

# SEPP 33 - PRELIMINARY RISK SCREENING

**Fujitsu Hyperscale Upgrade Project  
Western Sydney Data Centre**

**Prepared for:**

HDR Pty Ltd  
Level 15, 2 Market Street  
Sydney NSW 2000

SLR Ref: 610.30599.00200-R03  
Version No: -v1.3  
February 2022



## PREPARED BY

SLR Consulting Australia Pty Ltd  
ABN 29 001 584 612  
Tenancy 202 Submarine School, Sub Base Platypus, 120 High Street  
North Sydney NSW 2060 Australia

T: +61 2 9427 8100  
E: sydney@slrconsulting.com www.slrconsulting.com

## BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with HDR Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

## DOCUMENT CONTROL

Reference	Date	Prepared	DRAFT	Authorised
610.30599.00200-R03-v1.3	8 February 2022	Craig Simpson	Jordan Harley	Craig Simpson

---

## EXECUTIVE SUMMARY

This SEPP 33 Preliminary Risk Screening Assessment has been prepared by SLR Consulting Australia Pty Ltd on behalf of Fujitsu Australia C/- HDR Pty Ltd.

The Western Sydney Data Centre facility will provide additional data hall capacity at the subject site, improving the overall operational efficiencies and provision of technology services to customers and the wider locality.

The site consists of an existing data centre buildings to which the footprint is to be expanded by the construction of WS 2 Expansion Zone. The site includes administrative offices, internal roads and car parks.

The proposed site layout showing existing site and proposed development has been set out in **Figure 3**.

The proposal involves the construction and operation of an expansion to an existing data centre located at 6 Bellevue Circuit Pemulwuy NSW 2145, comprising:

- Four (4) levels of plant gantry
- a back-up power system, including lithium ion batteries
- associated infrastructure, car parking

The site is within the local government area of Cumberland City Council (Council).

The Project seeks to operate 24 hours per day, seven (7) days per week, with the testing of back-up generators (generators) occurring between the hours of 9:00 am to 4:00 pm from Monday to Friday.

The particulars of this proposal are summarised below:

- Minor earthworks involving cut and fill works
- Infrastructure comprising civil works and utilities servicing
- Construction of a four (4) level plant gantry extension, comprising:
  - data halls
  - 32 generators
  - fitout of the building for use as a data centre (on an as-needs basis).

The SEPP 33 Preliminary Risk Screening requirements, set out in NSW State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33), are to provide a clear indication of class, quantity and location of all dangerous goods and hazardous materials associated with the development. Should preliminary screening indicate that the project is “potentially hazardous” a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011).

The report included details regarding the location and number of back-up generators, diesel fuel storage tanks, VRLA batteries and lithium-ion batteries to be installed to service the development and the existing facility.

The table below sets out where this information can be found.

## EXECUTIVE SUMMARY

**Table 1 Relevant Information**

SEARS Items	Location
Preliminary SEPP 33 Screening	Section 3
Back up generators number	Section 2.3
Diesel storage tanks	Table 2 Diesel Fuel Storage Requirements
VRLA batteries	Table 5 Estimation of Sulfuric Acid in VRLA Batteries on Site
Lithium ion batteries	Section 3.1.1

It is the conclusion that the proposed development, with suitable engineering and design controls in place, meets all the requirements stipulated by the Department of Planning and Environment, and hence would not be considered to be an offensive or hazardous development on site.

Under the Protection of the Environment Operations Act 1997, Schedule 1, Clause 9(1) 'petroleum products storage', which would include diesel fuel storage, is a Scheduled Activity. Capacity to store greater than 2,000 tonnes requires an environment protection licence from the NSW Environmental Protection Authority (EPA). Under the current design the final storage capacity at 1,090 tonnes (refer Table 4 for calculation details) is not expected to require an environment protection licence. Further advice on these requirements may be sort from NSW Environmental Protection Authority.

The volume of diesel fuel storage exceeds the manifest quantities for C1 combustible liquids specified in schedule 11 of the Work Health and Safety Regulation 2017. Therefore, Safework NSW must be notified, which will include manifests and lodgement an emergency plan to Fire and Rescue NSW. Further advice on these requirements should be sought from Safework NSW.

VRLA batteries currently onsite contain dilute sulphuric acid, a Class 8 dangerous goods. However the total weight of sulfuric acid in the VRLA batteries is within the SEPP 33 Screening Threshold and therefore considered not hazardous

Lithium ion batteries are Class 9 Miscellaneous dangerous substances and articles, which are excluded from the SEPP 33 screening process. The lithium ion batteries shall be addressed as part of demonstrating compliance of the building with the National Construction Code. The hazard associated with the batteries shall be addressed in the Fire Engineering Brief Questionnaire in consultation with Fire and Rescue NSW and in the Fire Engineering Report. Any additional fire protection requirements shall be determined at that point in time.

## CONTENTS

<b>1</b>	<b>INTRODUCTION .....</b>	<b>6</b>
<b>2</b>	<b>PROPOSED DEVELOPMENT .....</b>	<b>6</b>
2.1	Site Description .....	6
2.2	Surrounding Land Uses and Zoning .....	7
2.3	Overview & Site Layout.....	9
2.4	Hours of Operation .....	11
2.5	Vehicular Access and Parking .....	11
<b>3</b>	<b>PRELIMINARY RISK SCREENING .....</b>	<b>11</b>
3.1	Dangerous Goods Storage .....	12
3.1.1	Battery Storage Onsite .....	12
3.2	Dangerous Goods Transport.....	13
<b>4</b>	<b>PRELIMINARY RISK SCREENING CONCLUSION .....</b>	<b>13</b>
<b>5</b>	<b>REFERENCES .....</b>	<b>14</b>

## DOCUMENT REFERENCES

### TABLES

Table 1	Relevant Information .....	4
Table 2	Diesel Fuel Storage Requirements <sup>1</sup> .....	10
Table 3	Proposed Generator Testing Regime .....	11
Table 4	Classification of Diesel in Storage* .....	12
Table 5	Estimate of Sulfuric Acid in VRLA Batteries on Site.....	13

### FIGURES

Figure 1	Site Location .....	7
Figure 2	Land Zoning .....	8
Figure 3	Site Layout.....	9

# 1 Introduction

SLR Consulting Australia Pty Ltd (SLR) have been appointed by HDR Pty Ltd on behalf of Fujitsu Australia to undertake the SEPP 33 Preliminary Risk Screening Assessment for the proposed development of the Western Sydney Data Centre (WSDC) at 6 Bellevue Circuit Pemulwuy NSW 2145 (the Site). The site is within the local government area of Cumberland City Council (Council).

The purpose of this report is to provide a screening assessment of the hazards associated with the storage of dangerous goods on the site in accordance with *NSW State Environmental Planning Policy No. 33 – Hazardous and Offensive Development* (SEPP 33). The purpose of the initial SEPP 33 risk screening is to exclude from more detailed studies those developments which do not pose significant risk.

Where SEPP 33 identifies a development as potentially hazardous and/or offensive, developments are required to undertake a Preliminary Hazard Analysis (PHA) to determine the level of risk to people, property and the environment at the proposed location and in the presence of controls.

If the risk levels exceed the criteria of acceptability and/or if the controls are assessed as inadequate, or unable to be readily controlled, then the development is classified as 'hazardous industry'. Where it is unable to prevent offensive impacts on the surrounding land users, the development is classified as 'offensive industry'.

A development may also be considered potentially hazardous with respect to the transport of dangerous goods. A proposed development may be potentially hazardous if the number of generated traffic movements (for significant quantities of hazardous materials entering or leaving the site) is above the cumulative annual or peak weekly vehicle movements. Table 4 in the document *Applying SEPP 33: Hazardous and Offensive Development Application Guidelines* (NSW Department of Planning, 2011), outlines the screening thresholds for transportation.

This report presents information pertaining to the presence of any hazardous materials, flammable substances, and compressed or liquefied gases proposed to be stored or handled in relation to the Development Site, including on site storage, or transported to or from the site.

## 2 PROPOSED DEVELOPMENT

### 2.1 Site Description

WSDC is located at 6 Bellevue Circuit, Pemulwuy NSW 2145 within the Cumberland Council Local Government Area (LGA). The Site has a total area of approximately 36,620 m<sup>2</sup> and is accessed via the site entry on Bellevue Circuit. The Site is bound by parkland and commercial properties to the north, Bellevue Circuit to the south, parkland and residential properties to the east (along Daruga Avenue) and commercial properties to the west.

The Site is situated approximately 27 km west of the Sydney CBD and 7.5 km west of Parramatta (see **Figure 1**). It is within close proximity to the M4 Motorway, Great Western Highway, M7 Western Sydney Orbital road system and the Cumberland Highway.

**Figure 1 Site Location**



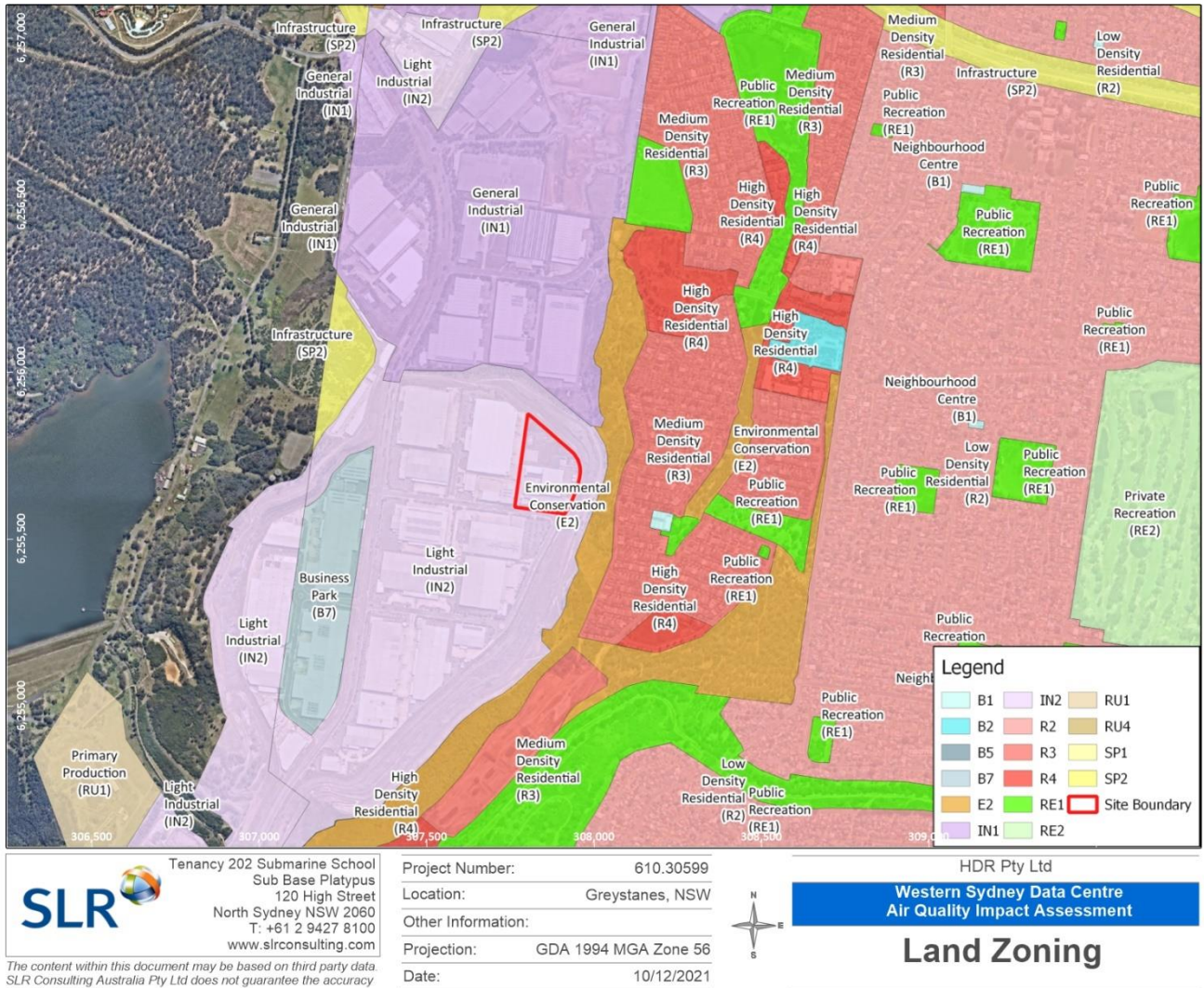
## 2.2 Surrounding Land Uses and Zoning

The Site is zoned as IN2 Light Industrial (State Environmental Planning Policy (State Significant Precincts) 2005) as is the immediately surrounding land.

The nearest residential area is identified on Reservoir Road, located approximately 150m to the east of the site (along Daruga Avenue).

**Figure 2** shows surrounding land uses and zoning.

**Figure 2 Land Zoning**



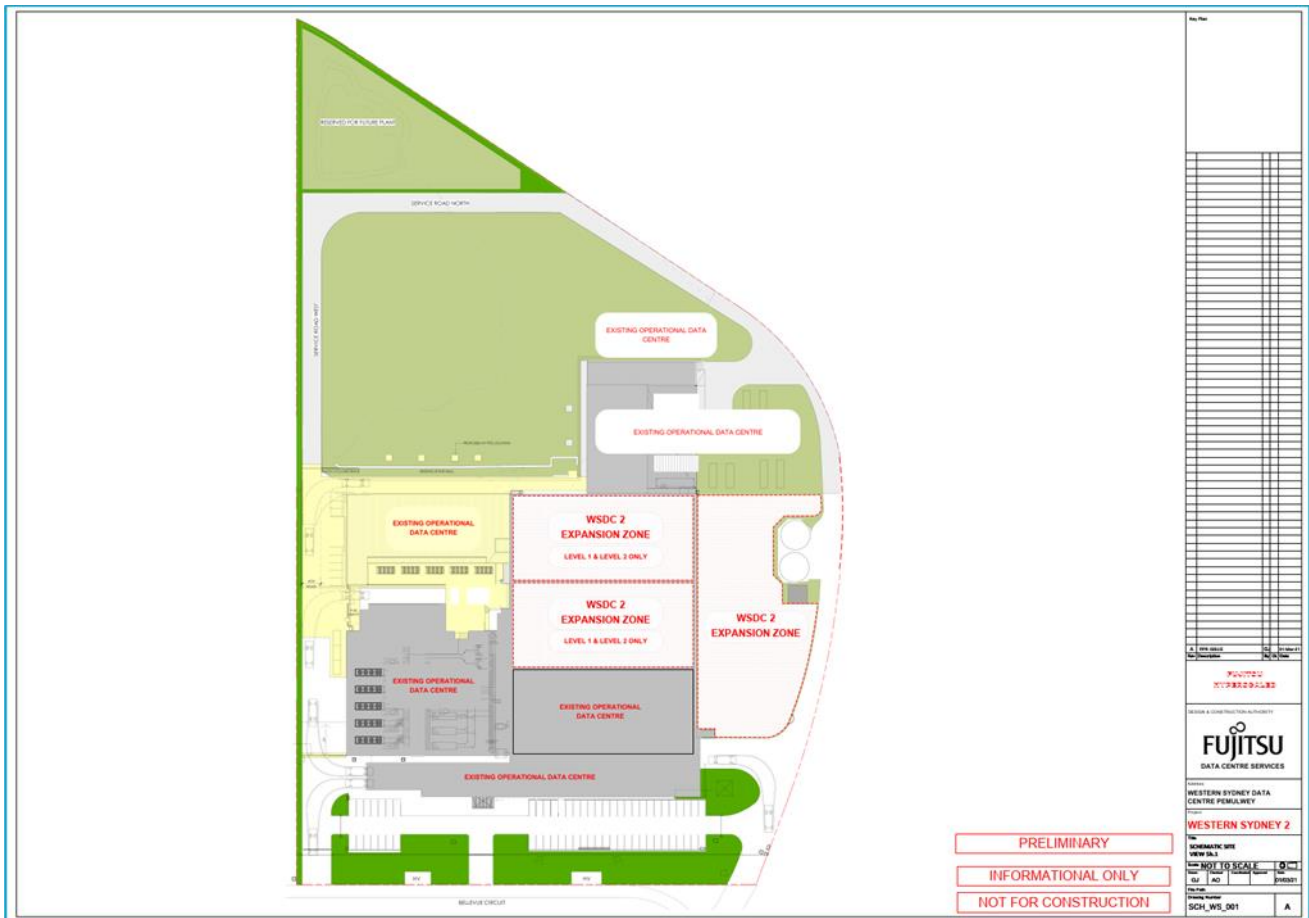
## 2.3 Overview & Site Layout

The Western Sydney Data Centre facility will provide additional data hall capacity at the subject site, improving the overall operational efficiencies and provision of technology services to customers and the wider locality.

The site consists of an existing data centre buildings to which the footprint is to be expanded by the construction of WS 2 Expansion Zone (**Figure 3**). The site includes administrative offices, internal roads and car parks.

The proposed site layout showing existing site and proposed development has been set out in **Figure 3**.

**Figure 3 Site Layout**



Limited Dangerous Goods will be required for the operation of the site.

The only potentially hazardous material associated with the facility will be diesel fuel for the back-up generators. The total number of generators for the site will be 40, situated in both the existing buildings (8 generators) and the proposed buildings (32 generators). The fuel on the site is made up of the bulk fuel capacity plus the capacity in the generator day tanks for both the existing and proposed buildings. The total site bulk fuel storage is 1,288,600 L.

Diesel fuel storage shall be limited to generator day tanks and the bulk fuel storage systems. The breakdown of this storage requirements has been set out in **Table 3** below.

**Table 2 Diesel Fuel Storage Requirements<sup>1</sup>**

	WSDC (existing)	WS 2 (proposed extension)	Total Future Capacity (existing + extension)
<b>Bulk Tank (UST) Capacity L</b>	100,000	100,000	
<b>Bulk Tanks</b>	2	4	
<b>Quantity L</b>	200,000	400,000	
<b>Bulk Tank (UST) Capacity L</b>	75,000	n/a	
<b>Bulk Tanks</b>	4	n/a	
<b>Quantity L</b>	300,000	n/a	
<b>Bulk Belly Tank Capacity L</b>	n/a	21,600	
<b>Bulk Belly Tanks</b>	n/a	16	
<b>Quantity L</b>	n/a	345,600	
<b>Local Day Tanks L</b>	1,000	1,000	
<b>Day Tanks</b>	11	32	
<b>Total Day Tanks L</b>	11,000	32,000	
<b>Total Capacity L</b>	511,000 L (existing)	777,600 L (extension)	<b>1,288,600 L</b> (existing + extension)

Note: <sup>1</sup> Source HDR

The proposed data centre has established procedures for the safe delivery and handling of fuel.

Diesel fuel top up would occur infrequently to ensure stocks remain at the required level. Replenishment of stock in significant quantities would only occur in the event of a major power failure to the site.

Generators are required to ensure ongoing operation if the mains grid electricity supply is interrupted for more than a few minutes. The function of the standby generators is to provide power when there is an unexpected interruption of mains grid electricity.

During the operational phase, the generators would be a source of products of combustion while undergoing testing and in the event of a power failure. In general, power interruptions last anything from a few seconds to a few hours and therefore even when required the generators would only operate for a short time.

**Table 3 Proposed Generator Testing Regime**

Parameter	Value
No of generators	40 (inclusive of 8 existing and 32 proposed)
Test frequency per generator	Quarterly
Run time per test	60 minutes
No of generators per test	1 - 5
Number of tests per day	5
Testing schedule	Monday to Friday (9:00 am to 4:00 pm)
Total testing time for all generators	160 hours / annum (based on 1 generator per test)

As outlined in **Table 3**, testing of generators is proposed to be conducted for not longer than 60 minutes between 9:00 am to 4:00 pm, Monday to Friday. Up to five generators will be tested per day and the five generators will not necessarily be tested concurrently, noting that in previous discussions with the EPA on annual operating hours of diesel generators, they have indicated that time spent testing more than one generator concurrently will be counted once, i.e. not hours multiplied by number of generators running. The total test time for all generators (existing and proposed) is therefore estimated to be 160 hours or less per year.

In order to assess the worst-case scenario, the modelling undertaken for the operational scenario conservatively assumes that:

- Each generator would be tested for a period of 60 minutes.
- Five generators will be tested concurrently within the same hour.
- Testing of generators is conducted every hour of the year between 9:00 am and 5:00 pm, i.e. one additional hour.

## 2.4 Hours of Operation

The proposed development will operate 24 hours a day, seven days a week.

## 2.5 Vehicular Access and Parking

Access to the Development Site will be via the site entry on Bellevue Circuit (refer **Figure 1**).

# 3 PRELIMINARY RISK SCREENING

Preliminary risk screening of the proposed development is required under SEPP 33 to determine the need for a Preliminary Hazard Analysis (PHA). The preliminary screening assesses the storage of specific dangerous goods classes that have the potential for significant, off-site effects. Specifically, the assessment involves the identification of classes and quantities of all dangerous goods to be used, stored or produced on site with respect to storage depot locations as well as transported to and from the site.

### 3.1 Dangerous Goods Storage

There are limited Dangerous Goods to be used or stored at the facility and therefore the facility is not considered potentially hazardous with regards to Dangerous Goods in accordance with the thresholds pertaining to SEPP 33.

Diesel fuel to be stored on site, is not classed as a Dangerous Goods, but is classed as a C1 Combustible Liquid provided no flammable liquids are stored with the diesel.

SLR has been advised that no flammable liquids will be stored with the diesel. Therefore, in the proposed development diesel will be classed as a C1 Combustible Liquid.

Note that C1 combustible liquids are not a dangerous good under UN (United Nations) classification. However, they are defined as dangerous goods under NSW workplace legislation. Where dangerous goods are used or stored in volumes greater than the manifest quantities specified in schedule 11 of the Work Health and Safety Regulation 2017, Safework NSW must be notified, which will include manifests and lodgement an emergency plan to Fire and Rescue NSW. Further advice on these requirements should be sort from Safework NSW.

It should be noted that the Protection of the Environment Operations Act 1997, Schedule 1, Clause 9(1) indicates that 'petroleum products storage', which would include diesel fuel storage, is a Scheduled Activity. Capacity to store greater than 2,000 tonnes requires an environment protection licence under the Protection of the Environment Operations Act 1997 (POEO Act), from the NSW Environmental Protection Authority (EPA).

The proposed inventory of diesel, and classification is provided in **Table 4** below.

**Table 4 Classification of Diesel in Storage\***

Substance	Hazardous Class	Packing Group	Combustible Liquid Class	Total Storage on Site	Manifest Quantity	SEPP 33 Level Findings
Diesel	Not applicable	-	C1	1,288,600 litres	100,000 kg or litres	<b>Safework NSW notification required</b>
				Equivalent to 1,090 tonnes <sup>^</sup>	2,000 tonnes	Environmental Protection Licence under (POEO Act) not required from NSW EPA

\* Information provided by HDR : <sup>^</sup> Conversion based on 1,182 L per tonne for automotive diesel, source: Department of the Environment and Energy (2017).

#### 3.1.1 Battery Storage Onsite

Both the existing facility and the proposed expansion have batteries on site for backup power. The existing facility, WSDC, currently uses Valve Regulated Lead Acid Batteries (VRLA batteries) with 960 VRLA batteries onsite. These 960 VRLA batteries weighing approximately 45,312 kg.

VRLA batteries are sealed units containing dilute sulphuric acid and lead plates. The sulfuric acid is held in suspension or a gel and does not normally "flow" if the casing damaged. Typically the sulfuric acid makes up approximately 10 % to 30% of the VRLS battery weight (SBS, 2012).

In the existing WSDC facility the 960 VRLA batteries weighing approximately 45,312 kg indicate sulfuric acid may comprise 4,531.2 kg to 13,593.6 kg of the battery weight. This amount of sulfuric acid is within the SEPP 33 Screening Threshold and therefore considered not hazardous. (See **Table 5**)

**Table 5 Estimate of Sulfuric Acid in VRLA Batteries on Site**

Substance	Hazardous Class	Packing Group	Total Storage on Site	SEPP 33 Screening Threshold	SEPP 33 Level Findings
Sulfuric Acid (VRLA Batteries)	Class 8	II	13.6 tonnes	25 tonnes	Below Screening Threshold

The proposed extension, WS 2, utilises lithium ion batteries. The batteries being set out in 198 cabinets with a weight of 179,200 kg.

Lithium ion batteries are Class 9 Miscellaneous dangerous substances and articles, which are excluded from the SEPP 33 screening process.

The lithium ion batteries shall be addressed as part of demonstrating compliance of the building with the National Construction Code. The hazard associated with the batteries shall be addressed in the Fire Engineering Brief Questionnaire in consultation with Fire and Rescue NSW and in the Fire Engineering Report. Any additional fire protection requirements shall be determined at that point in time.

In the proposed development, lithium ion batteries will be contained in Battery cabinets. Estimates of total quantity of lithium ion batteries are based on the weight of cabinets. This gives an estimate of total quantity of lithium ion batteries as 179,200 kg. (As previously stated the existing facility, WSDC, does not have lithium ion batteries.) Note this weight is likely to be an overestimate as the supplier details do not specify weight of lithium and therefore the total weight may include non lithium components, such as wire, frames, etc.

### 3.2 Dangerous Goods Transport

There will be no transport of Dangerous Goods associated with the facility.

## 4 PRELIMINARY RISK SCREENING CONCLUSION

This report has reviewed and applied the requirements of SEPP 33 in order to determine whether the policy applies to the Project.

The SEPP33 screenings for storage of dangerous goods indicate that the development may not be classified as a hazardous or offensive industry.

It is the conclusion that the proposed development with suitable engineering and design controls in place, meets all the requirements stipulated by the Department of Planning and Environment, and hence would not be considered, to be an offensive or hazardous development on site.

Under the Protection of the Environment Operations Act 1997, Schedule 1, Clause 9(1) 'petroleum products storage', which would include diesel fuel storage, is a Scheduled Activity. Capacity to store greater than 2,000 tonnes requires an environment protection licence from the NSW Environmental Protection Authority (EPA). Under the current design the total site storage capacity at 1,090 tonnes is not expected to require an environment protection licence. Further advice on these requirements may be sort from NSW Environmental Protection Authority.

The volume of diesel fuel storage exceeds the manifest quantities for C1 combustible liquids specified in schedule 11 of the Work Health and Safety Regulation 2017. Therefore, Safework NSW must be notified, which will include manifests and lodgement an emergency plan to Fire and Rescue NSW. Further advice on these requirements should be sort from Safework NSW.

VRLA batteries currently onsite contain dilute sulphuric acid, a Class 8 dangerous goods. However the total weight of sulfuric acid in the VRLA batteries is within the SEPP 33 Screening Threshold and therefore considered not hazardous

Lithium ion batteries are Class 9 Miscellaneous dangerous substances and articles, which are excluded from the SEPP 33 screening process.

The lithium ion batteries shall be addressed as part of demonstrating compliance of the building with the National Construction Code. The hazard associated with the batteries shall be addressed in the Fire Engineering Brief Questionnaire in consultation with Fire and Rescue NSW and in the Fire Engineering Report. Any additional fire protection requirements shall be determined at that point in time.

## 5 REFERENCES

Commonwealth Government, 2020, Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Number 7.7).

Department of the Environment and Energy (2017), Guide to the Australian Energy Statistics 2017, Canberra, August.

Department of Planning NSW, 2011, Applying SEPP 33 - Hazardous and Offensive Development Application Guidelines.

NSW Government Code of Practice Managing Risks of Hazardous Chemicals in the Workplace, August 2019

NSW Government Notifications of Schedule 11 Hazardous Chemicals and Abandoned Tanks – Guidance Material. Safework NSW

Planning NSW, 2011 Rick Criteria for Land Use Safety Planning – Hazardous Industry Planning Advisory Paper No 4, New South Wales Government

Planning NSW, 2011 Hazard Analysis – Hazardous Industry Planning Advisory Paper No 6, New South Wales Government

SBS, 2012, Storage Battery Systems Valve Regulated Lead Acid Battery Material Safety Data Sheet. Storage Battery System, LLC.

## ASIA PACIFIC OFFICES

### BRISBANE

Level 2, 15 Astor Terrace  
Spring Hill QLD 4000  
Australia  
T: +61 7 3858 4800  
F: +61 7 3858 4801

### MACKAY

21 River Street  
Mackay QLD 4740  
Australia  
T: +61 7 3181 3300

### ROCKHAMPTON

rockhampton@slrconsulting.com  
M: +61 407 810 417

### AUCKLAND

68 Beach Road  
Auckland 1010  
New Zealand  
T: +64 27 441 7849

### CANBERRA

GPO 410  
Canberra ACT 2600  
Australia  
T: +61 2 6287 0800  
F: +61 2 9427 8200

### MELBOURNE

Suite 2, 2 Domville Avenue  
Hawthorn VIC 3122  
Australia  
T: +61 3 9249 9400  
F: +61 3 9249 9499

### SYDNEY

2 Lincoln Street  
Lane Cove NSW 2066  
Australia  
T: +61 2 9427 8100  
F: +61 2 9427 8200

### NELSON

5 Duncan Street  
Port Nelson 7010  
New Zealand  
T: +64 274 898 628

### DARWIN

5 Foelsche Street  
Darwin NT 0800  
Australia  
T: +61 8 8998 0100  
F: +61 2 9427 8200

### NEWCASTLE

10 Kings Road  
New Lambton NSW 2305  
Australia  
T: +61 2 4037 3200  
F: +61 2 4037 3201

### TAMWORTH

PO Box 11034  
Tamworth NSW 2340  
Australia  
M: +61 408 474 248  
F: +61 2 9427 8200

### NEW PLYMOUTH

Level 2, 10 Devon Street East  
New Plymouth 4310  
New Zealand  
T: +64 0800 757 695

### GOLD COAST

Ground Floor, 194 Varsity  
Parade  
Varsity Lakes QLD 4227  
Australia  
M: +61 438 763 516

### PERTH

Ground Floor, 503 Murray Street  
Perth WA 6000  
Australia  
T: +61 8 9422 5900  
F: +61 8 9422 5901

### TOWNSVILLE

Level 1, 514 Sturt Street  
Townsville QLD 4810  
Australia  
T: +61 7 4722 8000  
F: +61 7 4722 8001