Permit

Environmental Protection Act 1994

Environmental authority EPPR00683313

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EPPR00683313

Environmental authority takes effect on 04-12-2019

Environmental authority holder(s)

Name(s)	Registered address
DYNO NOBEL MORANBAH PTY LTD	Level 8 28 Freshwater Place SOUTHBANK VIC 3006

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
ERA 14 - Electricity Generation 1: Generating electricity by using gas at a rated capacity of 10MW electrical or more	Lot 13 on SP191679
ERA 07 - Chemical Manufacturing 3: Manufacturing, in a year, a total of 200t or more of any of the following (d) explosives	Lot 13 on SP191679
ERA 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (a-i) 21 to 100EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	Lot 13 on SP191679
ERA 08 - Chemical Storage 1: Storing a total of 50t or more of chemicals of dangerous goods class 1 or class 2, division 2.3 under subsection (1)(a)	Lot 13 on SP191679

ABN 46 640 294 485

Queensland Government

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or

b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or

c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

Tristan Roberts
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Date issued: 04 December 2019

Enquiries:
Extraction, Energy and Chemical Industries Assessment
Department of Environment and Science

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Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Agency Interest - General

G1 All reasonable and practicable **measures** must be taken to minimise the likelihood of environmental harm being caused

G2 All information and records that are required by the conditions of this environmental authority must be kept for a minimum for five (5) years. Environmental monitoring results must be kept until surrender of this environmental authority. All information and records required by the conditions of this environmental authority must be provided to the **administering authority** upon request.

G3 All instruments, equipment and measuring devices used for measuring or monitoring in accordance with any condition of this approval must be calibrated, and appropriately operated and maintained.

G4 The **activity** must be undertaken in accordance with written procedures that:

1. Identify potential risks to the environment from the **activity** during routine operations, closure and an emergency.
2. Establish and maintain control **measures** that minimise the potential for environmental harm.
3. Ensure plant, equipment and **measures** are maintained in a proper and effective condition.
4. Ensure plant, equipment and **measures** are operated in a proper and effective manner.
5. Ensure staff are trained and aware of their obligations under the *Environmental Protection Act 1994*.
6. Ensure that reviews of environmental performance are undertaken at least annually.

G5 An **appropriately qualified person(s)** must monitor, record and interpret all parameters that are required to be monitored by this environmental authority and in the manner specified by this environmental authority.

G6 Any breach of a condition of this environmental authority, must be reported to the **administering authority** as soon as practicable, or at most, within 24 hours of **you** becoming aware of the breach. Records must be kept including full details of the breach and any subsequent actions undertaken.

Agency Interest - Air

A1 Odours or airborne **contaminants** which are **noxious** or **offensive** or otherwise unreasonably disruptive to public amenity or safety must not cause nuisance to any **sensitive place** or **commercial place**.

A2 The release of **contaminants** to the atmosphere from a point source must only occur from those release points identified in **Table 1 - Release Points to Ai**r and must be directed vertically upwards without any impedance or hindrance.

Table 1 – Release Points to Air

Release Point	Description	Minimum Release Height (metres above ground)	Minimum Exit Velocity (m/s)
A1	Prill Tower	73.4	12.5
A2	Nitric Acid Vent	64.7	19.1
A3	Ammonia Plant Air Heater	21	9.7
A4	Ammonia Plant Auxiliary Boiler	21	13.4
A5	Generator Stack 1	6	16.8
A6	Generator Stack 2	6	16.8
A7	Generator Stack 3	6	16.8
A8	Generator Stack 4	6	16.8
A9	Generator Stack 5	6	16.8
A10	Generator Stack 6	6	16.8
A11	Generator Stack 7	6	16.8
A12	M109 Boiler	25	2.6

A3 **Contaminants** must be released to the atmosphere from a release point at a height and a flow rate not less than the corresponding height and velocity stated for that release point in **Table 1 – Release Points to Air**.

A4 **Contaminants** must not be released to the atmosphere from a release point at a mass emission rate/concentration, as measured at a monitoring point, in excess of that stated in **Table 2 - Contaminants Limits to Air** and monitored not less frequently than **Table 3 - Required Release Point Determinations.**

Table 2 – Contaminant Limits to Air

Release Point	Point Description	Contaminant	Maximum Release Limit (g/s)
A1	Prill Tower	Particulates	0.890
A2	Nitric Acid Vent	Oxides of Nitrogen	14.400
A3	Ammonia Plant Air Heater	Oxides of Nitrogen	0.450
		Oxides of Sulphur	0.032
A4	Ammonia Plant Auxiliary Boiler	Oxides of Nitrogen	2.700
		Oxides of Sulphur	0.092
A5 – A11	Generator Stack 1 - 7	Oxides of Nitrogen	1.650
		Oxides of Sulphur	0.016
		Particulates (PM10)	0.380
A12	M109 Boiler	Oxides of Nitrogen	3.692
		Oxides of Sulphur	0.024

Note 1. The above oxides of nitrogen release limits are applicable during all timings except start-up, shutdown and calibration of emissions monitoring devices.

Table 3 - Required Release Point Determinations

Determination Required	Release Point	Frequency
Mass emission rate and concentration of PM10 particulates, ammonium nitrate, ammonia and nitric acid	A1	Annually
Mass emission rate and concentration of oxides of nitrogen (expressed as NO2 equivalents) and ammonia	A2	Annually
Mass emission rate and concentration of oxides of nitrogen (expressed as NO2 equivalents) and oxides of sulphur (expressed as SO2 equivalents) in the flue gas	A3	Annually
Mass emission rate and concentration of oxides of nitrogen (expressed as NO2 equivalents) and oxides of sulphur (expressed as SO2 equivalents) in the flue gas	A4	Annually

Determination Required	Release Point	Frequency
Mass emission rate of PM10 particulates, mass emission rate and concentration of oxides of nitrogen (expressed as NO2 equivalents) in the flue gas at 5% oxygen reference level and mass emission rate of oxides of sulphur (expressed as SO2 equivalents)	A5 – A11	Every 2 years
Mass emission rate and concentration of oxides of nitrogen (expressed as NO2 equivalents) and oxides of sulphur (expressed as SO2 equivalents) in the flue gas	A12	Annually

A5 Where any flare(s) is used for treatment of emissions, then all flares are to be operated to optimise combustion and minimize likelihood of smoky emissions and odours.

A6 The holder of this approval must conduct and keep records of a monitoring program of **contaminant** releases to the atmosphere at the release points, frequency, and for the parameter specified in **Table 3 - Required Release Point Determinations** and which complies with the following:

(a) Monitoring provision for the release points listed in **Table 3** must comply with the Australian Standard AS 4323.1 - 1995 "Stationary source emissions Method 1: Selection of sampling provisions" or other relevant standard.

(b) The following tests must be performed for each required determination specified in Table 3 - Required Release Point Determinations:
- gas velocity and volume flow rate;
- temperature and oxygen content;
- water vapour concentration (moisture content);
- reference to the actual test methods and uncertainties of the methods.

(c) Where practicable samples taken must be representative of the **contaminants** discharged when emissions are expected to be at maximum rates.

(d) During the sampling period the following additional information must be gathered from Release Points A1 – A4 and A12:
- production rate at the time of sampling;
- raw materials used;
- number of equipment and mixing vessels operating;
- operating or mixing temperature; and
- product made.

(e) During the sampling period the following additional information must be gathered from Release Points A5 – A11:
- production rate or throughput of equipment served;

- electricity generation rate at the time of sampling;
- fuel type and consumption rate; and
- number of generating units in use.

A7 When requested by the **administering authority**, monitoring for relevant specified air quality indicators must be undertaken to investigate any complaint **of environmental nuisance** caused by a release to the atmosphere from a release point at the site, and the results thereof notified to the **administering authority** within 14 days following completion of monitoring. Air quality indicators and locations specified in the request must be relevant to the complaint.

A8 The holder of this environmental authority must ensure that all reasonable and practicable **measures** are taken in the design and operation of the plant to prevent, or if this is not practicable, minimise fugitive emissions. Reasonable and practicable measures include but are not limited to:

(a) Implementation of a monitoring program to regularly monitoring for leaks on all componentry including pumps, piping and controls, vessels and tanks;

(b) Operating, maintenance and management practices to be implemented to mitigate fugitive sources; and

(c) The ducting and extraction systems that transfer effluent gases from one location to another must be constructed, operated and maintained so as to minimise any leakage of effluent gases and vapours to the atmosphere occurring from these sources.

A9 All collected material removed from the Prill Tower scrubber must be recycled or disposed of in a manner that will not cause the release of **contaminants** to the atmosphere or to waters.

Agency Interest – Water

WA1 Other than as permitted within this authority, contaminants must not be released from the site to any **waters** or the bed and banks of any **waters** except at:

W1. 21° 58’ 27.78”S 147° 58’ 38.78”E
Stormwater that may be released to a contained structure in compliance with the limit levels stated in Table 1 – Release Criteria.

W2. 21° 58’ 17.89”S 147° 58’ 27.86”E
Emergency overflow of process water from evaporation pond spillway overflow point.

Table 1 – Release Criteria

Parameter	Limit	Unit	Comment
Calcium	1000	mg/L	
Magnesium	-	mg/L	Insufficient information
Sulphate	1000	mg/L	
Nitrate (as NO_3)	400	mg/L	
Nitrite (as NO_2)	30	mg/L	
Fluoride	2	mg/L	
Chloride	4000	mg/L	
Total Dissolved Solids	4000 – 5000	mg/L	
Aluminium	5	mg/L	
Arsenic	0.5	mg/L	
Beryllium	-	mg/L	Insufficient information
Cadmium	0.01	mg/L	
Chromium	1	mg/L	
Cobalt	1	mg/L	
Copper	0.5	mg/L	
Iron	-	mg/L	No limit
Lead	0.1	mg/L	
Manganese	-	mg/L	No limit
Mercury	0.002	mg/L	
Molybdenum	0.15	mg/L	
Nickel	1	mg/L	
Selenium	0.02	mg/L	
Uranium	0.2	mg/L	
Vanadium	-	mg/L	Insufficient information
Zinc	20	mg/L	

Note 1 – data taken from ANZECC Chapter 9 Stock Watering Guidelines

WA2 The maximum volume of stormwater to be released is 36,000m^3 per annum.

WA3 The controlled release of treated/settled stormwater must be conducted in a way and at a rate that does not cause:

1. re-suspension of particles;
2. erosion of bed or banks of receiving waters;
3. landscape damage;
4. ponding of the water; or
5. vegetation damage.

WA4 Ponds used for the storage or treatment of **aqueous waste** must be constructed, installed and maintained to:

- Prevent any release of **aqueous waste** through the bed or banks of the pond; and
- Ensure the stability of the pond structure.

WA5 The stormwater runoff from the disturbed areas, generated by (up to and including) a **24 hour storm event with an average recurrence interval of 1 in 10 years** must be retained on site or managed as per this authority.

WA6 Monitoring of stormwater releases to contained structures must be undertaken and records must be kept, including:

- Volumes released;
- Dates and times; and
- Sampling results.

WA7 Water sampling will be undertaken for the parameters listed in **Table 2 – Process Water Release Monitoring** at the frequency specified. During emergency overflow events the site will undertake monitoring at the following locations:

Table 2 – Process Water Release Monitoring

Monitoring Locations	Parameter	Frequency
Upstream of site – 21° 58′ 36.22″S 147° 57′ 17.19″E **Spillway overflow point –** 21° 58′ 17.89″S 147° 58′ 27.86″E **Downstream of site –** 21° 0′ 50.22″S 148° 2′ 39.99″E	Ammonium N (µg/L)	Every 24 hours during emergency release events
	Oxidised N (µg/L)	
	Turbidity (NTU)	
	Suspended Solids (mg/L)	
	pH	
	EC (µS/cm)	
	TDS	
	Aluminium (mg/L)	
	Arsenic (mg/L)	
	Boron (mg/L)	
	Cadmium	
	Chromium	
	Cobalt	
	Copper (mg/L)	
	Fluoride	
	Iron (mg/L)	
	Lead (mg/L)	
	Manganese (mg/L)	
	Mercury	
	Selenium	
	Uranium (mg/L)	
	Vanadium (mg/L)	
	Zinc (mg/L)	

WA8 The environmental authority holder must notify the **administering authority** as soon as practicable and no later than 24 hours after commencing to release process water to the receiving environment.

WA9 Following notification as per condition WA8, written advice must be provided to the **administering authority** within 30 business days outlining:

- Rainfall event causing release of process water;
- Volumes released; and
- The results of environmental monitoring.

WA10 A downstream inspection must be undertaken one month after releases from release point W2 to assess and record any environmental impacts from the discharges.

WA11 The holder of this approval must implement and maintain a recycling and re-use program for post treatment discharges. The program should outline:

- Investigation for the feasibility of alternative options, practices and procedures to minimise the volume and concentration of contaminants released to waters.
- Practices and procedures to maintain minimal mass loads for total nitrogen and total phosphorus released into the receiving environment.

Agency Interest – Noise

N1 Noise from the ERA must not cause an environmental nuisance sensitive place or commercial place.

N2 Noise from the **activity** must not exceed the levels identified in **Table 1 – Noise Limits** when measured in accordance with the associated monitoring requirements.

Table 1 – Noise Limits

Noise level measured in dB(A)	Monday to Saturday			Sunday and Public Holidays		
	7am – 6pm	6pm – 10pm	10pm – 7am	9am – 6pm	6pm – 10pm	10pm – 9am
	Noise measured at a nuisance sensitive place					
$L_{Aeq\ adj,\ T}$	Background +5	Background +3	Background +0	Background +5	Background +3	Background +0
Max $L_{pA,\ T}$	Background +10	Background +8	Background +5	Background +10	Background +8	Background +5
	Noise measured at a commercial place					
$L_{Aeq\ adj,\ T}$	Background +10	Background +8	Background +5	Background +10	Background +8	Background +5
Max $L_{pA,\ T}$	Background +15	Background +13	Background +10	Background +15	Background +13	Background +10

Associated monitoring requirements

1. All monitoring devices must be correctly calibrated and maintained.
2. Any monitoring must be in accordance with the most recent version of the administering authority's Noise Measurement Manual.

Any monitoring of noise emissions from the **activity** must be undertaken when the **activity** is in operation.

Agency Interest – Land

L1 Contaminants must not be released to land except as authorised under this authority.

L2 Spillage of all chemicals and fuels must be contained within an on-site contaminant system and controlled in a manner that prevents environmental harm.

Note: All petroleum product storages must be designed, constructed and maintained in accordance with AS1940 – Storage and Handling of Flammable and Combustible Liquids.

L3 Treated effluent is permitted to be released to land via surface irrigation and for the purpose of dust suppression, provided that it is done in accordance with a written procedure that ensures:

- Infiltration to groundwater and subsurface flows of contaminants to surface waters are prevented;
- Surface pondage and runoff of effluent is prevented;
- Degradation of soil structure is minimised;
- Soil sodicity and the build-up of nutrients and heavy metals in the soil and subsoil are minimised;
- Spray drift or overspray do not carry beyond effluent disposal areas;
- Effluent disposal areas are maintained with an appropriate crop in a viable state for transpiration and nutrient uptake; and
- The crop on the disposal area is harvested and removed from the disposal area.

L4 When weather conditions or soil conditions preclude the release of effluent to land, effluent must be directed to wet weather storage or be lawfully removed from the site.

L5 A minimum area of 3.5 hectares of land, excluding any necessary buffer zones, must be utilised for irrigation of treated effluent/stormwater.

L6 Treated effluent released to land must comply with the limits in **Table 1 – Contaminant Release to Land**.

Table 1 - Contaminant Release to Land

Quality Characteristic	Limit Type	Release Limit	Monitoring Frequency
5 day Biological Oxygen Demand (BOD)	Maximum	50 mg/L	Monthly
Total Nitrogen	Average	38 mg/L	
Total Phosphorous	Maximum	10 mg/L	
pH	Within	6.5 – 8.5	

L7 When irrigating to land monitoring must be undertaken not less frequently than specified in **Table 1**. All analyses of the quality of contaminants released must be:

a) Made in accordance with methods prescribed in the latest version of the administering authority's *Water Quality Sampling Manual*; and
b) Carried out on samples that are representative of the effluent discharge.

L8 Signage in accordance with *AS3500.1.2003 Plumbing and drainage – Water services* must be prominently displayed on areas undergoing effluent irrigation. These notices must be clearly visible and maintained in a legible condition.

L9 Notices must be prominently displayed on all vehicles being used to transport and/or spray treated effluent for dust suppression. These notices must be clearly visible and maintained in a legible condition.

Agency Interest – Waste

WS1 Other than effluent released to land in accordance with conditions (L3), (L5) and (L6), all waste generated in carrying out the activity must be reused, recycled or lawfully disposed.

WS2 All regulated waste removed from the site must be removed by a person who holds a current approval to transport such waste under the provisions of the *Environmental Protection Act 1994*.

WS3 If the holder of this environmental authority becomes aware that a person has removed regulated waste from the licenced place and disposed of the regulated waste in a manner which is not authorised by this environmental authority or improper or unlawfully, then the holder of this environmental authority must, as soon as practicable, notify the **administering authority** of all relevant facts, matters and circumstances known concerning the disposal.

Definitions

Key terms and/or phases used in this document are defined in this section and **bolded** throughout this document. Applicants should note that where a term is not defined, the definition in the Environmental Protection Act 1994, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

Activity means the environmentally relevant activity, whether resource activities or prescribed activities, to which the environmental authority relates.

Administering authority means the department of Environment and Science or its successor or predecessors.

Appropriately qualified person(s) means a person or persons who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods and literature.

Background means noise, measured in the absence of the noise under investigation, as LA90, T being the A-weighted sound pressure level exceeded for 90% of the time period of not less than 15 minutes, using Fast response.

Commercial place means a place used as a workplace, an office of for a business or commercial purpose and includes a place within the curtilage of such a place reasonably used by persons at that place.

Environmental nuisance as defined under Chapter 1 of the Environmental Protection Act 1994.

Environmental value as defined by Chapter 1 of the Environmental Protection Act 1994.

$L_{Aeq,\ adj,\ T}$ means the adjusted A weighted equivalent continuous sound pressure level **measures** on fast response, adjusted for tonality and impulsiveness, during the time period T, where T is measured for a period no less than 15 minutes when the approved **activity** is causing a steady state noise, and no shorter than 1 hour when the approved **activity** is causing an intermittent noise.

Landfill facility means land and structures at the site used for the disposal of solid waste.

Max$L_{pa,\ T}$ means the maximum A-weighted sound pressure level measured over time period T of not less than 15 minutes, Fast response.

Measures has the broadest interpretation and includes plant, equipment, physical objects, monitoring, procedures, action directions and competency.

Noxious means harmful or injuries to health or physical well-being.

Offensive means causing offence or displeasure; is reasonably disagreeable to the sense; disgusting, nauseous or repulsive.

Release of a contaminant to the environment means to:

1. Deposit, discharge, emit or disturb the contaminant; and
2. Cause or allow the contaminant to be deposited, discharged, emitted or disturbed; and
3. Fail to prevent the contaminant from being deposited, discharged, emitted or disturbed; and
4. Allow the contaminant to escape; and
5. Fail to prevent the contaminant from escaping.

Sensitive place includes the following and includes a place within a curtilage of such a place reasonably used by persons at that place;

1. A dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
2. A motel, hotel or hostel; or
3. A kindergarten, school, university or other educational institution; or
4. A medical centre or hospital; or
5. A protected area under the Nature Conservation Act 1992, the Marine Parks Act 1992 or a World Heritage Area; or
6. A public thoroughfare, park or gardens; or
7. For noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2019.

24 hour storm event with an average recurrence interval of 1 in 10 years means the maximum rainfall depth from a 24 hour duration precipitation event with an average recurrence of once in 10 years. For example, an Intensity-Frequency-Duration table for a 24 hour duration event with an average recurrence interval of 1 in 10 years, identifies a rainfall intensity of 8.2 mm/hour. The rainfall depth for this event is therefore 24 hours x 8.2 mm/hour = 196.8 mm.

Waters includes river, stream, lake, lagoon, swamp, unconfined surface water, unconfined water, natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel. Stormwater drain, roadside gutter, stormwater runoff, and groundwater and any part thereof.

You means the holder of the environmental authority.

END OF ENVIRONMENTAL AUTHORITY