



Application for Licence

Division 3, Part V *Environmental Protection Act 1986*

Licence Number	L8976/2016/1
Applicant	Chevron Australia Pty Ltd
ACN	086 197 757
File Number	DER2016/000906
Premises	Wheatstone LNG Plant Waste Storage Facility Part of Lot 567 on Plan 71345 within coordinates: E292471.142, N7598413.793; E292586.005, N7598383.017; E292445.475, N7598317.997 and E292560.338, N7598287.221 TALANDJI WA 6710
Date of Report	6 December 2018
Status of Report	Final

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1. Definitions of terms and acronyms

In this Decision Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
AHD	Australian Height Datum
ANSIA	Ashburton North Strategic Industrial Area
ANZECC & ARMCANZ (2000)	Australian and New Zealand Guidelines for Fresh and Marine Water Quality
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
Applicant	Chevron Australia Pty Ltd
AS 4156.6 – 2000	Australian Standard AS 4156.6 – 2000: Determination of Dust/moisture Relationship for Coal.
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CS Act	<i>Contaminated Sites Act 2003 (WA)</i>
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DoH (2014)	Contaminated Sites Ground and Surface Water Chemical Screening Guidelines
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
GPT	Gross Pollutant Trap

Issued Licence	The Licence issued under Part V, Division 3 of the EP Act following the finalisation of this assessment
Landfill Definitions	<i>Landfill Waste Classification and Waste Definitions 1996 (as amended 2018)</i> .
Licence Holder	Bechtel (Western Australia) Pty Ltd
LNG	liquefied natural gas
m ³	cubic metres
mbgl	metre below ground level
Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
mtpa	million tonnes per annum
NATA	National Association of Testing Authorities, Australia
NEPM	National Environmental Protection Measure
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Primary Activities	as defined in Schedule 2 of the Revised Licence
Revised Licence	the amended Licence issued under Part V, Division 3 of the EP Act following the finalisation of this Review.
Risk Event	As described in <i>Guidance Statement: Risk Assessment</i>
TRH	Total Recoverable Hydrocarbons
UDR	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)</i>
µg/m ³	micrograms per cubic metre
µg/L	micrograms per litre
waste type	waste types identified in the Landfill Definitions, or in Schedule 1 of the Controlled Waste Regulations (as applicable).

2. Purpose and scope of assessment

An application for a licence (the Application) has been received from Bechtel (Western Australia) Pty Ltd (the Applicant) for the Wheatstone LNG Plant Waste Storage Facility (WSF) on 23 May 2016. The Application is for Prescribed Categories 57, 61 and 62), which is a new facility constructed as part of the Wheatstone Project near Onslow, Western Australia

2.1 Application details

The Application was submitted in 2016 to be processed concurrently with the Works Approval (W5976/2016/1). The Works Approval, granted on 3 November 2016, required the submission of compliance documentation certifying that the works had been constructed in accordance with the specifications of the Works Approval. The Licence application was placed on hold pending receipt of the compliance certification which was subsequently submitted on 5 September 2018.

Table 2 lists the documents submitted during the assessment process.

Table 2: Documents and information submitted during the assessment process

Document/information description	Date received
Application for Licence – Application Form and supporting documentation?	23 May 2016
Wheatstone LNG Plant Waste Storage Facility – Response to Department of Environment Information Request	10 August 2016
Waste Storage Area Works Approval Application – Response to Department of Environment Information Request	30 August 2016
Wheatstone LNG Plant Waste Storage Facility – Response to Department of Environment Information Request	17 October 2016
Wheatstone Project LNG Plant – Waste Storage Area – Engineering Certification to satisfy Condition 5 of Works Approval W5976/2016/1	21 December 2016
Wheatstone Project LNG Plant – Waste Storage Area – Compliance Document	5 September 2018
Application form: Transfer works approval or licence – notify new occupier registered premises	10 October 2018

3. Background

Chevron Australia Pty Ltd (Chevron, the Applicant) is developing the Wheatstone Project 12km south-west of Onslow for the production of LNG and domestic gas. The Wheatstone Project includes onshore processing facilities including two LNG trains, one domestic gas train, LNG and condensate storage and support facilities such as power and accommodation.

The Application for Licence was initially submitted by Bechtel (Western Australia) Pty Ltd (Bechtel) who were engaged by Chevron as the engineering, procurement and construction contractor to deliver the LNG plant and associated facilities of the Wheatstone Project. On 10 October 2018, Chevron applied to transfer the application from Bechtel as they had assumed operational control of the Premises.

The Wheatstone LNG Plant WSF is located within the footprint of the LNG plant site and provides temporary storage of various waste materials generated by the LNG plant site prior

to transporting either offsite or to the waste transfer station located at the Ashburton North Village; an accommodation facility operated by the Applicant under Licence L8650/2012/1.

Table 3 lists the prescribed premises categories that have been applied for.

Table 3: Prescribed Premises Categories

Classification of Premises	Description	Approved Premises production capacity or throughput
Category 57	Used tyre storage (general): premises (other than premises within category 56) on which used tyres are stored	150 whole tyres at any one time
Category 61	Liquid waste facility: premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.	≤1,364 tonnes per year
Category 62	Solid waste depot: premises on which waste is stored, or sorted, pending final disposal or re-use.	≤5,000 tonnes per year

4. Overview of Premises

4.1 Operational aspects

The WSF receives various wastes generated from the LNG plant site for temporary storage prior to transport for further processing or disposal. The facility consists of a designated hazardous waste storage area (with two concrete bunded areas for the storage of both solid and liquid hazardous waste) and a hardstand area for the storage of general, non-hazardous waste (e.g. putrescible or inert waste). There is also an area for the storage of empty storage containers.

The WSF is located within the footprint of the Wheatstone Project LNG plant site (premises boundary has been described by GPS coordinates) and provides temporary storage of various waste materials generated by the LNG plant site prior to transporting offsite.

The WSF operates 24 hours a day, 365 days a year and is not always attended; however, the WSF is located within the LNG plant site which has controlled access via guardhouses meaning that the WSF is accessible to only staff and contractors of the Wheatstone Project. The site is fully fenced with gates to remain closed but unlocked when unattended. Signage is provided to inform staff/contractors delivering waste to the WSF of appropriate authorised staff who are required to be present to receive the waste. All waste entering the WSF is recorded and placed in the appropriate storage area.

No processing of waste occurs at the site.

Waste types and quantities that are accepted at the premises are provided in Table 4.

Table 4: Waste types (including controlled waste code) and quantities proposed to be received at the WSF, the proposed storage receptacle and storage area.(From Application)

Waste Type	Waste code	Quantity Limit	Specification
Solid			
Inert Waste Type 1	NA	1,000 tonnes per annual period	Abrasive blasting residue Cement and concrete Glass Insulation and refractor (excluding asbestos) Light bulbs (non-mercury) Metal Plastic
Putrescible waste (solid)	NA		Domestic waste (mixed) Filters (non-hydrocarbon service) Filtration media (non-hydrocarbon service) Food Paper and cardboard Vessel packaging media (non-hydrocarbon service) Wood (treated)
Inert Waste Type 2	T140 (Used tyres)	No more than 150 tyres at any time	3m ³ of shredded tyres or 150 whole tyres
Septage wastes	K210 (septage wastes)	750 tonnes per annual period	Sanitary sludge (solids including biosolids)
Solid Hazardous wastes	A100 (Waste resulting from the surface treatment of metals and plastics) B100 (acidic solutions or acids in solid form) C100 (basic (alkaline) solutions or bases (alkalis) in solid form) D120 (Mercury and mercury compounds) D151 (Used nickel cadmium batteries) D210 (Nickel compounds) D211 (Used nickel metal hydride batteries) D220 (Lead and lead compounds) D221 (Used lead acid batteries) D230 (Zinc compounds)	600 tonnes per annual period	Absorbents Batteries (alkaline) Batteries (metal) Compressed gas cylinders and aerosol cans Containers and drums (containing residue) Electrical and e-waste Filters (hydrocarbon service) Filtration media, vessel packaging and molecular sieve (hydrocarbon service) Molecular sieve (hydrocarbon service)

Waste Type	Waste code	Quantity Limit	Specification
	D270 (Vanadium compounds) D300 (Non-toxic salts) D340 (Perchlorates) J100 (Waste mineral oils unfit for their intended purpose) J170 (Used oil filters) K110 (Waste from grease traps) K130 (Sewage waste from the reticulated sewerage system) K200 (Food and beverage processing wastes) M220 (Isocyanate compounds) M230 (Triethylamine catalysts) N100 (Containers or drums contaminated with residues of a controlled waste) N120 (Soils contaminated with a controlled waste) N230 (Ceramic based fibres with physico-chemical characteristics similar to asbestos) T100 (Waste chemical substances arising from research and development or teaching activities)		Industrial solid waste Laboratory wastes (solids) Light bulbs (containing mercury) Soil (hydrocarbon contaminated) Activated carbon Naturally occurring radioactive material (NORM)
Special Waste Type 2	R100 (Clinical and related wastes)	2 tonnes per annual period	Clinical waste (solids)
Liquid Waste			
Special Waste Type 3	M270 (Per- and polyfluoroalkyl substances (PFAS) contaminated materials, including waste PFAS containing products and contaminated containers)	50 tonnes per annual period (Solid Waste) 400 tonnes per annual period (Liquid Waste)	N/A
Liquid Hazardous Wastes	B100 (Acidic solutions or acids in solid form) C100 (Basic (alkaline) solutions or bases (alkalis) in solid form) D120 (Mercury and mercury compounds) D140 (Chromium compounds) E100 (Waste containing peroxides excluding hydrogen peroxide) E120 (Waste of an explosive nature not subject to other legislation) E130 (Highly reactive chemicals not otherwise specified)	1,364 tonnes per annual period	Acidic/caustic solutions Amine sludges Car and truck wash waters Chemicals Cooking oil Fire-fighting foams Industrial liquid waste (mixed)

Waste Type	Waste code	Quantity Limit	Specification
	<p>F100 (Aqueous-based wastes from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish)</p> <p>F110 (Aqueous-based wastes from the production, formulation and use of resins, latex, plasticisers, glues and adhesives)</p> <p>F120 (Solvent based-wastes from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish)</p> <p>F130 (Solvent based wastes from the productions, formulation and use of resins, latex, plasticisers, glues and adhesives.</p> <p>G100 (Ethers and highly flammable hydrocarbons)</p> <p>G110 (Non-halogenated organic solvents)</p> <p>G150 (Halogenated organic solvents. Not otherwise specified.)</p> <p>G160 (Waste from production, use and formulation of organic solvents not otherwise specified)</p> <p>H100 (Waste from the production formulation or use of biocides and phytopharmaceuticals)</p> <p>H170 (Waste wood-preserving chemicals)</p> <p>J100 (Waste mineral oils unfit for their intended purpose)</p> <p>J120 (Waste oil and water mixtures or emulsions, and hydrocarbon and water mixtures or emulsions)</p> <p>J130 (Oil interceptor wastes)</p> <p>J160 (Waste tarry residues arising from refining, distillation or pyrolytic treatment)</p> <p>J180 (Oil sludge)</p> <p>K110 (Waste from grease traps)</p> <p>K130 (Sewage waste from the reticulated sewerage system)</p> <p>K200 (Food and beverage processing wastes)</p> <p>L100 (Car and truck wash waters)</p> <p>L150 (Industrial wash waters contaminated with a controlled waste)</p> <p>M130 (Non-halogenated organic chemicals)</p> <p>M150 (Phenols, phenol compounds including halogenated phenols)</p> <p>M160 (Organohalogen compounds not elsewhere listed)</p> <p>M220 (Isocyanate compounds)</p> <p>M250 (Surfactants and detergents)</p> <p>N140 (Fire debris or fire wash waters)</p>		<p>Industrial wash waters contaminated with a controlled waste</p> <p>Laboratory wastes (liquids)</p> <p>Oils</p> <p>Oil-water mixtures</p> <p>Sludge and scale (hydrocarbon)</p> <p>Sludge and scale (inorganic)</p> <p>Solvents and organic wash fluids</p> <p>NORM</p>

Waste Type	Waste code	Quantity Limit	Specification
	N190 (Filter cake containing a controlled waste) N205 (Industrial waste treatment plant residues) T100 (Waste chemical substances arising from research and development or teaching activities) T120 (Waste from production or formulation or photographic chemicals or processing materials)		

4.2 Infrastructure

The WSF facility infrastructure, as it relates to Category 57, 61 and 62 activities, is detailed in Table 4 and with reference to the Site Plan (attached in the Issued Licence).

Table 4 lists infrastructure associated with each prescribed premises category.

Table 5: Wheatstone LNG Plant WSF infrastructure

	Infrastructure	Site Plan Reference
	Prescribed Activity Categories 57, 61 and 62	
Waste materials stored temporarily prior to transporting offsite or to the Ashburton North Village Waste Transfer Station		
1	Bunded hazardous waste area (for the storage of hazardous solid and liquid waste)	Site layout – diagonal red lined area
2	General waste area	General Layout Map – diagonal orange lined area
3	Empty container storage area	General Layout Map – diagonal aqua lined area
4	Mixed dangerous goods stores	General Layout Map – diagonal yellow lined area

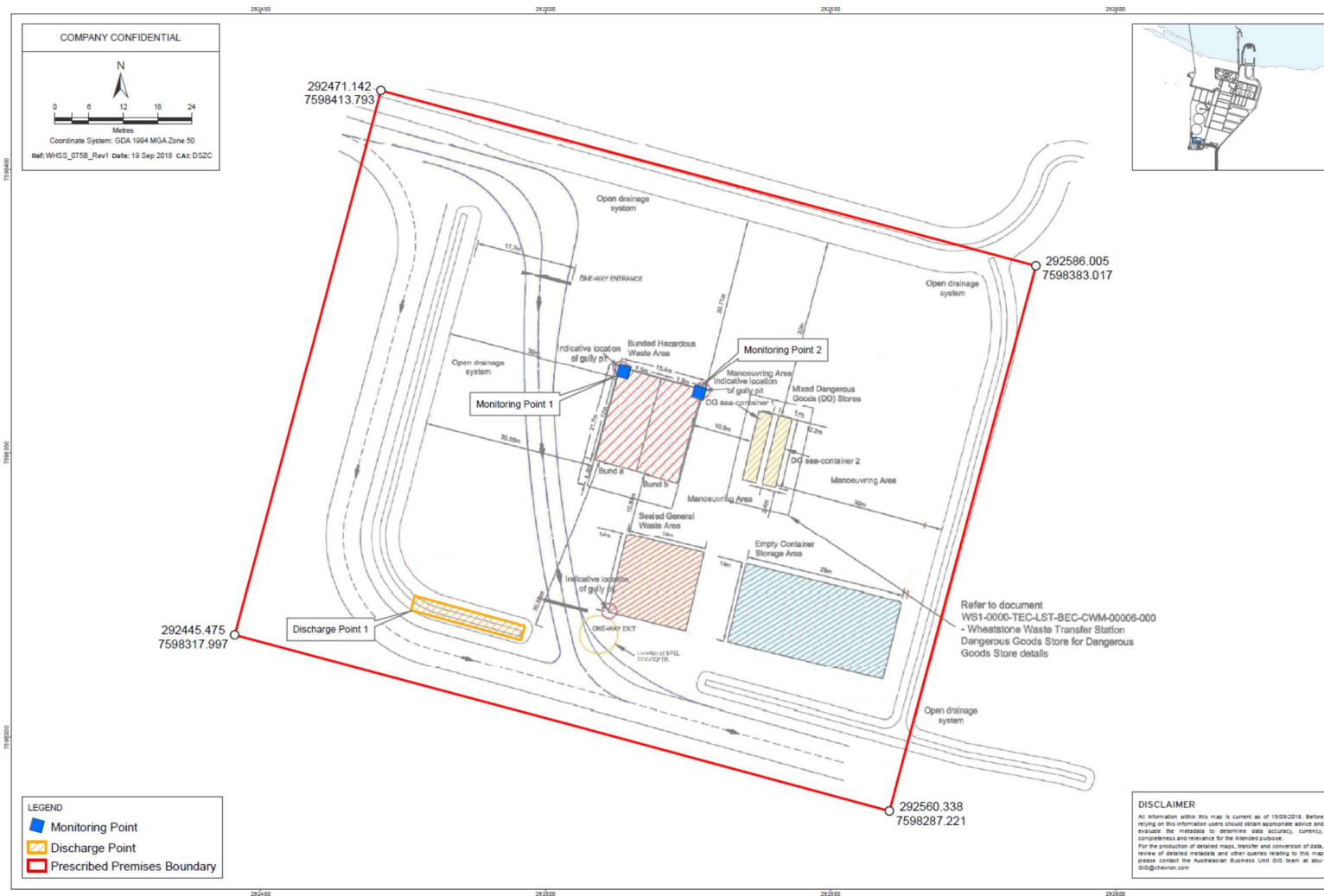


Figure 1: Site layout

4.3 Part IV of the EP Act

4.3.1 Background

The WSF forms part of the Wheatstone Project which was formally assessed by the Environmental Protection Authority (EPA). Ministerial Statement (MS) 873 was published for the Wheatstone Project on 30 August 2011. The following Statements have also been issued incorporating amendments to Statement 873:

- MS 903 published on 6 July 2012;
- MS 922 published on 11 January 2013; and
- MS 931 published on 30 January 2013.

There are no conditions on MS 903, 922 or 931 relating to the WSF.

4.3.2 Ministerial Statement 873

Provides a summary of conditions in the statement addressing the emissions and discharge from the Wheatstone Project, including the WSF.

Condition No.	Summary of conditions
10-11 & 10-12	The condition requires the development of the a Conservation Significant Marine Fauna Interaction Management Plan for the purpose of detecting, avoiding and mitigating impacts on conservation significant fauna during construction and operation of the nearshore and offshore facilities. This includes actions for managing impacts on marine turtles from light.
14	<p>The conditions required the development of a Mangrove, Algal Mat and Tidal Creek Protection Management Plan for the purpose of minimising impacts on mangroves, algal mats, juvenile turtle habitat and sawfish nursery habitat between and including the Ashburton River and Four Mile Creek. This includes management actions relating to contaminated surface runoff, and chemical and hydrocarbon spills and leaks.</p> <p>Commitments relevant to the WSF include:</p> <ul style="list-style-type: none">• Chemical / fuel storage will include secondary containment measures;• Chemical / hydrocarbon wastes will be disposed of appropriately; and• Stormwater runoff will be directed through open drains/ditches via sedimentation basins prior to discharge to the environment. <p>The Plan also details monitoring programs for detecting impacts on mangroves, algal mats and tidal creek systems.</p>

4.4 Other relevant approvals

4.4.1 Planning approvals

Planning for the ANSIA is administered by the Western Australia Planning Commission under the ANSIA Improvement Scheme No. 1 which was gazetted on 30 September 2016. The scheme is now operational and replaces the Shire of Ashburton's Town Planning Scheme No. 7 as the land

use planning instrument for the ANSIA.

The works approval and licence applications were referred to the Shire of Ashburton on 18 July 2016 and 8 August 2016, as they were the planning authority at the time the applications were submitted. No comment was received

4.4.2 Department of Mine, Industry Regulation and Safety

The Applicant has stated that waste forecasts do not indicate the requirement for a dangerous goods licence under the *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007*. If quantities of dangerous goods exceed manifest quantities then a dangerous goods licence will be sought.

4.4.3 Rights in Water and Irrigation Act 1914

The *Rights in Water and Irrigation Act 1914* (RIWI Act) provides for the regulation, management, use and protection of water resources. The RIWI Act provides for the sustainable use and development of water resources, protection of their ecosystem and the environment in which water resources are situated, and assists in the integration of water resources management with other natural resources management.

The WSF is located within the surface water area and groundwater area both proclaimed under the RIWI Act (Table 9). An area is proclaimed where there is a need for regulation of the taking of water from watercourses, wetlands or groundwater. Section Groundwater and water sources identifies groundwater and water sources and their environmental value.

4.4.4 Radiological Council

Radioactive material, including NORM, is regulated under the *Radiation Safety Act 1975*. The Applicant advised that while NORM waste will be accepted onto the Premises, it will be below the radioactive thresholds defined under the *Radiation Safety (General) Regulations 1983*. The Applicant expects that NORM waste may increase over time and will engage with the Radiological Council with regard to registration, licensing and provisions of a Radiation Management Plan for the storage of NORM which triggers the relevant thresholds.

4.5 Part V of the EP Act

4.5.1 Applicable regulations, standards and guidelines

The overarching legislative framework of this assessment is the EP Act and EP Regulations.

The guidance statements which inform this assessment are:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Land Use Planning (February 2017)*
- *Guidance Statement: Licence Duration (August 2016)*
- *Guidance Statement: Publication of Annual Audit Compliance Reports (May 2016)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessments (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

4.5.2 Works approval and licence history

Works Approval W5976/2016/1 was granted to the Applicant on 3 November 2016 to allow construction of the WSF. Works Approval W5976/2016/1 was amended on 14 March 2017 to alter the prescribed premises boundary. Engineering or building certification documents as per condition 6 of W5976/2016/1 were submitted on 5 September 2018.

Table 6 summarises the works approval and licence history for the premises.

Table 6: Works approval and licence history

Instrument	Issued	Nature and extent of works approval, licence or amendment
W5976/2016/1	03/11/2016	New Works Approval for the construction of the WSF
W5976/2016/1	14/03/2017	Amendment Notice 1 Amend the premises boundary
L8976/2016/1	22/11/2018	New Licence for the operation of the WSF constructed under W5976/2016/1 Application
L8976/2016/1	6/12/2018	Department initiated Licence amended to correct clerical error in Table 3 (Condition 2)

5. Consultation

The licence application was advertised in *The West Australian* newspaper and on the Departments website on 8 August 2016. No comments were received.

6. Location and siting

6.1 Siting context

The WSF is located within the Wheatstone LNG plant site boundary on Lot 567 on Plan 71345, Talandji. The premises is located within the ANSIA zoned under the ANSIA Improvement Scheme 1 for strategic industry. Other industrial projects in the area include the Onslow Solar Salt Project (5km east) and the Macedon Gas Project (2.8km south-west). Adjacent land to the south and east is zoned "Rural", while the area to the west, including the Ashburton River mouth and old Onslow townsite (4km west), are zoned "Conservation, Recreational and Nature Landscape".

The nearest residence is located 2km south-west at the Macedon Gas Project site accommodation camp currently operated by the Applicant. The town of Onslow is located 12km north-east of the site. There are no residential or sensitive receptors within 1km of the proposed WSF.

The WSF is located in the Ashburton River Delta, which is characterised as a coastal flood plain. The presence of surface water is predominantly the result of runoff from local sub-catchments during periods of high rainfall. Major watercourses in the area are the Ashburton River (6km west) and Hooley Creek (2km north east). When the Ashburton River floods, its flood waters spill onto the flood plain and may significantly add to the stream flow in the drainage lines of the Wheatstone Project area.

6.2 Residential and sensitive Premises

The distances to residential and sensitive receptors are detailed in Table 7.

Table 7: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
Industrial Premises: Macedon Gas Project	2,800m south west
Old Onslow townsite (zoned Conservation, Recreational and Nature Landscape)	4,000m west
Industrial Premises: Onslow Solar Salt Project	5,000m east (measured to the nearest salt pond)
Residential zone and sensitive public receptors (Onslow)	12,000m to the north east (measured from the premises boundary)

6.3 Specified ecosystems

Specified ecosystems are areas of high conservation value and special significance that may be impacted as a result of activities at or Emissions and Discharges from the Premises. The distances to specified ecosystems are shown in Table 8. Table 8 also identifies the distances to other relevant ecosystem values which do not fit the definition of a specified ecosystem.

The table has also been modified to align with the *Guidance Statement: Environmental Siting*.

Table 8: Environmental values

Specified ecosystems	Distance from the Premises
Pilbara Surface Water Area	Located within the surface water area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act)
Pilbara Groundwater Area	Located within the groundwater area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act)
Other landscape features, relevant factors or receptors	Distance from the Premises
Turtle rookery	The nearest turtle nesting beach is located 4.5km away (URS 2010).

6.4 Groundwater and water sources

The distances to groundwater and water sources are shown in Table 9.

Table 9: Groundwater and water sources

Groundwater and water sources	Distance from Premises	Environmental value
Minor creek – Hooley Creek	Fluvial overflow channel and tidal creek (3 distinct tidal channels with a single ocean inlet), approximately 1,900m east of the premises boundary.	Mangrove and tidal habitats that support a variety of marine fauna, including species listed under the EPBC Act and <i>Wildlife Conservation Act 1950</i> such as sawfish and juvenile turtles.
Major river – Ashburton River / Estuary	Watercourse, major, approximately 6,000m west of the premises boundary.	Surface water drainage system (estuarine, with upper limits fresh) within fringing mangrove and algal mat communities.

Groundwater and water sources	Distance from Premises	Environmental value
Groundwater	<p>Depth to groundwater at the premises, has been identified in to be approximately 0.5m below AHD. The WSF will be developed on an existing built up pad at 7m AHD; therefore, depth to groundwater is approximately 7.5m at the premises.</p> <p>Monitoring bores have been constructed to monitor groundwater impacts associated with the greater Wheatstone LNG Project. The nearest bore is approximately 800m SE of the premises boundary.</p>	<p>Water is note used for potable or industrial use. Groundwater is brackish to hypersaline.</p> <p>Groundwater system potentially linked to marine ecosystem and tidal creeks.</p> <p>The nearest Public Drinking Water Source Area (PDWSA) is the Cane River Water Reserve located more than 30km east of the site.</p>

6.5 Soil type

Topography is dominated by undulating dunal systems, alluvial / colluvial plains and low-lying coastal systems.

6.6 Meteorology

6.6.1 Regional climatic aspects

Onslow experiences an arid-tropical climate. The area is subject to occasional tropical cyclones, usually between January and April.

Annual yearly evaporation (approximately 3,100mm) exceeds the average yearly rainfall consistently throughout the year.

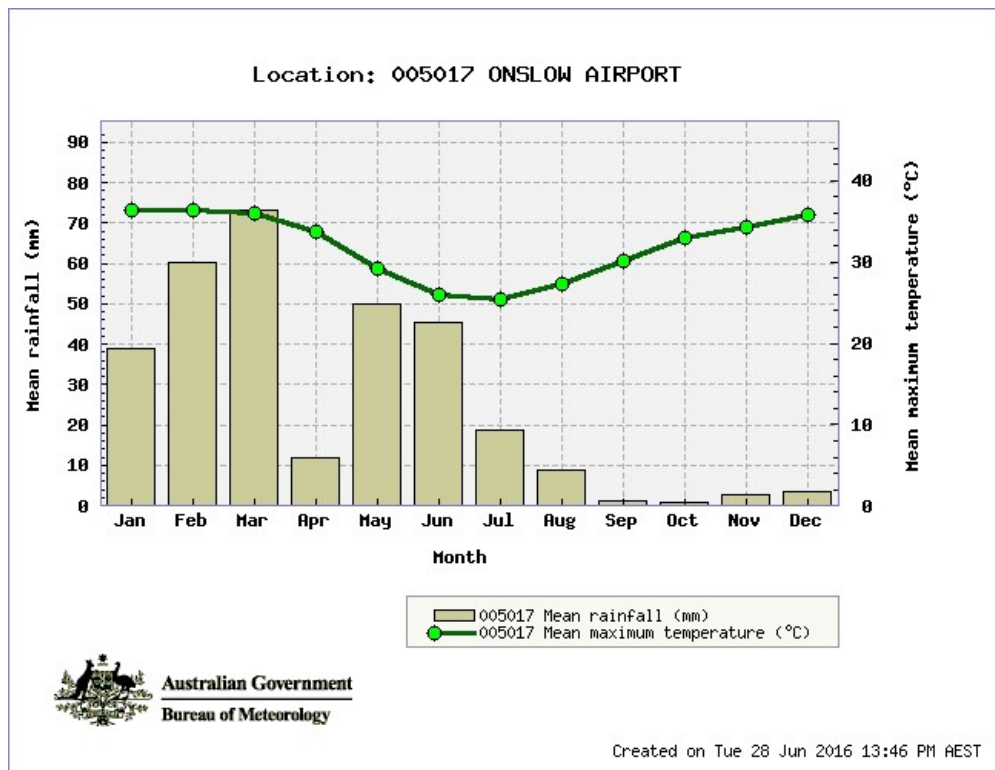


Figure 2: Annual mean rainfall and maximum temperature at Onslow Airport.

7. Risk assessment

7.1 Determination of emission, pathway and receptor

In undertaking its risk assessment, DWER will identify all potential emissions pathways and potential receptors to establish whether there is a Risk Event which requires detailed risk assessment.

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission. Where there is no actual or likely pathway and/or no receptor, the emission will be screened out and will not be considered as a Risk Event. In addition, where an emission has an actual or likely pathway and a receptor which may be adversely impacted, but that emission is regulated through other mechanisms such as Part IV of the EP Act, that emission will not be risk assessed further and will be screened out through Table 13.

The identification of the sources, pathways and receptors to determine Risk Events are set out in Table 10 below.

Table 10: Identification of emissions, pathway and receptors during operation

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
Receipt and delivery of waste	Vehicle movements on unsealed access roads	Noise	No residences or other sensitive receptors in proximity	Air / wind dispersion	Potential amenity impacts	No	No receptor present
		Dust			Potential amenity and health impacts	No	No receptor present
Temporary storage of waste	Storage of non-hazardous and hazardous waste	Odour	No residences or other sensitive receptors in proximity. Nearest industrial receptor 2km away.	Air / wind dispersion	Potential amenity impacts	No	No receptor present.
		Leaks, spills, overflows, containment failure. Contaminated	Soil and groundwater (~7mbgl) Tidal creek system (1.9km east) including algal mat communities 700m east	Direct discharge to land. Infiltration to groundwater. Groundwater	Land and groundwater pollution	Yes	See section 7.4

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts			
		and potentially contaminated stormwater.		flow to tidal creek system.			
		Litter	Fauna including marine fauna located Hooley Creek (1.9km east)	Wind dispersion	Fauna injury/fatality due to ingestion or entrapment.	Yes	See section 7.5
	Fire within the premises resulting in the combustion of combustible wastes such as used tyres, etc	Air emissions	Nearest industrial receptor 2km away. Town of Onslow 12km away.	Air	Potential health impacts	Yes	See section 7.6
		Firewater Pyrolytic oils from burning tyres	Soil and groundwater (~7mbgl) Tidal creek system (1.9km east) including algal mat communities 700m east	Discharge to land and infiltration to groundwater.	Land and groundwater pollution Impacts on creek ecosystem		

7.2 Consequence and likelihood of risk events

A risk rating will be determined for risk events in accordance with the risk rating matrix set out in Table 11 below.

Table 11: Risk rating matrix

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

DWER will undertake an assessment of the consequence and likelihood of the Risk Event in accordance with Table 12 below.

Table 12: Risk criteria table

Likelihood		Consequence		
The following criteria has been used to determine the likelihood of the Risk Event occurring.		The following criteria has been used to determine the consequences of a Risk Event occurring:		
			Environment	Public health* and amenity (such as air and water quality, noise, and odour)
Almost Certain	The risk event is expected to occur in most circumstances	Severe	<ul style="list-style-type: none"> onsite impacts: catastrophic offsite impacts local scale: high level or above offsite impacts wider scale: mid-level or above Mid to long-term or permanent impact to an area of high conservation value or special significance[^] Specific Consequence Criteria (for environment) are significantly exceeded 	<ul style="list-style-type: none"> Loss of life Adverse health effects: high level or ongoing medical treatment Specific Consequence Criteria (for public health) are significantly exceeded Local scale impacts: permanent loss of amenity
Likely	The risk event will probably occur in most circumstances	Major	<ul style="list-style-type: none"> onsite impacts: high level offsite impacts local scale: mid-level offsite impacts wider scale: low level Short-term impact to an area of high conservation value or special significance[^] Specific Consequence Criteria (for environment) are exceeded 	<ul style="list-style-type: none"> Adverse health effects: mid-level or frequent medical treatment Specific Consequence Criteria (for public health) are exceeded Local scale impacts: high level impact to amenity
Possible	The risk event could occur at some time	Moderate	<ul style="list-style-type: none"> onsite impacts: mid-level offsite impacts local scale: low level offsite impacts wider scale: minimal Specific Consequence Criteria (for environment) are at risk of not being met 	<ul style="list-style-type: none"> Adverse health effects: low level or occasional medical treatment Specific Consequence Criteria (for public health) are at risk of not being met Local scale impacts: mid-level impact to amenity
Unlikely	The risk event will probably not occur in most circumstances	Minor	<ul style="list-style-type: none"> onsite impacts: low level offsite impacts local scale: minimal offsite impacts wider scale: not detectable Specific Consequence Criteria (for environment) likely to be met 	<ul style="list-style-type: none"> Specific Consequence Criteria (for public health) are likely to be met Local scale impacts: low level impact to amenity
Rare	The risk event may only occur in exceptional circumstances	Slight	<ul style="list-style-type: none"> onsite impact: minimal Specific Consequence Criteria (for environment) met 	<ul style="list-style-type: none"> Local scale: minimal to amenity Specific Consequence Criteria (for public health) met

[^] Determination of areas of high conservation value or special significance should be informed by the *Guidance Statement: Environmental Siting*.

* In applying public health criteria, DWER may have regard to the Department of Health's *Health Risk Assessment (Scoping) Guidelines*.

“onsite” means within the Prescribed Premises boundary.

7.3 Acceptability and treatment of Risk Event

DWER will determine the acceptability and treatment of Risk Events in accordance with the Risk treatment Table 13 below:

Table 13: Risk treatment table

Rating of Risk Event	Acceptability	Treatment
Extreme	Unacceptable.	Risk Event will not be tolerated. DWER may refuse application.
High	May be acceptable. Subject to multiple regulatory controls.	Risk Event may be tolerated and may be subject to multiple regulatory controls. This may include both outcome-based and management conditions.
Medium	Acceptable, generally subject to regulatory controls.	Risk Event is tolerable and is likely to be subject to some regulatory controls. A preference for outcome-based conditions where practical and appropriate will be applied.
Low	Acceptable, generally not controlled.	Risk Event is acceptable and will generally not be subject to regulatory controls.

7.4 Risk Assessment – Emissions to land (stormwater contamination and leaks, spills or loss of containment)

7.4.1 General hazard characterisation and impact

The WSF consists of:

- a bunded hazardous waste area with two concrete bunded areas for the storage of solid and liquid hazardous waste;
- mixed dangerous goods stores;
- a sealed general waste area; and
- an empty container storage area for the storage of empty containers and as an overflow area for general waste.

Waste types stored at the premises are detailed in Table 4.

The primary cause of impacts is likely to be small-scale occasional incidents or emergencies resulting in direct discharge to land caused by spills, overflows, or infrastructure leaks, and infiltration to groundwater. Contaminant contact with infiltrated stormwater may also result in groundwater contamination.

7.4.2 Description of potential adverse impact from the risk event

Release of waste materials to the environment may cause groundwater contamination impacting on groundwater ecosystem health. Depth to groundwater is 0.5m AHD. The WSF has been developed on an existing built up pad at 7m AHD; therefore, depth to groundwater is approximately 7.5m at the premises. Local groundwater quality is brackish to hypersaline and

is not currently used for beneficial use.

Contaminated stormwater entering the environment could impact on sensitive ecosystems of Hooley Creek which provide habitat for mangrove, algal mat communities, sawfish and juvenile turtles. Hooley Creek is located 1,900m from the Premises boundary with the nearest area containing algal mat communities located approximately 700m west (Chevron 2017) at the boundary of the GTP site.

7.4.3 Criteria for assessment

Relevant land and groundwater quality criteria include:

- *National Environment Protection (Assessment of Site Contamination) Measure 1999*;
- ANZECC & ARMCANZ (2000) – freshwater and marine waters criteria; and
- DoH 2014 – non-potable groundwater use.

7.4.4 Applicant controls

This assessment has reviewed the controls set out in Table 17 below.

Table 14: Applicant’s proposed controls for stormwater contamination and and leaks, spills or loss of containment (from Application)

Control	Description
Siting	Site built up to 7m AHD increasing separation distance to groundwater.
Engineering	<ul style="list-style-type: none"> • Hazardous solid and liquid waste are stored in concrete bunded areas with sumps to collect spills and/or stormwater. A waterproof liner has been installed underneath the concrete to provide a barrier to liquids, moisture and gas. Concrete bunds are sealed to ensure they are chemically and fire resistant to the material contained within the containers. • Dangerous goods are stored in IBCs, on pallets and in skip bins within four modified sea containers. Each sea container has a common bund allowing for common storage of mixed compatible dangerous goods. • Bunds have been constructed to hold a 1 in 30 year 24 hour rainfall event and a spill event (either 110% of the largest container or 25% of the total volume stored; whichever is greater). • The general waste area is sealed. • The general waste area has been constructed to ensure that the first 25mm of rainfall (considered potentially contaminated) is captured in a sump or low collection point and is directed through a Gross Pollutant Trap (GPT) which is designed to separate sediment, silt, suspended solids and oil and grease prior to discharge. Subsequent rainfall is treated as “clean” and discharged to the environment.
Management / procedures	<ul style="list-style-type: none"> • The Empty Container Storage Area stores only clean and empty containers and therefore risk of contamination from this area is limited. • All waste received at the Premises is recorded and directed to the appropriate storage area. • General solid wastes are stored and managed separately from hazardous wastes to ensure no cross contamination. • General wastes, including putrescible wastes, are stored in appropriate containers such as garbage bins or skip bins. • Prior to disposal, the wastewater collected in the hazardous waste bund sumps

Control	Description
	<p>is sampled and analysed for pH and TRH. The results are compared to the following criteria: pH: 6 – 9 and TRH: <15mg/L. If deemed clean (meets the above criteria) it will be directed to the Project internal stormwater drainage system which comprises of sedimentation ponds for the storage of stormwater. The internal drainage system is an unlined system that discharges to the environment via infiltration or via a series of sedimentation ponds.</p> <ul style="list-style-type: none"> • If deemed contaminated (does not meet the above criteria) it will be forwarded to the Primary Treatment System for treatment or trucked off site to an appropriate facility. The method of transfer to the Primary Treatment System or stormwater drains will be done manually by pump truck, pump and hose or other similar transfer method. • Weekly inspections are carried out to identify environmental issues such as spills and leaks. Ad hoc inspections also occur on a daily basis as part of normal operations. • Litter is collected on a regular basis and returned to the waste storage containers. • No bin washing occurs at the premises. • Consolidation of liquid waste will only occur within the bunded hazardous waste area • Spill kits are available onsite for immediate spill response.

7.4.5 Consequence

Based upon the hazard characterisation, presence of environmentally sensitive receptors and the likely nature and scale of events that may cause impacts, the Delegated Officer has determined that there will be minimal onsite impacts. Therefore, the Delegated Officer considers the consequence to be **Slight**.

7.4.6 Likelihood of Risk Event

Based upon the proposed Applicant controls, the Delegated Officer has determined that onsite impacts will probably not occur in most circumstances. Therefore, the Delegated Officer considers the consequence to be **Unlikely**.

7.4.7 Overall rating of risk event

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk event during normal operation is **Low**.

7.5 Risk Assessment – Litter

7.5.1 General hazard characterisation and impact

The WSF receives general waste such as plastics, paper and cardboard, aluminium cans, and putrescible wastes (such as food scraps) generated on the Premises. Hazardous wastes including hydrocarbons and chemicals are also received. Waste is sorted and stored prior to removal off site for further consolidation and/or disposal. Inadequate containment of waste can result in the dispersal of litter via wind and rain.

7.5.1 Description of potential adverse impact from the risk event

Uncontained litter can cause fauna injury or death as a result of ingestion or strangulation. Hooley Creek is located 2km east of the site and is habitat for sawfish (*Pristis zijsron*) and juvenile turtles, which are listed as rare fauna under EPBC Act and the *Wildlife Conservation Act 1950*,

7.5.2 Applicant controls

This assessment has reviewed the controls set out in Table 15 below.

Table 15: Applicant’s proposed controls for containment of litter (from Application)

Control	Description
Management / procedures	<ul style="list-style-type: none"> Waste materials will be held within enclosed containers where practical Litter accumulated around the site will be collected as part of routine procedures The WSF is fenced in isolation and is situated within the Wheatstone LNG Plant site which is also fully fenced.

7.5.1 Consequence

The WSF is located nearby Hooley Creek which is habitat for marine species listed under the EPBC Act and the *Wildlife Conservation Act 1950*. The Delegated Officer considers that litter could have minimal off-site impacts on a local scale due to the potential for injury or death of local fauna with wide scale impacts not detected. Therefore, the Delegated Officer considers the consequence to be **Minor**.

7.5.2 Likelihood of Risk Event

Based upon the proposed Applicant controls and distance to Hooley Creek, the Delegated Officer has determined that impacts will only occur in exceptional circumstances. Therefore, the Delegated Officer considers the consequence to be **Rare**.

7.5.3 Overall rating of risk event

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk event during normal operation is **Low**.

7.6 Risk Assessment – Emissions to land resulting from a fire

7.6.1 General hazard characterisation and impact

The WSF receives flammable wastes such as hydrocarbons and chemicals. Tyres are also received at the WSF. Ignition of these materials can result in the release of contaminated firewater, pyrolytic oil and other hazardous materials entering the environment.

7.6.2 Description of potential adverse impact from the risk event

Waste materials resulting from a fire at the WSF can be toxic to the environment. Release of these materials during a fire may cause groundwater contamination impacting on groundwater ecosystem health. Depth to groundwater is 0.5m AHD. The WSF has been developed on an existing built up pad at 7m AHD; therefore, depth to groundwater is approximately 7.5m at the premises. Local groundwater quality is brackish to hypersaline and is not currently used for beneficial use.

If not adequately contained, materials may also enter the environment via the stormwater

drainage system and impact on sensitive ecosystems of Hooley Creek. Hooley Creek provide habitat for mangrove, algal mat communities, sawfish and juvenile turtles and is located 1,900m from the Premises boundary. The nearest area containing algal mat communities located approximately 700m west (Chevron 2017) at the boundary of the WSF site.

7.6.3 Applicant controls

This assessment has reviewed the controls set out in Table 16 below.

Table 16: Applicant’s proposed controls for emissions to land resulting from fire

Control	Description
Engineering	<ul style="list-style-type: none"> Materials are stored in accordance with Australian Standards AS1940: <i>Storage of flammable and combustible materials</i> and AS3833 <i>The storage and handling of mixed classes of dangerous goods, in packages and intermediate bulk containers</i>, which include provisions for secondary containment and fire protection (refer to Table 14 for further detail). Material collected in the hazardous waste bund drains to a sump for collection prior to disposal. Tyres are stored in the general storage area which drains to a GPT.
Management / procedures	<ul style="list-style-type: none"> All waste received at the Premises is recorded and directed to the appropriate storage area ensuring that incompatible wastes are kept separate. No more than 150 of whole tyres or 3m³ of shredded tyres are stored on the premises at any one time. Material captured in the hazardous waste bund sumps is assessed for contamination to determine the appropriate method of disposal (refer to Table 14 for further detail)

7.6.1 Consequence

Based upon the hazard characterisation, presence of environmentally sensitive receptors, the likely nature and scale of events that may cause impacts and the Applicant controls, the Delegated Officer has determined that there will be minimal onsite impacts. Therefore, the Delegated Officer considers the consequence to be **Moderate**.

7.6.2 Likelihood of Risk Event

Based upon the proposed Applicant controls, the Delegated Officer has determined that there is a limited risk of fire and therefore impacts will only occur in exceptional circumstances. As such, the Delegated Officer considers the consequence to be **Rare**.

7.6.3 Overall rating of risk event

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk event during normal operation is **Medium**.

7.7 Summary of acceptability and treatment of Risk Events

A summary of the risk assessment and the acceptability or unacceptability of the risk events set out above, with the appropriate treatment and control, are set out in Table 17 below. Controls are described further in section 8.

Table 17: Risk assessment summary

	Description of Risk Event			Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
	Emission	Source	Pathway/ Receptor (Impact)			
1.	Leaks, spills, overflows, containment failure. Contaminated and potentially contaminated stormwater.	Hardstand surfaces and infrastructure associated with the prescribed activity. Stormwater management infrastructure.	Direct discharge to land. Infiltration to groundwater. Groundwater flow to tidal creek system. (Land and groundwater pollution)	Infrastructure and management controls.	Slight consequence Unlikely Low risk	Acceptable subject to proponent controls conditioned
2.	Litter	Solid wastes including plastics	Wind dispersal. Fauna including rare species occurring in Hooley Creek (Fauna injury/fatality due to ingestion or entrapment)	Infrastructure and management controls.	Minor consequence Rare Low risk	Acceptable subject to proponent controls conditioned
3.	Fire resulting in emissions to land	Containment infrastructure, management of waste and firewater (storage of compatible materials and quantity limits).	Direct discharge to land. Infiltration to groundwater. Groundwater flow to tidal creek system. (Land and groundwater pollution)	Infrastructure and management controls.	Moderate consequence Rare Medium risk	Acceptable subject to proponent controls conditioned

8. Regulatory controls

A summary of regulatory controls determined to be appropriate for the Risk Event is set out in Table 18. The risks are set out in the assessment in section 7 and the controls are detailed in this section. DWER will determine controls having regard to the adequacy of controls proposed by the Applicant. The conditions of the Licence will be set to give effect to the determined regulatory controls.

Table 18: Summary of regulatory controls to be applied

		Controls					
		8.1.1 and 8.2.1: Waste acceptance and management	8.2.1: Infrastructure	8.2.3: Waste monitoring	8.2.4: Limits	8.2.5: Monitoring	8.2.6: Reporting
Risk Items (see risk analysis in section 7)	Leaks, spills, overflows, containment failure. Contaminated and potentially contaminated stormwater.	●	●	●	●	●	●
	Litter	●					
	Fire resulting in emissions to land	●		●	●	●	●

8.1 Licence controls – Litter

8.1.1 Waste management

The Licence includes a requirement that wind-blown waste (litter) is contained within the boundary of the Premises

Grounds: The Delegated Officer has included the requirement to contain litter within the boundary of the premises based on the applicant controls to be implemented to mitigate the risk of contamination (refer to section 7.4.4).

8.2 Licence controls – Emissions to land

8.2.1 Infrastructure

The Licence requires the operation and maintenance of the GPT (SPEL Ecoceptor or similar) capable of capturing at least the first 25mm of rainfall received at the General Waste Area.

Grounds: The assessment has determined an acceptable level of risk associated with stormwater contamination based on the Applicant controls which includes the operation and effective maintenance of a GPT for the capture and treatment of stormwater occurring on the General Waste Area.

8.2.2 Waste acceptance and management

The types and quantities of waste permitted to be accepted onto the premises are specified in condition 8 of the Licence.

Grounds: The assessment has determined an acceptable level of risk based on the type, rate and specification of waste. Therefore, condition 8 specifies the types of waste and volumes of waste allowed to be accepted at the WSF.

The Licence includes requirements for the prevention and management of leaks, spills, overflows, contaminated and potentially contaminated stormwater:

- no bin washing will occur at the premises;
- consolidation of liquid waste will only occur within the bunded hazardous waste area; and
- hazardous materials and dangerous goods shall only be stored within specified containment areas.

Note: Specified management/procedure requirements are derived from those currently undertaken by the applicant as described in section 7.4.4. Waste types accepted at the premises have been provided by the Applicant.

Grounds: Operation of the WSF includes the storage of waste where there is a risk to land and groundwater if not managed appropriately. The Delegated Officer has included management/procedure requirements based on the applicant controls to be implemented to mitigate the risk of contamination (refer to section 7.4.4).

8.2.3 Waste monitoring

Conditions 11 and 12 of the Licence require the monitoring of waste inputs and outputs.

Grounds: Monitoring of waste entering and exiting the premises is required to ensure compliance with the specified waste acceptance limits.

8.2.4 Limits

Limits have been included on the licence requiring that wastewater discharged from the hazardous waste bund sumps and directed to the internal stormwater drainage system shall not contain a TRH concentration greater than 15mg/L or a pH of less than 6 or greater than 9.

Grounds: The assessment has determined an acceptable level of risk from emissions to land based on the Applicant controls which include commitments to test wastewater captured in the hazardous waste bund sumps for assessment against limits for TRH and pH to determine the appropriate method of disposal. If the specified limits are met, the wastewater is considered “clean” and disposed of the environment via the internal stormwater drainage network.

Wastewaters that do not meet the limits set by the Applicant are transferred to the Primary Treatment System for further treatment and discharge. The Primary Treatment System is designed to treat potentially polluted stormwater and process water associated with the LNG and Domestic Gas Plants by removing free oil and suspended solids. Construction and commissioning of the Primary Treatment System and associated stormwater infrastructure was approved under Works Approval W5584/2013/1.

The Licence includes conditions derived from the above Applicant controls including limits for discharges and monitoring requirements. Limits for discharges to land set under condition 4 of the Licence are set at the discharge point into the internal stormwater drainage network and are derived from the applicant’s controls.

8.2.5 Monitoring

Condition 4 specifies that wastewater in the hazardous waste bund sumps shall be monitored for pH and TRH in pH units and mg/L respectively prior to discharge to the stormwater drainage system. Samples for TRH are required to be analysed by a NATA accredited laboratory (Condition 5).

Grounds: Wastewater monitoring is required to confirm compliance with limits specified for discharges to land. The monitoring is derived from the Applicant’s controls.

Analysis of samples by a NATA accredited laboratory is required for quality assurance purposes. Noting the limited holding times for pH (24hours) and the remote location of the site, in-field, non-NATA testing of pH is allowed.

8.2.6 Reporting

Monitoring information required in sections 8.2.3 and 8.2.5 will be reported to DWER annually.

9. Determination of Licence conditions

The conditions in the issued Licence in Attachment 1 have been determined in accordance with the *Guidance Statement: Setting Conditions*.

The *Guidance Statement: Licence Duration* has been applied and the issued licence expires in 20 years from date of issue.

Table 19 provides a summary of the conditions to be applied to this licence.

Table 19: Summary of conditions to be applied

Condition Ref	Grounds
Infrastructure 1	These conditions are valid, risk-based and consistent with the EP Act.
Emissions 2	
Discharges to land including monitoring 3, 4, 5 and 6	
Waste acceptance and management including monitoring 7, 8, 9, 10, 11 and 12	
Record-keeping 13, 14, 15, 16 and 17	These conditions are valid and are necessary administration and reporting requirements to ensure compliance.

DWER notes that it may review the appropriateness and adequacy of controls at any time and

that, following a review, DWER may initiate amendments to the licence under the EP Act.

10. Applicant's comments

The Applicant was provided with the draft Decision Report and draft Licence on 13 September 2018, 9 October 2018 and 15 November 2018. The Applicant provided comments which are summarised, along with DWER's response, in Appendix 2.

11. Conclusion

This assessment of the risks of activities on the Premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this Decision Report (summarised in Appendix 1).

Based on this assessment, it has been determined that the Issued Licence will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Caron Goodbourn
A/Manager, Process Industries
Delegated Officer
under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key documents

	Document title	In text ref	Availability
1.	Works Approval W5976/2016/1 for the Wheatstone LNG Plant Waste Storage Area	W5976/2016/1	accessed at www.dwer.wa.gov.au
2.	Application for Licence – Application Form	Bechtel 2016a	DWER records (A1102299)
3.	Wheatstone Project LNG Plant Waste Staging Area Works Approval Application (May 2016)	Bechtel 2016b	DWER records (A1102300)
4.	Wheatstone LNG Plant Waste Storage Facility – Response to Department of Environment Information Request received 10 August 2016	Bechtel 2016c	DWER records (A1146455)
5.	Waste Storage Area Works Approval Application – Response to Department of Environment Information Request received 30 August 2016	Bechtel 2016d	DWER records (A1156817)
6.	Wheatstone LNG Plant Waste Storage Facility – Response to Department of Environment Information Request received 17 October 2016	Bechtel 2016e	DWER records (A1180273)
7.	Wheatstone Project LNG Plant – Waste Storage Area – Engineering Certification to satisfy Condition 5 of Works Approval W5976/2016/1 received 21 December 2016	Bechtel 2016f	DWER records (A1348022)
8.	Wheatstone Project LNG Plant – Waste Storage Area – Compliance Document	Bechtel 2018	DWER records (A1717430)
9.	Ministerial Statement 8734	MS 873	Accessed at http://www.epa.wa.gov.au
10.	Mangrove, Algal Mat and Tidal Creek Protection Management Plan	Chevron 2017	Accessed at http://chevronaustralia.com.au
11.	Wheatstone Project Appendix O1 – An assessment of Light Emissions in Relation to Sea Turtle Nesting Beaches	URS 2010	

	in the Wheatstone Project Area		
12.	DER, July 2015. <i>Guidance Statement: Regulatory principles.</i> Department of Environment Regulation, Perth.	DER 2015a	
13.	DER, October 2015. <i>Guidance Statement: Setting conditions.</i> Department of Environment Regulation, Perth.	DER 2015b	
14.	DER, August 2016. <i>Guidance Statement: Licence duration.</i> Department of Environment Regulation, Perth.	DER 2016a	
15.	DER, November 2016. <i>Guidance Statement: Risk Assessments.</i> Department of Environment Regulation, Perth.	DER 2016b	
16.	DER, November 2016. <i>Guidance Statement: Decision Making.</i> Department of Environment Regulation, Perth.	DER 2016c	

Appendix 2: Summary of applicant’s comments on risk assessment and draft conditions

Condition	Summary of Licence Holder comment	DWER response
Condition 3 (Table 4) (Since deleted)	The Applicant requested that the description of discharge in Table 4 be amended to ‘treated or clean stormwater’ given that not all discharged stormwater will be treated (i.e. clean stormwater from the hazardous waste area sumps that meet the discharge limits set out in the licence).	Description amended to “Stormwater from the Gross Pollutant Trap and Hazardous waste sumps 1 and 2” noting that not all stormwater discharged is treated.
Condition 3 (Since deleted)	Condition 3 specifies discharges to land are only via Discharge Point 1. The Applicant notes that the hazardous waste sumps are required to be manually emptied (usually via vac truck) and notes that at times the vac truck will discharge clean stormwater off the premises (i.e. Vac truck will collect water from various sumps within and outside of the WSF prescribed premises and discharge the combined clean stormwater to a drain outside of the WSF prescribed premises). The Applicant requested that a note is added in Table 1 or the figure in Schedule 1 suggesting that Discharge Point 1 is representative of the sitewide stormwater drainage network.	The condition (condition 3) specifying Discharge Point 1 has been removed allowing for wastewater that meets the water quality limits to be discharged anywhere within the Wheatstone internal stormwater drainage network. The Delegated Officer has determined that provided the discharge meets the specified limits, the environmental risk does not change regardless of where the wastewater is discharged within the drainage system. Condition 4 (now condition 3) has been amended to clarify that the discharge point applies to “Discharge from the Gross Pollutant Trap and Hazardous waste bund sumps 1 and 2” which is derived from the deleted condition.
Condition 3 (Table 4)	Limits specified in Table 4 require pH to be in the range of 6 and 8. The Applicant advised that historical surface water monitoring at the LNG Plant Site has demonstrated that the naturally occurring pH is between 6 and 9 and requested that pH criteria is amended to the range of 6 and 9.	Accepted.
Condition 4	The Applicant requested that the condition be reworded to read “The licence holder must monitor emissions in accordance with	The Delegated Officer considers these conditions to be legally sound, clear and enforceable and as such no changes have

Condition	Summary of Licence Holder comment	DWER response
	Table 5” to reduce unnecessary complication with demonstrating compliance with Conditions 4 and 6.	been made.
Condition 4 (Table 5)	The GPT is a SPEL Ecoceptor which is designed to separate and capture sediments, silt, suspended solids and oil and grease. Water only discharges from the gross pollutant trap during flow events and as such the Applicant advised that is not possible to monitor water from the GPT prior to discharge and that they can only attempt to take a sample of the discharge when discharging, however this also is not always possible. Instead of conditions requiring water quality sampling, the Applicant requested a condition to ensure that the SPEL Ecoceptor is maintained such that it will perform per design during flow events.	Waste stored in the General Waste Area includes general wastes such as putrescible and inert waste. Hazardous wastes are stored in separate bunded areas. Considering this, the Delegated Officer considers that the likelihood of stormwater contamination from hazardous materials is low. The Delegated Officer also notes that GPT, which captures stormwater from the General Waste Area, has some ability to separate oil and grease if required. Given the low risk of contamination, and noting that water quality sampling may not be possible during flow events, the Delegated Officer has removed the requirement on the licence to sample wastewater from the GPT. A condition requiring the operation and maintenance of the GPT has been placed on the licence in lieu of sampling requirements to ensure that the system is maintained appropriately.
Condition 9	The Applicant advised that the WSF is fenced and therefore considered the conditioned requirement to collect litter at least weekly to be overly prescriptive and inconsistent with Licence L8759/2013/1 for the Wheatstone Waste Management Facility which will receive waste from the WSF. The Applicant requested that the same condition as Licence L8759/2013/1 be included requiring the Applicant to “take all reasonable and practical measures to ensure that no windblown litter escapes from the Premises”.	Noting that the WSF is fully fenced the Delegated Officer has removed the specification to collect litter on a weekly basis and amended the condition to require that wind-blown waste is contained within the boundary of the premises. The Licence Holder is responsible for initiating actions to ensure the requirements of this condition are met.
Condition 12 (Since	The Applicant requested that DWER provide further definition of consolidation. Bechtel will we need the ability to combine wastes into one bin (i.e. tip one half full bin into another one containing the same type of waste, so that a full bin can be transported	Further information was provided by the Applicant on 16 October 2018 confirming that consolidation of liquid waste would likely occur, however, consolidation of solid waste was not proposed. Consolidation of liquid waste would take place

Condition	Summary of Licence Holder comment	DWER response
deleted)	back to the WTS). Therefore, filling up partially empty containers should be permitted but mixing or blending of different liquid waste types would not be permitted.	<p>within the bunded areas and only compatible waste will be mixed.</p> <p>The Delegated Officer considers that limiting the consolidation of liquid waste to within the bunded area will mitigate risks associated with potential spills during transfer. As such condition 12 restricting the consolidation of liquid waste has been removed from the Licence. Table 12 has been amended to specifying that consolidation of liquid waste shall only occur in the Hazardous Waste Area.</p>
Conditions 11 and 12	The Applicant requested the inclusion of the option to record waste volumes in m ³ where tonnages can't be measured.	The conditions have been amended to allow the monitoring of waste inputs and outputs in m ³ where no weighbridge is present. The annual report requires that where quantities of waste have been measured in m ³ , an estimated quantity in tonnes be reported to allow comparison with limits specified on the licence. Factors for calculating the conversion are to be provided in the annual report.
Schedule 1: Premises map	The gross pollutant trap is located outside of the premises boundary on the draft site layout map. An updated map was provided to include the GPT, as well as locations of monitoring and discharge points.	Noted and Schedule 1 maps updated.
Condition 7 (Schedule 3: Table 12)	<p>The Applicant requested that for consistency with Licence L8759/2013/1 and ease of management of wastes between the two areas can the additional waste types that have recently been added to L8759/2013/1 (Amendment Notice 3 issued on 7 August 2018) also be added to Table 12.</p> <p>Also for consistency with L8759/2013/1, the Applicant requested that the Controlled Waste codes be added to Table 12 (Refer Table 1.3.1 of L8759/2013/1 Amendment Notice 3), and that Special Waste Type 3 be added to Table 12. The additional</p>	<p>The Delegated Officer has allowed the inclusion of the additional waste codes noting that receipt and handling of these types of waste are subject to the existing conditions relating to storage within specified areas and quantity limits.</p> <p>Waste codes have been included on the licence for consistency with L8759/2013/1.</p>

Condition	Summary of Licence Holder comment	DWER response
	<p>codes are Hazardous Solid Waste – A100, D210, D220, D230, D270, D340, M220, M230, N230. Hazardous Liquid Waste – E100, E120, E130, H100, H170, J160, M150, M220, T120, J180.</p> <p>In their response to the revised draft (16 October 2018), the Applicant confirmed that Special Waste Type 3 would be stored in IBCs, drums or isotainers (liquid waste) and IBCs or covered skip bins (solid waste) within the Hazardous Waste Bunds.</p>	
Schedule 3: Table 12	Table 10 in Schedule 2 states that the depot has a design capacity of 5000 tonnes per year for solid waste. At present Table 12 only allows for 2350 tonnes of solid waste to be received at the WSF. The Applicant requested that the allowable volume in Table 12 be increased to align with Table 10.	The Applicant confirmed that current waste quantities were sufficient.
Section 4.1 of Decision Report	<p>The Decision Report indicates that mercury adsorption material will not be accepted at this facility. The Applicant advised that the intention and preference is to manage NORM and mercury adsorption media at their source (i.e. handling, packaging, containerised) and transport directly off-site. However, it has been identified that if there are delays to sending these wastes off-site (potentially due to transportation or disposal facility constraints), it would be preferential to store these wastes in the WSF (and WTS) given these areas are purpose designed for the storage of hazardous waste (including bunding, security, etc.), rather than leaving them within the LNG Plant until off-site disposal is possible.</p> <p>The Applicant also advised that they had engaged with the Radiological Council regarding the storage of NORM and confirmed that the WSF does not require registration under the <i>Radiation Safety Act 1975</i> until NORM waste is encountered that is legally radioactive under Regulation 5 of the <i>Radiation</i></p>	<p>The Delegated Officer considers that the management of waste containing NORM above the thresholds specified in the <i>Radiation Safety (General) Regulations 1983</i> is adequately regulated under the <i>Radiation Safety Act 1975</i>.</p> <p>The Delegated Officer notes that the <i>Environmental Protection (Controlled Waste) Regulations 2004</i> do not apply to waste with NORM below these thresholds and therefore there is no applicable Waste Code. No changes to the conditions are required to allow acceptance of NORM waste below these thresholds as they are captured under existing waste descriptions/codes relating to Hazardous Solid and Liquid Waste.</p>

Condition	Summary of Licence Holder comment	DWER response
	<p><i>Safety (General) Regulations 1983</i>. The Applicant advised that NORM waste had not been encountered to date on site and it was expected that identification of NORM would be a gradual process (i.e. detection of low levels in initial years of operation). As such, the Applicant intends to manage NORMs waste that is below radioactive thresholds defined in the <i>Radiation Safety (General) Regulations 1983</i> at the WSF prior to registering the site with the Radiological Council.</p>	

Attachment 1: Issued Licence L8956/2016/1
