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Our Ref: 3356A/BC/AS/20140815

15 August 2014

Kerry Hamann
Environmental Planning Officer
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Email: Kerry.hamann@planning.nsw.gov.au

Dear Kerry

Re: Response to Submissions – Section 75W Minor Modification to Project Approval 07_0066 – Marine Fuel Storage/Distribution Facility, Kooragang Island - Change to Storage Tank Design

An application for a Section 75W modification to PA07_0066 to provide for changes in tank design and use was submitted to the Department of Planning and Environment (DP&E) on 21 May 2014. DP&E sought submissions from a number of relevant agencies, with submissions received from Newcastle City Council and the Environment Protection Agency (EPA). Clarification on several issues was also sought by the Department of Planning and Environment's (DP&E's) internal risk and hazard specialist. The Port of Newcastle also provided a response with no objections to the modification.

The issues raised in the above submissions and the response to these issues is discussed in **Sections 1.0** to **3.0** below.

1.0 Newcastle City Council

The submission for the proposed modification from Newcastle City Council raised two issues which are outlined in detail below.

1.1 Clarification of Proposed Modifications

Newcastle City Council raised the following issue:

> According to the submission dated 21 May, 2014 prepared by Umwelt (Australia) Ltd, the proposed modifications to the approved project comprise only the following:
>
> - replace the internal floating roofs of storage tanks T-1, T-2 and T-7 with fixed roofs.
> - use tank T-7 to store biodiesel instead of methanol.
>
> However, the Fire Fighting Addendum Report prepared by TFA Project Group (TFA) states:
>
> > 'Subsequent to the above reports and approvals Park Fuels have decided to operate the facility as Fuel Terminal only. It is proposed to store and handle biodiesel on the site, however it will be imported as a finished product.'

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Umwelt (Australia) Pty Limited
ABN: 18 059 519 041

This modification has not been addressed in the Umwelt submission including the review of environmental aspects. Given that it is now proposed to import biodiesel as a finished product rather than manufacture it on site (i.e. 52ML a year), it is expected that there would be at least some changes to the design and layout of the facility and the operational transport activities associated with the development.

Response

Park fuels is currently examining its options regarding biodiesel manufacture on-site, and wishes to retain the ability to manufacture biodiesel on site in the future as permitted by the existing consent. However, it is recognised that the proposed modification will limit the practical ability to do this as the existing tank approved for the site will no longer be suitable for methanol storage. Prior to any biodiesel manufacture on site, a further modification of the consent will be required to convert T7 (or another tank) or construct a new tank to a standard appropriate for the on-site storage of methanol. Such a modification would necessarily involve a review of fire safety and hazard controls applicable to the site.

It was not considered necessary to undertake a revised traffic assessment for the modification or assess other potential impacts associated with not producing biodiesel given Park Fuels' intentions to keep open the option of manufacturing biodiesel on –site at some stage in the future. It is noted however, that the impacts associated with the use of the site as a fuel distribution facility only are likely to be less than that associated with operating the site as a distribution and manufacturing facility, primarily due to reduced traffic demands associated with the transport of methanol.

1.2 Section 75W Modification

Newcastle City Council raised the following issue:

> The application was not supported by a table which details the proposed variations to the conditions of consent and the description of the project to accommodate the above modifications.

Response

As outlined above, Park Fuels is not seeking approval to alter the construction or operation of the approved production and distribution facility other than for the purposes of:

- replacing the internal floating roofs from the design of tanks T-1, T-2 and T-7 with fixed roofs; and
- the storage of biodiesel in T-7 in place of methanol.

2.0 NSW EPA

The submission for the proposed modification from NSW EPA identified the potential for the vapour pressure of biodiesel to be stored in T-7 to be greater than 2mm Hg at 25°C. In accordance with the *Protection of the Environment Operations (Clean Air) Regulation 2010* storage tanks with a capacity of more than 150ML which contain a volatile organic compound (a liquid with a vapour pressure greater than 2mm Hg at 25°C) requires the installation of a floating metal roof to limit vapour emissions.

NSW EPA has recommended the following conditions if the vapour pressure of the liquids to be stored are greater than 2mm Hg at 25°C:

- All fuels stored or mixed in the tanks identified as T-1, T-2 and T-7 must have a vapour pressure of less than 2mm of Hg at 25°C and 101.3 kPa at all times;
- Prior to loading the tanks identified as T-1, T-2 and T-7 the licensee must have conducted a vapour pressure test on the fuel to be loaded into the tanks to confirm it complies with the condition.

Response

The NSW EPA submission identifies a discrepancy between the vapour pressure identified in MSDS provided as part of the engineering review prepared by TFA and the vapour pressure referenced in the air quality assessment by Pacific Environment for the s.75W modification from the National Toxicology Program for the US Department of Health and Human Services. The discrepancy between vapour pressures for biodiesel is the result of the individual mixes and the source ingredients included in each individual biodiesel combination.

Park Fuels can clarify the following:

- The MSDS included in the engineering report prepared by TFA was for biodiesel based on tallow which has vapour pressure of <5mm Hg at 25°C. While this was correct for the project as originally contemplated, Park Fuels will no longer be purchasing biodiesel based on Tallow feedstock for use.

- Park Fuels has commenced using a soy based biodiesel feedstock which will have a vapour pressure of <2mm Hg at 25°C. All bio-fuels stored onsite will have a vapour pressure of <2mm Hg at 25°C.

The conditions recommended by EPA are not required as Park Fuels will only store biodiesel with a vapour pressure of <2mm Hg at 25°C and the requirement to conduct vapour pressure tests on all fuel prior to storage is therefore considered to be unnecessarily onerous. Current MSDS for all fuel specifications handled on-site will be included in the Safety Management System prepared in accordance with Condition 14(a) of PA07_0066.

3.0 Department of Planning and Environment Risk and Hazard Specialist

DP&E's internal risk and hazard specialist raised three issues in relation to the proposed project. These are addressed in **Sections 3.1** to **3.3** below.

3.1 Emergency Venting Arrangements

DP&E noted insufficient information had been provided regarding tank venting arrangements and requested further details a regarding the normal, and emergency venting arrangements for all three tanks in light of the possibility that the removal of the internal floating roofs may result in a change to the normal and emergency venting requirements of some tanks. In particular, DP&E sought clarification regarding compliance with *API Standard 2000: Venting Atmospheric and Low Pressure Storage Tanks* (API).

Response

Product storage tanks are designed and will be constructed in accordance with *API Standard 650: Welded Steel Tanks for Oil Storage*. Venting systems on all tanks will meet the requirements of API2000.

3.2 Safety Analysis of Hot Oil Analysis

DP&E noted that insufficient detail had been provided with respect to the extent of the safety analysis undertaken for the Hot Oil System for the Heavy Fuel Oil tank (Tank T1). DP&E noted in discussions that is was unclear from the information provided:

- what measures are in place in order to prevent or minimise the chance of a high temperature excursion in the Tank T1 contents due to a malfunction of the temperature control system; and

- whether the analysis considered common mode failures.

- In particular, DP&E sought clarification regarding the extent of the redundancy, and whether the Safety Integrity Level (SIL) assessment (allocation/verification) was applied to the whole safety function loop.

Response

The HAZOP analysis undertaken for the Park Fuels Facility, including the modified tank design, included consideration of risks associated with the Hot Oil System. **Attachment 1** to this letter contains extracts from the relevant sections of the HAZOP analysis undertaken for the Hot Oil System on Tank T1.

The Hot Oil System on Tank T1 has a number of layers of protection incorporated into the design which have been through HAZOP. These include:

- Tank draw off nozzle is located above heating coils to physically prevent the coils being exposed.
- Hot oil control valve provides position feedback & is fail closed.
- The hot oil heater is a manual start with a hot oil set point of 180°C and a heater trip shut down if the oil temperature reaches 190°C.
- Tank T1 is uninsulated and the heating coils are designed to absorb sufficient heat to maintain the temperature at 35°C. Over 50% of the capacity of the heater is required to offset tank heat losses.
- SIL3 rated Rosemount self-checking dual radar tank gauge on tank sends tank level to PLC from primary tank gauge and has dedicated low low level alarm relay output from second tank gauge. A SIL rated relay activates an audible siren and visual alarm on high level.
- Dual temperature probes are provided. Primary hot oil control is via the tank gauging multipoint temperature probe closing the hot oil control valve at 37°C.
- A redundant temperature transmitter TT102 provides a backup high temperature alarm which is audible and visual and also closes the hot oil control valve.
- PLC closes hot oil control valve on low level (125mm above coils) based on primary tank gauge.
- Low low level relay based on second radar tank gauge (100mm above coils) output also closes hot oil control valve as backup, stops the fuel oil pumps and activates an audible siren and visual alarm.

3.3 Fires Safety Systems

- DP&E also raised a number of questions regarding the proposed modifications to the fire safety systems installed on site. The following issues were raised by DP&E:
- The Fire Safety Study (FSS) addenda imply that it is now proposed that only 3 mobile firewater/foam solution application monitors are kept on site, mainly for the protection of the road tankers loading gantry. This indicates that the foam deluge system recommended in the FSS for the loading bays has been ruled out. The volume of foam concentrate stock to be kept on site is not provided. [DP&E] recommend that the proponent seeks the opinion of NSW fire service in writing with respect to whether any foam stocks should be kept on site. Regardless of the requirements of AS 1940, it is good industry practice that semi-fixed foam delivery systems are provided for fixed roof C1 bulk liquid storage tanks, and or that sufficient foam concentrate stocks are kept onsite in order to mount a single attack on the largest full surface tank top fire, or a large spill within a tank bund. We seek a response from the proponent regarding this point.

Response

The changes identified in the FSS addenda arise as a result of methanol no longer being stored at the site.

The recommendations for the loading bays contained in the original Fire Safety Study (Clause 8.4), as approved by the NSW Fire Brigade, were to install either a deluge system or, alternatively, mobile fire water monitors. It is noted that either option is in excess of AS1940 requirements for combustible liquids. The 2009 study action plan defined the action for this item as the implementation of three mobile fire water monitors.

The mobile fire monitors will be retained as per the FSS action plans and FSS addenda. A copy of the Fire Fighting Site Layout Plan is enclosed as Attachment 2. Copies of the Fire Safety Study, Hazard Study and HAZOP reports prepared for the originally approved Project are available and can be forwarded to DP&E if required.

Park Fuels will consult with the NSW Fire Brigade regarding the proposed fire safety systems to be implemented on site and, as per existing processes, the NSW Fire Brigade will be advised of any revisions to the fire safety systems to be implemented for the modified development should it be approved. Implementation of all relevant fire safety systems will occur prior to the transfer of any fuels to the facility.

Should Park Fuels wish to commence manufacture of biodiesel, a further modification of the consent will be required to enable storage of methanol on site. Appropriate Fire Safety and Hazard Studies would be prepared as part of this modification process.

4.0 Conclusion

The above responses are considered to adequately address the issues raised by Newcastle City Council, the EPA and DP&E in their submissions. Should DP&E have any further questions regarding the proposed modification or the environmental assessment, please contact Allison Sharp or David Holmes on (02) 4950 5322.

Yours sincerely

Barbara Crossley
Director

Enc

PARK FUELS
KOORAGANG ISLAND, NSW
BULK FUEL TERMINAL

Document Purpose:	The purpose of this document is to capture minutes from the HAZOP for PARK FUELS BULK TERMINAL. It is intended to provide a record of HAZOP discussion, recommended actions, and to track closeout of action items.
HAZOP Objective:	Conduct a structured and systematic examination of the PARK FUELS BULK FUEL TERMINAL in order to identify and evaluate problems that may represent risks to personnel or equipment, or prevent efficient operation. Provide recommendations to address any issues identified.
Date HAZOP Conducted:	Monday 3 February - Wednesday 5 February, 2014
HAZOP Location:	TfA Office, Brisbane, QLD
HAZOP Committee:	Dean Shewring (Pinnacle) - Facilitator Andrea Loh (TfA) - Scribe Brett Fletcher (Park Fuels) Brendan Keegan (Park Fuels) Tam Faragher (TfA) Keith Sharp (TfA)
Systems Considered:	Ship Discharge Road Tanker Load-In Tanks Product Pumping Slops Hot Oil
Drawings Reviewed:	13163-PI00 to 13163-PI55 (Rev B)
Conclusions:	The results of this HAZOP generated 97 items for the HAZOP record, some with recommendations to be actioned by the parties as stated in the record.
Recommendations:	Recommendations as listed in the HAZOP record are considered action items which should be followed up and closed out.

HAZOP RECORD

Company:	PARK FUELS	**Facilitator:**	DEAN SHEWRING	DS
Location:	KOORAGANG ISLAND, NSW	**Scribe:**	ANDREA LOH	AL
Proposed Plant:	BULK FUEL TERMINAL	**Committee:**	BRETT FLETCHER	BF
			BRENDAN KEEGAN	BK
Date:	03/02/2014 - 05/02/2014		KEITH SHARP	KS
Owner Close By Date:	TBA		TAM FARAGHER	TF
TfA Project Number:	13163			
Revision:	A	**Drawings:**	13163-PI00 to 13163-PI55 (All Rev B)	
Date:	13/02/2014			

PARK FUELS
KOORAGANG ISLAND, NSW
BULK FUEL TERMINAL

Item #	SYSTEM	NODE	PARAMETER	GUIDEWORD	CAUSE	CONSEQUENCE	LAYERS OF PROTECTION	RECOMMENDATION	BY	WHEN	STATUS	PID
94	HOT OIL SYSTEM	T1 HEATING COILS & HE-01	Temperature	higher	Overheating heavy fuel oil in Tank T1, in particular when the tank level is low.	Potential to increase the heavy fuel oil temperature above its flash point therefore creating flammable atmosphere / hazardous zone issues.		Provide a high temperature alarm on TI102 and install position switches on XV103 to alarm when this valve is open when it should be closed. Install a redundant temperature transmitter TT102 which is audible and visual and also closes the hot oil control valve.	TFA	TBA	Open	13163-PI-09 (Rev B)
95	HOT OIL SYSTEM	T1 HEATING COILS & HE-01	Instrument-Control	higher				Install a local temperature gauge on the outlet of the hot oil coils from tank T-1 for performance monitoring.	TFA	TBA	Open	13163-PI-09 (Rev B)
96	HOT OIL SYSTEM	T1 HEATING COILS & HE-01	Other	higher			Hot oil control valve provides position feedback & is fail closed. The hot oil heater is a manual start with a hot oil set point of 180°C and a heater trip shut down if the oil temperature reaches 190°C. Tank T1 is uninsulated and the heating coils are designed to absorb sufficient heat to maintain the temperature at 35°C. Over 50% of the capacity of the heater is required to offset tank heat losses.	Tank draw off nozzle to be located above heating coils to physically prevent the coils being exposed.	TFA	TBA	Open	13163-PI-09 (Rev B)

FIRE FIGHTING EQUIPMENT LEGEND

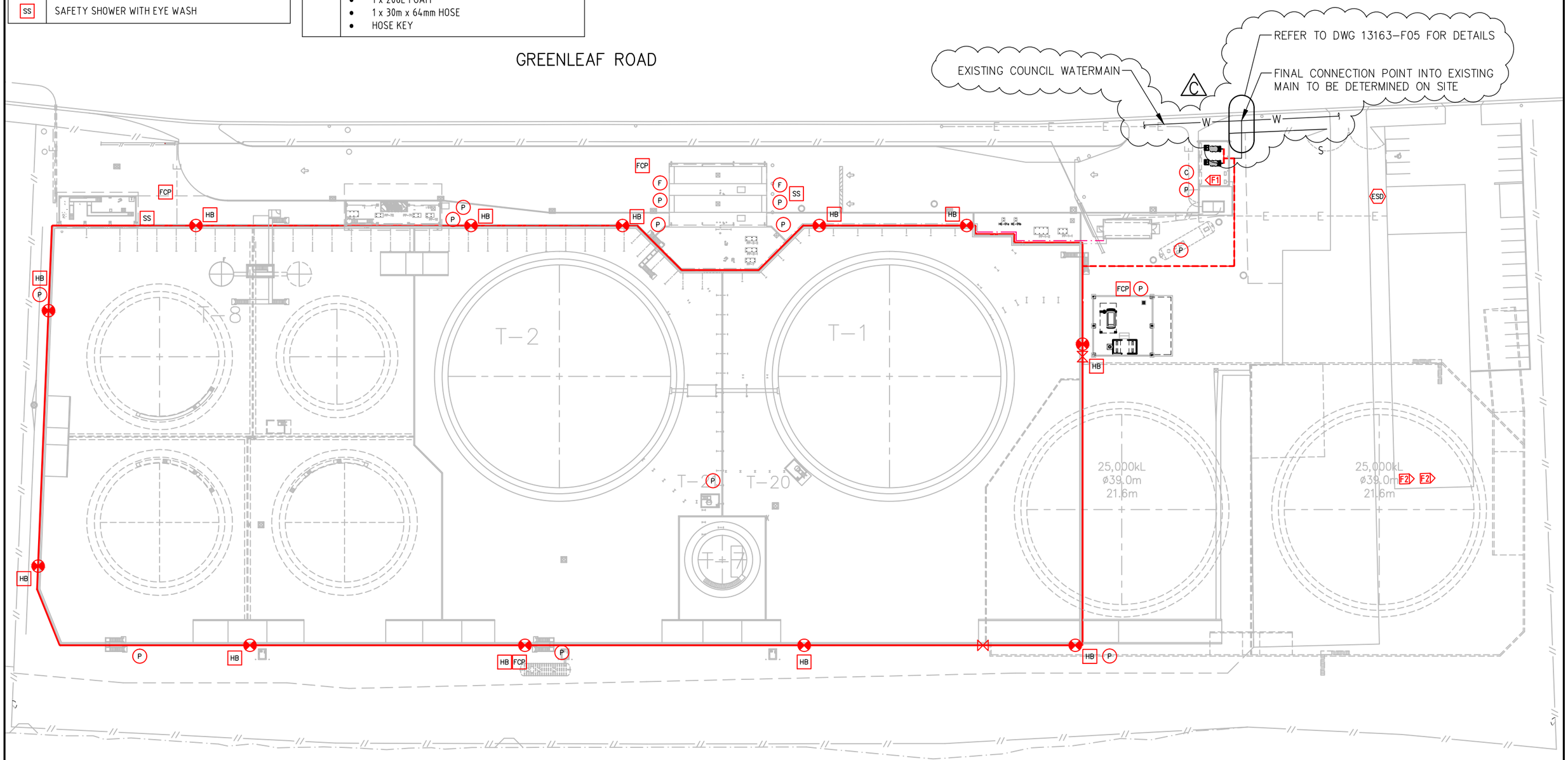
⊗	FIRE HYDRANT
P	9KG PORTABLE POWDER FIRE EXTINGUISHER WITH MIN. RATING 2A 60B (E)
C	5KG PORTABLE CO2 FIRE EXTINGUISHER WITH MIN. RATING 10B
F	PORTABLE FOAM FIRE EXTINGUISHER WITH MIN. RATING 2A 20B
FCP	FIRE CALL POINT
SS	SAFETY SHOWER WITH EYE WASH

FIRE FIGHTING EQUIPMENT LEGEND CONT.

F1	FIRE TRAILER C/W • MOUNTED FIRE WATER MONITOR • 3 x 208L FOAM • 1 x 30m x 64mm HOSE • HOSE KEY • 2 x 9kg PORTABLE POWDER FIRE EXTINGUISHER WITH MIN. RATING 2A 60B (E)
F2	FIRE TRAILER C/W • MOUNTED FIRE WATER MONITOR • 1 x 208L FOAM • 1 x 30m x 64mm HOSE • HOSE KEY

FIRE FIGHTING EQUIPMENT LEGEND CONT.

HB	HOSE BOX C/W • 1 x 30m x 64mm HOSE • 1 x FOG NOZZLE • 1 x HOSE KEY
⋈	ISOLATING GATE VALVE



NOTE:
1. MAXIMUM LENGTH OF PIPING BETWEEN HYDRANTS MUST BE LESS THAN 60m

Scale Bar

8 0 10 20 30 40m

Metres

Figured dimensions to be taken in preference to scale readings.

revision	date	by	description	approved
D	20.05.14	JRM	ISSUED FOR CONSTRUCTION	✓
C	08.04.14	AWT	BRANCH TO EXSITING MAIN ADDED	KS
B	27.02.14	JWH	HYDRANT LAYOUT REVISED	KS
A	24.02.14	JWH	ISSUED FOR APPROVAL	TF

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project
PARK FUELS
FUEL TERMINAL
KOORAGANG ISLAND
NEWCASTLE
NSW

title
EMERGENCY FIRE SERVICES
SITE LAYOUT

drawn	approved	date created	A1 scale	A3 scale
JWH	✓	08.11.13	1:400	1:800

status	drawing no.	rev.
CONSTRUCTION	13163–F01	D