Government of Western Australia
Department of Environment Regulation

Works Approval

Works Approval Number	W6016/2016/1
Works Approval Holder	Mud Logic (WA) Pty Ltd ACN: 6015 038 376
Registered business address	Suite 14, 71-73 Calley Drive LEEMING WA 6149
Address for notifications	35 Crocker Drive MALAGA WA 6062
Duration	**Commencement date** 7 March 2017 **Expiry Date** 6 March 2020
Prescribed Premises	Category 72- Chemical manufacturing Category 75- Chemical blending
Premises	Mud Logic WA 35 Crocker Drive MALAGA WA 6062 Lot 9 on Plan 13931 Certificate of Title Volume 1631 Folio 412

This Works Approval is granted to the Works Approval Holder, subject to the following conditions, on 3 March 2017 by:

Date signed: 3 March 2017

Caron Goodbourn

Acting Manager Licensing (Process Industries)

an officer delegated under section 20 of the Environmental Protection Act 1986

Premises Description

The **Works Approval Holder** is proposing to construct a chemical manufacturing and chemical blending facility at 35 Crocker Drive, Malaga.

The **Works Approval Holder** will be carrying out work on the premises that fall within categories 72 and 75 and as such the **Premises** will become Prescribed Premises under the **EP Act.**

The **Premises** is situated within an industrial area, with other industrial premises directly adjacent. The nearest residential area is Mirrabooka approximately 350m to the west.

Conditions

Environmental compliance

1. The ***Works Approval Holder*** must comply with the ***EP Act*** and all regulations prescribed under the ***EP Act*** applicable to the ***Premises*** including:

(a) The duties of an occupier under s 61;

(b) The duty to notify the ***CEO*** of ***discharges*** of waste under s 72; and

(c) Not causing, or doing anything that is likely to cause, an offence under the ***EP Act***,

except where the ***Works Approval Holder*** does something in accordance with a ***Condition*** which expressly states that a defence under s 74A of the ***EP Act*** may be available.

Premises

2. This ***Works Approval*** applies to the ***Premises*** defined in the *Premises Description Table* and as depicted in the Premises Map in Schedule 1.

Premises Description Table	
General Location	Legal land description, reserve or tenement (all or part)
35 Crocker Drive, Malaga	Lot 9 on Plan 13931 Certificate of Title Volume 1631 Folio 412

Location of Works

3. The ***Works Approval Holder*** must locate the **Works** generally in accordance with the Site Plan in Schedule 1.

Infrastructure and Equipment

4. Key items of infrastructure which may be built are listed in the *Infrastructure Requirements Table*. The ***Works Approval Holder*** must not depart from the requirements specified in column 2 of *the Infrastructure Requirements Table* except:

(a) where such departure is minor in nature and does not materially change or affect the infrastructure; or

(b) where such departure improves the functionality of the infrastructure and does not increase risks to public health, public amenity or the environment;

and all other ***Conditions*** in this **Works Approval** are still satisfied.

Infrastructure Requirements Table	
Infrastructure	Requirements (Design and Construction)
Chemical storage, manufacturing, blending and packaging area	- Located within an enclosed shed to allow the blending, packaging and manufacture of chemicals in a sealed environment. - Chemical storage areas must be provided with a sealed bunded capacity of 110% volume capacity of the maximum stored volume. - Up to an aggregate of 7kL/tonnes of Class 8 products contained in containers ranging in size from 20 litres to 1kL capacity to be stored on bunded storage areas. - Chemically incompatible liquids(acid and alkalis) to be stored within separate bunds and at least 5m apart.
6000 litre stainless steel chemical blending tank	- Designed and constructed such that it is located within a bund that is capable of containing the contents of the tank in the event of a leak or rupture. - Fitted with a batch controller to prevent overflow.
6000 litre stainless steel chemical manufacturing tank	- Designed and constructed such that it is located within a bund that is capable of containing the contents of the tank in the event of a leak or rupture. - Fitted with a batch controller to prevent overflow. - Fitted with a cooling system to ensure exothermic reaction is controlled and does not exceed 115^0 C

5. On completion of the Works, the ***Works Approval Holder*** must provide to the ***CEO*** a compliance document confirming the extent to which construction of the infrastructure has been completed in accordance with this works approval.

6. If any departures to the infrastructure or the requirements of the infrastructure have occurred, the ***Works Approval Holder*** must provide the ***CEO*** with a list of such departures and certification that the departures comply with Condition 4(a) or (b), together with the compliance document pursuant to condition 5.

Records and Information

7. The ***Works Approval Holder*** must maintain accurate records including information, reports and data in relation to the Works.

8. All information and records required under this ***Works Approval*** must:

(a) be legible;

(b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval; and

(c) be retained for 6 years after the expiry of this ***Works Approval***.

Reports

9. If requested by the ***CEO*** from time to time, the ***Works Approval Holder*** must provide

the ***CEO*** with reports or information relating to the Works, the ***Premises*** or any ***condition*** in this Works Approval (including data from any monitoring conditions or environmental risk assessment studies).

10. Reports or information must be in such form as the ***CEO*** may require in a ***CEO Request***.

Requests for Information

11. The ***Works Approval Holder*** must comply with a ***CEO Request***, within 7 days from the date of the ***CEO Request*** or such other period specified in the ***CEO Request***.

Definitions and Interpretation

Definitions

In this Works Approval, the following terms have the following meanings:

CEO Request means a request made by the CEO to the Works Approval Holder in writing, sent to the Works Approval Holder's address for notifications, as described at the front of this Works Approval, in relation to:

(a) information, records or reports in relation to specific matters in connection with this Works Approval including in relation to compliance with any conditions and the calculation of fees (whether or not a breach of condition or the EP Act is suspected); or

(b) reporting, records or administrative matters:

(i) which apply to all Works Approvals granted under the EP Act; or

(ii) which apply to specified categories of Works Approvals within which this Works Approval falls.

Condition means a condition to which this Works Approval is subject under s 62 of the EP Act.

Discharge has the same meaning given to that term under the EP Act and, in relation to waste or other matter, includes deposit it or allow it to escape, or cause or permit it to be, or fail to prevent it from being, discharged, deposited or allowed to escape.

EP Act means the *Environmental Protection Act 1986* (WA).

EP Regulations means the *Environmental Protection Regulations 1987* (WA).

Premises refers to the premises to which this Works Approval applies, as specified at the front of this Works Approval and as shown on the map in Schedule 1 to this Works Approval.

Works Approval refers to this document, which evidences the grant of Works Approval by the CEO under s 57 of the EP Act, subject to the conditions.

Works Approval Holder refers to the occupier of the Premises being the person to whom this Works Approval has been granted, as specified at the front of this Works Approval.

Interpretation

In this Works Approval:

(a) the words ‘including,' ‘includes’ and ‘include’ will be read as if followed by the words ‘without limitation’;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

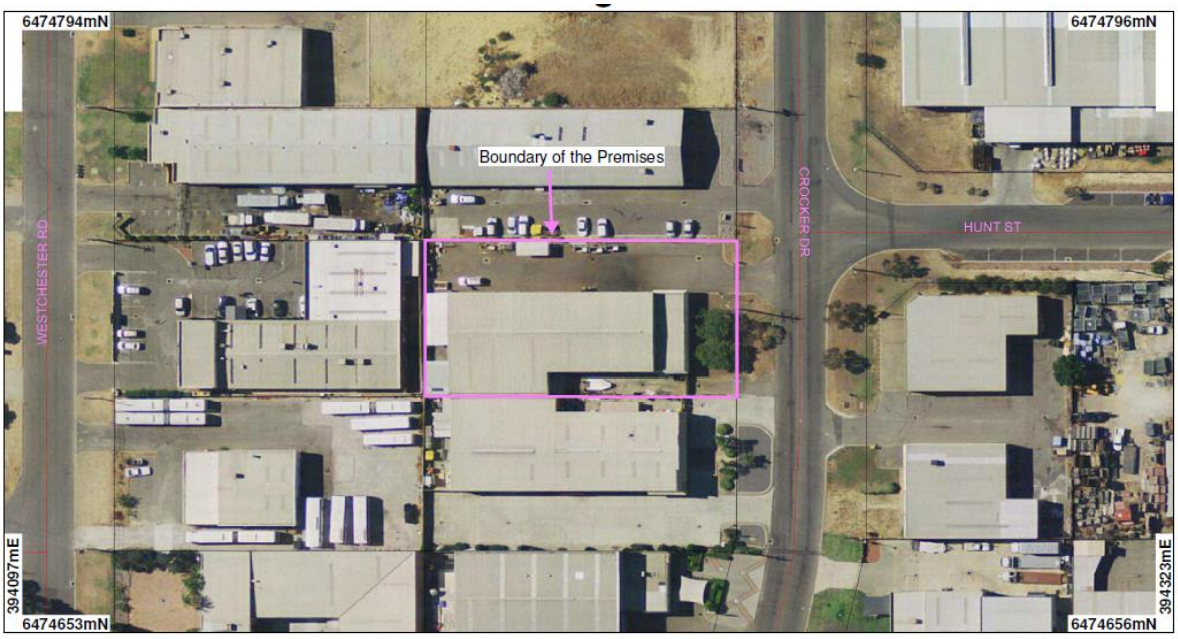
(c) where tables are used in a Condition, each row in a table constitutes a separate Condition; and

(d) any reference to an Australian or other standard, guideline or code of practice in this Works Approval means the version of the standard, guideline or code of practice in force at the time of granting of this Works Approval and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the Works Approval.

Schedule 1: Site Plans

Premises Map

The ***Premises*** are shown in the map(s) below. The pink line depicts the boundary of the ***Premises***.



LEGEND

- Road Centrelines
- Perth Metropolitan Area Central 15cm Orthomosaic - Landgate 2014
- Perth Metropolitan Area South 15cm Orthomosaic - Landgate 2014
- Perth Metropolitan Area North 15cm Orthomosaic - Landgate 2014

Cadastre

- Freehold
- Crown Reserve
- State Forest / Timber Reserve (cont)
- Marine Park
- Crown Lease
- Lease / Reserve
- Lease on State Forest / Timber Reserve
- Public Roads
- Unallocated Crown Land
- Water

N

0 ~30 m

Scale 1:1249
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

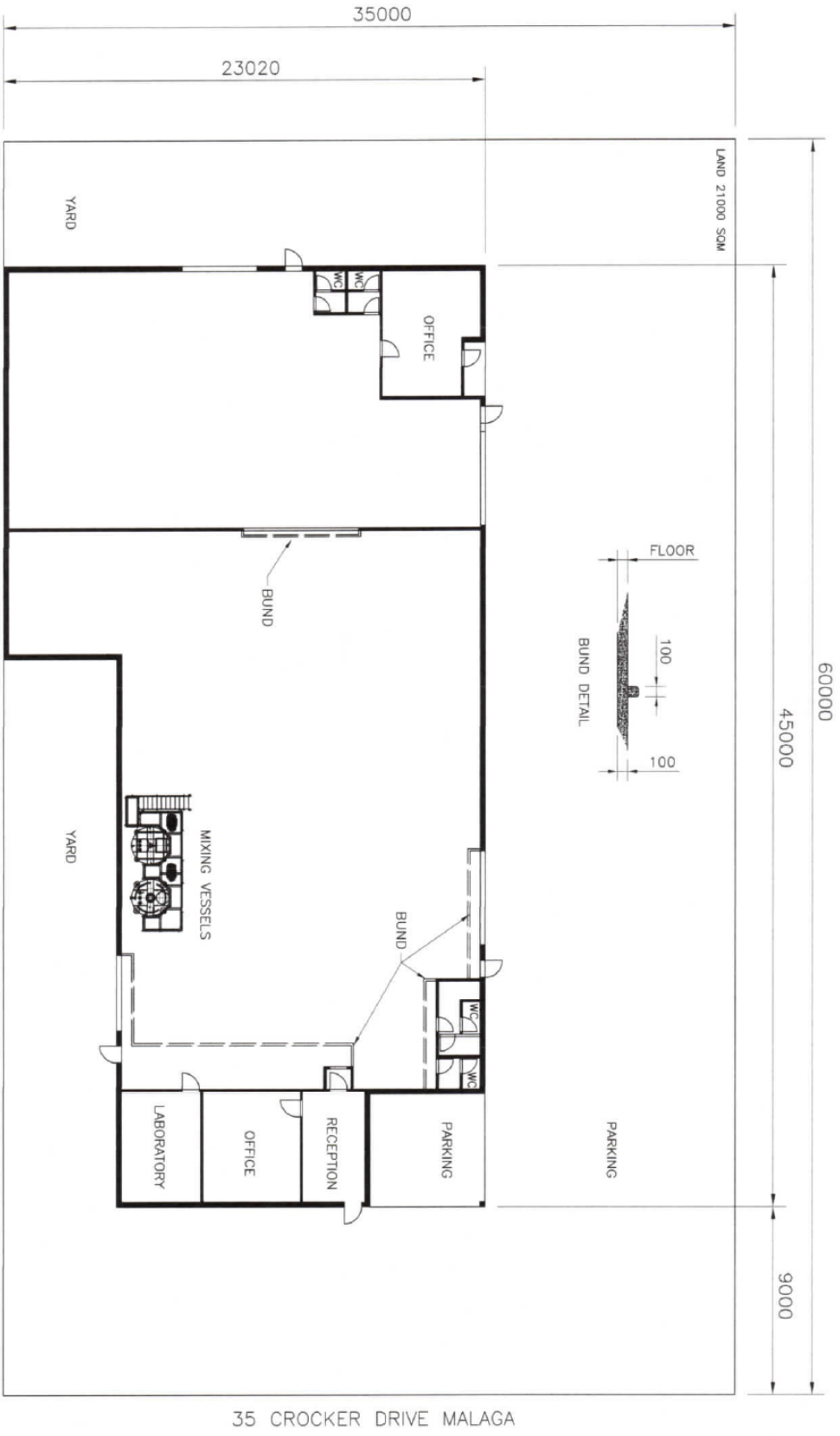
Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

Prepared by: Peter Knol
Prepared for: Department of Environment Regulation
Date: 20/01/2017 5:44:13 PM

Information derived from this map should be confirmed with the data custodian acknowleged by the agency acronym in the legend.

Government of Western Australia
Department of Environment Regulation

Site Plan


35000
23020
LAND 21000 SQM
YARD
WC
WC
OFFICE
BUND
FLOOR
BUND DETAIL
100
100
60000
45000
9000
YARD
MIXING VESSELS
BUND
WC
WC
LABORATORY
OFFICE
RECEPTION
PARKING
PARKING
35 CROCKER DRIVE MALAGA

Government of Western Australia
Department of Environment Regulation

Decision Report

Application for Works Approval and Licence/Registration

Division 3, Part V *Environmental Protection Act 1986*

Applicant:	**Mud Logic (WA) Pty Ltd**
ACN:	**615 038 376**
Works Approval	**W6016/2016/1**
File Number:	**DER2016/002302**
Premises:	**Mud Logic WA** **Unit 1, 35 Crocker Drive, MALAGA WA 6062** **Lot 9 on Plan 13931** **Certificate of Title Volume *1631* Folio 412**
Date of report:	**03/03/2017**
Status of Report	**Final**

Table of Contents

Definitions of terms and acronyms

Term	**Definition**
Applicant	Mud Logic (WA) Pty Ltd
Category/Categories (Cat.)	categories of prescribed premises as set out in Schedule 1 of the EP Regulations
DER	Department of Environment Regulation
Decision Report	this document
Delegated Officer	An officer under section 20 of the EP Act.
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
Noise Regulations	*Environmental Protection (Noise) Regulations 1997* (WA)
Occupier	is defined in the EP Act to mean a person who is in occupation or control of a premises, or part of a premises, whether or not that person is the owner of the premises or part of the premises.
Premises	35 Crocker Drive, MALAGA WA, Lot 9 on Plan 13931 (Certificate of Title Volume 1631 Folio 412)
Prescribed Premises	Premises prescribed under Schedule 1 to the EP Regulations
Primary Activities	is defined in DER's *Guidance Statement: Risk Assessments* to include the primary activities which fall within the description of the category of prescribed premises in Schedule 1 to the EP Regulations.
UDR	Environmental Protection(Unauthorised Discharges) Regulations 2004 (WA)
kL	Kilolitres

1. Purpose and scope of assessment

An application for a concurrent works approval and a licence was received on 12 November 2016 from Mud Logic (WA) Pty Ltd (the Applicant) for the construction and operation of a chemical manufacturing and chemical blending premises to be located at Unit 1, 35 Crocker Drive, Malaga (the premises).

The application was submitted for the Categories 31 and 33 of Schedule 1 of the EP Regulations, however due to the nature of the proposed works and operation of the premises, the Delegated Officer has decided that the chemical blending and manufacturing (production of drilling mud, drilling foam and drilling lubricants) at the premises are more suited to fall under categories 72 (chemical manufacturing) and 75 (chemical blending) of Schedule 1 Part 2 of the *Environmental Protection Regulations 1987*. A works approval is required for the installation of equipment that will make the premises prescribed and a licence or registration for the commissioning the facility. The Applicant may choose to withdraw the current licence application and apply for a registration instead.

This Decision Report presents an assessment of potential environmental and public health risks from emissions and discharges from the construction and operation of these activities.

2. Background

The Applicant proposes to undertake the production of drilling mud, drilling foam and drilling lubricants and includes storage and repackaging drilling mud powdered products from bulk to smaller bags or containers.

The Applicant intends to use the existing warehouse as a distribution and manufacturing centre. The Applicant has no other prescribed premises within Western Australia. The Applicant has significant experience in the drilling industry. The Applicant leases the premises and indicated the intention to operate for a period of at least 10 years.

The proposed activities will cause the premises to become prescribed under categories 72 (chemical manufacturing) and 75 (chemical blending) of Schedule 1 of the *Environmental Protection Regulations 1987*. A works approval is required by the Applicant the installation of equipment that will make the premises prescribed. Table 1 describes the premises categories applicable to the premises.

Table 1: Prescribed Premises Category

Classification of Premises	**Description**	**Production or design capacity**(as per application)	***Schedule 1 Category Threshold***
Category 72	Chemical manufacturing: premises on which chemical products are manufactured by a chemical process.	225 tonnes per year	Not more than 100 tonnes per year
Category 75	Chemical blending or mixing: premises on which chemicals or chemical products are mixed, blended or packaged in a manner that does not causes or is not likely to cause a discharge of waste into the environment.	225 tonnes per year	5,000 tonnes or more per year

3. Overview of Premises Operations

3.1 Infrastructure

The Applicant proposes to install the following infrastructure on the premises as it relates to Categories 72 and 75, which is detailed in Table 2 below.

Table 2: Mud Logic prescribed premises infrastructure

	Infrastructure
	Prescribed Activity Category 72 – Chemical Manufacturing and Category 75 – Chemical Blending
The Applicant manufactures drilling foam by mixing C 10 Ethoxylated Alcohol and Sulphamic Acid in a mixing tank, which then reacting with each other in a mild exothermic reaction. The temperature of the reaction is controlled by using a cooling system.	
1	One 6,000L mixing vessel, fitted with batch controller and cooling system to ensure the exothermic reaction is controlled.
2	Bunded, chemical storage and packaging building
	Prescribed Activity Category 75 – Chemical Blending
The production of liquid drilling lubricants by blending a range of lubricants, water, emulsifiers and surfactants. The raw materials are pumped into a mixing vessel, mixed and then packaged into containers (25L to 200L) for sale.	
3	One 6,000L mixing vessel, fitted with batch controller to prevent overflow of the vessel.

3.2 Operational aspects

The Applicant proposes to use an existing warehouse as distribution and manufacturing center for drilling products as follows:

a) Repackaging of powdered polymers

Repackaging of bulk quantities of powdered polymers such as XC Polymer, Guar Gum, Polyanionic Cellulose and starch based products. Bulk bags (1000KG) are loaded into an enclosed hopper from where smaller containers are filled using an enclosed chute. This process will occur inside an enclosed building and as outlined in the application is not expected to generate any waste or dust outside of the shed.

b) Blending of liquids

The second planned activity is blending of liquids, such as castor oils, esters of canola oil and sunflower oil, with emulsifiers, surfactants and water to create water soluble drilling products. The raw materials are pumped at the required ratio into a 6,000L mixing tank. The tank is enclosed and is cleaned with water after each batch. The wash water is collected in an IBC and reused for subsequent production runs. There are no process related emissions and as the mixing tank is within a bunded area any spillage that may occur is competently contained

c) Chemical manufacturing

The third planned activity is chemical manufacturing of drilling foam products. C 10 Ethoxylated Alcohol and Sulphamic Acid are blended in a 6,000L mixing vessel. They are then heated to about 85°C and at that temperature a mild exothermic reaction occurs which is controlled to a maximum of 115°C to ensure the product achieves the required quality. The finished product is cooled to about 50°C and mixed with other additives and water to make the final product. This final product is then decanted into containers (25L to 200L) for sale. On

completion of a production run, the mixing equipment is washed, with wash water being collected in an IBC for use in subsequent production runs. There is no waste emitted from this process, although chemical odours may be detected in the manufacturing area. As the planned activity is to occur within an enclosed building, odours are not expected beyond the premises.

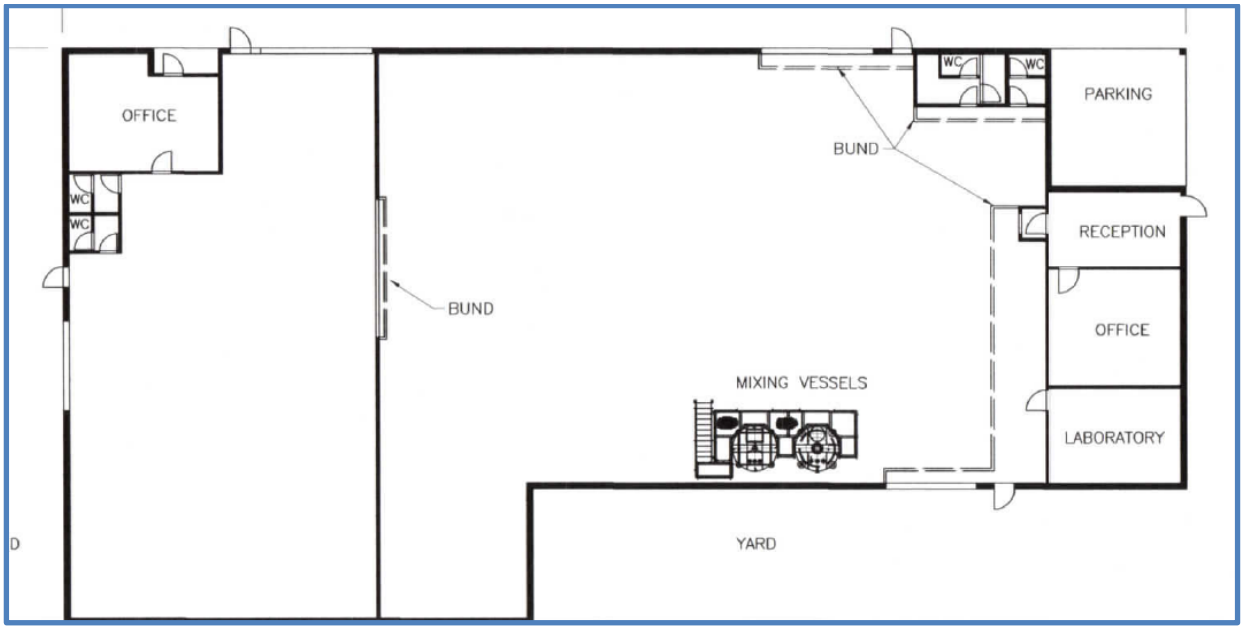
d) Chemical storage

The Applicant advised that an application for a Dangerous Goods Licence was lodged but that it was not required due to the limited amount of Class 8 products to be stored on site. All chemicals used for the manufacturing and blending and the final products are stored within the building. Up to an aggregate of 7kL/tonnes of Class 8 (corrosive) products contained in containers ranging in size from 20 litres to 1kL capacity IBC's are to be stored on 2 x bunded storage areas constructed on the northern wall. Chemically incompatible liquid products (acid and alkalis) will be stored in separate bunds and at least 5m apart.

e) Stormwater management

As the activities are planned to occur within a bunded and enclosed building it is highly unlikely that stormwater outside the building will be contaminated with raw materials or finished goods.

Figure 1 Premises lay out and bunding



4. Legislative context

4.1 Other relevant approvals

4.1.1 Planning approvals

The City of Swan confirmed that for this proposal there is no need for development approval.

4.2 Part V of the EP Act

4.2.1 Guidance Statements

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

DER Guidance Statements which inform this assessment are:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Licence Duration (November 2015)*
- *Guidance Statement: Decision Making (November 2016)*
- *Guidance Statement: Risk Assessment (November 2016)*
- *Guidance Statement: Environmental Siting (November 2016)*

5. Consultation

The Application for a Works Approval and Licence was advertised in the West Australian on 19 December 2016, to enable interested parties to comment on the application. DER did not receive any comments from third parties on this application.

On 19 December 2016 the Application was referred to the City of Swan requesting their comments. On 17 January 2017 the City of Swan advised that the proposed activity does not require development approval. The City of Swan suggested that DER should consider including conditions regarding the containment of chemicals, stormwater management and spill management. DER has considered these in its risk assessment detailed below in section 7.

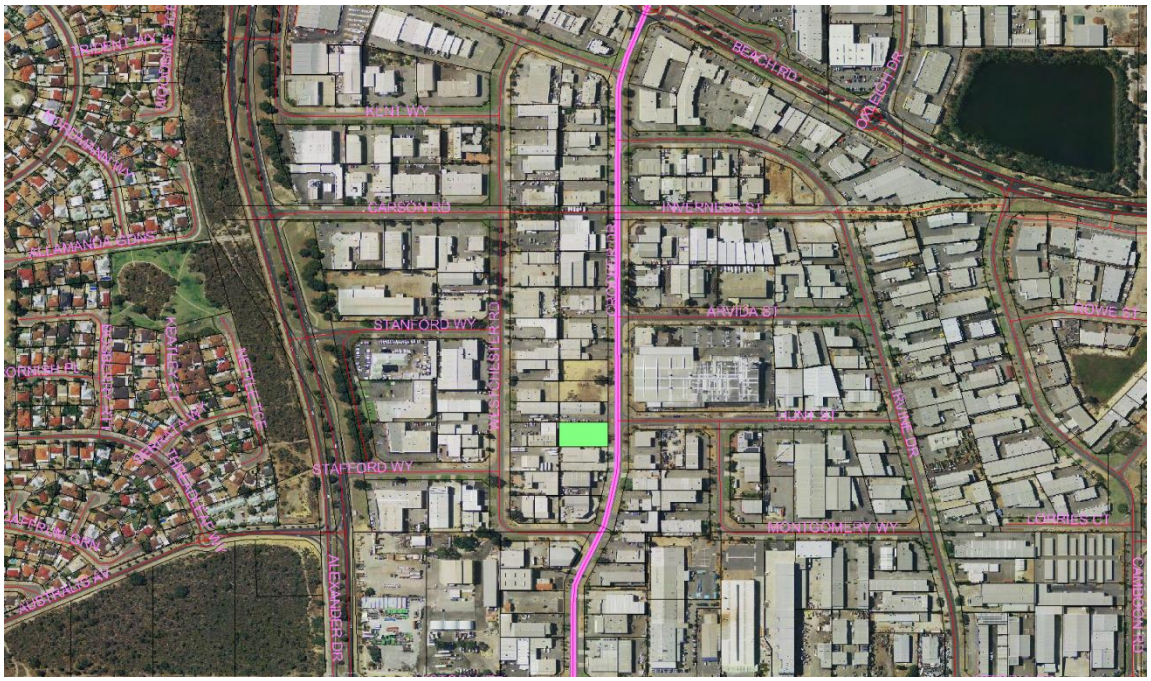
6. Location and siting

6.1 Siting context

The proposed prescribed premises will be located within an existing building within an industrial area in Malaga. Surrounding the premises are other industrial premises.

The generic location of the premises is displayed in green in Figure 2.

Figure 2 Generic premises location



6.2 Residential and sensitive premises

The distances to residential and sensitive receptors are as follows:

Table 3: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
Residential premises	About 350m to the west of the premises is the residential area of Mirrabooka.
Industrial premises	Immediately adjacent to the premises

6.3 Specified ecosystems

The distances to specified ecosystems are shown in Table 4.

Table 4: Specified ecosystems

Specified ecosystems	Distance from the Premises
Bush Forever site #385, Reid Highway Bushland, Mirrabooka, Malaga	About 300m to the west of the premises.

7. Risk assessment

7.1 Confirmation of potential impacts

Identification of key potential emissions, pathways, receptors and confirmation of potential impacts are set out in Tables 5 and 6 below. Tables 5 and 6 also identify which potential emissions will be progressed to a full risk assessment. Some potential emissions/impacts may not receive a full risk assessment where a potential receptor or pathway cannot be identified.

Table 5: Identification of key emissions during construction

		Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Works to fit out the warehouse	*Vehicle movements to deliver equipment* *Installation of equipment*	*Noise*	*Residents of Mirrabooka located 350m to the west of the premises.* *Adjacent industrial premises*	*Air/wind dispersion*	*Public amenity*	*No*	*The Delegated Officer considers that the separation distance between the source and potential receptors is sufficient to ensure there are no adverse impacts on potential receptors. In addition construction works are limited to the installation of tanks and works will be of short duration during working hours* *The Environmental Protection (Noise) Regulations 1997 will also apply.*

Table 6: Identification of key emissions during operation

		Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Chemical blending and Chemical manufacturing	*Process area*	*Odour emissions to atmosphere.*	*Residents of Mirrabooka located 350m to the west of the premises.* *Adjacent industrial premises*	*Air/wind dispersion*	*Public amenity*	*No*	*The production area is within a building.* *Small scale premises that are well separated by more than 300m to residential areas, but are immediately adjacent to industrial premises on all sides*
		Chemical contaminated process/wash water	*Soil and groundwater*	*Direct discharge*	*Soil and groundwater contamination.*	*No*	*Process area is bunded to contain 110% of the largest container.* *Wash waters are captured and contained in an onsite IBC and re-used in the process-*

		Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Bulk storage of chemicals	*Chemical Storage*	*Chemical discharge due to leaks / spillage and containment failure*	*Soil and groundwater*	*Direct discharge*	*Soil and groundwater contamination.*	*Yes*	*Chemicals are stored in competent primary with secondary containment.* *There is no waste to be emitted to the environment from the premises, at the operational stage.*

8. Appropriateness of Works Approval conditions

The conditions in the Issued Works Approval have been determined in accordance with DER's *Guidance Statement on Setting Conditions*.

Condition Ref	Grounds
Environmental Compliance Condition 1	Environmental compliance is a valid, risk-based condition to ensure appropriate linkage between the licence and the EP Act.
Premises and Location of Works Conditions 2 and 3	These conditions are valid, risk-based and ensure the premises are properly defined and works are generally located at the location specified in the application.
Infrastructure and Equipment Conditions 4, 5 and 6	These conditions are valid, risk-based and contain appropriate controls.
Records, Information and Reporting Conditions 7, 8, 9,10 and 11	These conditions are valid and are necessary administration and reporting requirements to ensure compliance.

DER notes that it may review the appropriateness and adequacy of controls at any time, and that following a review, DER may initiate amendments to the works approval under the EP Act.

9. Applicant's comments

The Applicant was provided with the draft decision report and draft works approval on 27 February 2016. The Applicant provided comments on 3 March 2017 as follows: the chemicals that were used within the process as the original information provided have changed. *The Works Approval Holder manufactures drilling foam by (mixing monomers of acrylamide and acrylic acid in a mixing tank). This needs to be changed to: The Works Approval Holder manufactures drilling foam by mixing – (C 10 Ethoxylated Alcohol and Sulphamic Acid in a mixing tank). Acrylamide and Acrylic Acid are toxic and Corrosive monomers and will not be used by Mud Logic (W.A.) Pty Ltd. All other aspects of the Draft Report are accurate and appear fine to me.*

The Delegated Officer considered that it was appropriate to make the requested changes as these chemicals are of a lower risk.

10. 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.

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

Caron Goodbourn
Acting Manager Licensing (Process Industries)
Delegated Officer under section 20 of the Environmental Protection Act 1986

Appendix 1: Key Documents

	Document Title	In text ref	Availability
1	Mud Logic Works Approval Application Form. 12 November 2016		DER records A1323680
2	Dangerous Goods Site: Risk Review Report- Albarta EHS Management Pty Ltd, September 2016		DER records A1323681
3	DER, July 2015. *Guidance Statement: Regulatory principles.* Department of Environment Regulation, Perth.	DER 2015a	accessed at http://www.der.wa.gov.au
4	DER, October 2015. *Guidance Statement: Setting conditions.* Department of Environment Regulation, Perth.	DER 2015b	
5	DER, August 2016. *Guidance Statement: Licence duration.* Department of Environment Regulation, Perth.	DER 2016a	
6	DER, November 2016. *Guidance Statement: Risk Assessments*. Department of Environment Regulation, Perth.	DER 2016b	
7	DER, November 2016. *Guidance Statement: Decision Making*. Department of Environment Regulation, Perth.	DER 2016c	