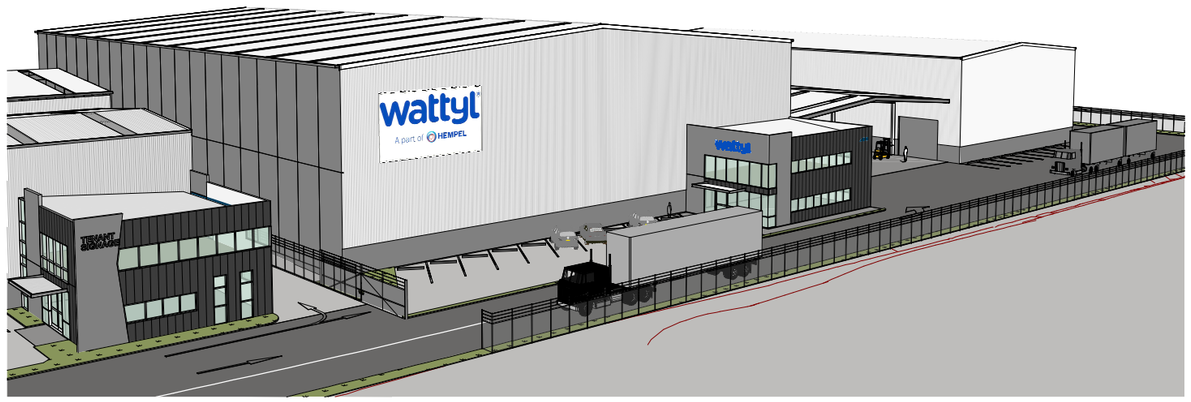
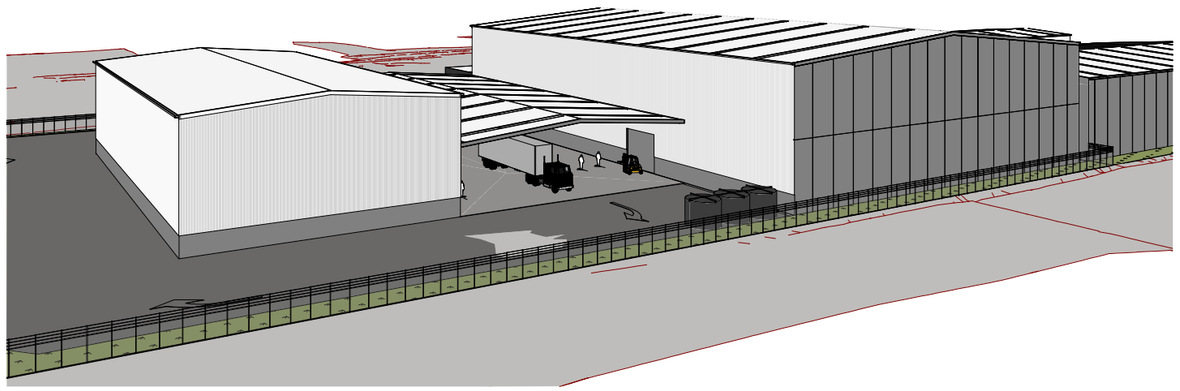
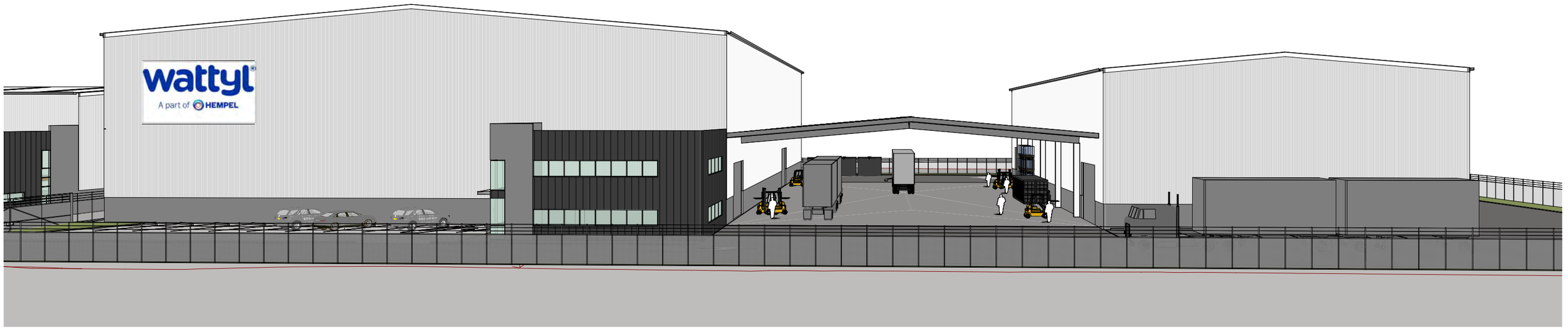


View - Wattyl Warehouse North Boundary



View -Wattyl Warehouse South Boundary



View - Wattyl Warehouse North Facade

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PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

FOR
STRIDE PROPERTY

DRAWING
3D VIEW-Wattyl Site (stage 1)

CAD FILE
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JOB NO **10368**

SCALE AT A1
SCALE AT A3

SHEET **RC09**

REV **1**

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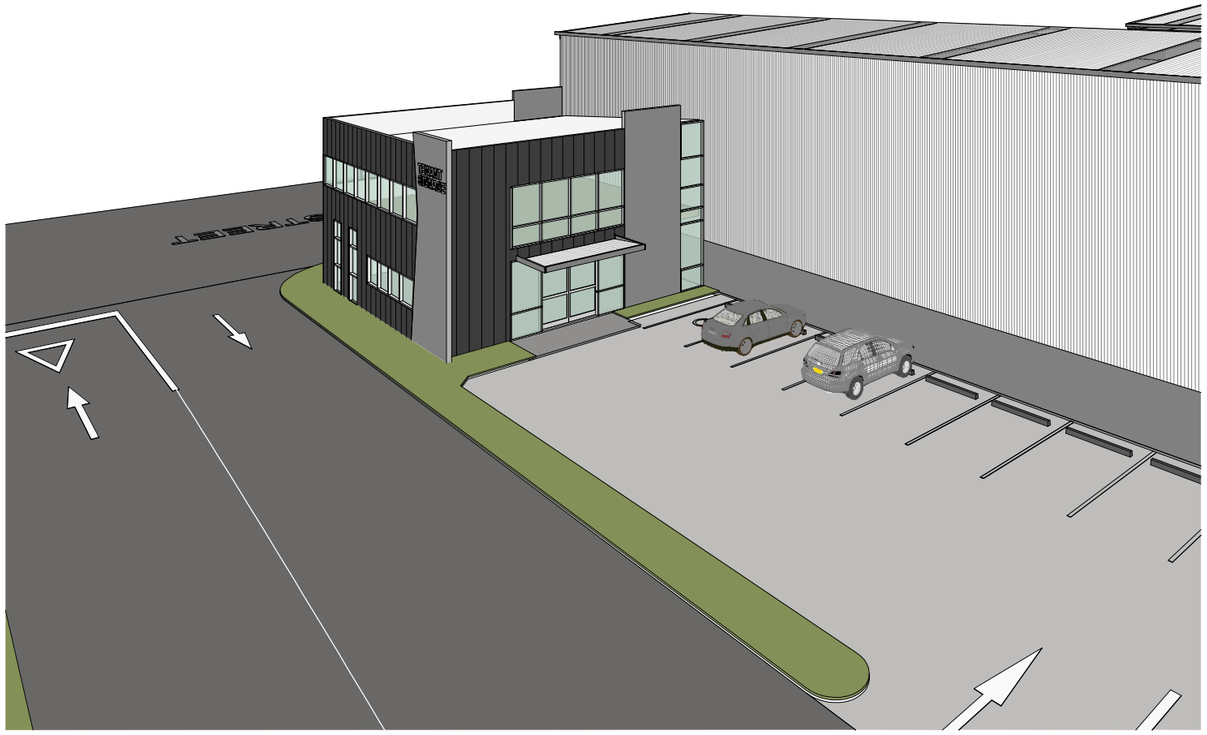
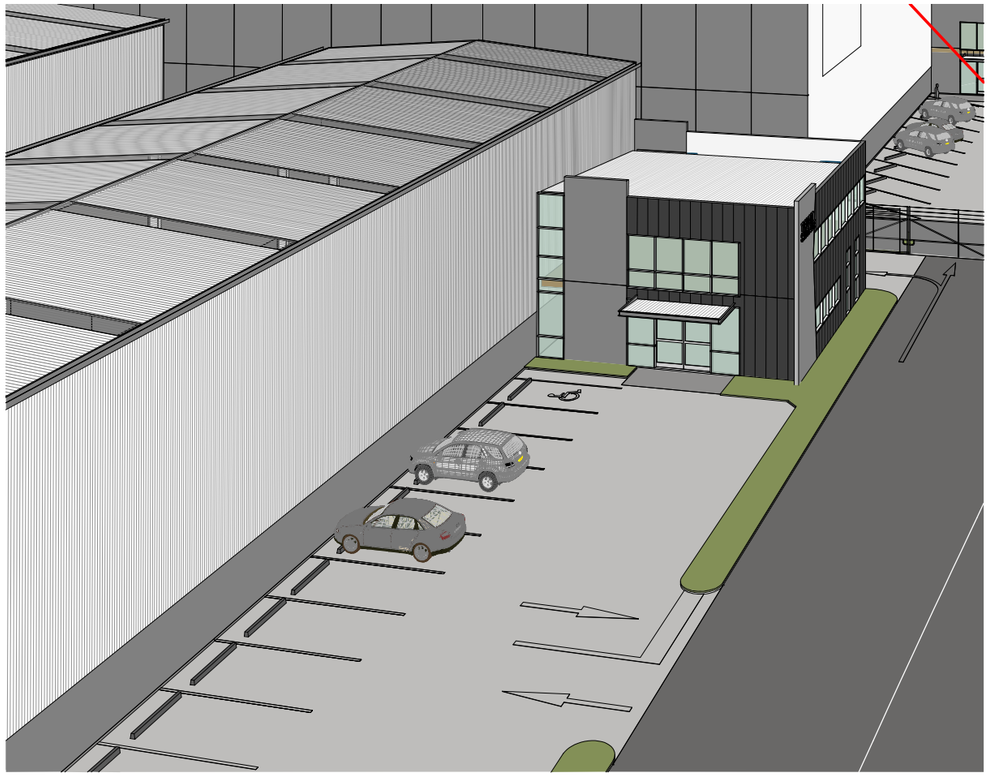


View - Warehouse 3



View - Warehouse 2

View - Warehouse 1

0 50 100mm

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PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

FOR
STRIDE PROPERTY

DRAWING
3D VIEW -Stage 2

CAD FILE
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JOB NO **10368**

SCALE AT A1
SCALE AT A3

SHEET **RC10**

REV **1**

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MITCHELL GEOCON GEOTECHNICAL
A DIVISION OF GWE

GEOTECHNICAL SITE INVESTIGATION
FUTURE INDUSTRIAL DEVELOPMENT

No. 16A Wickham Street
Hamilton

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Mitchell Geocon Geotechnical (a division of GWE)
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Final	31/01/23	First Issue	AT	GW	RD

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TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

The subject site is located within the Frankton Industrial area. The proposed development area is bisected by Wickham Street with southern portion occupied by KDH homes and the remaining area by Shaw Asphalters. Basecourse has been laid across the entire property up to 0.9 metres depth to form a near-level working surface.

The site is bordered by other industrial lots along the northern direction and farm sites to the south.

It is understood that the proposed building will comprise of a concrete floor slab, steel portal frame, lightweight and concrete tilt panel cladding.

2 BACKGROUND

Previous geotechnical reports have been carried out by Mark T Mitchell and Geocon Geotechnical Ltd. for the subject site, as follows;

- Report dated 12 August, 2005 (Ref: W–8421) which provided a Geotechnical Assessment and Foundation Recommendations for the overall site development;
- Foundation Completion Report for the pavement design and construction dated 9 January, 2005 (Ref: W-8321);
- Reviews of Preload Fill Settlements and associated data that were presented in our reports dated 16 May, 2006 (Ref: W-8421/1) and 29 November, 2007 (Ref: W-10102);
- Foundation Completion Report for the bored pile foundation support dated 9 July, 2012 (Ref: 13268.2);
- Site Investigation Report dated 26 October, 2012 (Ref: G-13407.1), carried out to provide foundation designs for the (now existing) Workshop and Offices situated at No. 16 Wickham Street, Hamilton;
- Summary Report date 21 January, 2020 (Ref: W – 16255.7) which provided Site Investigation, Geotechnical Assessment, Foundation Recommendations, Liquefaction Assessment and Pavement Design (Stage 1).

The following report is based on site conditions as observed during a geotechnical investigation carried out by our staff between 28 November, 2022, 5 December, 2022 and Cone Penetrometer Testing (CPT) completed by WSP New Zealand Ltd (WSP) on 23 November, 2022.

The location of the proposed development is shown on the attached Site Plan, Drawing No. J4072-10.

The results of our geotechnical assessment of the subject site, together with our foundation recommendations, liquefaction analysis and pavement design recommendations are as follows:

3 GEOMORPHOLOGY AND GEOLOGY

The site surface is overlain by Basecourse, Rockfill and variably compacted Filling to depths of between 0.5 to 0.9 metres.

The natural soils encountered below filling, as encountered at the test locations consist typically of low strength, organic Silt and Peat (Swamp Deposit). These soils represent slack water deposits that have formed upon the older (and deeper) alluvial deposit known as the Hinuera Formation.

The Hinuera formation was deposited at a time when the Waikato River was meandering over a vast flood plain some 17,000 to 22,000 years ago, with rhyolitic sands, gravels and silts being laid down in irregular patterns together with occasional slack water deposits including organic Silts and Peats.

Because of the non-uniform manner in which the alluvial soils were deposited and the continually changing river channel alignments, variations in soil grain size, density and shear strength may occur within relatively short distances.

The deeper soils encountered in the deeper CPT tests consist primarily of fine grained Silt and Clay soils, which have developed by the progressive weathering of volcanic tephra (ash). The ash layers are a few to several metres in thickness and are representative of a sequence of volcanic ash deposits that have been progressively weathered to silty Clay and clayey Silt soils. These layers are a part of the Hamilton Ash Formation.

Below the Volcanic soils, the alluvial deposits known as the *Walton Subgroup are present.* The Walton Subgroup consists of two geological units referred to as the *Karapiro* and *Puketoka Formations.* These soils are older and are distinguished from the volcanic ash soils as pumiceous in nature.

The Walton Subgroup soils are understood to have been deposited as primary or re-worked alluvial deposits or as non-welded distal ignimbrites (volcanic deposit). These soils typically consist of pumiceous silts, clays and consolidated fine grained sands with weathered pumice inclusions.

4 FIELD INVESTIGATION AND SUBSURFACE CONDITIONS

4.1 Field Investigations

The subsurface conditions at the site were investigated by drilling eight machine auger borings to a depth of 6.0 metres together with Scala Penetrometer probes at the locations shown on the attached Site Plan. The Bore Holes are designated Nos. 31 to 38 with the Bore Hole Logs and associated test results presented on Figs. A-31 to A-38.

Two CPT probes were carried out by WSP New Zealand Ltd (WSP) on 23 November 2022, the locations of which is shown the attached Site Plan. The CPT tests is designated CPT Nos. 11 and 12, with test results presented on Figs. B-11 and B-12 (series A-E).

The purpose of the borings and associated testing was to provide guidance as to the general subsurface soil profile together with the variability and relative density of soils within and below the proposed site areas. Actual conditions may vary across the development site however, and in some locations may differ slightly from those as described in the following section of this report.

4.2 Subsurface Conditions

4.2.1 Upper Soils – Bore Hole Nos. 31 to 38

The near-surface soil conditions at the site as revealed by bore holes consist of uncontrolled FILLING comprised of a mixture of Basecourse, Brown Rock, Pit Sand and Silts and Clays to depths of between 0.3 to 0.9 metres below existing ground level. In Bore Hole Nos. 32 and 33, 30mm of ASPHALT overlies the Basecourse layer.

The Filling is underlain by very soft to stiff, fibrous PEAT (Swamp Deposit) present to depths of 4.6 to 4.9 metres with very soft to very stiff, slightly organic, clayey SILT (Swamp Deposits) between depths of 4.8 metres to 5.2 metres below the original ground level. A layer of medium dense to dense, silty, fine to medium grained SAND (Hinuera Formation) is then present to at least the base of the 6.0 metre deep bore holes.

4.2.2 Deeper Soils – CPT Nos. 11 and 12

The Cone Penetrometer Test (CPT) probe indicate the following subsurface profile:

- 0-0.5m: Comprises of uncontrolled well compacted Filling to depths of about 0.5 metre below the existing ground.
- 0.5-5.0m: Low strength of the Swamp deposit (Peat) extend up to a depth of 5.0 metres has been confirmed by the Bore Hole Nos. 31 to 38.
- 5.0 -8.0: Alternating layers of low to moderate strength Silts and medium dense to dense Sands extend to a depth of about 8 metres and represent the Hinuera Formation.
- 8.0 -14.5 &18.0m: Stiff to hard clay (Hamilton Ash over Walton Subgroup) soils are then present to at least the base of the 14.5 and 18 metre deep probes.

4.3 Groundwater

Groundwater was encountered at the following depths at the time of our spring site investigation.

Table 1: Groundwater Depths

Bore Hole No.	Groundwater (m)	Bore Hole No.	Groundwater (m)
31	2.3	35	4.3
32	1.3	36	4.2
33	1.1	37	3.8
34	4.5	38	3.5
CPT No.	**Groundwater (m)**	**CPT No.**	**Groundwater (m)**
11	-	12	0.4

5 SITE SUBSOIL ASSESSMENT

In reference to section 3.1.3 of NZS 1170.5:2004, the Subsoil Class for this site may be assumed to be Class D (Deep soils).

6 REVIEW OF LIQUEFACTION ASSESSMENT

The properties of the soils and associated groundwater levels have been assessed for their liquefaction potential in accordance with Ministry of Business Innovation and Employment (MBIE) Earthquake Geotechnical Engineering Practice Modules (November 2021).

The key elements required for liquefaction to occur are:

1. Loose non-plastic soil (typically sands and silts, or in rare cases gravel)
2. Saturated soils (ie. below the groundwater table)
3. Sufficient ground shaking (a combination of the duration and intensity of shaking)

The results of our assessment are as follows:

6.1 Cone Penetrometer Testing

The investigation included two CPT tests probes carried out to a depth of 14.5 to 18 metres at the location shown on the attached Site Plan Drawing No J4072-10, with results presented in the attached Figures B-11 and B-12 (series A to E).

6.2 Assumed Groundwater Levels

Groundwater was encountered within the CPTs at a depth of about 0.4 metres and within the bore holes at a depth of about 0.8 to 4.5 metres below the existing ground level. The liquefaction analysis described below has assumed groundwater level to be present at 3.0 metres depth, taking into consideration winter weather conditions.

6.3 Liquefaction Assessment – Ultimate (ULS) & Serviceability Limit (SLS) States

The New Zealand design loads code NZS 1170 defines two design conditions which need to be assessed for the purpose of liquefaction assessment.

- **ULS** – Ultimate Limit State is concerned with ground damage associated with a 500-year earthquake event, and all commercial buildings, such as this one, are to be designed to avoid collapse and potential loss of life.
- **SLS** – Serviceability Limit State is concerned with ground damage associated with smaller earthquakes with a return period of 25 years. Buildings and their non-structural components are to be designed to withstand damage for a 25-year event.

In addition, our analyses include an intermediate state, based on a 100-year return period earthquake event, with a typically assumed design life for most buildings being 50 years.

The Peak Ground Accelerations (PGA) associated with these magnitudes have been calculated following the guidelines set out by the New Zealand Geotechnical Society document; Earthquake

Geotechnical Engineering Practice, Appendix A, Module 1: Overview of the guidelines, updated November 2021.

For the subject site, peak ground acceleration (PGA) for SLS and ULS are determined to be 0.06g and 0.25g respectively with 0.12g for the 100-year event. The earthquake magnitude is determined to be 5.9.

These documents have been published following the 2010/2011 Christchurch earthquake sequence which has redefined the assessment principles for earthquakes in New Zealand.

6.4 Liquefaction Assessment Method

The liquefaction assessment was carried out in accordance with the Boulanger and Idriss (2014) Method. For this method, the CPT database has been updated adding data from more recent earthquakes, with a significant number (50) of liquefaction case histories from the Canterbury Earthquake Sequence being added to the dataset. In addition, some of the older case studies have been re-examined.

The vertical seismic settlements have been computed as described below, for the total CPT investigation depths of about 15 to 18 metres and with total seismic settlements for this depth shown on the attached graphical plots (Figs C-30 to C-37). However anecdotal data from international observations following earthquake events has indicated that the settlement effects of liquefaction at depth are limited to a depth range of zero to 10 metres.

This was also confirmed in a paper presented at the 2016 NZ Geotechnical Conference, by Cubrinovski and McManus entitled Liquefaction Assessment in the Engineering Practice (Earthquake Geotechnical Engineering Module 1 – Overview of the guidelines).

Lateral displacement under seismic activity does not need to be considered as the subject site is near level.

6.5 Liquefaction Assessment Results

Liquefaction studies were carried out for the soil profile of CPT Nos. 11 and 12, with analyses carried out for the groundwater table at 3.0 metres depth. These test results presented on a series of figures (Figs C-30 to C-37) with the Basic Data presented on the front page of the set of CPT results (Fig C-30 and C-34).

The following categories are computed:

- **Vertical Settlement (mm)** – expected settlement (mm) of proposed building under seismic loading (see values illustrated on Figure 1 below).
- **Liquefaction Potential Index (LPI)** - the potential damage caused by liquefaction. (see also Figure 2 below) where;
  - 0 – 5 is low risk
  - 5 – 15 is high risk
  - 15 + is very high risk
- **Liquefaction Severity Number (LSN)** - an estimate of anticipated expression of liquefaction at the surface and a useful tool for the hazard screen purposes. (see Figure 3 below)

For the assessment of the potential severity of liquefaction at this site, LSN categories are defined as follows:

- Low to minor expression of liquefaction applicable for a LSN of between 0 and 20,
- Moderate expression of liquefaction for a LSN between 20 to 40, and
- High to severe has an LSN of in excess of 40.

6.5.1 Analyses for SLS Event – 25-year Return and 100-year Return Period Events

- The Factor of Safety (FoS) and vertical plots for the SLS event show low potential for liquefaction with negligible vertical settlement under a 25-year, and 100-year return period.
- Refer to Figures C-31 and C-32 for CPT No. 11 and Figures C-35 and C-36 for CPT No. 12.

6.5.2 Analyses for ULS Event - 500-year Return Period Event

- The FoS and associated settlement plots for the ULS (500-year) event shows that within the upper 10 metre depth range, about 95 to 140 mm of vertical settlement can be expected to develop on account of site liquefaction.
- Figure 1 below also shows the **Vertical Settlements** for the CPT and indicates the effects of liquefaction from a ULS event within the site are expected to be high.
- Figure 2 shows the **LPI** for the CPT and also indicates that there is a high risk of liquefaction damage occurring during ULS event at the CPT locations.
- Figure 3 shows the **LSN** values and indicates low to moderate liquefaction during ULS event.

The results of the liquefaction assessment indicate the site has a performance level of L2 to L3 (Moderate to High) according to Table 5.1 of the MBIE Earthquake and geotechnical engineering practice notes, module 3, during a ULS magnitude event.

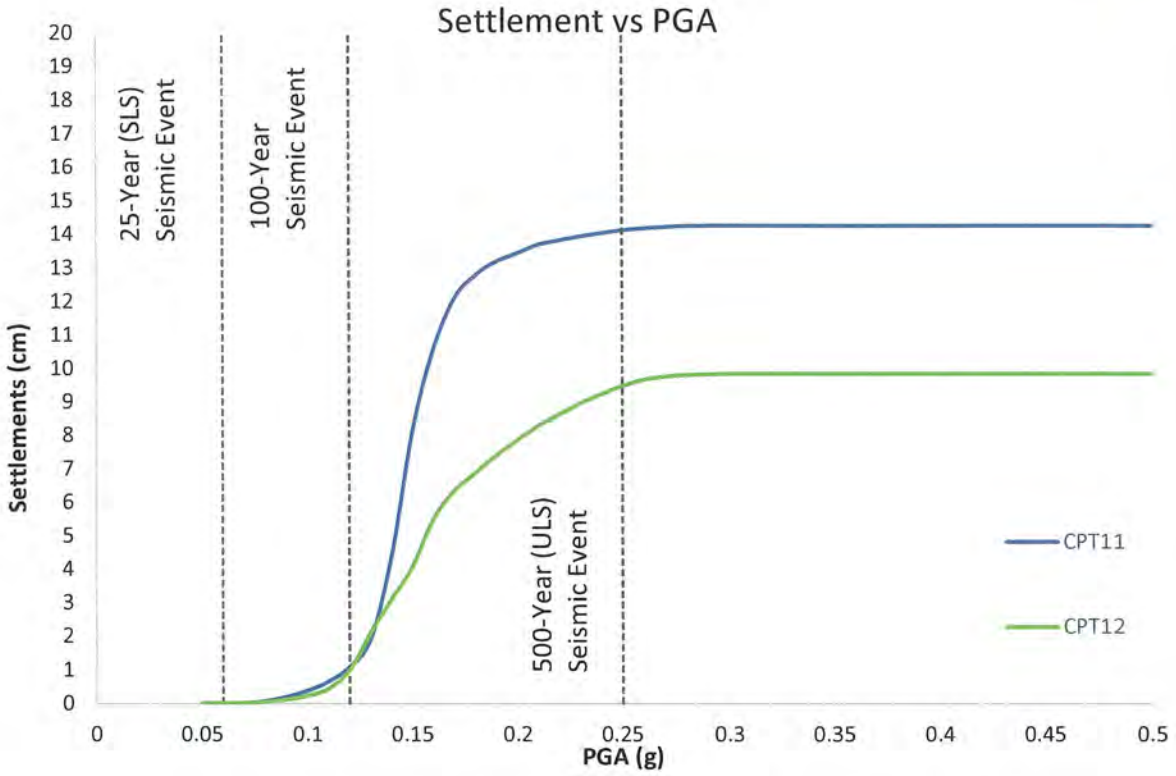


Figure 1 Vertical Settlement vs PGA for CPT Nos. 11 and 12 for a depth of 10 metres.

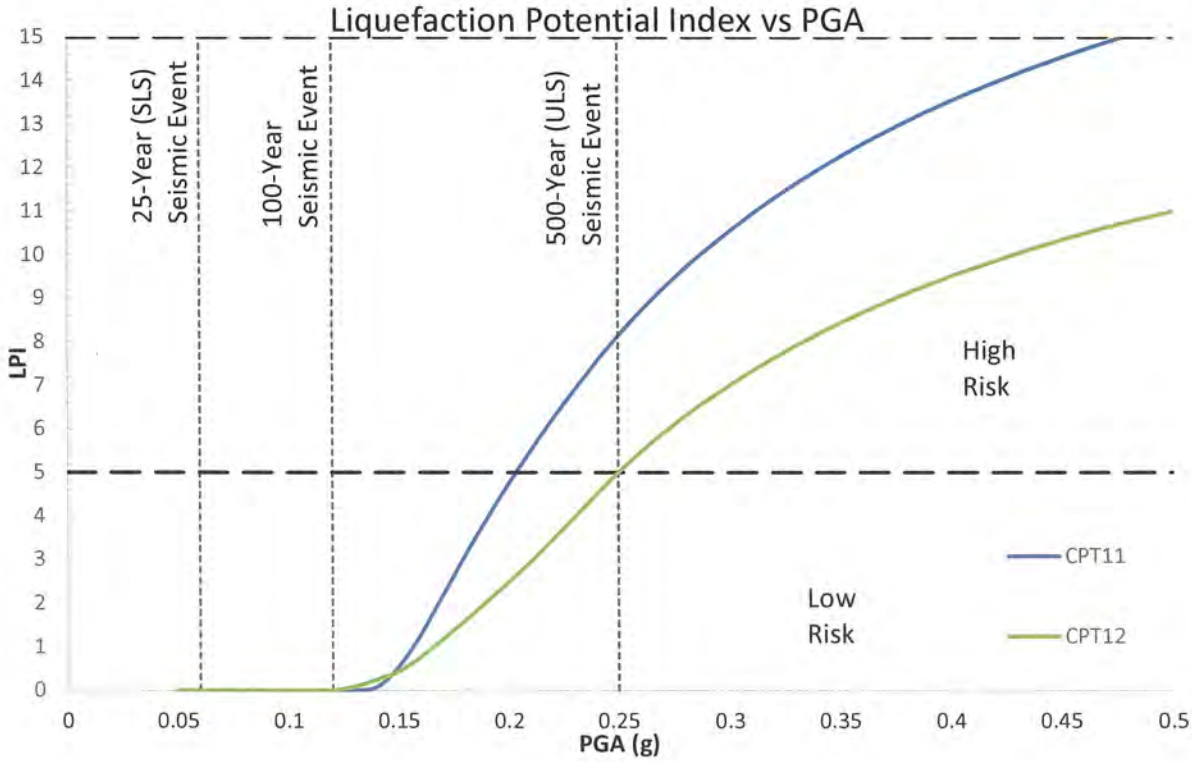


Figure 2 Liquefaction potential index (LPI) vs PGA for CPT Nos. 11 and 12.

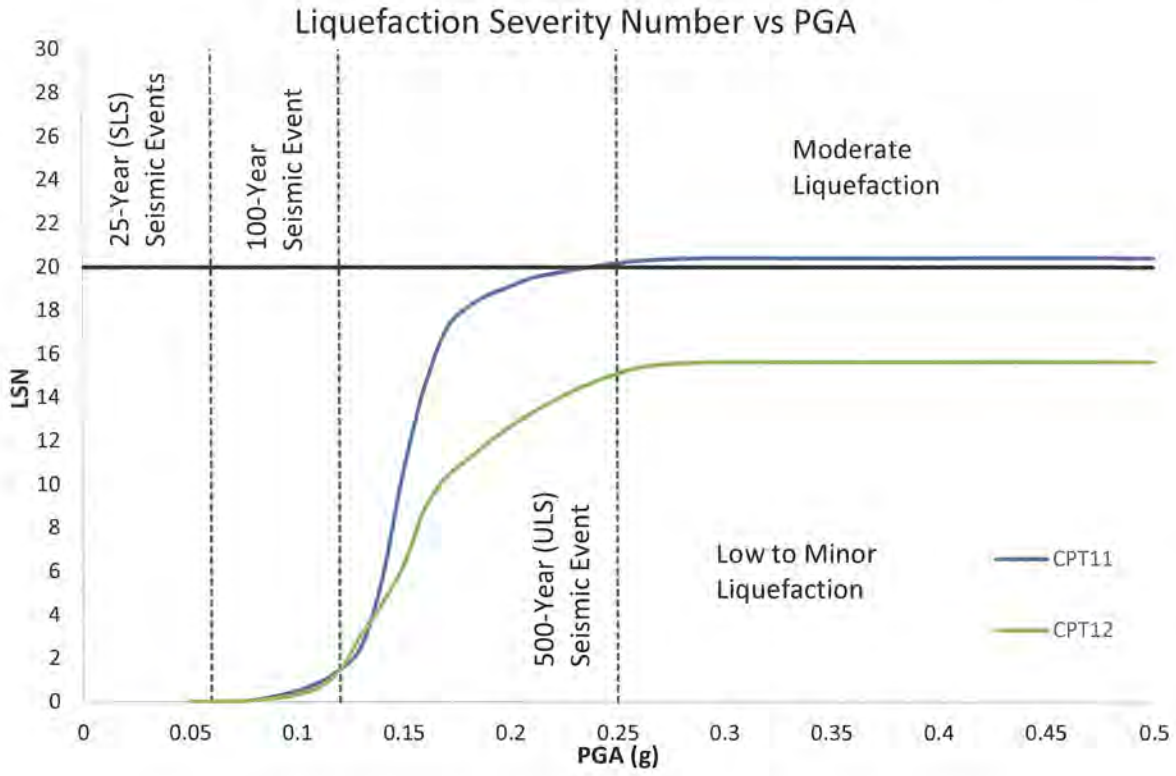


Figure 3 Liquefaction Severity Number (LSN) vs PGA for CPT Nos. 11 and 12.

7 LIQUEFACTION SUMMARY

Our liquefaction analysis shows that the sandy soils that are present beneath the water table are expected to be stable during seismic events of up to 100-year return period event but are expected to experience liquefaction during a 1 in 500-year, ULS return period event, such as to produce about 95-140 mm of seismic-related, total ground settlement. This number is overstated as Hamilton Ash Soils are resent below 8 metres, which are not expected to liquefy therefore this settlement expected in likely to be in the range of 80mm to 100mm.

It is noted that vertical settlement of the peat deposit is not shown to develop through all return periods through to ULS, although considerable disturbance to this deposit is expected to develop for the 500-year return period seismic events take place. This would be the result of groundwater pressure waves moving upwards from the underlying sand soils as they consolidate following liquefaction.

A dense sand layer is present below about 6 to 8m depth with a thickness of at least 2 to 3m, which is proposed to be a founding layer for driven piles. This layer is non-liquefiable up to the 100 year return period event, but in some CPT locations indicates liquefaction during the 500 year return period event. The process of pile driving will result in densification of the founding sand layer beneath and around the piles which will reduce the potential for liquefaction of this founding layer. The pile spacing should be selected during detailed design to provide for sufficient extent of densification to limit liquefaction during the ULS event.

The deep profile of low strength soils require that the foundations of the proposed building comprise of engineer-design foundations, likely piles. These foundations will be required to provide egress from a building during a ULS-magnitude earthquake, together with details to

control localised spreading of the foundation support to the walls and roof of the proposed building.

8 FOUNDATION RECOMMENDATIONS

8.1 Review of Soil Conditions

The results of soil testing indicate the presence of generally well compacted Filling to depths of between 0.5 to 0.9 metres below existing ground level.

The natural soils consist predominantly of low strength PEAT (Swamp Deposit) to at least 4.6 to 4.9 metres below the existing ground level. Low to moderate strength Sils and moderate to high density Sand of the Hinuera Formation.

8.2 Foundation Recommendations

The proposed building structures are to be pile supported this will require an engineer-designed floor slab, incorporating deepened ribs along interior footing lines, with the piles aligned along these ribs. For this project, driven timber piles of 200 to 250mm SED (Small End Diameter) could be suitable. The piles would function as end-bearing piles, with the piles being driven into the dense soils that were encountered at depth CPT probes. Screw piles could also be considered. Their helices would need to be located with the dense sand layers below about 8 metres depth.

The test data indicates that the expected pile lengths are in the order of 6 to 8 metres below existing ground level. It is expected that pile loads will be reasonably high, in which case the piles will need to be driven with a minimum 2 tonne hammer (King Drilling ex Hamilton has a suitable pile driving rig) with a drop of 1 metre. We estimate an ultimate end bearing capacity of 3000 kPa, A suitable capacity reduction factor should be applied to get dependable capacity (0.5 for static and 0.8 for seismic).

Test piles will be required in order to determine the actual length of piles to be delivered to the project. This will involve a minimum of two, 10 metre-long test piles to be driven, one at either end of each building envelope. The data obtained from the driving of these test piles would enable the lengths of the remaining piles to be determined more precisely. The test piles may be used as production piles in the support of the proposed structure.

8.2.1 Liquefaction Induced Pile Downdrag

Downdrag refers to the phenomenon where a pile foundation is subjected to negative (downward) side shear stresses from the ground surrounding the pile when settling (moving downward) more than the pile. Liquefaction induced downdrag occurs due to ground settlement caused by soil liquefaction and occurs immediately after earthquake shaking ceases.

The amount of downdrag friction can be estimated from the soil shear strengths and interface friction for the pile/soil interface. Downdrag loads from the liquefied layers should be calculated based on the shear strength parameters of the resettled liquefied soils. The internal friction value for resettled liquefied soils will be in the range of 25 deg (for silts) to 30 deg (for sands). The interface frictional strength is often taken as 2/3 of the soil friction strength. Accordingly, downdrag stress (τ) can be calculated from:

$$\tau = K_0 \tan \delta' \sigma'_v$$

where, K_0 is the coefficient of lateral earth pressure, δ' is the interface of soil friction strength and σ'_v is the effective vertical consolidation stress.

Based on geotechnical investigation and liquefaction analyses we have estimated that piles can be founded in non-liquefiable deposits at a depth of about 8m for up to 100 year return period earthquake events, refer to our discussion in Section 8 for sand layer densification during driving and response during a ULS event. A detailed pile design by a Chartered Professional Engineer is required.

9 CONSTRUCTION INSPECTIONS

In order to satisfy Waipa District Council building requirements, engineer-inspections of the pile foundations or excavations installations will need to be carried out.

This work is required to be tested and inspected under the direction of a Chartered Professional Engineer, with Producer Statement certification provided upon satisfactory completion to indicate that the ground is suitable for the support of the proposed subdivision.

Mitchell Geocon Geotechnical is able to provide this service. Where possible, please provide at least 48 hours' notice prior to the commencement of these site works. Please note that inspection and certification of the foundation and stormwater system will be at an additional cost.

10 LIMITATIONS

This report has been prepared for the sole benefit of Stride Property Ltd as our Client, and their appointed representatives, according to their instructions, for the specific objectives described herein. This report is qualified in its entirety and should be considered in the light of our Terms of Engagement with the Client and the following:

a. Data or opinions contained within the report may not be used in other contexts or for any other purpose without our prior review and written agreement. Any reliance will be at the parties' sole risk.

b. No responsibility is assumed for inaccuracies in reporting by the information providers. In no event, regardless of whether GWE 's consent has been provided, does GWE accept any liability, whether directly or indirectly, for any liability or loss suffered or incurred by any third party to whom this report is disclosed placing any reliance on this report, in part or in full.

c. GWE has relied on information provided by the Client and by third parties to produce this document and arrive at its conclusions. GWE has not verified information provided (unless specifically noted otherwise) and we assume no responsibility and make no representations with respect to the adequacy, accuracy, or completeness of such information. No responsibility is assumed for inaccuracies in reporting by the information providers.

d. Only a finite amount of information has been collected to meet the specific financial and technical requirements of the Client's brief and this report does not purport to completely describe all the site characteristics and properties. Due to the inherent variability in natural soils and subsurface conditions, it is unlikely that the results, assumptions, and conclusions set out in this report represent the extremes of conditions at any location removed in time and/or place from the specific points of sampling. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it must be appreciated that actual conditions could vary from the assumed model.

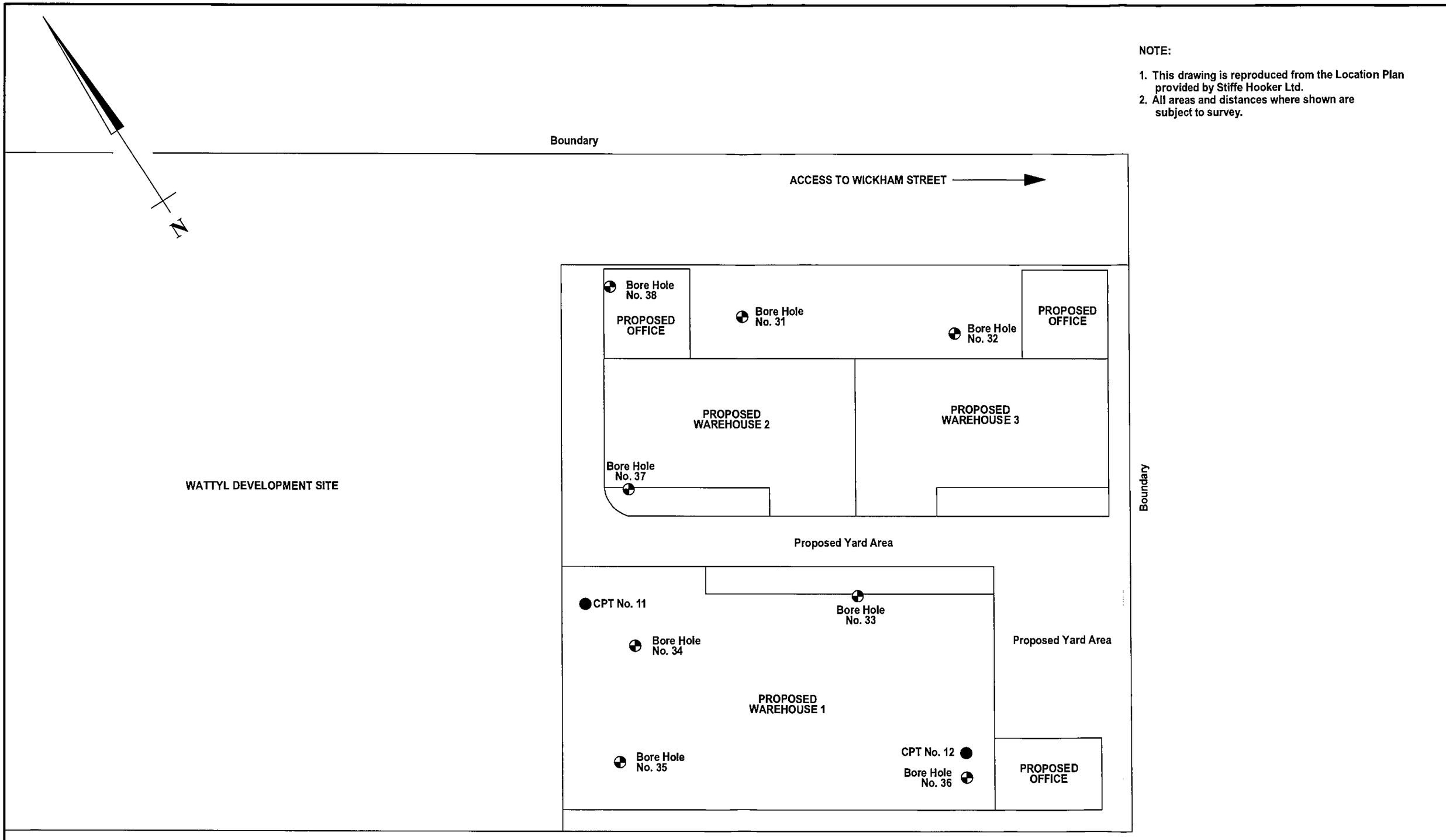
e. Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.

f. Subsurface conditions, such as groundwater levels, can change over time. This should be borne in mind, particularly if the report is used after a protracted delay.

APPENDIX A
SITE PLAN

NOTE:

1. This drawing is reproduced from the Location Plan provided by Stiffe Hooker Ltd.
2. All areas and distances where shown are subject to survey.



LEGEND

- denotes Bore Hole locations.
- " Cone Penetrometer Test (CPT) Probe locations.

SCALE 1:500

0 10 20 30 40 50 Metres

Mitchell Geocon Geotechnical
Consulting Geotechnical Engineers
1150 Victoria Street, P.O. Box 9123, Hamilton

STRIDE PROPERTIES LTD (FUTURE DEVELOPMENT)

Proposed Industrial Development
No.16A Wickham Street, Hamilton

SITE PLAN

DRAWING No. J4072-10
DATE January 2023
ISSUE DATE

MGG

APPENDIX B

BORE HOLE LOGS

BORE HOLE LOG No. 31

GRAPHIC LOG	SOIL DESCRIPTION	DEPTH (metres)	GEOLOGICAL FORMATION
	FILLING: Mixture of Basecourse (GAP 40) and Blue/Brown Rock. Uncontrolled, well compacted, moist, light bluish grey.		Filling
	PEAT. Very soft to stiff, fibrous, moist to wet, blackish brown. Becoming wet @ 2.3 metres.	1 2 3 4	Swamp Deposit
	clayey SILT. Firm to stiff, wet, slightly organic, brown.	5	
	silty fine to medium SAND. Medium dense to dense, saturated, light grey.	6	Hinuera Formation
	Bottom of Bore Hole completed 28/11/22		

SHEAR VANE DIAL READING (In-situ/Remoulded)

SCALA PENETROMETER (blows/100mm)

1 2 3 4 5 6 7 8 9 10 20+

PIEZOMETER / WATER LEVEL

End of Day

NOTES
- The stratification lines represent the approximate boundary between soil types and the transition may be gradual.
- Scala test was carried out in 1.0 metre depth increments.

JOB NAME: STRIDE PROPERTIES LTD - FUTURE DEVELOPMENT
JOB LOCATION: No. 16A Wickham Street, Hamilton
JOB NUMBER: J4072

DRILL METHOD: Machine Auger
RIG: Hilux
DRILLER: RS

LOGGED: AT PLOTTED: RS
DATE LOGGED: 28/11/22
CHECKED:

Mitchell Geocon Geotechnical
Geotechnical Engineers
1150 Victoria Street, P.O. Box 9123, Hamilton

BORE HOLE LOG

BORE HOLE No. 31
LOCATION: Refer Site Plan RL (m):
SHEET: 1 OF 1 Fig. No. A-31

BORE HOLE LOG No. 32

GRAPHIC LOG	SOIL DESCRIPTION	DEPTH (metres)	GEOLOGICAL FORMATION	SHEAR VANE DIAL READING (In-situ/Remoulded)	SCALA PENETROMETER (blows/100mm) 1 2 3 4 5 6 7 8 9 10	PIEZOMETER / WATER LEVEL
	ASPHALT		AS		20+	
	BASECOURSE (GAP 40).		BC			
	FILLING: Pit Sand. Uncontrolled, poorly compacted, moist, yellowish brown.		Filling			
	PEAT. Very soft to soft, fibrous, moist to wet, blackish brown. Becoming wet @ 1.3 metres.	1 2 3 4	Swamp Deposit			End of Day
	clayey SILT. Firm, slightly organic, wet, brown.	5				
	silty fine to medium SAND. Medium dense to dense, saturated, grey.	6	Hinuera Formation		11	
	Bottom of Bore Hole completed 29/11/22					

NOTES - The stratification lines represent the approximate boundary between soil types and the transition may be gradual.
- Scala test was carried out in 1.0 metre depth increments.

JOB NAME: STRIDE PROPERTIES LTD - FUTURE DEVELOPMENT
JOB LOCATION: No. 16A Wickham Street
JOB NUMBER: J4072

DRILL METHOD: Machine Auger
RIG: Hilux
DRILLER: RS

LOGGED: AT PLOTTED: AT
DATE LOGGED: 2/12/22
CHECKED:

Mitchell Geocon Geotechnical
Geotechnical Engineers
1150 Victoria Street, P.O. Box 9123, Hamilton

BORE HOLE LOG

BORE HOLE No. 32
LOCATION: Refer Site Plan RL (m):
SHEET: 1 OF 1 Fig. No. A-32

BORE HOLE LOG No. 33

GRAPHIC LOG	SOIL DESCRIPTION	DEPTH (metres)	GEOLOGICAL FORMATION	SHEAR VANE DIAL READING (In-situ/Remoulded)	SCALA PENETROMETER (blows/100mm)	PIEZOMETER / WATER LEVEL
	ASPHALT	0	AS		1 2 3 4 5 6 7 8 9 10	
	BASECOURSE (GAP 40).		BC		20 20 18	
	PEAT. Very soft, fibrous, moist to wet, blackish brown. Becoming wet @ 1.1 metres.	1 2 3 4	Swamp Deposit			End of Day
	clayey SILT. Firm, slightly organic, wet, brown.	4				
	silty fine to medium SAND. Medium dense to dense, saturated, grey.	5	Hinuera Formation			
	Bottom of Bore Hole completed 1/12/22	6				

NOTES - The stratification lines represent the approximate boundary between soil types and the transition may be gradual.
- Scala test was carried out in 1.0 metre depth increments.

JOB NAME: STRIDE PROPERTIES LTD - FUTURE DEVELOPMENT
JOB LOCATION: No. 16A Wickham Street
JOB NUMBER: J4072

DRILL METHOD: Machine Auger
RIG: Hilux
DRILLER: RS

LOGGED: AT PLOTTED: AT
DATE LOGGED: 2/12/22
CHECKED:

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Geotechnical Engineers
1150 Victoria Street, P.O. Box 9123, Hamilton

BORE HOLE LOG

BORE HOLE No. 33
LOCATION: Refer Site Plan RL (m):
SHEET: 1 OF 1 Fig. No. A-33

BORE HOLE LOG No. 34

SOIL DESCRIPTION

DEPTH (metres)	GEOLOGICAL FORMATION	SOIL DESCRIPTION
0	Filling	FILLING: Mixture of Basecourse (GAP40), Silt and Clay. Uncontrolled, well compacted, moist, yellowish brown.
		FILLING: Mixture of Silt and Clay. Uncontrolled, low strength, moist, yellowish brown.
1	Swamp Deposit	PEAT. Very soft to firm, fibrous, moist to wet, blackish brown. Containing tree bark @ 1.1 metres. Becoming wet @ 4.5 metres.
5		clayey SILT. Stiff, slightly organic, wet, brown.
	Hinuera Formation	silty fine to medium SAND. Dense, saturated, yellowish grey.
6		Bottom of Bore Hole completed 5/12/22

SCALA PENETROMETER (blows/100mm): 1 2 3 4 5 6 7 8 9 10 — 20+ — 12

SHEAR VANE DIAL READING (In-situ/Remoulded)

PIEZOMETER / WATER LEVEL: End of Day

NOTES - The stratification lines represent the approximate boundary between soil types and the transition may be gradual.
- Scala test was carried out in 1.0 metre depth increments.

JOB NAME: STRIDE PROPERTIES LTD - FUTURE DEVELOPMENT
JOB LOCATION: No. 16A Wickham Street
JOB NUMBER: J4072

DRILL METHOD: Machine Auger
RIG: Hilux
DRILLER: RS

LOGGED: AT PLOTTED: AT
DATE LOGGED: 6/12/22
CHECKED: SJ

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Geotechnical Engineers
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BORE HOLE LOG

BORE HOLE No. 34
LOCATION: Refer Site Plan RL (m):
SHEET: 1 OF 1 Fig. No. A-34

BORE HOLE LOG No. 35

GRAPHIC LOG	SOIL DESCRIPTION	DEPTH (metres)	GEOLOGICAL FORMATION
	FILLING: Mixture of Basecourse (GAP 40) and Silt. Uncontrolled, well compacted, moist, greyish brown.	0	Filling
	PEAT. Very soft to stiff, fibrous, moist to wet, blackish brown. Containing tree bark @ 1.2 metres. Becoming wet @ 4.3 metres.	1 2 3 4	Swamp Deposit
	clayey SILT. Stiff, slightly organic, wet, brown.	5	Hinuera Formation
	silty fine to medium SAND. Medium dense to dense, saturated, light grey.		
	Bottom of Bore Hole completed 5/12/22	6	

SHEAR VANE DIAL READING (In-situ/Remoulded)

SCALA PENETROMETER (blows/100mm)

1 2 3 4 5 6 7 8 9 10

20+ 16 18

PIEZOMETER / WATER LEVEL

End of Day

NOTES - The stratification lines represent the approximate boundary between soil types and the transition may be gradual.
- Scala test was carried out in 1.0 metre depth increments.

JOB NAME: STRIDE PROPERTIES LTD - FUTURE DEVELOPMENT
JOB LOCATION: No. 16A Wickham Street, Hamilton
JOB NUMBER: J4072

DRILL METHOD: Machine Auger
RIG: Hilux
DRILLER: RS

LOGGED: AT PLOTTED: AT
DATE LOGGED: 6/12/22
CHECKED: SJ

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Geotechnical Engineers
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BORE HOLE LOG

BORE HOLE No. 35
LOCATION: Refer Site Plan RL (m):
SHEET: 1 OF 1 Fig. No. A-35

BORE HOLE LOG No. 36

GRAPHIC LOG	SOIL DESCRIPTION	DEPTH (metres)	GEOLOGICAL FORMATION
	FILLING: Mixture of Basecourse (GAP 40) and Blue/Brown Rock. Uncontrolled, well compacted, moist, light bluish grey.		Filling
	PEAT. Very soft to firm, fibrous, moist to wet, blackish brown. Becoming wet @ 2.3 metres.	1 2 3 4	Swamp Deposit
	clayey SILT. Firm to stiff, slightly organic, wet, brown.	5	
	silty fine to medium SAND. Medium dense to dense, saturated, light grey.	6	Hinuera Formation
	Bottom of Bore Hole completed 1/12/22		

SHEAR VANE DIAL READING (In-situ/Remoulded)

SCALA PENETROMETER (blows/100mm)

1 2 3 4 5 6 7 8 9 10 20 20+

PIEZOMETER / WATER LEVEL

End of Day

NOTES
- The stratification lines represent the approximate boundary between soil types and the transition may be gradual.
- Scala test was carried out in 1.0 metre depth increments.

JOB NAME: STRIDE PROPERTIES LTD - FUTURE DEVELOPMENT
JOB LOCATION: No. 16A Wickham Street, Hamilton
JOB NUMBER: J4072

DRILL METHOD: Machine Auger
RIG: Hilux
DRILLER: RS

LOGGED: AT PLOTTED: AT
DATE LOGGED: 2/12/22
CHECKED: JW

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Geotechnical Engineers
1150 Victoria Street, P.O. Box 9123, Hamilton

BORE HOLE LOG

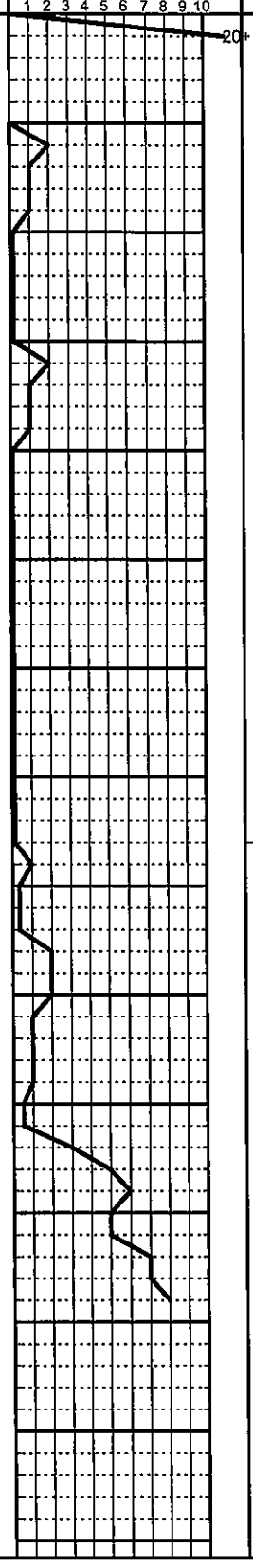
BORE HOLE No. 36
LOCATION: Refer Site Plan RL (m):
SHEET: 1 OF 1 Fig. No. A-36

BORE HOLE LOG No. 37

GRAPHIC LOG	SOIL DESCRIPTION	DEPTH (metres)	GEOLOGICAL FORMATION
	FILLING: Mixture of Basecourse (GAP 40) and Blue/Brown Rock. Uncontrolled, well compacted, moist greyish brown.		Filling
	FILLING: Mixture of Clay and Silt. Uncontrolled, low strength, moist, yellowish brown.		
	PEAT. Very soft to firm, moist to wet, fibrous, blackish brown. Becoming saturated @ 3.8 metres.	1 2 3 4	Swamp Deposit
	clayey SILT. Very soft, slightly organic, wet, light brown.	5	
	silty fine to medium SAND. Medium dense, saturated, light grey.		Hinuera Formation
	silty fine SAND. Medium dense to dense, saturated, yellowish grey.		
	Bottom of Bore Hole completed 28/11/22	6	

SHEAR VANE DIAL READING (In-situ/Remoulded)

SCALA PENETROMETER (blows/100mm)



PIEZOMETER / WATER LEVEL

End of Day

NOTES
- The stratification lines represent the approximate boundary between soil types and the transition may be gradual.
- Scala test was carried out in 1.0 metre depth increments.

JOB NAME: STRIDE PROPERTIES LTD - FUTURE DEVELOPMENT
JOB LOCATION: No. 16A Wickham Street, Hamilton
JOB NUMBER: J4072

DRILL METHOD: Machine Auger
RIG: Hilux
DRILLER: RS

LOGGED: AT PLOTTED: RS
DATE LOGGED: 28/11/22
CHECKED: SJ

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BORE HOLE LOG

BORE HOLE No. 37
LOCATION: Refer Site Plan RL (m):
SHEET: 1 OF 1 Fig. No. A-37

BORE HOLE LOG No. 38

GRAPHIC LOG	SOIL DESCRIPTION	DEPTH (metres)	GEOLOGICAL FORMATION
	FILLING: Mixture of Basecourse (GAP 40) and Topsoil. Uncontrolled, variable compaction, moist, greyish brown.	0	Filling
	PEAT. Very soft to firm, moist to wet, fibrous, blackish brown. Becoming wet @ 3.5 metres.	1 – 4	Swamp Deposit
	clayey SILT. Very stiff, slightly organic, wet, light brown.	5	Hinuera Formation
	silty fine to medium SAND. Medium dense, saturated, light grey.		
	silty fine SAND. Medium dense to dense, saturated, yellowish grey.	6	
	Bottom of Bore Hole completed 28/11/22		

SHEAR VANE DIAL READING (In-situ/Remoulded)

SCALA PENETROMETER (blows/100mm)

1 2 3 4 5 6 7 8 9 10

PIEZOMETER / WATER LEVEL

End of Day

NOTES - The stratification lines represent the approximate boundary between soil types and the transition may be gradual.
- Scala test was carried out in 1.0 metre depth increments.

JOB NAME: STRIDE PROPERTIES LTD - FUTURE DEVELOPMENT
JOB LOCATION: No. 16A Wickham Street, Hamilton
JOB NUMBER: J4072

DRILL METHOD: Machine Auger
RIG: Hilux
DRILLER: RS

LOGGED: AT PLOTTED: RS
DATE LOGGED: 28/11/22
CHECKED: SW

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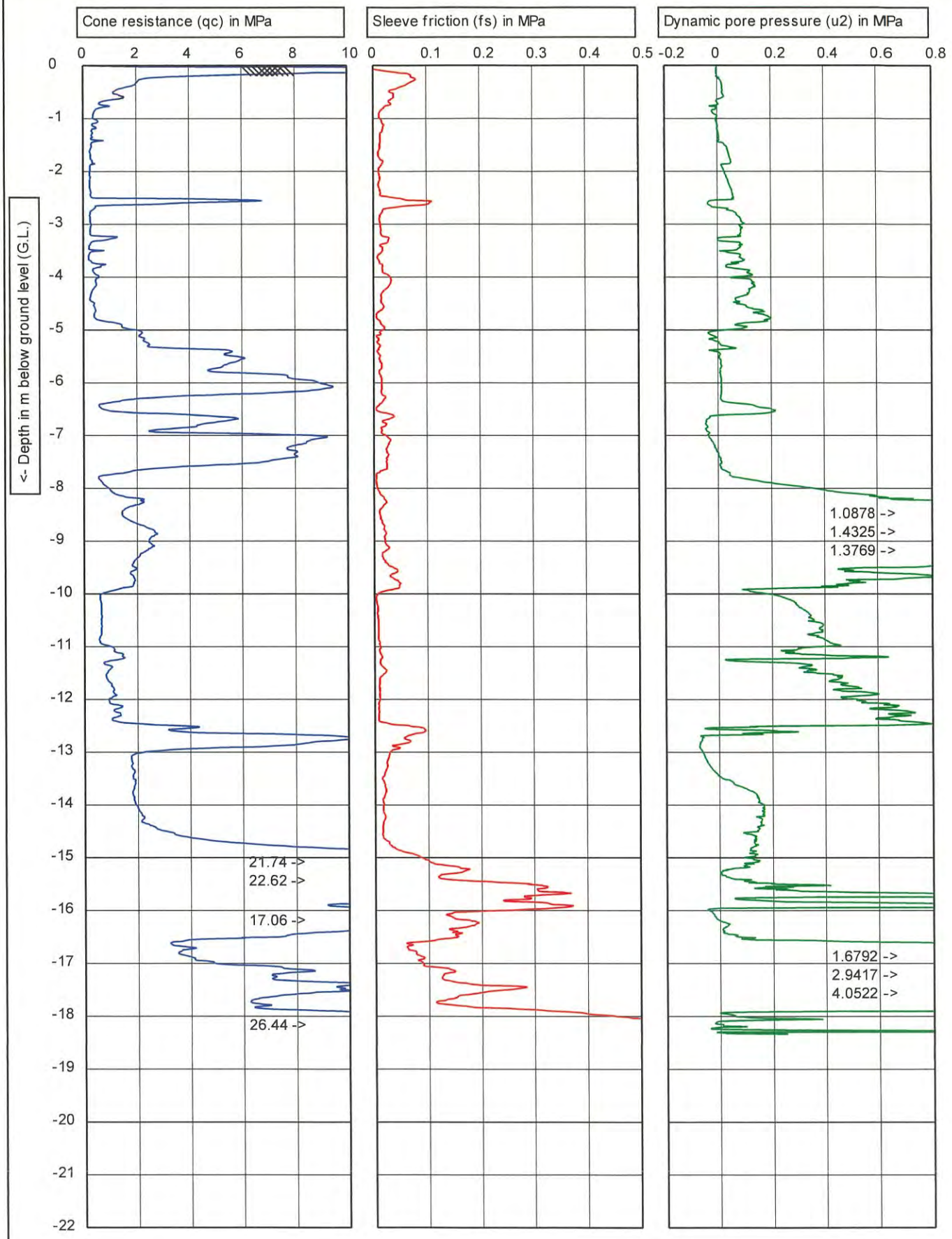
Geotechnical Engineers
1150 Victoria Street, P.O. Box 9123, Hamilton

BORE HOLE LOG

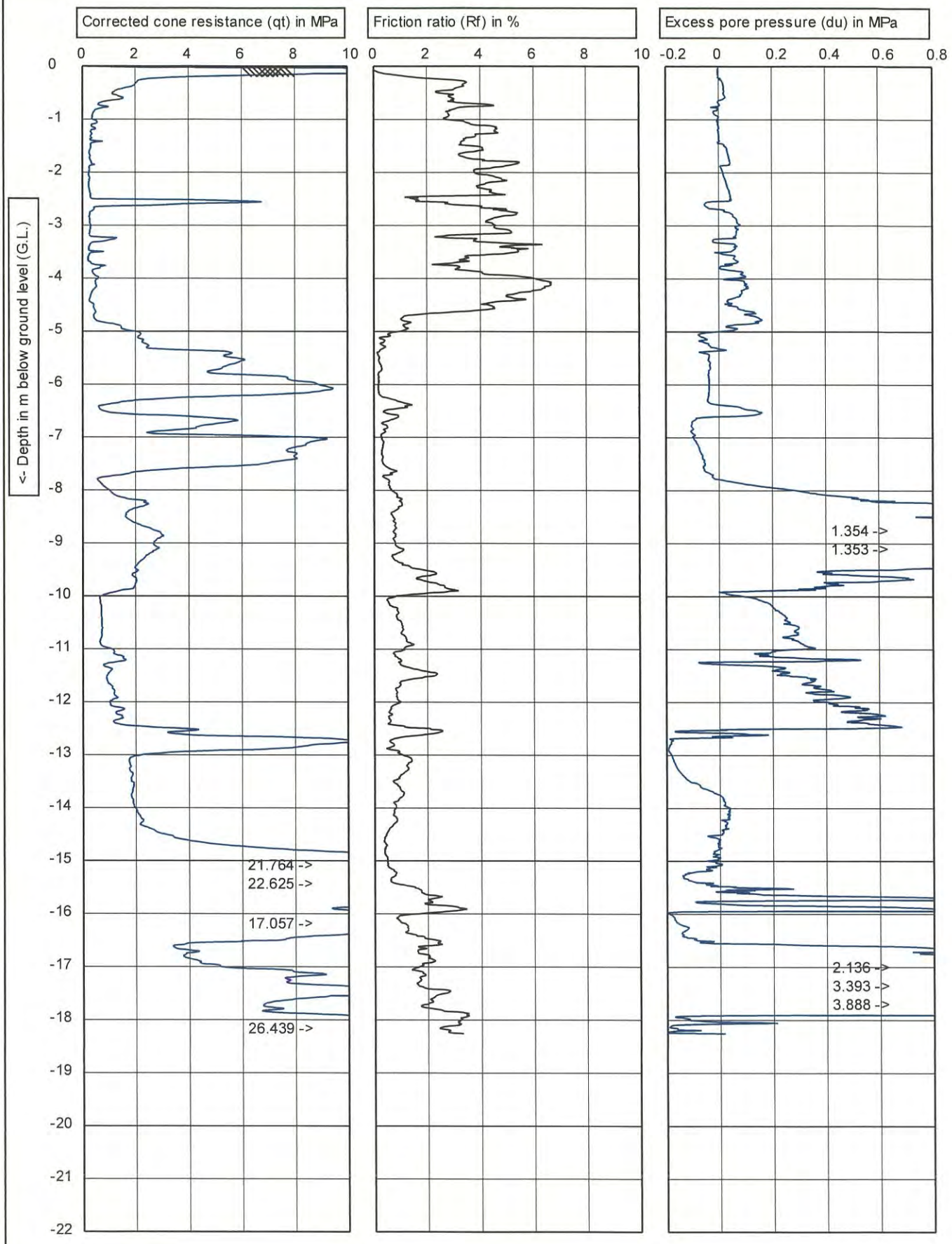
BORE HOLE No. 38
LOCATION: Refer Site Plan RL (m):
SHEET: 1 OF 1 Fig. No. A-38

APPENDIX C
CPT LOGS



WSP / IANZ accredited testing laboratory. Test results indicated as not accredited are outside the scope of the laboratory's accreditation	u2 150 cm² 10 cm²	Test according ASTM D5778:12 & ISO 22476-1:2012	Predrill: **0.00 m Predrilled**
		G.L.: **0.00 m MSL**	Date: **23/11/2022**
		Project: **16A Wickham St**	Cone no.: **C10CFIIP.C21105**
		Location: **Hamilton (J4072)**	Project no.: **2-68002.00_HA10003**
		Position: **1798551, 5812979 NZTM**	CPT no.: CPT11Fig. B-11A

1 49



Refusal 10t.

EOH - Dipped - Collapsed dry @ 1.0m

Graphs on this page are not IANZ accredited

r u2
150 cm²
10 cm²

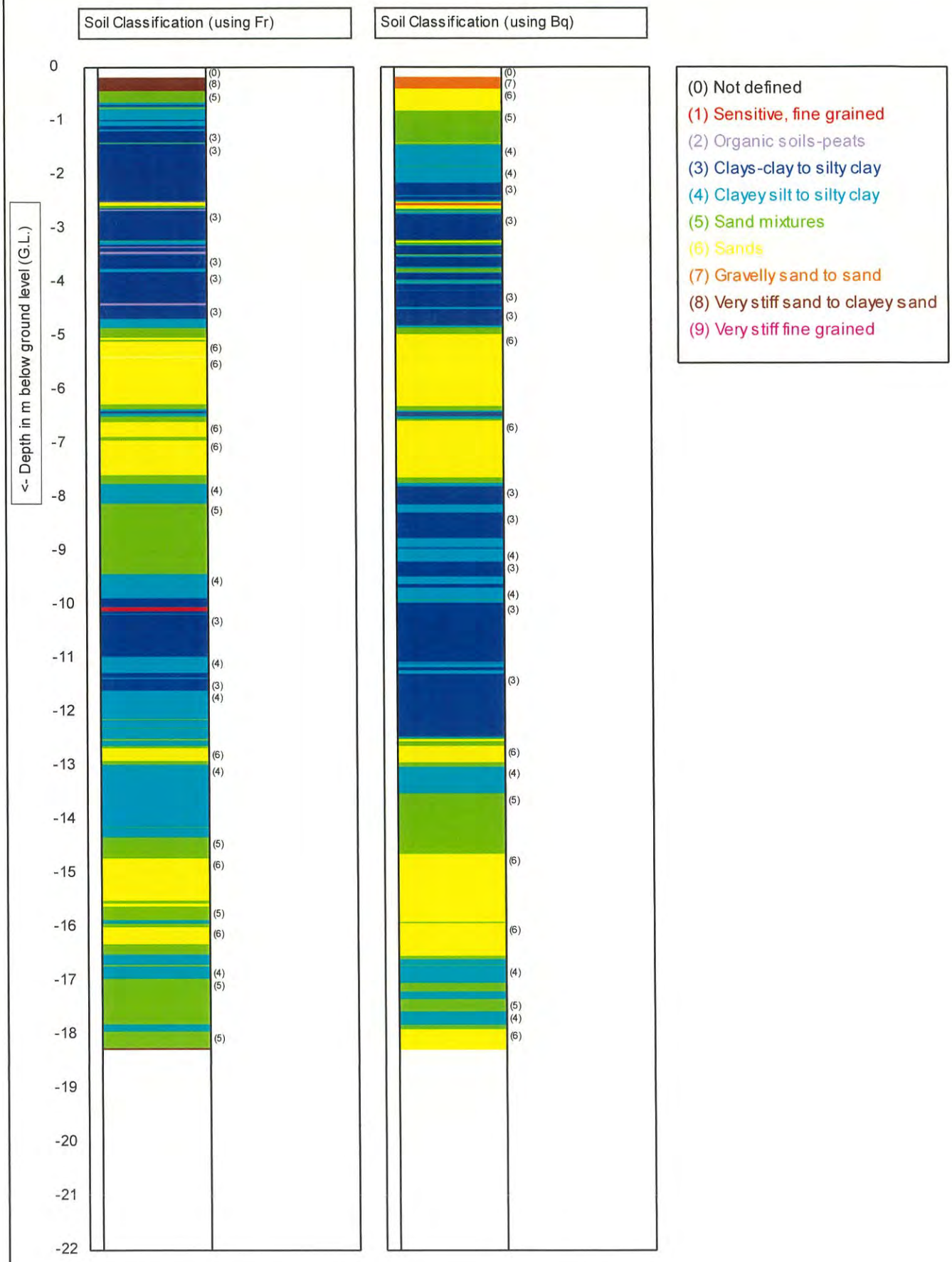
Test according ASTM D5778:12 & ISO 22476-1:2012

G.L.: **0.00 m MSL**

Project: **16A Wickham St**
Location: **Hamilton (J4072)**
Position: **1798551, 5812979 NZTM**

Predrill:	**0.00 m Predrilled**
Date:	**23/11/2022**
Cone no.:	**C10CFIIP.C21105**
Project no.:	**2-68002.00_HA10003**
CPT no.:	CPT11Fig. B-11B

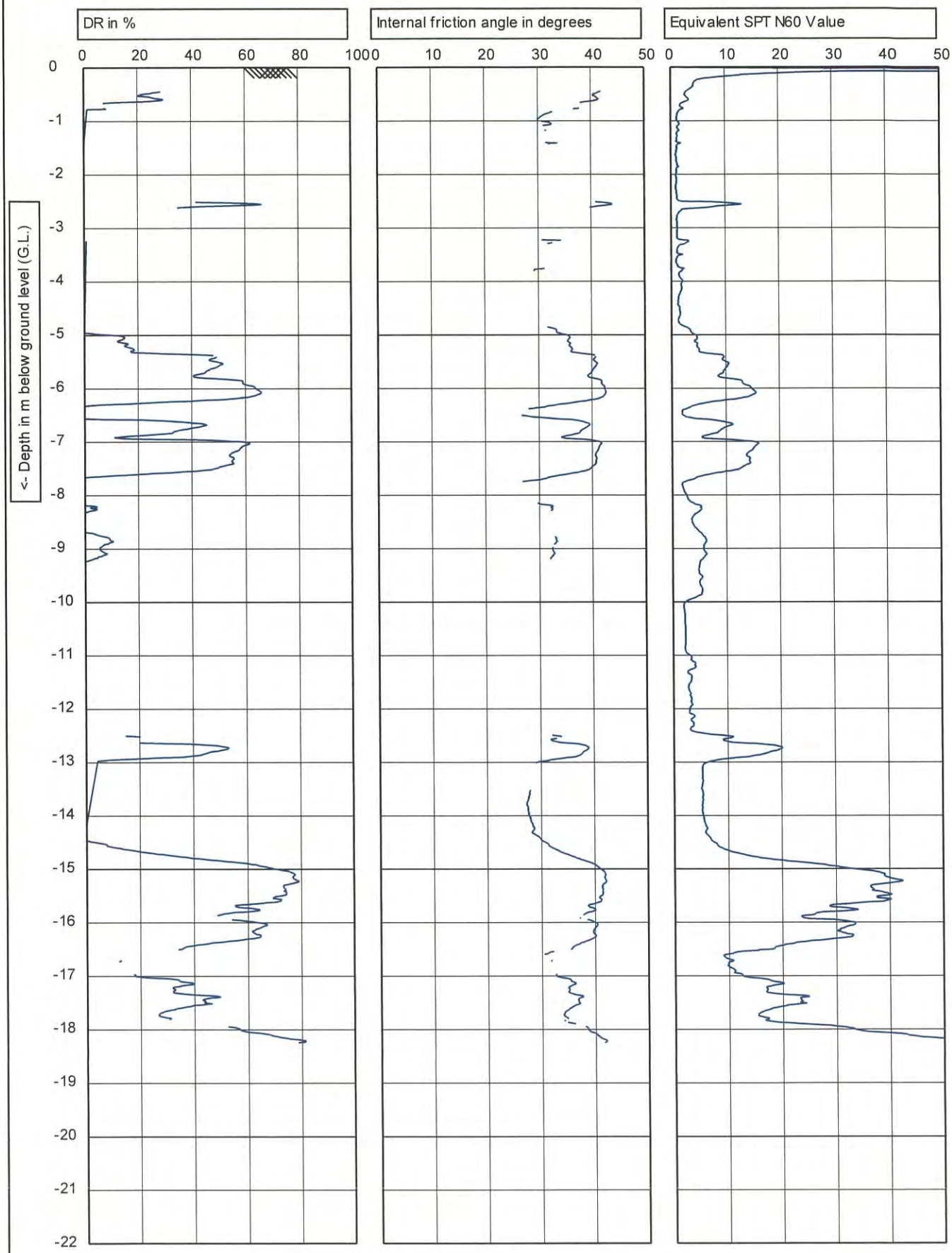
1 49



Graphs on this page are not IANZ accredited

r u2 / 150 cm² / 10 cm²	Test according ASTM D5778:12 & ISO 22476-1:2012	Predrill:	0.00 m Predrilled
	G.L.: 0.00 m MSL	Date:	23/11/2022
Project: 16A Wickham St		Cone no.:	C10CFIIP.C21105
Location: Hamilton (J4072)		Project no.:	2-68002.00_HA10003
Position: 1798551, 5812979 NZTM		CPT no.: CPT11Fig. B-11C	

1.49



Refusal 10t.

EOH - Dipped - Collapsed dry @ 1.0m

wsp

Graphs on this page are not IANZ accredited

qu2 150 cm² 10 cm²

Test according ASTM D5778:12 & ISO 22476-1:2012

G.L.: **0.00 m MSL**

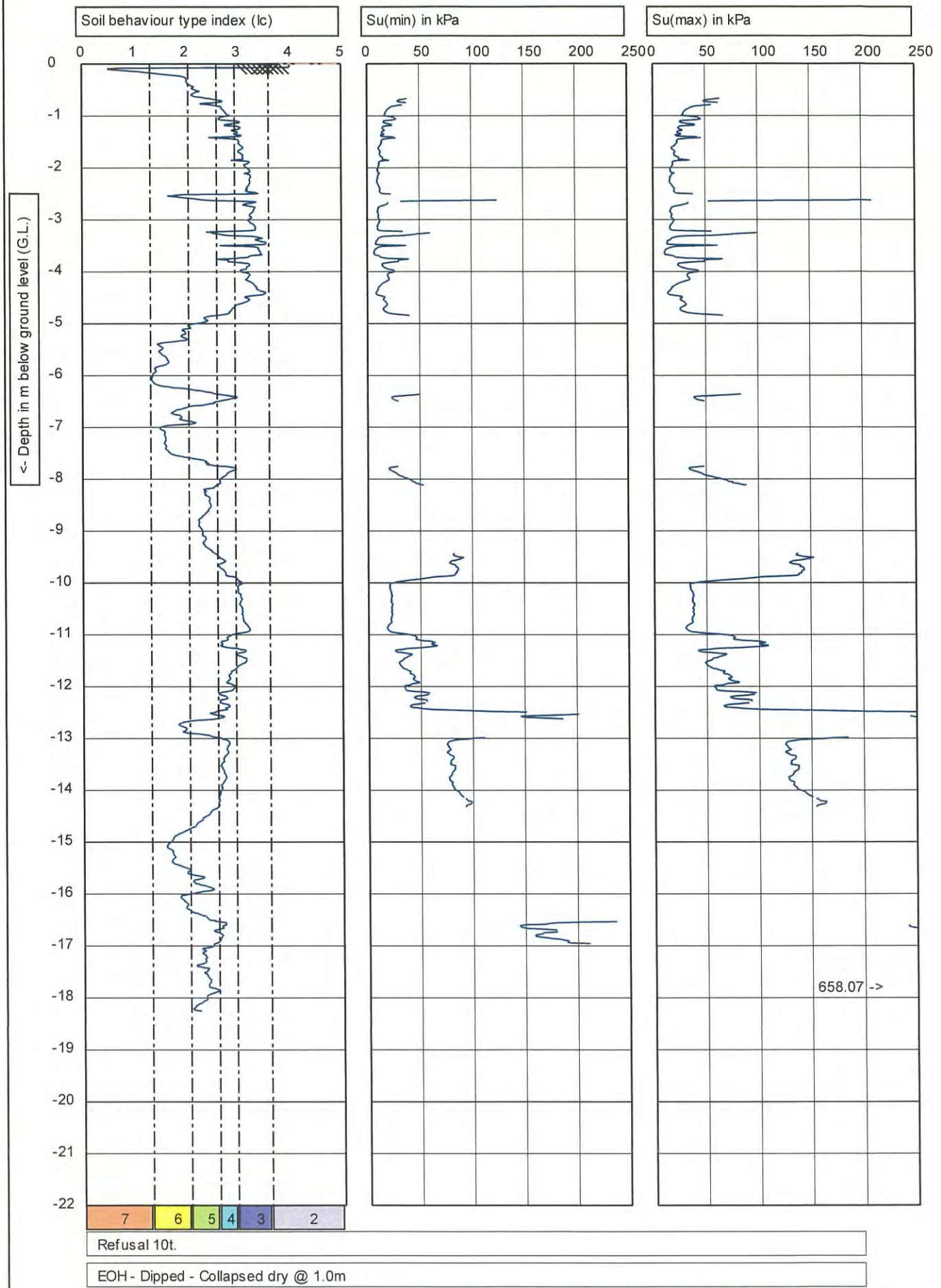
Project: **16A Wickham St**

Location: **Hamilton (J4072)**

Position: **1798551, 5812979 NZTM**

Predrill:	**0.00 m Predrilled**
Date:	**23/11/2022**
Cone no.:	**C10CFIIP.C21105**
Project no.:	**2-68002.00_HA10003**
CPT no.:	CPT11Fig. B-11D

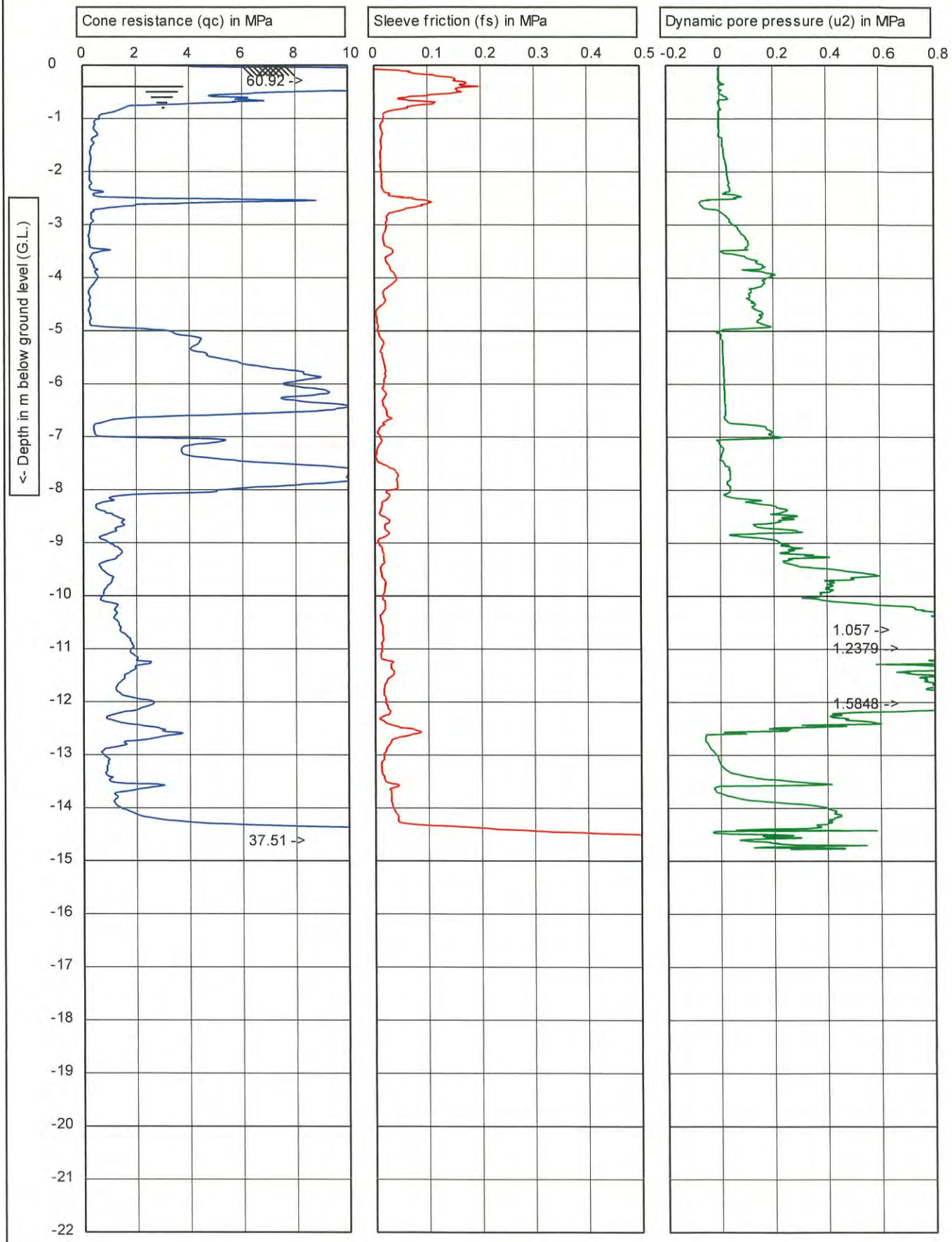
1.49



Graphs on this page are not IANZ accredited

r u2 150 cm² 10 cm²	Test according ASTM D5778:12 & ISO 22476-1:2012	Predrill:	0.00 m Predrilled
	G.L.: 0.00 m MSL	Date:	23/11/2022
Project: 16A Wickham St		Cone no.:	C10CFIIP.C21105
Location: Hamilton (J4072)		Project no.:	2-68002.00_HA10003
Position: 1798551, 5812979 NZTM		CPT no.: CPT11Fig. B-11E	

1.49



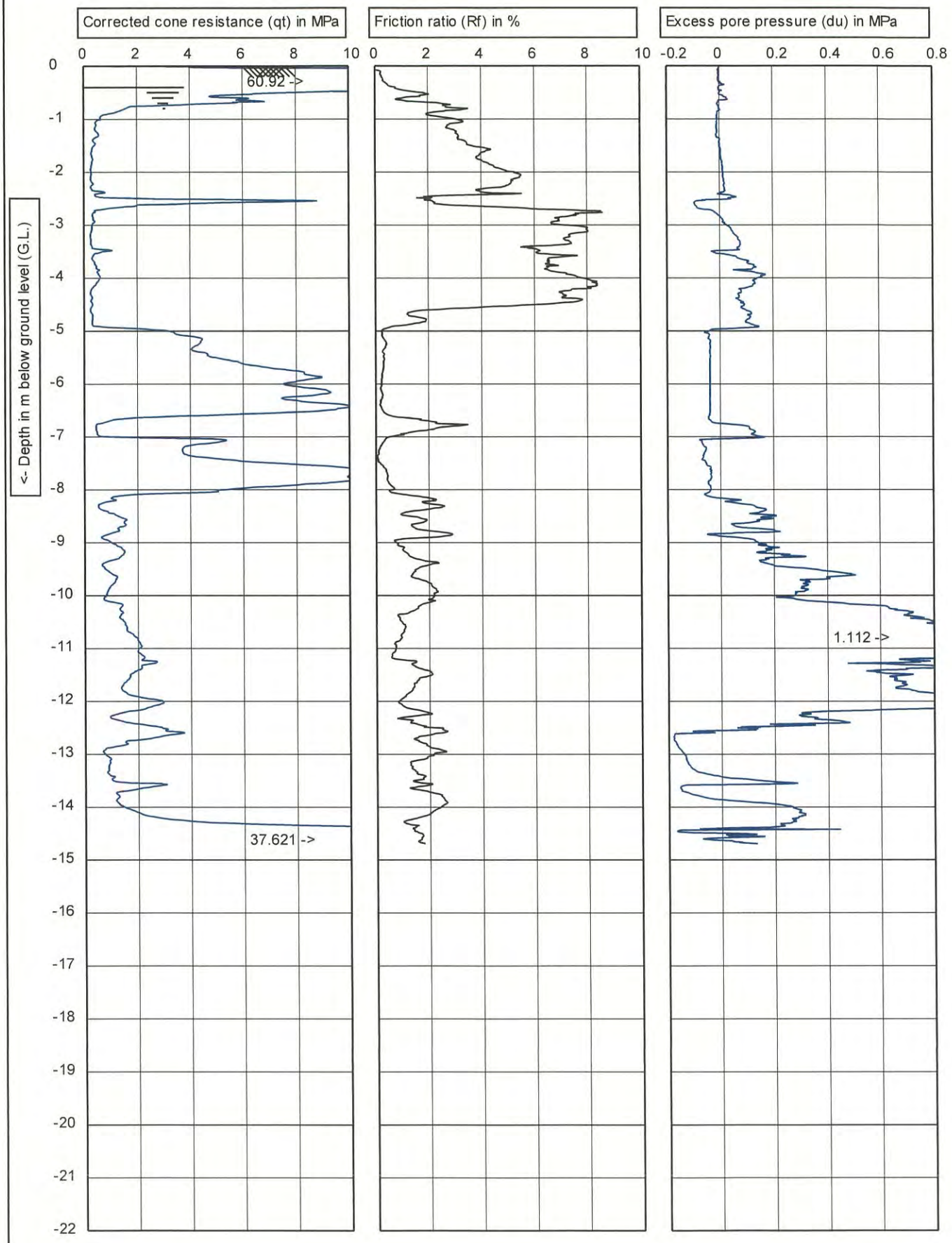
Refusal (qc 40+ MPa)

EOH - Dipped - GWL @ 0.4m

	Test according ASTM D5778:12 & ISO 22476-1:2012		Predrill: **0.00 m Predrilled**
r u2 150 cm² 10 cm²	G.L.: **0.00 m MSL**	W.L.: **-0.40 m**	Date: **23/11/2022**
Project: **16A Wickham St**			Cone no.: **C10CFIIP.C21109**
Location: **Hamilton (J4072)**			Project no.: **2-68002.00_HA10003**
Position: **1798597, 5812964 NZTM**			CPT no.: CPT12 Fig. B-12A

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

1.49



Refusal (qc 40+ MPa)

EOH - Dipped - GWL @ 0.4m

wsp

Graphs on this page are not IANZ accredited

u2 / 150 cm² / 10 cm²

Test according ASTM D5778:12 & ISO 22476-1:2012

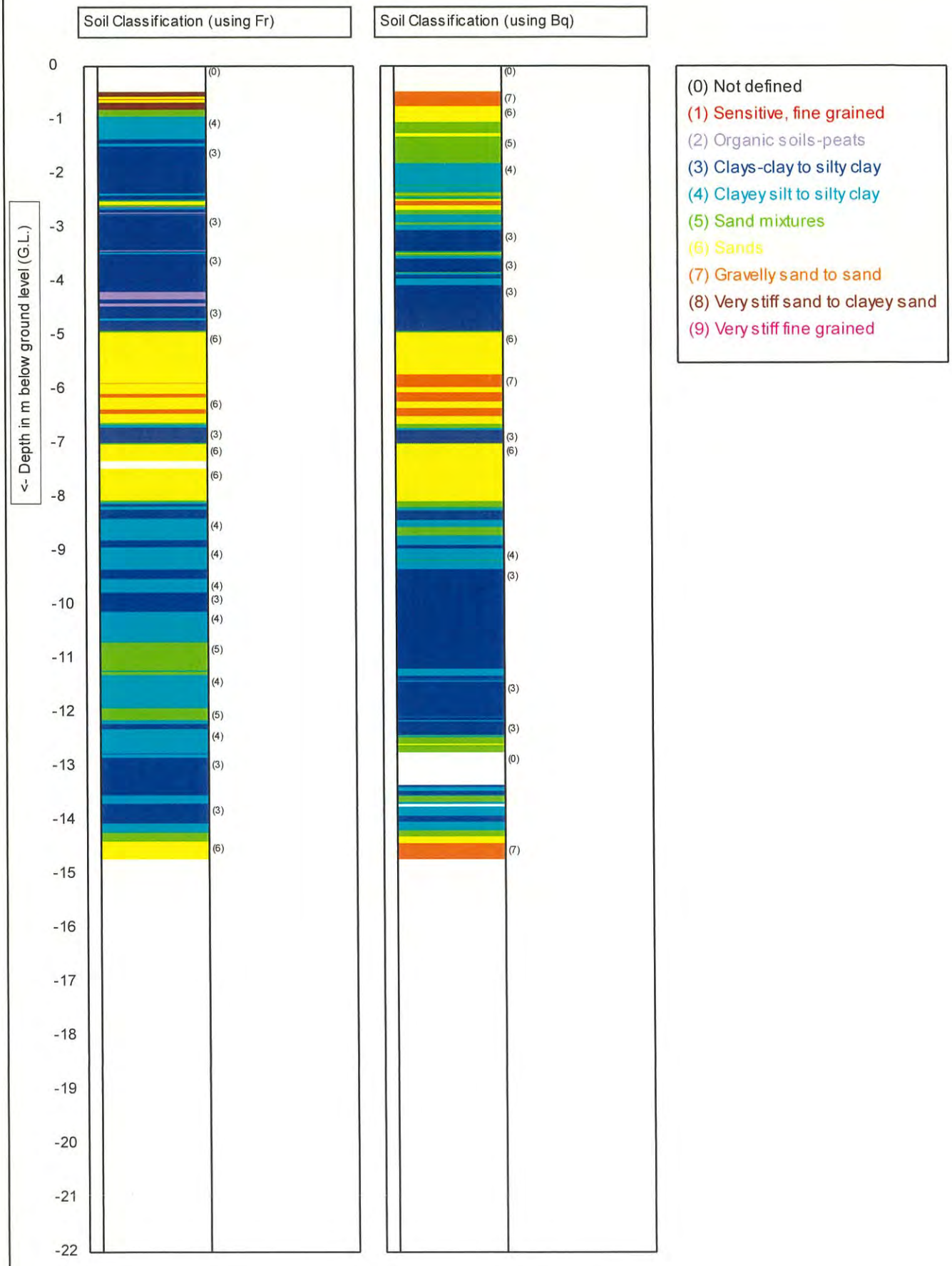
G.L.: **0.00 m MSL** | W.L.: **-0.40 m**

Project: **16A Wickham St**

Location: **Hamilton (J4072)**

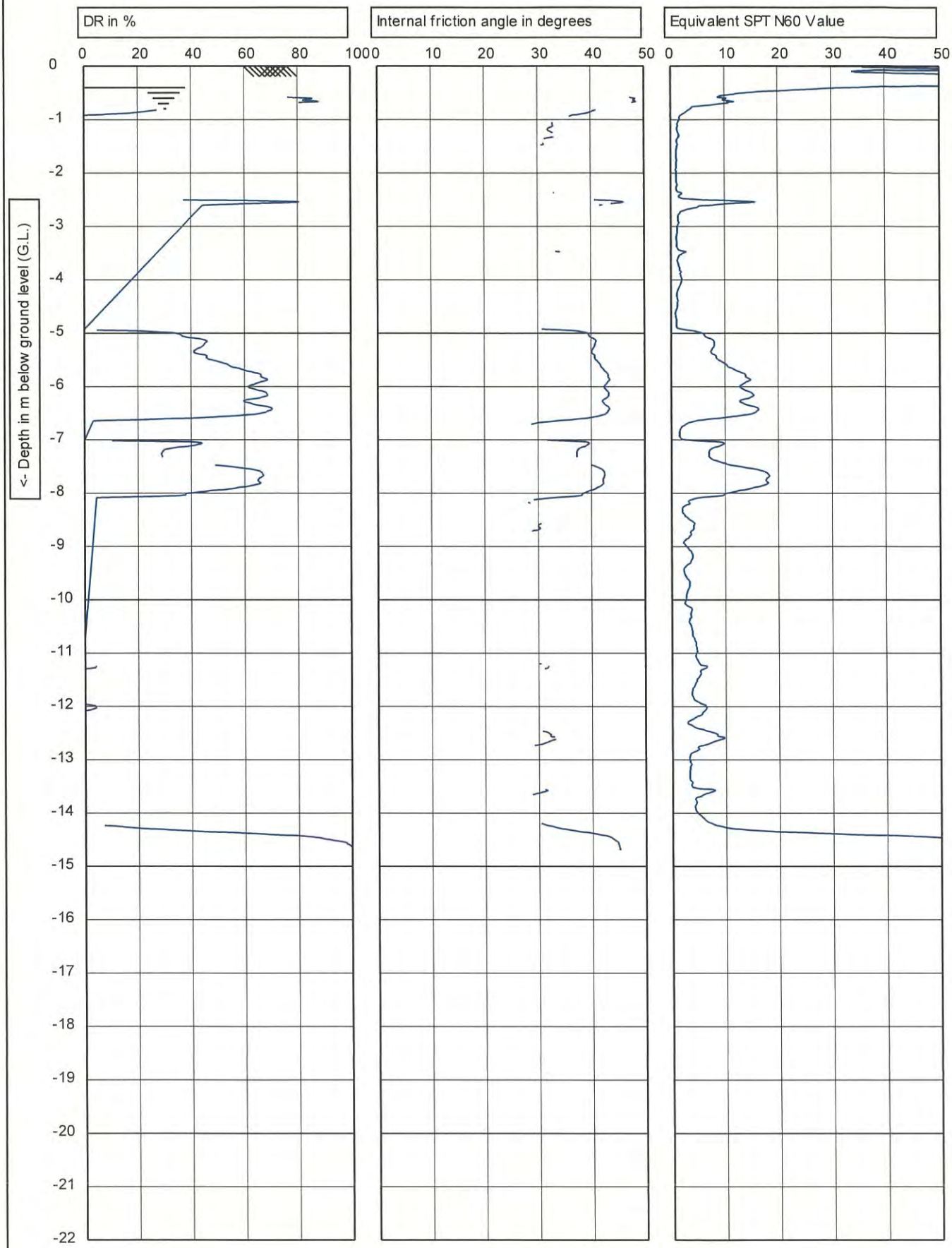
Position: **1798597, 5812964 NZTM**

Predrill:	**0.00 m Predrilled**
Date:	**23/11/2022**
Cone no.:	**C10CFIIP.C21109**
Project no.:	**2-68002.00_HA10003**
CPT no.:	CPT12 Fig. B-12B



Graphs on this page are not IANZ accredited

Test according ASTM D5778:12 & ISO 22476-1:2012		Predrill:	0.00 m Predrilled
G.L.: 0.00 m MSL	W.L.: -0.40 m	Date:	23/11/2022
Project: 16A Wickham St		Cone no.:	C10CFIIP.C21109
Location: Hamilton (J4072)		Project no.:	2-68002.00_HA10003
Position: 1798597, 5812964 NZTM		CPT no.:	CPT12 Fig. B-12C



Refusal (qc 40+ MPa)

EOH - Dipped - GWL @ 0.4m

Graphs on this page are not IANZ accredited

r u2
150 cm²
10 cm²

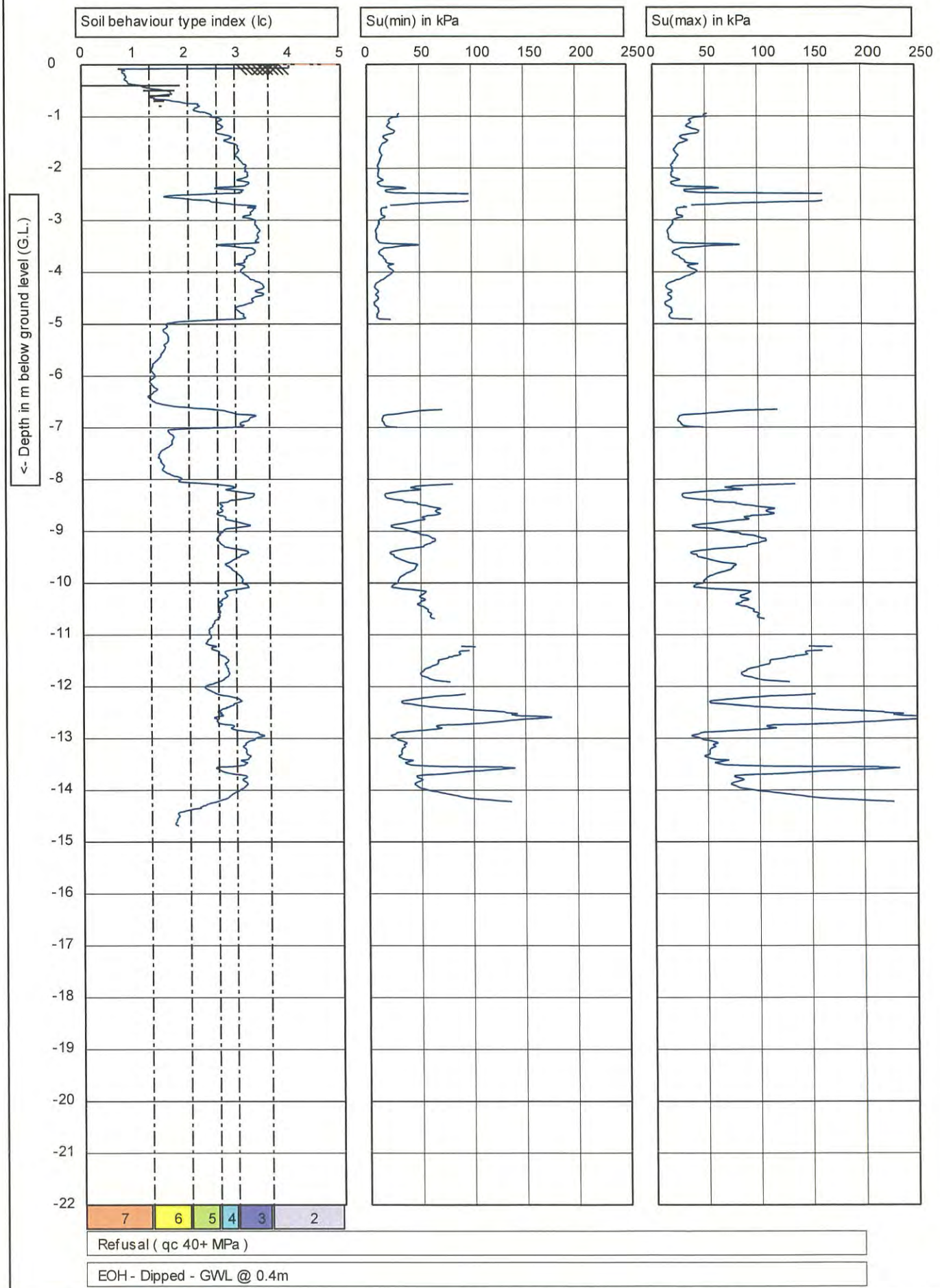
Test according ASTM D5778:12 & ISO 22476-1:2012

G.L.: **0.00 m MSL** | W.L.: **-0.40 m**

Project: **16A Wickham St**
Location: **Hamilton (J4072)**
Position: **1798597, 5812964 NZTM**

Predrill:	**0.00 m Predrilled**
Date:	**23/11/2022**
Cone no.:	**C10CFIIP.C21109**
Project no.:	**2-68002.00_HA10003**
CPT no.:	CPT12 Fig. B-12D

1.49



Graphs on this page are not IANZ accredited

r u2
150 cm²
10 cm²

Test according ASTM D5778:12 & ISO 22476-1:2012

G.L.: **0.00 m MSL** | W.L.: **-0.40 m**

Project: **16A Wickham St**
Location: **Hamilton (J4072)**
Position: **1798597, 5812964 NZTM**

Predrill:	**0.00 m Predrilled**
Date:	**23/11/2022**
Cone no.:	**C10CFIIP.C21109**
Project no.:	**2-68002.00_HA10003**
CPT no.:	CPT12 Fig. B-12E

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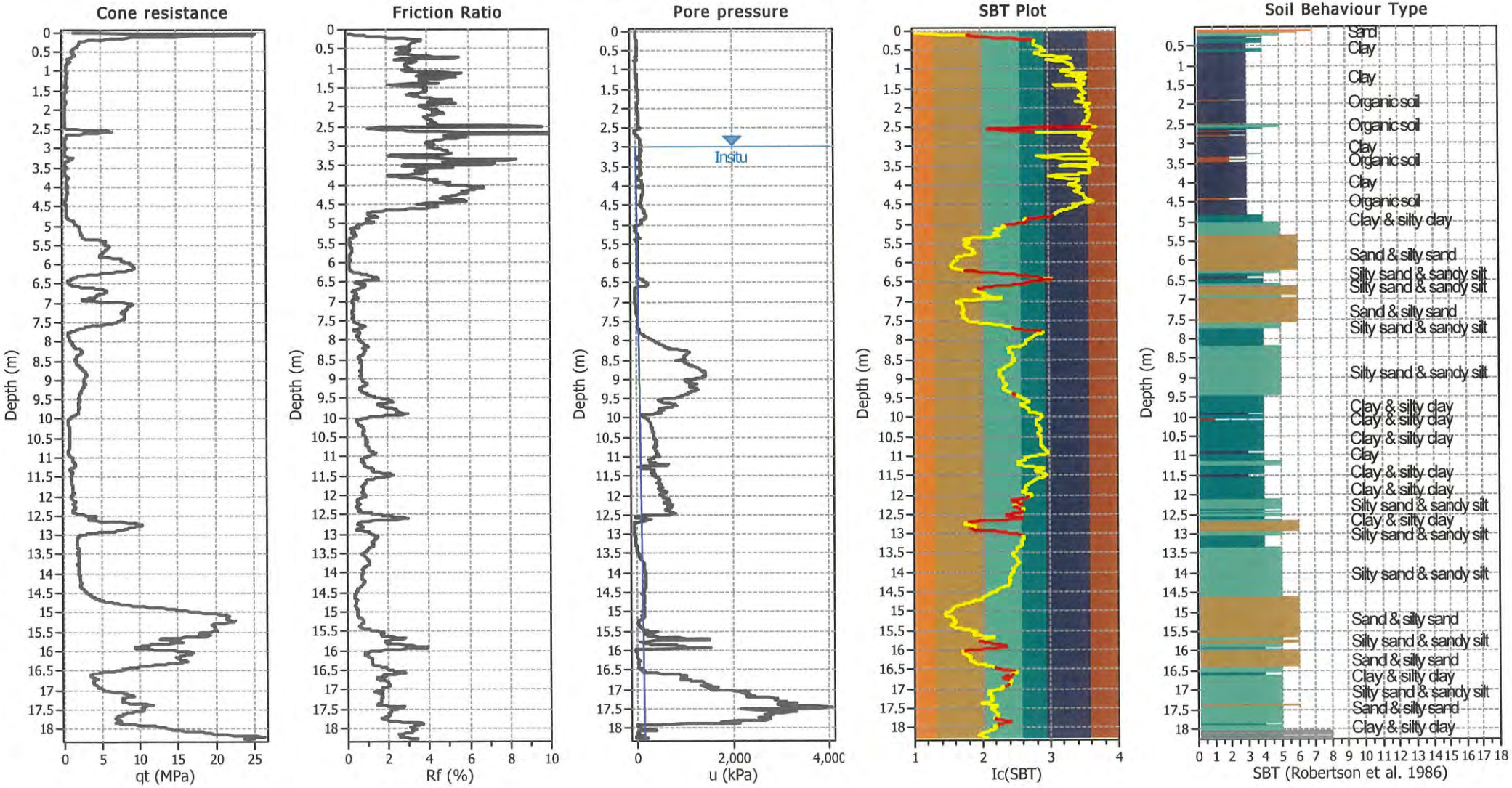
APPENDIX D
LIQUEFACTION ASSESSMENT

CPT basic interpretation plots



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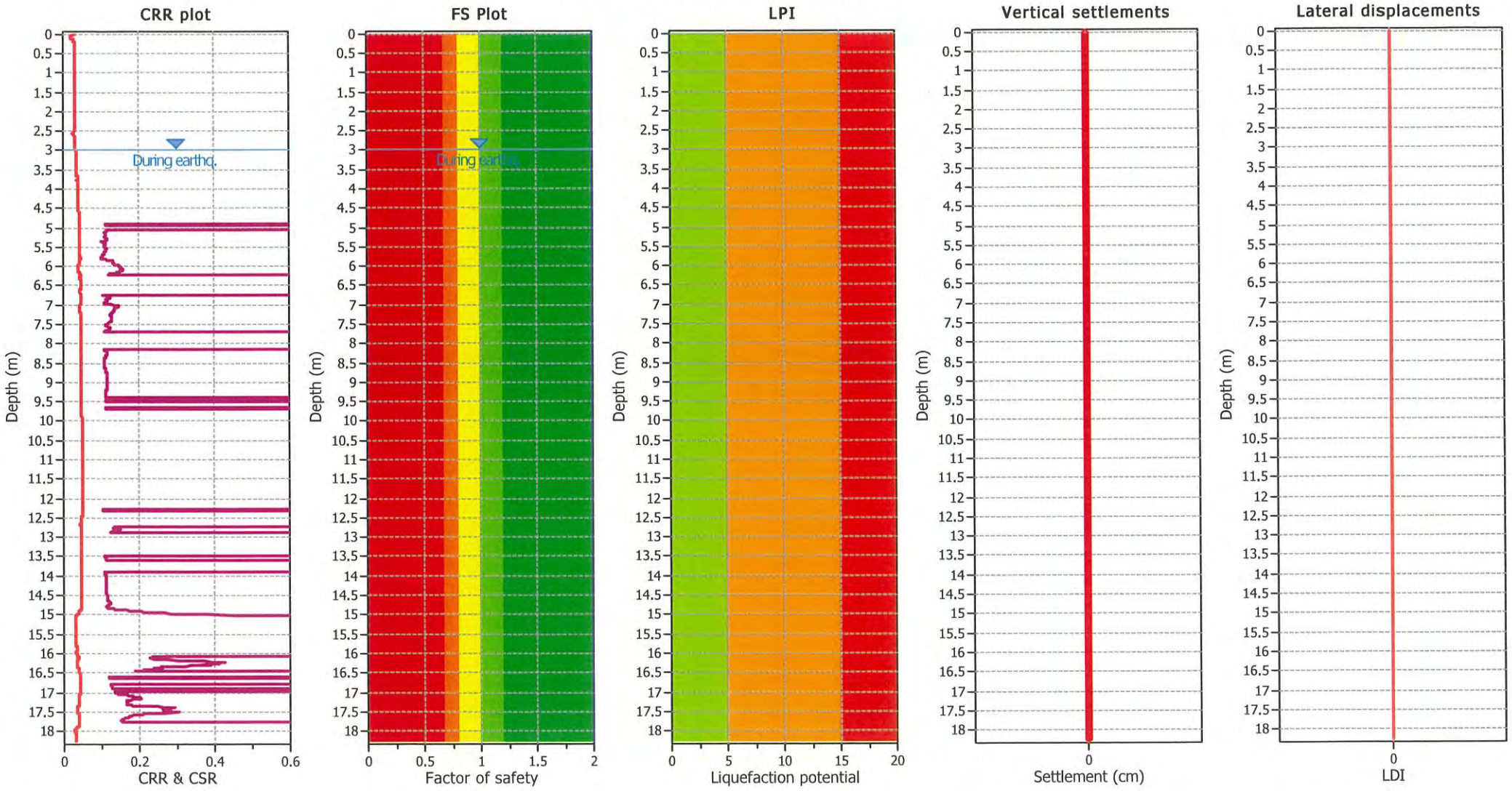
Peak ground acceleration:	0.06	Use fill:	No	Limit depth applied:	No		
Depth to water table (insitu):	3.00 m	Fill height:	N/A	Limit depth:	N/A		

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



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Depth to water table (insitu):	3.00 m	Fill height:	N/A	Limit depth:	N/A

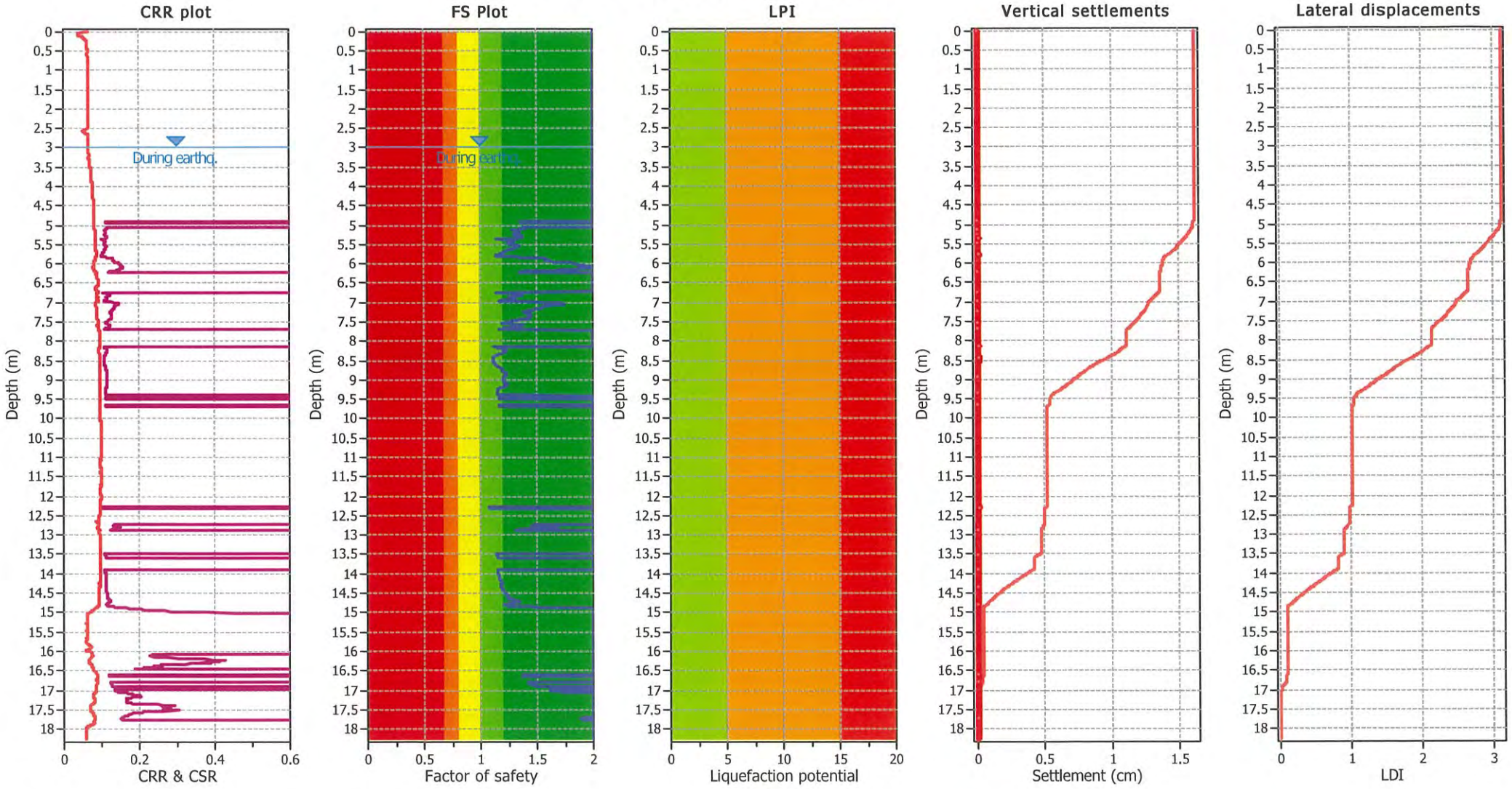
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis overall plots



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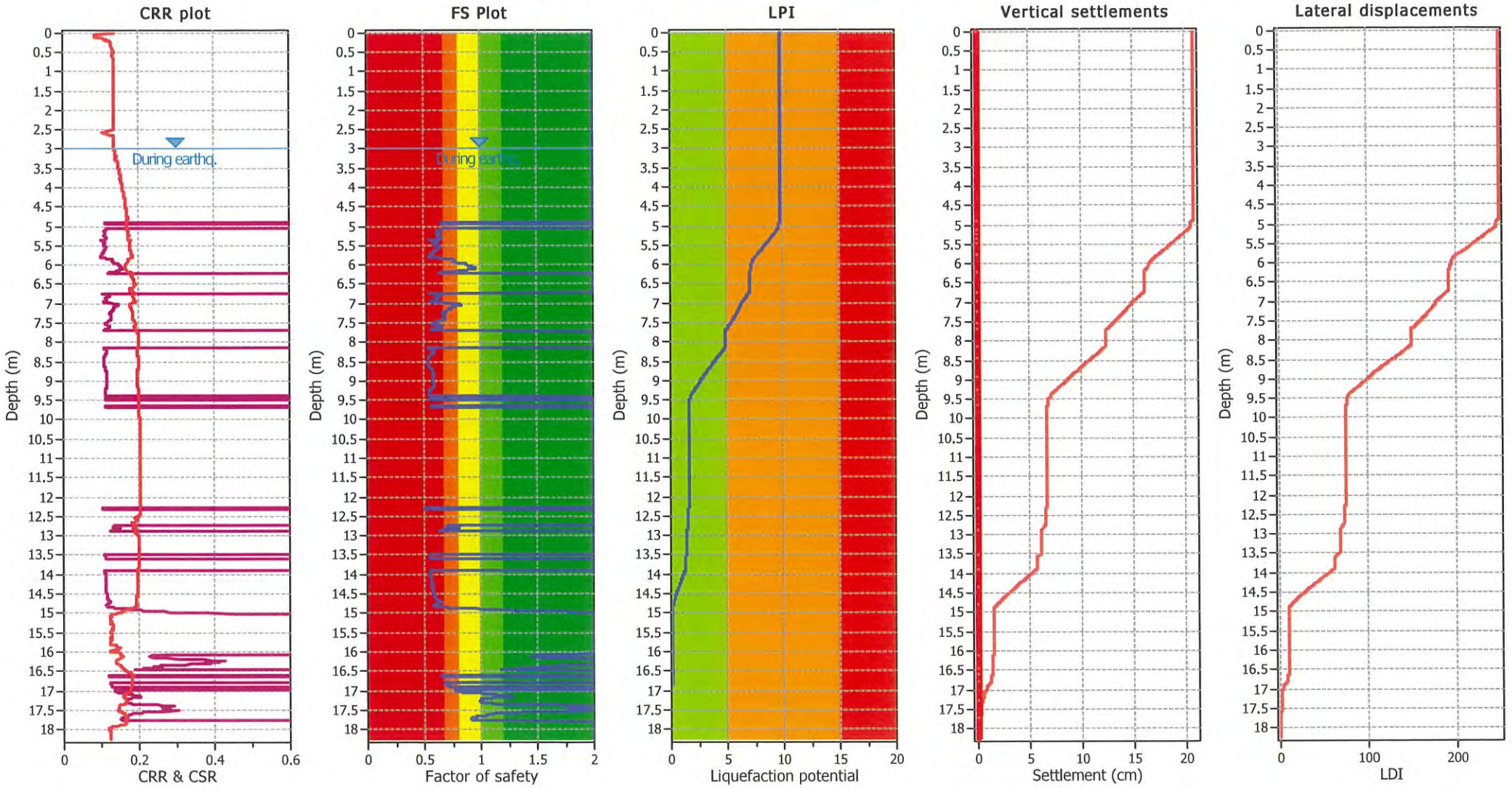

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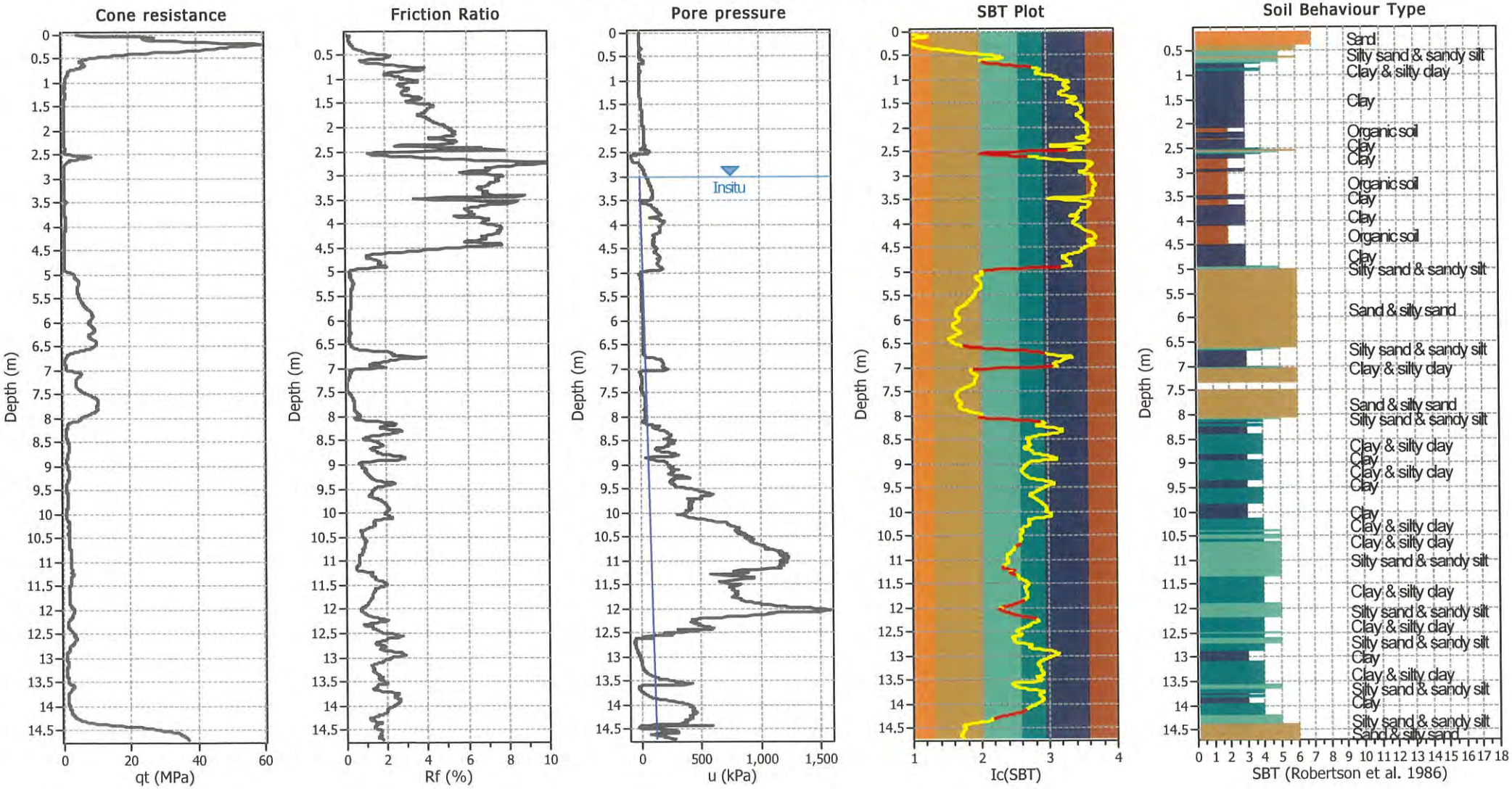

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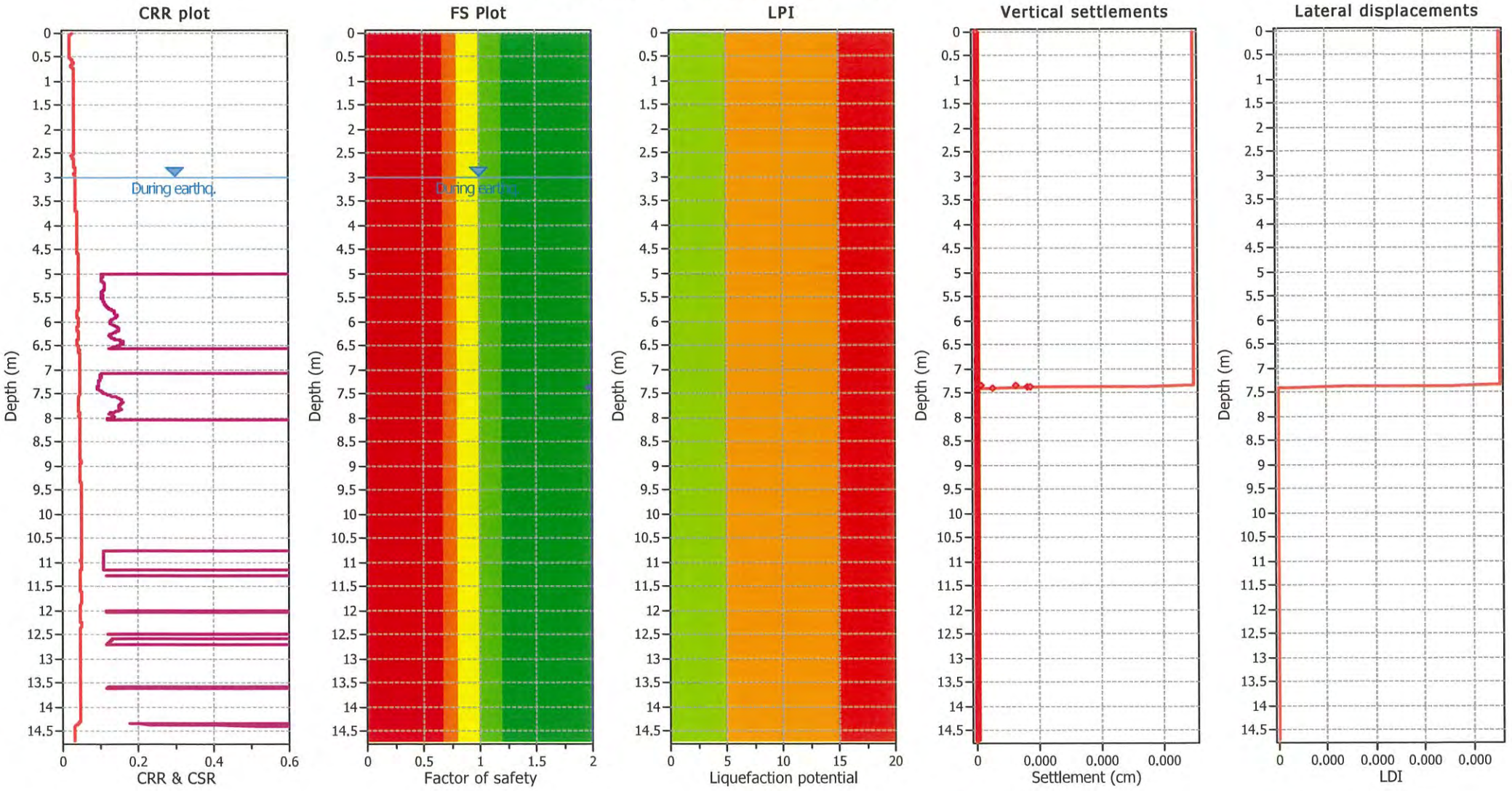

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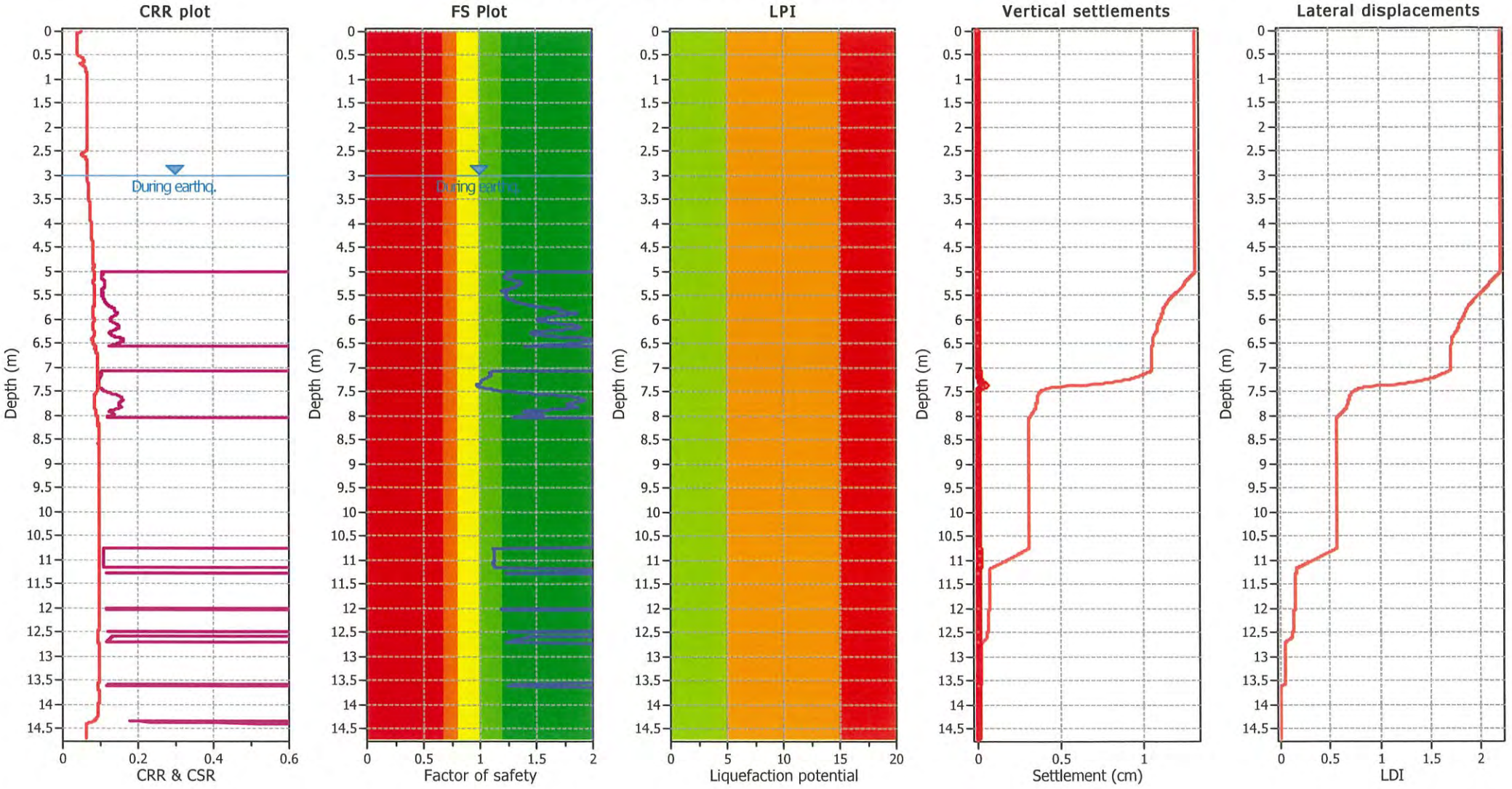

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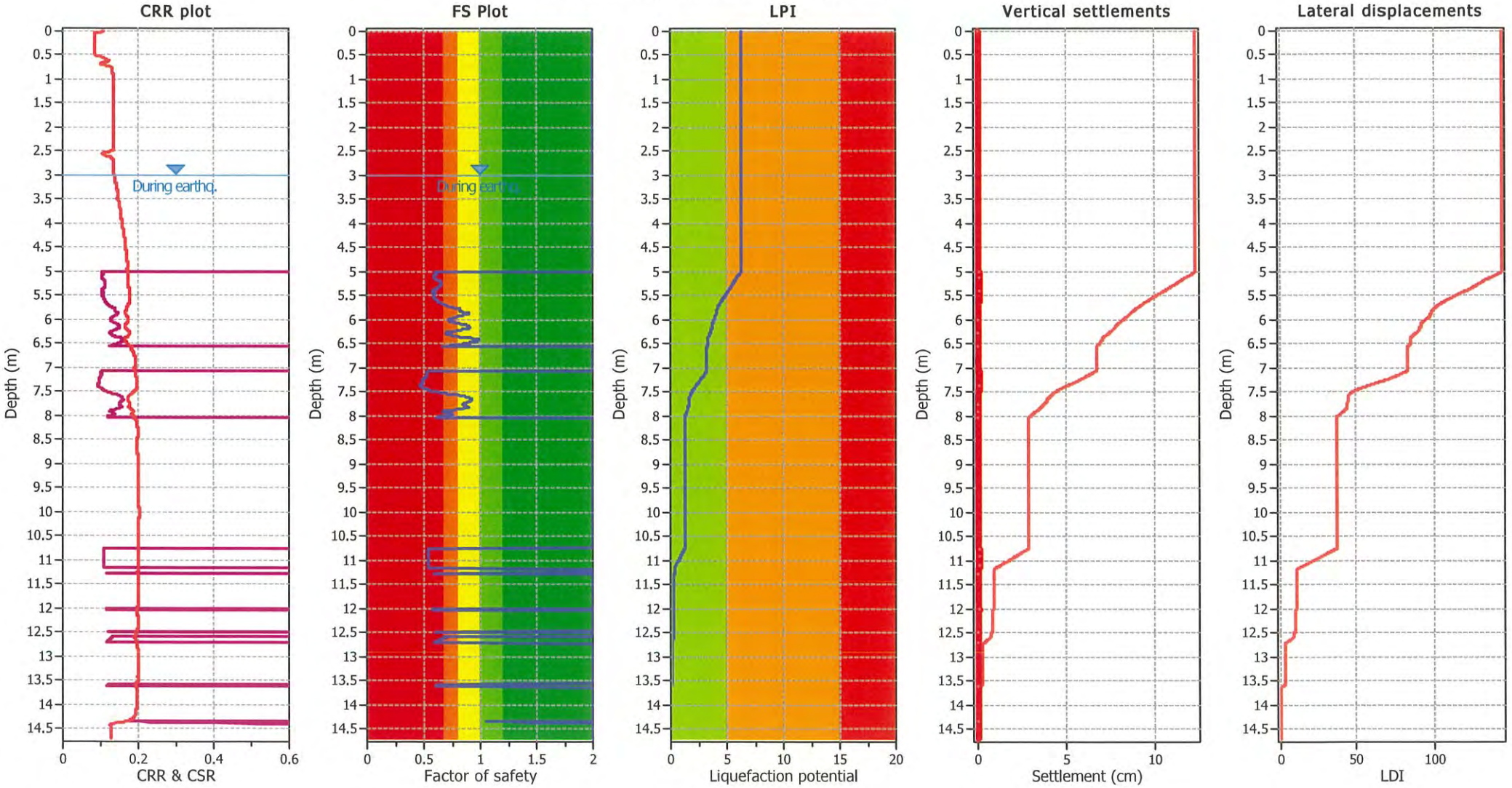

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APPENDIX E

LIQUEFACTION INDUCED PILE DOWNDRAG CALCULATIONS

1 Introduction

These calculations set out the basis for estimating foundation bearing capacity for piles. The methodology is based on NZ Building Code B1/VM4.

2 Notation

The following notation is adopted in these calculations:

S_u	Soil undrained shear strength (kPa)
c'	Soil effective cohesion (kPa)
ϕ'	Soil effective internal friction (deg)
γ	Soil unit weight (kN/m^3)
L	Length of pile shaft (m)
d_{water}	Depth to water table (m)
D_b	Pile base diameter (m)
N_c	Bearing capacity factor
N_q	Bearing capacity factor
N_γ	Bearing capacity factor
D_b	Pile diameter at base (m)

3 Soil and Pile Properties

The following table sets out the parameters adopted for soil strength and density, and the specific pile parameters:

Parameter	Value	Unit
S_u		kPa
c'	0.0	kPa
ϕ	35.0	^{o}
γ	18.0	kN/m^3
d_{water}	3.0	m
d	8.0	m
D_b	0.2	m

4 End Bearing Capacity

Ultimate end bearing capacity is estimated with the bearing capacity equation (Section 4.1 of B1/VM4) as follows:

$$q_u = c'.N_c + q'.N_q + 0.6.D_b.\gamma'.N_\gamma$$

Where:

$N_q = e^{\pi \tan\phi} \tan^2\left(45 + \frac{\phi}{2}\right)$

$N_c = (N_q - 1)\cot\phi$ =5.14 for $\phi = 0$

$N_\gamma = 2(N_q - 1)\tan\phi$

The calculated bearing capacity factors are:

Parameter	Value	Unit
N_c	46.12	
N_q	33.30	
N_γ	45.23	

The calculated capacity is:

Parameter	Value	Unit
q_u	3184	kPa
Q_u	156	kN

Planning | Surveying | Engineering | Environmental

Integrated Transportation Assessment

Stride Property Ltd

ITA - 16A Wickham Street, Hamilton, New Zealand

DOCUMENT CONTROL

CKL REFERENCE	B22188
DOCUMENT STATUS	Draft
REVISION NO.	3
FILE NAME	B22188-TR- -ITA Highlighted
AUTHOR	Samuel Peploe Transportation Planner 
AUTHORISED BY	Judith Makinson Transportation Engineering Manager 
OFFICE OF ORIGIN	Hamilton

TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

TABLE OF APPENDICES

1 Introduction

1.1.1 This Integrated Transportation Assessment (ITA) has been prepared to assess the traffic effects of a proposed warehouse development located at 16A Wickham Street in Frankton, Hamilton. The site itself lies within the jurisdiction of Waipa District Council (WDC), however road access is from within Hamilton City only. This ITA has therefore been prepared to accompany a land use consent application to WDC but recognises the potential effects on the road networks controlled by both Hamilton City Council (HCC) and Waka Kotahi. As such, this ITA references the HCC standards in terms of network capacity assessment given all roading effects would lie within Hamilton City, and WDC standards in relation to wider Rules compliance for parking and means of access.

1.1.2 By way of summary, it is concluded that the proposed warehouse development can be operated from the site in a such a way that results in less than minor traffic effects on the surrounding road network.

2 Site Location

2.1.1 The subject site is located at 16A Wickham Street, Hamilton. Whilst the site is adjacent to the HCC boundary and accessed from the HCC transportation network, it is located within the WDC jurisdiction. The site is zoned Rural under the WDC Operative District Plan (ODP). The site's legal description is Lot 1DP 396081.

2.1.2 The site location is highlighted in red in Figure 1 and is currently operated as:

- Overnight storage for vehicles and asphalt material and associated site offices;
- Transportable house depot (sale and construction) and associated offices; and
- Timber sales yard.

Figure 1: Site Location

2.1.3 The site is generally flat and rectangular in shape and covers some 2 hectares (ha) in total. The boundary between HCC and WDC is located along the storm drain to the north of the adjacent Waste Management site.

2.1.4 The surrounding land use is predominantly industrial to the north and rural to the south.

2.1.5 Wickham Street ends at the HCC/Waipa boundary. The site takes access via a Rights of Way (ROW) to Wickham Street. The arrangement is illustrated in Figure 2 with the vehicle crossing outlined in the blue. The subject site at 16A Wickham Street has access via a right-of-way onto Wickham Street.

Figure 2: Vehicle Crossing to Site (From Waipa InterMaps)

2.1.6 This vehicle crossing has a width of approximately 8m which is sufficient to allow for two vehicles to pass each other.

3 Existing Environment

3.1 Road Network

3.1.1 Wickham Street is defined as a local road under Appendix 15-4 of the HCC ODP and primarily provides access to the surrounding industrial properties. It is a no-exit road approximately 225m in length and operates under a 50km/h speed limit. The carriageway is unmarked but is of sufficient width to allow two-way traffic movement and support on-street parking. A footpath extends along the majority of the eastern side of Wickham Street. The cross section of Wickham Street is shown in Figure 3 with Figure 4 to Figure 6 showing the general environment of Wickham Street.

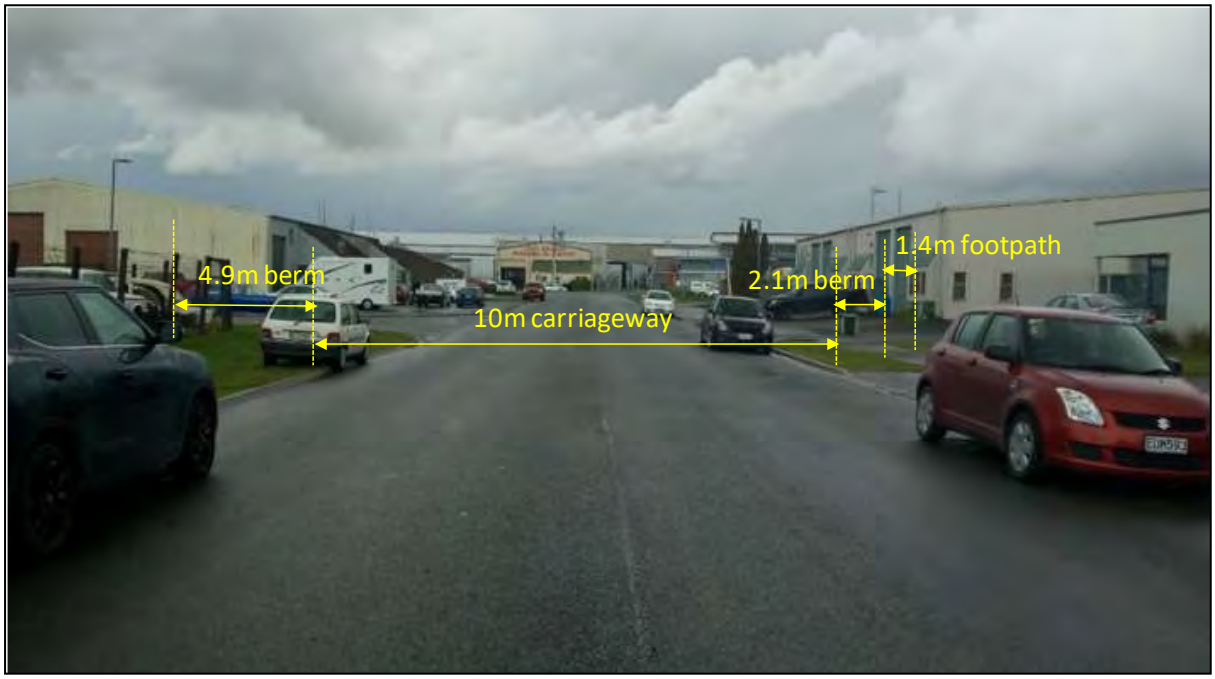


Figure 3: Wickham Street Cross Section (Looking North)

Figure 4: Wickham Street, Looking South from Kahikatea Drive

Figure 5: Shared Vehicle Access to Site

Figure 6: Wickham Street, Looking North from Site Access

3.1.2 Wickham Street intersects with Kahikatea Drive at a priority-controlled, T-intersection. At this point, Kahikatea Drive is classified as a collector road and operates under a 50km/h speed limit. Kahikatea Drive provides property access and through traffic functions and connects SH1c in the east with Higgins Road in the west. The typical cross section of Kahikatea Drive is shown in Figure 7.

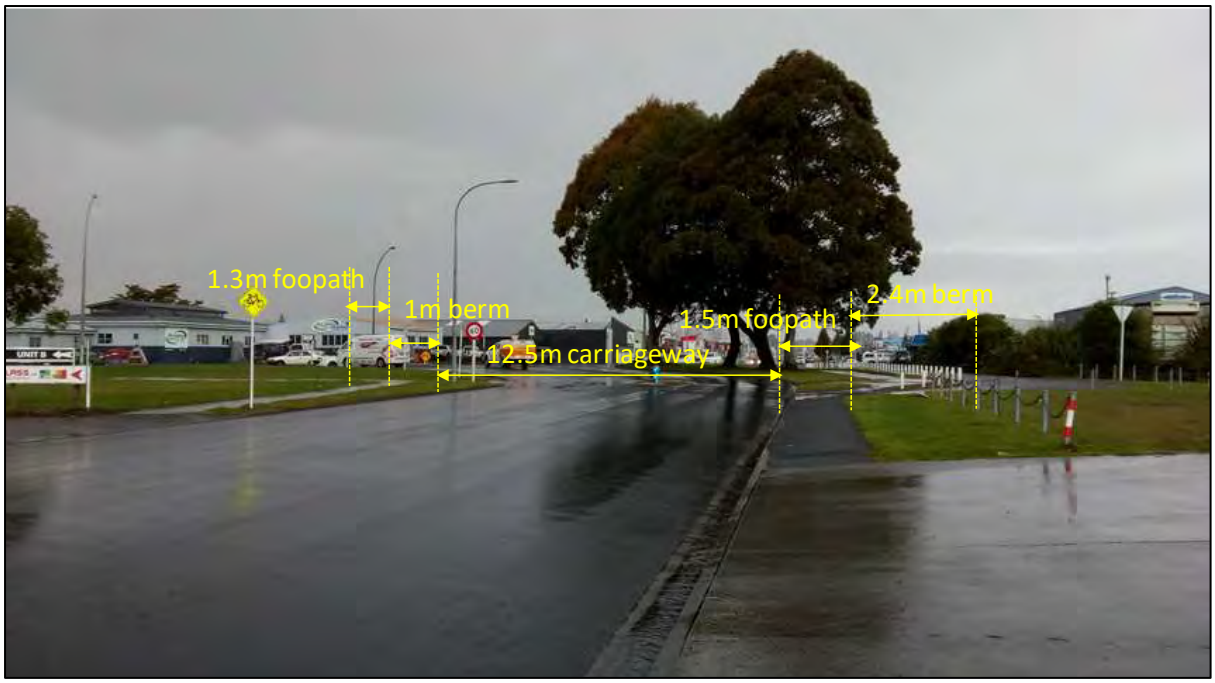


Figure 7: Kahikatea Drive Cross Section

3.1.3 Kahikatea Drive has two marked lanes (one in each direction) and unmarked on-street parking on both sides of the trafficable corridor. There is a footpath to both sides of the road.

3.1.4 Greenwood Street / State Highway 1 (SH1c) is a Major Arterial Road and is also identified as part of both the Strategic Network and the Sensitive Transport Network for Hamilton City. Near Kahikatea Drive, SH1c has two lanes (one in each direction), separated by a flush median to facilitate right hand turns through the Greenwood Street / Kahikatea Drive intersection. The posted speed limit of SH1c in this location is 60km/h, however this changes to 80km/h approximately 80m to the north. The SH1c / Kahikatea Drive intersection is shown in Figure 8.

Figure 8: Greenwood Street / Kahikatea Drive Intersection, Looking North

3.1.5 Higgins Road is defined as a local road between Kahikatea Drive extension and Duke Street and forms a natural boundary between the industrial activities in the vicinity of the site and the residential activities further west. The carriageway is approximately 10m wide and on-street parking is generally permitted on both sides of the road. The posted speed limit is 50km/h. The cross section of Higgins Road, taken from StreetView is shown in Figure 9.

Figure 9: Higgins Road Cross Section

3.2 Traffic Volumes

3.2.1 Traffic volumes for Kahikatea Drive and Higgins Road have been obtained from the Mobileroad website (which provides estimates as at June 2021). Peak hour volumes have been estimated on that basis that they typically represent around 10% of daily traffic volumes.

3.2.2 Peak hour volumes for Wickham Street have been taken from a survey arranged by CKL in October 2018. This was peak period survey, so the peak hour volume below is the average of the AM and PM peak hours and the daily volume is estimated as ten times the peak hour. The volumes are summarised in Table 1.

Table 1: Traffic Volumes

Road	ADT (vpd)	Peak Hour (vph)
Wickham Street	2,495	250
Kahikatea Drive	5,020	502
Higgins Road	570	57

3.2.3 Based on a review of SCATS data from the SH1c / Gallagher Drive / Quentin Drive intersection, SH1c is currently carrying some 27,300vpd. This is a reduction of approximately 3,200 vpd (around 10.5%) compared to the volume it was carrying prior to the opening of the Waikato Expressway (WEX), which has drawn some traffic away from the western side of the city.

3.3 Road Safety

3.3.1 A search was made of the Waka Kotahi Crash Analysis System for all crashes that had been reported on Wickham Street and along Kahikatea Drive from SH1c to Higgins Road over the last five years. The search found a total of 45 crashes had been reported within the study area, of which five resulted in serious injuries, nine resulted in minor injuries and the remaining 31 were damage to property only.

3.3.2 No crashes were reported on Wickham Street.

3.3.3 Two crashes occurred on Kahikatea Drive near Wickham Street. Neither resulted in serious injury. One was as a result of losing control and striking a parked vehicle. The other was as a result of a driver failing to give way to non-turning traffic.

3.3.4 A total of 33 crashes occurred near the SH1c / Kahikatea Drive intersection of which four resulted in serious injuries and six resulted in minor injuries. A further detailed review of the crash types is below:

- 5 overtaking/changing lanes on SH1c;
- 4 rear end crashes due to queueing on SH1c. Anecdotal evidence suggests that there are frequent queues or slow-moving traffic as a result of the level crossing to the east and Killarney signals to the north;
- 4 loss of control on the bend of SH1c; and
- 19 turning crashes.

3.3.5 Seven crashes were reported at the Kahikatea Drive / Higgins Road intersection of which one resulted in minor injury. A further detailed review of the crash types is below:

- 1 lost control and hit a power pole;
- 1 rear end crash as a result of a vehicle failing to slow for queueing traffic; and
- 5 turning crashes.

3.3.6 The Safe System approach to road safety focuses on reducing death and serious injury crashes. Although there have been no deaths at the SH1 / Kahikatea Drive intersection, the high number of crashes suggest that there may be an underlying issue with its design or use. The Waka Kotahi NZTA MegaMaps metric was used to determine collective and personal risk.

Table 2: Mega Maps personal and collective risk assessment

Road	Personal Risk	Collective Risk
Kahikatea Drive	Low	Low
SH1c	High	Medium High
Wickham Street	Low	Low
Higgins Road	Medium High	Low-Medium

3.3.7 Personal risk is classed as the risk to the individual of being killed or seriously injured in a crash and is calculated using both traffic volumes and Death / Serious Injury (DSI) crash equivalents.

Personal risk therefore decreases as traffic volumes increase. Collective risk is based on DSI equivalents only. This confirms that SH1c is classed as a high-risk route. It also confirms that Kahikatea Drive, Higgins Road and Wickham Street are not high-risk routes.

3.4 Network Operating Framework

3.4.1 HCC has been developing a Network Operating Framework (NOF) for the city. A NOF seeks to maximise the potential of the existing network through prioritising different user groups along different routes and at different times of the day. As part of this process, a Draft NOF Freight Route map has been developed. This defines the preferred routes to be used by heavy commercial vehicles (HCVs) and recognises both wider freight routing as well as local access needs.

3.4.2 The Freight NOF identifies SH1 as part of the primary freight network and recognises the industrial nature of the area through the classification of collector and local of roads throughout the area such as Kahikatea Drive, Wickham Street, Higgins Road and Ellis Street as forming part of the local access freight network and HPMV approved routes. The Draft NOF Freight Network is shown in Figure 10 with the general area of interest circled in blue.

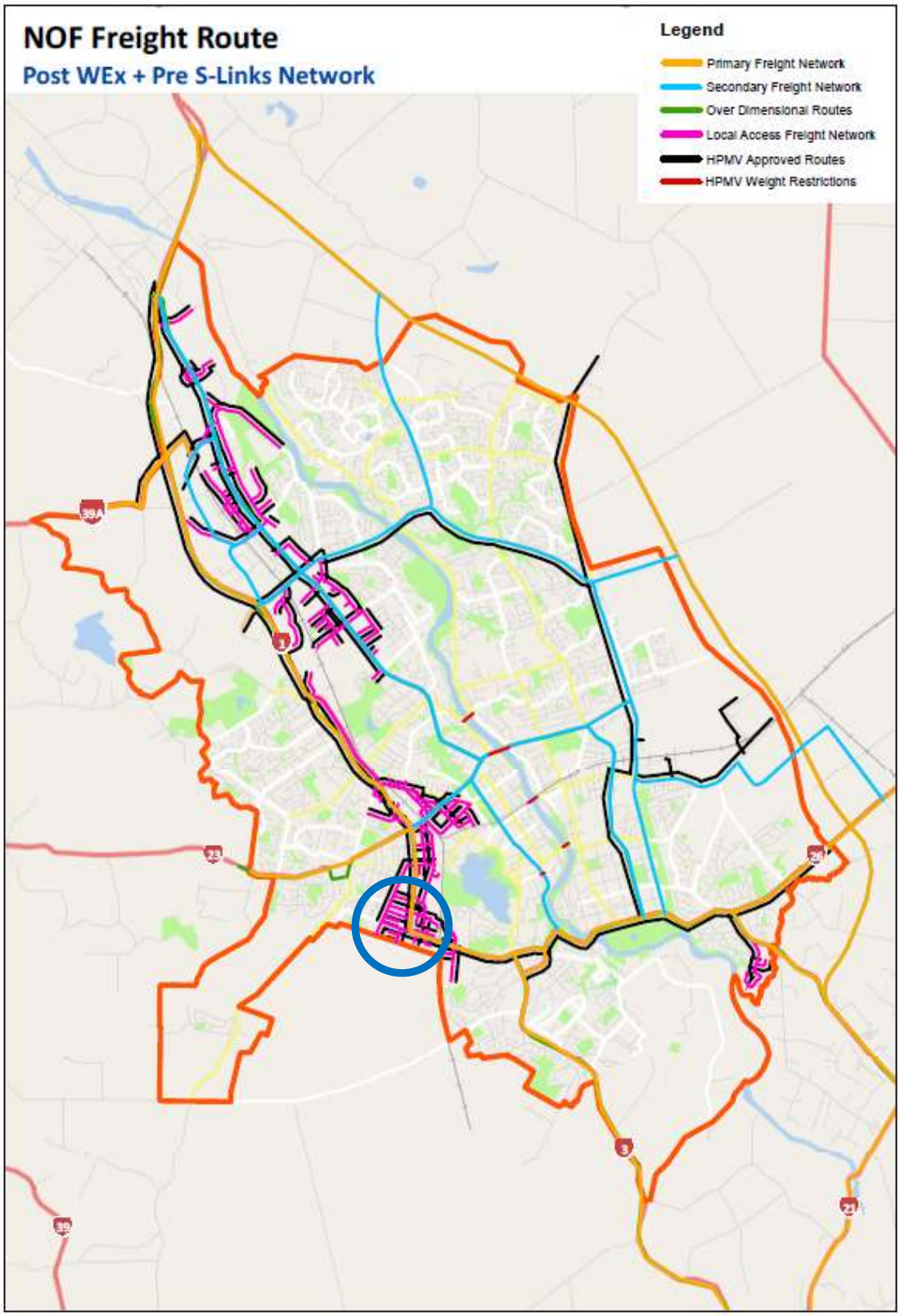


Figure 10: Network Operating Framework

3.4.3 The NOF identifies Wickham Street, Kahikatea Drive and Higgins Road as both local access freight routes and high productivity motor vehicle (HPMV) routes. This reflects the industrial

nature of the area. SH1c is identified as part of the primary freight network and is also shown as an HPMV route.

4 Sustainable Travel Modes

4.1 Walking and Cycling

4.1.1 Wickham Street and Kahikatea Drive provide walking facilities in the form of footpaths, although Wickham Street has a footpath only on one side of the road. Cycling facilities are not explicitly provided for through on-road features, but each trafficable corridor is wide enough to accommodate cyclists. There is a shared path on SH1c that extends from the intersection of Ohaupo Road in the south, to Killarney Road in the north. From this path, there are off-road paths to the Hamilton Western Rail Trail and the CBD. Additionally, there are also on-road marked cycle facilities along SH1c.

4.2 Public Transport

4.2.1 Kahikatea Drive is a bus route and is serviced by the Number 19: Bremworth Templeview route. Route 19 operates Monday to Friday between Templeview and the CBD approximately half hourly to hourly throughout the day from 7am to 8pm. The bus stops on Kahikatea Drive are some 350m from the site access and are therefore within the preferred maximum walking distance of 600m set out in Policy P8 of the draft Waikato Regional Public Transport Plan (RPTP).

4.2.2 There are further bus stops along SH1c that are serviced by the Orbiter route. These are within 800m of the subject site and provide alternative access to major destinations within the city such as the hospital, university and The Base shopping Centre.

5 Committed Environmental Changes

5.1.1 The Southern Links roading project has been planned for a significant period and was subject to a notification of requirement (NOR) process. The designation will form the east boundary of the proposed development area within the site and it is confirmed that the proposed development does not encroach into the designation area.

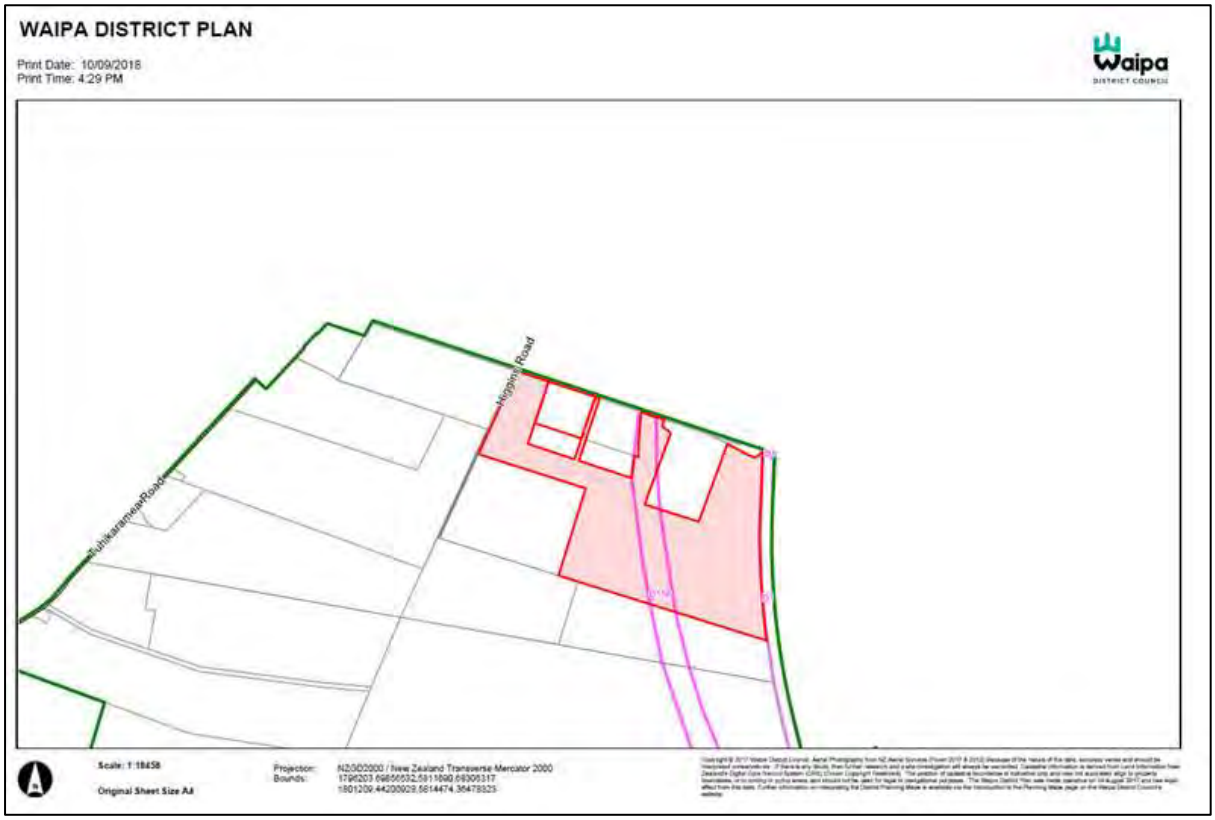


Figure 11: Southern Links Designation at WDC / HCC Border

5.1.2 Under the Southern Links scheme, the SH1c / Kahikatea Drive intersection is proposed to be upgraded to a roundabout. This roundabout is shown as Figure 12.

Figure 12: Southern Links Roundabout at SH1c/Kahikatea Drive (Source: Waka Kotahi)

5.1.3 It is understood that the Southern Links project is currently unfunded and has no known delivery timeframe.

5.1.4 In terms of known land use changes, the adjacent site to the north (Waste Management at 16 Wickham Street) has a Resource Consent to develop a waste and recycling facility. It is understood that this development is approximately 50% complete. The development includes approximately 9,500 sqm of GFA and it is understood that an Application has been made to increase this by around 400 sqm.

5.1.5 The Waste Management development also takes access from the Wickham Street ROW. The ITA prepared for the development[1] outlined that it was expected to generate approximately 230 vpd. This was less than the traffic generated by what was then the established activity on the site (a transport depot), resulting in no net increase in the traffic volume on Wickham Street.

[1] CKL Integrated Transportation Assessment, 16 Wickham Street, prepared for Stride Property Ltd

5.1.6 For the purposes of the current assessment, the consented base existing traffic volume on Wickham Street will be taken as the volume in Table 1.

6 Development Proposal

6.1 Land Use

6.1.1 The proposed development includes two stages. Stage 1 is a Wattyl distribution centre and storage facility at the rear of the site. Stage 2 is a warehouse development at the front of the site with three warehouses that will accommodate as-yet unknown tenants. The proposed site layout is shown in Figure 13 and Appendix A.

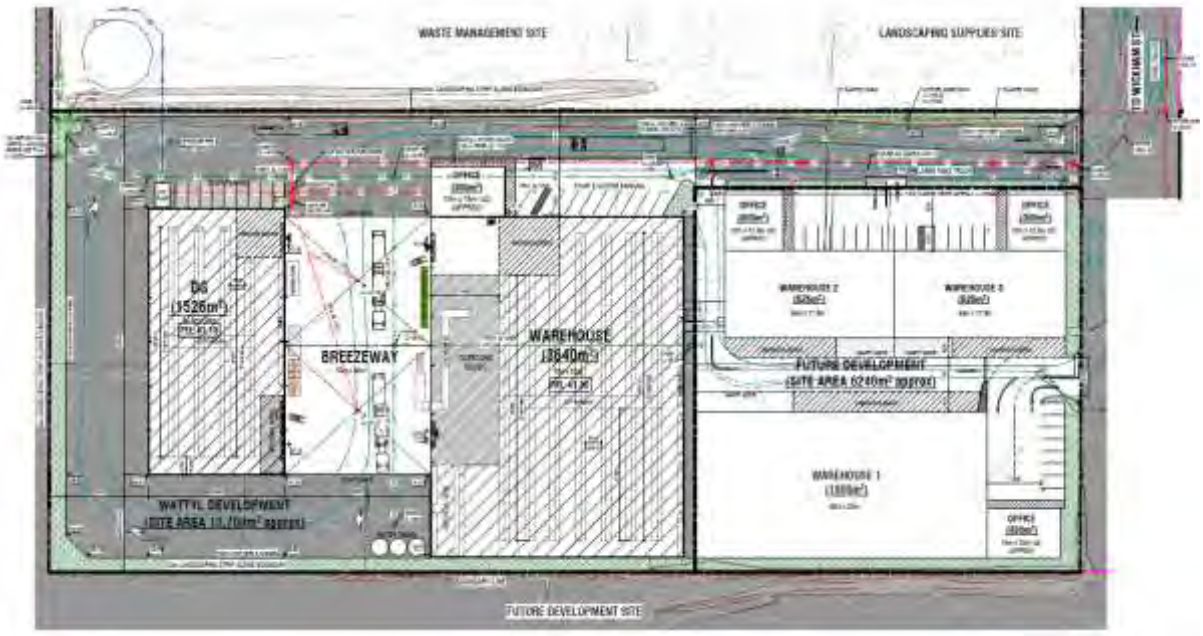


Figure 13: Proposed Site Layout (Prepared by Stiffe Hooker)

6.1.2 The Stage 1 Wattyl development includes a 3,640 sqm warehouse, 300 sqm office and 1,526 sqm dangerous goods store, arranged around a central breezeway.

6.1.3 The Stage 2 development includes three warehouses that are proposed to have areas of 626 sqm, 626 sqm and 1,800 sqm. Each warehouse has an attached 300 sqm office.

6.1.4 Staff and visitor parking is provided around the site. There are 19 spaces provided in the Stage 1 Wattyl area (including two accessible spaces) and 24 spaces (including two accessible spaces) provided on the Stage 2 warehouse area.

6.1.5 Access is proposed to be provided via two two-way vehicle crossings to Wickham Street. The northern crossing provides two-way access to the Wattyl area and entry only to the warehouse area. The southern crossing is a two-way access for the warehouse area.

6.2 Traffic Generation

6.2.1 The site is currently occupied by a range of activities which generate traffic onto the network. The overall site is 2ha in total and existing demand has been assessed based on *ITE Trip Generation database 11th Edition* manufacturing (and use 140) as the land use. This provides a site area-based trip rate which is appropriate give the nominal indoor areas associated with each existing tenancy.

6.2.2 The trip generation of the proposed development has been assessed using information provided by the Applicant for the Stage 1 Wattyl activity, and generic rates for the Stage 2 warehouses because the tenants are not yet known.

6.2.3 The Stage 1 Wattyl activity is expected to have between five and seven container trucks bringing goods in per day and between three and five truck and trailer units for outbound goods per day. It has been assumed that there would be five staff on site. It is assumed that all staff arrive or depart in the same hour and that 2 – 4 HCV movements occur per hour.

6.2.4 The Stage 1 Wattyl activity is not expected to attract visits from members of the public. An allowance of 2 vph and 20 vpd has however been made for non-staff commercial visitors associated with Wattyl's operations.

6.2.5 The Stage 2 warehouses have been assessed using the rates from ITE 11th Edition. These are based on gross floor area (GFA) rather than site area. The existing and proposed trip generation totals are presented in Table 5.

Table 3: Existing and Future Generated Traffic

Activity	Peak Hour		Daily	
	Trip Rate	Trips (vph)	Trip Rate	Trips (vpd)
Existing				
Manufacturing	2.8/hectare	6	15.97/hectare	32
Proposed				
Wattyl	-	11	-	44
Warehouses	0.23/100 sqm GFA	9	1.84/100sqm GFA	73
Total	**0**	**20**	**-**	**117**
Change	**-**	**14**	**-**	**85**

6.2.6 The proposal expected to generate a net increase of 85 vpd across the day including up to 14 vph during the peak hours of the day.

7 Assessment of Effects

7.1 Access Effects

7.1.1 The external access arrangements for the site are not proposed to change. The site will continue to take access via the existing ROW to Wickham Street, shown earlier as Figure 2. This crossing is approximately 8m wide and can accommodate two-way traffic movement. No changes are proposed.

7.1.2 The subject vehicle crossing is not located near any other vehicle crossings onto Wickham Street or near any other intersections. The access therefore fully complies with the requirements of the Waipa ODP and the HCC ODP.

7.1.3 The proposed development will have two accesses to the ROW, one near its northern boundary and one mid-way along the frontage. These both provide for two-way traffic movement and have been designed to accommodate heavy vehicles circulating through the Wattyl and warehouse areas.

7.1.4 Semi-trailers can access the Stage 1 Wattyl area, arriving and departing via the northern access. Large rigid trucks can access the Stage 2 warehouse area, arriving via the northern access and leaving via the southern access. Design vehicle swept paths are included on the plans prepared by Stiffe Hooker and included as Appendix A.

7.1.5 All access, parking and vehicle manoeuvring areas within the site are proposed to be to be sealed.

7.2 Traffic Effects

7.2.1 As shown in Table 5 the proposed development is expected to generate a net increase of 85vpd, including 14 vph during the peak hours of the day. Wickham Street and Kahikatea Drive are currently carrying around 2,500 vpd and 5,000 vpd respectively. These volumes are within the practical carrying capacity of two-way two-lane roads and both roads have adequate capacity to accommodate the additional movements.

7.2.2 Existing safety concerns at the Kahikatea Drive / SH1c intersection are acknowledged. As such, in the short to medium term, before this intersection is upgraded, it is recommended that a travel management plan (TMP) be developed for the activities on the site to minimise vehicles taking the right turn movement onto SH1c from Kahikatea Drive. This reflects the approach taken with the recent Stride Property development at 16 Wickham Street.

7.2.3 The TMPs should be prepared in consultation with HCC. It is recommended that the TMPs require HCVs and staff drivers from the site turn left only at the SH1c / Kahikatea Drive intersection. For vehicles wanting to head east on SH1c, Higgins Road will be identified as an alternative route given that it is identified for freight use as part of the NOF. Right turns to SH1c can then be made via Killarney Road. The TMPs should be continued until such time that the SH1c / Kahikatea Drive intersection is upgraded. A consent condition to that end is proposed. A draft TMP for the Stage 1 Wattyl development has been included as Appendix B. It is expected that future tenants of Stage 2 would prepare their own TMPs following the same general structure.

7.2.4 The effects on Higgins Road and Killarney Road are assessed as being negligible because of the low volume of movements involved. Assuming the TMPs are implemented as recommended, operation traffic would be required to only undertake left turns at the SH1c / Kahikatea Drive intersection.

7.2.5 Overall, it is assessed that the long-term road network can accommodate traffic associated with the proposed development, however short-term demand management and vehicle routing restrictions would be an appropriate mitigation until such time that the Southern Links network, specifically the SH1c / Kahikatea Drive Extension / Southern Links roundabout is constructed.

7.3 Parking

7.3.1 Minimum parking requirements have been removed from the WDC ODP in response to the NPS-UD. As such, there is no specific requirement to provide general parking. On-site supply is proposed with 19 spaces in the Stage 1 Wattyl area and 24 around the Stage 2 warehouses. Four accessible spaces are provided (two in each area), which exceeds the minimum required by NZS4121.

7.3.2 Industrial activities are required by the ODP to provide one HCV bay per site. Each warehouse has one loading bay and the Wattyl development has a breezeway that can accommodate multiple HCVs. This rule is therefore satisfied.

7.3.3 The car parking spaces are designed with a 2.5m width, 5m depth and at least an 8.0m wide manoeuvring aisle resulting in a total row depth of 13m. This appropriately accommodates the parking and manoeuvring needs of light vehicles.

7.3.4 Overall, the proposed supply and layout of parking and loading facilities is assessed as suitable for the activities. No off-site parking effects are anticipated.

8 Planning Framework

8.1.1 Table 4 below summarises compliance with the relevant transportation rules from Section 16 of the Waipa ODP.

Table 4: Waipa District Plan Compliance Assessment

Rule	Requirement	Proposed	Compliance
Road Hierarchy			
16.4.2.1	All structure plans, plan changes, developments, and subdivision must be consistent with the road hierarchy, as contained in Appendix T5.	No changes to the road hierarchy are proposed.	Complies
16.4.2.2	To maintain the effectiveness of the road hierarchy, a road network must be designed so that a road connects to a road at the same level in the hierarchy, or directly above or below its place in the hierarchy	No road network additions are included as part of the proposed development.	N/A
16.4.2.3	To maintain the effectiveness of the road hierarchy, when a site has two road frontages, vehicle access and egress must be from the lesser road type	Access to the site is provided via the road with the lowest hierarchy status.	Complies
Vehicular Access to Sites in All Zones			

Rule	Requirement	Proposed	Compliance
16.4.2.4	Every site shall be provided with vehicle access to a formed road that is constructed to a permanent standard. The vehicle access shall be designed to accommodate the demands of all traffic from the activity on that site, taking into account the form and function of the road.	Site access is provided to a formed road. The access has been designed to accommodate the expected demands	Complies
Vehicle Entrance Separation from Intersections and Other Vehicle Entrances			
16.4.2.5	The minimum distance of a vehicle entrance (accessway) from an intersection or other entrance shall be as follows. Values K, M and N are 100m, 45m, and 100m respectively for the site as the frontage road speed limit is 80km/h	At least 11m separation is provided between nearby crossings. The nearest intersection is over 100m from the site access.	Complies
Vehicle Entrance Separation from Railway Level Crossings			
16.4.2.6	New vehicle access ways shall be located a minimum of 30m from a railway level crossing.	No level crossings are near the site.	Complies
Minimum Sight Distance Requirements for a Railway Level Crossing			
16.4.2.7	Any buildings, structure or land use shall be located to comply with the minimum rail level crossing sightline requirements within Appendix T2.	No level crossings are near the site.	Complies
Vehicle Access to Compact Housing Development			
16.4.2.8	Compact housing development must only have one access point to a strategic road	Development does not include compact housing	N/A
Vehicle Access to Sites in the Industrial Zone			
16.4.2.12	Where a site has a frontage greater than 50m to a road which is not a State Highway or a major arterial road, two vehicle crossings will be allowed from that road, subject to the requirements of Rule 16.4.2.5.	Only one vehicle crossing proposed	Complies
Parking, Loading and Manoeuvring Area			
16.4.2.13	All activities that involve the erection, construction or substantial reconstruction, alteration or addition to a building on any site, or changes the use of any land or building, shall provide loading/unloading for vehicles on the site as set out in Appendix T1.	At least one HCV bay is provided for each building.	Complies

Rule	Requirement	Proposed	Compliance
16.4.2.14	Vehicle parking (if provided), loading/unloading, and manoeuvring areas shall: (a) Not encroach on any setback, outdoor living area, or bicycle parking spaces; and loading/unloading areas and manoeuvring areas shall not encroach over vehicle parking spaces; and (b) Be designed, formed, and constructed to ensure that the surface of the required area provides a dust free environment; and (c) Provide for the safe and efficient disposal of surface stormwater clear of any adjoining access or road surface in a way that does not result in ponding or scouring; and (d) Be constructed to accommodate the anticipated use of the area by all traffic likely to access the site in the zone in which it is located, including construction traffic taking into account pavement, surfacing, demarcation of spaces, aisles and circulation roads; and (e) Be provided on the site on which the building, activity or proposal is located, except where the provisions of Rules 16.4.2.15 and 16.4.2.16 apply. For the avoidance of doubt, rear sites that are served by an access leg/driveway that is in sole ownership are considered to be part of the site. Provided that: (i) In all zones the vehicle entrance may cross the road boundary setback; and (ii) N/A (iii) N/A (iv) N/A (v) N/A (vi) N/A (vii) In the Rural and Large Lot Residential Zones private right of ways must have an all-weather (metal) surface. Where existing dwellings are located within 15m of a private right of way, the surface must be sealed and drained.	Compliance expected.	Complies
16.4.2.19	All car parks (if provided) shall be marked or delineated on site, except in the Residential Zone and in the St Peters School Zone	All parking spaces on site are expected to have delineation.	Complies
Car Park Landscaping and Lighting			
16.4.2.20	Other than in the St Peters School Zone, all car parks must: (a) Provide at least one tree planted for every 5 car parking spaces at a grade of no less than PB95. For the avoidance of doubt, PB95 is equivalent to a tree that is at least 1.5m tall at the time of planting; and (b) Ensure lighting is designed to avoid shading areas or isolating areas of public use.	Sufficient vegetation and lighting is expected to be provided.	Can Comply
Provision of Bicycle Parking Facilities			
16.4.2.21	In areas other than the Rural Zone and Pedestrian Frontages, activities employing more than ten people must provide bicycle parking facilities at a rate of one bicycle park for every ten people employed	Site is within Rural zone	N/A
Provision of an Integrated Transportation Assessment			

Rule	Requirement	Proposed	Compliance
16.4.2.22	A Simple or Broad Integrated Transport Assessment (ITA) shall be prepared for activities as required by this rule. A Simple ITA is required for a development generating more than 250 'car equivalents' onto a Local Road	This report is a Simple ITA.	Complies

8.1.2 Overall, the proposed development is assessed as being compliant with the transport related rules of the ODP.

9 Conclusions and Recommendations

9.1.1 It is proposed to redevelop the site at 16A Wickham Street into a Wattyl distribution and storage facility (Stage 1) with a warehouse development as Stage 2. Based on the assessment undertaken it is concluded that:

- The proposed redevelopment of the site is not expected to result in a material impact on the surrounding road network subject to a travel management plan (TMP) being implemented (for each tenant) to avoid or minimise right turns at the SH1c / Kahikatea Drive intersection in the short to medium term.
- The TMPs should be developed in consultation with HCC and remain in place until such time as the SH1c / Kahikatea Drive intersection is upgraded (or HCC agrees that it is no longer necessary for any other reason). The TMPs should include (but not be limited to) measures to avoid right turn demand from Kahikatea Drive onto SH1c. The requirement to provide this is offered as a resource consent condition.
- The proposed development is expected to result in a small increase in trips on the surrounding transport network. This can be managed by the proposed conditions to have a negligible effect on the wider road network.
- The long-term road network is assessed as able to accommodate the traffic demands associated with the site. The proposed development does not affect the land subject to the Southern Links designation.
- External access to the site will be maintained in the same location as for the current activity (via a ROW to the end of Wickham Street) Two points of access are proposed to the ROW.

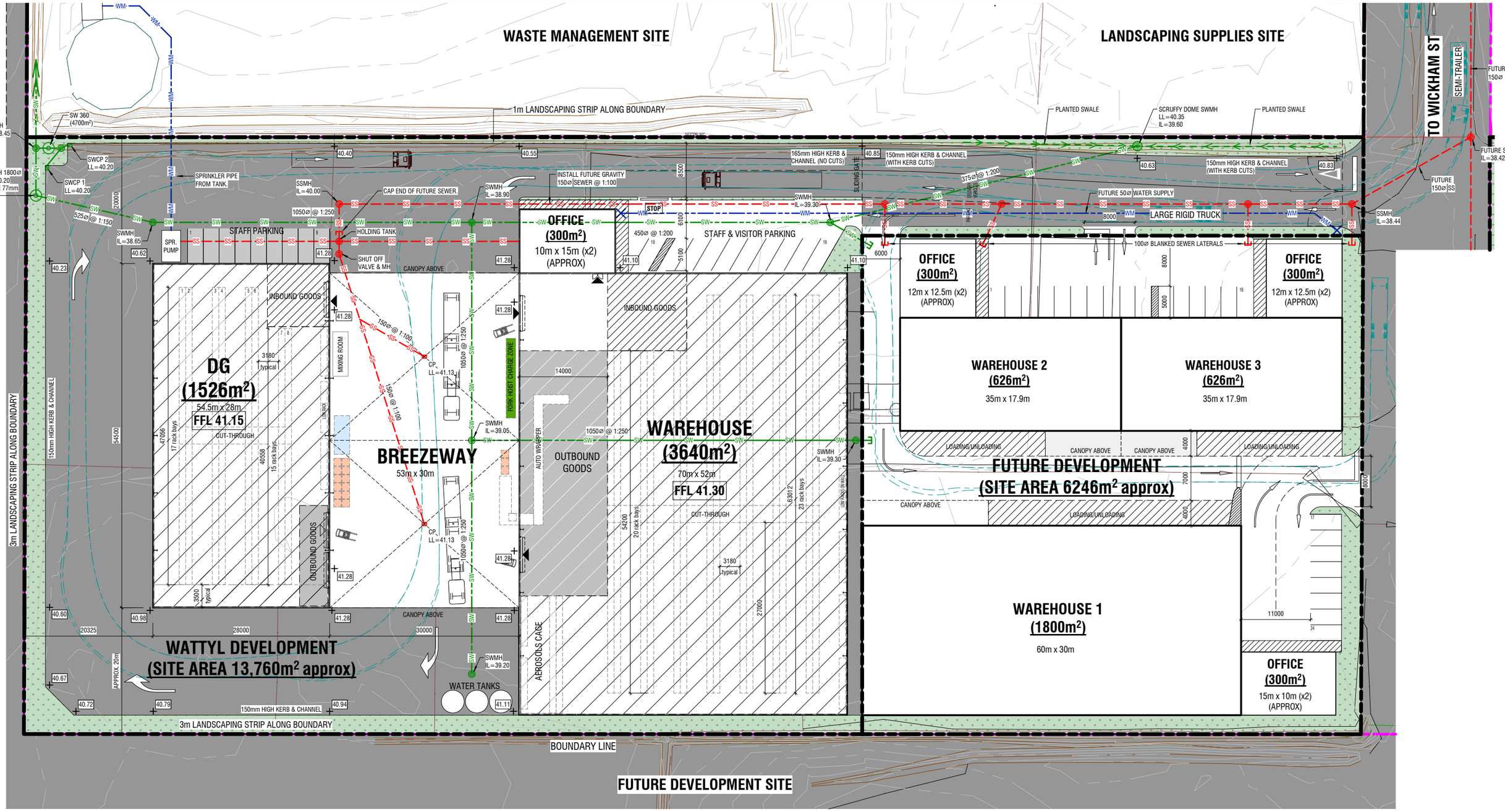
- The overall site layout appropriately provides for the access, circulation, and parking needs of light and heavy vehicles.

9.1.2 Overall, there are no traffic or transportation reasons to preclude approval to the proposed facility.

CKL

Appendix A Development Proposal

Appendix B Draft TMP



PROPOSED SITE PLAN - LEVELS & DRAINAGE

SCALE @ A1 1 : 300

PRELIMINARY 16.01.2023

REV	DATE	DESCRIPTION

stiffe hooker ltd
architects - engineers - interiors
3a melrose street
newmarket
auckland
ph +64 9 520 4400
www.stiffehooker.co.nz

PROJECT
WICKHAM STREET

FOR
STRIDE PROPERTY

DRAWING
PROPOSED SITE PLAN - LEVELS & DRAINAGE

CAD FILE
D:\Revit Local Files\10368 - Wattyl Development- Wickham Street-Central_v22_jamesm@stiffehooker.co.nz.rvt

JOB NO 10368

SCALE AT A1 1 : 300
SCALE AT A3

SHEET SD-RC01
REV

0 50 100mm

Planning | Surveying | Engineering | Environmental

Travel Management Plan

Wattyl NZ

16A Wickham Street, Hamilton, New Zealand

DOCUMENT CONTROL

CKL REFERENCE	B22188
DOCUMENT STATUS	Draft
REVISION NO.	1
DATE	14 March 2023
FILE NAME	
AUTHOR	Michael Hall Transportation Engineer
REVIEWED BY	Judith Makinson Transportation Engineering Manager
VERIFIED BY	.....
APPROVED BY	Hamilton City Council .....
OFFICE OF ORIGIN	Hamilton

TABLE OF CONTENTS

TABLE OF FIGURES

1 Introduction

1.1.1 This Travel Management Plan (TMP) relates to Wattyl NZ's facility at 16A Wickham Street in Hamilton which was granted consent by Waipa District Council (WDC) on ##/##/## (Consent number ###). A condition of that consent stated that a TMP was to be prepared in consultation with Hamilton City Council (HCC) to manage the traffic associated with the site.

1.1.2 This document has been prepared to comply with the above consent condition. It considers the movements by Wattyl NZ's heavy vehicles and staff. Consideration has also been given as to when any vehicle restrictions should apply, how information will be conveyed to staff and members of the public and when the TMP should be reviewed.

1.1.3 By way of summary, this TMP is designed to encourage drivers to avoid over-saturated intersections where turning movements present a greater risk and drivers of heavy vehicles to avoid local roads.

2 Purpose

2.1.1 The purpose of this TMP is to promote safe and appropriate road access, avoiding the known issues of turning right at the Greenwood Street / Kahikatea Drive and Duke Street / Greenwood Street intersections through using Wattyl NZ's operational process to keep staff and commercial drivers informed of appropriate route choice to support their own Health and Safety and that of other road users.

3 Vehicle Restrictions –Wattyl NZ Traffic and Heavy Vehicles

3.1.1 The Integrated Transportation Assessment report prepared as part of the consent application for the site identified the intersection between Greenwood Street and Kahikatea Drive (the Intersection) as a key location to minimise right turning traffic during peak times. For the purposes of this TMP, the three roads involved in the Intersection will be referred to as Greenwood Street to the north (SH1c), Kahikatea Drive (SH1c) to the east and Kahikatea Drive extension to the west.

3.1.2 No right turns into or out of Kahikatea Drive extension will be permitted at all times for any Wattyl NZ vehicles, including staff vehicles (private and work related) and trucks,

3.1.3 Vehicles that are not able to turn right at the Intersection due to the above restrictions will use Higgins Road and Killarney Road to access SH1c. The signalised intersection at the Greenwood Street / Killarney Road intersection will enable right turns to be made to and from SH1 in a safe manner. Duke Street is not a viable alternative route for right turning traffic as, similar to the Kahikatea Drive Extension intersection with SH1c, it is priority controlled. As such, heavy vehicles and staff will also be prohibited from turning right at Duke Street. Figure 1 below illustrates the route restrictions that apply to all Wattyl NZ.

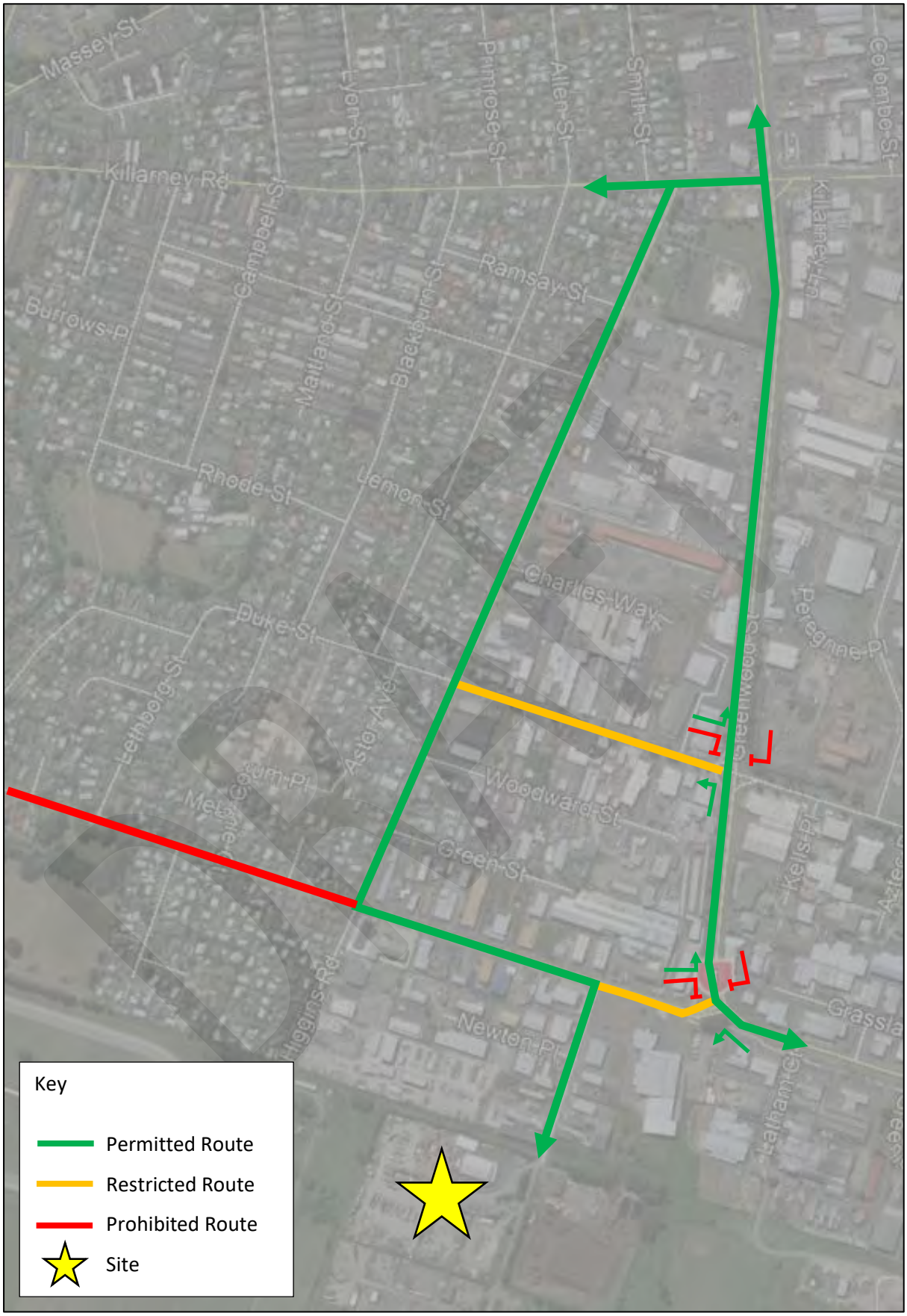


Figure 1: Traffic Restrictions - SH1c Intersection

3.1.4 Kahikatea Drive Extension to the west of Higgins Road runs through a residential area. No heavy vehicles will be permitted to use this at any time. Light vehicles will be able to use this route if desired and will not be restricted.

3.1.5 The Higgins Road /Killarney Road corridors will be used as the route by vehicles that are not permitted to use Kahikatea Drive Extension to the west. This is illustrated in Figure 2.

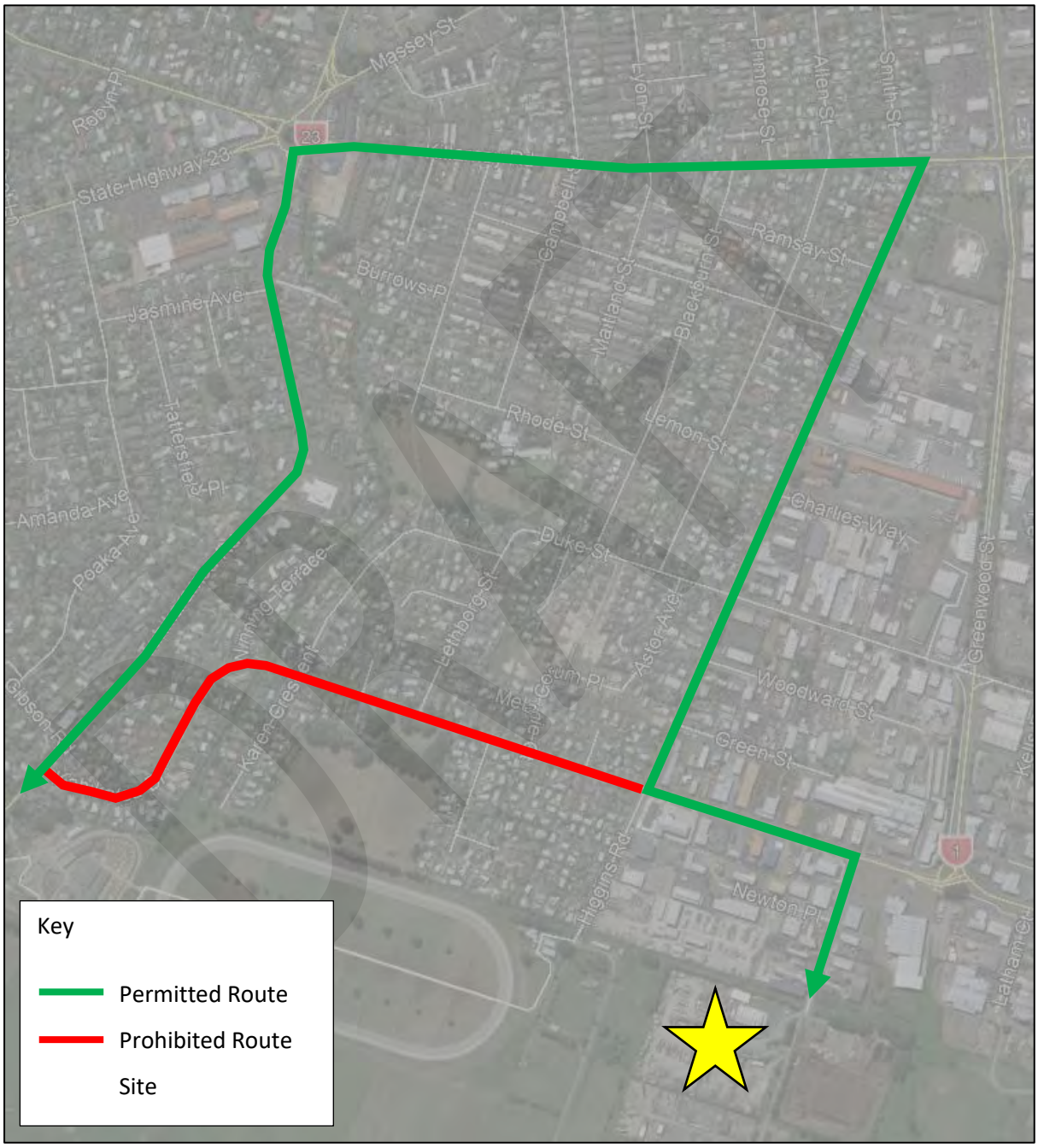


Figure 2: Heavy Vehicle Traffic Restrictions – Kahikatea Drive Extension

4 Briefings

4.1.1 As part of Wattyl NZ Health and Safety processes, drivers and staff will be informed and regularly reminded of the requirements and route restrictions outlined in this TMP.

4.1.2 This could include providing information about travel route restrictions as part of staff and contractor induction activities, staff training, staff meetings and routine HSE programmes. Information could also be provided through on-site signage and through other physical and electronic means that are used to provide information to staff, contractors and visitors.

5 Complaints Process

5.1.1 Any complaints received by Wattyl NZ from members of the public, Council or Waka Kotahi NZTA in relation to Wattyl NZ driver behaviour will be investigated within 24 hours and appropriate action taken in accordance with Wattyl NZ Health and Safety policies and disciplinary processes. All complainants will receive a response from Wattyl NZ confirming that the matter has been addressed. Council and Waka Kotahi NZTA will also be kept informed of all complaints raised in relation to this TMP. There will be a named contact person and information on the Wattyl NZ website on how to register a complaint. This person will be XXXXX. Their contact details are as follows:

- Name
- email
- Phone

6 Compliance Monitoring and Review

6.1.1 All heavy vehicles related to the site are fitted with GPS units. All truck routes and times are able to be monitored and any trucks not complying with this TMP will be able to be identified. Non-complying drivers will be identified through the daily Health and Safety briefings and disciplinary action taken as required for repeat offenders.

6.1.2 In relation to staff vehicles, spot checks will be undertaken at least two times per year to ensure compliance with vehicle route restrictions. Staff will not be given prior warning to the spot checks being undertaken.

6.1.3 The results from GPS logs will be provided to HCC on a monthly basis for the first three months that the facility is operational to ensure that the requirements of this TMP are being satisfied. If there are no issues identified, reporting will reduce to a six-monthly basis. After the first year, if no issues have been identified in relation to this TMP, reporting will be provided on an annual basis. Compliance reporting will also include a log of any complaints received by Wattyl NZ and how they have been addressed.

6.1.4 It is intended that this TMP remains in force until such time there is a fundamental change to the on-site activities or the nearby road network (such as an upgrade to the Greenwood Street / Kahikatea Drive intersection). At that time, the TMP shall be reviewed, and discontinued if appropriate through consultation with Waka Kotahi NZTA and HCC. Any or all of this TMP may also be discontinued if all parties agree that it is no longer warranted.

Industre Property Rua Ltd

Proposed Site Development

16A Wickham Street, Hamilton

Application for Resource Consent

Engineering Infrastructure Report

SHL Job No: **10368**
Date: **20 February 2023**
Revision: **A**

3a Melrose Street, Newmarket, Auckland 1023
PO Box 1964, Shortland Street, Auckland 1140
Telephone: 09 520 4400
www.stiffehooker.co.nz

1.0 Introduction

Stiffe Hooker Ltd has been engaged by Industre Property Rua Ltd to prepare Engineering Infrastructure Designs for this resource consent application for a new site development over part of 16A Wickham Street, Hamilton. The proposal is to develop a Distribution Centre and warehousing hub for a number of tenants.

2.0 Description of the Site

The site is located approximately 3km to the southwest of Hamilton City and the Waikato River. It has access to Wickham Street via a ROW to the east and is bounded by neighbouring properties to the north, south and west. The 2 Ha site is within the Waipa District Council jurisdiction and has a legal description of Lot 1 DP 396081. It is zoned as a Rural Zone under the Waipa District Plan.

The overall land parcel has an area of approximately 2.0 hectares. The existing site topography has a gradual fall towards the north-west, with an overall cross fall of approximately 1.4m over 230m. Currently the site is occupied by a number of storage yards to different tenants. The existing site surface consists largely of compacted metal with localised areas of asphalt paving, including the central accessway between the various yards.

The stormwater drainage within the existing site is largely via overland flow to a channel swale drain on the northern boundary draining to the west.

The existing site plan and property boundaries are shown on site works drawing SD-RC01.

3.0 Proposed Development

The proposed distribution centre (approx. 13,760m^2) and warehousing buildings (approx. 6,245m^2) will utilise the area of the site currently occupied with a development area of approximately 20,005m^2.

The two areas of proposed developments within this site are

1. Distribution Centre for Wattyl Paints
2. Three Warehouse buildings.

The Wattyl distribution centre will incorporate a general warehouse, Dangerous Goods Storage building with a common breezeway for container unloading and outwards goods dispatch, plus a two-level office building attached to the main warehouse, for general staff amenities.

The adjacent warehouse development will have three warehouse buildings each with attached offices for staff amenities and administration, with a common drive through for loading/unloading operations.

The overall development will incur a total impermeable area of approximately 18,162m^2, of which the building footprints are approximately 10,603m^2 (53% of total land area) and sealed pavement area of approximately 7,559m^2 (38% of land area). A detailed breakdown of the pre- and post-development areas are outlined below:

Pre-Development (m^2)		
Finishes/Sites		Total m^2
Permeable Areas: Landscaping		1,171
Semi-impermeable Areas: Compacted Metal		16,999
Impermeable Areas: Roof		315
Impermeable Areas: Pavement/Hardstand		1,520
Total		20,005

Post-Development (m^2)			
Finishes/Sites	Wattyl (m^2)	Warehousing (m^2)	Total (m^2
Permeable Areas: Landscaping	1,331	512	1,843
Semi-impermeable Areas: Compacted Metal	0	0	0
Impermeable Areas: Roof	6,924	3,679	10,603
Impermeable Areas: Pavement/Hardstand	5,505	2,054	7,559
Total	13,760	6,245	20,005

4.0 Existing Site Investigations

A number of site investigations have been carried out in assist with this resource consent application. The following sections provide a brief outline of our reviews of the various investigations and the reports referred to have been included within this application.

4.1 Geotechnical Assessment

A geotechnical assessment for the proposed development has been completed by Mitchell Geocon Geotechnical (Ref: J4072.7, January 2023) This assessment indicates that the site is underlain with compacted basecourse and sand filling materials followed by peat layers overlaying interbedded sand and silt/clay materials to deeper depths. The report provides preliminary foundation recommendations using piles for the proposed buildings.

The liquefaction hazard assessment does not appear to be of a concern and provision for seismic-related liquefaction effects has not been required.

4.2 Contamination Investigation

PDP Ltd has prepared a detailed site investigation report. Refer the investigation report for comments and recommendations

4.3 Traffic Assessment

CKL Ltd has carried out an integrated traffic assessment for the proposed development (ref: B22188). The assessment recommends a traffic management plan to be implemented to minimise right turns at the State Highway 1 and Kahikatea Drive intersection, which with this recommendation implemented, the report concludes the proposed development is not expected to result in a material impact on the surrounding roading network.

5.0 Existing Infrastructure

5.1 Stormwater

Both Waipa District Council and Hamilton City Council GIS systems show no existing public stormwater network/connections located within the site. An open drainage channel along the northern boundary drains the site to the west where it joins an open drain running north into the main catchment channel that in turn connects to the Waitawhiriwhiri Stream and then into the Waikato River.

5.2 Wastewater

No Waipa District Council wastewater infrastructure exists for this site, with the adjacent (northern) site having access into Hamilton City Council's wastewater network via connection to a public manhole at the top end of Wickham Street.

5.3 Water Supply

Similar to wastewater infrastructure above, no Waipa District Council water supply is available on site. The adjacent (northern) site has access to Hamilton City Council's water supply infrastructure via connections within Wickham Street for both potable water and sprinkler supply.

5.4 Power and Telecommunication Supplies

An existing transformer/power supply is located within the ROW north of the site along with telecommunication services.

6.0 Proposed Infrastructure

6.1.1 Stormwater Drainage

The peak flow rate generated from the full 2.0HA land parcel has been assessed, for the pre-development and post-development conditions. This assessment was carried out in accordance with the Waikato Stormwater Runoff Modelling Guideline TR2018/02. The existing site finish, which consists of compacted metal and sand fill, has been considered as semi-developed. The calculated peak flow rates are outlined below:

Excluding climate change effect:

ARI Events	Pre-development	Post-development	% Decrease
2-year ARI Event	211 l/s	202 l/s	- 4 %
10-year ARI Event	350 l/s	317 l/s	- 10 %

Including climate change effect of 2.1°C:

ARI Events	Post-development
2-year ARI Event	281 l/s
10-year ARI Event	357 l/s

The stormwater runoff will discharge to the current discharge location in the north-west corner of this site. The stormwater drainage for the proposed development will utilise a combination of piped reticulations including detention with treatment via stormwater 360 devices and grassed swales.

For the building roof areas, piped reticulations conveying clean stormwater runoff will be connected to the rainwater harvesting tanks with the outflow draining to the underground detention system.

For the new carpark, road pavement and operation yard areas, a low-impact design approach as per the Waikato Stormwater Management Guideline TR2018/01 has been adopted.

- Convey stormwater runoff to designated drainage outlet;
- Provide initial treatment and removal of coarse solids;
- Stormwater detention to limit max peak discharge to 80% of pre-development levels.
- Provide stormwater infiltration that allows for groundwater recharge.

The calculated post-development peak flow rates without climate change effect indicates improvement to that of the existing (pre-development) condition due to additional landscaping areas. Whereas when the climate change effect has been allowed for, an increase of approximately 33% and 2% in peak flow rate (predevelopment to post development)has been calculated for the 2 and 10-year ARI events respectively. While our calculations have not included the effect of the groundwater recharge, we consider this will likely reduce the calculated increase in peak flow rate and thus lessen the potential

impacts on the capacity of the open channel and the downstream receiving environment.

6.1.2 Stormwater Quality

Stormwater quality will focus on treatment of all pavements via stormwater 360 devices and swale drains, for roadways, parking and operational yard areas, whereas clean water from the building roofs will be discharged directly to the open northern channel, via the on-site detention system.

The site, in terms of the level of stormwater treatment, has been divided into three areas:

- Wattyl DC pavement area 4,539m^2
  – Stormwater 360 device
- Warehousing development pavement area 2,074m^2
  – Stormwater 360 devices;
- Entry roadway pavement area 946m^2
  – Swale Drain

Refer drawing SD-RC04 for treatment areas and stormwater reticulation

6.2 Wastewater Drainage

As no wastewater infrastructure is available on site, all wastewater will drain to a central holding tank for later removal by a liquid waste contractor, refer drawing SD-RC03.

6.3 Water Supply

6.3.1 Potable Water

As no water supply infrastructure is available on site, all potable water will be provided by on-site rainwater harvesting tanks, treated as required. When additional water is required, this will be tankered in to top up storage tanks.

6.3.2 Sprinkler Supply

The Wattyl Distribution Centre is proposed to be sprinklered protected, which this supply will be provided by the sprinkler tank on the adjacent (Waste Management) property.

6.4 Power and Telecommunication Supplies

New power and telecom connections for all buildings will be accessed within the ROW.

7.0 Construction Methodology

Construction will occur in staged sequences, with:

Stage 1

- Earthworks including sediment control for the full site for all building and roading platforms, along with stormwater outlet structures;
- Refer SD-RC06 to SD-RC09.

Stage 2

- `Building construction including all underground services installation.
- Pavement/Roading construction
- The Wattyl Distribution Centre is proposed to be constructed initially with the Warehousing development following at a later date.

7.1 Sediment and Erosion Control

Sediment control will be established with the installation of a sediment control pond and silt fences designed in accordance to the Waikato Regional Council guidelines for erosion and sediment control technical report TR2009/02

The sediment pond will be excavated into the existing natural ground and located at the lowest part of the site (northwest corner). Gravity contour drains on the northern and western boundaries will convey sediment laden runoff into the forebay pond. A primary spillway will be provided with two floating T-bar decants, which discharge into the existing open channel to the north. This pond also incorporates an emergency spillway discharge in to the open channel, should a 100-year ARI rainfall event occur during the course of the earthworks.

As the existing site access is fully sealed and transits to metal surfaces, we do not envisage the need for a purpose-built stabilised entrance, which the existing surfacing and new site levels will require minimal removal to the existing metal pavement.

The proposed sediment and erosion control works are demonstrated on the site works drawings SD-RC06 to SD-RC09.

7.2 Earthworks

The majority of earthworks will involve only surficial trimming/formation of building and pavement platforms due to the existing site surfaces.

As recommended in the Geotech report (Section 4.1) it is envisaged all buildings will be piled which will have minimal earthworks impact on the site when construction commences.

The pavement platform levels have been designed to match existing ground levels where possible to minimise the earthworks required. It is proposed to retain and reuse existing hardfill materials where possible for future hardfill and yard areas. The

pavement levels and grades have been designed to provide drainage into the stormwater swales and general system while maintaining an overland flow to the northwest in extreme events.

The detailed breakdown of earthwork is outlined below:

Development area:	
Earthwork area:	20,005m^2
Total Cut volume:	2,210m^3
Cut to Waste	680m^2
Cut to Fill	1,200m^3
Cut to Stockpile	330m^3

In conclusion, the proposed Construction earthworks will involve the following operations:

a. Installation of sediment control works including sediment pond, silt fences and contour drains;

b. Carry out cut and fill earthworks to form the building and pavement platforms. Stockpile surplus cut (where acceptable) on site for reuse.

c. Sediment control measures will remain in place and operational until the site is stabilised with compacted hardfill over the full site.

7.3 Building Foundations and Super-Structure

The new buildings proposed will have concrete floor slabs supported on pile foundations as recommended by the geotechnical assessment.

The new buildings will be clad with light weight metal roofing supported by steel portal frames with a combination of pre-cast concrete walls panels with metal cladding above.

7.4 Pavement and Yard

Pavement areas will be concrete and asphaltic wearing surfaces over compacted basecourse. Yard areas will have reinforced concrete slabs to provide durable surfaces for trucking and container laydown.

8.0 Assessment of Effects on the Environment

8.1 Sediment and Erosion Control

Sediment control measures as described in Section 7.1 will be constructed prior to commencement of any earthworks. The sediment control system will be maintained and remain fully operational until the site is fully stabilised.

8.2 Stormwater Management

The proposed development improves the site conditions by adding more landscaping areas. As a result, the calculated post-development stormwater peak flow rate, excluding the climate change effect, for the entire land parcel indicates slight improvement to that of the existing (pre-development) condition. When the climate change effect has been included, a 33% and 12% increase has been calculated for the 2 and 10-year ARI events respectively. Through onsite detention, the max peak discharge has been limited to 80% of pre-development levels. This discharge is likely to be further reduced by the recharge ability of the swales adopted, and thus lessen the potential impacts on the receiving environment.

Stormwater treatment for the pavement and yard areas has incorporated a low-impact design approach. We consider these swales and stormwater 360 treatment devices with the underground detention system will provide betterment to the current site discharge in line with Councils and Regional Council's guidelines.

8.3 New Services

8.3.1 Stormwater

The use of onsite detention has been designed to maintain 80% of predevelopment max peak discharge levels, ignoring any benefits gained by the recharge ability of the grass swales and ground drains.

8.3.2 Sewer

On site storage will be provided for all domestic sewage generated, with removal being provided by a licenced Liquid Waste contractor.

8.3.3 Potable Water

On site storage for potable water will be provided via rain water harvesting tanks. Where additional water is required, this shall be tankered in to top-up storage tanks as required.

8.3.4 Electrical and Telecommunication

Services required for the proposed development will be sourced from the existing networks located within the ROW and road reserves. Connections to each utility provider will be applied for during the building design development.

8.5 Noise Control

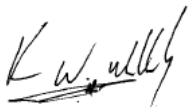
The proposed development does not involve large scale earthworks but only surficial cut and fill operations. We do not expect the construction noise generated on-site will exceed the territorial authorities' standards.

When these facilities are operational the majority of noise generators will be conducted within or under cover. Therefore, no new major noise source is anticipated other than from typical truck traffic and MHE operations.

8.6 Construction Traffic

Earthwork construction traffic will mainly involve:

- Cut to Waste – 50 truck/trailer loads
- Import fill – 5 truck/trailer loads.



Report reviewed by:
Kevin Mullaly

Attachments:

Appendix A – Engineering Calculations

Appendix B – Engineering Drawings

Appendix A – Engineering Calculations

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Project No	Engineer
10368	KWM
Date	Sheet No
12/22	

Predevelopment

- Site size ≈ 20,000 m² (2 Ha)
- Slope 1% (contour NW)
- Catchment length 90m (to N to field drain) + 200m Field drain
- Predevelopment Hardstand – metal pavements.
- Post Development 90% impervious
- Attenuation – 2 & 10 yrs to 80% predevelopment flow rates
  - extended Detention required
  - Water quality treatment required.
- 2 yr Rainfall (Historical) = 64.6 + 12 = 76.6 mm.
- 10 yr Rainfall (Historical) = 97.7 + 19 = 116.7mm

Predevelopment

CN = 91 // I_a = 1.3mm // Slope 1% // T.C. = mins.

$$C^*_{2yr} = \frac{P_{24} - 2I_a}{P_{24} - 2I_a + 2S} = \frac{76.6 - 2\times1.3}{76.6 - 2\times1.3 + 2\times26.3} = 0.58$$

$$C^*_{10yr} = \frac{116.7 - 2\times1.3}{116.7 - 2\times1.3 + 2\times26.3} = 0.68$$

Location

Address search | Enter your address and press enter to search

Site Information

To generate a set of results, either click on an existing data point, or a new location and enter a site name, then press the Generate Report button.

Latitude	-37.80869897600677
Longitude	175.25497913360593
Site Name	WATTYL SITE
Site Id	

Output Table Format

- (●) Depth - Duration - Frequency
- ( ) Intensity - Duration - Frequency

Generate Report

Results

Spreadsheet Download

Site Details | Historical Data | RCP2.6 Scenario | RCP4.5 Scenario | RCP6.0 Scenario | RCP8.5 Scenario

Rainfall depths (mm) :: Historical Data

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	8.97	12.4	14.8	19.8	26.0	38.5	48.1	59.1	71.2	78.7	84.1	88.4
2	0.500	9.85	13.6	16.2	21.7	28.5	42.1	52.6	64.6	77.7	85.9	91.8	96.5
5	0.200	12.9	17.8	21.2	28.3	37.1	54.7	68.2	83.5	100	111	118	124
10	0.100	15.3	21.0	25.0	33.4	43.6	64.2	79.9	97.7	117	129	138	145
20	0.050	17.8	24.4	29.1	38.7	50.5	74.2	92.2	113	135	149	159	166
30	0.033	19.3	26.5	31.5	41.9	54.7	80.2	99.7	122	146	160	171	179
40	0.025	20.4	28.0	33.3	44.3	57.8	84.7	105	128	153	169	180	189

Table 5-2: Runoff curve numbers for most urban and rural lands[18]

Cover description					
Cover type and hydrologic condition	**Hydrologic condition**	**A**	**B**	**C**	**D**
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, reserves, etc.)					
Condition (grass cover < 50%)	Poor	68	79	86	89
Fair condition (grass cover 50%-75%)	Fair	49	69	79	84
Good condition (grass cover >75%)	Good	39	61	74	80
Impervious areas					
Paved parking lots, roofs, driveways, etc.		98	98	98	98
Streets and roads*					
Paved; kerbing and catchpits (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Pasture, grassland, or range – continuous forage for grazing	Poor Fair Good	68 49 39	79 69 61	86 79 74	89 84 80
Straight row crops	Poor Good	72 67	81 78	88 85	91 89+
Bush – bush-weed-grass mixture with bush being the major element	Poor Fair Good	48 35 30	67 56 48	77 70 65	83 77 73
Bush – grass combination (orchard or tree farm)	Poor Fair Good	57 43 32	73 65 58	82 76 72	86 82 79
Bush**	Poor Fair Good	45 36 30	66 60 55	77 73 70	83 79 77
Farmsteads – buildings, lanes, driveways, and surrounding lots		59	74	82	86

* As calculations for runoff volumes are undertaken separately for pervious and impervious areas, the generalised curve numbers incorporating pervious and impervious surfaces provided by NRCS are not included in the table.

Some of the cultivated agricultural land categories are not included and Table 2-2b of Technical Release No. 55 should be referred to which is located in Appendix A.

** Bush condition:

Poor: forest litter, small trees, and bush are destroyed by heavy grazing or regular burning
Fair: woods are grazed but not burned, and some forest litter covers the soil
Good: woods are protected from grazing, and litter and bush adequately cover the soil

[18] Natural Resources Conservation Service, 1986

Worksheet 1: Runoff Parameters and Time of Concentration

Project: Nickham Street By: _____ Date: _____

Location: _____ Checked: _____ Date: _____

Scenario: Pre development (Pre-developed or post-developed)

1. **Runoff Curve Number (CN) and Initial Abstraction (I_a)**

Soil name and classification	Cover description (cover type, treatment and hydrologic condition	Curve Number (CN)	Area (km^2)	Product of CN x Area
	Planter areas	74	0.001	0.088
	Hardstand	91	0.017	1.547
	Roofs/pavement	98	0.002	0.1764
		TOTALS	0.02	1.8122

CN (weighted) = $\frac{Total\ Product\ of\ CN\ x\ Area}{Total\ Area}$ = 1.8122/0.02 = 90.6

Initial abstraction

$S = \left(\frac{1000}{CN} - 10\right) 25.4 \ (mm)$ = $\left(\frac{1000}{90.6} - 10\right) \times 25.4$ = 26.3

$I_a = 0.05\ S$ = 0.05 x 26.3 = 1.31

2. **Time of Concentration (T_c)**

(a) Sheet and shallow concentrated flow

From Equation 7-2 or from Figure 7-1:

$T_t = {100nL^{0.33}}/{S^{0.2}}$ = $100 \times 0.02 \times 90^{0.33} / 0.2$ = 5.3 min

+5min in field obtain = 10.3 min

(b) Concentrated network flow

i. Road channel flow from Figure 7-2: – NIL

ii. Pipe network flow from Table 7-2 and Figure 7-3: – NIL

iii. Open channel flow from Equation 7-3: AS ABOVE [FIG 7-2]

$V = {R^{2/3}S^{1/2}}/{n}$

(c) Time of concentration

$T_c = T_{t1} + T_{t2} + \cdots .. T_{tm}$ = hours 10.3/60 = 0.17 hrs

SCS Lag for HEC-HMS = $t_p = \frac{2}{3} t_c$ = hours 2/3 x 0.17 = 0.11 hrs

Worksheet 2: Graphical Peak Flow Rate

Project: north/ site **By:** _____ **Date:** _____

Location: _____ **Checked:** _____ **Date:** _____

Scenario: redevelopment **(Pre-developed or post-developed)**

1. Data

Catchment area (A) = 0.02 km²

Runoff curve number (CN) = 90.6 (from Worksheet 1)

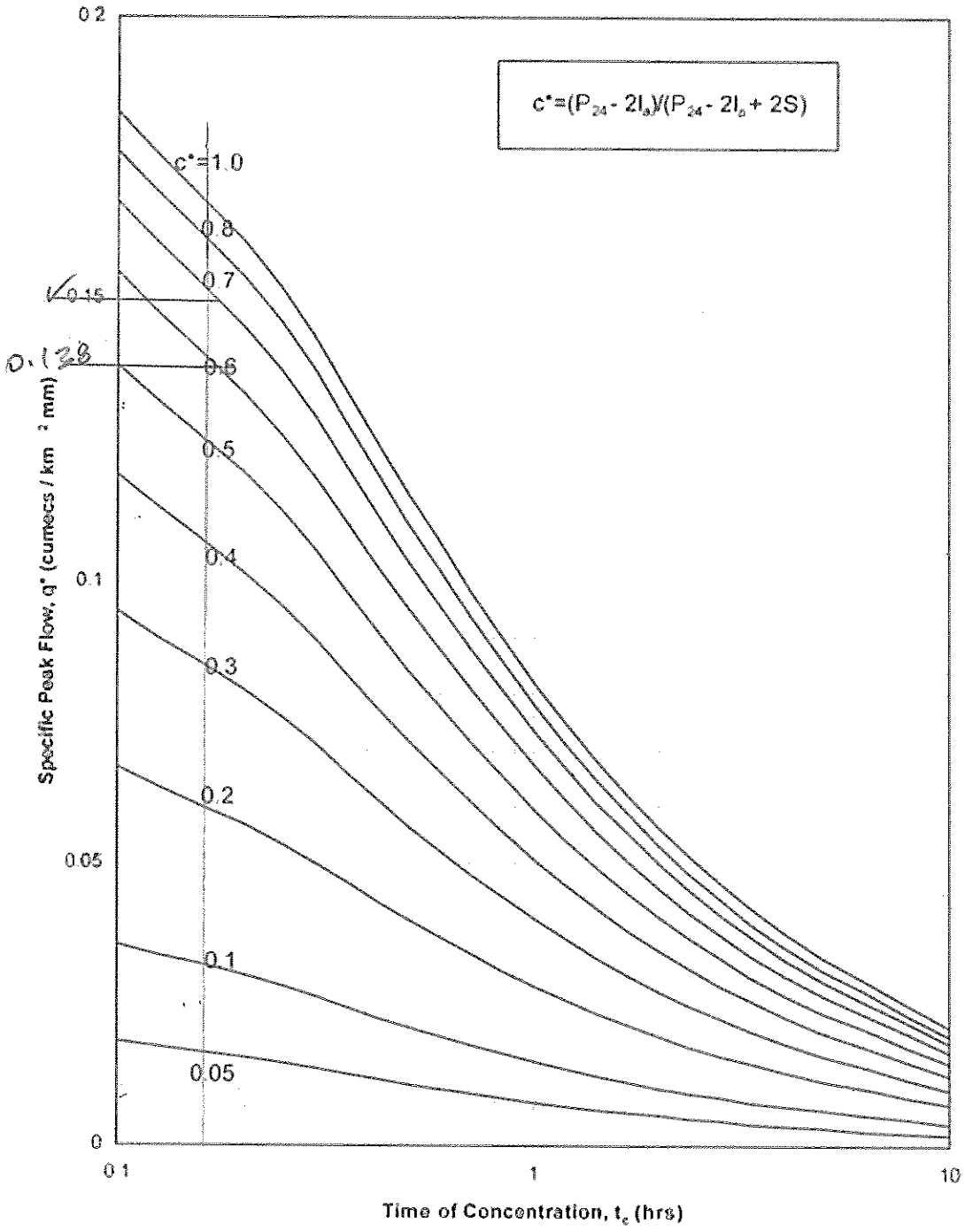
Initial abstraction (Ia) = 1.31 (from Worksheet 1)

Time of concentration (Tc) = 0.17 hours (from Worksheet 1)

2. Storage

Storage (S) = 26.3 mm (from Worksheet 1)

	Storm #1	Storm #2	Storm #3
Average Recurrence Interval ARI (year)	2	10	
24-hour rainfall depth P24 (mm)	76.6	116.7	
Compute c*: $c^* = \frac{P_{24} - 2I_a}{P_{24} - 2I_a + 2S}$	0.58	0.68	
Specific peak flow rate q* (From Figure 8-1)	0.138	0.150	
Peak flow rate q_p: $q_p = q^* A P_{24}$ (m³/s)	0.211	0.350	
Runoff depth Q_{24}: $Q_{24} = \frac{(P_{24} - I_a)^2}{(P_{24} - I_a) + S}$	55.8	94.2	
Runoff volume V_{24} $V_{24} = 1000 x Q_{24} A$ (m³)	1116	1883	


$c^*=(P_{24}-2I_a)/(P_{24}-2I_a+2S)$
c*=1.0
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.05
0.2
0.1
0.05
0
0.1
1
10
Specific Peak Flow, q* (cumecs / km ² mm)
Time of Concentration, t_c (hrs)

Worksheet 1: Runoff Parameters and Time of Concentration

Project: Nicholson Street By: _____ Date: _____

Location: _____ Checked: _____ Date: _____

Scenario: Post Development (Pre-developed or post-developed)
(No climate change)

1. Runoff Curve Number (CN) and Initial Abstraction (I_a)

Soil name and classification	Cover description (cover type, treatment and hydrologic condition	Curve Number (CN)	Area (km^2)	Product of CN x Area
	Planter	74	0.002	0.136
	Roof/Pavement	98	0.018	1.779
		TOTALS	0.102	1.916

CN (weighted) = $\frac{Total\ Product\ of\ CN\ x\ Area}{Total\ Area}$ = 1.916/0.02 = 95.8

Initial abstraction

$S = \left(\frac{1000}{CN} - 10\right) 25.4 \ (mm)$ = $\left(\frac{1000}{95.8} - 10\right) \times 25.4 = 11.17$

$I_a = 0.05\ S$ = $0.05 \times 11.17 = 0.56$

2. Time of Concentration (T_c)

Swale flow 55m @ 1%
Pipe flow 220m @ 0.5%
t_c (swale) = 16 min.
t_c (pipe) = 7.5 "
23.5 min
≈ 0.39 hrs.

(a) Sheet and shallow concentrated flow

From Equation 7-2 or from Figure 7-1:

$T_t = {100nL^{0.33}}/{S^{0.2}}$

(b) Concentrated network flow

i. Road channel flow from Figure 7-2:

ii. Pipe network flow from Table 7-2 and Figure 7-3:

iii. Open channel flow from Equation 7-3:

$V = {R^{2/3}S^{1/2}}/{n}$

(c) Time of concentration

$T_c = T_{t1} + T_{t2} + \cdots .. T_{tm}$ = hours 0.39 hrs

SCS Lag for HEC-HMS = $t_p = \frac{2}{3} t_c$ = hours 0.26 hrs.

Worksheet 2: Graphical Peak Flow Rate

Project: Wickham Street **By:** _____ **Date:** _____

Location: _____ **Checked:** _____ **Date:** _____

Scenario: Post Development (no climate change) **(Pre-developed or post-developed)**

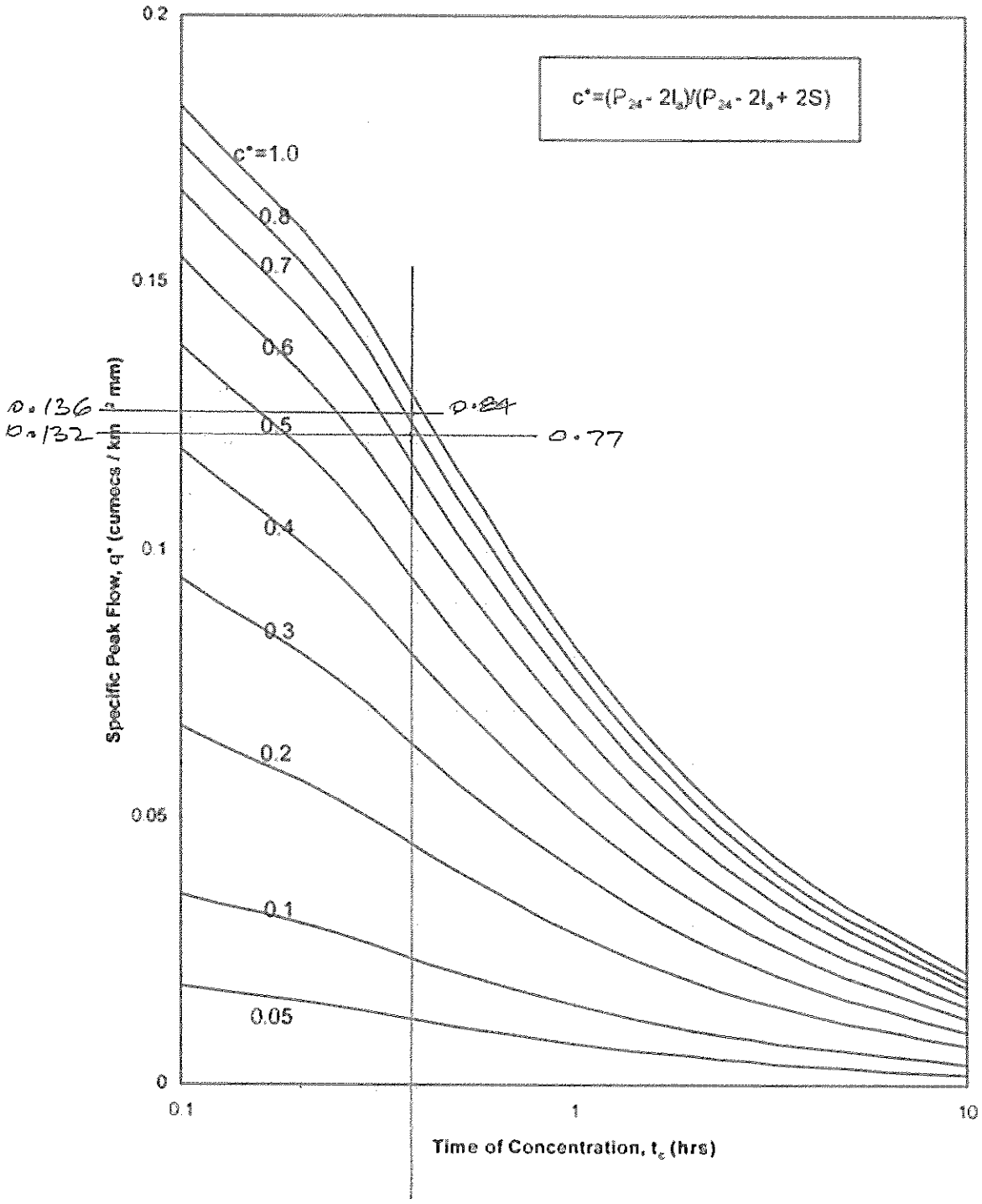
1. Data

Catchment area (A) =	0.02	km^2
Runoff curve number (CN) =	90.6	(from Worksheet 1)
Initial abstraction (Ia) =	0.558	(from Worksheet 1)
Time of concentration (Tc) =	0.26	hours (from Worksheet 1)

2. Storage

Storage (S) =	11.17	mm (from Worksheet 1)

	Storm #1	Storm #2	Storm #3
Average Recurrence Interval ARI (year)	2yr	10yr	
24-hour rainfall depth P24 (mm)	76.6	116.7	
Compute c*: $c^* = \frac{P_{24} - 2I_a}{P_{24} - 2I_a + 2S}$	0.77	0.84	
Specific peak flow rate q* (From Figure 8-1)	0.132	0.136	
Peak flow rate q_p: $q_p = q^* A P_{24}$ (m^3/s)	0.202	0.317	
Runoff depth Q_{24}: $Q_{24} = \frac{(P_{24} - I_a)^2}{(P_{24} - I_a) + S}$	66.3	106.0	
Runoff volume V_{24}: $V_{24} = 1000 x Q_{24} A$ (m^3)	1326	2119	


$c^*=(P_{24}-2I_a)/(P_{24}-2I_a+2S)$
c*=1.0
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.05
0.136
0.132
0.84
0.77
Specific Peak Flow, q* (cumecs / km² / mm)
Time of Concentration, t_c (hrs)
0.2
0.15
0.1
0.05
0
0.1
1
10

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Project No	Engineer
Date	Sheet No

Post Development

Climate Change allowance

- 2yr ARI = 76.6mm.
  2.1°C increase = 9.03% increase
  ∴ 2y ARI CC = 76.6 × 1.093
  = 83.7 mm
- 10yr ARI = 116.7
  ∴ 10yr ARI CC = 116.7 × 1.1323
  = 132.1 mm
- CN Pervious 84
- CN for impervious 98
- Percentage coverage 90%
- AV CN = $\frac{0.9 \times 98 + 0.1 \times 74}{100}$ = 0.89
- Piped stormwater system
  length 220 mm.
  Slope 0.5%

$$C^*_{2yr} = \frac{83.7 - 2 \times 0.61}{83.7 - 2 \times 0.61 + 2 \times 12.25} = 0.77$$

$$C^*_{10yr} = \frac{132.1 - 2 \times 0.61}{132.1 - 2 \times 0.61 + 2 \times 12.25} = 0.84$$

Location

Address search Enter your address and press enter to search

Site Information

To generate a set of results, either click on an existing data point, or a new location and enter a site name, then press the Generate Report button.

Latitude -37.808622687961304

Longitude 175.25498986244202

Site Name Custom Location

Site Id

Output Table Format

○ Depth - Duration - Frequency

◉ Intensity - Duration - Frequency

Generate Report

Results

Spreadsheet Download

Site Details | Historical Data | RCP2.6 Scenario | RCP4.5 Scenario | RCP6.0 Scenario | RCP8.5 Scenario

Rainfall intensities (mm/hr) :: RCP8.5 for the period 2031-2050

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	59.3	40.9	32.6	21.8	14.2	6.93	4.29	2.61	1.56	1.14	0.912	0.765
2	0.500	65.2	44.9	35.8	23.9	15.6	7.60	4.70	2.85	1.70	1.25	0.998	0.837
5	0.200	86.0	59.1	47.1	31.4	20.5	9.93	6.13	3.71	2.21	1.62	1.29	1.08
10	0.100	102	70.0	55.6	37.1	24.1	11.7	7.20	4.35	2.59	1.89	1.51	1.27
20	0.050	119	81.4	64.7	43.0	28.0	13.5	8.32	5.02	2.98	2.18	1.74	1.45
30	0.033	129	88.4	70.2	46.7	30.3	14.6	9.00	5.43	3.22	2.35	1.88	1.57
40	0.025	137	93.5	74.3	49.3	32.1	15.5	9.50	5.72	3.39	2.48	1.98	1.65

60	0.017	148	101	80.2	53.2	34.5	16.6	10.2	6.15	3.64	2.66	2.12	1.77
80	0.013	156	106	84.5	56.1	36.4	17.5	10.7	6.46	3.83	2.79	2.22	1.86
100	0.010	162	111	87.8	58.3	37.8	18.2	11.2	6.70	3.97	2.90	2.31	1.93
250	0.004	189	129	102	67.6	43.8	21.0	12.9	7.72	4.56	3.33	2.65	2.21

Rainfall intensities (mm/hr) :: RCP8.5 for the period 2081-2100

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	70.4	48.5	38.7	25.9	16.7	7.97	4.84	2.91	1.70	1.24	0.983	0.823
2	0.500	77.7	53.5	42.7	28.5	18.5	8.79	5.35	3.19	1.87	1.36	1.08	0.904
5	0.200	103	70.9	56.5	37.7	24.4	11.6	7.03	4.18	2.45	1.78	1.41	1.18
10	0.100	123	84.2	67.0	44.6	28.9	13.7	8.29	4.92	2.88	2.10	1.66	1.38
20	0.050	143	98.2	78.1	51.9	33.6	15.9	9.61	5.68	3.33	2.41	1.92	1.59
30	0.033	156	107	84.9	56.4	36.5	17.2	10.4	6.15	3.60	2.61	2.07	1.72
40	0.025	165	113	89.7	59.6	38.5	18.2	11.0	6.50	3.80	2.76	2.18	1.82
50	0.020	173	118	93.8	62.3	40.2	19.0	11.5	6.76	3.96	2.87	2.27	1.89
60	0.017	179	122	97.0	64.4	41.5	19.6	11.8	7.00	4.08	2.96	2.34	1.95
80	0.013	189	129	102	67.9	43.8	20.6	12.4	7.34	4.29	3.11	2.46	2.05
100	0.010	196	134	106	70.6	45.5	21.5	12.9	7.63	4.45	3.22	2.55	2.12
250	0.004	229	156	124	81.9	52.7	24.8	14.9	8.79	5.12	3.70	2.93	2.43

Worksheet 1: Runoff Parameters and Time of Concentration

Project: Wattyl Site **By:** ______ **Date:** 1/12/22

Location: Wickham St **Checked:** ______ **Date:** ______

Scenario: Post Development (Pre-developed or post-developed)
Whole site

1. Runoff Curve Number (CN) and Initial Abstraction (I_a)

Soil name and classification	Cover description (cover type, treatment and hydrologic condition	Curve Number (CN)	Area (km^2)	Product of CN x Area
	Planters	74	0.002	0.148
	Impervious	98	0.018	1.76
		TOTALS	0.02	1.908

CN (weighted) = $\frac{Total\ Product\ of\ CN\ x\ Area}{Total\ Area}$ = 1.908/0.02 = 95.4

Initial abstraction

$S = \left(\frac{1000}{CN} - 10\right)25.4 \quad (mm)$ = $\left(\frac{1000}{95.4} - 10\right) \times 25.4 = 12.25$

$I_a = 0.05\,S$ = $0.05 \times 12.25 = 0.61$ mm.

2. Time of Concentration (T_c)

(a) Sheet and shallow concentrated flow

From Equation 7-2 or from Figure 7-1:

$T_t = 100nL^{0.33}/S^{0.2}$ 0.39 hrs

(b) Concentrated network flow

i. Road channel flow from Figure 7-2:

ii. Pipe network flow from Table 7-2 and Figure 7-3:

iii. Open channel flow from Equation 7-3:

$V = R^{2/3}S^{1/2}/n$

(c) Time of concentration

$T_c = T_{t1} + T_{t2} + \cdots .. T_{tm} =$ hours 0.39 hrs

SCS Lag for HEC-HMS = $t_p = \frac{2}{3}t_c$ = hours 0.26 hrs

Worksheet 1: Runoff Parameters and Time of Concentration

Project: Nathyl Site **By:** KWM **Date:** 1/12/22.

Location: Wickham St **Checked:** _____ **Date:** _____

Scenario: Post Development (Pre-developed or post-developed)
Pervious.

1. Runoff Curve Number (CN) and Initial Abstraction (I_a)

Soil name and classification	Cover description (cover type, treatment and hydrologic condition	Curve Number (CN)	Area (km^2)	Product of CN x Area
Planters		74	0.002	0.148
		TOTALS	0.002	0.148

CN (weighted) = $\frac{Total\ Product\ of\ CN\ x\ Area}{Total\ Area}$ = 0.148/0.002 = 74

Initial abstraction

$S = \left(\frac{1000}{CN} - 10\right) 25.4\ (mm)$ = $\left(\frac{1000}{74} - 10\right) \times 25.4$ = 89.2 mm

$I_a = 0.05\,S$ = 0.05 x 89.2 = 4.5

2. Time of Concentration (T_c)

Swale flow 55m @ 1%
Pipe flow 220m @ 0.5%
∴ t_c swale = 16 mins
t_c pipe = 7.5 m / 23.5 m/min
= 0.39 hrs

(a) Sheet and shallow concentrated flow

From Equation 7-2 or from Figure 7-1:

$T_t = {100nL^{0.33}}/{S^{0.2}}$

(b) Concentrated network flow

i. Road channel flow from Figure 7-2:

ii. Pipe network flow from Table 7-2 and Figure 7-3:

iii. Open channel flow from Equation 7-3:

$V = {R^{2/3}S^{1/2}}/{n}$

(c) Time of concentration

$T_c = T_{t1} + T_{t2} + \cdots .. T_{tm}$ = hours = 0.39 hrs

SCS Lag for HEC-HMS = $t_p = \frac{2}{3} t_c$ = hours = 0.26 hrs.

Worksheet 2: Graphical Peak Flow Rate

Project: Nethyl Site **By:** KWM **Date:** 1/12/22

Location: Nicholson St **Checked:** _____ **Date:** _____

Scenario: Post Development (Pre-developed or post-developed)
PERVIOUS

1. Data

Catchment area (A) = 0.002 km²

Runoff curve number (CN) = 74 (from Worksheet 1)

Initial abstraction (Ia) = 4.5 (from Worksheet 1)

Time of concentration (Tc) = 0.26 hours (from Worksheet 1)

2. Storage

Storage (S) = 89.2 mm (from Worksheet 1)

	Storm #1	Storm #2	Storm #3
Average Recurrence Interval ARI (year)	water Quality.	2yr	10yr
24-hour rainfall depth P24 (mm)	27.9	83.7	132.1
Compute c*: $c^* = \frac{P_{24} - 2I_a}{P_{24} - 2I_a + 2S}$	NA	NA	NA
Specific peak flow rate q* (From Figure 8-1)	NA	NA	NA
Peak flow rate q_p: $q_p = q^* A P_{24}$ (m³/s)	NA	NA	NA
Runoff depth Q_{24}: $Q_{24} = \frac{(P_{24} - I_a)^2}{(P_{24} - I_a) + S}$	4.9	37.2	75.1
Runoff volume V_{24}: $V_{24} = 1000 x Q_{24} A$ (m³)	9.8	74.5	150.2

Worksheet 1: Runoff Parameters and Time of Concentration

Project: Nathyl Site **By:** ______ **Date:** ______

Location: Nickham St **Checked:** ______ **Date:** ______

Scenario: Post Development (Pre-developed or post-developed)
Impervious

1. **Runoff Curve Number (CN) and Initial Abstraction (I_a)**

Soil name and classification	Cover description (cover type, treatment and hydrologic condition	Curve Number (CN)	Area (km²)	Product of CN x Area
	Impervious			
	surfaces	98	0.018	1.76
		TOTALS	0.018	1.76

CN (weighted) = $\frac{Total\ Product\ of\ CN\ x\ Area}{Total\ Area}$ = 1.764/0.018 = 98

Initial abstraction

$S = \left(\frac{1000}{CN} - 10\right) 25.4\ \ (mm)$ = $\left(\frac{1000}{98} - 10\right) \times 25.4$ = 5.2

$I_a = 0.05\,S$ = 0.05×5.2 = 0.26

2. **Time of Concentration (T_c)**

(a) Sheet and shallow concentrated flow

From Equation 7-2 or from Figure 7-1:

$T_t = 100nL^{0.33} / S^{0.2}$

(155m @ 1.2%)
17 K & C flow.
+ 18 OLF (Pavement)
∴ = 3.5 mins + 3.6 mins
= 7.1 mins
= 0.12 hrs.

(b) Concentrated network flow

i. Road channel flow from Figure 7-2:

ii. Pipe network flow from Table 7-2 and Figure 7-3:

iii. Open channel flow from Equation 7-3:

$V = R^{2/3}S^{1/2} / n$

(c) Time of concentration

$T_c = T_{t1} + T_{t2} + \cdots .. T_{tm}$ = hours 0.12 hrs

SCS Lag for HEC-HMS = $t_p = \frac{2}{3} t_c$ = hours 0.08 hrs.

Worksheet 2: Graphical Peak Flow Rate

Project: Natty1 Site By: _____ Date: _____

Location: Nicklaus St Checked: _____ Date: _____

Scenario: Post Development Impervious (Pre-developed or post-developed)

1. Data

Catchment area (A) = 0.018 km²

Runoff curve number (CN) = 98 (from Worksheet 1)

Initial abstraction (Ia) = 0.026 (from Worksheet 1)

Time of concentration (Tc) = 0.12 hours (from Worksheet 1)

2. Storage

Storage (S) = 5.2 mm (from Worksheet 1)

	Storm #1	Storm #2	Storm #3
Average Recurrence Interval ARI (year)	Water Quality	2yr	10yr
24-hour rainfall depth P24 (mm)	27.9	83.7	132.1
Compute c*: $c^* = \frac{P_{24} - 2I_a}{P_{24} - 2I_a + 2S}$	NA	NA	NA
Specific peak flow rate q* (From Figure 8-1)	NA	NA	NA
Peak flow rate q_p: $q_p = q^* A P_{24}$ (m³/s)	NA	NA	NA.
Runoff depth Q_{24}: $Q_{24} = \frac{(P_{24} - I_a)^2}{(P_{24} - I_a) + S}$	23.3	78.5	126.8
Runoff volume V_{24}: $V_{24} = 1000 x Q_{24} A$ (m³)	419	1414	2283

Worksheet 2: Graphical Peak Flow Rate

Project: Natty / Site **By:** _____ **Date:** _____

Location: Nicholson St **Checked:** _____ **Date:** _____

Scenario: Post Develop who6 site. **(Pre-developed or post-developed)**

1. Data

Catchment area (A) = 0.102 km²

Runoff curve number (CN) = 95.4 (from Worksheet 1)

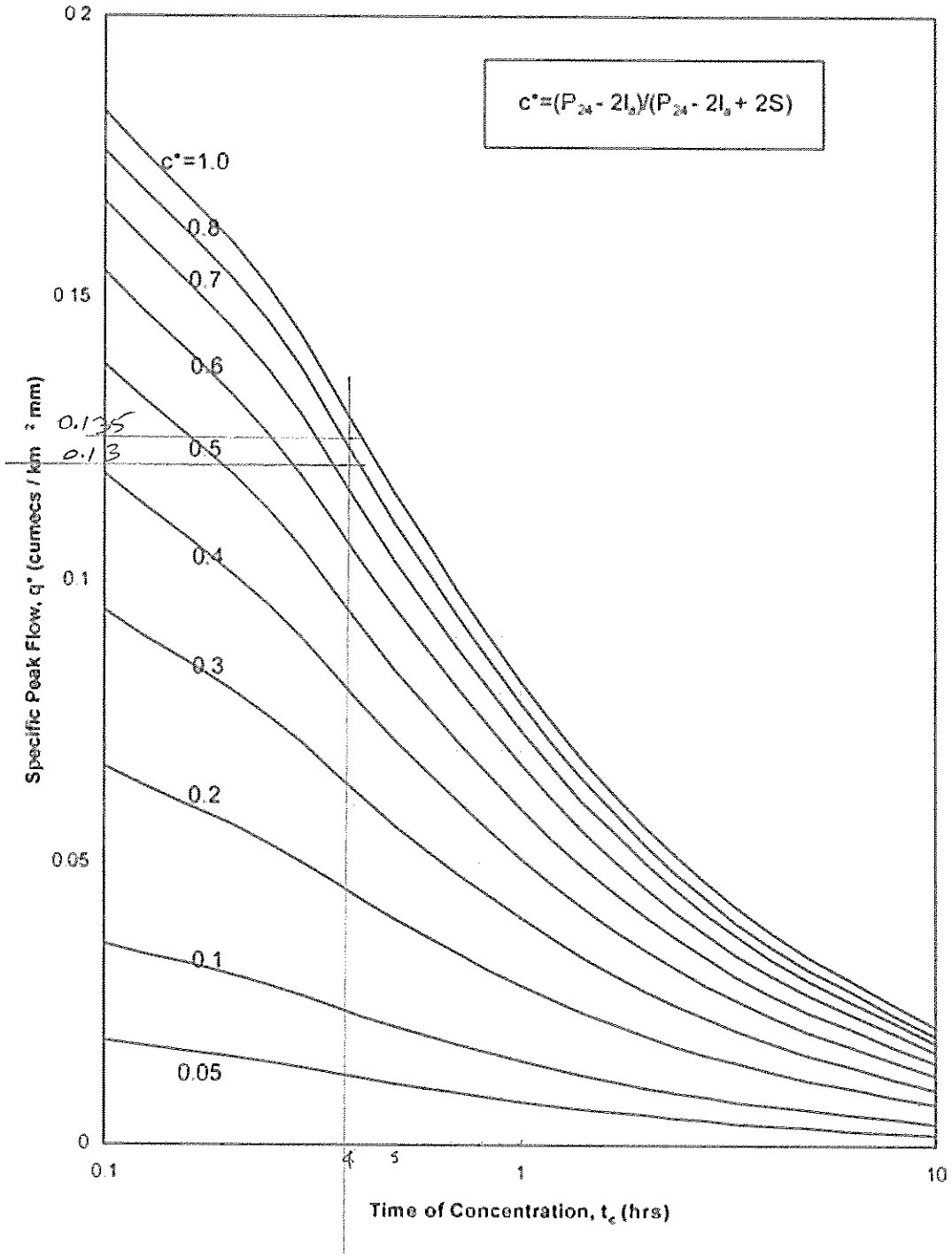
Initial abstraction (Ia) = 0.61 (from Worksheet 1)

Time of concentration (Tc) = 0.39 hours (from Worksheet 1)

2. Storage

Storage (S) = 12.25 mm (from Worksheet 1)

	Storm #1	Storm #2	Storm #3
Average Recurrence Interval ARI (year)		2yr	10yr
24-hour rainfall depth P24 (mm)		83.7	132.1
Compute c*: $c^* = \frac{P_{24} - 2I_a}{P_{24} - 2I_a + 2S}$		0.77	0.84
Specific peak flow rate q* (From Figure 8-1)		0.13	0.135
Peak flow rate q_p: $q_p = q^* A P_{24}$ (m³/s)		0.218	0.357
Runoff depth Q_{24}: $Q_{24} = \frac{(P_{24} - I_a)^2}{(P_{24} - I_a) + S}$			
Runoff volume V_{24}: $V_{24} = 1000 x Q_{24} A$ (m³)			


$c^*=(P_{24}-2I_a)/(P_{24}-2I_a+2S)$
c^*=1.0
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.05
0.135
0.13
0.2
0.15
0.1
0.05
0
0.1
1
10
Specific Peak Flow, q* (cumecs / km ² mm)
Time of Concentration, t_c (hrs)

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Project No	Engineer
Date	Sheet No

POST DEVELOPMENT SUMMARY

2 YEAR EVENT

- Peak flow Rate = 0.213 m³/s
- Runoff depths
  - Pervious 37.2mm
  - Impervious 78.5mm
- Total Runoff Volume = 79.5 + 1414
  = 1489 m³

10 YEAR EVENT

- Peak flow Rate 0.367 m/s
- Runoff Depth
  - Pervious 75.1mm
  - Impervious 126.8mm.
- Total Runoff Volume = 150.2 + 2283
  = 2433 m³

WATER QUALITY RAINFALL

- ⅓ 2yr event = 83.7/3 = 27.9mm over 24hrs pervious
- Runoff depth
  - Pervious 4.9mm Volume = 9.8 m³.
  - Impervious 23.3mm Volume = 419
- Total runoff Volume = 9.8 + 419
  = 429 m³.

∴ 80% betterment 429/0.8 = 536 m³.
Storage required

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Project No	Engineer
Date	Sheet No

Stormwater System

Pavements & SW360 sizing.

Pavement 1 area = 2311 m²

" 2 " = 2963 m²

5274 m². → SW360 size requirements.

Catchpits

Pavement 1 & 2

Rainfall intensity for RCP 8.5 (2081-2100)

10 ARI → 10 min intensity = 123 mm/hr.

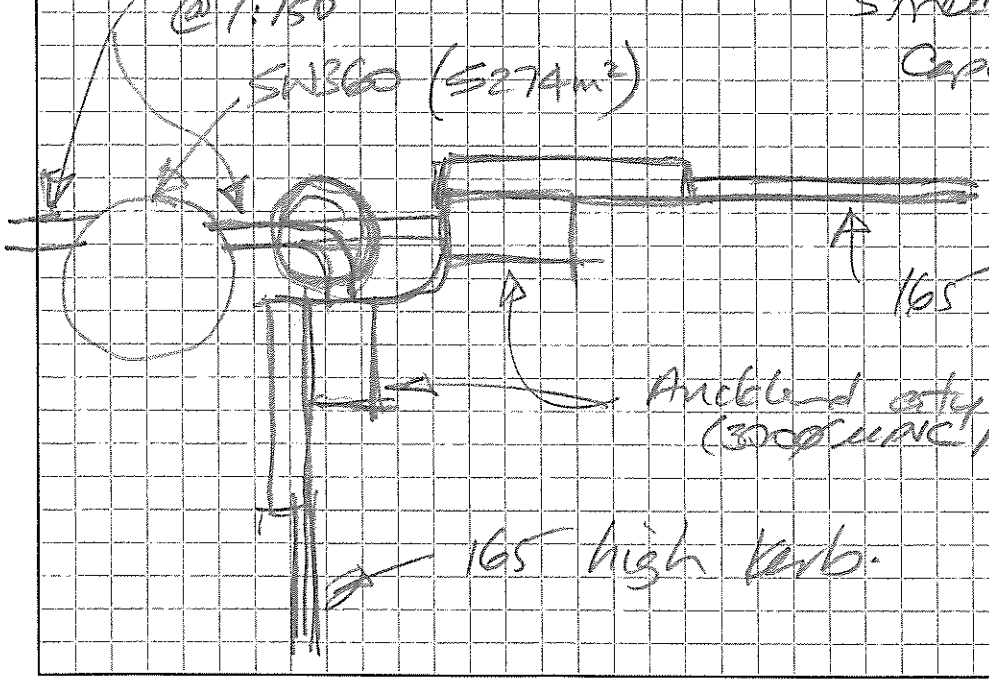
$$Q/s = \frac{0.123}{3.6} \times 0.9 = 0.0308 \text{ l/s/m}^2.$$

Pavement 1 Q = 0.0308 × 2311 = 71.1 l/s.

2 Q = 0.0308 × 2963 = 91.1 l/s

162.2 l/s → 375Ø pipe @ 1:150

→ use Hynds (Auckland City) Street Catchpits (2) Capacity 80-150 l/s.



Appendix B – Engineering Drawings

CIVIL DRAWING INDEX

No.	Sheet Name
SD-RC01	EXISTING SITE PLAN
SD-RC02	PROPOSED SITE & FINISHED LEVELS PLAN
SD-RC03	PROPOSED DRAINAGE PLAN
SD-RC04	PROPOSED SITE CATCHMENT AREAS PLAN
SD-RC05	EXISTING OVER LAND FLOW PATH PLAN
SD-RC06	SEDIMENT CONTROL PLAN
SD-RC07	SEDIMENT CONTROL DETAILS
SD-RC08	SEDIMENT CONTROL DETAILS
SD-RC09	PROPOSED BUILDING PLATFORM PLAN
SD-RC10	PROPOSED BUILDING PLATFORM CUT & FILL PLAN

PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST
FOR
STRIDE PROPERTY

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EXISTING SERVICES LEGEND

BOUNDARY	
EXTG. SWCP	
EXTG. SW PIPE	SW
EXTG. CHORUS SERVICE	CHO
EXTG. POWER	PWR
EXTG. POWER 400V	400V
EXTG. LIGHT POLE	
EXTG. POWER CABINET	

NOTE: SERVICES INDICATED ARE NOT EXHAUSTIVE & WE PROVIDE NO GUARANTEE THAT ALL SERVICES ARE SHOWN.

ORIGINAL DRAWING IN COLOUR

EXISTING SITE PLAN

SCALE @ A1 1 : 300

SITE AREAS SCHEDULE - PRE-DEVELOPMENT (m²)

FINISHES / SITES	EXISTING SITE
PERMEABLE AREAS: LANDSCAPING	1171
SEMI-IMPERMEABLE AREAS: COMPACTED METAL	16999
IMPERMEABLE AREAS: PERMANENT BUILDINGS	315
IMPERMEABLE AREAS: PAVEMENT / HARDSTAND	1520
TOTAL	**20005**

0 50 100mm

REV	DATE	DESCRIPTION
1	21-03-2023	Resource Consent

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PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

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DRAWING
EXISTING SITE PLAN

CAD FILE
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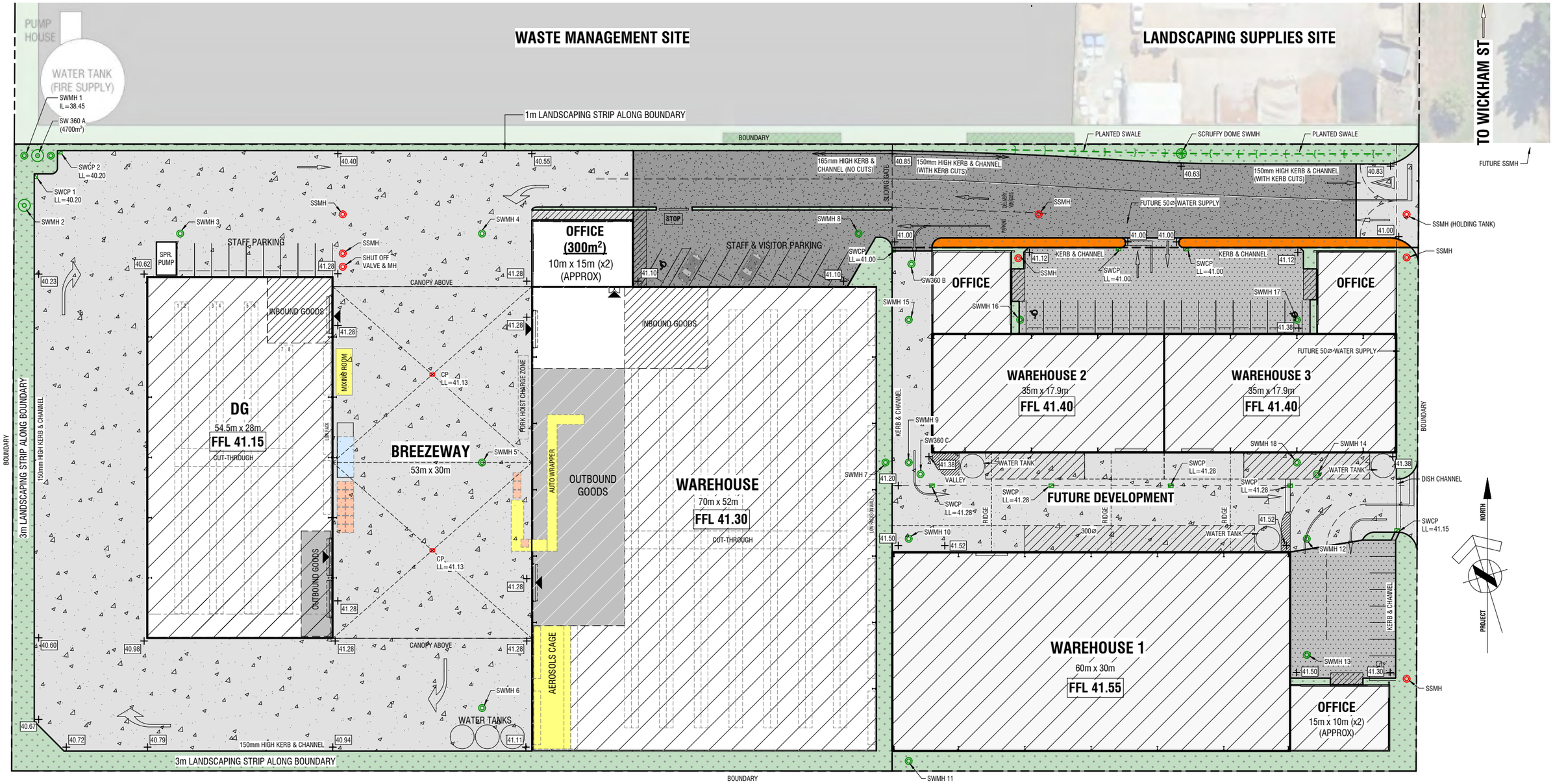
JOB NO **10368**

SCALE AT A1 As indicated
SCALE AT A3

SHEET **SD-RC01** REV **1**



FUTURE DEVELOPMENT SITE

SITE FINISHES LEGEND

- LANDSCAPED / GRASSED AREA
- 150 THK. REINFORCED CONCRETE SLAB ON GAP40 BASECOURSE
- 50mm THK. AC14 ON GAP40 BASECOURSE
- 25mm THK. AC10 ON GAP40 BASECOURSE

PROPOSED SITE PLAN

SCALE @ A1 1 : 300

SITE AREAS SCHEDULE - POST-DEVELOPMENT (m²)

FINISHES / SITES	WATTYL DEVELOPMENT	FUTURE DEVELOPMENT	TOTAL
PERMEABLE AREAS: LANDSCAPING	1331	512	1843
SEMI-IMPERMEABLE AREAS: COMPACTED METAL	0	0	0
IMPERMEABLE AREAS: PERMANENT BUILDINGS	6924	3679	10603
IMPERMEABLE AREAS: PAVEMENT / HARDSTAND	5505	2054	7559
TOTAL	**13760**	**6245**	**20005**

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PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

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DRAWING
PROPOSED SITE & FINISHED LEVELS PLAN

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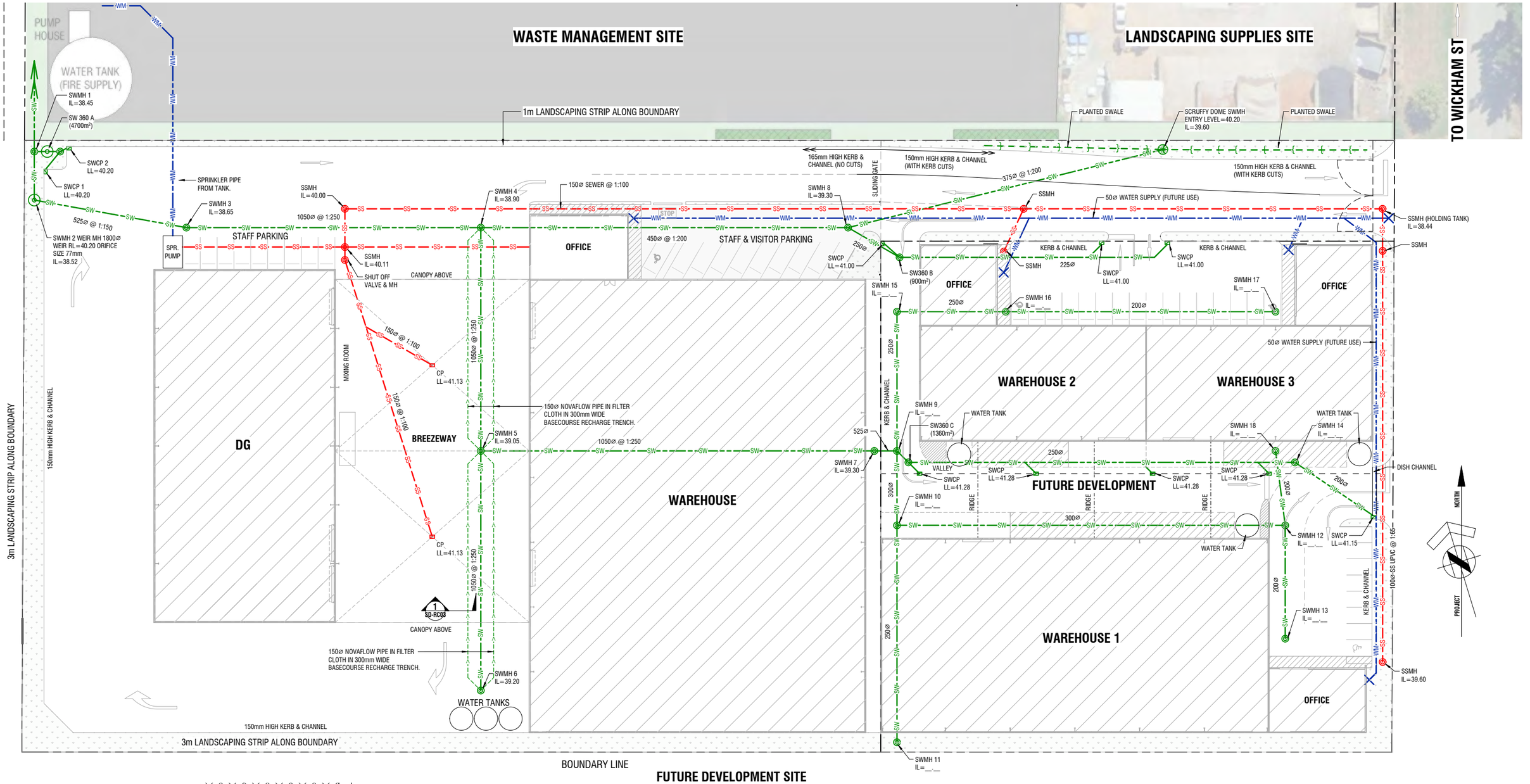
JOB NO 10368

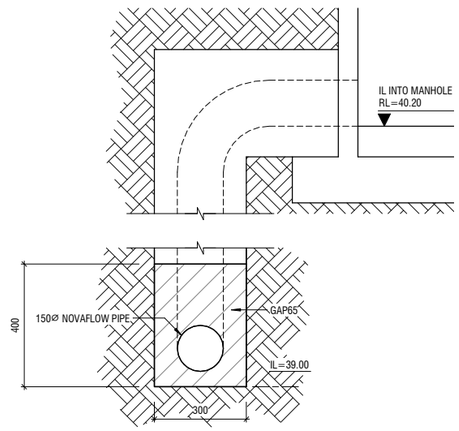
SCALE AT A1 As indicated
SCALE AT A3

SHEET SD-RC02 REV 1

0 50 100mm

ORIGINAL DRAWING IN COLOUR





1 SD-RC03 **SECTION THRU GROUNDWATER RECHARGE TRENCH**
SCALE @ A1 1 : 10

PROPOSED DRAINAGE PLAN
SCALE @ A1 1 : 300

ORIGINAL DRAWING IN COLOUR

0 50 100mm

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PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

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DRAWING
PROPOSED DRAINAGE PLAN

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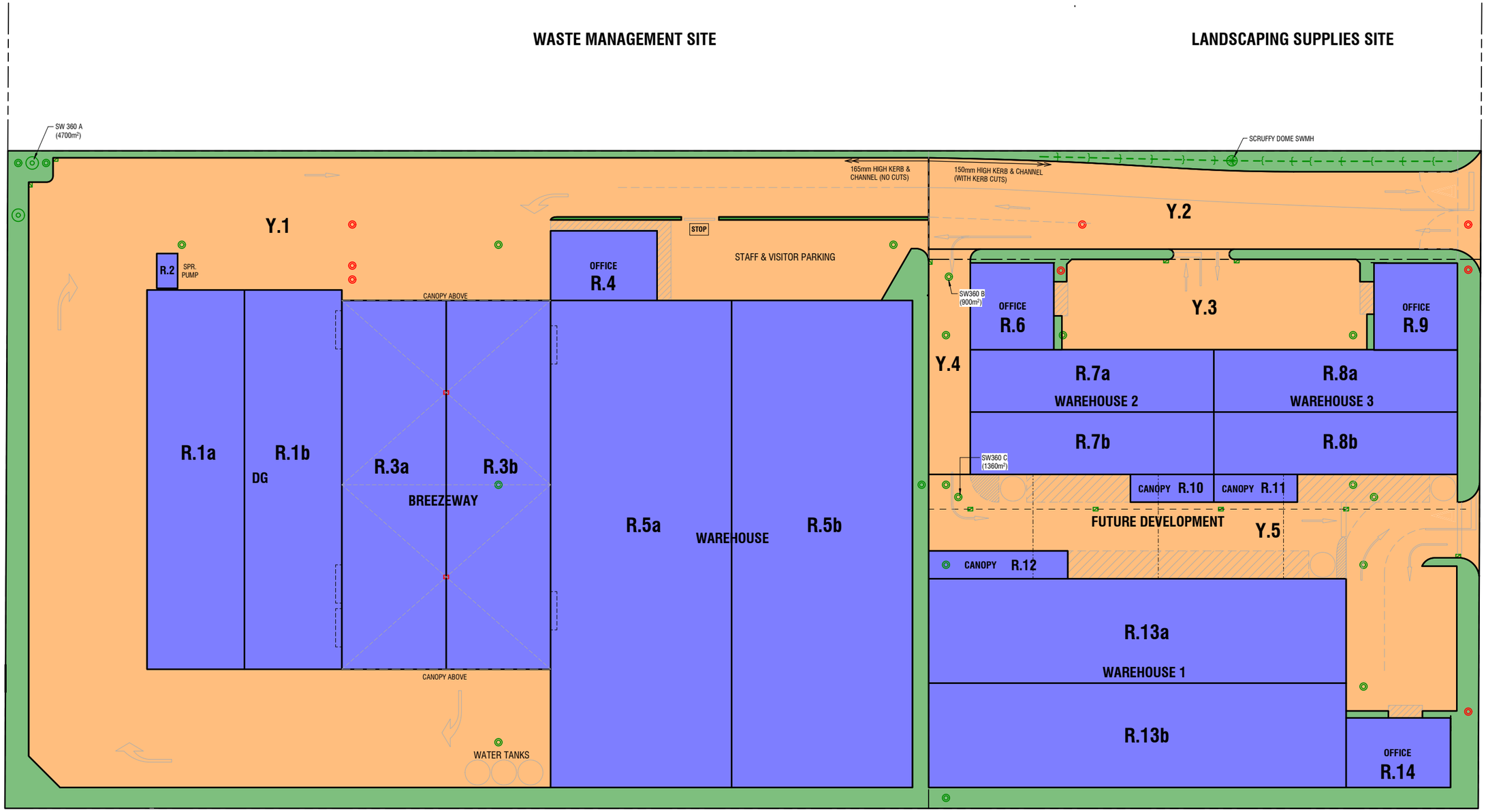
JOB NO 10368

SCALE AT A1 As indicated
SCALE AT A3

SHEET SD-RC03 REV 1



ROOF CATCHMENT AREAS SCHEDULE

CATCHMENT	AREA (m²)
R.1a	763
R.1b	763
R.2	15
R.3a	795
R.3b	795
R.4	153
R.5a	1820
R.5b	1820
R.6	150
R.7a	313.25

ROOF CATCHMENT AREAS SCHEDULE (CONT.)

CATCHMENT	AREA (m²)
R.7b	313.25
R.8a	313.25
R.8b	313.25
R.9	150
R.10	48
R.11	48
R.12	80
R.13a	900
R.13b	900
R.14	150

PROPOSED CATHCMENT AREAS PLAN

SCALE @ A1 1 : 300

YARD CATCHMENT AREAS SCHEDULE

CATCHMENT	AREA (m²)
Y.1	4539
Y.2	946
Y.3	585
Y.4	195
Y.5	1294

CATCHMENT AREAS LEGEND

LANDSCAPE AREA	TOTAL AREA =1843m²
ROOF AREA	TOTAL AREA =10603m²
YARD / HARDSTAND AREA	TOTAL AREA =7559m²

ORIGINAL DRAWING IN COLOUR

0 50 100mm

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PROJECT
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DRAWING
PROPOSED SITE CATCHMENT AREAS PLAN

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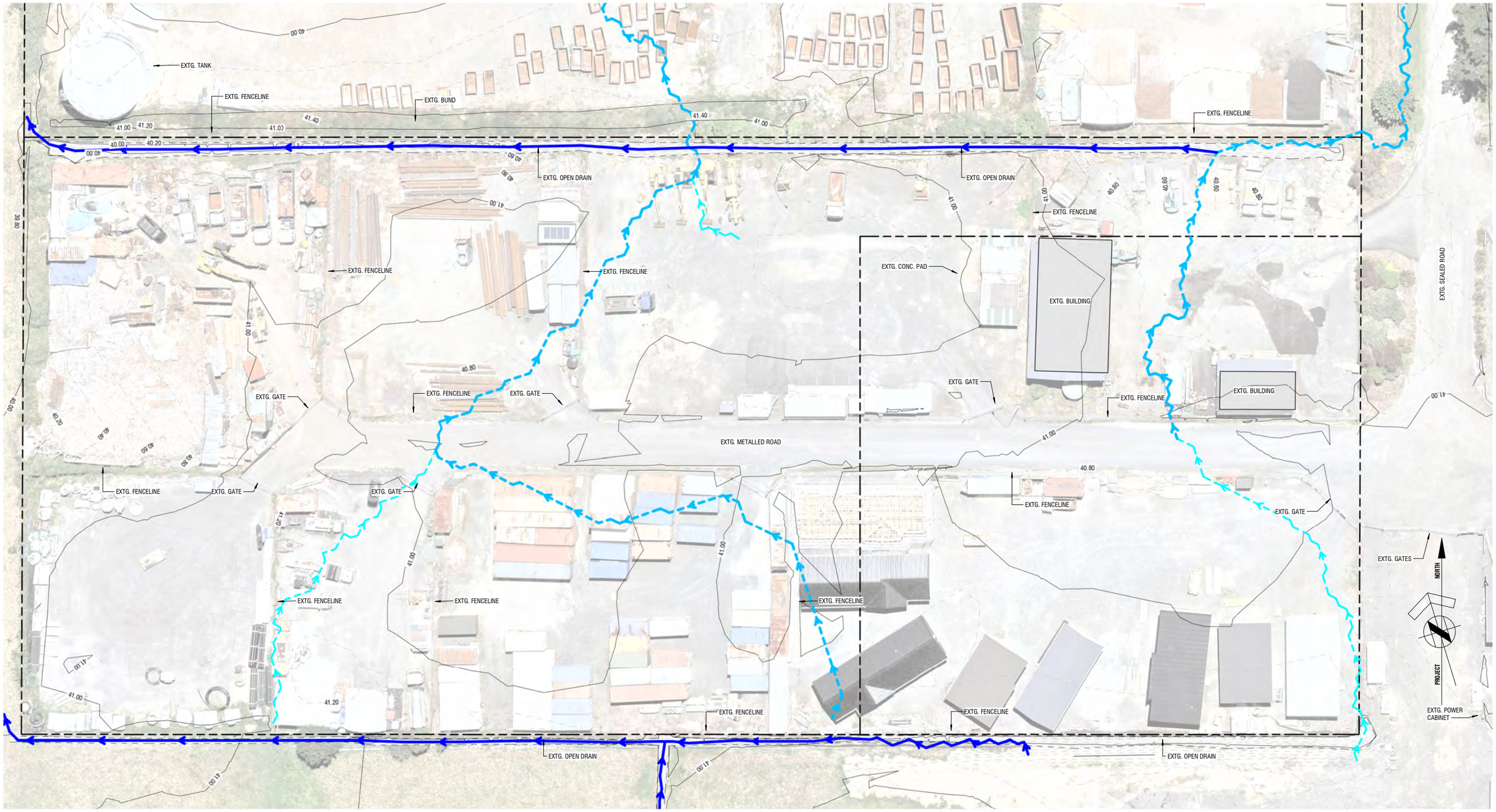
JOB NO 10368

SCALE AT A1 1 : 300
SCALE AT A3

SHEET SD-RC04
REV 1



EXISTING OVER LAND FLOW PATH PLAN

SCALE @ A1 1 : 300

OVER LAND FLOW PATH LEGEND

- BOUNDARY
- HCC FLOOD MAP OVER LAND FLOW PATH - MINOR
- HCC FLOOD MAP OVER LAND FLOW PATH - MODERATE
- EXISTING SITE DRAIN

0 50 100mm

ORIGINAL DRAWING IN COLOUR

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PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

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DRAWING
EXISTING OVER LAND FLOW PATH PLAN

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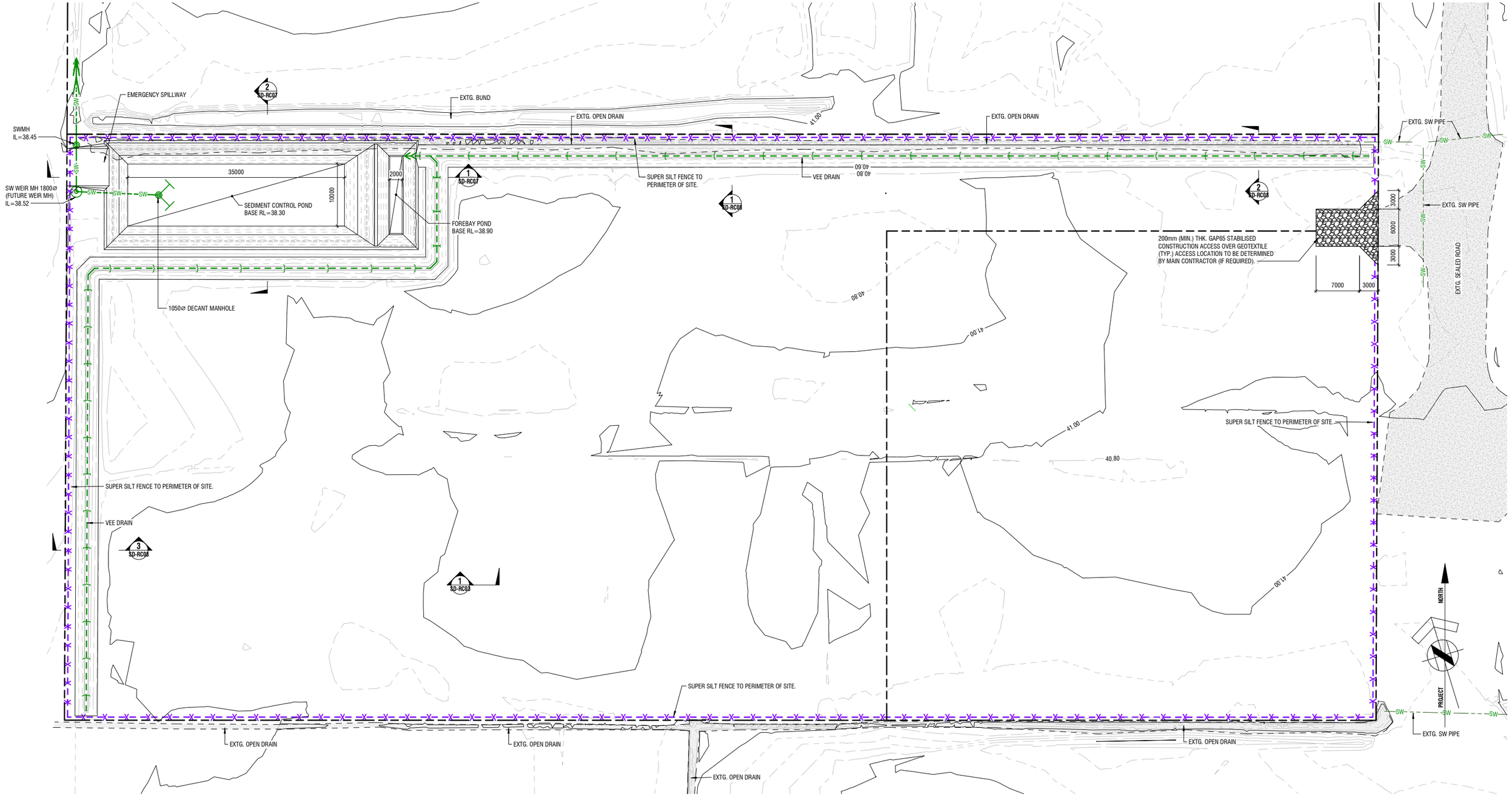
JOB NO **10368**

SCALE AT A1 1 : 300
SCALE AT A3

SHEET **SD-RC05** REV **1**



SEDIMENT CONTROL PLAN

SCALE @ A1 1 : 300

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PROJECT
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DRAWING
SEDIMENT CONTROL PLAN

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JOB NO **10368**

SCALE AT A1 1 : 300

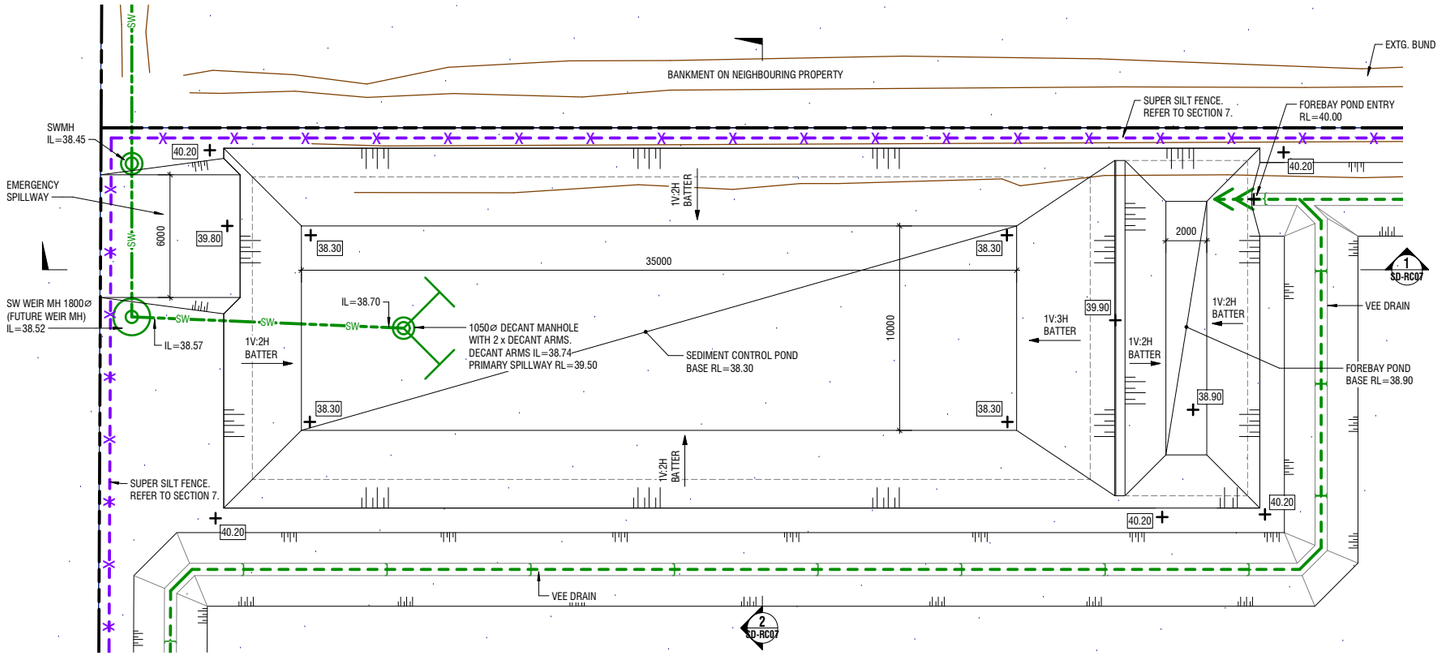
SCALE AT A3

SHEET **SD-RC06** REV **1**

0 50 100mm

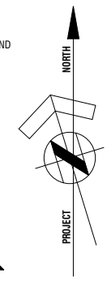
CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK
FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALE

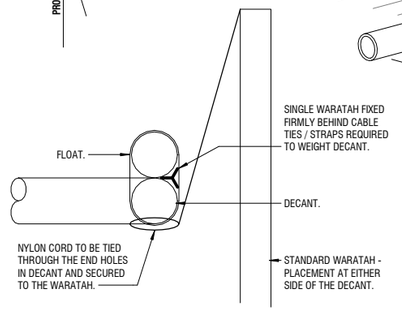
ORIGINAL DRAWING IN COLOUR



SEDIMENT CONTROL POND PLAN

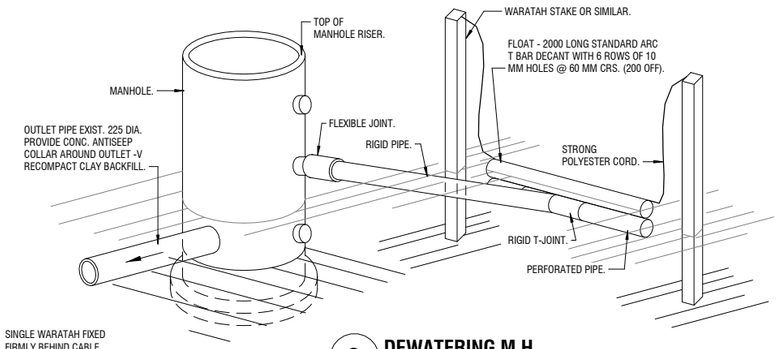
SCALE @ A1 1 : 150





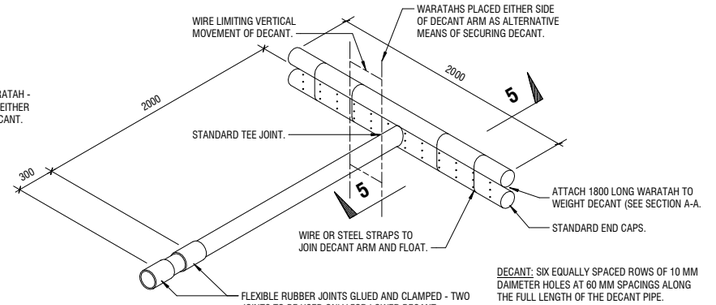
5 SECTION DECANTING BAR

SCALE @ A1 1 : 10



3 DEWATERING M.H.

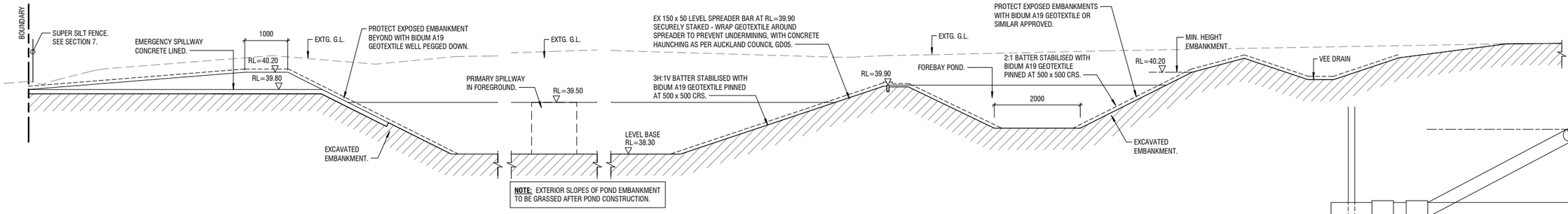
SCALE - N.T.S.



DECANT: SIX EQUALLY SPACED ROWS OF 10 MM DAIMETER HOLES AT 60 MM SPACINGS ALONG THE FULL LENGTH OF THE DECANT PIPE.

4 DECANT DETAIL

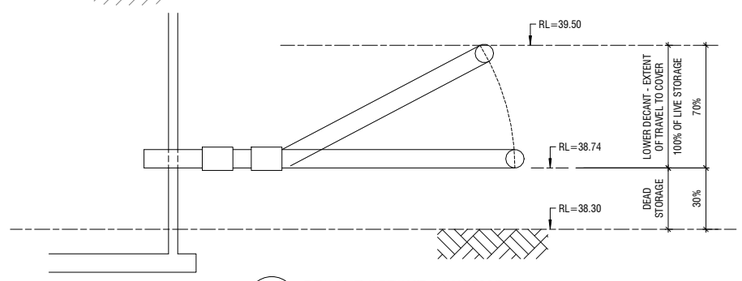
SCALE - N.T.S.



NOTE: EXTERIOR SLOPES OF POND EMBANKMENT TO BE GRASSED AFTER POND CONSTRUCTION.

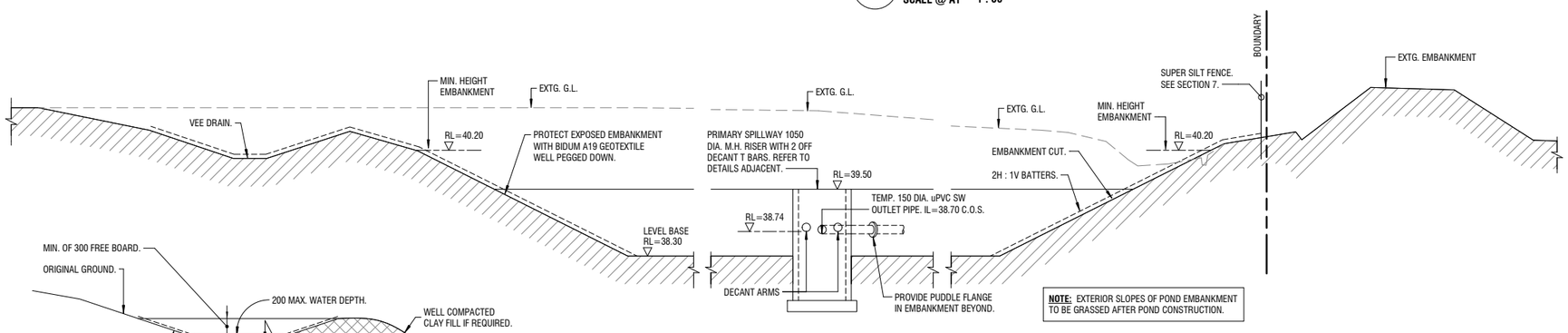
1 SEDIMENT POND LONGITUDINAL SECTION

SCALE @ A1 1 : 50



6 DECANT SETOUT SCHEMATIC

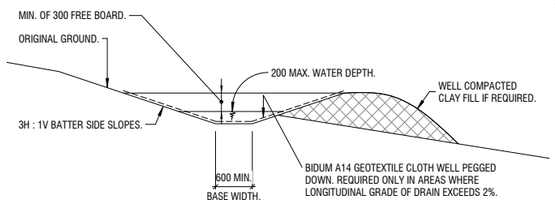
SCALE @ A1 1 : 25



NOTE: EXTERIOR SLOPES OF POND EMBANKMENT TO BE GRASSED AFTER POND CONSTRUCTION.

2 SEDIMENT POND CROSS SECTION

SCALE @ A1 1 : 50

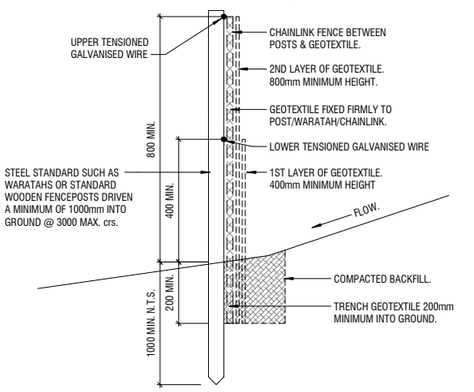


8 TYPICAL SECTION OF CLEAN / DIRTY WATER DRAIN

SCALE @ A1 1 : 50

SEDIMENT POND SCHEDULE

POND	TRIBUTARY AREA	2% VOLUME	BASE DIMENSIONS	BASE R.L.	SPILLWAY R.L.	MIN. BANK R.L.	OVERFLOW R.L.	TOTAL VOLUME R.L. = 39.50	DEAD STORAGE 30% VOLUME	DEAD STORAGE DECANT R.L.
1	2.00 Ha	400m³	35m x 10m	38.30	39.50	40.20	39.80	568m³	170m³	38.74



7 SUPER SILT FENCE TYPICAL DETAIL

SCALE @ A1 1 : 10

ORIGINAL DRAWING IN COLOUR

REV	DATE	DESCRIPTION
1	21-03-2023	Resource Consent

stiffe hooker ltd
architects - engineers - interiors
3a melrose street
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www.stiffehooker.co.nz

PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

FOR
STRIDE PROPERTY

DRAWING
SEDIMENT CONTROL DETAILS

CAD FILE D:\Revit Local Files\10368 - Wattyl Development- Wickham Street-Central_v22_jamesm@stiffehooker.co.nz.rvt
JOB NO 10368

SCALE AT A1 As indicated
SCALE AT A3

SHEET SD-RC07
REV 1

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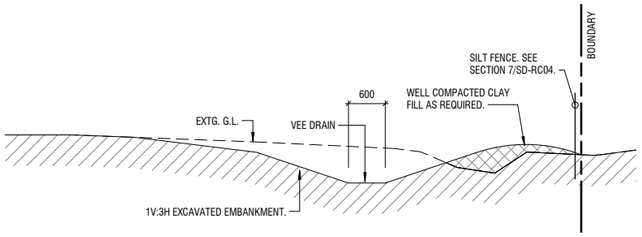
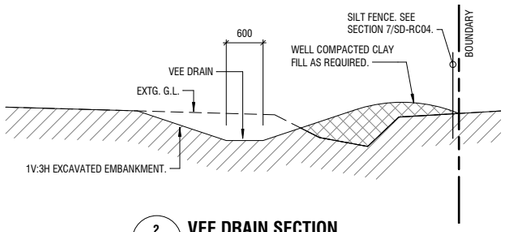
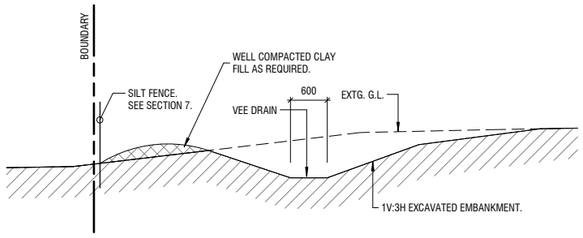


1 **VEE DRAIN SECTION**
SD-RC06 **SCALE @ A1 1 : 50**



2 **VEE DRAIN SECTION**
SD-RC06 **SCALE @ A1 1 : 50**



3 **VEE DRAIN SECTION**
SD-RC06 **SCALE @ A1 1 : 50**

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JOB NO **10368**

SCALE AT A1 1 : 50
SCALE AT A3

SHEET **SD-RC08** REV **1**

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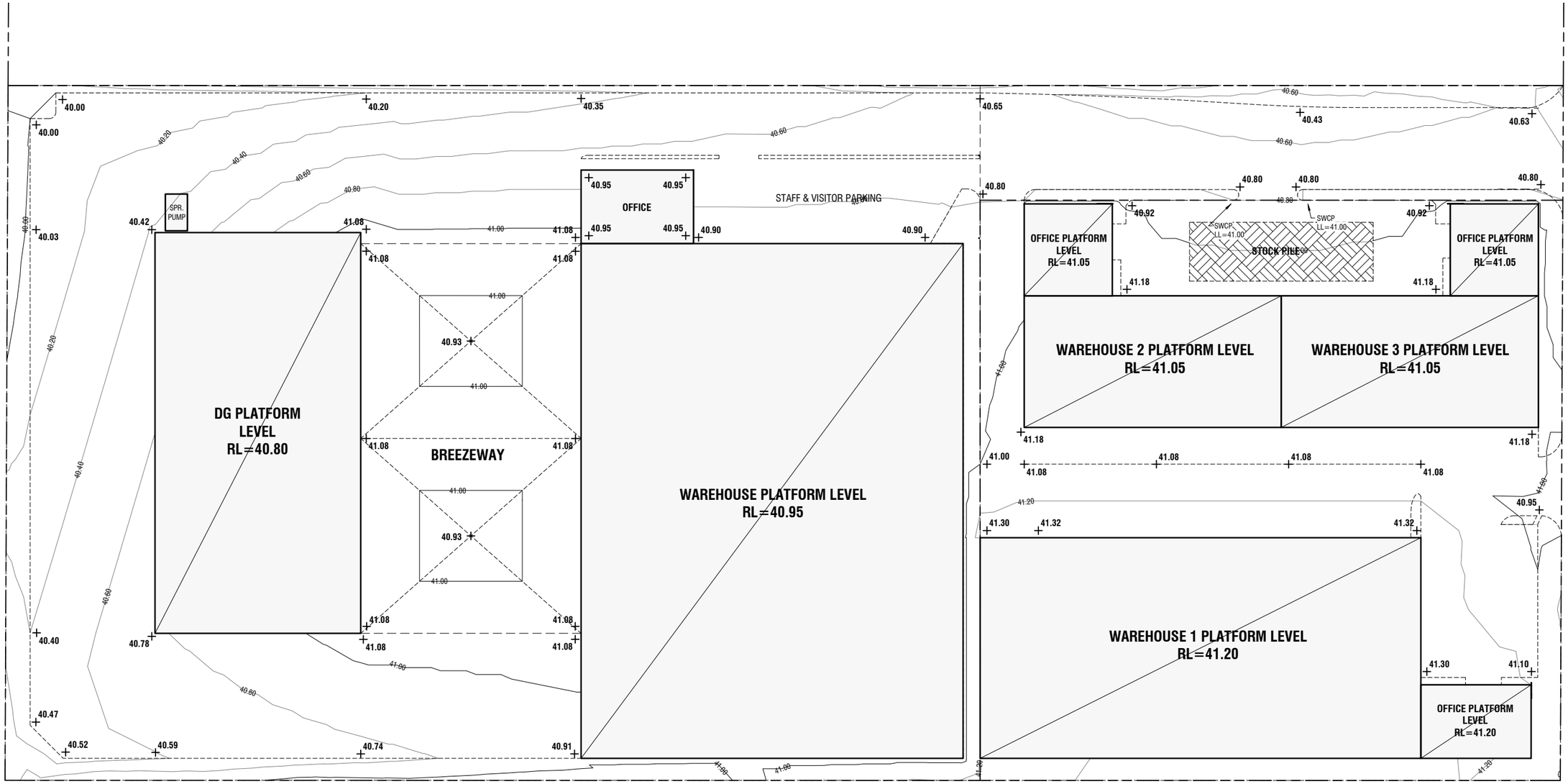
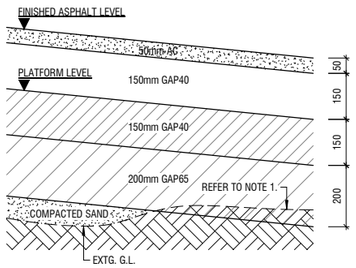


PROPOSED BUILDING PLATFORM PLAN

SCALE @ A1 1 : 300

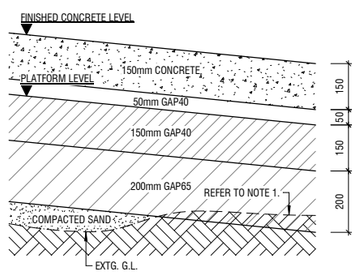
BUILDING PLATFORM NOTES

1. THE EXISTING SURFACE SHALL BE CLEARED OF ALL VEGETATION, ASPHALT & CONCRETE INCLUDING EXISTING STRUCTURES/FOUNDATIONS & BE REMOVED FROM SITE.
2. ANY HIGH POINTS ACROSS THE SITE ABOVE THE REQUIRED PLATFORM LEVELS, SHALL BE TRIMMED TO THE REQUIRED LEVELS.
3. WITHIN FUTURE PAVEMENT AREAS FOLLOWING CLEARING/TRIMMING WHERE THE EXISTING SURFACE IS COMPACTED BASECOURSE, THE EXISTING SURFACE SHALL BE PROOF ROLLED AND CIV TESTED ON A 3M GRID TO CONFIRM ACCEPTANCE/REJECTION. MIN CIV 30 IS REQUIRED. WHERE MIN CIV CANNOT BE ACHIEVED OR SOILS/PEAT EXIST, THE AREA SHOULD BE EXCAVATED TO 350MM BELOW PLATFORM LEVEL LAY FILTER CLOTH ON EXPOSED SUBGRADE WITH COMPACTED GAP40/65 LAID AS DETAILED.
4. WITHIN FUTURE BUILDING AREAS FOLLOWING CLEARING/TRIMMING WHERE THE EXISTING SURFACE IS COMPACTED BASECOURSE THE SURFACE SHALL BE PROOF ROLLED TO CONFIRM A WORKABLE SURFACE (MIN CIV 16). WHERE MIN CIV CANNOT BE ACHIEVED OR SOILS/PEAT EXIST, THE AREA SHOULD BE EXCAVATED 300MM BELOW PLATFORM LEVEL LAY FILTER CLOTH ON EXPOSED SUBGRADE WITH COMPACTED SAND LAID (MIN CIV 20) ABOVE.
5. ALLOW 1500m² OF UNSUITABLE OR SOFTSPOT SUBEXCAVATION & BACKFILLING WITH GAP65 BASECOURSE WHERE DIRECTED BY ENGINEER. MIN. COMPACTION CIV 24.
6. ALLOW 5000m² OF CIRTEX DURAFORCE AS440 GEOTEXTILE TO BE USED IN SOFTSPOT / SUBEXCAVATIONS WHERE DIRECTED BY THE ENGINEER.



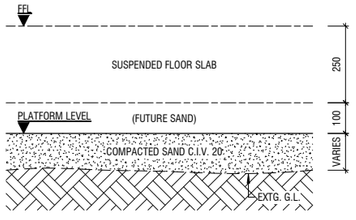
TYPICAL ASPHALT PAVEMENT PLATFORM SECTION

SCALE @ A1 1 : 10



TYPICAL CONCRETE PAVEMENT PLATFORM SECTION

SCALE @ A1 1 : 10



TYPICAL BUILDING PLATFORM SECTION

SCALE @ A1 1 : 10

0 50 100mm

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PROJECT
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FOR
STRIDE PROPERTY

DRAWING
PROPOSED BUILDING PLATFORM PLAN

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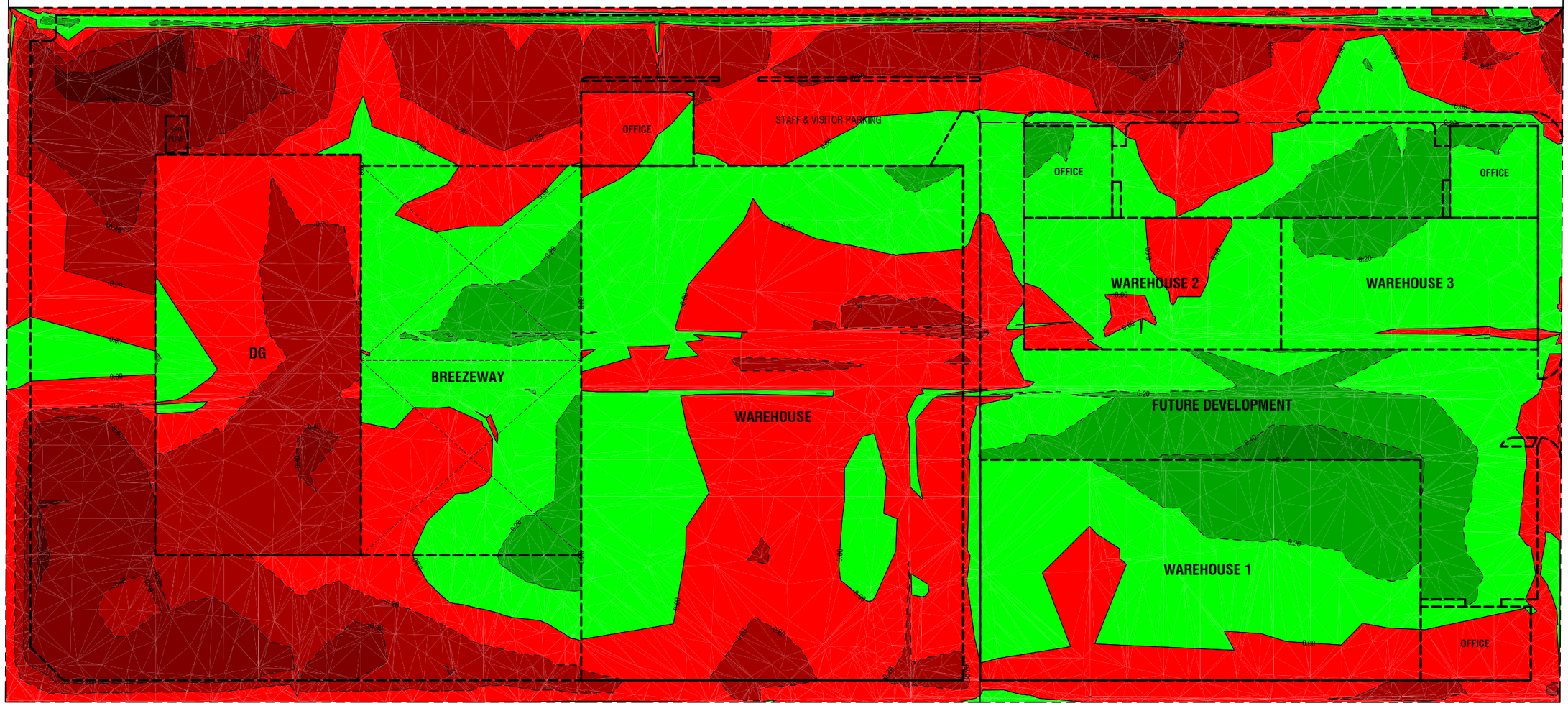
JOB NO **10368**

SCALE AT A1 As indicated
SCALE AT A3

SHEET **SD-RC09** REV **1**



TO WICKHAM ST

NORTH

PROJECT

PLATFORM VOLUMES

1. VOLUMES ARE SOLID VOLUMES, NO BULKING FACTORS HAVE BEEN APPLIED.
2. -VE VALUES = CUT DEPTH
3. +VE VALUES = FILL DEPTH

APPROX. BULK CUT / FILL VOLUMES FOR PLATFORM

CUT VOLUME = 2230m³

FILL VOLUME = 1130m³

WORKS AREA = 20005m²

BULK EARTHWORKS CUT / FILL DEPTHS

RANGE NO.	MIN. DEPTH (m)	MAX. DEPTH (m)	AREA (m²)	COLOUR
1	-0.80	-0.60	102.75	
2	-0.60	-0.40	1310.42	
3	-0.40	-0.20	3238.80	
4	-0.20	0.00	6545.43	
5	0.00	0.20	6647.38	
6	0.20	0.40	2050.25	
7	0.40	0.60	109.85	
8	0.60	0.80	1.63	

ORIGINAL DRAWING IN COLOUR

0 50 100mm

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PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET-WEST

FOR
STRIDE PROPERTY

DRAWING
PROPOSED BUILDING PLATFORM CUT & FILL PLAN

CAD FILE
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JOB NO 10368

SCALE AT A1 As indicated
SCALE AT A3

SHEET SD-RC10
REV 1

B&A

Waipa District Plan Rules Assessment
16A Wickham Street, Frankton

Rule	Complies	Comments
Section 4 – Rural Zone		
4.4.1.5 Non-complying activities (b) All other activities not listed in activity status table Rules 4.4.1.1 to 4.4.1.4 and not listed as a prohibited activity	Non-Complying	The proposal involves a non-rural activity in the rural zone and is thus assessed as a Non-Complying Activity.
Minimum building setback from road boundaries		
4.4.2.1 (b) For buildings over 100m^2 (other than dwellings) – 30m *Activities that fail to comply with Rules 4.4.2.1(b) to 4.4.2.1(d) will require a resource consent for a discretionary activity.*	Does not comply - Non-Complying	The Eastern boundary closest to Wickham Street is 3m off the boundary.
Minimum setbacks from internal site boundaries		
4.4.2.2 (d) All other buildings less than or equal to 250m^2 – 15m (e) All other buildings greater than 250m^2 – 25m *Activities that fail to comply with this rule will require a resource consent for a restricted discretionary activity with the discretion being restricted over:* • *The provision of daylight and sunlight into neighbouring buildings; and* • *Visual and aural privacy; and* • *The general appearance/effect on the openness and character; and* • *The safety and efficiency of traffic flow; and* • *Access around the site; and* • *Effects on surrounding properties; and* • *Potential reverse sensitivity effects on any adjoining rural activities.* *These matters will be considered in accordance with the assessment criteria in Section 21.*	Does not comply- Restricted Discretionary	The buildings will be located: Northern boundary: 11.5m Western boundary: 20.32m Southern boundary: 3m Eastern Boundary: 3m
Height of Buildings		
4.4.2.9 Buildings in all areas except for those affected by the approach surfaces, transitional surfaces, horizontal surface, conical surface, as delineated on the Planning Maps for Hamilton International Airport and also in Appendix O9 shall not exceed 12m in height above ground level. *Activities that fail to comply with this rule will require a resource consent for a restricted discretionary activity with the discretion being restricted over:*	Does not comply- Restricted Discretionary	The tallest building on site will be the distribution warehouse that stands at 18.02m tall.

• *Visual effects including bulk, scale and location of the building; and* • *Effects on rural character and amenity; and* • *Effects on surrounding properties; and* • *Loss of daylight to adjoining sites.* *These matters will be considered in accordance with the assessment criteria in Section 21*		
Maximum building coverage		
4.4.2.10 The maximum amount of a site which can be covered by buildings is: (a) 3% for sites of one hectare or more. (b) 10% for sites less than one hectare. Provided that this rule does not apply to the Tokanui Dairy Research Centre or to dwellings. *Advice Note: Buildings for the processing and/or storage of horticultural or floricultural produce are subject to Rule 4.4.2.13.* *Activities that fail to comply with this rule will require a resource consent for a restricted discretionary activity with the discretion being restricted over:* *Visual effects including bulk, scale and location of the building; and* *Effect on high class soils; and* *Effects of traffic generation; and* *Effects on identified landscapes or cultural values; and* *Effects on rural character.* *These matters will be considered in accordance with the assessment criteria in Section 2*	Does not comply- Restricted Discretionary	Total building coverage site is 52.0%
Daylight control		
4.4.2.12 No building shall penetrate a recession plane at right angles to a boundary inclined inwards and upwards at an angle of 45° from 2.7m above the ground level of the front, side or rear boundaries of a site.	Does not Comply – Restricted Discretionary	The site does not meet the the 45 degree daylight plane on southern and eastern boundaries. The southern boundary adjoins pastural land. The eastern boundary adjoins the lot which is also owned by Industre Property Rua Ltd.

 *Activities that fail to comply with this rule will require a resource consent for a restricted discretionary activity – as per rule 4.4.2.9*		
Noise		
4.4.2.15 Noise-generating activity other than that from farm animals including farm dogs, agricultural vehicles (when not being used for recreational purposes), agricultural machinery or equipment (including produce packing facilities where the only produce packed is grown on site) operated and maintained in accordance with the manufacturer's specifications and in accordance with accepted management practices (e.g. for milking, spraying, harvesting, packing and the like, but not including frost fans) and provided that the best practicable option (including the option for the activity to take place at another time of the day), is adopted to ensure that the emission of noise does not exceed a reasonable level; shall be conducted and buildings located, designed and used to ensure that they do not exceed the following limits within the notional boundary of any dwelling (excluding dwellings within mineral extraction sites): (a) Day time - 7.00am to 10.00pm 50dBA (Leq) (b) Night time - 10.00pm to 7.00am 40dBA (Leq) (c) Night time single noise event 70dBA (Lmax) The noise levels shall be measured and assessed in accordance with the requirements of NZS 6801:2008 – Acoustics – Environmental Sound and assessed in accordance with NZS 6802:2008 –	Complies	No additional noise over and above what currently occurs on site will be generated with this proposal.

Acoustics – Environmental Noise. Provided that this rule shall not apply to the use or testing of station and vehicle sirens or alarms used by emergency services. *Activities that fail to comply with this rule will require a resource consent for a discretionary activity.*		
Vibration		
4.4.2.18 Vibration emanating from a site shall not exceed the limits recommended in and be measured and assessed in accordance with New Zealand Standard NZS 4403:1996 Code of Practice for Storage, Handling, and Use of Explosives. *Activities that fail to comply with this rule will require consent for a restricted discretionary activity, with the discretion being restricted over:* *Safety; and* *Time and duration of effect; and* *Effects on buildings and structures, either on site or on surrounding properties.* *These matters will be considered in accordance with the assessment criteria in Section 21*	Complies	No vibration over and above what currently occurs on site will be generated with this proposal.
Construction Noise		
4.4.2.19 Construction noise emanating from a site shall meet the limits recommended in and be measured and assessed in accordance with New Zealand Standard NZS 6803:1999 Acoustics – Construction Noise. *Activities that fail to comply with this rule will require a resource consent for a restricted discretionary activity with the discretion being restricted over:* *Time and duration of effect; and* *Effects on surrounding properties.* *These matters will be considered in accordance with the assessment criteria in Section 21*	Complies	Construction noise is anticipated to meet the limits recommended in and measured and assessed in accordance with the NZ Acoustic standards.
Signs		
4.4.2.44 The following signs are permitted: A sign giving information such as the name or street number of premises, the business carried on, names of people occupying premises, and hours of operation; but containing no reference to particular products. No such sign(s) shall exceed the following: In the Tokanui Dairy Research Centre the maximum total area of a sign is 3m2 and the total areas of signs on a site shall not exceed 5m2 . In all other instances 1.2m2 visible in any one direction with a maximum area of 2.4m2 . Signs advertising that the land or premises are for sale or lease. The maximum size of each sign shall be no more than 2m2 and no more than four signs are permitted on a site at any one time.	Complies	Details of the proposed signage have not yet been determined; however, they will comply with the maximum district plan provisions; if not an additional resource consent will be required.

A sign erected on a construction site giving details of the project. The maximum total area of the sign shall be no more than 2m2 and no more than one sign is permitted on a site at any one time. Within the Tokanui Dairy Research Centre, signs giving information on forthcoming field days and displayed not more than 90 days before and three days after the event. Signs of any materials erected by Council, New Zealand Transport Agency, or the Automobile Association for the direction and control of traffic. Health and Safety at Work Act 2015 related signs. Provided that in all cases: Signs shall relate to activities authorised under the District Plan and shall be located on the site to which they relate; and Signs shall not be internally illuminated, flashing, incorporate fluorescent or moving materials such as flags or be painted in colours that are used on traffic signals; and All signs shall be placed so that, where attached to a building, no part protrudes above the eaves or parapet, or where attached to a fence or wall, no part protrudes above the top of the fence or wall; and A freestanding sign shall be placed so that no part is more than 2m above ground level; and Signs shall be placed so that they do not block sight distances at entranceways and shall be no closer than 20m to a road intersection; and Signs shall be removed where the goods, services or events to which the sign relates are no longer available, or no longer relevant to that site or building.		
Solid and liquid waste generated off-site		
4.4.2.46 The storage volume of non-hazardous solid or liquid waste and/or by-product generated off site and suitable as a fertiliser or soil conditioner shall not exceed 100m3 per holding. *Advice Note: Rules relating to the location of disposal fields for domestic wastewater are found in Section 15 - Infrastructure, Natural Hazards, Development and Subdivision and in the Waikato Regional Plan. The Waikato Regional Plan also contains rules relating to discharges of solid and liquid waste to the environment.* *Activities that fail to comply with this rule and rule 4.4.2.47 will require a resource consent for a restricted* *discretionary activity with the discretion being restricted over:* *Effects on rural character and amenity; and* *The type of by-product or waste proposed to be stored; and* *Location and scale of the storage facility; and* *Effects on surrounding properties.*	N/A	No, volume of non-hazardous solid or liquid waste and/or by-products generated off-site will be stored.

These matters will be considered in accordance with the assessment criteria in Section 21.		
Solid and liquid waste storage and spreading setbacks		
4.4.2.47 Solid and liquid waste storage and spreading setbacks The storage and spreading of any non hazardous solid or liquid waste and/or by-product as a fertiliser or soil conditioner shall be at least: (a) 100m from any existing dwellings or marae buildings on a separate holding. (b) 15m from the boundary of any adjoining holding.	N/A	No storage and spreading of any non-hazardous solid or liquid waste and/or by-product as a fertiliser or soil conditioner will occur onsite.
4.4.2.48 Unless otherwise authorised under Rules 4.4.2.46 or 4.4.2.47 above, the disposal of solid waste shall be in landfill sites or at transfer stations approved by Council, provided that this rule shall not apply to the disposal of carcases in offal pits, the composting of vegetation and the burying of non-toxic solid wastes on holdings where they are produced.	Complies	Disposal of waste from the site will be disposed of through an authorised depot by the council.
Earthworks		
4.4.2.75 Earthworks (excluding mineral extraction activities), shall not exceed a total volume of 1000m³ in a single activity or in cumulative activities in any calendar year, provided that this rule shall not apply to earthworks incidental to an approved resource consent or building consent, tillage of land associated with the growing of crops, construction, maintenance and upgrading of farm tracks, farm silage pits or existing drains.	Does not comply- Discretionary activity	All earthworks will exceed 1000m^3 by 1,210m^3 with a total of 2,210m^3 proposed.

Rule	Complies	Comments
Section 16 – Transport		
	Permitted Activity	
Road Hierarchy		
16.4.2.1 All structure plans, plan changes, developments, and subdivisions must be consistent with the road hierarchy, as contained in Appendix T5.	Complies	No changes to the road hierarchy are proposed.
16.4.2.2 To maintain the effectiveness of the road hierarchy, a road network must be designed so that a road connects to a road at the same level in the hierarchy, or directly above or below its place in the hierarchy.	N/A	No road network additions are included as part of the proposed development.
16.4.2.3 To maintain the effectiveness of the road hierarchy, when a site has two road frontages, vehicle access and egress must be from the lesser road type	Complies	Access to the site is provided via the road with the lowest hierarchy status.
Vehicular access to sites in all zones		
16.4.2.4 Every site shall be provided with vehicle access to a formed road that is constructed to a permanent standard. The vehicle access shall be designed to accommodate the demands of all traffic from the activity on that site, taking into account the form and function of the road.	Complies	Site access is provided to a formed road. The access has been designed to accommodate the expected demands

Vehicle entrance separation from intersections and other vehicle entrances		
16.4.2.5 The minimum distance of a vehicle entrance (accessway) from an intersection or other entrance shall be as follows. Values K, M and N are 100m, 45m, and 100m respectively for the site as the frontage road speed limit is 80km/h	Complies	At least 11m separation is provided between nearby crossings. The nearest intersection is over 100m from the site access.
Vehicle entrance separation from railway level crossings		
16.4.2.6 New vehicle access ways shall be located a minimum of 30m from a railway level crossing.	Complies	At least 11m separation is provided between nearby crossings. The nearest intersection is over 100m from the site access.
Minimum sight distance requirements for a railway level crossing		
16.4.2.7 Any buildings, structure or land use shall be located to comply with the minimum rail level crossing sightline requirements within Appendix T2.	Complies	No level crossings are near the site.
Vehicle access to compact housing development		
16.4.2.8 Compact housing development must only have one access point to a strategic road	Complies	Development does not include compact housing
Vehicle access to sites in the Industrial Zone		
16.4.2.12 Where a site has a frontage greater than 50m to a road which is not a State Highway or a major arterial road, two vehicle crossings will be allowed from that road, subject to the requirements of Rule 16.4.2.5.	Complies	Only one vehicle crossing proposed
Parking, loading and manoeuvring area		
16.4.2.14 Vehicle parking (if provided), loading/unloading, and manoeuvring areas shall: (a) Not encroach on any setback, outdoor living area, or bicycle parking spaces; and loading/unloading areas and manoeuvring areas shall not encroach over vehicle parking spaces; and (b) Be designed, formed, and constructed to ensure that the surface of the required area provides a dust free environment; and (c) Provide for the safe and efficient disposal of surface stormwater clear of any adjoining access or road surface in a way that does not result in ponding or scouring; and (d) Be constructed to accommodate the anticipated use of the area by all traffic likely to access the site in the zone in which it is located, including construction traffic taking into account pavement, surfacing, demarcation of spaces, aisles and circulation roads; and (e) Be provided on the site on which the building, activity or proposal is located, except where the provisions of Rules 16.4.2.15 and 16.4.2.16 apply. For the avoidance of doubt, rear sites that are served by an access leg/driveway that is in sole ownership are considered to be part of the site. Provided that: (i) In all zones the vehicle entrance may cross the road boundary setback; and (ii) N/A	Complies	The vehicle carparking, unloading/loading and manoeuvring area do not encroach on setbacks; Will be designed, formed, and constructed to ensure that the surface of the required area provides a dust free: Provide for the safe and efficient disposal of surface stormwater environment: Be constructed to accommodate the anticipated use of the area by all traffic, and on the site on which the building and activity are proposed.

(iii) N/A (iv) N/A (v) N/A (vi) N/A (vii) In the Rural and Large Lot Residential Zones private right of ways must have an all-weather (metal) surface. Where existing dwellings are located within 15m of a private right of way, the surface must be sealed and drained.		
16.4.2.19 All car parks (if provided) shall be marked or delineated on site, except in the Residential Zone and in the St Peters School Zone	Complies	All parking spaces on site are expected to have delineation.
Car park landscaping and lighting		
16.4.2.20 Other than in the St Peters School Zone, all car parks must: (a) Provide at least one tree planted for every 5 car parking spaces at a grade of no less than PB95. For the avoidance of doubt, PB95 is equivalent to a tree that is at least 1.5m tall at the time of planting; and (b) Ensure lighting is designed to avoid shading areas or isolating areas of public use.	Complies	Sufficient vegetation and lighting is expected to be provided.
Provision of bicycle parking facilities		
16.4.2.21 In areas other than the Rural Zone and Pedestrian Frontages, activities employing more than ten people must provide bicycle parking facilities at a rate of one bicycle park for every ten people employed	N/A	Site is within Rural zone
Provision of an integrated transportation assessment		
16.4.2.22 A Simple or Broad Integrated Transport Assessment (ITA) shall be prepared for activities as required by this rule. A Simple ITA is required for a development generating more than 250 'car equivalents' onto a Local Road	Complies	This report is a Simple ITA.

Rule	Complies	Comments
Section 19 – Hazardous Substances and Contaminated Land		
Hazardous Facilities		
19.4.2.1 The following Hazardous Facilities Screening Procedure Consent Status Matrix must be used to determine the consent status of a hazardous facility in the zone where it is to be located.	Does Not Comply- Restricted Discretionary	The HFSP Consent Status Matrix was used and it was found that the proposed Wattyl Distribution

		Centre constitutes a restricted discretionary activity in the Rural Zone.
19.4.2.2 Calculation of the Effects Ratio (R) must be undertaken by a suitably qualified practitioner experienced, qualified and presently operating in the field of hazardous substances and facilities, using the "Hazardous Facilities Screening Procedure" contained in the document titled "Land Use Planning Guide for Hazardous Facilities – A Resource for Local Authorities and Hazardous Facilities Operators, Ministry for the Environment (February 2002)".	Complies	The HFSP has been undertaken by Rose Turnwald (Environmental Engineer) and Rob Van de Munckhof (Principal Environmental Risk Specialist) at Tonkin and Taylor Ltd, using the methodology set out in the Land Use Planning Guide for Hazardous Facilities.
19.4.2.3 "Minimum Performance Requirements for Hazardous Facilities Under the Resource Management Act" set out in Section 4 of the document titled "Land Use Planning Guide for Hazardous Facilities – A Resource for Local Authorities and Hazardous Facilities Operators, Ministry for the Environment (February 2002)" shall apply to all hazardous facilities as permitted activities	Complies	The performance requirements of the Land Use Planning Guide refer to the HSNO regulations, which have been superseded for the control of hazardous substances by the Health and Safety at Work (Hazardous Substances) 2017 regulations (HSW-HS) The Wattyl Distribution Centre will be managed in accordance with the HSW-HS as identified by Dangerous Goods Compliance Limited.
General site design		
19.4.2.5 Any part of a site where hazardous substances are used, stored, manufactured, mixed, packaged, loaded, unloaded or otherwise handled shall be designed, constructed and managed to prevent any adverse effects of the intended use from occurring outside the area where the particular activity is to be carried out.	Complies	All locations where flammable liquids and gases are proposed to be stored and used are specified to be designed and constructed with non-combustible or fire rated claddings in accordance with Clause 11.11 in HSW-HS regulations. The packages in the DG store and breezeway will remain closed. Any open containers or damaged empty packaging of Class 3.1 substances will be stored in the mixing room separated from the DG store and main warehouse. Staff will be trained in safe handling procedures for the Class 2.1.2 and Class 3.1 substances and in emergency response procedures. Only workers who are trained and certified in spill response are authorized to

		respond to hazardous material spills. All workers are responsible for knowing the location and proper operating techniques for all emergency equipment.
19.4.2.6 All stormwater grates on the site shall be clearly labelled “STORMWATER ONLY”	Complies	Labels are proposed to be displayed at each stormwater grate on site.
Spill containment system		
19.4.2.7 Any part of the site, including vehicle accessways, where hazardous substances are used, stored, manufactured, mixed, packaged, loaded, unloaded, or otherwise handled shall be served by a spill containment system: (a) Constructed from impervious materials resistant to the hazardous substances; and (b) Able to meet Ministry for the Environment standards including NZS 8409:2004 Management of Agrichemicals or contain the maximum volume of the largest tank used, or where drums or other containers are used, able to contain half the maximum volume of substances stored, or complies with the Secondary Containment requirements of the Hazardous Substances Emergency Management Regulations as a means of compliance; and (c) Able to prevent any spill or other unintentional release of hazardous substances (including waste), and any stormwater that has become contaminated from discharging into or on to land and/or water (including stormwater, groundwater and potable water supplies), unless the discharge is permitted by a rule in a Regional Plan or Proposed Regional Plan or by a resource consent; and (d) Provided with a release mechanism for the drainage of the bunded areas that is secured to prevent unintentional release of contaminants into stormwater; and (e) Maintained to ensure it remains effective in the event of a spill. Provided that this rule does not apply to the application of agrichemicals or fertilisers applied in accordance with the manufacturer’s recommendations.	Complies	(a) Areas where the Class 3.1 flammable liquids are stored, loaded or used (the DG store, breezeway and mixing room) will have impervious containment systems designed to enable safe clean-up and disposal off site for the proposed hazardous substances. (b) These areas have been designed with secondary containment capacity for 25% of the total pooling potential to retain any leaked material in the event of damage to a package. This complies with the requirements for secondary containment for more than 5,000 L of flammable liquids in packages smaller than 60 L (Clause 10.31 of the HSW-HS regulations). (c) and (d) Small spills will be held within the secondary containment and cleaned up in accordance with the spill response plan using spill kits. Large spills in the DG store will also be retained in the secondary containment for removal by specialist waste contractors. There is no connection to the stormwater network within the DG store. In event of a large spill in the breezeway, the shut off valve to the site wastewater network at the northwest corner will be used to contain the material on site for removal by specialist waste contractors. Any residual contaminated wastewater will drain to a central holding tank for a later removal by a liquid waste contractor. There

		is no connection beneath the breezeway canopy to the stormwater network. (e) The secondary containment systems will need to provide evidence of testing for certification under the HSW-HS location compliance requirements. Compliance certification is renewed annually.

REPORT

Tonkin+Taylor

Hazardous Substances Assessment

Proposed Development of Wattyl Paint Distribution Centre in Hamilton

Prepared for
Industre Property Rua Limited
Prepared by
Tonkin & Taylor Ltd
Date
March 2023
Job Number
1090165.0000.v1

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Title: Hazardous Substances Assessment					
Date	**Version**	**Description**	**Prepared by:**	**Reviewed by:**	**Authorised by:**
23 March 2023	1.0	Hazardous Substances Assessment – for land use consent application submission	S. Xue	R. Turnwald	R. Van de Munckhof

Distribution:

Industre Property Rua Limited	1 electronic copy
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Table of contents

1 Introduction

Industre Property Rua Limited (IPRL) are proposing to develop a distribution centre and warehousing hub for Wattyl Limited (Wattyl) at 16A Wickham St, Frankton, Hamilton (referred to hereafter as the 'site' or 'Wattyl Distribution Centre'). The site is located in the Waipā District adjacent to the southern border of Hamilton City. Activities will include storage, use and distribution of a range of paint-related flammable liquid (Class 3) and flammable aerosol (Class 2) products. Tonkin & Taylor Limited (T+T) has been commissioned by IPRL to prepare a hazardous substances technical assessment to support a landuse consent application for the establishment and operation of the warehouse and facility. This report has been prepared in accordance with our letter of engagement dated 13 December 2022.

Under the Resource Management Act 1991 (RMA), controls for hazardous facilities and activities are exercised through District Plans, including requirements for resource consents for certain activities. The proposed storage and use of hazardous substances at the site is a restricted discretionary activity under Rule 19.4.1.3 of the Waipā District Plan (WDP).

This report assesses the proposed storage and use of hazardous substances against the provisions of the WDP and has been prepared for resource consent application purposes only.

2 Environmental setting

2.1 Site description

The proposed Wattyl Distribution Centre is located at 16A Wickham St, Frankton, Hamilton, and is shown in **Figure 2.1** below. The site consists of approximately 13,760 m^2 of proposed distribution centre, which will incorporate a general warehouse, Dangerous Goods Storage building (DG store) for flammable liquids, as well as common breezeway for container unloading and outwards goods dispatch, plus a two-level office building attached to the main warehouse. A full site plan is included in **Appendix A**.

The existing site topography has a gradual fall towards the north-west, with an overall cross fall of approximately 1.4 m over 230 m. Currently the site is occupied by a number of storage yards to different tenants. The existing site surface consists largely of compacted metal with localised areas of asphalt paving, including the central accessway between the various yards.

Figure 2.1: Site location plan *Copyright T+T Map Viewer 2023*

2.2 Receiving environment

The site is located approximately 3 km to the southwest of Hamilton City and the Waikato River. The surrounding environment consists of highly modified rural and industrial land. No existing public stormwater network connections are located within the site. Stormwater collected in the proposed on-site network from the site initially discharges into an open channel along the northern boundary to the west where it joins an open drain running north into the main catchment channel, which is part of the Hamilton City Council (HCC) stormwater network before flowing via the Waitawhiriwhiri Stream into the Waikato River. The Waitawhiriwhiri Stream flows into the Waikato River approximately 4 km northeast of the site as shown in below.

Similar to stormwater infrastructure above, no Waipā District Council wastewater infrastructure exists for this site, with the adjacent (northern) site having access into Hamilton City Council's wastewater network via connection to a public manhole at the top end of Wickham Street.

Figure 2.2: Receiving environment (sourced from Hamilton City Council GIS Data Mapping)

Waikato Regional Council (WRC) has a water quality monitoring site at the outlet from the Waitawhiriwhiri Stream to the Waikato River. Monitoring results are summarised in the Land, Air and Water website which describes the stream as 'turbid and iron stained', with the overall catchment being comprised of an even split of dairy farmland and urban. Monitoring results from the WRC monitoring site indicate that the stream is in the worst 25% of all freshwater monitoring sites in New Zealand for all parameters currently tracked (bacteria levels, clarity, nitrogen and phosphorus levels).

While the receiving environment is currently degraded, the site should be operated to minimise any off site impacts due to the stormwater discharge.

2.3 Sensitivity of surrounding land uses

The site is located within the Rural Zone under the Waipā District Plan and is surrounded by other rurally zoned lots to the south, east and west. Surrounding land uses are shown in **Figure 2.3**. Neighbouring properties to the north of the site are within the Hamilton City District and zoned for industrial use. The closest residential area is the General Residential Zone of Hamilton City approximately 250 m to the northeast of the Wattyl Distribution Centre.

Overall, the sensitivity of the surrounding environment to human health hazards is low to moderate in the areas designed for rural and industrial areas and the local reserve, and moderate to high in the residential areas.

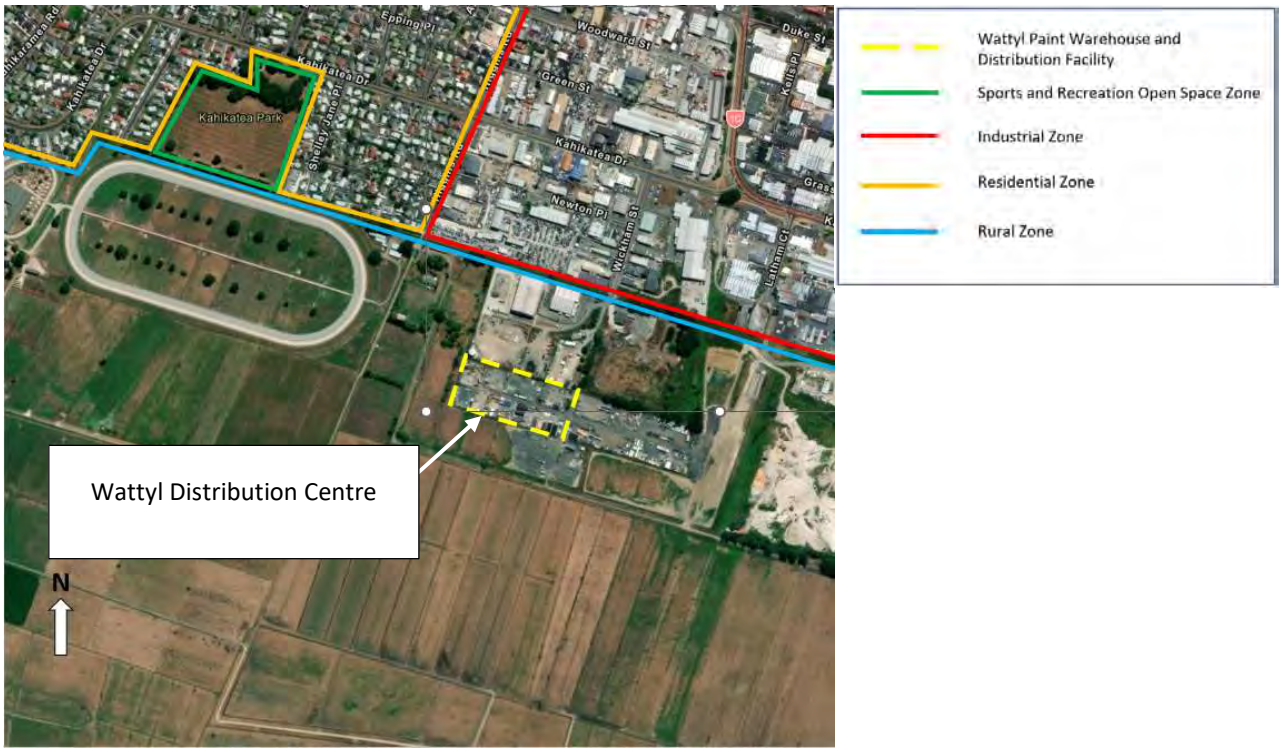

Figure 2.3 : Site location and surrounding land uses (sourced from Hamilton City Council Operative District Plan, 2017)

3 Description of activities and substances

3.1 Overview

The current proposed activities include a general warehouse, Dangerous Goods Storage building (DG store) as well as a common breezeway and an office building attached to the main warehouse on the western part of the site. The hazardous substances will be delivered and dispatched by trucks, which will access the site from Wickham Street at the northeast corner. Some warehouses with offices for future developments are proposed for the eastern part of the site, which are out of scope of this report.

The buildings and rooms included in the current development proposal requiring hazardous substance technical assessment under the HSW-HS are identified as:

- **DG store:** A Type B storage area for flammable liquids.
- **Breezeway:** Covered breezeway for deliveries and dispatch of product. Some transit storage of DG shipping containers may be located on the western side of the breezeway
- **Main warehouse:** A general warehouse, the only hazardous substances proposed to be stored here are aerosols, which will be stored in a dedicated cage in the southwestern corner of the building.
- **Mixing room:** A paint mixing room for decanting of packages, located on the western edge of the breezeway.

A full site plan is included in **Appendix A.** An indicative layout of the hazardous substance locations is in **Figure 3.1** below.

The following sub sections describe the proposed activities in each area in more detail. A summary of hazard classification and proposed cumulative storage volumes of substances used at each building in greater than domestic quantities is provided in **Table 3.1**.

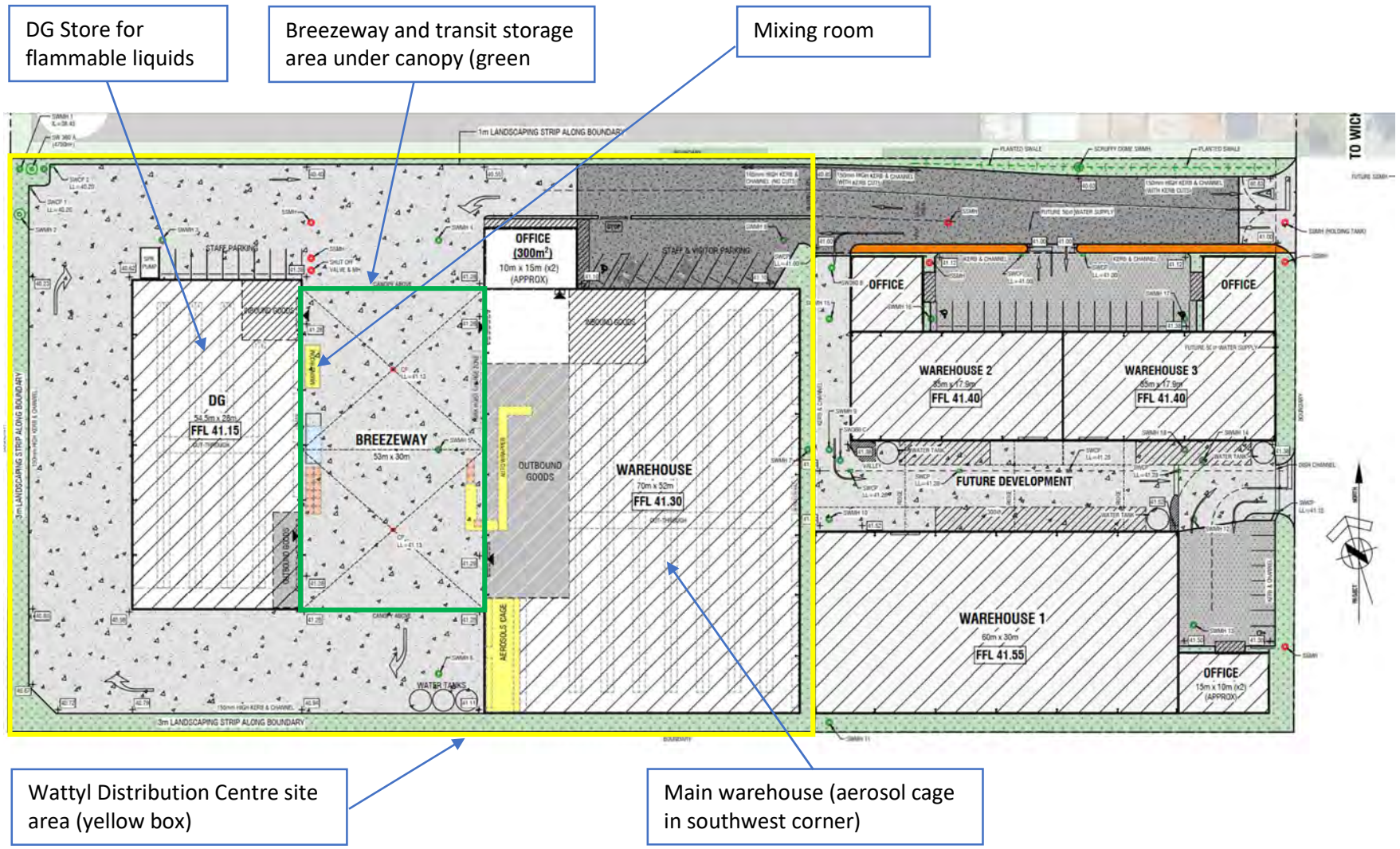

Figure 3.1: Proposed site plan showing indicative hazardous substances locations (sourced from Proposed Site & Finished Levels Plan by Stiffe Hooker Ltd)

3.2 Hazardous substances quantities

The site is proposing to store 544,000 litres of paints (Class 3's) in the DG store, while up to 150,000 litres of Class 3 hazardous substance will be unloaded, dispatched or temporarily stored in the breezeway. A mixing room will be located outside the DG store for blending or decanting paints into containers. An additional caged area within the main warehouse will hold up to 2,800 litres of aerosols (Class 2.1.2). A summary of hazard classification and proposed cumulative storage volumes of substances used or stored of each area is provided in **Table 3.1** below.

A new hazard classification system came into force in New Zealand on 30 April 2021 to align with the Globally Harmonised System 7 (GHS 7). Both the former classifications from the safety data sheets and the equivalent new classifications have been presented.

Table 3.1: Hazardous substances volumes and classifications

Location	Activities	Hazard classifications		Maximum quantity
		Pre-2021	Post-2021	
DG Store	Maximum storage	Class 3.1B, Class 3.1C[1]	Flammable liquids Category 2 or 3.	544,000 L
Breezeway/ Transit storage	Storage of up to six 20' containers, each with 13,000 litres. Or up to four 40' containers, each with 20,000 litres	Class 3.1B, Class 3.1C[1]	Flammable liquids Category 2 or 3.	80,000 L
	Maximum day's despatch of 30,000 litres			30,000 L
	Contingency storage – additional two 40' containers, each with 20,000 litres			40,000 L
Main warehouse	Aerosols storage in caged area	Class 2.1.2A[1]	Flammable Aerosol Category 1 or 2.	2,800 L
Mixing room	A room for blending and decanting of paint products. Maximum individual unit size of 20 L, up to 450 L in aggregate held within the room.	Class 3.1B, Class 3.1C[1]	Flammable liquids Category 2 or 3	450 L

1. Some of these products may also have subsidiary human health (Class 6.1D – 6.1E or Class 6.3 - 6.9) or ecotoxicity (Class 9.1 – 9.4) classifications. These hazards have been considered in the risk assessment in Section 6 of this HSA.

Descriptions of each of these locations are provided in the following sub-sections.

3.3 DG store

The DG store will be used to hold maximum of 544,000 litres of Class 3.1B and Class 3.1C flammable liquids in individual units smaller than 60 L. It will be located at the western part of the site, which is

separated from the main warehouse, with inbound and outbound access on the eastern elevation next to the breezeway. The separation distance to protected places is greater than 20 m, which is the meets the requirement identified by Dangerous Goods Compliance Limited in the Supply Chain Dangerous Goods Report. The DG store is designed to meet the specifications for a Type B store: framed with non-combustible cladding materials and with secondary containment capacity for 136,000 litres. All the flammable liquids held in DG store will be sealed in their closed containers. Any energy source capable of igniting flammable substances or incompatible substances will be excluded from DG store and its secondary containment.

3.4 Breezeway

The breezeway is beneath a canopy in between the DG store and main warehouse. This area is used for unloading and outwards goods dispatch of around 30,000 litres daily of mainly Class 3.1B and 3.1C hazardous substances. It will also temporarily hold a maximum of 120,000 litres of Class 3's hazardous substances for 24 to 72 hours. The prescribed separation distances for compatible substances is 3 m and 5 m for incompatible substances, which will inform the positioning of vehicles loaded with hazardous substances, loading docks and other areas at the breezeway where hazardous substances are located. For more detail, please refer to Section 5.1.3.

The breezeway is built in between the DG store and main warehouse. The traffic flow comes from the northern entry and exiting from the southern side. Two wastewater sumps are located within the breezeway which drain to a shut-off valve at the northeast outside of the breezeway to contain any spillages. The stormwater manhole and basecourse recharge trench beneath the eastern part of breezeway do not receive runoff from the surfaces beneath the canopy.

Secondary containment with capacity for 37,500 litres will be designed for this area, utilising the fall to the two wastewater sumps. Any energy source capable of igniting flammable substances or incompatible substances will be excluded from breezeway and the associated secondary containment system.

3.5 Main warehouse

The main warehouse is central to the site, on the eastern side of the breezeway. A caged area will be built within the main warehouse, designed to store up to 2,800 litres of Class 2.1.2A flammable aerosols in units smaller than 1 L. The cage is proposed to be located in the southwest corner of the main warehouse beside the boundary line. This area is segregated from any incompatible substances, specifically the Class 3 products proposed to be stored in the DG Store and western side of the breezeway. The separation distance from the incompatible activities will be over 20 m, which is greater than the 3 m minimum separation requirement in the HSW-HS as identified in Dangerous Goods Compliance Limited's report.

3.6 Mixing room

A mixing room located on the western side of the breezeway against the DG Store will be used for blending or repacking paints in containers (less than 20 litres units). When required, any damaged packages of paint will be decanted into other containers in the mixing room. Once emptied, the damaged package will be stored in a dedicated area of the DG store, unless it cannot be closed, in which case it will be stored within the mixing room until it can be collected for disposal to an authorised hazardous waste facility.

The mixing room will be designed to hold up to 450 litres of Class 3.1B and 3.1C flammable liquids. Providing the total quantity of hazardous substances is less than 1,000 litres, no secondary containment is required for the mixing room in accordance with *AS/NZS 4114 Spray painting booths, designated spray painting areas and paint mixing rooms (2020)*. However, the secondary

containment system servicing the breezeway will also retain any spills that may occur at the mixing room. An electrical certificate of compliance from a registered electrical inspector will be provided for any equipment within the hazardous area of the mixing room.

4 Resource consent requirements

The hazardous substances provisions are set out in Chapter 19 of the WDP, which was made fully operative on 14 August 2017. Waipā District Council uses the Effects Ratio (calculated using the Hazardous Substance Facilities Screening Procedure (HFSP) as set out in the Land Use Planning Guide for Hazardous Facilities, 2000) to determine the consent status for activities involving hazardous substances. For the Wattyl Distribution Centre, the cumulative Effects Ratio calculated in the HFSP is compared with the permitted Effect Ratios specified for the Rural Zone (Rule 19.4.2.1).

An HFSP has been prepared attached as **Appendix B** for the proposed bulk hazardous substances storage and use on site. The Effects Ratio for each effect type is summarised below:

- Fire/Explosion Effect Ratio: 69.8
- Human health Effect Ratio: 23.2
- Environmental Effect Ratio: 231.9

Each Effect Ratio exceeds the Restricted Discretionary trigger level of 0.25 for the storage and use of hazardous substances in the Rural Zone under Rule 19.4.2.1. Therefore, a consent for a Restricted Discretionary activity is required.

Assessment for the Wattyl Distribution Centre activities against the relevant rules and performance standards in the WDP for Hazardous Substances has been provided in **Appendix C** of this report.

5 Control and management of hazardous substance

5.1 Summary of controls under the Health and Safety at Work (Hazardous Substances) 2017 regulations

The HSW-HS regulations specify quantity thresholds above which structural and management controls for hazardous substances are required for the protection of workers at the site and to minimise impacts beyond the site boundary. The requirements for the site have been identified by Dangerous Goods Compliance Limited's in the *Supply Chain Dangerous Goods Report* attached as **Appendix D**.

The specific control measures that are triggered under HSW-HS by the volumes and types of hazardous substances on site are summarised in **Table 5.1**Table 3.1 below. The site is required to comply with all the listed provisions, and in many cases (where location compliance certification is triggered) will be regularly audited against the requirements by an independent certifier.

Table 5.1: Summary of HSW HS requirements

Location	Controls
DG Store	Signage Secondary containment Segregation of incompatible substances Hazardous areas Equipment electrically bonded and earthed Secured from unauthorised access Fire extinguishers (2) Emergency response plan Hazardous substance location compliance certification (Class 3.1 flammable liquids) Structure design requirements – Type B store Separation to protected places (minimum 20 m)
Breezeway/ Transit storage	Signage Secondary containment Segregation of incompatible substances Hazardous areas Equipment electrically bonded and earthed Secured from unauthorised access Fire extinguishers (2) Emergency response plan Hazardous substance location compliance certification (Class 3.1 flammable liquids) Structure design requirements Separation to protected places (minimum 20 m)
Main warehouse (aerosols storage cage)	Segregation of incompatible substances Hazardous areas

Location	Controls
Mixing room	Signage Segregation of incompatible substances Hazardous areas Equipment electrically bonded and earthed Secured from unauthorised access Fire extinguishers (2) Hazardous substance location compliance certification (Class 3.1 flammable liquids) Structure design requirements – AS/NZS 4114:2020

The identified separation distances are provided in the drawing set attached as **Appendix A**. The HSW-HS requirements are discussed in more detail below.

5.1.1 Signage

Signage will be provided at all pedestrian and vehicular entrances to the building and land where hazardous substances requiring signage are located. This will identify the substance present, the class and action to be taken in an emergency.

Signage at particular rooms, such as at the entrances to the DG store and mixing room will contain:

- the word HAZCHEM in relation to class 3 substances; and
  - state the hazardous properties and describe the general type of hazard relating to each category of hazardous substance present through the use of –
  - hazard pictograms consistent with the correct classification of the hazardous substances present; or
  - hazard statements consistent with the correct classification of the hazardous substances present; and describe –
    - if the substances include flammable substances, the precautions necessary to prevent unintended ignition of a substance; and
    - describe the immediate response action to be taken in an emergency.

5.1.2 Secondary containment systems

Secondary containment is required for pooling substances held in the workplace such that they will be contained if they escape from the primary container or containers in which they are being held; and from which they can be recovered (subject to unavoidable wastage).

The DG store and breezeway are stored with Class 3.1 flammable liquids, which will be required to be designed, constructed and operated in a manner that prevents discharge to stormwater. Details of secondary contaminant storage for the relevant buildings (where bulk storage of liquids are proposed) are provided below in **Table 5.2.**

Table 5.2: Secondary containment storage details

Building	Type of Room	Minimum secondary containment requirement	Maximum proposed liquid storage volume	Secondary containment provided
DG Store	Type B store	25% of the liquid storage volume	544,000 L	136,000 L
Breezeway/ transit storage	Transit area	25% of the liquid storage volume	150,000 L	37,500 L

The maximum quantity of Class 3.1 substances stored and used in the mixing room is 450 litres in packages smaller than 20 L (lower than the 1,000 litres threshold for secondary containment specified in the HSW HS regulations 2017). Therefore, no secondary containment is specifically allocated to the mixing room. However, as it is located within the breezeway, any spills at the mixing room will be retained by the breezeway's secondary containment system for clean-up.

5.1.3 Separation distances

The HSW-HS regulations require separation distances between substances with hazards to human health or property from potentially sensitive locations within the boundary ('protected places'), such as worker lunchrooms or offices, and from any areas off site where members of the public may be present ('public places'). The minimum separation distances to protected and public places (including the site boundary) specified in the HSW-HS regulations are designed to mitigate the risk of:

- any adverse event in the store impacting on public places or protected places, and
- any adverse event at public places or protected places impacting on the store.

Class 2.1.2 substances and Class 3.1 substances are also identified as incompatible, and therefore will be stored in segregated areas. The identified separation distances are provided in the drawing set attached as **Appendix A** and summarised in **Table 5.3** below.

Table 5.3: Separation distance details

Building	Hazardous substances classification	Provided separation distances (from site plans)
DG Store	3.1B, 3.1C	30 m to the main warehouse (and Class 2.1.2A aerosols) 20 m to the nearest site boundary
Breezeway	3.1B, 3.1C	20 m between the proposed transit storage areas for DG containers of Class 3.1 liquids on the western side of the breezeway to the main warehouse (and Class 2.1.2A aerosols) 20 m to the nearest site boundary
Mixing room	3.1B, 3.1C	27 m to the main warehouse (and Class 2.1.2A aerosols) 31 m to the nearest site boundary

Building	Hazardous substances classification	Provided separation distances (from site plans)
Breezeway	2.1.2A	Any vehicle loaded with Class 2.1.2A substances must be – • 3 metres from any other vehicle loaded with compatible (Class 2.1.2A) substances; and • 5 metres from any other vehicle loaded with incompatible (Class 3) substances; and • 3 metres from any place where containers of compatible (Class 2.1.2A) substances not on a vehicle are located; and • 5 metres from any place where containers of incompatible (Class 3) substances not on a vehicle are located. Any containers of Class 2.1.2A substances held in breezeway but not loaded onto a vehicle are – • 3 metres from containers of incompatible (Class 3) substances being consolidated at a loading dock in readiness for transportation separated from each other; and • 5 metres from containers of incompatible (Class 3) substances at a transit depot in any other circumstance not already described separated from each other.

All storage of Class 3 substances in the transit areas of the breezeway will be situated within 10 m of the Type B DG store, such that there will be at least 20 m separation provided to the main warehouse.

5.1.4 Specified construction of Class 3.1 substances stores

All locations where flammable liquids and gases are proposed to be stored are specified to be designed and constructed in accordance with Clause 11.11 in the HSW-HS regulations 2017. The details for proposed construction elements for locations where flammable substances are proposed to be stored are summarised in **Table 5.4.**

Table 5.4: Specified construction details

Location	Specification
DG Store	Type B store – a building where hazardous substances are stored that: a) is made of non-combustible cladding materials such as steel; and b) is part of a secondary containment system.
Breezeway	Transit area adjacent to the Type B store. Part of a secondary containment system.
Mixing room	Paint mixing room built to AS/NZS 4114:2020
Main warehouse (aerosols storage cage)	Storage of aerosols will be in a secure cage to prevent projectile motion of aerosol cannisters in a fire, minimising the potential for spread of a fire within the warehouse. Preliminary fire-rated construction plans for the site show that the southern boundary wall and eastern boundary wall adjacent to the future development are designed with fire-rated materials.

5.1.5 Security

Areas where hazardous substances are stored or used must be secured from unauthorised access. There is no public access to the proposed Wattyl Distribution Centre. An indicative Emergency Response Plan (**Appendix D**) was provided by Wattyl, which details the typical access restrictions at its distribution centres. All visitors must report to reception for sign in and must be escorted by a trained employee at all times around site.

Contractors are required to complete an induction prior to working in the facility. Return Contractors must sign in and out for each visit. Contractors will complete the induction annually as a refresher.

5.1.6 Hazardous areas and earthing

Hazardous areas will be established and maintained for the flammable liquids and aerosols on site. Hazardous areas are determined in accordance with AS/NZS 60079.10:2009. Sources of ignition are restricted within hazardous areas. If electrical equipment is required within a hazardous area, it needs an electrical certificate of compliance from an electrical inspector. All electrical equipment is designed and constructed so that in the event of a failure no resulting ignition source will contact either the substance or its package.

5.1.7 Hazardous substance location compliance certification

A Location Compliance Certificate is needed at hazardous substance locations where flammable substances are stored or used, and the quantity exceeds the threshold set out in the HSW-HS legislation for a period greater than 24 hours. Location Compliance Certificates are issued by a Compliance Certifier, demonstrating that all relevant controls and notifications are in place. The details of buildings or rooms requiring compliance certification are identified in **Table 5.1** and include the DG store, the mixing room and transit storage in the Breezeway.

5.2 Site drainage

The drainage plans for the site are provided as **Appendix A**.

The site has been designed to limit the risk to stormwater from hazardous substances and other activities on site as follows:

- Areas where hazardous substances are unloaded or stored in transit (the breezeway) are covered and drain to the wastewater network. Two wastewater catch pits are shown on a recessed level in the breezeway under the canopy for collection of any spillages. A shut off valve is installed in the manhole located on the northwest of the breezeway adjacent to the staff carpark to retain any spills for removal by a hazardous waste contractor. Any residual contaminated runoff from the breezeway will drain to site's wastewater holding tank for a later removal by a liquid waste contractor. The entry and exit roadways to the breezeway slope away to prevent clean stormwater draining into the breezeway area;
- Areas where hazardous substances are stored long-term (the DG Store) are within buildings provided with secondary containment to prevent leaked or spilled substances reaching the stormwater system;
- Rainwater collected on the roofed areas of the new buildings proposed for the site will be reticulated to rainwater harvesting tanks positioned across the site, and any overflows discharged to the on-site stormwater network;
- Vehicle accessways and carparks around the DG store and main warehouse drain to Stormwater360 Stormfilter devices for removal of sediments, oil and grease, metals, organics,

and nutrients[1]. These areas are not expected to be impacted by hazardous substances, due to the designation of storage and unloading to under the breezeway and within the buildings on site.

- Wastewater connections to the holding tank are provided at the main warehouse and provisionally at the future development warehouses and their associated offices. There is also a wastewater connection from the sprinkler water pump north of the DG store to facilitate draining of the sprinkler system for scheduled maintenance.

5.3 Environmental, Health and Safety Management System and Emergency Response

Wattyl has provided an example of its typical emergency response plan (ERP) documentation, attached as **Appendix D** and of an Environmental Health and Safety Management System (EHSMS) document, attached as **Appendix F**. The indicative ERP is for an Australian site operated by Sherwin Williams and the EHSMS is for Wattyl's existing Avondale site. These documents are proposed to be updated to address the site-specific matters prior to commission of Wattyl's Wickham Street site.

The EHSMS sets out the responsibilities on site for workers, contractors and visitors to ensure that the environmental, health and safety duties for the site are complied with, including consent requirements. It provides an overview of the site leadership, procedures for risk assessment, incident reporting and management of change, programs for emergency preparedness, staff training, site maintenance, audits and management system reviews.

The ERP includes procedures for fire/ smoke, explosive emergency, hazardous chemical spill, bomb threat, natural disasters and workplace violence events.

Spill kits, eye wash station, fire sprinklers, extinguishers and hoses, spill kits, emergency exit lights will be available on site for emergency response. The fire suppression systems will be designed by a fire engineer as part of the detailed site design. Staff will be trained how to handle Class 2.1.2 and Class 3.1 substances and emergency response involving the hazardous substances. Only workers who are trained and certified in spill response are authorized to respond to non-routine hazardous material spills. All workers are responsible for knowing the location and proper operating techniques for all emergency equipment.

5.4 Hazardous waste management

Small spills will be cleaned up using the provisions of the site spill kits by site employees. Larger spills will be retained in the secondary containment systems for clean up by emergency services or specialist contractors.

Damaged packages of paint will be decanted into other containers in the mixing room. The empty packages will be kept closed and stored in a designated area of the Type B store until collection by a liquid waste contractor for disposal at an authorised facility. If the packages cannot be closed they will be stored in the mixing room prior to collection.

5.5 Transport

Hazardous substances are delivered to site via the accessway at the northeastern corner of the site which exits on to Wickham Street. Trucks delivering substances to the site will travel through the industrial area of Frankton for 600 m before accessing State Highway 1C for transit on the national road freight network. Transport of hazardous substances will be in accordance with the *Land*

[1] Stormwater360, Protecting the Future of our Waterways – Product Guide 2021, Page 4.

Transport Rule – Dangerous Goods 2005 including requirements for placarding, segregation of incompatible materials and driver training in emergency response.

6 Risk assessment for hazardous substances

6.1 Introduction

The following section sets out a risk assessment of the storage and handling of hazardous substances at the site for the proposed storage and use volumes. The approach to hazard analysis and risk assessment is based on Ministry for the Environment Assessment Guide for Hazardous Facilities (1999) [2].

The risk assessment involves consideration of:

- Identification of potential hazards, failure modes and exposure pathways.
- The sensitivity of the surrounding environment.
- The separation distances from neighbouring activities and the number of people potentially at risk from the facility.
- Cumulative risks of hazardous facilities in the area.
- Transport of hazardous substances on and off the site to ensure safe access and appropriate routes for delivery vehicles on site to minimise risk of spillage.

6.2 Hazard analysis

The hazards associated with hazardous substances are generally classified as follows:

- Fire/Explosion Effects: concerned with damage to property, the built environment and safety of people.
- Human Health Effects: concerned with the well-being, health and safety of people.
- Environmental Effects: concerned with damage to ecosystems and natural resources.

Table 6.1 below sets out the hazard analysis for the site, identifying and rating potential hazards.

These hazards are based on the intrinsic characteristics of the substance. The purpose of the hazard analysis is to undertake a preliminary scaling of hazards and to identify pathways with potential effects to be investigated in greater detail. **Table 6.1** sets out the hazard analysis for the site, identifying and rating potential hazards.

The hazard analysis identifies high fire hazard from flammable liquids storage in the DG store, breezeway and mixing room as well as flammable aerosol storage at the aerosols cage located in the southwest of the main warehouse at the site. A high hazard to ecosystems is identified from flammable liquids Class 3.1 substances stored in the DG store, breezeway and mixing room. Additionally, there are low hazards to human health from both the flammable liquids Class 3.1 substances stored in the DG store, breezeway and mixing room and the flammable aerosol storage at the aerosols cage in the main warehouse.

[2] Ministry for the Environment, Assessment Guide for Hazardous Facilities (ME339), 2000

Table 6.1: Hazard analysis

Location	Identification of potential hazard properties (Hazard level[1])	Failure Modes	Exposure pathways/ Affected part of environment	Indicative hazard rating	Potential off-site effects	
01 – DG Store	Fire/Explosion (high) Human toxicity (low) Ecotoxicity (high)[2]	Storage container failure (leak or rupture) or spill during handling.. Fire in the DG store.	People, property, ecosystems	High fire hazard. Low hazard to people due to acute toxicity and carcinogenicity classifications, hazard limited to direct exposure by staff. High hazard to ecosystems in the event of a spill to stormwater.	Yes	Potential off-site effects in the event of fire at the storage location. Potential off-site environmental effects if failure of secondary containment occurs, coinciding with a spill or container leak at storage locations.
02 – Breezeway	Fire/Explosion (high) Human toxicity (low) Ecotoxicity (high)[2]	Storage container failure (leak or rupture) or spill during handling. Fire in the breezeway.	People, property, ecosystems	High fire hazard. Low hazard to people due to acute toxicity and carcinogenicity classifications, hazard limited to direct exposure by staff. High hazard to ecosystems in the event of a spill to stormwater.	Yes	Potential off-site effects in the event of fire in the transit area. Potential off-site environmental effects in the event that a failure of secondary containment occurs during unloading, handling or dispatching goods.
03 – Main warehouse (aerosols storage cage)	Fire/Explosion (high) Human toxicity (low)	Fire in the main warehouse.	People, property	High fire hazard. Low hazard to people due to respiratory and carcinogenicity classifications, hazard to people through direct exposure by staff.	No	Effects from fire limited to on site damage to property due to the small scale of aerosol storage, segregation of storage from other flammable substances and provision of fire-fighting facilities.

Location	Identification of potential hazard properties (Hazard level[1])	Failure Modes	Exposure pathways/ Affected part of environment	Indicative hazard rating	Potential off-site effects	
04 – Mixing room	Fire/Explosion (high) Human toxicity (low) Ecotoxicity (high)[2]	Spill during decanting. Fire in the mixing room.	People, property, ecosystems	High fire hazard. Low hazard to people due to acute toxicity and carcinogenicity classifications, hazard limited to direct exposure by staff. High hazard to ecosystems in the event of a spill to stormwater.	Yes	Potential off-site effects in the event of fire. High hazard to ecosystems in the event of a failure of secondary containment during decanting containers.

1. The hazard level is specified according to the hazard classification in Table 1 of the Land Use Planning Guide for Hazardous Facilities, MfE 2002.

2. Acute and chronic ecotoxicity and low acute human health hazard conservatively anticipated to be a subsidiary hazards for all liquids with flammable classifications.

6.3 Risk analysis

A qualitative risk assessment of the identified hazards/failure modes has been undertaken in **Table 6.5** for all of the scenarios identified in **Table 6.1** where there is the potential for offsite effects.

The qualitative risk assessment has been carried out in accordance with the method described in ME339 by applying a qualitative rating to the frequency (likelihood) of the failure occurring and the consequence (severity) of impacts if the event were to occur. The likelihood and consequence ratings take into account the controls (mitigation and management measures) that will be in place. The qualitative likelihood and effects ratings are described in **Table 6.2** and **Table 6.3**, respectively.

Table 6.2: Qualitative rating of likelihood

Frequency rating	Descriptor	Explanation
A	Almost certain	The event is expected to occur in most circumstances
B	Likely	The event will probably occur in most circumstances
C	Moderate	The event should occur at some time
D	Unlikely	The event could occur at some time
E	Rare	The event may occur only in exceptional circumstances

Table 6.3: Qualitative rating of consequence

Effects rating	Descriptor	Explanation
1	Insignificant	No injuries, negligible environmental damage
2	Minor	First aid treatment required, on-site release contained, minor damage to property
3	Moderate	First aid treatment required, minor environmental damage, damage to off-site property
4	Major	Extensive injuries, major environmental damage to immediate environment, moderate damage to off-site property
5	Catastrophic	Fatalities both on and off-site, major and widespread environmental damage, exposure to toxic release by numerous people.

The likelihood and consequence ratings are then combined to qualitatively assess the overall level of risk associated with each hazard. The risk assessment matrix is shown in **Table 6.4**.

Table 6.4: Risk matrix

Consequence / Likelihood	Severity				
	Insignificant (1)	**Minor (2)**	**Moderate (3)**	**Major (4)**	**Catastrophic (5)**
Almost certain (A)	Significant	Significant	High	High	High
Likely (B)	Moderate	Significant	Significant	High	High
Moderate (C)	Low	Moderate	Significant	High	High
Unlikely (D)	Low	Low	Moderate	Significant	High
Rare (E)	Low	Low	Moderate	Significant	Significant

Table 6.5: Qualitative risk assessment

Event	Controls (Mitigation/ Management Measures)	Residual risk of off-site effects with controls in place		
		Likelihood	Consequence	Risk
Fire in flammable substance storage locations: • DG store, • breezeway, • mixing room, and • main warehouse (aerosols storage cage).	Restriction of ignition sources in the storage areas and control of un-intended ignition sources through use of intrinsically safe electrical equipment and earthing of equipment. Each flammable substance storage location is secured from unauthorised access. Each storage area is segregated from other hazardous substances and buildings to limit the potential for a fire to spread between stores or off site. Fire rated or non-combustible cladding construction of flammable substance storage areas as specified in the HSW-HS. Separation distances provided to public and protected places (and the boundary) to minimise the impact of fire on sensitive locations. Emergency Response Plan in place, including provision of fire extinguishers for initial response to small fires, and a sprinkler system for automated fire suppression.	Unlikely	Minor	Low
Spill during unloading of liquid hazardous substances to site or during transfer to dedicated storage locations, resulting in loss to off-site stormwater network	Deliveries of liquid hazardous substances are made to the breezeway in a covered and impervious area which minimises the potential for stormwater contamination and prevents loss to land or groundwater in the event of a spill. Secondary containment provided at the breezeway with capacity for a 25% of the maximum liquid storage capacity in the area, to retain any leaked material in the event of damage to a container. Unloading is supervised by staff trained in the standard operating procedures and emergency response plans. During deliveries of hazardous substances, the wastewater drainage shut off valve will be closed to contain any spilt material in the breezeway sump in the event of a spill. In the event of a spill in the breezeway, the material will be cleaned up by trained staff through use of spill kits or, in event of a large spill, retained in the secondary containment through use of the shut off valve on the northwest corner of the breezeway. In such a scenario, the spilt material will be removed from the area by specialist emergency response personnel to a n authorised hazardous waste contractor. Any residual contaminated wastewater will drain to a central holding tank for a later removal from site as part of the wastewater management.	Unlikely	Minor	Low

Event	Controls (Mitigation/ Management Measures)	Residual risk of off-site effects with controls in place		
		Likelihood	Consequence	Risk
Container leak or rupture at storage locations and loss to stormwater system	Hazardous substances will be stored and used in areas with containment systems designed to enable safe clean-up and disposal off site. Damaged goods will be removed from the DG store or breezeway into the mixing room to be decanted into other containers. The empty containers will be kept closed and stored in a designated area of the DG store until disposal to an authorised waste contractor is arranged. Secondary containment provided at the DG store and breezeway with capacity for a 25% of the total pooling potential of either area to retain any leaked material in the event of damage to a container. Spills will be cleaned up in accordance with the spill response plan using the spill kits. In event of a large spill, the shut off valve on the northwest corner of the breezeway will be used to prevent contaminated wastewater from leaving the site. After clean up, any residual contaminated wastewater will drain to a central holding tank for a later removal by a liquid waste contractor.	Unlikely	Minor	Low
Spill during decanting and blending activities and loss to stormwater system	The mixing room will be secured from unauthorised access. Decanting activities are undertaken by staff trained in the operating procedures and emergency response plans for spill response. Spills will be cleaned up in accordance with the spill response plan using the spill kits. In event of a spill, the shut off valve on the northwest corner of the breezeway will be used to prevent contaminated wastewater from leaving the site. After clean up, any residual contaminated wastewater will drain to a central holding tank for a later removal by a liquid waste contractor.	Unlikely	Minor	Low

7 Assessment of effects

7.1 Introduction

The following assessment identifies and assesses the actual and potential effects of the proposed activities. This assessment also outlines the measures proposed to avoid, remedy or mitigate any potential adverse effects on the environment.

In accordance with the Objectives and Policies of the Waipā District Plan, this assessment has had particular regard to the following aspects:

- The location, design and management of hazardous facilities to avoid or adequately mitigate adverse effects, including risks, to people, property and the environment.
- Assessment of cumulative effects of hazardous facilities so they do not increase to unacceptable levels of risk to people, property and the environment.
- The transport of hazardous substances as part of a land use activity so adverse effects associated with the transport of hazardous substances on roading infrastructure and other land use activities along transport routes are minimised.
- How risks to people, property and the environment have been avoided or adequately mitigated.
- The control of hazardous substances waste and its safe disposal.

The assessment is informed by the risk assessment found in Section 6.

7.2 Effects on people and property

The site is located in the Rural zone under the Waipā District Plan and is surrounded by other rurally zoned lots on all borders of the site. Neighbouring properties 200 m north of the site are within the Hamilton City District and zoned for industrial use. The closest residential area is the General Residential Zone of Hamilton City approximately 250 m to the northeast of the proposed Wattyl Distribution Centre. The closet hazardous substance storage activity will be the waste transfer station located next to the northern boundary.

The flammable substance storage locations on site have been identified as a hazard to people or property in the event of a fire and the residual risk of this event to off site areas has been assessed as low. The risk will be managed through structural controls including design of storage areas with fire rated construction elements, selection of intrinsically safe electrical equipment within the storage areas to minimise the risk of ignition, segregation of incompatible or reactive substances and separation of flammable storage areas from other buildings and the boundary. Operational controls will also apply, including prohibition of ignition sources in the vicinity of the stores (through hazardous areas), the provisions of emergency response equipment and planning, and staff training in standard operating procedures.

The chronic human health hazards posed by some of the Class 3 paints or Class 2.1.2A aerosols have require direct contact (ingestion or skin contact) with off site people, and this pathway is limited by the distance to neighbouring residences, the secure containment and small package sizes of the substances. The risk to human health from the activities on site are considered insignificant and are managed by the same methods for fire risks discussed above and spill risks discussed for effects on ecosystems in Section 7.3.

Taking into consideration the low to moderate sensitivity of the surrounding environment and the proposed controls, the effects on people from a fire in the Wattyl Distribution Centre has been assessed low.

7.3 Effects on the environment

The site is located approximately 3 km to the southwest of Hamilton City and the Waikato River. The surrounding environment consists of highly modified rural and industrial land. No existing public stormwater networks/ connections located within the site. Stormwater from the site is discharged to the connecting drain running north into the main catchment channel, which is part of the Hamilton City Council (HCC) stormwater network, before flowing via the Waitawhiriwhiri Stream into the Waikato River. The Waitawhiriwhiri Stream flows into the Waikato River approximately 4 km northeast of the site. The main hazards that have been identified which could result in off-site environmental effects include a spill of Class 3.1 substances during unloading or dispatching in the breezeway, leak or rupture of packages at the storage locations, or a spill of Class 3.1 substances during decanting or blending activities.

For the management of spill risks within the DG store, mixing room and breezeway, the key controls in place to prevent discharge of hazardous liquids are the secondary containment systems and the isolation of the hazardous substances from areas on site that drain to the stormwater network.

As described in Section 5.1.2, the DG store, mixing room and breezeway are covered by impermeable roofs to exclude rainwater. The hardstand and pavement areas are also constructed of impermeable materials. The breezeway slopes to two wastewater sumps with a downstream shut-off valve installed on a recessed level providing containment volume for 25% of the maximum anticipated storage of liquids in the area. The sumps will contain any spills in the area for clean up. All staff will be trained in emergency response plans, as well as spill response and the use of spill kits.

Provided the controls and mitigations are in place as outlined above, the effects on the adjacent environment from a release or spill of Class 3.1 substances are expected to be low.

7.4 Cumulative effects

The majority of the hazardous substance stores on site have the potential for off-site effects, the greatest risks being to people and property from a fire in one of the flammable substance storage locations or risk to ecosystems from a spill of Class 3.1 hazardous substance during unloading, dispatching, decanting or blending liquid in containers.

The flammable substance storage locations at the site are located in areas constructed of non-combustible materials and with restricted access for authorised staff only. They are operated as hazardous areas with prohibitions on ignition sources. All flammable substance storage areas will be separated as required by the HSW-HS to limit the risk of propagation of fire between stores. Fire-fighting facilities including extinguishes for response to small fires and sprinklers for suppression of larger fires will be in place. The risk of cumulative effects of flammable substance storage is assessed as low, due to low likelihood of a fire on site and the separation distances provided from the flammable storage areas to the site boundary.

Ecotoxic substances and substances that are toxic to human health are stored and used at the DG store, breezeway and mixing room. DG store and breezeway will be provided with secondary containment systems with capacity for 25% of the total pooling potential, preventing loss to off site sensitive receptors in the event of damage to multiple containers. There is a low risk of multiple spills resulting in cumulative effects from activities on site.

In terms of cumulative effects with off-site facilities, the activities in the surrounding Rural zone include a waste transfer station on the northern side. The neighbouring site is likely to store or use

small volumes of hazardous substances and these activities are also subject to the requirements of the HSW-HS (including secondary containment, segregation of incompatible substances and emergency management) and will be appropriately separated from each site's boundary. There is negligible risk of cumulative effects from events at other facilities impacting the site.

7.5 Transport

The only site entrance and exit is located on the northeast corner of the site on Wickham Street. Access to State Highway 1C is via Wickham St through the industrial area of Frankton, avoiding residential areas. The risks associated with the transport of hazardous substances to the site will be managed through adherence to Land Transport Rules in relation to transport of hazardous substances, including selection of appropriate routes, placarding, segregation of incompatible materials and training in emergency response.

8 Conclusion

The risk assessment has identified that key risks associated with the storage and use of hazardous substances on-site include:

- risk of a fire at the DG store, breezeway, main warehouse (aerosols cage) or mixing room;
- risk of a spill of Class 3.1 substances during loading or unloading of vehicles in the breezeway or during decanting activities in the mixing room; and
- the risk of leakage of packages of the Class 3.1 substances in the DG store.

The risks to off-site people and property from a fire in all stores containing flammable substances has been assessed as low, and the proposed controls include selection of non-combustible or fire rated construction materials, installation of intrinsically safe electrical equipment, establishment of hazardous areas for control of ignition sources, provision of fire-fighting equipment and separation of hazardous goods stores from other buildings and the boundary. Access to hazardous goods stores on site will be restricted to authorised staff trained in emergency response procedures.

To manage the risk to the environment from a package leak or spill of hazardous substances, the areas where hazardous liquids will be stored or used have been isolated from the stormwater network. The DG store and breezeway have been designed with provision for secondary containment to retain any spills on site in the event of an incident during unloading or loading of vehicles or during decanting in the mixing room. The site emergency planning will include spill response plans. Overall, the effects on the environment from the use and storage of hazardous substances on-site has been assessed as low and can be managed through the proposed structural and operational controls.

Potential effects associated with transporting hazardous substances to the site will be minimised by the availability of appropriate transport routes and compliance with the Land Transport Rules and have been assessed as low.

9 Applicability

This report has been prepared for the exclusive use of our client Industre Property Rua Limited, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report as part of an application for resource consent and that Waipā District Council as the consenting authority will use this report for the purpose of assessing that application.

Tonkin & Taylor Ltd
Environmental and Engineering Consultants

Report prepared by:

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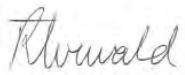
Sienna Xue
Contaminated Land Consultant

Authorised for Tonkin & Taylor Ltd by:

.....

Rob Van de Munckhof
Project Director

Technical review by:



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Rose Turnwald
Environmental Engineer

23-Mar-23
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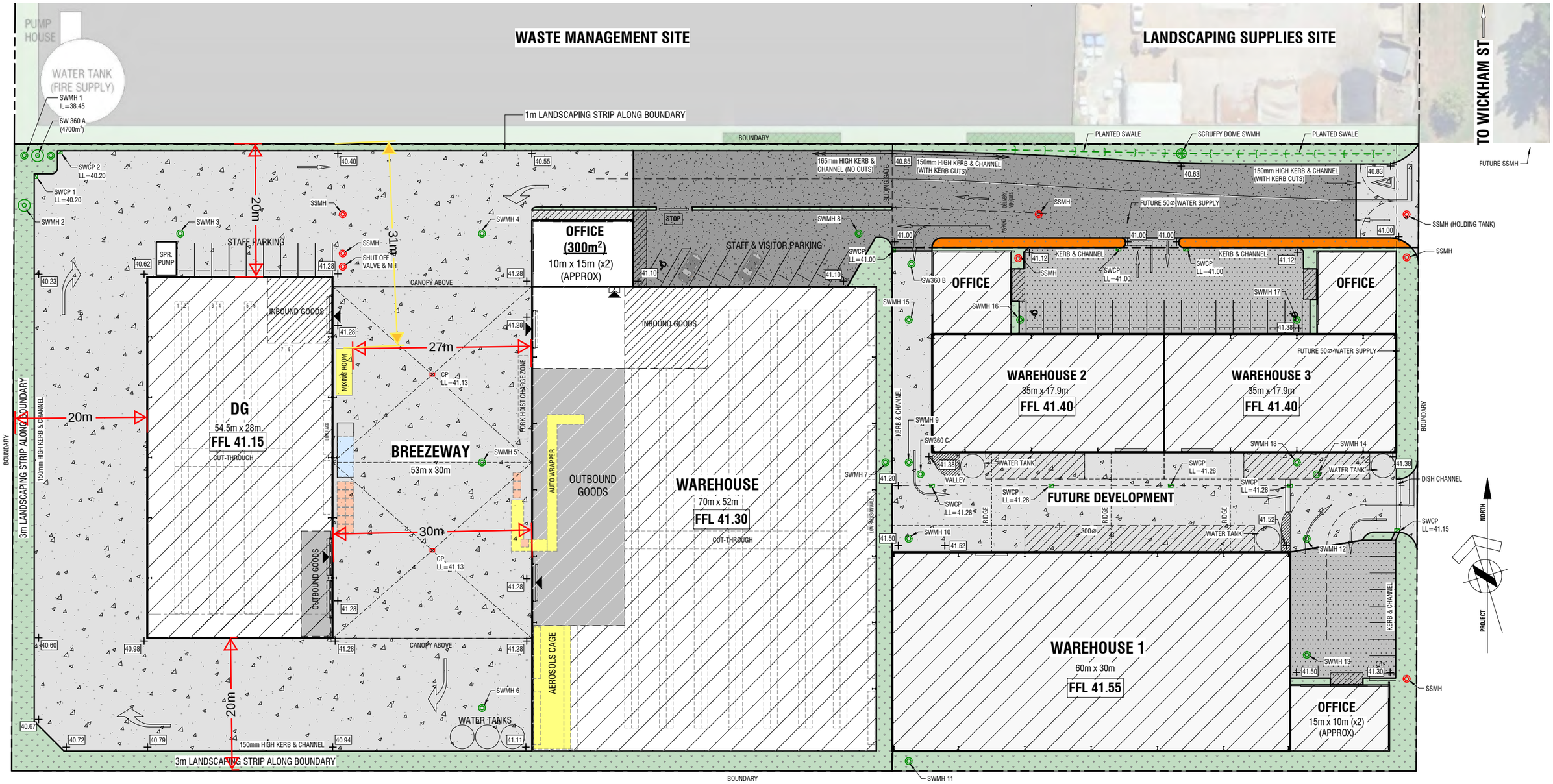
Appendix A Proposed Site Plans

SD-RC02 Proposed Site and Finished Levels Plan (annotated with separation distances)

SD-RC03 Proposed Drainage Plan



FUTURE DEVELOPMENT SITE

SITE FINISHES LEGEND

- LANDSCAPED / GRASSED AREA
- 150 THK. REINFORCED CONCRETE SLAB ON GAP40 BASECOURSE
- 50mm THK. AC14 ON GAP40 BASECOURSE
- 25mm THK. AC10 ON GAP40 BASECOURSE

PROPOSED SITE PLAN

SCALE @ A1 1 : 300

SITE AREAS SCHEDULE - POST-DEVELOPMENT (m²)

FINISHES / SITES	WATTYL DEVELOPMENT	FUTURE DEVELOPMENT	TOTAL
PERMEABLE AREAS: LANDSCAPING	1331	512	1843
SEMI-IMPERMEABLE AREAS: COMPACTED METAL	0	0	0
IMPERMEABLE AREAS: PERMANENT BUILDINGS	6924	3679	10603
IMPERMEABLE AREAS: PAVEMENT / HARDSTAND	5505	2054	7559
TOTAL	**13760**	**6245**	**20005**

ORIGINAL DRAWING IN COLOUR

PRELIMINARY 20.02.2023

0 50 100mm

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK
FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALE

REV	DATE	DESCRIPTION

stiffe hooker ltd
architects - engineers - interiors
3a melrose street
newmarket
auckland
ph +64 9 520 4400
www.stiffehooker.co.nz

PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET

FOR
STRIDE PROPERTY

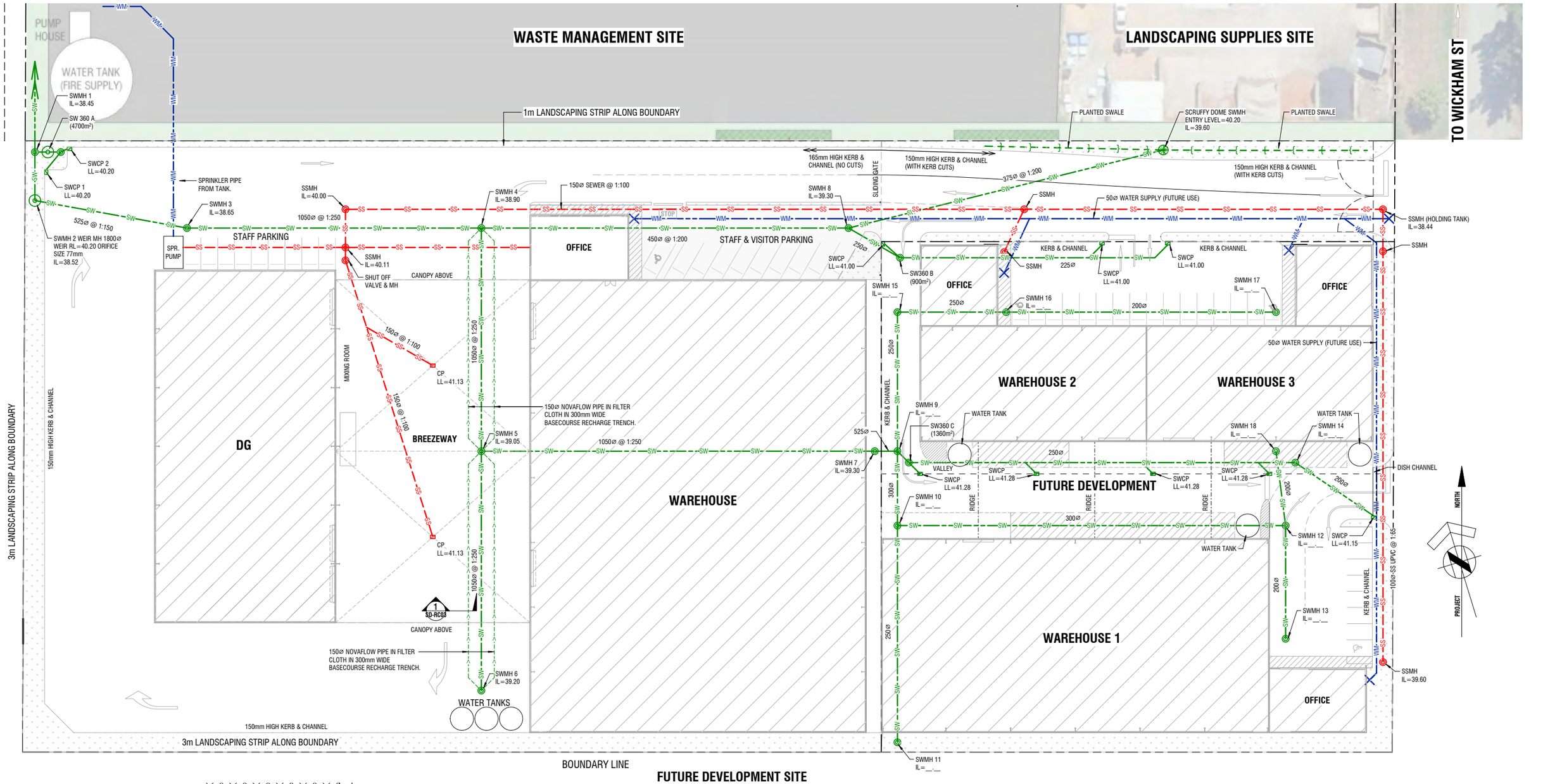
DRAWING
PROPOSED SITE & FINISHED LEVELS PLAN

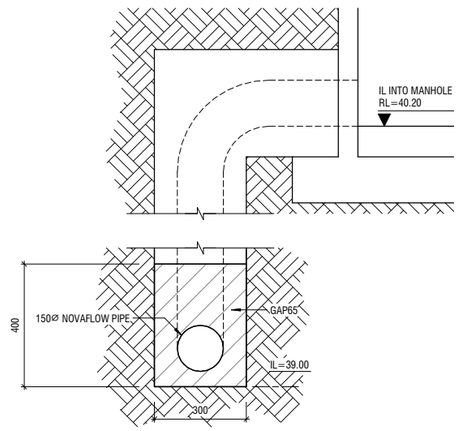
CAD FILE D:\Revit Local Files\10368 - Wattyl Development- Wickham Street-Central_v22_jamesm@stiffehooker.co.nz.rvt

JOB NO 10368

SCALE AT A1 As indicated
SCALE AT A3

SHEET SD-RC02
REV





1 SD-RC03 **SECTION THRU GROUNDWATER RECHARGE TRENCH**
SCALE @ A1 1 : 10

PROPOSED DRAINAGE PLAN
SCALE @ A1 1 : 300

ORIGINAL DRAWING IN COLOUR

REV	DATE	DESCRIPTION

stiffe hooker ltd
architects - engineers - interiors
3a melrose street
newmarket
auckland
ph +64 9 520 4400
www.stiffehooker.co.nz

PROJECT
PROPOSED DEVELOPMENT AT 16A WICKHAM STREET

FOR
STRIDE PROPERTY

DRAWING
PROPOSED DRAINAGE PLAN

CAD FILE
D:\Revit Local Files\10368 - Wattyl Development- Wickham Street-Central_v22_jamesm@stiffehooker.co.nz.rvt

JOB NO **10368**

SCALE AT A1 As indicated
SCALE AT A3

SHEET **SD-RC03** REV

PRELIMINARY 20.02.2023

0 50 100mm

Appendix B Hazardous Facility Screening Procedure

APPLICANT Stride Property Limited
PROJECT Wattyl Distribution Centre
LOCATION 16A Wickham St, Hamilton

Product	Proposed Quantity (t) P	Substance Form	Distance to boundary less than 30 metres? YES NO	Adjacent to water? YES NO	Type of Activity	HSNO Class	Effect Type	Hazard Rating	Base Quantity (t) B	Adjustment Factors F1	F2	F3	Product of Adjustment Factors	Adjusted Quantity A	Fire/ Explosion Effect Ratio	Human Health Effect Ratio	Environment Effect Ratio
Flammable liquids	**694**	**Liquid**	**Yes**	**No**	**Above ground storage**												
						3.1B - 3.1C	**Fire/Explosion**	High	10	1.0	1.0	1.0	1	10	**69.4**		
						6.1D - 6.1E, 6.3 - 6.9	**Human Health**	Low	30	1.0	1.0	1.0	1	30		**23.1**	
						9.1A - 9.1D	**Environment**	High	3	1.0	1.0	1.0	1	3			**231.3**
Flammable liquids	**0.45**	**Liquid**	**Yes**	**No**	**In use - paint mixing room**												
						3.1B - 3.1C	**Fire/Explosion**	High	10	1.0	1.0	0.3	0.3	3	**0.2**		
						6.1D - 6.1E, 6.3 - 6.9	**Human Health**	Low	30	1.0	1.0	0.3	0.3	9		**0.1**	
						9.1A - 9.1D	**Environment**	High	3	1.0	1.0	0.3	0.3	0.9			**0.5**
Flammable aerosols	**2.8**	**Liquid**	**No**	**No**	**Above ground storage**												
						2.1.2A	**Fire/Explosion**	High	10	1.0	1.0	1.0	1	10	**0.3**		
						6.1D - 6.1E, 6.3 - 6.9	**Human Health**	Low	30	1.0	1.0	1.0	1	30		**0.1**	
						9.1B	**Environment**	Medium	30	1.0	1.0	1.0	1	30			**0.1**
Total Effects Ratios															**69.8**	**23.3**	**231.9**

Appendix C Plan provisions related to hazardous substances

An evaluation of the proposed storage and use of hazardous substances at the Wattyl Distribution Centre against the relevant restricted discretionary activity rules and performance standards in Chapter 19 of the WDP have been provided in **Appendix C Table 1 and Table 2** below.

Appendix C Table 1: Restricted discretionary activity rules

Ref	Rule	Comment
19.4.1.3 (a)	All hazardous facilities shall comply with the performance standards of 19.4.2	Assessment against performance standard provided in **Appendix D Table 2**.
19.4.1.3 (b)	Any hazardous facility with an Effects Ratio above the Effects Ratio (R) specified for the zone in which it's proposed to locate, as indicated in the Hazardous Facilities Screening Procedure (HFSP) Consent Status Matrix in Rule 19.4.2.1. Assessment will be restricted to the following matters: (i) Effects of non compliance on the surrounding environment or the pattern of subdivision, land use, roading or infrastructure services in the locality; and (ii) The risk to sensitive environments. These matters will be considered in accordance with the assessment criteria in Section 21.	Potential off-site effects in the event of fire/explosion at the DG store, breezeway, main warehouse and mixing room. Potential off-site environmental effects in the event of a failure of secondary containment occurs, during unloading and dispatching goods, in the event of a failure of wastewater catchpits or stormwater shut-off valve or a container leak and rupture.
19.4.1.3 (c)	Hazardous facilities within the Rural Zone. Assessment will be restricted to the following matters: (i) Effects of non compliance on the surrounding environment or the pattern of subdivision, land use, roading or infrastructure services in the locality; and (ii) The risk to sensitive environments; and (iii) Conditions relating to application material. These matters will be considered in accordance with the assessment criteria in Section 21.	The assessment of effects in Section 7 of this report considers the risk to surrounding areas including sensitive environments, as follows: • The effects on people or property in the event of fire at the DG store, breezeway, main warehouse and mixing room. • The effects on ecosystems in the event of a spill during unloading and dispatching goods, or a container leak and rupture in storage.
19.4.1.3 (d)	Co-disposal of hazardous substances to a landfill operation not provided for as a permitted activity in Rule 19.4.1.1(e). (i) Effects of non compliance on the surrounding environment or the pattern of subdivision, land use, roading or infrastructure services in the locality; and (ii) The risk to sensitive environments; and (iii) Conditions relating to application material. These matters will be considered in accordance with the assessment criteria in Section 21.	N/A – No co-disposal of hazardous substances to a landfill operation.

Appendix C Table 2: Performance standards

Ref	Rule	Comment
19.4.2.1	The following Hazardous Facilities Screening Procedure Consent Status Matrix must be used to determine the consent status of a hazardous facility in the zone where it is to be located.	The HFSP Consent Status Matrix was used and it was found that the proposed Wattyl Distribution Centre constitutes a restricted discretionary activity in the Rural Zone.
19.4.2.2	Calculation of the Effects Ratio (R) must be undertaken by a suitably qualified practitioner experienced, qualified and presently operating in the field of hazardous substances and facilities, using the "Hazardous Facilities Screening Procedure" contained in the document titled "Land Use Planning Guide for Hazardous Facilities – A Resource for Local Authorities and Hazardous Facilities Operators, Ministry for the Environment (February 2002)".	The HFSP has been undertaken by Rose Turnwald (Environmental Engineer) and Rob Van de Munckhof (Principal Environmental Risk Specialist) at Tonkin and Taylor Ltd, using the methodology set out in the Land Use Planning Guide for Hazardous Facilities.
19.4.2.3	"Minimum Performance Requirements for Hazardous Facilities Under the Resource Management Act" set out in Section 4 of the document titled "Land Use Planning Guide for Hazardous Facilities – A Resource for Local Authorities and Hazardous Facilities Operators, Ministry for the Environment (February 2002)" shall apply to all hazardous facilities as permitted activities.	The performance requirements of the Land Use Planning Guide refer to the HSNO regulations, which have been superseded for the control of hazardous substances by the Health and Safety at Work (Hazardous Substances) 2017 regulations (HSW-HS) The Wattyl Distribution Centre will be managed in accordance with the HSW-HS as identified by Dangerous Goods Compliance Limited.
	General site design	
19.4.2.5	Any part of a site where hazardous substances are used, stored, manufactured, mixed, packaged, loaded, unloaded or otherwise handled shall be designed, constructed and managed to prevent any adverse effects of the intended use from occurring outside the area where the particular activity is to be carried out.	All locations where flammable liquids and gases are proposed to be stored and used are specified to be designed and constructed with non-combustible or fire rated claddings in accordance with Clause 11.11 in HSW-HS regulations. The packages in the DG store and breezeway will remain closed. Any open containers or damaged empty packaging of Class 3.1 substances will be stored in the mixing room separated from the DG store and main warehouse. Staff will be trained in safe handling procedures for the Class 2.1.2 and Class 3.1 substances and in emergency response procedures. Only workers who are trained and certified in spill response are authorized to respond to hazardous material spills. All workers are responsible for knowing the location and proper operating techniques for all emergency equipment.
19.4.2.6	All stormwater grates on the site shall be clearly labelled 'STORMWATER ONLY'.	Labels are proposed to be displayed at each stormwater grate on site.

Ref	Rule	Comment
	Spill containment system	
19.4.2.7	Any part of the site, including vehicle accessways, where hazardous substances are used, stored, manufactured, mixed, packaged, loaded, unloaded or otherwise handled shall be served by a spill containment system: (a) Constructed from impervious materials resistance to the hazardous substances; and (b) Able to meet Ministry for the Environment standards including NXS 8409:2004 Management of Agrichemicals or contain the maximum volume of the largest tank used, or where drums or other containers are used, able to contain half of the maximum volume of substances stored, or complies with the Secondary Containment requirements of the Hazardous Substances Emergency Management Regulations as a means of compliance; and (c) Able to prevent any spill or other unintentional release of hazardous substances, and any stormwater and/or fire water that has become contaminated, from discharging into or onto land and/or water (including groundwater and potable water supplies) unless the discharge is permitted by a rule in a Regional Plan or Proposed Regional Plan or by a resource consent; and (d) Provided with a release mechanism for the drainage of the bunded areas that is secured to prevent unintentional release of contaminants into stormwater; and (e) Maintained to ensure it remains effective in the event of a spill.	(a) Areas where the Class 3.1 flammable liquids are stored, loaded or used (the DG store, breezeway and mixing room) will have impervious containment systems designed to enable safe clean-up and disposal off site for the proposed hazardous substances. (b) These areas have been designed with secondary containment capacity for 25% of the total pooling potential to retain any leaked material in the event of damage to a package. This complies with the requirements for secondary containment for more than 5,000 L of flammable liquids in packages smaller than 60 L (Clause 10.31 of the HSW-HS regulations). (c) and (d) Small spills will be held within the secondary containment and cleaned up in accordance with the spill response plan using spill kits. Large spills in the DG store will also be retained in the secondary containment for removal by specialist waste contractors. There is no connection to the stormwater network within the DG store. In event of a large spill in the breezeway, the shut off valve to the site wastewater network at the northwest corner will be used to contain the material on site for removal by specialist waste contractors. Any residual contaminated wastewater will drain to a central holding tank for a later removal by a liquid waste contractor. There is no connection beneath the breezeway canopy to the stormwater network. (e) The secondary containment systems will need to provide evidence of testing for certification under the HSW-HS location compliance requirements. Compliance certification is renewed annually.

Appendix D DG Compliance report

December 2022

Hamilton Distribution Centre

Report prepared for

Stride Property Limited

DGC

Dangerous Goods Compliance Limited

Table of Contents

Important Notes

This report is confidential and has been prepared by DGC on the specific instructions of Stride Property Limited (**Client**) and otherwise in accordance with the scope of work and other terms in the agreement dated 16 November 2022. It is solely for Client's use for the purpose for which it is intended in accordance with the agreed scope of work, and must be read in conjunction with the assumptions, limitations and disclaimers set out below and elsewhere in the report. It should be read in its entirety, and no portion of it should be relied on without regard to the report as a whole and the methodologies and techniques adopted in its preparation.

This report, whether in whole or in part, may not be disclosed to any person other than the Client, and any use or reliance by any person contrary to the above to which DGC has not given its prior written consent is at that person's own risk.

The assessment provided in this report is based solely on the information detailed herein and is subject to the following limitations:

- We have not sought to independently verify information provided by the Client. To the extent any of the information provided is inaccurate or incomplete, the opinions expressed in this report may no longer be valid and should be reviewed.
- The contents of this report are based upon our understanding and interpretation of relevant current, legislation, including applicable Australian Standards, relating to the storage and use of hazardous substances only, and should not be construed as legal opinions or advice.
- While DGC has used all reasonable skills of a professional hazardous substances consultant in providing this report, which may include opinions and recommendations, DGC does not guarantee or otherwise warrant any particular outcome.

Supply Chain Advisory Dangerous Goods Report

Executive Summary

Wattyl Limited (**Wattyl**) is a wholesaler of paint and paint-related products. Stride Property group (the landlord) plans to construct in Hamilton a new warehouse and storage facility areas for the storage and distribution of a range of products, including a dedicated dangerous goods store (**DG store**). Hazardous substances to be stored are 544,000 litres of paints (class 3's) in the DG store, and up to 150,000 litres in transit (on truck) and steel shipping containers. In addition, a quantity of up to 2,800 litres of aerosols (class 2.1.2) is to be stored in a caged area inside the warehouse. The site will also include a mixing room to custom-mix paints.

The purpose of this report is to describe the various options which comply with the requirements of the Health and Safety at Work (Hazardous Substances) Regulations 2017 (**Regulations**). It also includes the requirements for certification, such as site plan, emergency response and training. References to specific "regulations" in this report are to the Regulations as defined above.

The following options have been discussed:

Mixing Room

Depending on the total quantity of flammable liquids to be **used**, one option is to have one or more AS/NZS 4114 mixing rooms storing 450 litres each. Paints can be blended within these rooms. Other options such as type 1, 2 or 3 workrooms and their requirements are detailed in this report.

Type B Store for the DG Store

Storage outside the main warehouse (with a separation distance to protected places) can be used to **store** the class 3s/flammable liquids. Wattyl and the design team have indicated a preference for a "type B store". A type B store is a framed building that has **non-combustible cladding**. All cladding (including the roof) must be made of non-combustible materials. Steel cladding is considered non-combustible. Material tested as non-combustible in accordance with the standard NZS/AS 1530.1:1994 may also be acceptable. Evidence of non-combustibility is required. "Type" stores and separation distances are discussed in detail within the report.

Damaged Goods

Damaged containers of paint will be decanted into other containers in the mixing room. The empty containers will be kept closed and stored in the type B store until disposal to the waste management depot is arranged. Any container that cannot be closed can be kept n the mixing room.

Transit Depot

If class 3's are held outside the type B store or mixing room for longer than 24 hours, Wattyl may establish a transit depot. The requirements of a transit depot are outlined in this report. Transit depots are exempt from the requirements of compliance certification, provided they meet the requirements detailed in regulation 10.37. Hazardous substances can be kept at a transit depot for up to 3 days.

Outside the DG Store and Warehouse - Part 10 of the Regulations

If Wattyl intends to hold class 3's outside the type B store or mixing room for less than 24 hours – whilst waiting for storage or dispatch for example – the requirements of part 10 of the regulations must be met. This includes secondary containment, segregation and hazardous area management.

Aerosol Storage in the Warehouse

Class 2.1.2 aerosols in quantities less than 3,000 litres can be kept inside the warehouse. They must be segregated from any incompatible substances, specifically class 3's. DGC recommends segregation of at least 3 metres based upon AS/NZS standards.

The report has been prepared by DGC in accordance with terms of the engagement agreement between us and Stride Property Limited (the **client**), specifically with regards to the scope of the assignment, DGC's reliance on information provided by the client, and the other terms of the agreement.

Relevant Regulations

A. Class 2.1.2A Aerosols

The storing of aerosols can comply with the Regulations through the controls listed below.

The controls apply to aerosols over 3,000 LWC (litres water content). The site can store a quantity below 3,000 LWC in the main warehouse. They cannot be stored in the type B store or mixing room, as class 3 is incompatible with class 2. Incompatible substances should be segregated from the aerosols by a minimum of 3 metres.

B. Class 3 Flammable liquids storage and use

Part 11 sub-part 2 of the Regulations provides options for the use and storage of flammable liquids at a hazardous substance location.

Using and storing substances inside a building have strict controls and limits on the quantities permitted both for storage and use.

Substances in use (where one or more containers are opened) must be done inside a paint mixing room complying to AS/NZS 4114 or a Type 1, 2 or 3 Workroom. The quantity allowed depends on the Workroom type.

Type 1 Workroom	450 litres	**type 1 workroom** means a building or room— **(a)** where hazardous substances are held in open containers or used; and **(b)** that is constructed in accordance with the following: **(i)** the floor, walls, and ceiling have a minimum fire-resistance rating of 60/60/60 minutes: **(ii)** every door opens towards the outside of the building or room, is self-closing, and has a fire-resistance rating of at least -/60/60 minutes: **(iii)** every window in the building or room complies with NZS 4232.2:1988; and **(c)** that is not occupied either in whole or in part as a dwelling; and **(d)** that has a secondary containment system with a capacity of at least 100% of the total pooling potential
Type 2 Workroom	1750 litres	**type 2 workroom** means a building or room—

		(a) where hazardous substances are held in open containers or used; and **(b)** that is constructed in accordance with the following: **(i)** the floor, walls, and ceiling have a minimum fire-resistance rating of 120/120/120 minutes: **(ii)** every door opens towards the outside of the building or room, is self-closing, and has a fire-resistance rating of at least -/120/60 minutes: **(iii)** every window in the building or room complies with NZS 4232.2:1988; and **(c)** that is not occupied either in whole or in part as a dwelling; and **(d)** that has a secondary containment system with a capacity of at least 100% of the total pooling potential

Type 3 Workroom	3000 litres	**type 3 workroom** means a building or room— **(a)** where hazardous substances are held in open containers or used; and **(b)** that is constructed in accordance with the following: **(i)** the floor, walls, and ceiling have a minimum fire-resistance rating of 240/240/240 minutes: **(ii)** every door opens towards the outside of the building or room, is self-closing, and has a fire-resistance rating of at least -/240/60 minutes: **(iii)** every window in the building or room complies with NZS 4232.2:1988; and **(c)** that is not occupied either in whole or in part as a dwelling; and **(d)** that has a secondary containment system with a capacity of at least 100% of the total pooling potential
Paint mixing room AS/NZS 4114	Any quantity in containers <20 litres, or 450 litres	A non-combustible room complying with the AS/NZS 4114 standard.

If a workroom were to be situated as a stand-alone building outside the warehouse building the quantities could be increased with separation distances to protected places.

An AS/NZS 4114 mixing room can hold any quantity of class 3's provided no containers are greater than 20 litres. The room can hold up to a maximum 450 litres if any container is over 20 litres. *Note: secondary containment in accordance with r.10.30 would have to be sufficient, and the airflow requirements would have to be verified as complying to the standard.*

An electrical certificate of compliance from a registered electrical inspector is required for any equipment within the hazardous areas of the workroom / paint mixing room.

Storage requirements – "type" stores – for the DG Store

The quantity of flammable liquids to be stored is estimated at 694,000 litres combined 3.1B and 3.1C. The maximum quantity needs to be taken into consideration to determine controls required.

The bulk of the flammable liquids (544,000 litres) can be held in a Type A, B, C or D store, separated from protected places by the specified distances. Some quantity can be kept inside the warehouse at one or more of the locations tabulated below.

Storage of class 3's inside the warehouse

AS 1940 cabinets	250 litres each	The maximum container size is 20 litres. The aggregate capacity of the cabinets must not be more than 750 L per 250 m^2 on a ground floor or 250 L per 250 m^2 on other floors. Cabinets must be kept a minimum of 3 metres apart. There must be no sources of ignition within 1 metre above and 3 metres in all directions from the cabinet.
Storeroom in a building	60/60/60 room	**(a)** in a room with the walls and ceiling constructed with a fire-resistance rating of 60/60/60 minutes and a door with a fire-resistance rating of at least -/60/60 minutes and— **(i) not more than 450 L** of those substances are held in the store; and **(ii)** the substances are stored in containers, each not exceeding 20 L capacity; and **(iii)** the requirements of subclause (2) (if applicable) are complied with;
Storeroom in a building	120/120/120 room	**(b)** in a room with the walls and ceiling constructed of reinforced concrete or an equivalent material with a fire-resistance rating of 120/120/120 minutes and a door with fire-resistance rating of at least -/120/60 minutes and— **(i) not more than 2 000 L** of those substances are held in the store; and **(ii)** the substances are stored in containers, each n**ot exceeding 60 L capacity** (except that 1 container of a maximum capacity of 250 L may be located in the store); and **(iii)** any vents are fitted with fire dampers with at least a -/90/- minutes fire-resistance rating; and **(iv)** the requirements of subclause (2) (if applicable) are complied with;

Type D storage inside the warehouse	Maximum **5 000 L** containers **exceeding 60 L capacity**	**(c)** in a type D storage that has no openings to the interior of the building except for— **(i)** a door that is self-closing in the event of a fire and that opens into a type 1, type 2, or type 3 workroom and complies with the requirements of subclause (2) (if applicable); or **(ii)** vents that are fitted with fire dampers with at least a -/180/- minutes fire-resistance rating. **type D storage** means a building where hazardous substances are stored that— **(a)** has a fire-resistance rating of 240/240/240 minutes and is made of structurally strong materials such as brick, block concrete, and reinforced concrete; and **(b)** has a reinforced concrete roof with a fire-resistance rating of 240/240/240 minutes; and **(c)** is part of a secondary containment system; and **(d** has a door with a fire-resistance rating of -/240/60 minutes unless the building is standalone, in which case a lesser rated door may be used.

DGC

Dangerous Goods Compliance Limited

Options for the DG Store

These options are available for the bulk storage of your flammable liquids. They are examples of stand-alone buildings and storage areas that have separation distances to protected places. The separation distances are shown for 624,000 litres in each case together with the requirements of the store. Separation distance is based upon containers no greater than 60 litres.

Type A storage Area	20 metres separation distance to protected places 60,000 litres or more	**type A storage** means an area that is designated for the storage of hazardous substances and that— **(a)** is located external to a building; and **(b)** may have a platform on which 1 or more containers are located, provided that the platform is made of non-combustible materials; and **(c)** may have a shelter roof, provided that the roof is made of non-combustible materials; and **(d)** is— **(i)** secured from access by persons other than those permitted by a PCBU to access the storage area; and **(ii)** is part of a secondary containment system
Type B store	20 metres separation distance to protected places 60,000 litres or more	**type B storage** means a framed building where hazardous substances are stored that— **(a)** has non-combustible cladding; and **(b)** is part of a secondary containment system
Type C store	15 metres separation distance to protected places 400,000 litres or more	**type C storage** means a building where hazardous substances are stored that— **(a)** has a fire-resistance rating of 120/120/120 minutes and is made of structurally strong materials such as brick, block concrete, and reinforced concrete; and **(b)** has a roof made of non-combustible materials; and **(c)** is part of a secondary containment system; and **(d)** has a door with a fire-resistance rating of at least -/120/60 minutes unless the building is standalone, in which case a lesser rated door may be used
Type D store	6 metres separation distance to protected places 400,000 litres or more	**type D storage** means a building where hazardous substances are stored that— **(a)** has a fire-resistance rating of 240/240/240 minutes and is made of structurally strong materials such as brick, block concrete, and reinforced concrete; and **(b)** has a reinforced concrete roof with a fire-resistance rating of 240/240/240 minutes; and **(c)** is part of a secondary containment system; and **(d** has a door with a fire-resistance rating of -/240/60 minutes unless the building is standalone, in which case a lesser rated door may be used.

C. Secondary Containment r.10.30

Mixing Rooms or Type 1, 2 or 3 Workrooms

There is no requirement for secondary containment in a paint-mixing room complying to AS/NZS 4114, provided the quantity does not exceed 1,000 litres.

The requirement for secondary containment inside Type 1,2,3 workrooms is 100 %. The secondary containment required for other storage locations is calculated on quantity and container sizes.

Stores

Taking into account container size of a maximum 60 litres the following secondary containment will apply for a type A, B, C, or D store;

If pooling substances that are class 3 substances are held above ground in a place within a workplace in containers each of which has a capacity of 60 L or less,

(a) if the place's total pooling potential is less than 5 000 L, the secondary containment system must have a capacity of at least 50% of that total pooling potential:

(b) if the place's total pooling potential is 5 000 L or more, the secondary containment system must have a capacity of the greater of—

(i) 2 500 L; and

(ii) 25% of that total pooling potential.

The secondary containment for quantities outside the store during the day and for longer periods has been taken into consideration. These consist of containers sitting inside the loading area and trucks waiting to be offloaded in the yard. The amount of secondary containment for these areas is the same as the store – 2 500L or 25%.

The confirmed quantities and areas requiring secondary containment are noted as follows:

Location	Basis	DG Maximum L	Total DG Maximum L	Containment Required L 25%
DG Warehouse	Maximum hold season build	544,000	544,000	136,000
Inbound/ Outbound Breezeway	Typically Max of 6 x DG 20' container, each with 13KL. Could be Max of 4 x DG 40' containers, each with 20KL	80,000	150,000	37,500
	Maximum days despatch 30KL. Allow more to allow for vehicle Class 3 not ours (normally truck is empty)	30,000		
	Contingency - another 2 x DG 40' container	40,000		
Site			**694,000**	**173,500**

Calculations for and evidence of testing of the secondary containment will be required for location compliance. Hydro testing is an option for confirming secondary containment. Regulation 10.30(4) requires controls on any energy source capable of igniting flammable substances to be excluded and prevents incompatible substances from contaminating. There should be no electrical equipment at ground level or below the level of secondary containment.

D. Options available within the regulations

External Type Store for bulk storage, depending on the available separation distance to protected places this can be a Type B, C or D. Secondary containment established.

AS/NZS 4114 tint mix room, example supplied by Seetal (https://www.seetal.kiwi/). Maximum storage dependent upon container size and capability, room used to blend and store paints.

AS1940 flammable storage cabinet. These can be used to store up to 250 litres in containers up to 20 litres per cabinet, inside the warehouse. Hazardous areas must be established and maintained. In addition to the Hazardous Substance Locations, the site could consider establishing a transit depot[i]. This could be inside a general warehouse. The requirements for transit depots are included below and a table which details separation of substances and controls included with the report.

E. Segregation of incompatible substances

Incompatible substances such as class 2 and class 3 must always be segregated from each other by a minimum of 3 metres.

F. Certification

The threshold for Location Compliance Certification is triggered for 3.1B over 250 litres. The site will require an annual location compliance certificate.

General Location Controls for hazardous substance locations

Regulation 10.34 lists the requirements that a compliance certifier must verify for a hazardous substance location for flammable gasses and liquids prior to issuing a location compliance certificate.

Notification

Wattyl must notify Worksafe at least 30 working days before the commissioning of the hazardous substance location - r.10.26

Security

The hazardous substance location must be appropriately secured from access by persons other than those permitted by the PCBU to access the location. r.10.34(1)(b).

Ensure that buildings and premises are appropriately secured and locked.

Training

Any worker at the location who handles a class 2.1.1, 2.1.2, or 3.1 substance has received information, training, and instruction in accordance with regulation 4.5. DGC Training Limited has various training options and are able to integrate approved training material into the PCBU's systems.

Training consists of training in what we describe as "theory" and a period of practical training under supervision. It is important to include the information from the safety data sheets into training material and the responsibilities of workers in accordance with HSWA. The period of practical supervision can take the form of standard operating procedures, all requirements of theory training need to be included in practical supervision.

The following are the required areas of training: r.4.5(3)

- **(i)** the physico-chemical and health hazards associated with the hazardous substances the worker uses at work:
- **(ii)** the procedures (if applicable) for the safe use, handling, manufacture, storage, and disposal of the hazardous substances:
- **(iii)** practice in the safe use of plant (including personal protective equipment) necessary to manage the hazardous substances:
- **(iv)** the worker's obligations under these regulations:
- **(v)** the actions that the worker should take in an emergency involving the hazardous substances

Hazardous Areas

Hazardous areas need to be established and maintained for flammable gasses and liquids. Zones are determined by the amount of vapour present. Hazardous areas are determined in accordance with AS/NZS 60079.10:2009. No sources of ignition are to be within hazardous areas. If electrical equipment is required within a hazardous area, it needs an electrical certificate of compliance from an electrical inspector. r.10.6

Segregation

Ensure that substances are not in contact with any substance or material with which they are incompatible. Note that class 2.1.2A and class 3.1B/C are incompatible. Segregate by at least 3 metres. r.10.5

Table 1

Substances and materials incompatible with class 2, 3, and 4 substances

rr 10.1, 10.5, 16.4

Hazard classification	Incompatible substances and materials
2.1.1	All class 1 substances
	Class 2.1.2 substances
	All class 3 substances
	All class 4 substances
	All class 5 substances
2.1.2	All class 1 substances
	Class 2.1.1 substances
	All class 3 substances
	All class 4 substances
	All class 5 substances
3.1	All class 1 substances
	All class 2 substances
	Class 3.2 substances
	All class 4 substances
	All class 5 substances

All advice is limited to the requirements of the Health and Safety at Work (Hazardous Substances) Regulations 2017

Signage

When the threshold for signage is triggered, HAZCHEM signage is required in accordance with r. 2.5 and 2.6. Signage is required at all pedestrian and vehicular entrances to the building and land and at any particular room.

- the signage meets the following requirements for comprehensibility, clarity, and durability:
- the signage is in English:
- the signage is readily understandable:
- abbreviations and acronyms are not used unless they are in common English usage and the term described by the abbreviation or acronym is used at least once on the signage:
- all required information is clearly visible and legible at a distance of not less than 10 m under varying conditions (for example, rain or poor light):
- the signage is made of materials that are durable, are resistant to sunlight, and require minimal maintenance

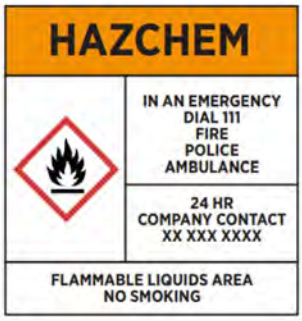
Signage at building and land entrances require:

(a) stating that hazardous substances are present; and
(b) stating the general type of hazard of each of them; and
(c) describing the immediate response action to be taken in an emergency.

Signage at particular rooms e.g. work rooms, type stores, mixing rooms

contain—

- the word HAZCHEM in relation to class 2, 3, 4, 5, 6, or 8 substances; and
- state the hazardous properties and describe the general type of hazard relating to each category of hazardous substance present through the use of—
- hazard pictograms consistent with the correct classification of the hazardous substances present; or
- hazard statements consistent with the correct classification of the hazardous substances present; and
- describe,—
- if the substances include flammable substances, the precautions necessary to prevent unintended ignition of a substance; and
- if the substances include oxidising substances or organic peroxides, the precautions necessary to prevent unintended combustion of, acceleration of a fire from, or thermal decomposition of, an oxidising substance or organic peroxide; and
- describe the immediate response action to be taken in an emergency.



All advice is limited to the requirements of the Health and Safety at Work (Hazardous Substances) Regulations 2017

Emergency Management

In accordance with part 5, when the threshold is triggered fire extinguishers are required. The site requires an emergency response plan (ERP). The ERP must describe the actions to take for "every reasonably foreseeable emergency" (r.5.7). For a class 3 site this includes fire and spill response. DGC can provide a template for this, which can be tailored to your specific site requirements.

Inventory

A PCBU with management or control of a workplace must ensure that an inventory of hazardous substances used, handled, manufactured, or stored at the workplace is prepared and kept at the workplace; and the inventory is maintained to ensure the information in the inventory is up to date. This is checked as part of the emergency response plan when a location certificate is triggered, it is however a PCBU responsibility to create. Worksafe have a toolbox which can be used to create an inventory. DGC can also provide a template. r.3.1.

Site Plan

A reference in these regulations to a **site plan** is a reference to a plan of the relevant place that is accurate and drawn to scale to the extent necessary to enable the plan to meet its purpose in the provision that refers to it (in particular, by enabling a person inspecting the plan to identify actual distances and other relevant dimensions).

DGC can provide contact details of providers if required.

The following items are to be included in the site plan.

Requirements: All site plans		Mark Complete
Site plan is uniquely identifiable	PCBU name	☐
	Site address	☐
Accurate and drawn to scale	Date site plan was prepared and version number	☐
	Scale that enables the plan to meet its purpose *(in particular, by enabling a person inspecting the plan to identify actual distances and other relevant dimensions)*	☐
	North arrow	☐
	Legend/key that defines colours, shaded areas, symbols, abbreviations etc	☐
Hazardous substances locations	Legal property boundary of the site	☐
	Physical position of all hazardous substances' locations in relation to the site boundary	☐
	Hazardous areas delineated in accordance with AS/NZS 60079.10.1:2009	☐
	Separation distances/controlled zones	☐
	(If applicable) If scale and complexity of the workplace demand, separate drawings to meet the purpose of the site plan	☐

All advice is limited to the requirements of the Health and Safety at Work (Hazardous Substances) Regulations 2017

Transit Depot Requirements – Class 2,3 and 8 substances

(r10.37 and r.13.28)

General Requirements for Transit Depots

- For all classes of hazardous substances, a PCBU with management or control of a transit depot must notify WorkSafe of the following information at least 30 working days (or, in the case of LPG, at least 5 working days) before the commissioning of the transit depot:
  (i) the street address of the transit depot; and
  (ii) the maximum quantity and the hazard classification of each of the classes of substances that the transit depot is designed or constructed to accommodate

- The PCBU must ensure that the substance, if left unattended, is appropriately secured from access by persons other than those permitted by the PCBU to access the substance – Reg. 10.4, and 13.10

- All workers who handle hazardous substances must have training in accordance with Reg. 4.5

- Signage is required in accordance with Reg. 2.7. The signage must be positioned at the primary points of vehicular and pedestrian entry to the land on which the transit depot is located. It must contain the word HAZCHEM, identifies the site as a transit depot and warns people that hazardous substances may be present at the site.

- There are prescribed separation distances for compatible and incompatible substances that must be adhered to. The separation distances are 3 or 5 metres depending on compatibility and must be taken into consideration in relation to positioning of vehicles loaded with hazardous substances, loading docks and other areas at the transit depot where hazardous substances are located. The attached excel table “Requirements for Transit Depots.xls” provides further detail regarding separation of substances.

- ensure that all class 2, 3, or 4 substances located at the transit depot remain within their containers and that the containers remain closed; and

- ensure that any electrical equipment at the transit depot is designed and constructed so that in the event of failure of the electrical equipment no resulting ignition source will contact either the substance or its package; and

- designate and clearly identify with signs areas for containment, pending disposal of any leaked or spilled material or damaged packages.

- Compliance with those parts of the Electricity Act 1992 and regulations made under that Act, the Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016, or the Civil Aviation Rules that relate to the matter described in subclause (1)(g) is a means of meeting the requirements of that subclause.

[i] **transit depot** means a permanent place (except a means of transport or any place where hazardous substances are held for sale or supply) used as a transport depot that is intended to hold hazardous substances in containers that remain unopened during the time that they are present at the depot for periods—

(a) that are more than—

(i) 24 hours, for a substance that is not subject to the tracking provisions in Part 19:

(ii) 2 hours, for a substance subject to the tracking provisions in Part 19; but

(b) that in no case exceeds 3 days

Appendix E Emergency procedures plan

Emergency Response Plan

TABLE OF CONTENTS

APPENDICES

1.0 PURPOSE / SCOPE

This manual contains all necessary information for the Contingency / Crisis Management procedures for the Blacktown site. Contents of this manual include: the emergency response program to be implemented in the event of a fire or smoke event, explosion, chemical spill / release, bomb threat, severe weather, medical emergency, biological hazard (waste), power outage or work place violence. Emergencies are situations that cannot be controlled by normal operating practices and procedures to: Protect human life and health, minimize adverse impact on the environment, protect the community, and to protect company property and assets.

The proper execution of this emergency plan is the responsibility of all company employees and, as appropriate, its vendors and contractors. It is essential that all personnel respond quickly and correctly to the instructions of the Chief Warden, their Supervisor and Emergency Response Personnel during an emergency.

It is the responsibility of the Site Manager to review and update the Emergency Response Plan, including the facility evacuation routes and headcount areas annually (located in Appendix 11 & 12), and or as needed to reflect any significant changes within the facility. It is also the Site Manager's responsibility to ensure workers receive training in relevant procedures on an annual basis. Training will be conducted in the format of a drill, classroom, toolbox, and or on the job training.

It is also the Site Manager's responsibility to ensure programs are in place to inspect, test and maintain fire prevention equipment, alarms, spill response equipment, first aid supplies, and personnel protective equipment. These programs will be conducted and maintained by qualified contractors.

2.0 FACILITY INFORMATION

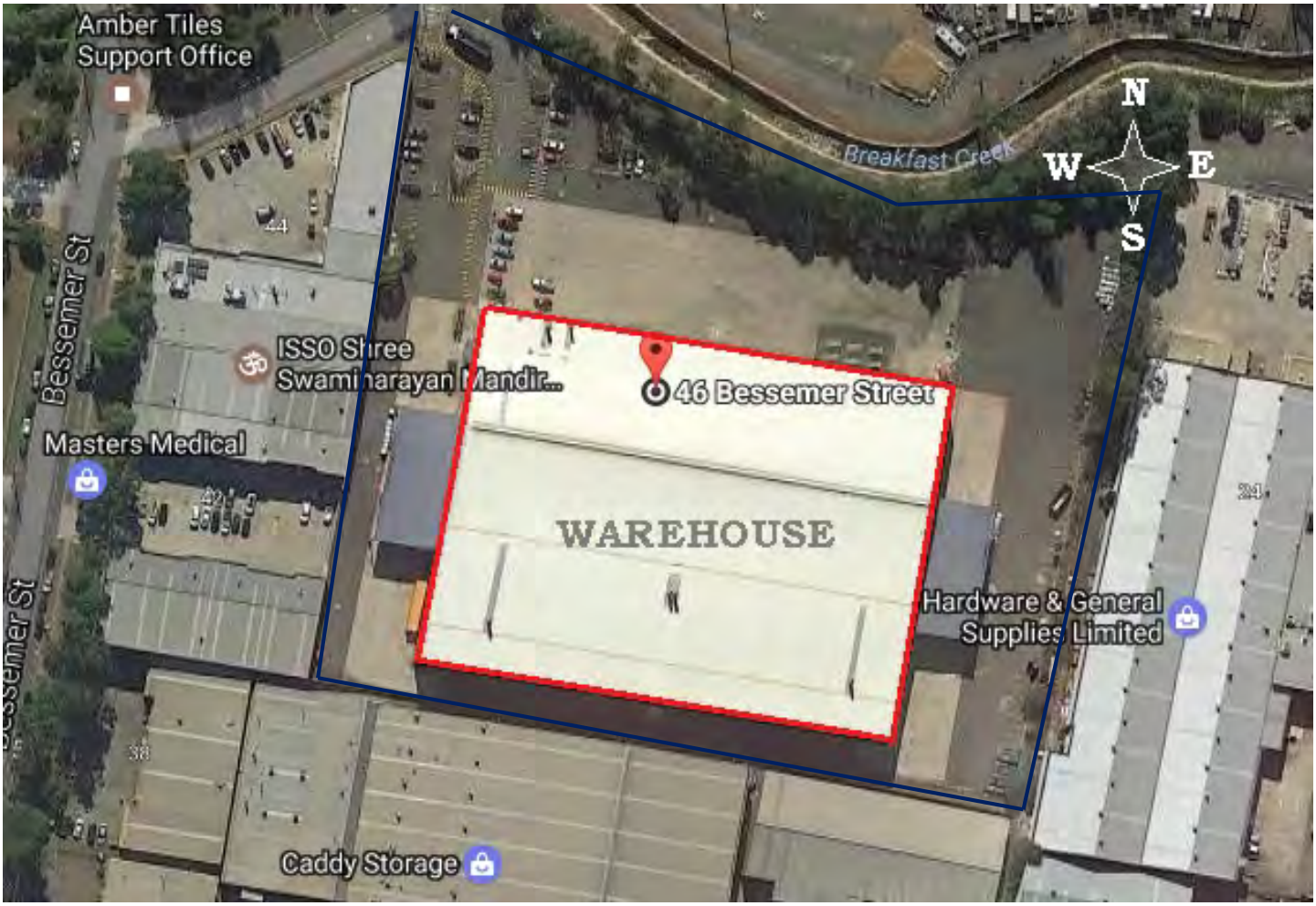
Sherwin Williams – Blacktown DSC
46 Bessemer St
New South Wales 2148
(02) 8811 5420

The site is located at the end of Bessemer Street, which is a two-way lane road speed limited to 50kph. Bessemer Street is located on the Western border (beside Shree Swaminarayan Mandir) and Breakfast Creek on the Northern border of the property. Site occupancy hours are 6:00 am to 10.00 pm, 5 days per week. Major activities conducted on site are Warehousing and Distribution of Water and Solvent Based Paint and Paint Consumables.

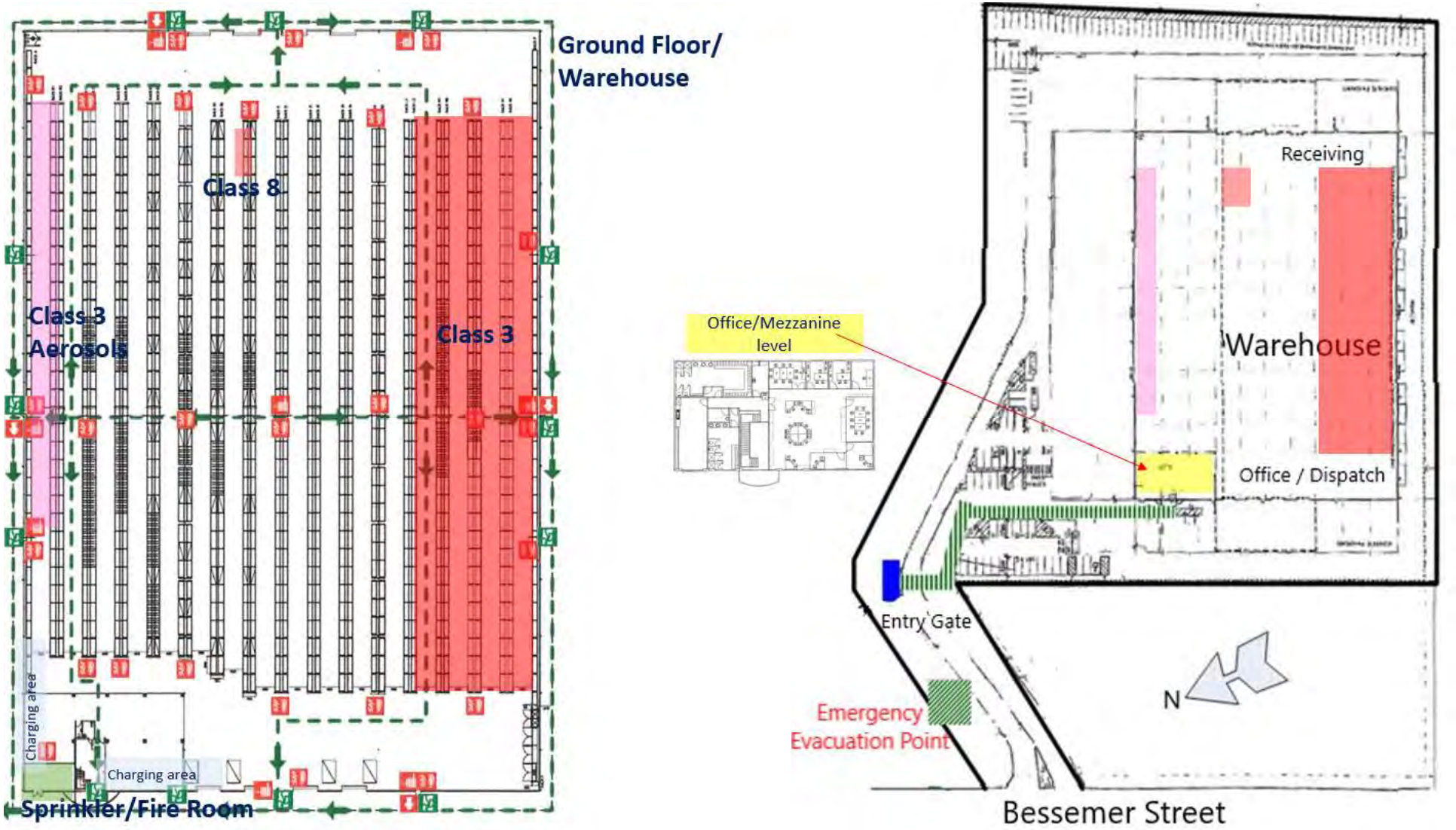
The eastern, western and southern border of the property are adjacent a mixed business precinct. Within the surrounding, operates the following listed from nearest out;

- Ozkor Pty Ltd – Warehousing of non-hazardous material. Ph. 02 9672 8588
- Shree Swaminarayan Mandir – Religious centre (Hindu Temple). Ph. 02 9676 4480
- Masters Medical – Administration, Sales and Warehousing of non-hazardous material Ph. 1800 621 335
- Safe Environments Pty Ltd – Administration, Sales and multi-specialist consultancy operating in the building, construction and property management industries. Ph. 02 9621 3706
- Caddy Storage – Warehouse and Distribution centre of non-hazardous material. Ph. 02 9831 2878
- Hardware & General Supplies Ltd – Store of non-hazardous material. Ph. 02 9621 6700

GOOGLE EARTH IMAGE OF BLACKTOWN SITE



Dangerous Goods/Hazardous Substance location Map



Manifest

Un Number	Shipping Name	Hazard	Pack Group	HazChem	
UN1090	ACETONE	3	II	2YE	74
					74
UN1170	ETHANOL	3	II	2YE	2268
					2268
UN1193	ETHYL METHYL KETONE	3	II	2YE	172
					172
UN1263	PAINT	3	II	3YE	34131
UN1263	PAINT RELATED MATERIAL	3	II	3YE	86
UN1263	PAINT	3	II		4772
					128827.67
UN1263	PAINT	3	III	3Y	245554
UN1263	PAINT RELATED MATERIAL	3	III	3Y	18850
UN1263	PAINT	3	III		27365
UN1263	PAINT RELATED MATERIAL	3	III		672
					640023.75
UN1866	RESIN SOLUTION	3	II	3YE	44400
					44400
UN1866	RESIN SOLUTION	3	III	3Y	109400
					109400
UN1950	AEROSOLS	2.1			30580
UN1950	AEROSOLS, FLAMMABLE	2.1			28664
					63054.38
UN3066	PAINT	8	III		549
					549
UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCES,	9	III	3Z	123
UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID,	9	III	3Z	984
					1107
UN3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.	8	III	2X	1914
					1914
					991789.79

First Response Personnel / Equipment

It is the intent of Management to operate the facility in a manner which will minimise the risks to our workers engaged in the warehousing and distribution of finished paints / coatings and related products wherever practicable. Recognition of those risks and the preparation and prevention efforts that are undertaken can minimize the impact fires or other emergencies may have in our facilities. Only workers who are trained and certified in spill response are authorized to respond to non-routine hazardous material spills. All workers are responsible for knowing the location and proper operating techniques for all emergency equipment.
Routine, small and incidental spills may be handled by department personnel. Absorbents, PPE, berms and other spill containment and control material are strategically located within the operating area and around the property in 120 litre orange containers labelled “Spill Kit”.

Firefighting equipment (fire extinguishers, fire hoses) is located throughout the facility. Fire extinguishers and hoses are intended for use in controlling and extinguishing incipient stage fires blocking egress.

No materials, in-process work, or finished goods shall be conducted, stored, stacked, or placed in such a manner as to block egress, access or prevent the proper operation of any emergency equipment (Sprinkler system, Fire extinguishers, Spill Control Equipment).

Sprinkler systems are located throughout the facility and will discharge automatically in the event of a fire. Flow of the sprinkler system will trigger the evacuation alarm and alert the Blacktown Fire Station of an emergency on site.

Programs are in place to inspect, test, and maintain fire prevention equipment, alarms, spill response equipment, first aid supplies, rescue equipment, and personal protective equipment (PPE). These programs are conducted by Sherwin Williams workers and qualified contractors.

In the event of loss of power in a fire, the emergency pump will automatically start to provide delivery to the water sprinkler and fire hose systems. It should be noted that the water delivery relies on town water and the site does not have a fire water tank. Disruption of town water directly impedes the site fire systems.

The site has a team of individuals trained and certified to be first aid responders who have strategically placed first aid kits / equipment. These individuals should be contacted when / if a local medical emergency occurs. They and / or the Chief Warden will decide if additional medical help is needed. Names, locations and contact numbers are listed under 5.5 Medical Emergencies (page 6).

Emergency Shutdown

Where emergency shutdown is required the following check list shall be utilised;

Warehouse/Distribution Preparation Activities	Yes	No	List Issues
Complete supply of all current orders if time permits			
Is there need to relocate stock to another DC to avoid out of stock?			
Secure / Guard all WH equipment			
Secure forklifts – ensure LPG is closed where appropriate			
Secure manual handling devices			
Shutdown / Lock LPG storage bottle cage if last on site			
Police entire site perimeter and secure loose items			
Shutdown Conveyor if last on site			
Switch off Electric Fans			
Switch off Lights			
Secure Perimeter doors			
Activate alarm if last on site			
Switch off Lights, Secure doors, Arm alarm in room if last on site			

Office Preparation Activities	Yes	No	List Issues
Switch off Air conditioners			
Switch off Copier/s			
Turn off office light			
Secure office			
Mezzanine Preparation Activities	**Yes**	**No**	**List Issues**
Switch off Air conditioners (Lunch room also)			
Switch off coffee machine			
Turn off lights			
Secure office			
Administrative Preparation Activities	**Yes**	**No**	
Have current listing of employee contact details available for all key personnel			
Contact Corporate, advise shutdown procedure to be implemented			
Notify local emergency services of closure			
Unplug all electricals at outlets			
Unspecified Activities			

3.0 Security

Access to the facility is controlled at all times. During normal operating hours, all visitors must report to the reception for check in and escort. Visitors must sign in and out and be accompanied by an employee while on site. The register / log is collected by the Chief Warden during an evacuation, to ensure all visitors signed in on site are accounted for during evacuation.

Contractors must complete an Induction prior to working in the facility. Return Contractors must sign in and out for each visit but may do this via the contractor or visitor log located in the warehouse office upon entrance into the facility. A copy of the log sheet will be collected by the Administration person and will be used to account for all contractors / visitors in the event of an evacuation. Contractors will complete the induction annually as a refresher.

4.0 Notification / Communication

Notification / Communication can be either or both Internal and / or External. The communication required is determined by the event. In the event of an emergency the site is well equipped to handle communications in the form of a Public Address system (PA) located in the pump room, and mobile phones. Although the alarm can be activated by any personnel if they deem the emergency to be a threat to themselves or others, calls to outside emergency services should be funnelled through the Chief Warden.

In an emergency where the PA is required, the message to announce will be provided by the Chief Warden to the Wardens. The PA announcement should be made in a loud clear voice and repeated twice. The PA or other means of communication may be used in situations where the emergency has blocked the normal evacuation route of any area within the facility.
The PA system is checked by the fire system maintenance contractor weekly.

4.1 Situations Requiring Off-Site Assistance

The decision to request off site assistance is at the discretion of the CMT however the following lists of events where that request should be made;

- Death
- Multiple Injuries
- Urgent Life Injury or Illness
- Biological Hazard Release
- Fire (non incidental)
- Explosion
- Bomb Threat
- Building or Partial Collapse
- Vehicular accident (non incidental)
- Chemical Release (to Sewer, Stormwater or threatening Ground Water)
- Workplace Violence (or threat)
- Civil Violence (or threat)

5.0 Emergencies

5.1 Fire / Smoke

Appendix 1 details the process to use in the event of a Fire / Smoke emergency. The first few minutes of a fire are the most critical in preventing an incidental fire becoming catastrophic. A first responder should only fight a fire after alerting others, and never alone unless to clear an exit.

5.2 Explosion

Appendix 2 details the process to use in the event of an Explosion. Because of the serious impact an explosion could have on the operation and personnel working in the warehouse, careful consideration must be given to ensure that tools/equipment are rated appropriately for the electrical classification of the area, all potential sources of ignition have been removed from the work area and areas are kept clean and free of dirty rags, and spilled material. An explosion is defined as any violent eruption of material or equipment.

5.3 Chemical Release Spill

Appendix 3 “Hazardous Chemical Emergency Response Flow Chart” details the process to use in the event of a chemical spill / release. Small spills inside the building or on paved areas outside that do not impose a threat to health or the environment should be cleaned up by employees.

5.4 Bomb Threat

Appendix 5 details the process to use in the event of a Bomb Threat. Bomb threats are most likely to be received by telephone. While anyone may receive threats, telephone operators, receptionists, and company officials are most likely to receive them. Personnel likely to receive such threats should be fully briefed on their responsibility to report such threats immediately to the Site Manager.

5.5 Medical Emergencies

Although the site is equipped with first aid equipment and trained responders, a medical emergency shall be responded by Ambulance where the situation is urgent or life threatening. The First Aid responders are trained and have access to first aid kits to provide superficial treatment and / or lifesaving first aid until a medical crew arrives.

FIRST AID AND EEO CONTACT OFFICERS

DISTRIBUTION	**Shane Nash**	**First Aid Officer**
	James Orrell	**First Aid Officer**
	Raymond Portelli	**First Aid Officer**
	Chris Watling	**First Aid Officer**
	Kevin Edwards	**EEO Contact Officer**
	Warren Thompson	**EEO Contact Officer**

5.6 Bio Hazard / Waste

Medical sharps are to be placed in the sharps container located in the first aid room.
Biological waste should be placed in plastic bags available in the first aid locker and marked “Bio Hazard” for collection. Collection of these bags and biological spills / waste unable to be bagged can be arranged via Cleanaway listed in the “Emergency Service Contact Numbers” table below.
Accidental / uncontrolled release of hazardous biological substance must be reported immediately to the Site Manager and the area shutdown / controlled, until the hazard has been removed by Cleanaway listed in the Emergency Service Contact Numbers table below.

5.7 Severe Weather

Severe weather could mean one of the following conditions:

- Cyclone
- Severe thunderstorm
- Extreme Heat
- Earthquake or
- Flood

Severe weather is detected by one of the following means:

1. Visual observation by a worker;
2. Report of a Severe Weather Warning by the National Weather Service; or
3. Other media notification.

If a worker detects severe weather through one of the above listed methods, the following steps will be taken:
The employee’s immediate supervisor or the Site Manager will be informed of the situation. An assessment of the threat will be made and either immediate emergency action taken or continued monitoring of the weather progress. Use the Severe Weather Checklist located in Appendix 5 to ensure all reasonable efforts have been made to ensure employee and property safety during a severe weather event.

5.8 Power Outage

There may be several causes for a power outage both internal and external. Because power outages can create potentially dangerous situation within or be a result of an emergency event in the facility operation, it is imperative power outages are treated as an emergency situation and the same care given to safely move quickly to the designated Power Outage Rally point in preparation for evacuation if required.
Distribution and Office workers go to the front of the warehouse until direction is given by the Chief Warden. The wardens will do a role call and if needed a sweep of the building to ensure everyone has safely evacuated. The Chief Warden will determine the cause and duration of the Power Outage and based on that information will determine the next course of action. No one can go home without the approval of a manager on site.

5.9 Workplace Violence

A workplace violence issue is considered to be any occurrence that involves the following:

- A physical attack on a worker
- The presence of a weapon in the workplace I.E. a gun or knife

- A verbal or written threat of physical harm to a worker, and / or;
- The unauthorised entrance onto the site by any individual/s believed to want to do harm to a worker or property.

Upon discovery of an actual or *potential* workplace violence incident, employees should notify their supervisors and / or the Site Manager and Human Resource Manager <u>immediately</u>.

Appendix 6 details the process / check list to use in the event of Workplace Violence.

<u>Emergency Service Contact Numbers</u>

SERVICE	***NUMBER***	***COMMENTS***
Fire and Rescue NSW	000	URGENT – Life threatening
Blacktown Fire Station	02 9622 8932	
Ambulance	000	URGENT – Life threatening
	13 12 33	Non urgent
Police Department	000	URGENT – Life threatening
	13 14 44	Attendance
Endeavour Energy	13 10 03	Report a fault
Electrician (M.J.N. Electrical)	0412 285 212	Electricity emergency only
Wormald	13 31 66	
Sydney Water	13 20 90	Report a fault
EPA	13 15 55	Pollution complaints
NSW Poisons Information Centre	13 11 26	Women & Children's Hospital
Plumber (AW Edwards Plumbing)	02 9624 5566	
Cleanaway	13 13 39	Chemical Spill and Bio Waste collection

5.10 Crisis Reporting Protocol and Contacts

The below details steps to follow where the emergency represents a crisis and the hotline although displayed must only be called via the chain of authority as listed in ascending order within the "staff contact" table below. Lesser emergencies / events shall be reported with reference to EHS-GLN-408 Incident Recording, EHS-STD-116 Incident reporting, investigation, and communication, and entered into MIRA.
An event may need to be reported to Safe Work NSW and the area involved is quarantined until cleared by a regularity officer. Contact your HSE Manager for Guidance. Follow the below URL for guidelines on reportable incidents. http://www.safework.nsw.gov.au/health-and-safety/Report-an-incident-or-injury/notifying-us

RESPONDING TO A POTENTIAL CRISIS EVENT

Sherwin-Williams Emergency / Crisis Response Hotline
00-1-216-566-3300 (Outside the US/Canada)

CRISIS REPORTING PROCESS

INITIAL REPORTING, RESPONSE & RECOVERY

Initial Tasks for Emergency & Crisis Determination

The following tasks should be completed given a disruptive event affecting location(s) under your supervision:

- ❑ Activate your location's Emergency Response Procedure
- ❑ Protect life and ensure safety
- ❑ Account for personnel and visitors
- ❑ Liaise with first responder
- ❑ Review business priorities
- ❑ If disruptive event meets the threshold of a crisis event, contact the crisis response hotline within 4 hours (prepare to provide critical crisis information - Page 2)
- ❑ Activate local crisis response plans / incident command
- ❑ Participate in Corporate / Region / Business CRT meetings
- ❑ Escalate resource requests to CRT (review response planning considerations – Page 3)
- ❑ Cascade relevant messaging to direct reports
- ❑ Execute crisis response action plans until normal operations

CRISIS THRESHOLD EVENTS TO ESCALATE

List of potential crisis events for division personnel to escalate to the Crisis Response Team (CRT):

- ❑ Natural disasters or man-made events (e.g., hurricane, tornado, earthquake, or act of terrorism)
- ❑ Pandemic/contagious illness
- ❑ Information system failure
- ❑ In-depth investigation by government agency
- ❑ Activist initiatives (external organization action)
- ❑ Information Security Breach
- ❑ High profile employee relations matter
- ❑ Major safety or quality recall
- ❑ Fire/Explosion resulting in injury to or death to employee /catastrophic damage to location or major disruption to operations
- ❑ Major work-related safety incident, if resulting in a fatality or multiple hospitalizations.
- ❑ Major environmental incident with negative impact to public health, regulatory compliance, and/or company reputation.
- ❑ Workplace violence or criminal act causing death or serious injury to employee/customer
- ❑ Transportation driver accident causing death, serious injury, major environmental impact

The table below list in hierarchy the Responsible Manager or representative to call in any event like the above. The caller shall attempt to contact the individual/s in descending order until the call is answered.

Contact Numbers / Crisis Management Team

TITLE	*MOBILE NUMBER*
Site Manager (Warren Thompson)	0420 936 418
Operations Supervisor (Kevin Edwards)	0418 215 243
Distribution Manager (Mick Miller)	0418 321 977
HSE Manager (Melissa Bennett)	0420 928 776
Human Resources Manager	TBA

6.0 Emergency Response Team (ERT) / Incident Response Team (IRT) Activities

During an evacuation the ERT / IRT shall follow the process detailed in Section 9 of this document only to the point of assembly and communication. Instruction / request to respond to an emergency will be based on the knowledge of the event, and the level of confidence the ERT / IRT are not placed in danger.

7.0 Training

Chief / Deputy Chief Warden
The Chief and Deputy Wardens shall obtain certification of Chief Warden and Building Evacuation from an approved provider.
The Chief and Deputy Wardens shall organise / attend biannual evacuations for all employees.
The Chief and Deputy Wardens shall organise / attend annual desktop training for the ECO.

Crisis Management Team
The CMT shall attend biannual revision / desktop training of the ERP document and participate in the planning and execution of the bi-annual evacuation drills.

Emergency Response Team / Incident Response Team
The ERT / IRT will be provided with spill response training.
The ERT / IRT will participate in biannual evacuation drills.
The ERT / IRT shall attend annual desktop training for the ECO.

Area Wardens
Area Wardens shall attend annual desktop training for the ECO.
Area Wardens will participate in biannual evacuation drills.

All Employees
Bi-annual evacuation drill
Annual evacuation procedures refresh toolbox

Contractors / Visitors
Annual evacuation procedures refresh toolbox

8.0 Documentation

Training Drills / Actual Evacuations
All Training drills and actual evacuations shall be documented and retained in the site emergency planning and response folder on the main company electronic directory.

Improvements

The evacuations will be critiqued for effectiveness and recommendations made for improvements. These shall be determined for feasibility and will be tracked to closure. The details of the recommendations and the improvement tracking shall be deposited in the emergency planning and response folder on the main company electronic directory.

EMP & Response Plan
A copy of this plan shall be stored on the company SharePoint. This plan shall be reviewed and updated by the CMT on an annual basis with the current date of revision on the cover of the plan.

9.0 EVACUATION PROCEDURE

REFERENCES

BLK-DIS-F-008	Fire Emergency Evacuation Responsible Persons List
BLK-DIS-F-013	Emergency Service Numbers
BLK-DIS-F-014	Blacktown Evacuation Report
BLK-DIS-C-035	Fire Extinguisher Types and Uses
BLK-DIS-C-036	Hazard and Protective Device Locations

DEFINITIONS

ECO:	Emergency Control Organisation
ERT / IRT:	Emergency Response Team / Incident Response Team
CCMT:	Corporate Crisis Management Team

9.1 Important Notes;

The alarm can be activated by any worker on site if they deem the threat as a danger to themselves and or others.

All personnel are instructed not to place themselves or others at risk of injury. Preservation of life is the primary objective.

Any significant incident must be reported to the Corporate Crisis Management Team via local management / supervision reporting up to division leadership at the local corporate head office. Details defining a potential crisis and appropriate reporting protocols and relevant phone numbers are available in 6.0 of this document.

Personnel are advised they must not offer any information to the media should they attend. Any media interest will be managed by the relevant executive.

Respond to emergencies according to the appropriate Flow Charts and check lists:

Appendix 1	Fire / Smoke Emergency Response Flow Chart
Appendix 2	Explosion Emergency Flow Chart
Appendix 3	Chemical Emergency Response Flow Chart
Appendix 4	Bomb Threat Checklist / Bomb Threat Response Flow Chart
Appendix 5	Severe Weather Check List
Appendix 6	Work Place Violence Check List
Appendix 7	Emergency Control Organisation / First Aid & Harassment Contact Officers
Appendix 8	ECO Responsibilities
Appendix 9	Evacuation Checklist Example
Appendix 10	Hazard and Protective Locations – Symbol Legend
Appendix 11	Evacuation Meeting Point
Appendix 12	Alternative Evacuation Meeting Point

The structure of the Emergency Control Organisation (ECO) is shown in Emergency Control Organisation (Appendix 7).

Responsibilities of the members of the ECO are detailed in ECO Responsibilities. (Appendix 8)

Emergency Contact Numbers are listed in Emergency Service Contact Numbers (page 7) which for convenience is displayed on each ECO board in the warehouse.

9.2 Evacuation

The alarm system has two tones, the alert (beep, beep) tone and the evacuation (whoop, whoop) tone. During the alert tone, personnel are to secure their work stations and await the next tone of the alarm system which is the evacuate tone. When this sounds, personnel must evacuate the site using the nearest safe exit to their immediate location.

The nearest safe exit is highlighted on the Building Evacuation Map located in front foyer and near exit doors.

Proceed immediately to the designated Evacuation Meeting Point in a calm manner and report to the Warden. Note: All personnel **MUST** stay at the evacuation meeting point until the "ALL CLEAR" is given from the Chief Warden.

Visitors and Contractors on Site are the responsibility of their **Site contact person** and **MUST** be escorted to the evacuation meeting point. Special consideration must be made should the visitor / contractor have a disability. It is the responsibility of the contact person who is by definition the visitor / contractor's manager to determine with the visitor / contractor the means of assistance that may be required in an evacuation event.

Visitors and Contractors names must checked off against the Visitor's Register held by the Chief Warden.

Responsibilities of the ERT / IRT are detailed in ECO Responsibilities (Appendix 9).

The Hazard and Protective Locations – symbol legend is detailed in Appendix 11.

When the "ALL CLEAR" is given by the Chief Warden via the Wardens, workers may return to the site and resume normal duties.

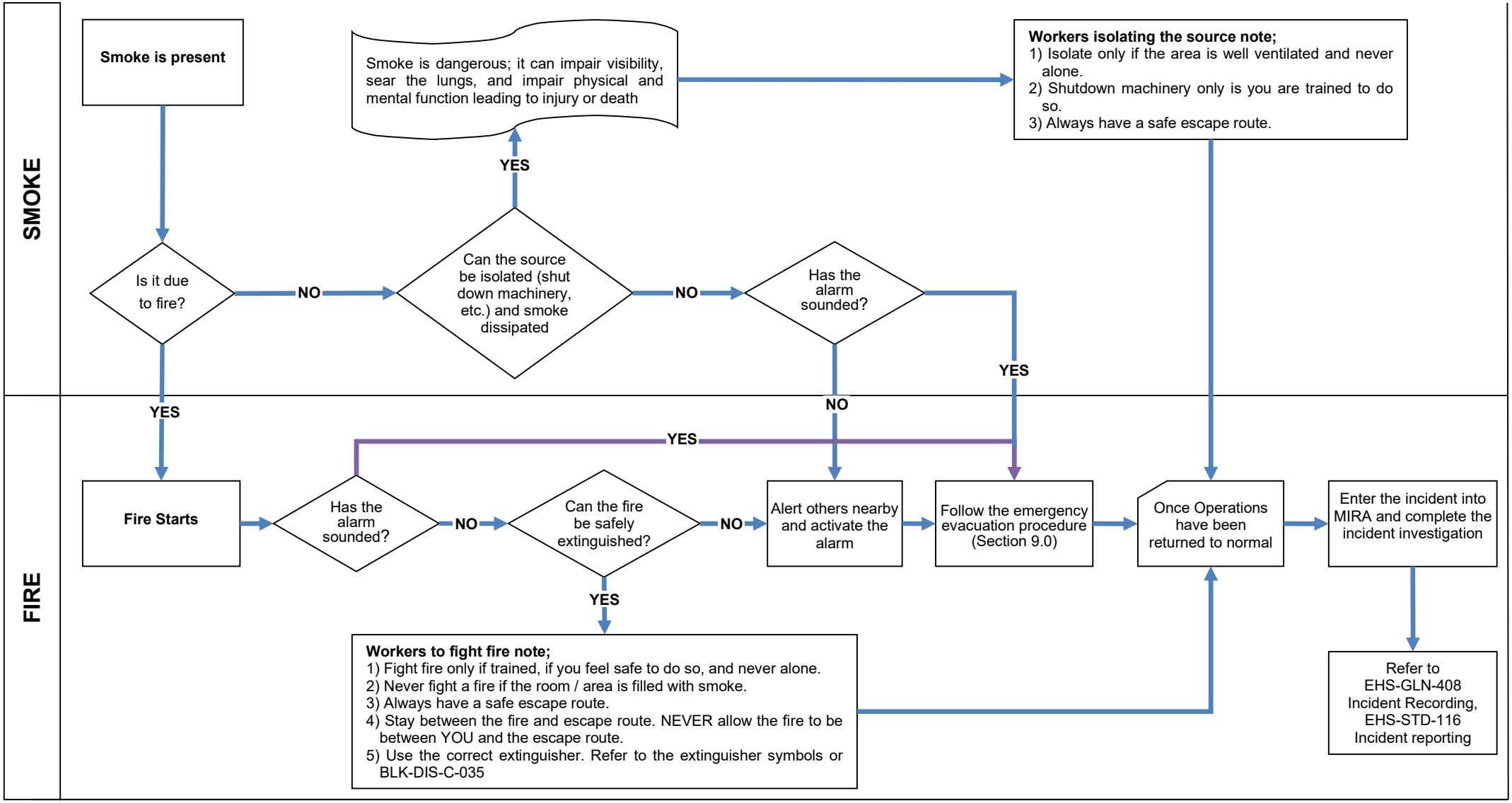
The Chief Warden and respective person/s are to enter the incident into MIRA with use of GRP-HSE-G-001 Incident Reporting and Investigation Guidelines.
The event may need to be reported to Safe Work NSW and the area involved is quarantined until cleared by a regularity officer. Contact your HSE Manager for Guidance. Follow the below URL for guidelines on reportable incidents. http://www.safework.nsw.gov.au/health-and-safety/Report-an-incident-or-injury/notifying-us

The fire system activation points are detailed in Guideline BLK-DIS-C-036.

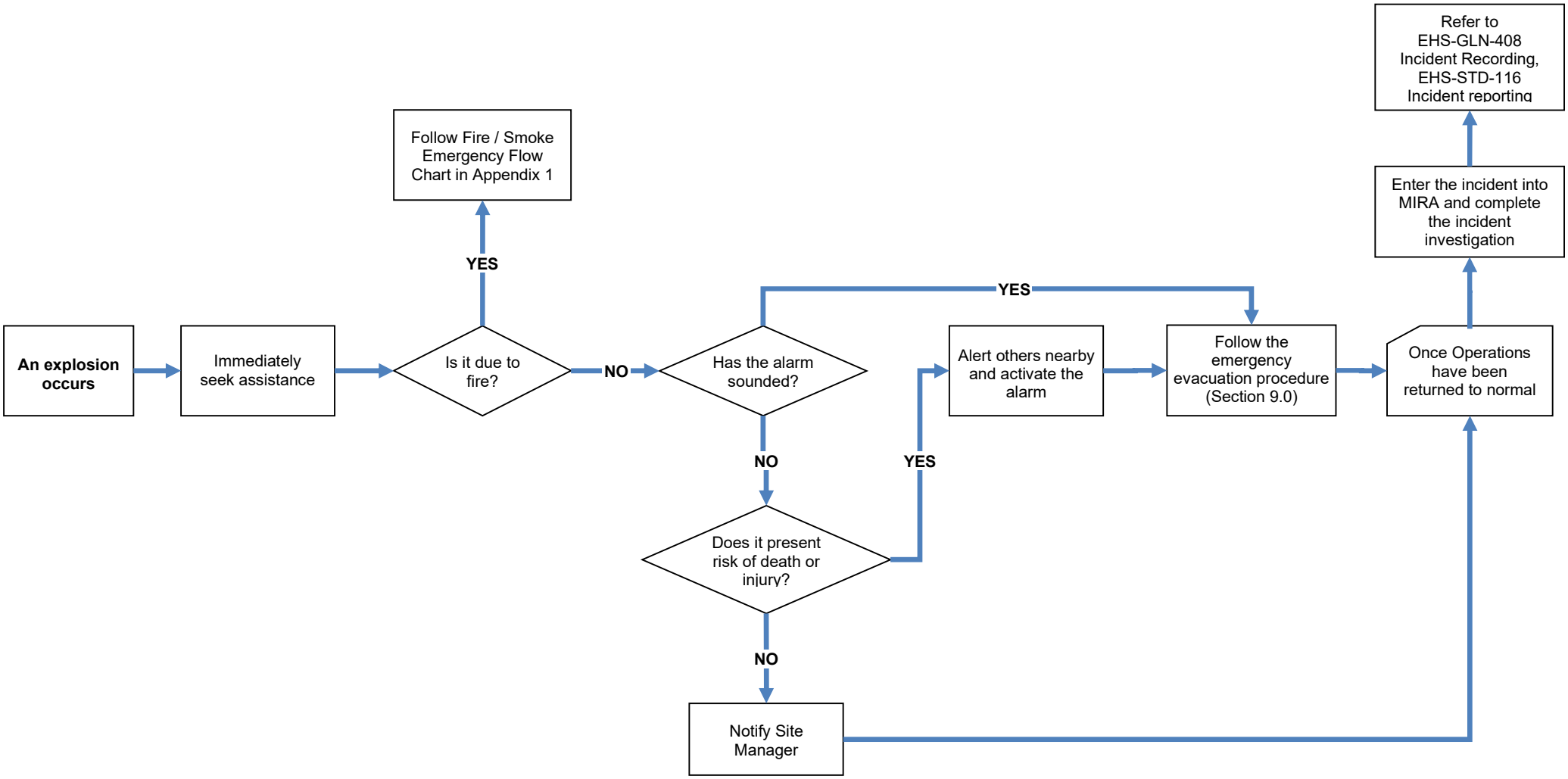
9.3 DOCUMENTATION / RECORDS

Evacuation Report is completed by the Chief Warden immediately following an evacuation. The comments recorded on the evacuation report are reviewed by the WHS Committee and ECO to identify opportunities for system improvement.

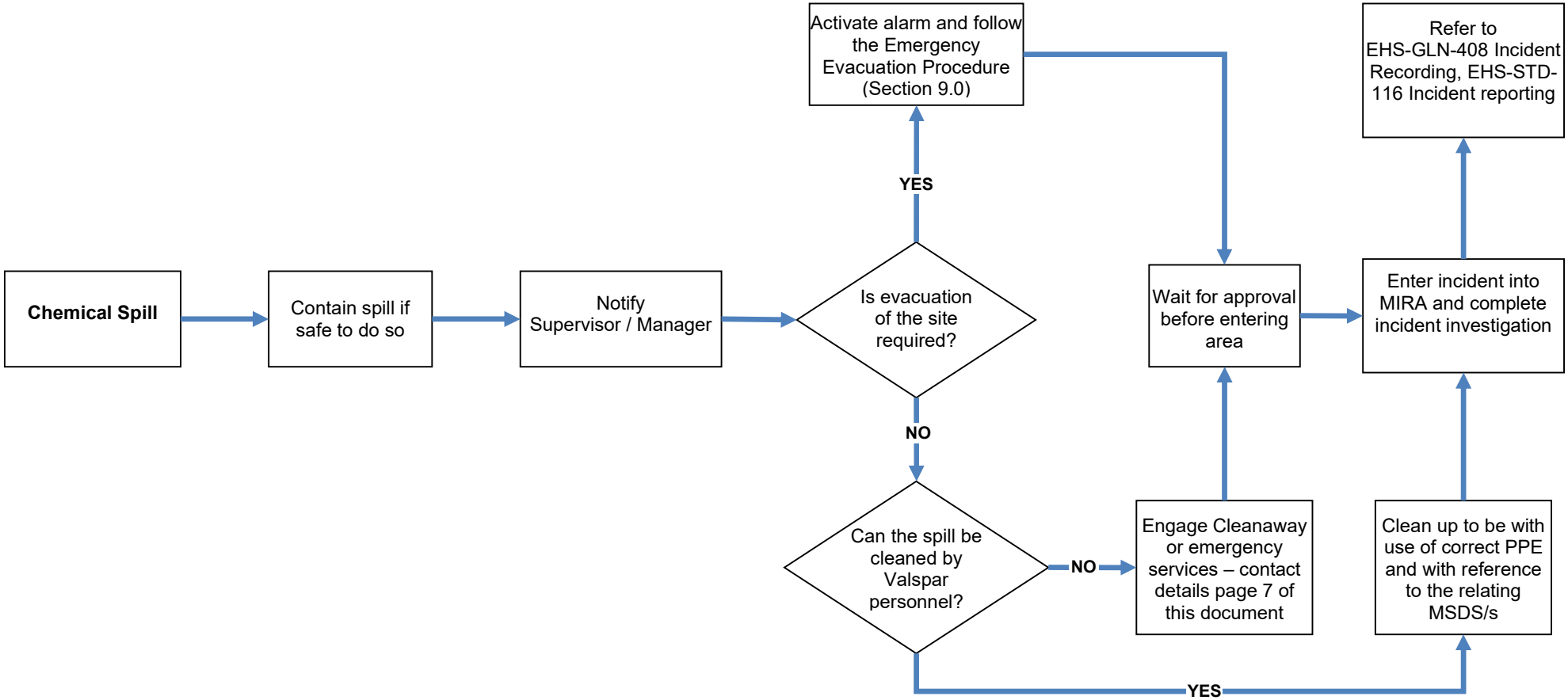
Appendix 1 Fire / Smoke Emergency Flow Chart



Appendix 2 Explosion Emergency Flow Chart



Appendix 3 Hazardous Chemical Emergency Response Flow Chart



Appendix 4 Bomb Threat Checklist

BOMB THREAT CHECKLIST

KEEP CALM and ask the following questions:

1.	When is the bomb going to explode?
2.	Where did you plant the bomb?
3.	When did you put it there?
4.	What does the bomb look like?
5.	What kind of bomb is it?
6.	What will make the bomb explode?
7.	Did you place the bomb?
8.	Why did you place the bomb?
9.	What is your name?
10.	Where are you?
11.	What is your address?

EXACT WORDING OF THREAT:

Supervisor:

Notify your Supervisor immediately. Follow their instructions.

DON'T HANG UP YOUR TELEPHONE - TRY TO KEEP PERSON TALKING.

RECIPIENT:

1. Name (print):

2. Department: 3. Telephone No.:

4. Signature:

CALLER'S VOICE

1.	Accent (specify)
2.	Speech Impediment (specify)
3.	Voice (loud, soft, etc.)
4.	Speech (fast slow etc.)
5.	Diction (clear, muffled)
6.	Manner (calm, emotional etc)
7.	Did you recognise the voice?
8.	If so, who do you think it was?

BACKGROUND NOISES

1.	Street noises (specify)	
2.	House noises (specify)	
3.	Aircraft	
4.	Voices	
5.	Music	
6.	Machinery	
7.	Other	
8.	Local call	(Incoming phone number identified?)
9.	Local STD call	(Incoming phone number identified?)
10.	STD	(Incoming phone number identified?)

OTHER

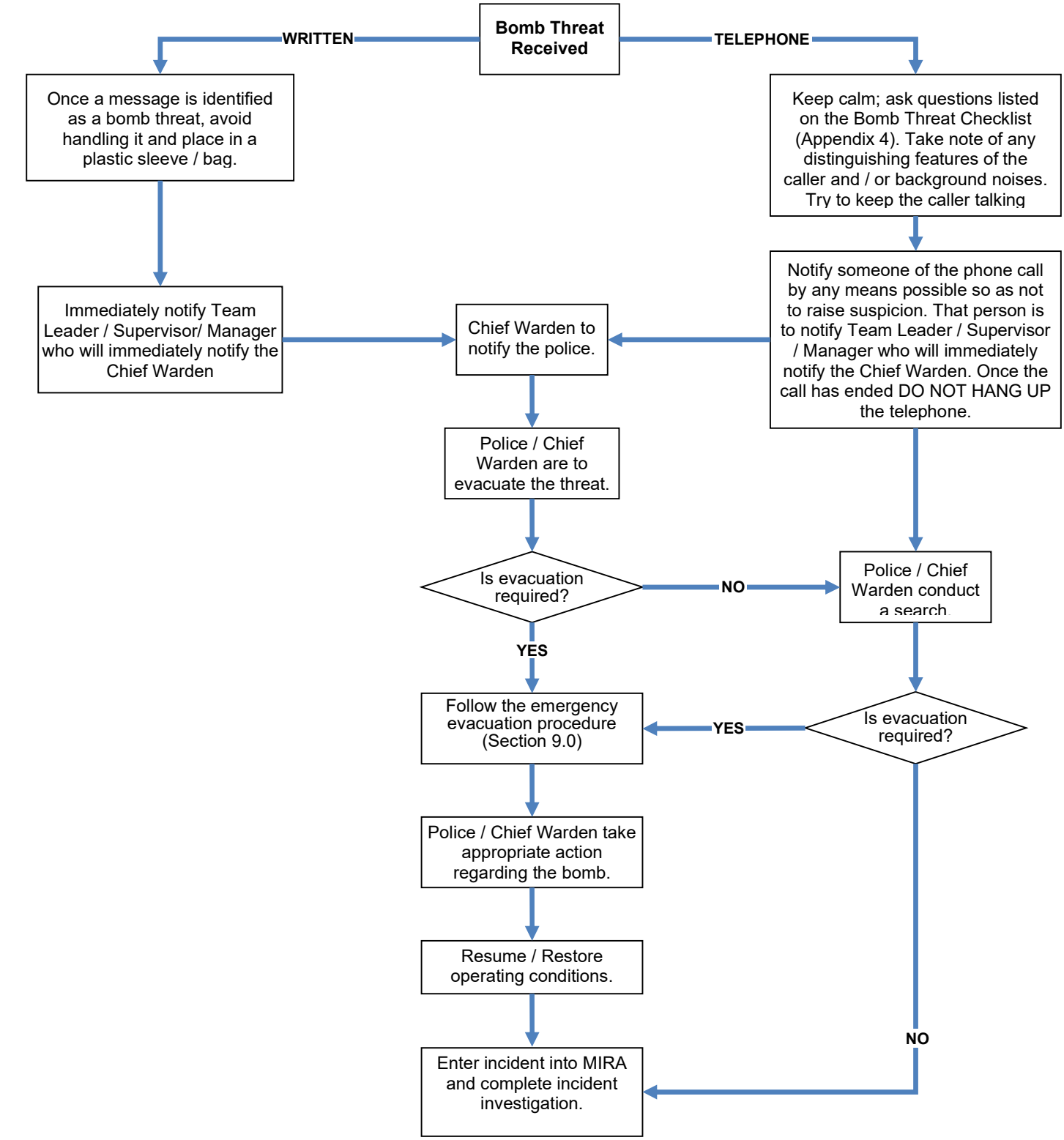
1.	Gender of caller
2.	Estimate age
3.	Call taken
4.	Date
5.	Time
6.	Duration of call
7.	Number called

THREAT LANGUAGE

1.	Well spoken
2.	Incoherent
3.	Irrational
4.	Recorded message played back
5.	Message read by caller
6.	Abusive
7.	Other

ONCE FOUND, DO NOT TOUCH OR MOVE A SUSPECT OBJECT
CLEAR THE AREA
AND NOTIFY YOUR SUPERVISOR / MANAGER IMMEDIATELY.

Appendix 4 Bomb Threat Response Flow Chart



Appendix 5 Severe Weather Emergency Checklist

Initial Assessment / Response	Yes	No
Obtain an assessment of the current weather conditions and predictions		
Assess for imminent Life-Safety conditions		
Execute a response appropriate to the conditions		
Immediately contact the appropriate emergency services if an immediate danger to life or property exists (I.E. dial 000)		
Establish notes of steps taken in response to the event for later MIRA reporting		
Establish / Maintain Communications	**Yes**	**No**
Establish / maintain contact with emergency services and other support agencies		
Communicate the situation / current course of action to entire site		
Maintain communications with Crisis Management Team		
Evacuations	**Yes**	**No**
If necessary coordinate evacuations with fire / police		
Consider closing / restricting access to the site. Decision to close the site will be made by the site Manager and the crisis management team if time permits and with consideration of employee welfare during their journey home.		
Secondary assessment / Response	**Yes**	**No**
Continue to monitor weather conditions – sources; Radio, News, Internet		
Adjust response plans as appropriate		
Restoration / Recovery	**Yes**	**No**
Consult with emergency services to make a decision to resume normal operations		
Should the site utilities be inspected / cleared ready for use (power / water)		
Announce all clear if the site was evacuated or locked down		
Debrief CMT and ECO regarding the conditions and safe conditions of the site		
Communicate to employees the safe conditions of the site		
Prepare a post event assessment report for MIRA		

Appendix 6 Work Place Violence Checklist

Initial Assessment / Response	Yes	No
Obtain a current assessment of the situation and verify the threat – Interview the person who received the threat ASAP – RECORD and assess the threat		
Assess the victims immediate level of danger		
Contact emergency services if required (000)		
Initiate protective strategies for the victim(s): • Move victim(s) to a safe off site location if the conditions permit. Otherwise; • Move / isolate victim(s) to a safe / secure location until the Police arrive		
Continue to assess the threat, gather and record details of the treat maker; • Identify the threat maker, get a photo, description • Obtain background information if possible • Determine if weapons are involved e.g. gun / knife • Obtain additional information – vehicle description, any associates		
Minimise danger to all persons onsite if an immediate threat to health / life exists; • Consider evacuations • Isolation of areas / locked offices • Site shutdown • Public address warning announcements		
If an evacuation is required should it be to an alternate location		
Establish / Maintain Communications	**Yes**	**No**
Establish / maintain contact with emergency services and internal corporate		
Communicate the situation / current course of action to entire site		
Maintain communications with Crisis Management Team		
Evacuations	**Yes**	**No**
If necessary coordinate evacuations with fire / police		
Secondary assessment / Response	**Yes**	**No**
Provide assistance to the authorities		
Continuously monitor the situation / Adjust response plans as appropriate		
Continue protective strategies for the victim(s) and others as appropriate		
Restoration / Recovery	**Yes**	**No**
Consult with authorities to decide if it is safe to resume normal activities		
Debrief employees regarding assessment of safe conditions		
Prepare post event report for MIRA		

Appendix 7 Emergency Control Organisation / First Aid Officers

EMERGENCY CONTROL ORGANISATION (ECO)

ECO Position	ECO Member
Chief Warden	Warren Thompson
Deputy Chief Warden	Kevin Edwards
Fire Systems Controller	Wormald
Emergency Response / Incident Response Team	Charlie Xuereb
(Wardens)	Chris Watling
	Claudio Barcala
	Robert Cox
	Shane Nash
First Aid Officers	Chris Watling
	James Orrell
	Kevin Edwards
	Raymond Portelli
	Shane Nash

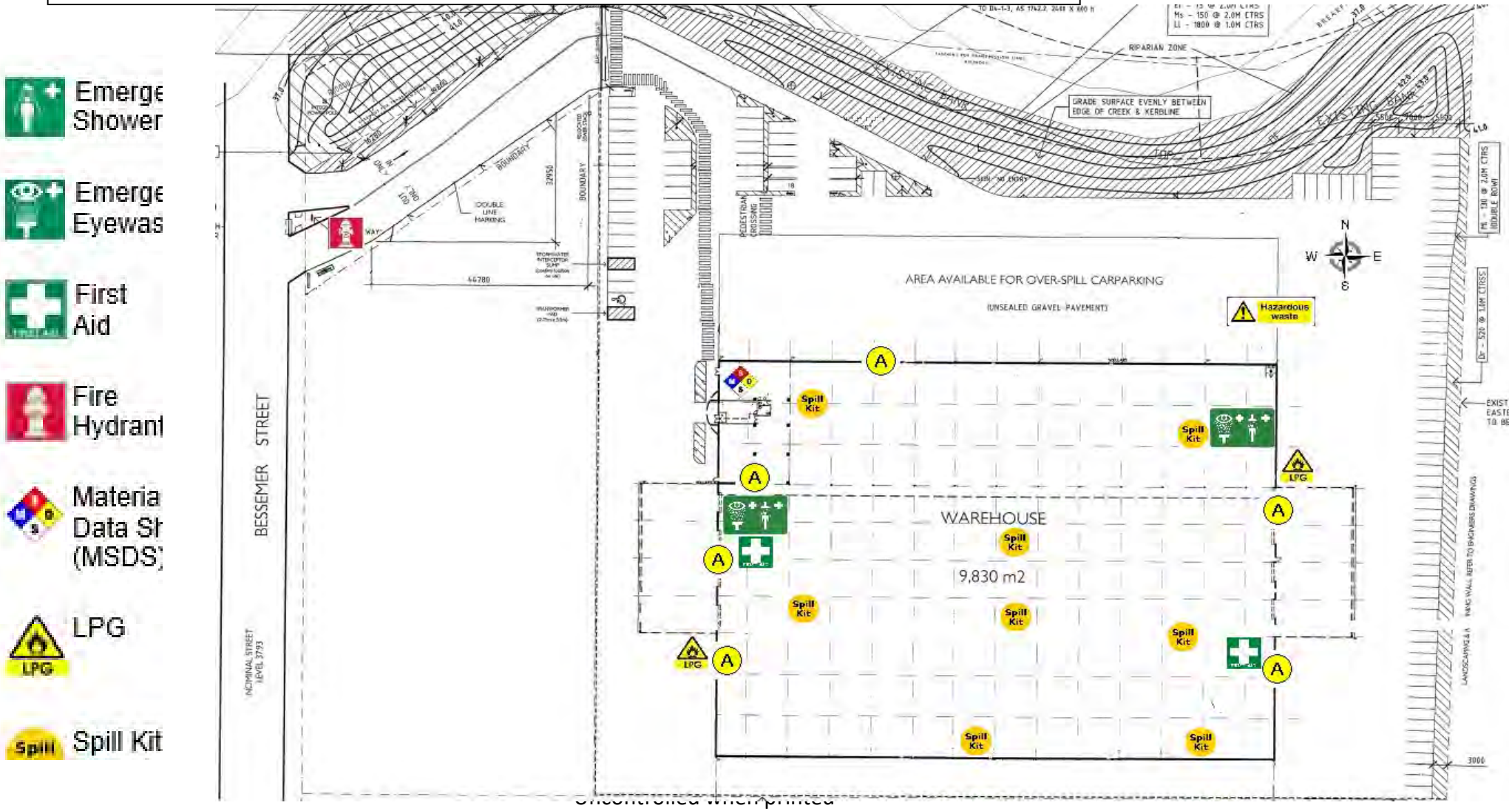
Appendix 8 ECO Responsibilities

TITLE	IDENTIFIED BY:	RESPONSIBILITIES
Chief Warden		**Note:** When the evacuate tone sounds, where practicable, without placing yourself or others at risk: 1. Ensure emergency services are notified (refer Emergency Contact Numbers – BLK-DIS-F013 or page 7, 8 & 9 of this document). 2. Proceed to Evacuation Meeting Point. 3. Restrict visitor and contractor access to the site. 4. Communicate with Emergency Response Team (ERT) / Incident Response Team (IRT) and/or Wardens to determine nature of emergency. 5. Nominate 1 member of ERT / IRT to assist the Fire System Controller (FSC). 6. Receive "all out" or feedback from Wardens. 7. Account for site Visitors using the Visitor's Book 8. Communicate with, and action responses from, the Wardens. 9. Brief Emergency Services 10. Await "ALL CLEAR" from Emergency Services and pass on to Wardens. **Note:** If "ALL CLEAR" not given by Emergency Services, consult with Senior Management to determine next course of action. 11. In the event of a black out, determine the cause and duration of the blackout and then decide on a course of action. **Note:** ****FOR FIRE DRILL ONLY**** PUBLIC ADDRESS (PA) ANNOUNCEMENT ATTENTION ALL SITE PERSONNEL ATTENTION ALL SITE PERSONNEL THIS IS A FIRE EVACUATION DRILL I REPEAT… THIS IS A FIRE EVACUATION DRILL PLEASE PROCEED TO THE DESIGNATED ASSEMBLY AREA IMMEDIATELY I REPEAT… PLEASE PROCEED TO THE DESIGNATED ASSEMBLY AREA IMMEDIATELY REMAIN AT THE ASSEMBLY AREA AND WAIT FOR FURTHER INSTRUCTIONS I REPEAT… REMAIN AT THE ASSEMBLY AREA AND WAIT FOR FURTHER INSTRUCTIONS

Wardens **(Emergency Response Team(ERT) / Incident Response Team (IRT))**	
	Orange Hi-vis Vest/Shirt/Jumper
		• Report on the incident situation to the Chief Warden, if known, and wait for further instructions. **Note:** 1 member of the ERT / IRT will be nominated by the Chief Warden and must report to the Fire Control Room to assist the Fire System Controller (FSC).
		• Isolate power to all areas involved as instructed.
		• Respond according to the relevant Flow Chart:
		  • Fire Emergency Response Flow Chart (Appendix 1)
		  • Explosion Emergency Flow Chart (Appendix 2)
		  • Hazardous Chemical Emergency Response Flow Chart (Appendix 3)
		  • Bomb Threat Response Flow Chart (Appendix 4)
		• Act on information obtained at the incident scene
		• Report the incident status to the Chief Warden.
		• In the event of a black out, assemble outside, directly in front of the building until further instructions are given.
		
		Note: When the evacuate tone sounds, without placing yourself or others at risk:
		• Obtain **Yellow** helmet.
		• Initiate evacuation for relevant area, ensuring calm and orderly flow of personnel from area to the designated evacuation meeting point.
		• If safe to do so, search the area to ensure all personnel are evacuated.
		• Check and close doors e.g. offices, toilets, storerooms etc.
		• Proceed to designated Evacuation Meeting Point.
		• Report immediately to the Chief Warden at Evacuation Meeting Point and if all personnel in the area are present and accounted for.
		• Communicate any personnel not present, but believed to be on site.
		• Communicate any injured personnel requiring ambulance treatment.
		• In the event of an evacuation being required due to a black out, sweep areas of responsibility to ensure all employees have safely evacuated.
		• NOTE: During the Afternoon where the Chief Warden is not present, the Warden/s refer

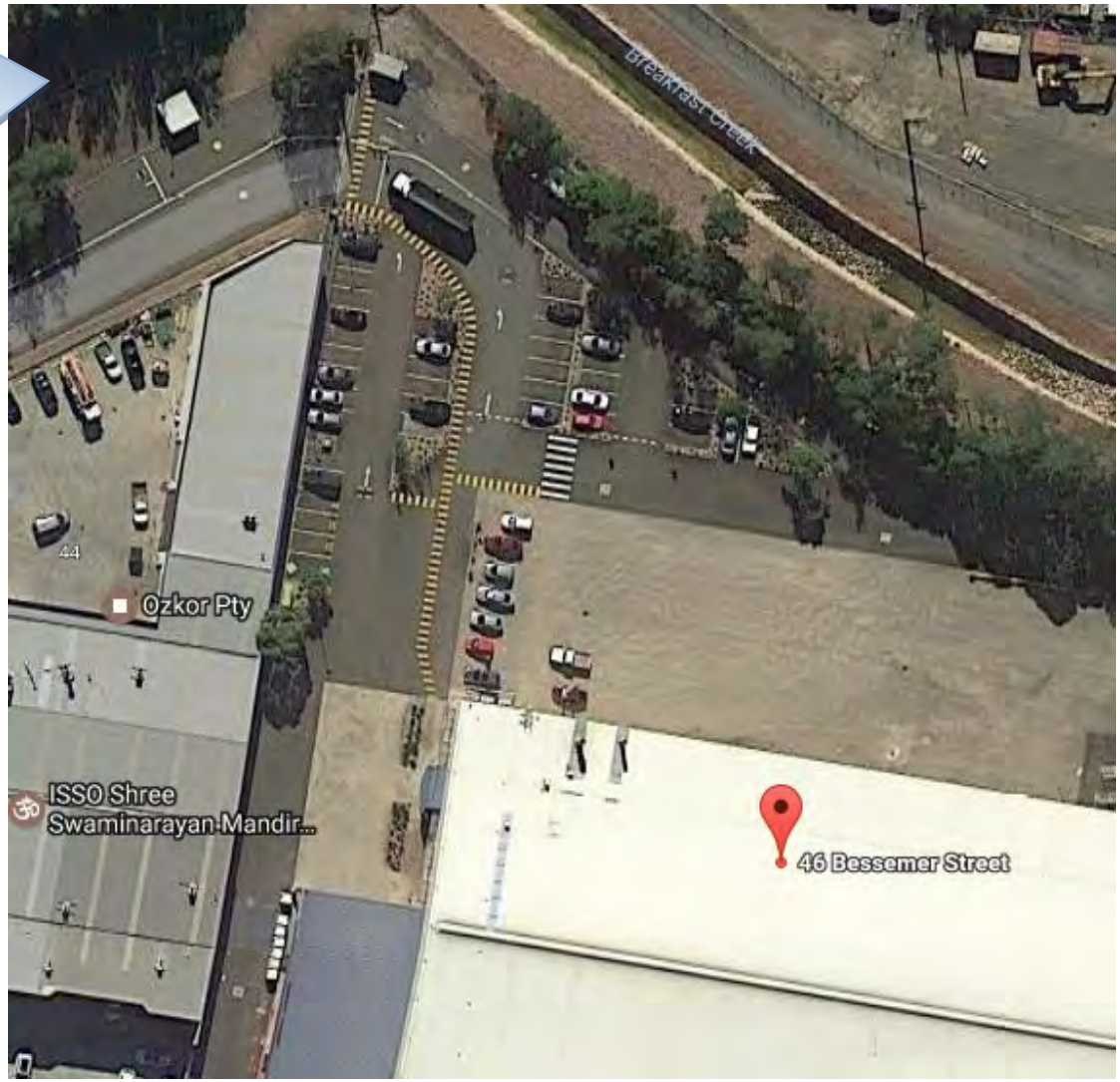
		to and act out further instruction / Responsibilities found under Chief Warden Points 8, 10, 11 and 12.
All Workers	N/A	**Note:** When the evacuate tone sounds, where practicable, without placing yourself or others at risk: • Obey instructions given to you by Wardens. • Assist others, if safe to do so. • Where practical, close vacant office doors & turn off lights. • Evacuate to your Evacuation Meeting Point in a calm & orderly manner and using designated walkways. • Report to Warden & tell them of any known missing or injured people. • Remain at the Evacuation Meeting Point until the "ALL CLEAR" is given by Chief Warden. In the event of a black out, assemble outside, directly in front of the building until further instructions are given.
First Aid Officers	N/A	**Note:** When the evacuate tone sounds, where practicable, without placing yourself or others at risk: • Take first aid box to evacuation meeting point and provide first aid assistance where required. • Communicate to Wardens the severity of any injuries and the need for Ambulance assistance.

Appendix 9 Hazard and Protective Locations



Appendix 10 Evacuation Meeting Point

All workers will meet at the Evacuation Assembly area



Appendix F Environmental, Health and Safety Management System Manual

Wattyl (NZ) LTD, 4/14 Patiki Road, Avondale, Auckland, New Zealand

Index

1.0 OBJECTIVE

The objective of the Environmental, Health and Safety Management System (EHSMS), including associated policies, procedures, processes and responsibilities, is to clearly establish Wattyl New Zealand's commitment to:

- Growing the health and safety culture within the organization
- Defining the EHS responsibilities and processes within the organization
- Maintaining and improving worker behavior, participation, collaboration and a culture that prevents harm to people and the environment.

2.0 SCOPE

This document applies to all workers stationed within the fence line (fencline-rule) of the Avondale site and all visitors to the site.

3.0 RESPONSIBILITIES

Site Manager and Line Managers:
Site-manger has the overall responsibility for the implementation and compliance to the EHSMS Manual.
Line-managers have overall responsibility for ensuring a safe workplace for their staff. Managers are responsible for:

- Ensuring compliance with relevant EHS responsibilities and policies, including adopting and implementing them in a timely manner
- Allocating responsibilities and accountabilities to direct reports and contractors
- Communicating with workers in a manner that encourages safe behavior and a culture of safety and continual improvement

Line Managers are supported by the ANZ HR, ANZ EHS and ANZ QA Managers

Workers:
Workers are responsible for taking care of their own health and safety, and of other persons who may be affected by their acts or omissions. Workers are responsible for:

- Complying with EHS policies, procedures, rules and guidelines in a safe and responsible manner that will not place their own health and safety, or that of any other person in the workplace or the environment at risk
- Contributing to workplace EHS responsibilities, policies, programs or initiatives
- Supporting their managers as required to meet their requirements of the EHS responsibilities and policies
- Demonstrating good health and safety behaviour and supporting the Wattyl (NZ) EHSMS

Contractors & Visitors
Contractors & Visitors are responsible for:

- Complying with EHS policies, procedures, rules and guidelines in a safe and responsible manner that will not place their own or that of any other person in the workplace at risk
- Contributing when consulted on workplace EHS responsibilities, policies, programs or initiatives
- Supporting SW as required to meet EHS chain of responsibility requirements and responsibilities
- Demonstrating good health and safety behaviour and supporting the Wattyl (NZ) EHSMS

4.0 PROCESS ELEMENTS

4.1 Element 1: Leadership

The current and signed EHS Policy is posted in reception and available on the Wattyl Intranet. New employees are introduced to the Policy during their Induction and bi-annual refresher training. Employees are expected to understand the intent of, follow and promote the EHS Policy.

Managers and EHS Champions shall practise visible leadership through leading by example and establishing the EHS culture of the organization. Managers shall supports and be engaged in EHS activities e.g. EHS committees, inspections, audits, BSOP and investigations and attends EHS conferences and training where applicable. All managerial positions shall have EHS KPIs associated with the function.

All meetings shall begin with an EHS message (Grabber / Setting The Tone) and an Agenda Item.

The EHSMS shall be reviewed bi-annually and updated as required. Records of reviews will be maintained for the specified retention periods.

Individual EHS performance of all employees will form part of their annual personal review to identify areas of continual improvement and personal development.

4.2 Element 2: Engagement and Participation

Wattyl promotes a positive health and safety culture and ensures that employees have the opportunity to be proactively involved in the planning, development, implementation, monitoring and review and of EHS policies, systems, practices, processes and programs.

Ongoing EHS communication includes e.g. notice boards, daily and weekly site huddles, monthly Site EHS Committee meetings, training, manager open door policy, event alerts (internal and external), posters, signage, programs and other EHS initiatives.

4.2.1 HSR

HSR (Health and Safety Representative) plays a vital part in ensuring a safe and healthy working environment, participation, collaboration and communication. The selection hierarchy of a HSR is:

1. Nomination by peers, agreement by employee and (if more than one candidate) selection by team
2. Asking for volunteers / champions
3. Shoulder tapping

HSR shall receive two days per annum training, organised by the EHS Manager and budgeted by the Site Manager. The applicable Line Manager shall allow / provide the HSR with:

- Administrative facilities and time for HSR tasks and participation in health and safety initiatives
- Making HSR responsible for EHS tasks e.g. routine area inspections
- Encouraging HSR to consult with, and get participation from, employees in all EHS matters
- Supporting the HSR and facilitating positive communication with teams
- Encouraging the up-skilling, on-going training and development of HSR

HSRs shall:

- Participate activity and positively in Safety Huddles and EHS Committee meetings
- Work with employees and managers to improve the health and safety of the workplace
- Encourage other employees to engage in health and safety and report / raise H&S issues
- Work with their teams to identify practical solutions to issues that arise (collaborate)
- Be a health and safety champion (i.e. an EHS initiative leader)
- Actively support their Area Manager in H&S tasks e.g. routine inspections

4.2.2 EHS Site Committee

The EHS Site Committee is made up of the HSR, committee members and managers. The Committee will meet on a monthly basis as practicable (typically February to November) and discuss health and safety issues and continual improvements.

Employees are encouraged to raise EHS issues through their HSR e.g. existing or new Hazards and associate Risks, incidents and injuries, including near-misses, behavioural observations, illness, pain or discomfort, stress and/or fatigue, improvement suggestions and changes that affect workplace health and safety.

Minutes will be kept of the meetings, posted on EHS Notice Boards and distributed as applicable. Employees are expected to read the minutes and get / give feedback to their HSR.

The EHS and Site Managers will communicate up to the Regional levels and the HSR will communicate back to their teams.

4.3 Element 3: Risk Assessment

The Wattyl Hazard / Risk Management program is a systematically process to identify, assesses and manage the actual and potential hazards and associated risks in the workplace through the process of:

- Identifying hazards
- Assessing the associated risks
- Eliminating or controlling the risks and assessing the residual risk
- Providing training
- Reviewing, monitoring and evaluating the effectiveness of the controls

Note: Hazard includes where a person's behaviour may be the source e.g. as the result of physical or mental fatigue, drugs, alcohol and traumatic shock, or other temporary condition that affects a person's behaviour.

Risk control hierarchy shall be:

- Elimination
- Minimisation:
  - Substitution
  - Engineering, including isolation e.g. guarding or segregation
  - Administrative
  - PPE

4.3.1 Risk Management Process

Hazard / risk management is a risk control tool that improves safety, productivity, quality, and site communication.

a) Identify the Hazards: A number of methods are used to identify Hazards, including but not limited to:
   - Physical inspections e.g. a checklist to identify visible hazards
   - Process or Task analysis e.g. a JSA/JHA, Wattyl MS, RA, ATW and / or Permit
   - Analysis of incident investigation details e.g. root cause and trends
   - BSOP (Behavioural Safety Observation Program) – proactive observation of an employee performing a task to determine e.g. process documentation accuracy, training needs, process improvement opportunities, re-inforce positive behaviours and eliminate negative behaviours

NOTE: 1. For routine task use applicable SOP / JSA / Authorisation To Work / Associated Permits. For non-routine tasks and in the absence of a SOP / JSA for the task, an additional Pro-Active Risk Evaluation (NZL-HSE-F-004) must be completed as well.
2. Use the applicable form to document the process e.g. NZL-HSE-F-002: JSA / JHA, -F-508: Machinery RA, -F-618: Office Ergo Risk Self-Assessment, -F-619: Ops Ergo RA, etc.

Types of hazard:

- Chemical e.g. hazardous substances exposure
- Physical e.g. slip/trip/fall, lack of guarding, blocked fire escapes, injury at work
- Biological e.g. animal faeces, rotten food, infections, illness
- Psychological e.g. temporary stress, fatigue, lack of sleep
- Electrical e.g. live electricity, too many items plugged into power boards
- Ergonomic e.g. work station set-up, lifting heavy items, repetitive movements
- Personal e.g. employee not fit-for-work due to D&A (Drug and Alcohol) use (including prescription medication), horse-play, short-cut or cow-boy actions

b) Identify the Risks associated with the Hazards

Identify and assess the level of risk for each identified hazard by specifically defining its:

- Likelihood of the incident / risk occurring e.g. how likely is this hazard to come up in day to day work
- Consequence or how bad could the injury be if it did happen / how serious would the injuries be? Objectively determine the worst probable case scenario (not worst possible scenario)
- Control effectiveness e.g. controls are in place and effective, administrative or PPE controls, partially in place or not in place

Calculate the relevant Risk Score e.g. using the JSA JHS Form, calculate the RPN (Risk Priority Number).

c) Develop Control Actions

The objective of the controls is to look at opportunities to eliminate the risk all together where possible or minimising / reducing the risk where elimination is not possible:

- Elimination - Is there a need to use the equipment, process, substance that created the risk?
- Minimisation:
  - Substitution - is there an equally good and safer item of equipment, process or substance available that will remove the risk?
  - Engineering Controls, including Isolation - can the risk be removed by isolating, enclosing or redesigning the equipment, process or substance, e.g. ventilation system, safety devices, mechanical lifting aids, trolleys?
  - Administrative Controls – e.g. task variation, limiting the number of people exposed to risk, job training, storage arrangements for heavy and frequently used items and signage?
  - Personal Protective Equipment (PPE) - the least desirable method which should only be used in combination with other controls or if other controls are not suitable. Employees issued with PPE should have it fitted correctly and be trained in its use and maintenance

Once the controls have been identified and implemented, re-evaluate the level of Residual Risk expected to be present after the control has been implemented. The risk score should ideally be significantly lower than before. If the score has not sufficiently changes or the risk is still unacceptably high, repeat the control actions process.

Identify appropriate methods to monitor the effectiveness of the control actions, e.g. supervision, random inspections, environmental health monitoring, health monitoring.

Ensure all parts of the Hazard and Risk Management process are documented and maintained in Assure

Record the Hazards, Risks Controls and possible future continuous improvement actions in the Hazard and Risk Register. Train / re-train staff and display register in applicable work area.

d) Servicing/Maintenance/Permits/Life Critical Procedures

All servicing, maintenance and repairs carried out on site, plant and equipment must be documented. This includes preventative maintenance programmes, equipment checks, break-downs and servicing. This does not apply to general servicing or maintenance performed by the equipment operator, which shall be covered by the applicable SOP. Non-operator servicing or maintenance shall be covered, as a minimum, by an ATW (Authority to Work) and any other associated and relevant Permits – see Intranet or T:\compliance\share\Permit Register for Forms and Records.

Obtain the next permit number from the Permit Register:
T:\compliance\share\Permit Register\Permit Register.xlsx

Complete the ATW and all relevant Permits for the task. After the task is completed and all records are signed-off, complete the Permit Register with all the detail required. Scan the completed forms as a Compliance Records to (with the Permit Number as the file number and in the applicable year folder):
T:\compliance\share\Permit Register\20XX

NOTE: Any Life Critical Procedures (LOTO – other than applied by the operator as part of their standard operations or maintenance as part of routine/minor tasks, confine space entry, hot work and working at height) shall be covered by a live Behavioural Observation, using the applicable Verification Checklist, by the area manager or their delegate. On completion, scan the form to the folder as above.

e) Specialist Advice

Where specialist advice is required, the appropriate expertise will be identified and engaged, which may include local or national authorities e.g. Auckland Council, ACC or WorkSafe.

f) Electrical Test & Tag

All plug-in electrically powered equipment leads should be inspected and tagged at their specified intervals by a competent person in compliance with AS/NZS3760, Standard for In-Service Safety Inspection and Testing of Electrical Equipment.

g) Health Monitoring and Ergonomics Program

Annual monitoring is required for operational staff for hearing and respirator fitment due to exposure to noise levels and raw material fumes and power dust. Additional testing may also be provided for staff as part of the Wattyl Wellness Program.

Health monitoring results and recommendations are recorded by the medical service provider and monitoring is to an "accepted industry standard". Prior to undertaking any testing employees must complete a Consent Form supplied by the testing organisation. The results and Records of any health monitoring of individual employees will be kept in the strictest confidence and in a secure location by the HR Manager.

Note: 1. Any reports on individuals or naming individuals are subject to NZ privacy regulations
2. The NZ record retention period is 30 years

Wattyl actively looks for continual improvement in workplace ergonomics. The Avondale Ergo team shall perform and document the site's ergo gap audit and improvement plan, implement a number of ergo interventions per year and use corporate proactive tools to identify improvement opportunities e.g. F622, Ergo Discomfort Form.

h) Post Critical Event Testing and Support
Post Critical Event testing and support will be offered to all employees as required e.g. following a critical event (e.g. lung function tests for those exposed to smoke in case of a fire and EPA sessions).
Note: See D&A Policy and Procedure for D&A screening and testing.

i) Exit Testing
Where required, exit testing will be undertaken with employees when they leave Wattyl employment e.g. staff who has worked in high noise areas could be required to undergo a final hearing test.

j) Notification of Particularly Hazardous Work
Wattyl standard tasks do not include Particular Hazardous Work as defined by WorkSafe. In the event that a contractor needs to perform defined work on site, the ATW and Permit processes will identify requirements on a case by case basis. For definitions and notification processes see:
https://worksafe.govt.nz/notifications/hazardous-work/

k) Management of Hazardous Substances
A report of any raw material or finished product hazardous substances is available from Oracle. Site laboratories shall maintain a Hazardous Substances Register. SDS (Safety Data Sheet) is available for each chemical or hazardous substance in the business on the G-Drive, Wattyl Intranet and/or the Hempel Intranet as well as via the company web-sites. Hard copy will be printed and filed as required. It shall be less than five years old and easily accessible by employees in the event of an emergency.

l) Hazard / Risk Management Training
Personnel involved in the hazard / risk management process will receive training suitable for their level of involvement. The training may vary from Huddle topics, internal training e.g. of those leading hazard management investigations on the hazard / risk management process or external training by identified service provider e.g. handling of Hazardous Substances.

m) Visitor and Contractor Management
Wattyl has a legal chain-of-responsibility obligations to plan, monitor and review the H&S activities and aspects of their work on site and work performed on behalf of the business, including hazards and risk they bring onsite for Wattyl staff or hazards and risk they may be exposed to onsite.

Their onsite contact person is responsible for the processes applicable to visitors and contractors while onsite e.g.:

- Sign-in; all visitors and contractors must sign-in and out for emergency requirement
- Induction; sign-in and escorted / under full supervision at all times or full induction if unescorted
- Only approved suppliers and contractors shall be used
- ATW for any and all work to be performed on site and associated Work Permits as required. NOTES: For routine task use applicable SOP / RA / ATW / Associated Permits. For non-routine tasks and in

the absence of a SOP / JSA / RA for the task, an additional Pro-Active RA shall be completed as well. A live Behavioural Observation must be done for Life Critical Processes

- Copies and records of all required documentation e.g. JSA/SWMS (or Safety Plan for larger projects), training, trade qualifications, trade / professional body membership, certificates, licenses and public liability insurance / professional indemnity
- Liaison with area managers for any visitor or contractor in their areas; verbal or in writing e.g. email, but preferential by ATW form sign-off

n) PPE
Line manager shall complete a PPE Hazard RA (F630, PPE Hazard Assessment Form or NZL-HSE-F-002, JSA JHA Template) for each area / task and develop an associated PPE Matrix (OHIG - 019.4, Form 5.1.4, PPE Assignment Chart) for their area. A PPE Issue Register (or equivalent) must be maintained to document and tracked any issued PPE.

4.4 Element 4: Compliance Assurance

Avondale EHSMS shall protect our employees, the public, our company and the environment by ensuring compliance with NZ regulatory and Hempel requirements.

Routine monitoring and reviews ensure on-going compliance and identifies non-compliance prior to incidents occurring or government inspection discovery. Reviews include e.g.:

- Audits e.g. Corporate EHS Audits, Internal Audits, Authority Audits, Third Party Audits and FM Global Audits
- Site Inspections / Checks e.g. Daily, Weekly and Monthly Site Safety Checks, Annual Ergonomics Self-check, PIT Pre-use Check (or electronically equivalent as applicable), Lifting Equipment Pre-use Check, Questionnaire for Early Identification of Discomfort and Pain
- Ad-hoc Inspections e.g. Machinery Safeguarding Checklist, Robot Evaluation Checklist
- Maintenance inspections e.g. 6-Monthly Ladder Inspection and Monthly Racking Inspections
- Emergency Preparedness and Building Warrant of Fitness (BWOF) Inspections e.g. fire equipment, emergency exits, eye wash stations and first aid kits

4.4.1 Consent and Certification Requirements

Avondale site holds four Local Authority Consents; Ground Water, Storm Water, Air Quality and Trade Waste. The EHS, QA and Manufacturing Managers and Maintenance Supervisor are responsible for compliance, review, inspections and testing e.g. daily trade waste PH and Temperature readings, quarterly external trade waste testing, annual baghouse inspections and bi-annual ground water testing.

4.4.2 Approved Transitional Facility

Avondale site is an Approved Transitional Facility for imported container devanning. The trained and appointed TFO (Transition Facility Operator) is responsible for maintaining the TF Manual, implement the required systems, perform the annual Internal Audit and liaise with MPI. The Distribution Manager is responsible to ensure that a suitable number of trained and certified APs (Accredited Person) are maintained for the site.

4.4.3 Hazardous Substances Site Certification (in process of implementation)

Avondale site shall hold all required Hazardous Substances Site Certification for all DGs used and stored on site over the required threshold and requiring an associated HSL (Hazardous Substances Location). All staff handling or storing Hazardous Substances shall be trained as required by the relevant regulation.

4.4.4 Medical Monitoring

Avondale site perform an annual medical to ensure staff working in identified high health risk areas are monitored e.g. noise induced hearing loss and respirator fitment testing – also see Risk Assessment above. The external service provider maintains a Monitoring Log and Records.

4.4.5 Keeping Up To Date With Changes

Avondale site shall keep up with local, regional and corporate changes by e.g.

- Subscriptions to local and regional safety news, publications and alerts e.g. NZ WorkSafe, Australian WorkSafe and ACC

- Membership of industry and professional bodies e.g. Engineering and Manufacturers Association (EMA) Health and Safety Association of New Zealand (HASANZ) and New Zealand Institute of Safety Management (NZISM) – to be planned for and budget for in 2020
- Seminars, workshops and expos
- Hempel corporate initiatives / programs roll-out and training

Note: Avondale site does not have any "Officers" as per the HASW Act definition. A number of Line Managers report directly off-shore and need to both understand and implement due diligence done by their managers/Officers or perform due diligence themselves for their NZ Teams. The Avondale Site and EHS shall assist by forwarding all relevant information when received e.g. ANZ WorkSafe Safety Alerts.

4.4.6 Documentation and Record Keeping

All processes shall be documented, kept up to date, stored on the Share Directory and be available at or near (e.g. in the office) the work station. Records shall be maintained for all EHS and compliance activities with retention periods as defined in the Hempel Standard.
Note: Avondale site is an ISO9001 accredited site and document management is as per the QAMS – see below.

4.5 Element 5: Design, Modifications and Construction

Avondale site shall ensure standards and procedures, crucial for facility and process design, modification, construction and start-up activities, are maintained. This allows for safe operation and minimizes risk to employee/worker health and the environment e.g. work stations are designed to fit the worker, warning lights shall be designed to attract attention and walking / vehicular paths are clearly defined. The site will use the MIRA MOC Module as the documentation and record keeping tool – see below.

Design and construction of new or modified facilities, installation of new equipment, or modification of equipment shall use approved design standards and procedures. Design standards and procedures shall comply with applicable regulatory requirements and Hempel requirements where regulations are not adequately protective. They will consider environmental aspects, human factors and worker exposures. All designs shall conform, at a minimum, to local and national authority codes. Design review shall consider all aspects including design, procurement, construction, operation, maintenance and decommissioning.

Design specifications for facilities and materials shall be reviewed and approved by a qualified subject matter experts / competent person, including external providers where internal competency is not available. A procedure to approve deviation from design or material specifications shall be implemented.

Pre-start-up reviews shall be performed and documented to ensure that design, construction, equipment, training and procedures are in place in accordance with design specifications.

4.6 Element 6: Management of Change (MOC)

Avondale site shall address both permanent and temporary change to ensure risks arising from these changes are evaluated and managed. The Wattyl MOC process covers all changes in facilities, operations or organizational structure.

The Assure MOC program is in place to manage both temporary and permanent change associated with facilities, operations, products or the organization. The process includes the authority for approving changes, evaluation of health and safety hazards, environmental impacts and mitigation, acquisition of needed permits, communication of the change and the risks associated with the change, training of all impacted personnel, documentation of the change and updates to all affected procedures and records.

The MOC process shall include representation of all relevant departments for impact on their operations and also for changes within their operations that may affect EHS.

4.7 Element 7: Emergency Preparedness

The site shall document an effective emergency response plan (ERP) to manage typical and relevant types of emergencies likely to occur within the business, and to comply with legislative requirements. An

emergency response team (ERT), spill response team (SRT) and a crisis response team (CRT) shall be identified to manage site emergencies and crises.

The types of emergency can be as diverse as:

- Natural disasters e.g. earthquake; tsunami, flood; storm / cyclone
- Man-made emergency e.g. bomb threat, armed robbery or terrorist act
- Spills / release e.g. , product spills, chemical spills and leaks or ammonia solution spills
- Fire
- Medical, mental or physical emergency e.g. injury, stroke or mental break-down

The ERP shall include but not be limited to, the following:

- Approved Fire Evacuation Scheme
- Site Emergency Plan
- Wardens: Sufficient number of trained Building and Fire Wardens, responsible to manage evacuations and do regular checks of their areas
- First Aiders and First Aid Kits: Sufficient number of trained first aiders and appropriate first aid kits. First aider are responsible for replenishing of the first aid kits
- Emergency Contact List
- ERT List, displayed on EHS Notice Boards
- Disabled Person assistance (if applicable)
- 6-Monthly emergency drills (of which one can be a table-top exercise)
- Evacuations reviews and warden refresher training

4.8 Element 8: Programs

Avondale shall ensure EHS Programs are maintained to provide systematic mechanisms to identify, continual improve and control hazards and risks, comply with regulatory and Hempel requirements and control contractor services. Avondale safety programs shall be in place including:

- Hazard and Risk Management e.g. hazard identification, risk assessment, risk controls, BSOPs, ergonomics
- Emergency Management e.g. fire prevention and mitigation, eye wash station, fire sprinklers, extinguishers and hoses, spill kits, emergency exit lights
- Process Management e.g. electrical safety, vehicle safety, fall protection, pre-operation checks, ventilation, grounding / bonding, hose integrity, tanker offloading containment
- Occupational Medical / Health Program e.g. industrial hygiene, decontamination, medical monitoring
- Fit-for-Work e.g. staff are safely able to perform the essential physical, psychological and cognitive requirements of their job without risk to self or others and are not impaired by drugs, prescription medication, alcohol, disabling medical conditions or fatigue
- Environmental Management e.g. consents, planned and unplanned emissions or releases to air, land and water, proper management and disposal of waste, defined waste and recycling streams, assign responsible personnel to manage, review all third party waste and recycling vendors for compliance and proper waste management practices. Data shall be documented and recorded in ECOMET – to be implemented.
- Maintenance e.g. Preventative Maintenance (PM), inventory of key replacement parts on hand
- Contractor Management e.g. ensuring service suppliers, including their subcontractors, perform to safety, health and environmental requirements, selection and review of service suppliers
- ATW and Permits
- MOC e.g. new or modified permit / consent requirements, including allowing sufficient time to obtain these before starting any new or modified processes
- Annual or Short-term Focus Programs e.g. corporate programs, respiratory protection program, eye protection

Annually Avondale shall implement Hempel Global initiatives and identify key new or continual site improvement programs. These shall be documented, promoted, communicated and be key focus areas for all staff.

4.9 Element 9: Maintenance

Avondale site shall ensure effective procedures, structured inspection, machinery risk assessments and reliable maintenance programs to protecting workers and the environment e.g.:

- Critical equipment identified and tested, preventive maintenance and critical part inventory on hand – in progress
- PM and servicing activities are scheduled, performed and validated
- MOC for all new and modified plant and equipment with consideration of e.g. emergency equipment, emission control, ventilation, spill control, fire protection

4.10 Element 10: Documentation

Avondale site is an ISO9001 accredited site. All processes shall be documented, kept up to date and be available on the Share Directory. Master document are maintained via the Australian QA function. Document implementation, availability training and training records shall be the responsibility of the Line Managers.

Records shall be maintained for all compliance activities e.g. inspections, and audits. Retention periods are defined in the applicable Hempel Standard.

4.11 Element 11: Training and Development

Employees will be trained and provided with the knowledge and experience of the workplace, plant, processes and substances so they can do their tasks safely. Training will include new workers, part-time, casuals / temps, transfers from another part of the business, contractors and visitors.

4.11.1 Approved Trainers / Trainer Selection

Line Manager is responsible to carry out training / induction programme for their staff, including the responsibility to ensure that external trainer have the qualifications or authority to provide the training:

- Identify the training needs of the employees
- Select reputable providers (providers will be approved and contracted companies as per the procurement system)
- Check whether the proposed trainer holds the required qualifications and relevant past experience
- Submit a proposal and Purchase Order to the Site Manager for approval

Internal training will be provided by a senior person identified by the line manager with the necessary practical skills, knowledge and competencies. Employees will be supervised or work with a buddy until deemed competent to work safely by their manager.

Training shall be documented and kept on file by the Line Manager and/or HR Manager.

4.11.2 Induction

Level of induction will depend on the circumstance:

a) Sign-In and Escorted – for visitors or contractors on short visits. Their host shall be responsible for their sign-in and to ensure they are escorted at all times
b) General Site Induction – for new employees on their first day or as shortly after as practical. Their Line Manager shall be responsible to arrange the induction and the Site Manager (or delegate) shall be responsible for their induction and induction records
c) Specific Area Induction / Full Contractor Induction – respectively for employees or contractors before they are allowed to work in the area un-escorted. The Area Manager (or delegate) shall be responsible for their induction and induction records
d) General Company Induction – for employees in their first month. Their Line Manager shall be responsible to arrange the induction and the HR Manager (or delegate) shall be responsible for their HR Policies and Procedures induction and induction records and the EHS Manager (or delegate) shall be responsible for their EHS Policies and Procedures induction and induction records

The HR Manager shall ensure there is a follow-up and review by the Line Manager of the new employee's induction at the end of the first and third month respectively – to be implemented

4.11.3 On-The-Job Training and Certification

The Line Manager shall ensure all task specific training is done, competency is satisfactory and records are maintained for any specific task. Where external certification / attendance is required e.g. Transition Facility, Hazardous Substances, PIT Operators, Confined Space Entry and Recovery and Working at Height, the employee shall be send for training. Until approved as competent and signed-off on a specific task employees shall work under supervision or with a buddy who has the relevant skills, experience or qualifications.

Note: On-line PIT refresher training is recommended due to significant cost saving. Not to be used for initial PIT training.

4.11.4 Refresher / Awareness / Re-certification Training

Refresher / awareness / re-certification training shall be conducted on predetermined intervals. The intervals shall be case specific and documented on a Training Matrix. Line Managers shall ensure this training is scheduled, delivered and recorded.

4.11.5 HSR (Health & Safety Representative) Training

HRS shall receive the regulated 2 days per year training. The EHS Manager shall ensure this training is scheduled, provided and records are maintained.

4.11.6 Ad-Hoc Training

Any ad-hoc training e.g. Fire Warden shall be arranged as required.

4.12 Element 12: Audit

Avondale site shall audit EHSMS to ensure compliance, identify gaps, controls implementation, continual improvement and maintain accountability. Audits shall consist of corporate, internal and external audits as applicable. The frequency and scope of audits shall reflect the complexity of the operation, level of risk, performance history or as needed by legal and other requirements.

Audit teams shall be trained and have the necessary skills and qualifications to conduct their assigned audits. Audit findings shall be documented with Action Plans entered into Assure to ensure timely improvements and close-out. Audit finding and trends shall form part of the inputs of focus programs and the annual EHS Systems Review.

Management and EHS Champions shall perform scheduled BSOPs using NZL-HSE-F-003, BSOP MIRA SmartCard (or equivalent) and document findings in Assure. This shall form part of individual EHS KPIs.

The EHS manager and applicable area managers shall schedule a monthly area specific Safety Walk. Each month a specific sub-area or task shall be selected and audited. Audit records shall be maintained in ASSURE.

4.13 Element 13: Incident Management

Near misses, injuries, work related illness, environmental harm and property / product damage are managed, reported, recorded and investigated to ensure appropriate action is taken to minimise the possibility of a re-occurrence of a similar incident.

All personnel shall report any Event, including Unsafe Acts, Near Misses or Injuries immediately or as soon as practicable, but before end of the shift. Wattyl is committed to working with injured employees, for both work-related and non-work related injuries in any rehabilitation process to ensure an early and safe return to work.

Events are documented and the workflow e.g. investigation, cause identification and action plans, are managed in Assure. Entry hierarchy is as follows:

- Event with injury, harm or property / product damage – Assure/ Incident Management / Events
- Near-Miss - Assure / Incident Management / Events
- Risk Assessments - Assure / Incident Management / Events

- Hazard - Assure / Incident Management / Smart Card
- BSOP - Assure / Incident Management / Smart Card.

Communication and escalation processes in ASSURE are automated. Data can be readily reviewed to establish common causes and trends to action prevention initiatives and continual improvements.

4.13.1 Notifiable Event / Notifiable Incident

Under the Health and Safety at Work Act 2015 (HSWA), WorkSafe must be notified when any of the following occurs as a result of work performed:

- a death
- notifiable illness or injury
- a notifiable incident

Follow the WorkSafe Notifiable tool: https://worksafe.govt.nz/notify-worksafe/

Protect the scene as far as possible (i.e. do not disturb the scene unless it is to prevent further injury or to make it safe). The scene can be released with permission from WorkSafe.

4.13.2 Treatment and Rehabilitation

Wattyl will identify and train a sufficient number of First Aiders who will provide on-site first aid care as required. First aid kits will be available and maintained.

The company medical service provider is Avondale Health Centre, (09) 828-2066 for any medical treatment.

In case of a serious event, call 111 for ambulance, police and/or NZ Fire & Emergency services.

Where the injury or illness (work or non-work related) results in an employee being of work, the manager will develop or agree an Individual Rehabilitation Plan (IRP) for the injured person in conjunction with the injured person and the medical provider, ACC, occupational therapist and a support person (if requested by the injured person) as applicable. The IRP may include all relevant action points, alternate and / or restrictive duties, responsibilities, due dates and review process.

4.14 Element 14: Action Management

Hempel uses ASSURE as a platform for the effective management of risks through a systematic approach to workplace health and safety and to demonstrate our focus on corrective action, preventative action and continuous improvement.

Wattyl uses PDCA (Plan – Do – Check – Act) as a four-step management method and SMART objectives (Specific – Measureable – Achievable - Realistic - Time-based) to achieve the required improvement results. Root cause analysis is performed using ARC (Accelerated Root Cause) investigation methods which could typically include 5-Why, 7-Why, Ishikawa Diagram or Tap-Root analysis methods.

4.15 Element 15: Management System Review

The management team will carry out global, regional and site status review at the scheduled Regional and Site EHS Meetings.

The Site Manager is responsible for (with support from the EHS Manager) an Annual EHSMS Review that will involve selected senior management and other personnel as required. A record of the annual review will be maintained. The review will include (but not be limited to):

- Updates on any action items from previous meetings
- Status of goals and objectives
- Adequacy of resources
- Internal and External Audit Results
- Updates to the EHSMS
- Event analysis and trends, including environmental, Near Misses and BSOP
- Action Plans and MOCs
- Continual improvement and injury prevention initiatives

- Legislative and good practice changes and updates
- Communications and audits from Authorities
- Recognition of worker contributions to EHS

Wattyl will keep up-to-date with e.g. changes in EHS Legislation, Regulations, Instruments, Codes of Practice and Guidelines e.g. through seminars, subscribing to communication distribution lists and other means of communication with the relevant regulatory authorities.

5.0 REVISION HISTORY:

Revision #	Revision Date	Description of Revision
03	01/07/2022	Update to Hempel EHSMS standard
02	07/01/2019	Update to SW EHS standards, document format and templates and general review
1	01/05/2017	First issue

6.0 APPENDICES and REFERENCES:

RESPONDING TO A POTENTIAL CRISIS EVENT

Sherwin-Williams Emergency / Crisis Response Hotline
00-1-216-566-3300 (Outside the US/Canada)

CRISIS REPORTING PROCESS

INITIAL REPORTING, RESPONSE & RECOVERY

Initial Tasks for Emergency & Crisis Determination

The following tasks should be completed given a disruptive event affecting location(s) under your supervision:

- ❑ Activate your location's Emergency Response Procedure
- ❑ Protect life and ensure safety
- ❑ Account for personnel and visitors
- ❑ Liaise with first responder
- ❑ Review business priorities
- ❑ If disruptive event meets the threshold of a crisis event, contact the crisis response hotline within 4 hours (prepare to provide critical crisis information - Page 2)
- ❑ Activate local crisis response plans / incident command
- ❑ Participate in Corporate / Region / Business CRT meetings
- ❑ Escalate resource requests to CRT (review response planning considerations – Page 3)
- ❑ Cascade relevant messaging to direct reports
- ❑ Execute crisis response action plans until normal operations

CRISIS THRESHOLD EVENTS TO ESCALATE

List of potential crisis events for division personnel to escalate to the Crisis Response Team (CRT):

- ❑ Natural disasters or man-made events (e.g., hurricane, tornado, earthquake, or act of terrorism)
- ❑ Pandemic/contagious illness
- ❑ Information system failure
- ❑ In-depth investigation by government agency
- ❑ Activist initiatives (external organization action)
- ❑ Information Security Breach
- ❑ High profile employee relations matter
- ❑ Major safety or quality recall
- ❑ Fire/Explosion resulting in injury to or death to employee /catastrophic damage to location or major disruption to operations
- ❑ Major work-related safety incident, if resulting in a fatality or multiple hospitalizations.
- ❑ Major environmental incident with negative impact to public health, regulatory compliance, and/or company reputation.
- ❑ Workplace violence or criminal act causing death or serious injury to employee/customer
- ❑ Transportation driver accident causing death, serious injury, major environmental impact

Personnel are advised they must not offer any information to the media should they attend. Any media interest will be managed by the relevant executive.

Respond to emergencies according to the appropriate Flow Charts and check lists:

Appendix 1 Fire / Smoke Emergency Response Flow Chart
Appendix 2 Explosion Emergency Flow Chart
Appendix 3 Chemical Emergency Response Flow Chart
Appendix 4 Bomb Threat Checklist / Bomb Threat Response Flow Chart
Appendix 5 Severe Weather Check List
Appendix 6 Work Place Violence Check List
Appendix 7 Emergency Control Organisation / First Aid & Harassment Contact Officers
Appendix 8 ECO Responsibilities
Appendix 9 Evacuation Checklist Example
Appendix 10 Hazard and Protective Locations – Symbol Legend
Appendix 11 Evacuation Meeting Point
Appendix 12 Alternative Evacuation Meeting Point

9.2 Evacuation

The alarm system has two tones, the alert (beep, beep) tone and the evacuation (whoop, whoop) tone. During the alert tone, personnel are to secure their work stations and await the next tone of the alarm system which is the evacuate tone. When this sounds, personnel must evacuate the site using the nearest safe exit to their immediate location.

The nearest safe exit is highlighted on the Building Evacuation Map located in front foyer and near exit doors.

Proceed immediately to the designated Evacuation Meeting Point in a calm manner and report to the Warden. Note: All personnel **MUST** stay at the evacuation meeting point until the "ALL CLEAR" is given from the Chief Warden.

Visitors and Contractors on Site are the responsibility of their **Site contact person** and **MUST** be escorted to the evacuation meeting point. Special consideration must be made should the visitor / contractor have a disability. It is the responsibility of the contact person who is by definition the visitor / contractor's manager to determine with the visitor / contractor the means of assistance that may be required in an evacuation event.

Visitors and Contractors names must checked off against the Visitor's Register held by the Chief Warden.

Responsibilities of the ERT / IRT are detailed in ECO Responsibilities (Appendix 9).

The Hazard and Protective Locations – symbol legend is detailed in Appendix 11.

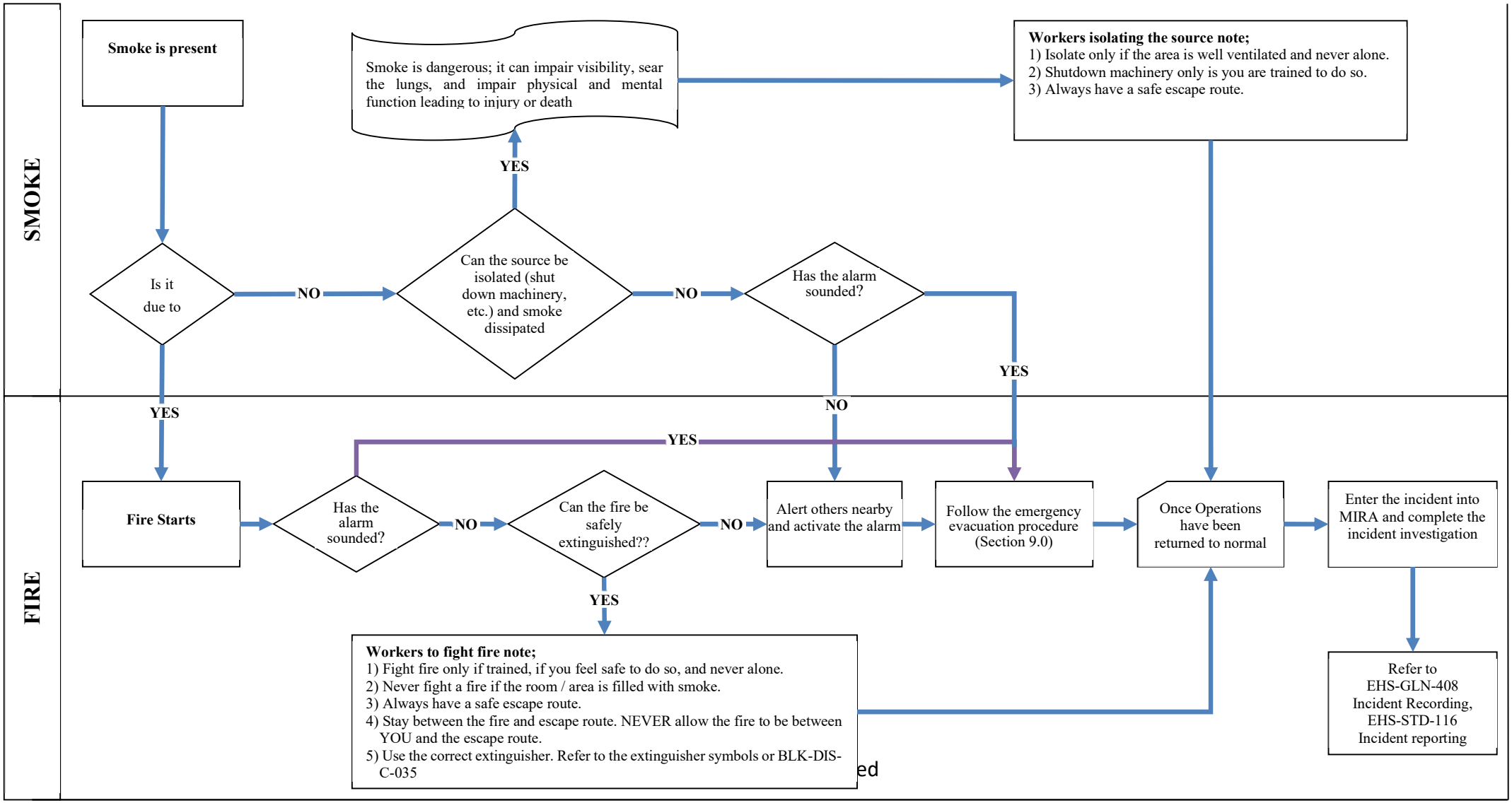
When the "ALL CLEAR" is given by the Chief Warden via the Wardens, workers may return to the site and resume normal duties.

The Chief Warden and respective person/s are to enter the incident into ASSURE with use of GRP-HSE-G-001 Incident Reporting and Investigation Guidelines.
The event may need to be reported to Safe Work NSW and the area involved is quarantined until cleared by a regularity officer. Contact your HSE Manager for Guidance. Follow the below URL for guidelines on reportable incidents.

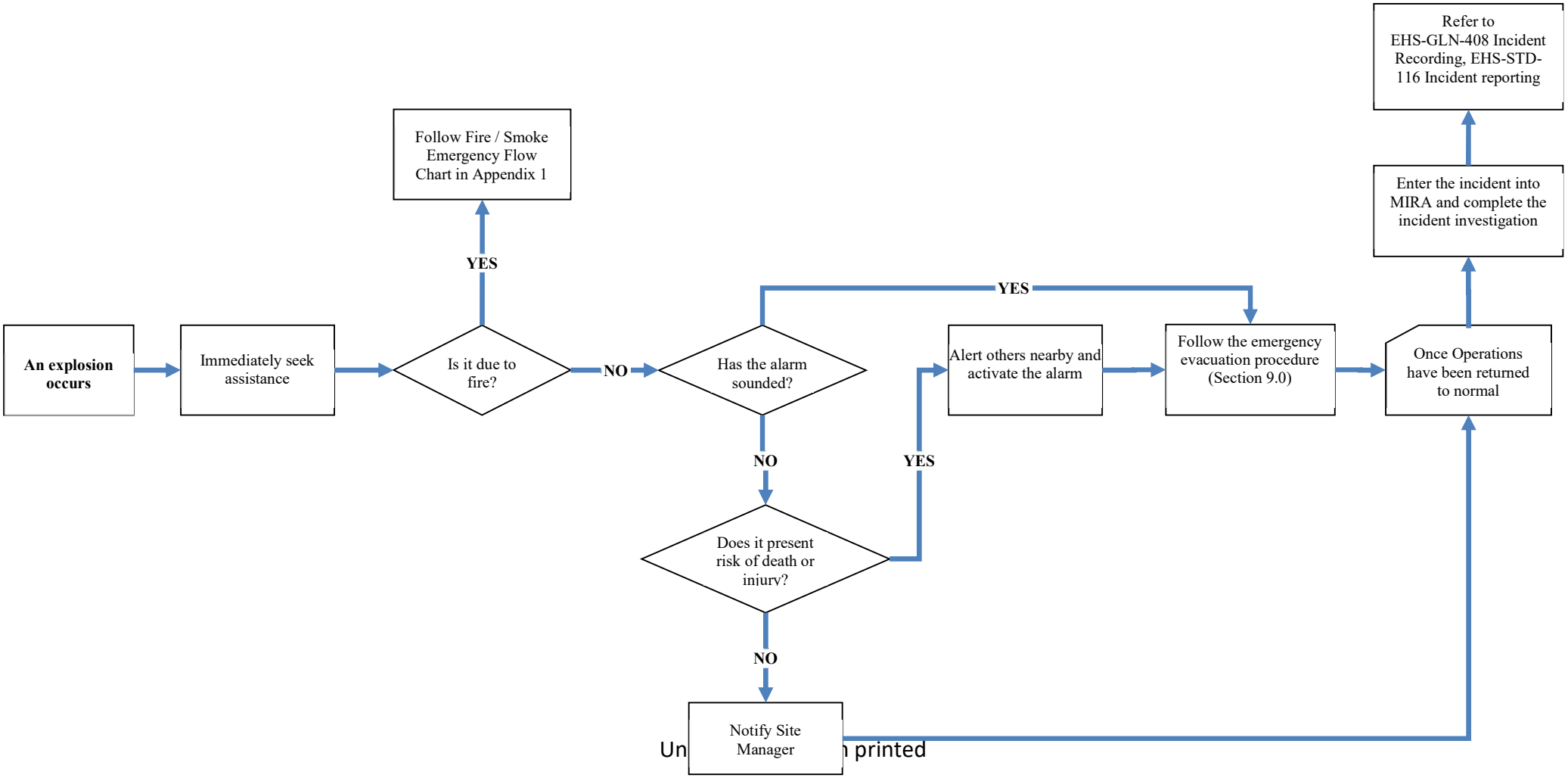
9.3 DOCUMENTATION / RECORDS

Evacuation Report is completed by the Chief Warden immediately following an evacuation. The comments recorded on the evacuation report are reviewed by the WHS Committee and ECO to identify opportunities for system improvement.

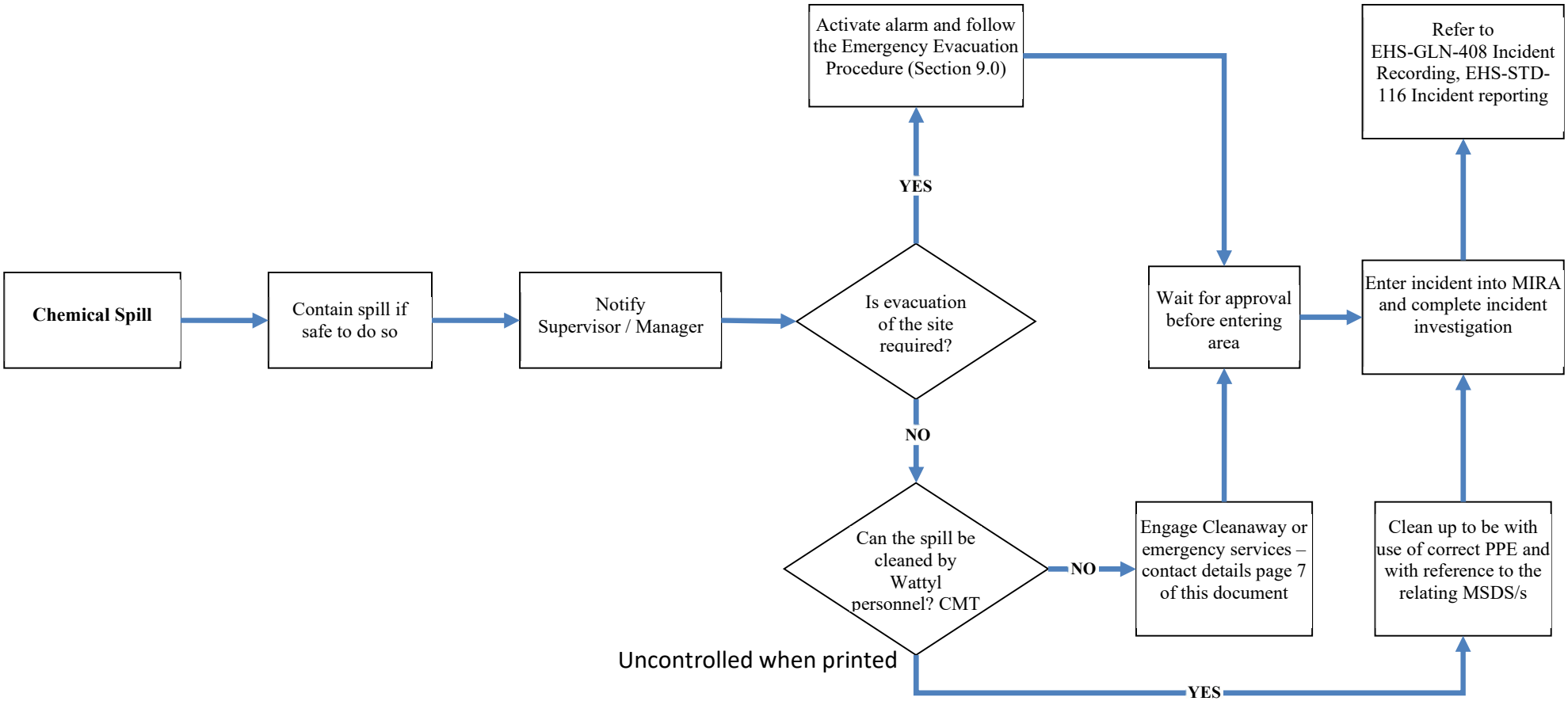
Appendix 1 Fire / Smoke Emergency Flow Chart



Appendix 2 Explosion Emergency Flow Chart



Appendix 3 Hazardous Chemical Emergency Response Flow Chart



Appendix 4 Bomb Threat Checklist

BOMB THREAT CHECKLIST

KEEP CALM and ask the following questions:

1. When is the bomb going to explode?
2. Where did you plant the bomb?
3. When did you put it there?
4. What does the bomb look like?
5. What kind of bomb is it?
6. What will make the bomb explode?
7. Did you place the bomb?
8. Why did you place the bomb?
9. What is your name?
10. Where are you?
11. What is your address?

EXACT WORDING OF THREAT:

Supervisor:

Notify your Supervisor immediately. Follow their instructions.

DON'T HANG UP YOUR TELEPHONE - TRY TO KEEP PERSON TALKING.

RECIPIENT:

1. Name (print):
2. Department:
3. Telephone No.:
4. Signature:

CALLER'S VOICE

1. Accent (specify)
2. Speech Impediment (specify)
3. Voice (loud, soft, etc.)
4. Speech (fast slow etc.)
5. Diction (clear, muffled)
6. Manner (calm, emotional etc)
7. Did you recognise the voice?
8. If so, who do you think it was?

BACKGROUND NOISES

1. Street noises (specify)
2. House noises (specify)
3. Aircraft

4.	Voices	
5.	Music	
6.	Machinery	
7.	Other	
8.	Local call	(Incoming phone number identified?)
9.	Local STD call	(Incoming phone number identified?)
10.	STD	(Incoming phone number identified?)

OTHER

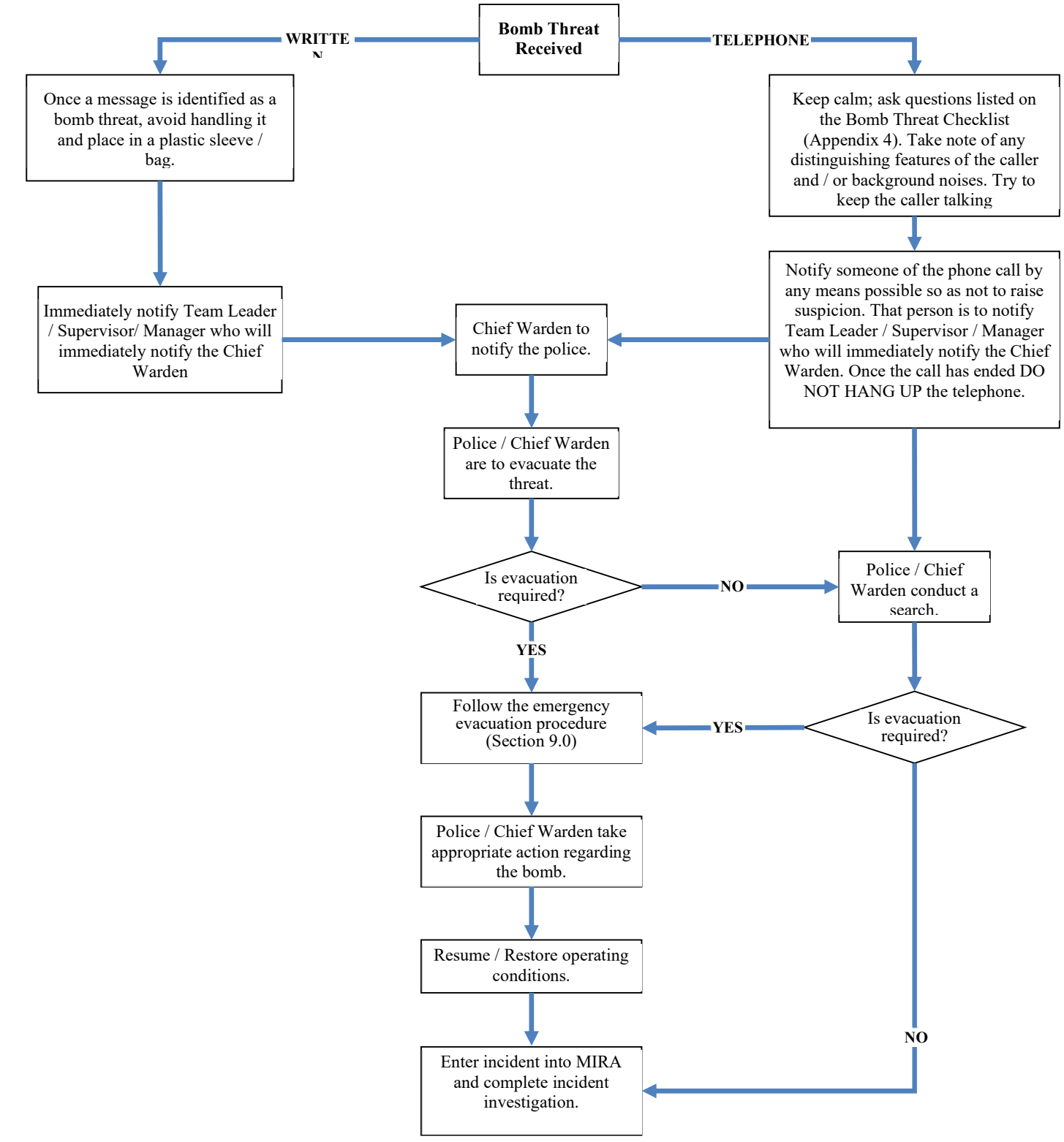
1.	Gender of caller
2.	Estimate age
3.	Call taken
4.	Date
5.	Time
6.	Duration of call
7.	Number called

THREAT LANGUAGE

1.	Well spoken
2.	Incoherent
3.	Irrational
4.	Recorded message played back
5.	Message read by caller
6.	Abusive
7.	Other

ONCE FOUND, DO NOT TOUCH OR MOVE A SUSPECT OBJECT
CLEAR THE AREA
AND NOTIFY YOUR SUPERVISOR / MANAGER IMMEDIATELY.

Appendix 4 Bomb Threat Response Flow Chart



Appendix 5 Severe Weather Emergency Checklist

Initial Assessment / Response	Yes	No
Obtain an assessment of the current weather conditions and predictions		
Assess for imminent Life-Safety conditions		
Execute a response appropriate to the conditions		
Immediately contact the appropriate emergency services if an immediate danger to life or property exists (I.E. dial 000)		
Establish notes of steps taken in response to the event for later MIRA reporting		
Establish / Maintain Communications	**Yes**	**No**
Establish / maintain contact with emergency services and other support agencies		
Communicate the situation / current course of action to entire site		
Maintain communications with Crisis Management Team		
Evacuations	**Yes**	**No**
If necessary coordinate evacuations with fire / police		
Consider closing / restricting access to the site. Decision to close the site will be made by the site Manager and the crisis management team if time permits and with consideration of employee welfare during their journey home.		
Secondary assessment / Response	**Yes**	**No**
Continue to monitor weather conditions – sources; Radio, News, Internet		
Adjust response plans as appropriate		
Restoration / Recovery	**Yes**	**No**
Consult with emergency services to make a decision to resume normal operations		
Should the site utilities be inspected / cleared ready for use (power / water)		
Announce all clear if the site was evacuated or locked down		
Debrief CMT and ECO regarding the conditions and safe conditions of the site		
Communicate to employees the safe conditions of the site		
Prepare a post event assessment report for MIRA		

Appendix 6 Work Place Violence Checklist

Initial Assessment / Response	Yes	No
Obtain a current assessment of the situation and verify the threat – Interview the person who received the threat ASAP – RECORD and assess the threat		
Assess the victims immediate level of danger		
Contact emergency services if required (000)		
Initiate protective strategies for the victim(s): • Move victim(s) to a safe off site location if the conditions permit. Otherwise; • Move / isolate victim(s) to a safe / secure location until the Police arrive		
Continue to assess the threat, gather and record details of the treat maker; • Identify the threat maker, get a photo, description • Obtain background information if possible • Determine if weapons are involved e.g. gun / knife • Obtain additional information – vehicle description, any associates		
Minimise danger to all persons onsite if an immediate threat to health / life exists; • Consider evacuations • Isolation of areas / locked offices • Site shutdown • Public address warning announcements		
If an evacuation is required should it be to an alternate location		
Establish / Maintain Communications	**Yes**	**No**
Establish / maintain contact with emergency services and internal corporate		
Communicate the situation / current course of action to entire site		
Maintain communications with Crisis Management Team		
Evacuations	**Yes**	**No**
If necessary coordinate evacuations with fire / police		
Secondary assessment / Response	**Yes**	**No**
Provide assistance to the authorities		
Continuously monitor the situation / Adjust response plans as appropriate		
Continue protective strategies for the victim(s) and others as appropriate		
Restoration / Recovery	**Yes**	**No**
Consult with authorities to decide if it is safe to resume normal activities		
Debrief employees regarding assessment of safe conditions		
Prepare post event report for MIRA		

Appendix 7 Emergency Control Organisation / First Aid Officers

EMERGENCY CONTROL ORGANISATION (ECO)

ECO Position	ECO Member
Chief Warden	Vikash Singh
Deputy Chief Warden	Hendrik Bossert
Fire Systems Controller	Chubb
Emergency Response / Incident Response Team	Tania Mangu
(Wardens)	Kirsten Wisnesky
First Aid Officers	Hendrik Bossert
	Tania Mangu
	Esau Loe

Appendix 8 ECO Responsibilities

TITLE	IDENTIFIED BY:	RESPONSIBILITIES
Chief Warden		**Note:** When the evacuate tone sounds, where practicable, without placing yourself or others at risk: 1. Ensure emergency services are notified (refer Emergency Contact Numbers – BLK-DIS-F013 or page 7, 8 & 9 of this document). 2. Proceed to Evacuation Meeting Point. 3. Restrict visitor and contractor access to the site. 4. Communicate with Emergency Response Team (ERT) / Incident Response Team (IRT) and/or Wardens to determine nature of emergency. 5. Nominate 1 member of ERT / IRT to assist the Fire System Controller (FSC). 6. Receive "all out" or feedback from Wardens. 7. Account for site Visitors using the Visitor's Book 8. Communicate with, and action responses from, the Wardens. 9. Brief Emergency Services 10. Await "ALL CLEAR" from Emergency Services and pass on to Wardens. **Note:** If "ALL CLEAR" not given by Emergency Services, consult with Senior Management to determine next course of action. 11. In the event of a black out, determine the cause and duration of the blackout and then decide on a course of action. **Note:** ****FOR FIRE DRILL ONLY**** PUBLIC ADDRESS (PA) ANNOUNCEMENT ATTENTION ALL SITE PERSONNEL ATTENTION ALL SITE PERSONNEL THIS IS A FIRE EVACUATION DRILL I REPEAT… THIS IS A FIRE EVACUATION DRILL PLEASE PROCEED TO THE DESIGNATED ASSEMBLY AREA IMMEDIATELY I REPEAT… PLEASE PROCEED TO THE DESIGNATED ASSEMBLY AREA IMMEDIATELY REMAIN AT THE ASSEMBLY AREA AND WAIT FOR FURTHER INSTRUCTIONS I REPEAT… REMAIN AT THE ASSEMBLY AREA AND WAIT FOR FURTHER INSTRUCTIONS

Wardens **(Emergency Response Team(ERT) / Incident Response Team (IRT))**	
	Orange Hi-vis Vest/Shirt/Jumper
		• Report on the incident situation to the Chief Warden, if known, and wait for further instructions. **Note:** 1 member of the ERT / IRT will be nominated by the Chief Warden and must report to the Fire Control Room to assist the Fire System Controller (FSC).
		• Isolate power to all areas involved as instructed.
		• Respond according to the relevant Flow Chart:
		  • Fire Emergency Response Flow Chart (Appendix 1)
		  • Explosion Emergency Flow Chart (Appendix 2)
		  • Hazardous Chemical Emergency Response Flow Chart (Appendix 3)
		  • Bomb Threat Response Flow Chart (Appendix 4)
		• Act on information obtained at the incident scene
		• Report the incident status to the Chief Warden.
		• In the event of a black out, assemble outside, directly in front of the building until further instructions are given.
		
		Note: When the evacuate tone sounds, without placing yourself or others at risk:
		• Obtain **Yellow** helmet.
		• Initiate evacuation for relevant area, ensuring calm and orderly flow of personnel from area to the designated evacuation meeting point.
		• If safe to do so, search the area to ensure all personnel are evacuated.
		• Check and close doors e.g. offices, toilets, storerooms etc.
		• Proceed to designated Evacuation Meeting Point.

		• Report immediately to the Chief Warden at Evacuation Meeting Point and if all personnel in the area are present and accounted for. • Communicate any personnel not present, but believed to be on site. • Communicate any injured personnel requiring ambulance treatment. • In the event of an evacuation being required due to a black out, sweep areas of responsibility to ensure all employees have safely evacuated. • NOTE: During the Afternoon where the Chief Warden is not present, the Warden/s refer to and act out further instruction / Responsibilities found under Chief Warden Points 8, 10, 11 and 12.
All Workers	N/A	**Note:** When the evacuate tone sounds, where practicable, without placing yourself or others at risk: • Obey instructions given to you by Wardens. • Assist others, if safe to do so. • Where practical, close vacant office doors & turn off lights. • Evacuate to your Evacuation Meeting Point in a calm & orderly manner and using designated walkways. • Report to Warden & tell them of any known missing or injured people. • Remain at the Evacuation Meeting Point until the "ALL CLEAR" is given by Chief Warden. In the event of a black out, assemble outside, directly in front of the building until further instructions are given.
First Aid Officers	N/A	**Note:** When the evacuate tone sounds, where practicable, without placing yourself or others at risk: • Take first aid box to evacuation meeting point and provide first aid assistance where required. • Communicate to Wardens the severity of any injuries and the need for Ambulance assistance.

www.tonkintaylor.co.nz

December 2022

Hamilton Distribution Centre

Report prepared for

Stride Property Limited

DGC

Dangerous Goods Compliance Limited

Table of Contents

Important Notes

This report is confidential and has been prepared by DGC on the specific instructions of Stride Property Limited (**Client**) and otherwise in accordance with the scope of work and other terms in the agreement dated 16 November 2022. It is solely for Client's use for the purpose for which it is intended in accordance with the agreed scope of work, and must be read in conjunction with the assumptions, limitations and disclaimers set out below and elsewhere in the report. It should be read in its entirety, and no portion of it should be relied on without regard to the report as a whole and the methodologies and techniques adopted in its preparation.

This report, whether in whole or in part, may not be disclosed to any person other than the Client, and any use or reliance by any person contrary to the above to which DGC has not given its prior written consent is at that person's own risk.

The assessment provided in this report is based solely on the information detailed herein and is subject to the following limitations:

- We have not sought to independently verify information provided by the Client. To the extent any of the information provided is inaccurate or incomplete, the opinions expressed in this report may no longer be valid and should be reviewed.
- The contents of this report are based upon our understanding and interpretation of relevant current, legislation, including applicable Australian Standards, relating to the storage and use of hazardous substances only, and should not be construed as legal opinions or advice.
- While DGC has used all reasonable skills of a professional hazardous substances consultant in providing this report, which may include opinions and recommendations, DGC does not guarantee or otherwise warrant any particular outcome.

Supply Chain Advisory Dangerous Goods Report

Executive Summary

Wattyl Limited (**Wattyl**) is a wholesaler of paint and paint-related products. Stride Property group (the landlord) plans to construct in Hamilton a new warehouse and storage facility areas for the storage and distribution of a range of products, including a dedicated dangerous goods store (**DG store**). Hazardous substances to be stored are 544,000 litres of paints (class 3's) in the DG store, and up to 150,000 litres in transit (on truck) and steel shipping containers. In addition, a quantity of up to 2,800 litres of aerosols (class 2.1.2) is to be stored in a caged area inside the warehouse. The site will also include a mixing room to custom-mix paints.

The purpose of this report is to describe the various options which comply with the requirements of the Health and Safety at Work (Hazardous Substances) Regulations 2017 (**Regulations**). It also includes the requirements for certification, such as site plan, emergency response and training. References to specific "regulations" in this report are to the Regulations as defined above.

The following options have been discussed:

Mixing Room

Depending on the total quantity of flammable liquids to be **used**, one option is to have one or more AS/NZS 4114 mixing rooms storing 450 litres each. Paints can be blended within these rooms. Other options such as type 1, 2 or 3 workrooms and their requirements are detailed in this report.

Type B Store for the DG Store

Storage outside the main warehouse (with a separation distance to protected places) can be used to **store** the class 3s/flammable liquids. Wattyl and the design team have indicated a preference for a "type B store". A type B store is a framed building that has **non-combustible cladding**. All cladding (including the roof) must be made of non-combustible materials. Steel cladding is considered non-combustible. Material tested as non-combustible in accordance with the standard NZS/AS 1530.1:1994 may also be acceptable. Evidence of non-combustibility is required. "Type" stores and separation distances are discussed in detail within the report.

Damaged Goods

Damaged containers of paint will be decanted into other containers in the mixing room. The empty containers will be kept closed and stored in the type B store until disposal to the waste management depot is arranged. Any container that cannot be closed can be kept n the mixing room.

Transit Depot

If class 3's are held outside the type B store or mixing room for longer than 24 hours, Wattyl may establish a transit depot. The requirements of a transit depot are outlined in this report. Transit depots are exempt from the requirements of compliance certification, provided they meet the requirements detailed in regulation 10.37. Hazardous substances can be kept at a transit depot for up to 3 days.

Outside the DG Store and Warehouse - Part 10 of the Regulations

If Wattyl intends to hold class 3's outside the type B store or mixing room for less than 24 hours – whilst waiting for storage or dispatch for example – the requirements of part 10 of the regulations must be met. This includes secondary containment, segregation and hazardous area management.

Aerosol Storage in the Warehouse

Class 2.1.2 aerosols in quantities less than 3,000 litres can be kept inside the warehouse. They must be segregated from any incompatible substances, specifically class 3's. DGC recommends segregation of at least 3 metres based upon AS/NZS standards.

The report has been prepared by DGC in accordance with terms of the engagement agreement between us and Stride Property Limited (the **client**), specifically with regards to the scope of the assignment, DGC's reliance on information provided by the client, and the other terms of the agreement.

Relevant Regulations

A. Class 2.1.2A Aerosols

The storing of aerosols can comply with the Regulations through the controls listed below.

The controls apply to aerosols over 3,000 LWC (litres water content). The site can store a quantity below 3,000 LWC in the main warehouse. They cannot be stored in the type B store or mixing room, as class 3 is incompatible with class 2. Incompatible substances should be segregated from the aerosols by a minimum of 3 metres.

B. Class 3 Flammable liquids storage and use

Part 11 sub-part 2 of the Regulations provides options for the use and storage of flammable liquids at a hazardous substance location.

Using and storing substances inside a building have strict controls and limits on the quantities permitted both for storage and use.

Substances in use (where one or more containers are opened) must be done inside a paint mixing room complying to AS/NZS 4114 or a Type 1, 2 or 3 Workroom. The quantity allowed depends on the Workroom type.

Type 1 Workroom	450 litres	**type 1 workroom** means a building or room— **(a)** where hazardous substances are held in open containers or used; and **(b)** that is constructed in accordance with the following: **(i)** the floor, walls, and ceiling have a minimum fire-resistance rating of 60/60/60 minutes: **(ii)** every door opens towards the outside of the building or room, is self-closing, and has a fire-resistance rating of at least -/60/60 minutes: **(iii)** every window in the building or room complies with NZS 4232.2:1988; and **(c)** that is not occupied either in whole or in part as a dwelling; and **(d)** that has a secondary containment system with a capacity of at least 100% of the total pooling potential
Type 2 Workroom	1750 litres	**type 2 workroom** means a building or room—

		(a) where hazardous substances are held in open containers or used; and **(b)** that is constructed in accordance with the following: **(i)** the floor, walls, and ceiling have a minimum fire-resistance rating of 120/120/120 minutes: **(ii)** every door opens towards the outside of the building or room, is self-closing, and has a fire-resistance rating of at least -/120/60 minutes: **(iii)** every window in the building or room complies with NZS 4232.2:1988; and **(c)** that is not occupied either in whole or in part as a dwelling; and **(d)** that has a secondary containment system with a capacity of at least 100% of the total pooling potential

Type 3 Workroom	3000 litres	**type 3 workroom** means a building or room— **(a)** where hazardous substances are held in open containers or used; and **(b)** that is constructed in accordance with the following: **(i)** the floor, walls, and ceiling have a minimum fire-resistance rating of 240/240/240 minutes: **(ii)** every door opens towards the outside of the building or room, is self-closing, and has a fire-resistance rating of at least -/240/60 minutes: **(iii)** every window in the building or room complies with NZS 4232.2:1988; and **(c)** that is not occupied either in whole or in part as a dwelling; and **(d)** that has a secondary containment system with a capacity of at least 100% of the total pooling potential
Paint mixing room AS/NZS 4114	Any quantity in containers <20 litres, or 450 litres	A non-combustible room complying with the AS/NZS 4114 standard.

If a workroom were to be situated as a stand-alone building outside the warehouse building the quantities could be increased with separation distances to protected places.

An AS/NZS 4114 mixing room can hold any quantity of class 3's provided no containers are greater than 20 litres. The room can hold up to a maximum 450 litres if any container is over 20 litres. *Note: secondary containment in accordance with r.10.30 would have to be sufficient, and the airflow requirements would have to be verified as complying to the standard.*

An electrical certificate of compliance from a registered electrical inspector is required for any equipment within the hazardous areas of the workroom / paint mixing room.

Storage requirements – "type" stores – for the DG Store

The quantity of flammable liquids to be stored is estimated at 694,000 litres combined 3.1B and 3.1C. The maximum quantity needs to be taken into consideration to determine controls required.

The bulk of the flammable liquids (544,000 litres) can be held in a Type A, B, C or D store, separated from protected places by the specified distances. Some quantity can be kept inside the warehouse at one or more of the locations tabulated below.

Storage of class 3's inside the warehouse

AS 1940 cabinets	250 litres each	The maximum container size is 20 litres. The aggregate capacity of the cabinets must not be more than 750 L per 250 m^2 on a ground floor or 250 L per 250 m^2 on other floors. Cabinets must be kept a minimum of 3 metres apart. There must be no sources of ignition within 1 metre above and 3 metres in all directions from the cabinet.
Storeroom in a building	60/60/60 room	**(a)** in a room with the walls and ceiling constructed with a fire-resistance rating of 60/60/60 minutes and a door with a fire-resistance rating of at least -/60/60 minutes and— **(i) not more than 450 L** of those substances are held in the store; and **(ii)** the substances are stored in containers, each not exceeding 20 L capacity; and **(iii)** the requirements of subclause (2) (if applicable) are complied with;
Storeroom in a building	120/120/120 room	**(b)** in a room with the walls and ceiling constructed of reinforced concrete or an equivalent material with a fire-resistance rating of 120/120/120 minutes and a door with fire-resistance rating of at least -/120/60 minutes and— **(i) not more than 2 000 L** of those substances are held in the store; and **(ii)** the substances are stored in containers, each n**ot exceeding 60 L capacity** (except that 1 container of a maximum capacity of 250 L may be located in the store); and **(iii)** any vents are fitted with fire dampers with at least a -/90/- minutes fire-resistance rating; and **(iv)** the requirements of subclause (2) (if applicable) are complied with;

Type D storage inside the warehouse	Maximum **5 000 L** containers **exceeding 60 L capacity**	**(c)** in a type D storage that has no openings to the interior of the building except for— **(i)** a door that is self-closing in the event of a fire and that opens into a type 1, type 2, or type 3 workroom and complies with the requirements of subclause (2) (if applicable); or **(ii)** vents that are fitted with fire dampers with at least a -/180/- minutes fire-resistance rating. **type D storage** means a building where hazardous substances are stored that— **(a)** has a fire-resistance rating of 240/240/240 minutes and is made of structurally strong materials such as brick, block concrete, and reinforced concrete; and **(b)** has a reinforced concrete roof with a fire-resistance rating of 240/240/240 minutes; and **(c)** is part of a secondary containment system; and **(d** has a door with a fire-resistance rating of -/240/60 minutes unless the building is standalone, in which case a lesser rated door may be used.

DGC

Dangerous Goods Compliance Limited

Options for the DG Store

These options are available for the bulk storage of your flammable liquids. They are examples of stand-alone buildings and storage areas that have separation distances to protected places. The separation distances are shown for 624,000 litres in each case together with the requirements of the store. Separation distance is based upon containers no greater than 60 litres.

Type A storage Area	20 metres separation distance to protected places 60,000 litres or more	**type A storage** means an area that is designated for the storage of hazardous substances and that— **(a)** is located external to a building; and **(b)** may have a platform on which 1 or more containers are located, provided that the platform is made of non-combustible materials; and **(c)** may have a shelter roof, provided that the roof is made of non-combustible materials; and **(d)** is— **(i)** secured from access by persons other than those permitted by a PCBU to access the storage area; and **(ii)** is part of a secondary containment system
Type B store	20 metres separation distance to protected places 60,000 litres or more	**type B storage** means a framed building where hazardous substances are stored that— **(a)** has non-combustible cladding; and **(b)** is part of a secondary containment system
Type C store	15 metres separation distance to protected places 400,000 litres or more	**type C storage** means a building where hazardous substances are stored that— **(a)** has a fire-resistance rating of 120/120/120 minutes and is made of structurally strong materials such as brick, block concrete, and reinforced concrete; and **(b)** has a roof made of non-combustible materials; and **(c)** is part of a secondary containment system; and **(d)** has a door with a fire-resistance rating of at least -/120/60 minutes unless the building is standalone, in which case a lesser rated door may be used
Type D store	6 metres separation distance to protected places 400,000 litres or more	**type D storage** means a building where hazardous substances are stored that— **(a)** has a fire-resistance rating of 240/240/240 minutes and is made of structurally strong materials such as brick, block concrete, and reinforced concrete; and **(b)** has a reinforced concrete roof with a fire-resistance rating of 240/240/240 minutes; and **(c)** is part of a secondary containment system; and **(d** has a door with a fire-resistance rating of -/240/60 minutes unless the building is standalone, in which case a lesser rated door may be used.

C. Secondary Containment r.10.30

Mixing Rooms or Type 1, 2 or 3 Workrooms

There is no requirement for secondary containment in a paint-mixing room complying to AS/NZS 4114, provided the quantity does not exceed 1,000 litres.

The requirement for secondary containment inside Type 1,2,3 workrooms is 100 %. The secondary containment required for other storage locations is calculated on quantity and container sizes.

Stores

Taking into account container size of a maximum 60 litres the following secondary containment will apply for a type A, B, C, or D store;

If pooling substances that are class 3 substances are held above ground in a place within a workplace in containers each of which has a capacity of 60 L or less,

(a) if the place's total pooling potential is less than 5 000 L, the secondary containment system must have a capacity of at least 50% of that total pooling potential:

(b) if the place's total pooling potential is 5 000 L or more, the secondary containment system must have a capacity of the greater of—

(i) 2 500 L; and

(ii) 25% of that total pooling potential.

The secondary containment for quantities outside the store during the day and for longer periods has been taken into consideration. These consist of containers sitting inside the loading area and trucks waiting to be offloaded in the yard. The amount of secondary containment for these areas is the same as the store – 2 500L or 25%.

The confirmed quantities and areas requiring secondary containment are noted as follows:

Location	Basis	DG Maximum L	Total DG Maximum L	Containment Required L 25%
DG Warehouse	Maximum hold season build	544,000	544,000	136,000
Inbound/ Outbound Breezeway	Typically Max of 6 x DG 20' container, each with 13KL. Could be Max of 4 x DG 40' containers, each with 20KL	80,000	150,000	37,500
	Maximum days despatch 30KL. Allow more to allow for vehicle Class 3 not ours (normally truck is empty)	30,000		
	Contingency - another 2 x DG 40' container	40,000		
Site			**694,000**	**173,500**

Calculations for and evidence of testing of the secondary containment will be required for location compliance. Hydro testing is an option for confirming secondary containment. Regulation 10.30(4) requires controls on any energy source capable of igniting flammable substances to be excluded and prevents incompatible substances from contaminating. There should be no electrical equipment at ground level or below the level of secondary containment.

D. Options available within the regulations

External Type Store for bulk storage, depending on the available separation distance to protected places this can be a Type B, C or D. Secondary containment established.

AS/NZS 4114 tint mix room, example supplied by Seetal (https://www.seetal.kiwi/). Maximum storage dependent upon container size and capability, room used to blend and store paints.

AS1940 flammable storage cabinet. These can be used to store up to 250 litres in containers up to 20 litres per cabinet, inside the warehouse. Hazardous areas must be established and maintained. In addition to the Hazardous Substance Locations, the site could consider establishing a transit depot[i]. This could be inside a general warehouse. The requirements for transit depots are included below and a table which details separation of substances and controls included with the report.

E. Segregation of incompatible substances

Incompatible substances such as class 2 and class 3 must always be segregated from each other by a minimum of 3 metres.

F. Certification

The threshold for Location Compliance Certification is triggered for 3.1B over 250 litres. The site will require an annual location compliance certificate.

General Location Controls for hazardous substance locations

Regulation 10.34 lists the requirements that a compliance certifier must verify for a hazardous substance location for flammable gasses and liquids prior to issuing a location compliance certificate.

Notification

Wattyl must notify Worksafe at least 30 working days before the commissioning of the hazardous substance location - r.10.26

Security

The hazardous substance location must be appropriately secured from access by persons other than those permitted by the PCBU to access the location. r.10.34(1)(b).

Ensure that buildings and premises are appropriately secured and locked.

Training

Any worker at the location who handles a class 2.1.1, 2.1.2, or 3.1 substance has received information, training, and instruction in accordance with regulation 4.5. DGC Training Limited has various training options and are able to integrate approved training material into the PCBU's systems.

Training consists of training in what we describe as "theory" and a period of practical training under supervision. It is important to include the information from the safety data sheets into training material and the responsibilities of workers in accordance with HSWA. The period of practical supervision can take the form of standard operating procedures, all requirements of theory training need to be included in practical supervision.

The following are the required areas of training: r.4.5(3)

- **(i)** the physico-chemical and health hazards associated with the hazardous substances the worker uses at work:
- **(ii)** the procedures (if applicable) for the safe use, handling, manufacture, storage, and disposal of the hazardous substances:
- **(iii)** practice in the safe use of plant (including personal protective equipment) necessary to manage the hazardous substances:
- **(iv)** the worker's obligations under these regulations:
- **(v)** the actions that the worker should take in an emergency involving the hazardous substances

Hazardous Areas

Hazardous areas need to be established and maintained for flammable gasses and liquids. Zones are determined by the amount of vapour present. Hazardous areas are determined in accordance with AS/NZS 60079.10:2009. No sources of ignition are to be within hazardous areas. If electrical equipment is required within a hazardous area, it needs an electrical certificate of compliance from an electrical inspector. r.10.6

Segregation

Ensure that substances are not in contact with any substance or material with which they are incompatible. Note that class 2.1.2A and class 3.1B/C are incompatible. Segregate by at least 3 metres. r.10.5

Table 1

Substances and materials incompatible with class 2, 3, and 4 substances

rr 10.1, 10.5, 16.4

Hazard classification	Incompatible substances and materials
2.1.1	All class 1 substances
	Class 2.1.2 substances
	All class 3 substances
	All class 4 substances
	All class 5 substances
2.1.2	All class 1 substances
	Class 2.1.1 substances
	All class 3 substances
	All class 4 substances
	All class 5 substances
3.1	All class 1 substances
	All class 2 substances
	Class 3.2 substances
	All class 4 substances
	All class 5 substances

All advice is limited to the requirements of the Health and Safety at Work (Hazardous Substances) Regulations 2017

Signage

When the threshold for signage is triggered, HAZCHEM signage is required in accordance with r. 2.5 and 2.6. Signage is required at all pedestrian and vehicular entrances to the building and land and at any particular room.

- the signage meets the following requirements for comprehensibility, clarity, and durability:
- the signage is in English:
- the signage is readily understandable:
- abbreviations and acronyms are not used unless they are in common English usage and the term described by the abbreviation or acronym is used at least once on the signage:
- all required information is clearly visible and legible at a distance of not less than 10 m under varying conditions (for example, rain or poor light):
- the signage is made of materials that are durable, are resistant to sunlight, and require minimal maintenance

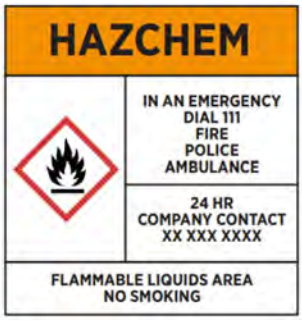
Signage at building and land entrances require:

(a) stating that hazardous substances are present; and
(b) stating the general type of hazard of each of them; and
(c) describing the immediate response action to be taken in an emergency.

Signage at particular rooms e.g. work rooms, type stores, mixing rooms

contain—

- the word HAZCHEM in relation to class 2, 3, 4, 5, 6, or 8 substances; and
- state the hazardous properties and describe the general type of hazard relating to each category of hazardous substance present through the use of—
- hazard pictograms consistent with the correct classification of the hazardous substances present; or
- hazard statements consistent with the correct classification of the hazardous substances present; and
- describe,—
- if the substances include flammable substances, the precautions necessary to prevent unintended ignition of a substance; and
- if the substances include oxidising substances or organic peroxides, the precautions necessary to prevent unintended combustion of, acceleration of a fire from, or thermal decomposition of, an oxidising substance or organic peroxide; and
- describe the immediate response action to be taken in an emergency.



All advice is limited to the requirements of the Health and Safety at Work (Hazardous Substances) Regulations 2017

Emergency Management

In accordance with part 5, when the threshold is triggered fire extinguishers are required. The site requires an emergency response plan (ERP). The ERP must describe the actions to take for "every reasonably foreseeable emergency" (r.5.7). For a class 3 site this includes fire and spill response. DGC can provide a template for this, which can be tailored to your specific site requirements.

Inventory

A PCBU with management or control of a workplace must ensure that an inventory of hazardous substances used, handled, manufactured, or stored at the workplace is prepared and kept at the workplace; and the inventory is maintained to ensure the information in the inventory is up to date. This is checked as part of the emergency response plan when a location certificate is triggered, it is however a PCBU responsibility to create. Worksafe have a toolbox which can be used to create an inventory. DGC can also provide a template. r.3.1.

Site Plan

A reference in these regulations to a **site plan** is a reference to a plan of the relevant place that is accurate and drawn to scale to the extent necessary to enable the plan to meet its purpose in the provision that refers to it (in particular, by enabling a person inspecting the plan to identify actual distances and other relevant dimensions).

DGC can provide contact details of providers if required.

The following items are to be included in the site plan.

Requirements: All site plans		Mark Complete
Site plan is uniquely identifiable	PCBU name	☐
	Site address	☐
Accurate and drawn to scale	Date site plan was prepared and version number	☐
	Scale that enables the plan to meet its purpose *(in particular, by enabling a person inspecting the plan to identify actual distances and other relevant dimensions)*	☐
	North arrow	☐
	Legend/key that defines colours, shaded areas, symbols, abbreviations etc	☐
Hazardous substances locations	Legal property boundary of the site	☐
	Physical position of all hazardous substances' locations in relation to the site boundary	☐
	Hazardous areas delineated in accordance with AS/NZS 60079.10.1:2009	☐
	Separation distances/controlled zones	☐
	(If applicable) If scale and complexity of the workplace demand, separate drawings to meet the purpose of the site plan	☐

All advice is limited to the requirements of the Health and Safety at Work (Hazardous Substances) Regulations 2017

Transit Depot Requirements – Class 2,3 and 8 substances

(r10.37 and r.13.28)

General Requirements for Transit Depots

- For all classes of hazardous substances, a PCBU with management or control of a transit depot must notify WorkSafe of the following information at least 30 working days (or, in the case of LPG, at least 5 working days) before the commissioning of the transit depot:
  (i) the street address of the transit depot; and
  (ii) the maximum quantity and the hazard classification of each of the classes of substances that the transit depot is designed or constructed to accommodate

- The PCBU must ensure that the substance, if left unattended, is appropriately secured from access by persons other than those permitted by the PCBU to access the substance – Reg. 10.4, and 13.10

- All workers who handle hazardous substances must have training in accordance with Reg. 4.5

- Signage is required in accordance with Reg. 2.7. The signage must be positioned at the primary points of vehicular and pedestrian entry to the land on which the transit depot is located. It must contain the word HAZCHEM, identifies the site as a transit depot and warns people that hazardous substances may be present at the site.

- There are prescribed separation distances for compatible and incompatible substances that must be adhered to. The separation distances are 3 or 5 metres depending on compatibility and must be taken into consideration in relation to positioning of vehicles loaded with hazardous substances, loading docks and other areas at the transit depot where hazardous substances are located. The attached excel table “Requirements for Transit Depots.xls” provides further detail regarding separation of substances.

- ensure that all class 2, 3, or 4 substances located at the transit depot remain within their containers and that the containers remain closed; and

- ensure that any electrical equipment at the transit depot is designed and constructed so that in the event of failure of the electrical equipment no resulting ignition source will contact either the substance or its package; and

- designate and clearly identify with signs areas for containment, pending disposal of any leaked or spilled material or damaged packages.

- Compliance with those parts of the Electricity Act 1992 and regulations made under that Act, the Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016, or the Civil Aviation Rules that relate to the matter described in subclause (1)(g) is a means of meeting the requirements of that subclause.

[i] **transit depot** means a permanent place (except a means of transport or any place where hazardous substances are held for sale or supply) used as a transport depot that is intended to hold hazardous substances in containers that remain unopened during the time that they are present at the depot for periods—

(a) that are more than—

(i) 24 hours, for a substance that is not subject to the tracking provisions in Part 19:

(ii) 2 hours, for a substance subject to the tracking provisions in Part 19; but

(b) that in no case exceeds 3 days