



LICENCE NUMBER: L8700/2012/1
LICENCE FILE NUMBER: 2012/007151
APPLICATION DATE: 11 OCTOBER 2012
EXPIRY DATE: 24 JANUARY 2018

PREMISES DETAILS

LICENSEE HOLDER

Fortescue Metals Group Limited
Level 2, 87 Adelaide Terrace
EAST PERTH WA 6892
ACN: 002 594 872

PREMISES

Kanyirri Fuel Facility
Chainage 6.5, Railway Special Rail Licence L1SA
Within the area bounded by 663,881E, 7,740,665N; 663,739E, 7,740,603N; 663,421E,
7,741,250N; 663633E, 7741169N (MGA Zone 50).
BOODARIE WA 6172

PRESCRIBED PREMISES CATEGORY

Table 1: Prescribed premises category

Category number*	Category Description*	Category Production or Design Capacity*	Premises Production or Design Capacity [#]	Premises Fee Component**
73	Bulk storage of chemicals	1,000 cubic metres in aggregate	6,100 cubic metres	No applicable

* From Schedule 1 of the Environmental Protection Regulations 1987

[#] From application

** From Schedule 4 of the Environmental Protection Regulations 1987

This Environmental Assessment Report (EAR) has been drafted for the purposes of detailing information on the management and mitigation of emissions and discharges from the prescribed premises. The objective of the EAR is to provide a risk assessment of emissions and discharges, and information on the management of other activities occurring onsite which are not related to the control of emissions and discharges from the prescribed premises activity. This does not restrict the Department of Environment and Conservation (DEC) to assessing only those emissions and discharges generated from the activities that cause the premises to become prescribed premises.

Basis of Assessment

The Kanyirri Fuel Facility has been assessed as a "prescribed premises" under category number 73, within Schedule 1 of the Environmental Protection Regulations 1987

Category 73 – Bulk storage of chemicals, etc' premises on which acids, alkalis or chemicals that –
(a) contain at least one carbon to carbon bond; and
(b) are liquid at standard temperature and pressure,
are stored



Fortescue Metals Group Limited (FMG) operates a permanent bulk diesel storage and locomotive provisioning facility along the FMG mainline railway to meet the increased diesel supply requirements of FMG's Christmas Creek, Cloudbreak and Solomon mines. Kanyirri Fuel Facility has a diesel storage capacity of 6,100m³.

FMG also operates a wastewater treatment plant (WWTP) within the prescribed premises, with a treatment capacity of 3.6m³ per day. The treated wastewater (TWW) is disposed of via irrigation to a dedicated spray field.

The construction of this infrastructure was approved under works approval W5133/2012/1, issued by DEC 21 June 2012. Compliance documentation for the construction of the works approved under W5133/2012/1 was submitted on 17 January 2013

1.0 BACKGROUND

1.1 GENERAL COMPANY DESCRIPTION

FMG commenced development of the Pilbara Iron Ore and Infrastructure Project in 2005, which involves a series of iron ore mines in the Pilbara region of Western Australia, along with rail and port infrastructure for export of iron ore through Port Hedland. A 260km north-south railway links the east-west railway to the Herb Elliot Port, located at Anderson Point, Port Hedland.

The east-west railway links the Cloudbreak and Christmas Creek mine sites, to the main north-south rail line just north of the Chichester Ranges. Ore from the mines is transported by rail to the port materials handling facility where it is loaded onto ships via a conveyor materials handling system.

FMG is in the process of developing and implementing an Environmental Management Systems (EMS) that will reflect ISO 14001:2004.

1.2 LOCATION OF PREMISES

The Kanyirri Fuel Facility is located 6.5km south of the Herb Elliot Port Facility between Chainage 6.2 and 7.4 of the North-South Railway. The Kanyirri Fuel Facility is located 12km south of Port Hedland, 6km south-south-west of Wedgefield and 4km south-west of South Hedland.

Figure 1 depicts the regional location of the Kanyirri Fuel Facility.

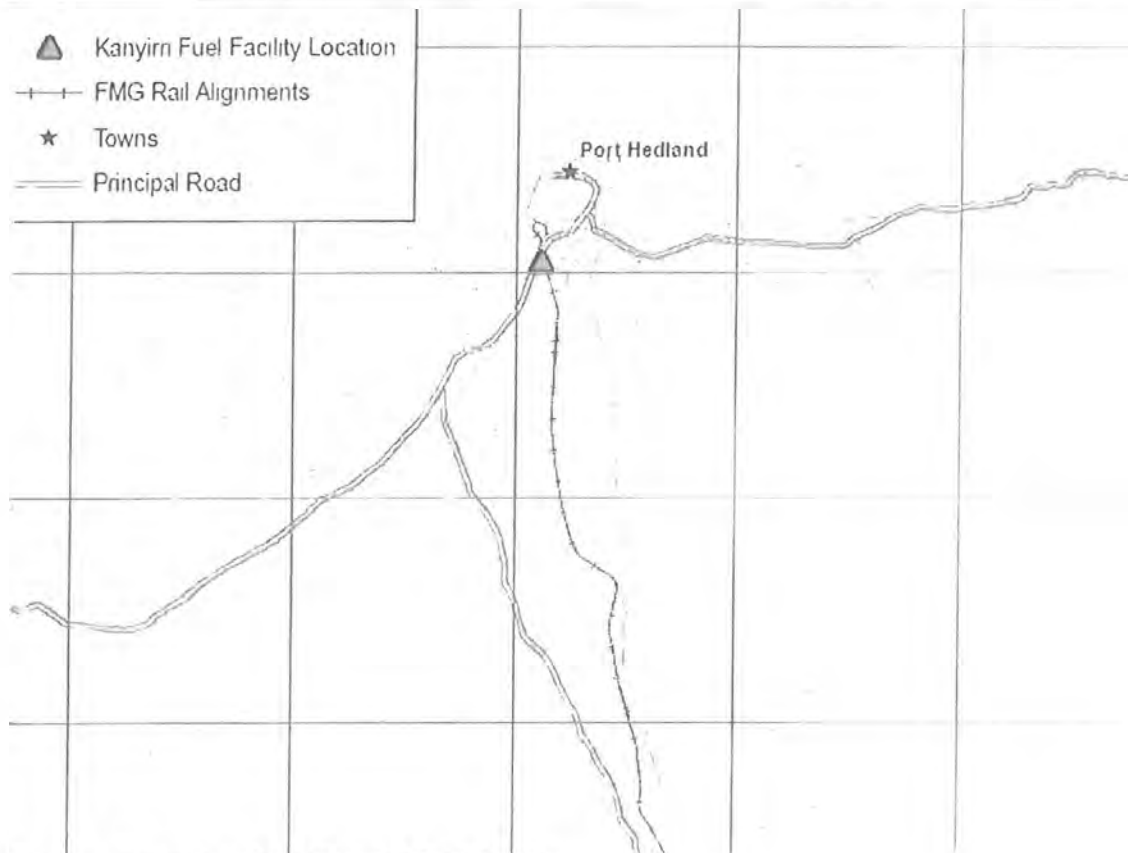


Figure 1. Location of the Kanyirri Fuel Facility

Climate

The Pilbara region around Port Hedland is classified as arid-tropical, becoming more arid inland. Peak rainfall occurs in the summer months between January and March with a secondary peak in May and June. Climatic conditions in the Pilbara are influenced by tropical cyclone systems predominantly between January and March. Average annual rainfall for the Pilbara ranges from 180mm to over 400mm, with data indicating an annual average of 310mm at Port Hedland.

Average maximum summer temperatures are generally between 35°C and 40°C and winter maximum temperatures are generally between 22°C and 30°C. In this climate, annual evaporation rates greatly exceed the mean annual rainfall.

Topography, geology and soils

The topography of the Port Hedland area is predominantly influenced by the Abydos Plain, which rises from the coastal lowlands to around 300m to 400m above the mean sea level adjacent to the Chichester Range, located approximately 200km south-west of Port Hedland. The Port Hedland coastal area varies from open harbour to tidal creeks, intertidal mudflats, bare coastal mudflats and sandy lowlands.

The Uaroo land system is the only physiographic land system represented in the project area and consists of broad sandy plains supporting shrubby hard and soft Spinifex grasslands.

The Port Hedland area is situated within the Pilbara Craton, described as a metamorphosed basement of granitoid rocks and gneiss. The soils in the area are clayey sands/sandy clays, known locally as red beds.



Hydrology and groundwater

The Port Hedland area catchment includes several creeks discharging to the coast, between the Turner River Catchment and the De Grey River Catchment. Minor tributaries to South West Creek are located on the eastern side of the existing rail alignment, within 500m of the Kanyirri Fuel Facility.

Depth to groundwater at the Kanyirri Fuel Facility site is approximately 5m below ground level. Groundwater quality in the area varies, with measure salinities ranging from 1,400mg/L to 7,100mg/L.

Vegetation

The site of the Kanyirri Fuel Facility lies within the Fortescue Botanical District of the Eremaean Botanical Province, with vegetation characterised by short bunch grassland, savannah/grass plain/hummock grasslands, grass steppe and soft Spinifex.

No flora of significance under the *Environmental Protection and Biodiversity Conservation Act 1999* is considered likely to occur, or has been recorded within the local area.

No species protected under state legislation have been identified within the Kanyirri Fuel Facility footprint, however, two species have been identified as occurring within 5km. *Goodenia nuda* (Priority 4) has been identified from a number of locations within FMG's rail corridor, including one location approximately 1km north of the Kanyirri Fuel Facility footprint. *Tephrosia rosea var. venulosa* (Priority 1) has recently been identified at one location, also approximately 1km north of the Kanyirri Fuel Facility footprint.

Fauna

Conservation significant species considered likely to be present nearby include the Greater Bilby, Crest-tailed Mulgara, Northern Quoll and Pilbara Leaf-nosed Bat.

Recent surveys for conservation significant fauna undertaken within 1km of the Kanyirri Fuel Facility footprint identified no signs of these species, though noted a high likelihood that the Greater Bilby and Crest-tailed Mulgara would be present in the local area.

Aboriginal heritage

Surveys and investigations have identified several sites of Aboriginal Heritage value and abundant rock engravings throughout the Abydos Plan, none of which were purposely disturbed during the construction of the Kanyirri Fuel Facility.

Ethnographic and archaeological surveys, assessment and salvage have been conducted along the FMG railway in accordance with approvals granted under Section 18 of the *Aboriginal Heritage Act 1972*.

1.3 PROCESS DESCRIPTION

The Kanyirri Fuel Facility has a fuel storage capacity of 6.1ML, consisting of two 3ML and one 110KL fuel storage tanks. The tanks are filled by triple road trains from Port Hedland, with the fuel supplying diesel for FMG's mine operations by rail. The layout of the Kanyirri Fuel Facility is shown in Figure 2.

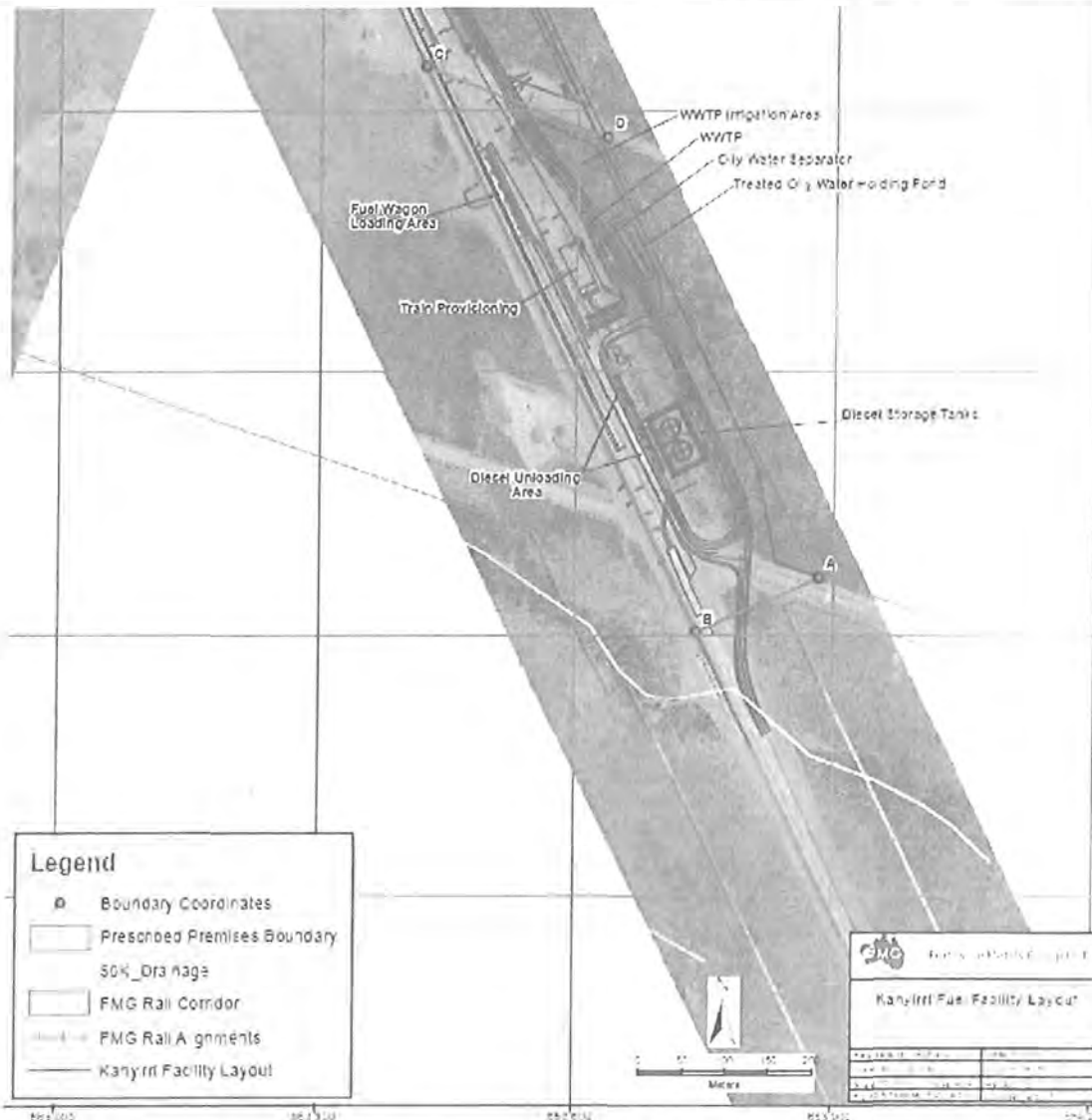


Figure 2. Layout of the Kanyirri Fuel Facility

Diesel storage

Two 3ML capacity diesel storage tanks are located within the Kanyirri Fuel Facility. The tanks are fixed roof atmospheric vertical aboveground storage tanks suitable for the storage of diesel and have been constructed to meet the associated wind forces prevalent in a cyclonic region. They have been constructed in accordance with Australian Standard 1940-2004: The storage and handling of flammable and combustible liquids (AS1940-2004) and API Standard 650-11: Welded Tanks for Oil Storage.

The tanks are located within an impervious bund capable of retaining 100% of the largest tank volume, together with retention of firewater for a 20 minute duration and rainwater. The bund is isolated from the main drainage system with a lockable gate valve as per the requirements of AS 1940-2004.

The bunded area is lined with a high density polyethylene (HDPE) liner with a minimum thickness of 1.5mm, and a coefficient of permeability of less than 2×10^{-10} metres/second. The bund wall is constructed of reinforced concrete. The liner material exposed to sunlight is stabilised against ultraviolet degradation and is highly resistant to deterioration by hydrocarbons. A layer of nonwoven geotextile covers the liner, followed by a cover material



incorporating a sand/gravel mixture. The bund floor has been graded to a minimum slope of 1:100 towards the drainage catch basin to ensure the area drains freely.

The tank bund drains to at least one catch basin within the bund and then flows through a pipe discharging to the oily water drainage system outside of the bund wall. The catch basin incorporates a removable grate to allow inspection and removal of any accumulated sediment in the catch basin.

The tank foundations are equipped with a bottom leak detection facility consisting of a release prevention barrier under the bottom of the tank to prevent the escape of contaminated material into the soil. An overflow/high level alarm has been installed on the storage tanks. If the alarm is activated the fuel pumps automatically shut down and the tank valve will be closed.

Double wall piping has been installed from the storage tanks to the train wagon loading facility, from where the diesel is loaded on trains for transport to the mines.

Truck unloading

Up to 3.1ML per day of diesel is delivered to the Kanyirri Fuel Facility via triple road train trucks. The unloading system consists of two stations to allow for two road trains to unload simultaneously. The unloading area includes a reinforced concrete pad under the outlet points on the tanker. The truck unloading area is surrounded by kerbs on each side and berms at the truck entry and exit points in order to contain oily water. Oily water is directed to catch basins on each concrete slab and then piped to a main containment basin.

Train wagon loading

The fuel wagon loading facility is capable of loading six 95kL fuel wagons of a fuel train simultaneously, using six separate loading arms, each with a maximum loading rate of 2,460L/minute. The fuel is pumped from the diesel storage tanks using three centrifugal, self-priming pumps. Spillages are contained by a reinforced concrete apron which falls back to a catch pit, which runs the length of the loading area and has a capacity of 95kL.

Train refuelling and provisioning

The Kanyirri Fuel Facility also incorporates facilities for direct locomotive refuelling and provisioning. Locomotives are refuelled with diesel from a 110kL capacity, self bunded storage tank. Four arms operate simultaneously with a maximum flow rate of up to 800L/minute for each arm.

The Kanyirri Fuel Facility stores up to 3,000L of coolant and 3,000L of engine oil (lubricant) on site, which accounts for approximately two weeks supply. Storage is in accordance with Australian Standard 3833 for The storage and handling of mixed classes of dangerous goods.

Oily water containment and treatment

Oily water collected from the Kanyirri Fuel Facility is transferred to primary and secondary treatment prior to release to the holding pond. Oily water from the bunded tank area, truck unloading facility, fuel wagon loading facility and pump areas is directed to a containment basin where sediment settles before entering the oily water treatment system. Oily water is gravity fed to a SPEL Stormceptor Class 2 stormwater interceptor for primary and secondary treatment.

Water flows into the primary chamber of the Stormceptor where gravity oil-water separation and some sedimentation takes place. Water then flows into the secondary chamber, where



further separation is undertaken using a gravity enhancing coalescer unit which reduces the hydrocarbon concentration in the water to less than 5mg/L.

Following treatment within the Stormceptor, water is stored within the treated oily water holding pond prior to any reuse application such as dust suppression, evaporation or discharge. The holding pond has a capacity of 1250m³ and is lined with a 1.5mm thick, HDPE liner.

The oily water system is designed to operate normally up to a 20 year annual recurrence interval (ARI) rainfall event. In the case of a 50 year ARI rainfall event, water collected from within the facility will bypass the Stormceptor to the oily water holding pond and any overflow from this pond will be directed directly to the environment. Prior to high rainfall events the oily water containment area is emptied and oily water treated to minimise the risk of hydrocarbon contaminated water from entering the environment. The treated oily water pond would also be emptied to allow for maximum capacity to hold water which has bypassed the treatment system.

Wastewater treatment plant

A WWTP with a design capacity of 3.6m³/day has also been constructed at the Kanyirri Fuel Facility. The WWTP treats waste from sanitary and crib facilities, as well as up to 100L/day of wastewater from locomotives. Treated wastewater (TWW) is disposed of via irrigation over a 0.1 hectare (ha) spray field.

The WWTP is a pre-engineered package plant, and treats water to an effluent quality as described in Table 2. Table 3 illustrates that the recommendations of Water Quality Protection Note 22 – "Irrigation with nutrient-rich wastewater" with regards to nutrient loading rates are met.

Table 2: Expected water quality outputs.

Parameter	Expected performance standard	Australian Guidelines*	% of guideline
Biological Oxygen Demand	<20mg/L	20-30mg/L	66.6%
Total Suspended Solids (max)	<30mg/L	25-40mg/L	75%
Total Nitrogen	<30mg/L	20-50mg/L	60%
Total Phosphorus	<7.5mg/L	6-12mg/L	62.5%
Faecal Coliforms (org/100mL)	<1000 cfu/100mL	10 ⁵ -10 ⁶ org/100mL	<1%

*Australian Guidelines for Sewerage Systems – Effluent Management

The above guidelines refer to evapo-transpiration (irrigation) of wastewater which has undergone secondary treatment (Class C)

Table 3: Expected nutrient loadings for the 0.1ha irrigation field.

Parameter	Nitrogen	Phosphorus
Maximum Throughput	3.6m ³ /day	
Irrigation Area	0.1ha	
Effluent Quality	<30mg/L	<7.5mg/L
Nutrient Loading	394kg/ha/year	98.5kg/ha/year
Guideline*	480kg/ha/year	120kg/ha/year

*Water Quality Protection Note 22 – Irrigation with nutrient rich wastewater (Department of Water 2008).

These guidelines refer to Risk Category D



1.4 REGULATORY CONTEXT

1.4.1 Part IV *Environmental Protection Act 1986*, Environmental Impact Assessment

FMG received approval to undertake the rail duplication project under section 45C of the *Environmental Protection Act 1986* (the Act) and is subject to Ministerial Statement 690. A disturbance footprint for the development of the Kanyirri Fuel Facility was included in the section 45C application which was approved by the Environmental Protection Authority (EPA) in December 2011.

1.4.2 Part V *Environmental Protection Act 1986*, Environmental Management

The Kanyirri Fuel Facility has been assessed as a category 73 "prescribed premises" under Part V of the *Environmental Protection Act 1986* and its associated regulations. State environmental policies and legislation which may apply to this proposal include

- *Environmental Protection Act 1986*;
- Environmental Protection Regulations 1987;
- Environmental Protection (Unauthorised Discharges) Regulations 2004;
- Environmental Protection (Noise) Regulations 1997;
- Environmental Protection (Controlled Waste) Regulations 2004;
- Environmental Protection (Clearing of Native Vegetation) Regulations 2004; and
- *Contaminated Sites Act 2003*.

1.4.3 Other Decision-making Authorities' Legislation which applies

The storage of chemicals and dangerous goods on site is covered by the following legislation:

- *Dangerous Goods Safety Act 2004*
- Dangerous Goods Safety (Explosives) Regulations 2007;
- Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007;
- *Occupational Safety and Health Act 1984*; and
- Occupational Safety and Health Regulations 1996.

1.4.4 Local Government Authority

The Kanyirri Fuel Facility is located in the Town of Port Hedland.

2.0 STAKEHOLDER AND COMMUNITY CONSULTATION

SUBMISSIONS RECEIVED DURING 21 DAY PUBLIC COMMENT PERIOD

The application for licence details for this facility were advertised in The West Australian newspaper on 12 November 2012 as a means of advising stakeholders and to seek public comments. No submissions were received.

3.0 EMISSIONS AND DISCHARGES RISK ASSESSMENT

The DEC considers that conditions should focus on regulating emissions and discharges of significance. Where appropriate, emissions and discharges which are not significant should be managed and regulated by other legislative tools or management mechanisms.

The following section assesses the environmental risk of potential emissions from the Kanyirri Fuel Facility. In order to determine the site's appropriate environmental regulation, an emissions and discharges risk assessment was conducted of the Kanyirri Fuel Facility using the environmental risk matrix outlined in Appendix A. The results of this are summarised in Table 4.



ENVIRONMENTAL ASSESSMENT REPORT

Table 4: Risk assessment and regulatory response summary table

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DEC Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Air emissions (point source)	<p>Operation – 1 There are no significant air emissions during operation of the Kanyirri Fuel Facility</p>	Low level of community interest or concern	E – No regulation, other management mechanisms	LIC – no conditions	N/A	General provisions of the <i>Environmental Protection Act 1986</i>
Dust emissions	<p>Operation – 1 Minimal dust is generated during operation of the Kanyirri Fuel Facility as all trafficable areas with the exception of one access track, are sealed</p> <p>The following measures are implemented to minimise the impacts of dust emissions on sensitive receptors during operation</p> <ul style="list-style-type: none"> Sealing of all roads with the exception of one access track, and Watering of dust prone areas using water carts as required 	<p>Low level of community interest or concern</p> <p>The operation of the facility is unlikely to contribute to the existing dust issues associated with the operation of the ports in Port Hedland</p>	E – No regulation, other management mechanisms	LIC – standard dust condition	N/A	<p>General provisions of the <i>Environmental Protection Act 1986</i></p> <p>Rail Construction Management Plan (R-PL-EN-0015)</p> <p>Construction Dust Management Plan (45-PL-EN-0012)</p>
Odour emissions	<p>Operation – 1 Minimal odour emissions may occur during operation of the fuel facility and WWTP. The WWTP is fully contained and includes a ventilation system which treats air prior to being released to the atmosphere</p> <p>Odour emissions from the fuel unloading and loading are localised and not likely to impact on the closest sensitive receptors</p>	Low level of community interest or concern	E – No regulation, other management mechanisms	LIC – no conditions	N/A	General provisions of the <i>Environmental Protection Act 1986</i>
Noise emissions	<p>Operation – 1 Noise emissions from the operation of the Kanyirri Fuel Facility are negligible</p> <p>Noise mitigation measures implemented during operation, include</p> <ul style="list-style-type: none"> Machinery equipment and vehicles comply with the Worksafe Western Australian 	Low level of community interest or concern	E – No regulation, other management mechanisms	LIC – no conditions	N/A	<p>General provisions of the <i>Environmental Protection Act 1986</i></p> <p>Environmental Protection (Noise) Regulations 1997</p> <p>Construction Environmental Noise</p>



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Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DEC Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	<p>requirements for noise abatement;</p> <ul style="list-style-type: none"> • Engine exhaust and silencing equipment on machinery, equipment and vehicles are inspected and regularly maintained; and • Noise is managed through application of the Operation Environmental Noise Management Plan. <p>The proponent has also committed to complying with the Environmental Protection (Noise) Regulations 1997</p>					Management Plan.
Light emissions	<p>Operation – 1 The Kanyirri Fuel Facility operates on a 24 hour basis. Lighting is required to ensure safe operations at night and has been installed in accordance with Australian Standards and the International Technical Guide for Lighting Exterior Work.</p> <p>Lighting is High Pressure Sodium lamps which provide a yellow light and are directionally positioned to provide maximum lighting for work areas whilst minimising light overspill on the surrounding environment. Potential impacts to the receiving environment are considered negligible.</p>	Low level of community interest or concern.	E - No regulation, other management mechanisms.	LIC – no conditions.	N/A.	General provisions of the <i>Environmental Protection Act 1986</i> .
Discharges to water	<p>Operation – 1 There are no point source discharges to water proposed during the operation of the facility.</p> <p>Minor tributaries to South West Creek are located on the eastern side of the existing rail alignment, within 500m of the Kanyirri Fuel Facility.</p> <p>Groundwater is approximately 5m below ground level and has measured salinities ranging from 1,400mg/L to 7,100mg/L.</p> <p>FMG has committed to complying with relevant Australian Standards to ensure contamination of water resources does not occur and undertakes quarterly monitoring of</p>	Low level of community interest or concern.	D - EIPs, other management mechanisms/ licence conditions (monitoring/ reporting)/other regulatory tools.	LIC – condition for monitoring of groundwater and treated oily water prior to discharge.	N/A.	<p>General provisions of the <i>Environmental Protection Act 1986</i>.</p> <p>Environmental Protection (Unauthorised Discharges) Regulations 2004.</p>



ENVIRONMENTAL ASSESSMENT REPORT

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DEC Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	<p>groundwater from six monitoring bores located around the facility to determine if groundwater contamination is occurring</p> <p>Conditions have been included on the operating licence requiring monitoring of WWTP outputs and treated oily water to ensure contamination of water resources does not occur</p>					
Discharges to land	<p>Operation – 1 FUEL FACILITY – Emission Significance 1</p> <p>During operation of the facility, there is the risk of hydrocarbon contaminated stormwater discharging to land and impacting surface water and groundwater</p> <p>FGM has committed to complying with AS1940 2004 and implements the following management measures to manage the risk associated with the operation of the fuel facility</p> <ul style="list-style-type: none"> Water generated from facilities potentially containing significant concentrations of hydrocarbons is treated with an oily water treatment system designed to achieve <5ppm total hydrocarbon content in discharged water Sediment separation systems are emptied when sediment accumulates to the design level, and sediment is treated at an appropriately licensed and managed hydrocarbon bioremediation facility and Prior to high rainfall events oily water containment areas are emptied and oily water treated to minimise the risk of water containing high concentrations of hydrocarbons being discharged to the environment. The treated oily water holding ponds are also emptied prior to high rainfall events, to allow maximum holding capacity of water which has bypassed the treatment system <p>During fuel wagon loading the risks of fuel spillage is reduced through the use of a vehicle static earthing system an overflow protection system, reduced fuel pumping rate for the first 750L and last 750L of each load</p>	Low level of community interest or concern	D - EIPs other management mechanisms/ licence conditions (monitoring/ reporting)/other regulatory tools	<p>LIC – conditions requiring monitoring of treated oily water prior to discharge Discharge quality limit and monitoring frequency will also be set</p> <p>Conditions requiring the monitoring of TWW from the WWTP have not been applied to the licence due to the small size of the plant and volume of TWW being discharged</p>	N/A	<p>General provisions of the <i>Environmental Protection Act 1986</i></p> <p>Environmental Protection (Unauthorised Discharges) Regulations 2004</p> <p>Chemical and Hydrocarbon Management Plan (45-PR-EN-0015)</p> <p>Australian Guidelines for Sewerage Systems – Effluent Management</p> <p>Water Quality Protection Note 22 Irrigation with Nutrient Rich Wastewater</p>



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Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DEC Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	<p>and emergency shutdown capability. Monitoring and inspection of the hydrocarbon facilities is undertaken as per the Chemical and Hydrocarbon Management Plan and includes weekly visual inspections, weekly spill kit inventory inspections, quarterly inspections of oily water separators, bunding inspections during and following rainfall, internal and external tank inspections and annual inspections of tank vents and fittings. Diesel piping is inspected on a weekly basis. Groundwater monitoring is also carried out on a quarterly basis</p> <p><u>WWTP – Emission Significance 3</u> During operation of the WWTP, TWW is disposed of via irrigation to a dedicated spray field. Effluent discharge quality is consistent with "Australian Guidelines for Sewerage Systems – Effluent Management" for secondary treated wastewater:</p> <p>BOD – 3 (66% of guidelines) TSS – 3 (75% of guidelines) TN – 3 (60% of guidelines) TP – 3 (62.5% of guidelines) E.Coli – 1 (<1% of guidelines)</p> <p>Nitrogen and phosphorus meet the Water Quality Protection Note 22 – "Irrigation with nutrient-rich wastewater". N – 349kg/ha/year P – 98.5kg/ha/year</p> <p>The irrigation area is fenced and signage has been posted advising that the area is irrigated with recycled water.</p> <p>Monitoring of treated oily water and TWW is undertaken prior to irrigation or discharge to ensure that quality is sufficient and meets relevant guidelines.</p>					
Solid / liquid wastes	<p>Operation – 1 Approximately 250kg per day of waste is generated from the operation of the facility, which includes waste from locomotives.</p>	Low level of community interest or concern.	E - No regulation, other management mechanisms.	LIC – no conditions.	N/A.	Environmental Protection (Controlled Waste) Regulations 2004.



ENVIRONMENTAL ASSESSMENT REPORT

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DEC Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	<p>This waste is removed from the facility by a waste contractor and disposed of at an appropriately licensed site as required</p> <p>Controlled wastes including separated oil and waste oily water, are segregated and stored, transported and disposed of in accordance with the Environmental Protection (Controlled Waste) Regulations 2004.</p> <p>The Stormceptor is inspected every 6-12 months to determine the depths of retained pollutants and silt. Bulk desludging of the Stormceptor is undertaken as required and waste disposed of offsite in accordance with the Environmental Protection (Controlled Waste) Regulations 2004.</p>					
Hydrocarbon/chemical storage	<p>Operation – 1 FMG operates the facility in accordance with Australian Standard 1940 2004 – The storage and handling of flammable and combustible liquids and API Standard 650-11 Welded Tanks for Oil Storage. The following design elements have been incorporated to ensure compliance with relevant Australian Standards</p> <ul style="list-style-type: none"> • Secondary containment (bunding) of the storage facility and refuelling pumps are compliant with the Australian Standards and Western Australian legislative requirements, • An overfill protection system has been implemented on storage tanks • Storage utilises HDPE lined bunding capable of storing 110% of the volume of the largest vessel, or 10% of the total volume, • Bund walls are constructed of reinforced concrete; and • Drainage valves are kept closed at all times <p>FMG operates the facility in accordance with FMGs Chemical and Hydrocarbon Management Plan, the objectives of which is to</p> <ul style="list-style-type: none"> • Ensure transport and storage of hydrocarbons and 	Low level of community interest or concern	D - EIPs, other management mechanisms/ licence conditions (monitoring/ reporting)/other regulatory tools	LIC – standard conditions relating to the storage and management of hydrocarbons included on the licence. The licence also includes monitoring conditions specifying the maximum allowable concentration of total petroleum hydrocarbons (TPH) to be discharged to the environment	N/A	<p>Chemical and Hydrocarbon Management Plan (45-PR-EN-0015)</p> <p>AS1940 2004 – the Storage and Handling of Flammable and Combustible Liquids</p> <p>API Standard 650-11 Welded Tanks for Oil Storage</p>



ENVIRONMENTAL ASSESSMENT REPORT

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DEC Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	chemicals complies with relevant standards; <ul style="list-style-type: none">• Ensure a rapid response to spills to minimise environmental impact; and• Ensure that disposal of contaminated material is in accordance with relevant standards and regulations.					
Native Vegetation	There was no clearing required for the Kanyirri Fuel Facility.	N/A.	N/A.	N/A.	N/A.	General provisions of the <i>Environmental Protection Act 1986</i> . Environmental Protection (Clearing of Native Vegetation) Regulations 2004.
Contaminated Sites	The site has not been identified as a contaminated site.	N/A.	N/A.	N/A.	N/A.	<i>Contaminated Sites Act 2003</i> .



4.0 GENERAL SUMMARY AND COMMENTS

FMG operates the Kanyirri Fuel Facility, consisting of two 3ML and one 110KL fuel storage tanks. The emissions and discharges associated with this proposal have been assessed in Table 4 and deemed to be of low significance. FMG has committed to implementing best practice management of the facility to reduce the risk of environmental contamination from hydrocarbons stored onsite.

A WWTP is also operated onsite. Treated effluent from the system is irrigated over a designated spray field. The capacity of this system does not trigger a category under the Environmental Protection Regulations 1987, however, DEC has assessed the facility as it is within the prescribed premises. Given the size of the WWTP, licence conditions relating to the operation of the facility are not considered necessary.

As shown in Table 4, emissions and discharges related to the operation of the Kanyirri Fuel Facility are a low risk to the environment if managed as per FMG commitments and should not result in significant impacts to the environment. The facility is also subject to the general provisions of the *Environmental Protection Act 1986* relating to the causing and reporting of pollution and subject to inspections by DEC officers.

OFFICER PREPARING REPORT

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November 2012

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Suzy Roworth

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November 2012



APPENDIX A: EMISSIONS AND DISCHARGES RISK ASSESSMENT MATRIX

Table 5: Measures of Significance of Emissions

Emissions as a percentage of the relevant emission or ambient standard		Worst Case Operating Conditions (95 th Percentile)			
		>100%	50 – 100%	20 – 50%	<20%*
Normal Operating Conditions (50 th)	>100%	5	N/A	N/A	N/A
	50 – 100%	4	3	N/A	N/A
	20 – 50%	4	3	2	N/A
	<20%*	3	3	2	1

*For reliable technology, this figure could increase to 30%

Table 6: Socio-Political Context of Each Regulated Emission

		Relative proximity of the interested party with regards to the emission				
		Immediately Adjacent	Adjacent	Nearby	Distant	Isolated
Level of Community Interest or Concern	5	High	High	Medium High	Medium	Low
	4	High	High	Medium High	Medium	Low
	3	Medium High	Medium High	Medium	Low	No
	2	Low	Low	Low	Low	No
	1	No	No	No	No	No

Note: These examples are not exclusive and professional judgement is needed to evaluate each specific case

*This is determined by DEC using the DEC "Officer's Guide to Emissions and Discharges Risk Assessment" May 2006

Table 7: Emissions Risk Reduction Matrix

		Significance of Emissions				
		5	4	3	2	1
Socio-Political Context	High	A	A	B	C	D
	Medium High	A	A	B	C	D
	Medium	A	B	B	D	E
	Low	A	B	C	D	E
	No	B	C	D	E	E

PRIORITY MATRIX ACTION DESCRIPTORS

A = Do not allow (fix)

B = licence condition (setting limits + EMPs - short timeframes)(setting targets optional)

C = licence condition (setting targets + EMPs - longer timeframes)

D= EIPs, other management mechanisms/licence conditions (monitoring/reporting)/other regulatory tools

E = No regulation, other management mechanisms