

Permit

Environmental Protection Act 1994

Environmental authority EPPR00872013

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

Environmental authority number: EPPR00872013

Environmental authority takes effect on 12 February 2024.

The anniversary date of this environmental authority is 1 March each year.

Environmental authority holder(s)

Name(s)	Registered address
ORICA AUSTRALIA PTY LTD	Level 3, 1 Nicholson Street EAST MELBOURNE VIC 3002

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
ERA 12 - Plastic product manufacturing - 2 - Manufacturing, in a year, a total of 5t or more of foam, composite plastics or rigid fibre-reinforced plastics	138/CTN2123
ERA 07 - Chemical manufacturing - 6(d) - Manufacturing, in a year, the following quantities of inorganic chemicals, other than inorganic chemicals to which items 1 to 4 apply - more than 100,000t	138/CTN2123
ERA 07 - Chemical manufacturing - 4(b) - Manufacturing, in a year, the following quantities of fertiliser - more than 5000t	138/CTN2123
ERA 33 - Crushing, milling, grinding or screening - Crushing, grinding, milling or screening more than 5000t of material in a year	138/CTN2123
ERA 50 - Mineral and bulk material handling - 2 - Loading or unloading 100t or more of bulk materials in a day, other than loading or unloading mentioned in item 3, or storing bulk materials	138/CTN2123

Environmentally relevant activity/activities	Location(s)
ERA 08 - Chemical Storage - 5 - storing 200 cubic metres or more of chemicals that are liquids, other than chemicals mentioned in items 1 to 3, under subsection (1)(d)	138/CTN2123
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)	138/CTN2123
ERA 12 - Plastic product manufacturing - 2 - Manufacturing, in a year, a total of 5t or more of foam, composite plastics or rigid fibre-reinforced plastics	500/SP120901
ERA 08 - Chemical Storage - 5 - storing 200 cubic metres or more of chemicals that are liquids, other than chemicals mentioned in items 1 to 3, under subsection (1)(d)	500/SP120901
ERA 07 - Chemical manufacturing - 6(d) - Manufacturing, in a year, the following quantities of inorganic chemicals, other than inorganic chemicals to which items 1 to 4 apply - more than 100,000t	500/SP120901
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)	500/SP120901
ERA 33 - Crushing, milling, grinding or screening - Crushing, grinding, milling or screening more than 5000t of material in a year	500/SP120901
ERA 50 - Mineral and bulk material handling - 2 - Loading or unloading 100t or more of bulk materials in a day, other than loading or unloading mentioned in item 3, or storing bulk materials	500/SP120901
ERA 07 - Chemical manufacturing - 4(b) - Manufacturing, in a year, the following quantities of fertiliser - more than 5000t	500/SP120901
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)	502/SP252988
ERA 33 - Crushing, milling, grinding or screening - Crushing, grinding, milling or screening more than 5000t of material in a year	502/SP252988

Environmentally relevant activity/activities	Location(s)
ERA 50 - Mineral and bulk material handling - 2 - Loading or unloading 100t or more of bulk materials in a day, other than loading or unloading mentioned in item 3, or storing bulk materials	502/SP252988
ERA 07 - Chemical manufacturing - 6(d) - Manufacturing, in a year, the following quantities of inorganic chemicals, other than inorganic chemicals to which items 1 to 4 apply - more than 100,000t	502/SP252988
ERA 12 - Plastic product manufacturing - 2 - Manufacturing, in a year, a total of 5t or more of foam, composite plastics or rigid fibre-reinforced plastics	502/SP252988
ERA 08 - Chemical Storage - 5 - storing 200 cubic metres or more of chemicals that are liquids, other than chemicals mentioned in items 1 to 3, under subsection (1)(d)	502/SP252988
ERA 07 - Chemical manufacturing - 4(b) - Manufacturing, in a year, the following quantities of fertiliser - more than 5000t	502/SP252988

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 land give written notice to the administering authority if they become aware of the following:

- the presence of, or happening of an event involving, a hazardous contaminant on the land that is causing, or is reasonably likely to cause, serious or material environmental harm (notice must be given within 24 hours); or
- if the land is contaminated land – a change in the condition of the land that is causing, or is reasonably likely to cause, serious or material environmental harm (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 land (notice must be given within 20 business days).

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.

The anniversary day of this environmental authority is the same day each year as the effective date. The payment of the annual fee will be due each year on this day.

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.



Signature

Helena Braye
Department of Environment, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

12/02/2024

Date

Enquiries:

Energy & Extractive Resources
GPO Box 2454, BRISBANE QLD 4001
Phone: (07) 3330 5715
Email: EnergyandExtractive@des.qld.gov.au

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)

Obligations under the *Mining and Quarrying Safety and Health Act 1999*

If you are operating a quarry, other than a sand and gravel quarry where there is no crushing capability, you will be required to comply with the *Mining and Quarrying Safety and Health Act 1999*. For more information on your obligations under this legislation contact Mine Safety and Health at <https://www.rshq.qld.gov.au/>, or phone 13 QGOV (13 74 68) or your local Mines Inspectorate Office.

Other permits required

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department and other State Government agencies prior to commencing any activity at the site. For example, this may include permits / approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access State controlled roads), the Department of Resources (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

Development Approval

This permit is not a development approval under the *Planning Act 2016*. The conditions of this environmental authority are separate, and in addition to, any conditions that may be on the development approval. If a copy of this environmental authority is attached to a development approval, it is for information only, and may not be current. Please contact the Department of Environment, Science and Innovation to ensure that you have the most current version of the environmental authority relating to this site.

Conditions of environmental authority

The environmentally relevant activity(ies) conducted at the locations described above for this part must be conducted in accordance with the following site specific conditions.

Agency interest: General	
Condition number	Condition
G1	The scale of the chemical plant and associated environmentally relevant activities authorised under this environmental authority is the scale indicated in the application information titled " <i>Orica Australia - Application to amend an environmental authority</i> " and the intensity of use for the environmentally relevant activities is for the production of not more than 680,000 tonnes of ammonium nitrate or 120,000 tonnes of sodium cyanide per calendar year.
G2	All reasonable and practical measures must be taken to minimise the likelihood of environmental harm being caused.
G3	Irrespective of any release limits in this environmental authority, the holder must not cause environmental nuisance. <i>Note: In the first instance the matter will be responded to via the Orica complaint procedure.</i>
G4	The administering authority must be notified by telephone as soon as practicable, but within twelve (12) hours of becoming aware of any emergency, event or incident which: a) results in the release of contaminants not in accordance with, or reasonably expected to be not in accordance with, the conditions of this environmental authority; and b) has the potential to cause material or serious environmental harm. <i>Note: The Pollution Hotline is the most appropriate after-hours contact.</i>
G5	A monthly compliance report must be submitted to the administering authority within 20 business days of the end of each month; including the name of the holder of the environmental authority, the environmental authority number; and the name and telephone number of a designated contact person; which outlines the following: a) the date and time of initial notifications reported to the administering authority as required by condition (G4); b) complaint information as required by condition (G6) received in the month; c) visible dust events report as required by condition (A12); d) a summary of instances where monitoring indicates impaired operational performance of air pollution control equipment; and e) a summary of the month's non-compliances with the environmental authority including written advice detailing the below information regarding any notification in accordance with condition (G4): i. the location, time and date of the release/event; ii. the time the holder became aware of the release/event; iii. the suspected cause of the release/event; iv. details of the approximate quantity of substance released (if known); v. details of the area/location impacted by the release/event; vi. a description of the resulting effects of the release/event; vii. the results of any sampling performed in relation to the release/event; viii. actions taken to mitigate any environmental harm (including environmental nuisance) caused by the release/event; and ix. proposed actions to prevent a recurrence of the release/event.

G6	The holder must record the following details for all complaints received and provide this information to the administering authority with each month's compliance report as required by condition (G5): a) time and date; b) name and contact details of the complainant (when provided and authorised by the complainant); c) reasons for the complaint; d) response and any investigations undertaken; e) conclusions formed; f) grounds for forming the conclusions; and g) any actions taken as a result of the complaint.
G7	When requested by the administering authority, monitoring must be undertaken to investigate any complaint of alleged environmental nuisance caused by a release from the site at any nuisance sensitive place. The request may outline: a) when the monitoring must commence; b) the duration of the monitoring; c) the location of the monitoring; d) the methods and relevant standard to be complied with; e) any evaluation, inspection and review of potential dust, particulate matter, odour or other noxious/offensive emission sources and associated pollution control systems; f) any review and interpretation of monitoring results; g) any modelling required; and h) the date the results and analysis is to be submitted to the administering authority.
G8	The activity must be undertaken in accordance with written procedures that: a) identify potential risks to the environment from the activity during routine operations and emergencies; b) establish and maintain control measures that minimise the potential for environmental harm; c) ensure plant, equipment and measures are maintained in a proper and effective condition; d) ensure plant, equipment and measures are operated in a proper and effective manner; e) ensure that staff are trained and aware of their obligations under the <i>Environmental Protection Act 1994</i>; and f) ensure that reviews of environmental performance are undertaken at least annually.
G9	The holder must have the capability of reporting to the administering authority within three (3) hours of any air emission incident that has the potential for material environmental harm beyond the site boundary. The report must: a) detail the: i. source; ii. potential path; and iii. the approximate dispersion concentration for contaminants within the plume that present a risk of material environmental harm; and b) be made available to the administering authority and other emergency services agencies.
G10	All information and records required by the conditions of this environmental authority must be kept for a period of at least five (5) years or a longer period if stated.

G11	All analysis and tests required under this environmental authority must be performed by a laboratory that has NATA certification, or an equivalent certification, for such analysis and tests. The only exception to this condition is for the in-situ monitoring of: a) physicochemical parameters in surface waters, sediment and soil samples for pH, temperature, turbidity, conductivity, dissolved oxygen, specific gravity, and volumetric flow; b) wind speed, wind direction, rainfall, air temperature and relative humidity; and c) or as otherwise authorised by the administering authority.
G12	Records and raw data relating to the accuracy, precision, and reliability of the results of monitoring required by this environmental authority must be kept. This includes, but is not limited to: a) records taken in the field during sampling; b) chain of custody documentation for samples taken; c) calibration records; d) raw data; and e) laboratory analysis reports.
G13	An appropriately qualified person(s) must conduct any monitoring required by this environmental authority.
G14	All instruments, equipment and measuring devices used for measuring or monitoring of any parameter under any condition of this environmental authority must be calibrated, operated and maintained in accordance with their design specifications unless otherwise authorised by the administering authority.
G15	All Continuous Environmental Monitoring Systems required by this environmental authority must have an instrument availability, on a yearly basis, of at least 80%.
G16	The third party environmental audit of compliance with conditions of this environmental authority must be: i. conducted by 1 March 2017 and every three (3) years thereafter; and ii. conducted by an appropriately qualified third party auditor, nominated by the holder and accepted by the administering authority.
G17	For the audit(s) required by condition (G16) the holder must submit a final version of the auditor's report to the administering authority within 28 days of receiving the final audit report. The report must be accompanied by a statutory declaration from the auditor, stating that the report accurately represents the findings of the auditor and that the report has been prepared independently of the holder and is the independently held opinion of the auditor.
G18	A visual inspection of the inspection pits on the caustic pipeline from Fisherman's Landing caustic soda storage facility to the Orica Yarwun site on Reid Road shall be conducted in accordance with Fisherman's Landing Terminal Safety Checklist in the holder's document management system.
G19	The relevant independent third party review of the design specifications (referenced in condition (A9)) must be: i. conducted by 1 March 2015 and every three (3) years thereafter; and ii. conducted by an appropriately qualified third party auditor, nominated by the holder and accepted by the administering authority.

Agency interest: Air	
Condition number	Condition
A1	Contaminants must only be released to atmosphere from the release points identified in <i>Table 1 - Release point description, minimum release height and efflux velocity</i> and on a non-continuous basis from passive emission devices (e.g. filling tanks/vessels or over pressure of pressure relief devices).
A2	Contaminants must not be released to atmosphere at a concentration in excess of that stated in <i>Table 2- Contaminant release limits and sampling frequency</i> .
A3	Contaminants must be monitored at the minimum frequency specified in <i>Table 2- Contaminant release limits and sampling frequency</i> . <i>Note: This condition does not apply to plant(s) with suspended operation.</i>
A4	The release limits prescribed in <i>Table 2- Contaminant release limits and sampling frequency</i> do not apply to the nitric acid plant stacks during a start-up period or a shut-down period, or the Boiler Gas Flow Stack (Tail Gas Burner) during a start-up period of the Tail Gas Burner DeNOx unit.
A5	Start-up periods, as specified in (A4) above, must be recorded.
A6	During the start up of the sodium cyanide plant the diverter stack pilot must be ignited within 20 minutes of the diverter 'Trip 11' resetting. <i>Note: Trip 11 resets when all the following plant conditions are met:</i> <i>a. The gas flow is stabilised;</i> <i>b. The converter temperature reaches 950°C (degrees Celsius);</i> <i>c. The reaction of the gauze is fully spread.</i>
A7	Monitoring of any release to the atmosphere required by a condition of this environmental authority must be carried out in accordance with the following requirements: a) monitoring provisions for the release points listed in <i>Table 2 - Contaminant release limits and sampling frequency</i> must comply with the Australian Standard AS 4323.1 - 1995 <i>Stationary source emissions Method 1: Selection of sampling positions</i> (or more recent editions); b) all determinations of contaminant releases to the atmosphere must be made in accordance with methods prescribed in the Department of Environment and Heritage Protection (EHP) Air Quality Sampling Manual (most recent edition), a method identified in Table 2, or other method approved by the administering authority¹; and c) samples must be taken when emissions are expected to be representative of actual operating conditions for the sampling period. ¹ Condition A7(b) does not relate to any approval given by the administering authority prior to 21 April 2017.

A8	A maintenance program must be developed that provides an inventory of what air pollution control equipment needs to be maintained; identifies the standard and frequency to which it must be maintained; and keeps a history of the maintenance performed.
A9	Where pollution control systems are installed to treat exhaust gases, dust and vapours they must be maintained and operated in accordance with their design specifications unless otherwise agreed by the administering authority. <i>Note: This condition does not apply to plant(s) with suspended operation.</i>
A10	A device must be installed and maintained on all flares (diverter stack, gas enrichment stack and ammonia stack) to alert key operations personnel if the pilots on the flare devices are not operational. <i>Note: This condition does not apply to plant(s) with suspended operation.</i>
A11	The holder must report all complaints of visible dust events to the administering authority within 24 hours or the next business day.
A12	A weather monitoring station must be maintained which measures and records the following meteorological parameters: a) air temperature; b) relative humidity; c) wind direction; d) wind speed; and e) rainfall. <i>Note: In the event that Orica's weather station is offline or not available, the Gladstone airport weather station may be used to record the above meteorological parameters.</i>
A13	A network of ammonia leak detection equipment must be installed and maintained at the Fisherman's Landing Ammonia terminal.
A14	The holder must, when requested in writing by the administering authority, contribute to the undertaking of an ambient air monitoring program in consultation with the administering authority.

Table 1 – Release point description, minimum release height and efflux velocity

Plant/Source	Release Point ⁽¹⁾	Sample Point	Minimum Release Height (m)	Minimum Efflux Velocity (m/sec)
Sodium Cyanide Plant				
Boiler Gas Flue Stack (Tail Gas Burner)	6C	AP02107 & AP02108	35	11
Drier Scrubber Vent 1	4C	AP04027 & AP04028	35	23
Drier scrubber Vent 2	9C	AP22035 & AP22036	35	18
Warehouse Extraction Cyclone	C24	AP05433 & AP05434	11	16
Air Heater 1	C29	Vent	30	n/a
Air Heater 2	C30	Vent	30	n/a
Chemicals Complex				
Diverter Stack	8C	Flare	40	n/a

Gas Enrichment Flare stack	C26	Flare	25	n/a
Ammonia Flare Stack	C27	Flare	15	n/a
HCl Tank Scrubber	C33	n/a	5	n/a
Nitric Acid Plants				
Nitric Acid No. 1 Stack	C17	AP3505	55	15
Nitric Acid No. 2 Stack	C21	AP3801	55	15
Nitric Acid No. 3 Stack	C23	AP5816	55	15
Ammonium Nitrate Plants				
ANP1 drier Scrubber Vent	C8	AP4512	24	19
APN2 Drier Scrubber Vent	C10	AP5512	24	19
AN Bulk Store Scrubber Stack	C19	AP4913	7	5
Fertiliser Concentrator Vent A	C15	AP4610	17	9
Fertiliser Concentrator Vent B	C34	AP4630	17	9
John Thompson Boiler Vent	C31	Vent	15	n/a
Maxithem Boiler Vent	C32	Vent	15	n/a
Fisherman's Landing				
Ammonia Flare Stack	C28	Flare	6	n/a

¹ The locations of air emission release points are identified on *Map 1 – Air emission release point locations* (excluding Fisherman's Landing)

Table 2 – Contaminant release limits and sampling frequency

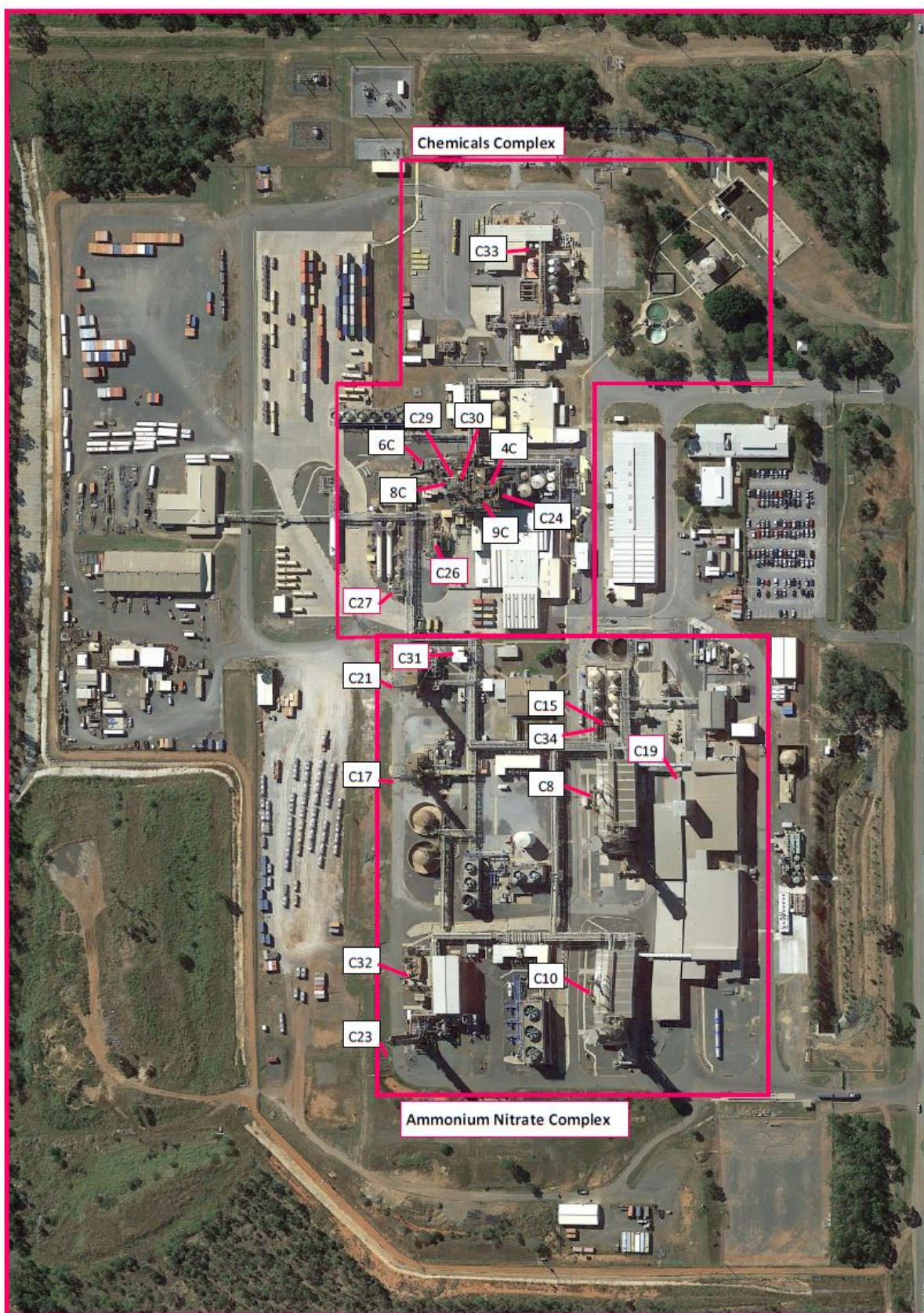
Plant/Source	Release Point	Contaminant	Contaminant Type	Release Limit	Sampling Frequency / Monitoring Method (where applicable)
Sodium Cyanide Plant					
Boiler Gas Flue Stack	6C	NOx (as NO ₂ equivalent)	Gaseous	1250mg/Nm ³ (dry)	Continuous ^(1 & 2)
Drier Scrubber Vent 1	4C	Hydrogen Cyanide	Gaseous	35mg/Nm ³ (dry)	Quarterly ³ , or Biannually ⁴ , or Annually ⁵ / US South Coast Air Quality Management District Method 202-1 ⁶
		Sodium Cyanide	Particulate	70mg/Nm ³ (dry)	
Drier Scrubber Vent 2	9C	Hydrogen Cyanide	Gaseous	35mg/Nm ³ (dry)	
		Sodium Cyanide	Particulate	70mg/Nm ³ (dry)	
Warehouse Extraction Cyclone	C24	Hydrogen Cyanide	Gaseous	35mg/Nm ³ (dry)	
		Sodium Cyanide	Particulate	70mg/Nm ³ (dry)	

Nitric Acid Plants					
Nitric Acid No. 1 Stack	C17	NOx (as NO ₂ equivalent)	Gaseous	850mg/Nm ³ (dry)	Continuous ^(1 & 2)
Nitric Acid No. 2 Stack	C21	NOx (as NO ₂ equivalent)	Gaseous	850mg/Nm ³ (dry)	
Nitric Acid No. 3 Stack	C23	NOx (as NO ₂ equivalent)	Gaseous	850mg/Nm ³ (dry)	
Ammonium Nitrate Plants					
ANP1 Drier Scrubber Vent	C8	Ammonia	Gaseous	200mg/Nm ³ (dry)	Quarterly ³ , or Biannually ⁴ , or Annually ⁵ / US-EPA Conditional Test Method 27 ⁷
		Ammonium Nitrate	Particulate	68/Nm ³ (dry)	
APN2 Drier Scrubber Vent	C10	Ammonia	Gaseous	200mg/Nm ³ (dry)	
		Ammonium Nitrate	Particulate	68mg/Nm ³ (dry)	
AN Bulk Store Scrubber Stack	C19	Ammonium Nitrate	Particulate	68mg/Nm ³ (dry)	
Fertiliser Concentrator Vent A	C15	Ammonia	Gaseous	100mg/Nm ³ (dry)	
		Ammonium Nitrate	Particulate	68mg/Nm ³ (dry)	
Fertiliser Concentrator Vent B	C34	Ammonia	Gaseous	150mg/Nm ³ (dry)	
		Ammonium Nitrate	Particulate	68mg/Nm ³ (dry)	

Associated monitoring requirements

- ¹ One hour moving average data will be used for continuous monitoring of NO_x (as NO₂ equivalent) and three minute moving average data will be used for continuous monitoring of Chlorine.
- ² See condition A4 for exception to NO_x emission limits during plant start up and shut down periods.
- ³ Quarterly for 12 months from 21 April 2017, or if an exceedance of a release limit is detected during 'Quarterly' or 'Biannually' sampling.
- ⁴ Biannually if 12 months of 'Quarterly' monitoring results are compliant with the release limits, or if an exceedance of a release limit is detected during 'Annually' sampling.
- ⁵ Annually if 12 months of 'Biannually' monitoring results are compliant with the release limits.
- ⁶ With a variation for in-line filtering to allow the reporting of solid Sodium Cyanide and gaseous Hydrogen Cyanide separately.
- ⁷ For sampling of Ammonia, with a variation to allow the use of a heated sample probe and filtering housing as per prescribed method AS4323.1/USEPA Method 5, to concurrently sample for particulates for Ammonium Nitrate emission determination. Also, a variation to the Method to collect a single, rather than triplicate, sample at each monitoring location.

Map 1 – Air emission release point locations



Agency interest: Noise	
Condition number	Condition
N1	<i>The activity must not cause a noise nuisance at any nuisance sensitive place or commercial place.</i> <i>Note: It is recognised that ambient noise monitoring was completed on July 10th 2013 in accordance with the administering authority's Noise Measurement Manual.</i>
Agency interest: Water	
Condition number	Condition
WT1	Permitted contaminant release locations and limits (Yarwun site) Contaminants must only be released to waters at the locations and in accordance with the contaminant release limits mentioned in <i>Table 3 - Effluent and stormwater release limits</i>.
WT2	Release monitoring (Yarwun site) Monitoring of contaminants released to waters must be undertaken for the parameters, at the locations and at the minimum frequencies specified in <i>Table 3 - Effluent and stormwater release limits</i>.
WT3	Release- Batches (Yarwun site) Effluent releases must be as batches (ponds) which must be tested for compliance with the relevant limits identified in <i>Table 3 - Effluent and stormwater release limits</i> prior to discharge from the pond.
WT4	All determinations of water quality must be: a) made in accordance with methods prescribed in the latest edition of the administering authority's <i>Monitoring and Sampling Manual</i>; and b) carried out on samples that are representative of the discharge.
WT5	Measurements of effluent and stormwater volumes released via the TWF must be determined by an appropriate method with an accuracy of +/-10%, (e.g. a calibrated flow meter).
WT6	The volume of effluent and CC1 SWRS Waters disposed of via the TWF must not exceed the capacity of the TWF.
WT7	Deposited sediment must be removed from the CC1 SWRS to ensure a minimum of 70% storage capacity is maintained at all times.
WT8	Annual mass load limits apply for releases of ammonia and nitrate in effluent and CC1 SWRS Waters via the TWF, as specified in <i>Table 4 - Annual mass load limits for releases of ammonia and nitrate via TWF</i>.

WT9	Permitted contaminant release locations and limits (Fisherman's Landing site) Contaminants must only be released to waters at the locations and in accordance with the contaminant release limits mentioned in <i>Table 5 - Stormwater release limits</i>.
WT10	Release monitoring (Fisherman 's Landing site) Monitoring of contaminants released to waters must be undertaken for parameters, at the locations and at the minimum frequencies specified in <i>Table 5 - Stormwater release limits</i>.
WT11	The holder must not release contaminants to groundwater. <i>Note: It is recognised that pre-existing groundwater contamination is being managed under a contamination action plan (CAP).</i>
WT12	Records must be kept of the results of all determinations of the quality of groundwater for a period of at least 30 years and be made available to the administering authority upon request. These records may be electronic. <i>Note: It is recognised that groundwater monitoring data is only available from 1997 onwards.</i>
WT13	An Annual Groundwater Report must be prepared by a specialist in the field of groundwater quality and the report submitted to the administering authority each year by the 30th June. The report must include but not be limited to: a) the monitoring frequency, sample locations and quality characteristics being analysed; b) a sufficient number of bores installed at locations and depths which yield representative groundwater samples from at least the impacted aquifer(s) ; c) an assessment, analysis and interpretation of groundwater quality results from each monitoring event, including a graphical comparison with at least the past five (5) years of previous monitoring data (or available data if monitoring bore installed less than 5 years ago); d) an investigation report that complies with the relevant guidelines for any groundwater monitoring locations where results indicate contamination including an assessment of the potential for environmental harm; e) an outline of any adaptive management changes to the groundwater monitoring plan; and f) a review of the progress against actions identified in the RAP (prepared on 30 June 2014 or more recent revision).
WT14	A report summarising the findings of the REMP (prepared on 29 June 2014) or more recent revisions must be submitted to the administering authority by 30 June each year. The scope of the REMP will be reviewed annually.
WT15	The holder must, when requested in writing by the administering authority, contribute to the undertaking of an ambient water monitoring program consistent with requirements of the Gladstone Healthy Harbours Partnership and in consultation with the administering authority.
WT16	By 30 June 2023, a third-party agreement must be in place between the operator of the TWF and the holder of this EA for the release of effluent and stormwater as authorised by <i>Table 3 - Effluent and stormwater release limits</i> and <i>Table 4 - Annual mass load limits for releases of ammonia and nitrate</i>.

Table 3 – Effluent and stormwater release limits

	Quality characteristic	Release Limits	Sample frequency
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Release locations ⁽³⁾		Minimum	Annual Median (January – December)	Maximum	
CC and ANC Effluent (via TWF) CC Ponds: E313445.1 N7362797.2 ANC Ponds: E313336.8 N7362651.2 End of Pipe: (Zone 56) E313972.23 N7368205.80	Free Cyanide (mg/L) ⁽¹⁾	-	-	1	Once per batch
	Ammonia (mg/L as N)	-	-	130	
	Nitrate (mg/L as N)	-	-	60	
	Total Residual Chlorine (mg/L) ⁽¹⁾	-	-	10	
	Total Suspended Solids (mg/L)	-	-	150	
	Temperature (°C)	-	-	45	
	pH	6	-	10	
CC1 SWRS Waters (via TWF) E313459.2 N7362903.4 End of Pipe: (Zone 56) E313972.23 N7368205.80	Free Cyanide (mg/L)	-	-	1	Prior to release and every four (4) hours while discharging (samples may be analysed as a daily composite)
	Ammonia (mg/L as N)	-	-	130	
	Nitrate (mg/L as N)	-	-	60	
	Total Suspended Solids (mg/L)	-	-	150	
	pH	6	-	10	
CC1 Stormwater Discharge to creek: E313466.9 N7362911.7	Free Cyanide (mg/L)	-	-	0.011 0.077 ⁽²⁾	Prior to release and every four (4) hours while discharging
	Ammonia (mg/L as N)	-	-	15	
	Nitrate (mg/L as N)	-	-	15	
	Total Suspended Solids (mg/L)	-	50	-	
	pH	6.5	-	9	Continuous
ANP1/ANP2 Stormwater ⁽⁴⁾ E313478.2 N7362557.4	Ammonia (mg/L as N)	-	-	15	Every four (4) hours while discharging
	Nitrate (mg/L as N)	-	-	15	
	Total Suspended Solids (mg/L)	-	50	-	
	pH	6.5	-	9	

¹ Free cyanide and TRC analysis is not required for effluent originating from the Ammonium Nitrate Complex.

² Stormwaters released to the discharge creek at CC1 as a consequence of a high rainfall event have increased maximum release limits for free cyanide (0.077 mg/L).

³ The locations of effluent and stormwater release points are identified on Maps 2 and 3 - Effluent and Stormwater release point locations for CC and ANC respectively.

⁴ ANP1/ANP2 stormwater is sampled from points Dam 1 (E313456.9, N2637440.7) and Dam 2 (E313405.7, N2637614.3), as identified on Map 3, when releasing from these points.

Table 4 – Annual mass load limits for releases of ammonia and nitrate via TWF

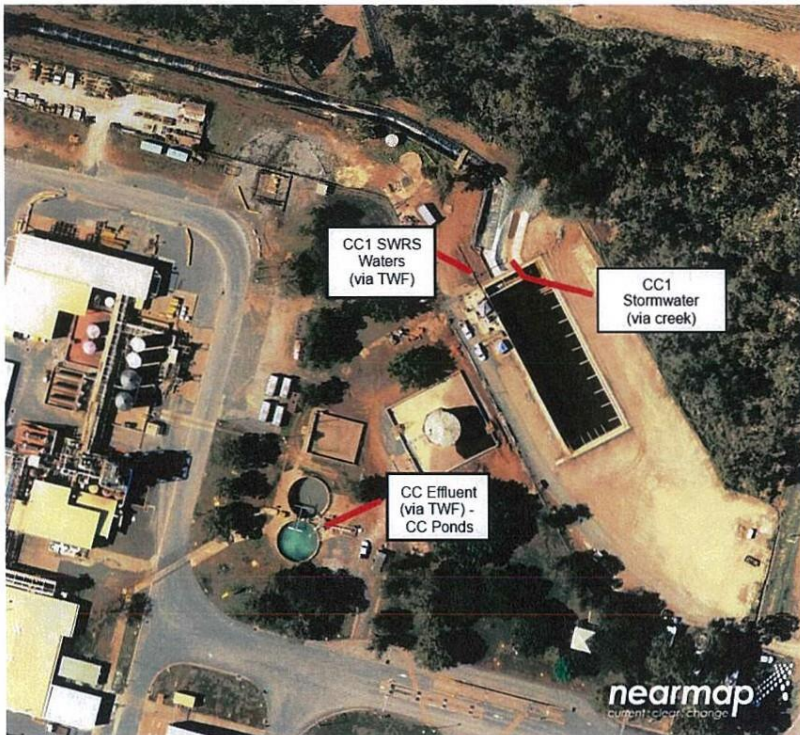
Quality Characteristic	Annual mass load limits (tonne)
Ammonia (as N)	18
Nitrate (as N)	18

Table 5 – Stormwater release limits

Release Locations ⁽¹⁾	Monitoring Locations	Quality characteristic	Release Limits		Sample frequency
			Minimum	Maximum	
Sodium Hydroxide storage facility					
Southern boundary of site E313052.87 N7367292.43 and E313111.12 N7367314.78	Top of Caustic Geotanks Western Geotank E313030.95 N7367341.36 Eastern Geotank E313087.32 N7367364.91	pH	6.5	9.0	Prior to commencement of pumping from Geotanks and Pump Bund to Release Location and daily thereafter during continuing discharge.
	Caustic Pump Bund E313069.90 N7367332.12	pH	6.5	9.0	
Ammonia terminal					
Southern boundary of site Release pipe E312813.63 N7367185.25 Weir overflow through fence E312829.85 N7367192.11	Immediately upstream of Release Valve E312808.39 N7367196.26 Weir E312815.25 N7367217.39	pH	6.5	9.0	Prior to release and daily thereafter during continuing discharge.
Wharf facility					
Wharf E313943.13 N7368311.38	Wharf Sump E313943.13 N7368311.38	pH	6.5	9.0	Before discharge

¹ The locations of the stormwater release points at Fisherman's Landing are identified on Map 4 and 5 – Fisherman's Landing stormwater release point locations and Fisherman's Landing Wharf Sump stormwater release point location.

Map 2 – CC Effluent and Stormwater release point locations



Map 3 – ANC effluent and ANP1/ANP2 stormwater release point locations



Map 4 - Fisherman's Landing stormwater release point locations



Map 5 - Fisherman's Landing Wharf Sump stormwater release point location



Agency interest: Waste	
Condition number	Condition
WS1	All waste removed from the site must be done by a transporter lawfully able to transport it and to a place lawfully able to receive it.
WS2	Waste must not be burnt on site.
WS3	Records of any trade waste approval or End of Waste agreement must be made available for inspection on request.
Agency interest: Land	
Condition number	Condition
L1	Contaminants must not be released to land.
L2	Before surrendering this environmental authority the site must undergo rehabilitation to achieve a safe, stable and non-polluting landform.

Definitions

Key terms and/or phrases used in this document are defined in this section. 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.

The Act' means the *Environmental Protection Act 1994*.

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

'Administering authority' means the Department of Environment and Heritage Protection or its successor in the administration of the *Environmental Protection Act 1994*.

'Ammonia leak detection equipment' means a network of ammonia detectors on the Fisherman's Landing wharf and ammonia storage tank, and leak detection flow meters on the pipeline from the Fisherman's Landing ammonia tank to the Yarwun site.

'ANC / Ammonium Nitrate Complex' means plot and assets associated with production of nitric acid, ammonium nitrate and derivative products.

'ANP1/ANP2 Stormwater' means 'waters' discharging from ANP1/ANP2 stormwater release location.

'Appropriately qualified person(s)' means a person or persons who has training, skills or experience relevant to the nominated subject matter and can perform monitoring consistent with the relevant protocols, standards or methods.

'Appropriately qualified third party auditor' means a person with a relevant qualification and at least five (5) years' experience in the field of environmental auditing that is accepted by the administering authority.

'Bed and banks' for a 'watercourse' or 'wetland' means land over which the water of the watercourse or wetland normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed or banks that is from time to time covered by floodwater .

'Beneficial re-use agreement' means an approval for beneficial use under the *Waste Reduction and Recycling Act 2011*.

'Capacity of the TWF' means the maximum volumetric containment capacity of the Trade Waste Facility operated by Gladstone Regional Council.

'CC / Chemicals Complex' means plot and assets associated with production of sodium cyanide, chlorine and derivative products.

'CC1 Stormwater' means waters discharging from CC 1 Stormwater release location.

'CC1 SWRS' means the Stormwater Retention System located at CC1 release point.

'CC1 SWRS Waters' means waters contained within the Chemical Complex Stormwater Retention System.

'Continuous Environmental Monitoring Systems' means any device, instrument, or system of measurement that provides real time sampling and analysis of species of interest.

'Daily composite' means sampling consists of a collection of individual discrete samples taken at regular intervals over a period of 24 hours.

'Design specification' refers to a specification prepared by Orica and as outlined in Orica's operating and maintenance systems. In the absence of a specification prepared by Orica, the design specification will be the relevant manufacturer's specification.

'Dwelling' means any of the following structures or vehicles that is principally used as a residence:;

- a) a house, unit, motel, nursing home or other building or part of a building
- b) a caravan, mobile home or other vehicle or structure on land; or
- c) a water craft in a marina.

'Effluent' means treated or partially treated wastewater from processes undertaken in the chemical plants and associated environmentally relevant activities.

'An effluent release' means the discharge of effluent from the ANC and CC effluent ponds to the TWF.

‘Environment’ includes:

- a) ecosystems and their constituent parts, including people and communities;
- b) all natural and physical resources;
- c) the qualities and characteristics of locations, places and areas, however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community; and
- d) the social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned in paragraphs (a) to (c).

‘Environmental authority’ means an environmental authority issued under section 195 that approves an environmentally relevant activity applied for in an application.

‘Environmentally relevant activities’ are any activity mentioned in Schedule 2 of the *Environmental Protection Regulation 2008*.

‘High rainfall event’ means a period of rainfall that result in 35mm or more of rain in any 24 hour period.

‘Holder’ means any person who is the holder of, or is acting under, that environmental authority.

‘Impaired operational performance of air pollution control equipment’ means when the pollution control equipment is not operating to design specification in relation to pollutant removal.

‘Land’ in the “land schedule” of this document means land excluding –

- a) the airspace above land; and
- b) waters.

‘NATA’ means the National Association of Testing Authorities, Australia.

‘Nuisance sensitive place’ means any of the following:

- a) a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises;
- b) library and educational institution (including a school, college and university);
- c) childcare centre or kindergarten;
- d) school or playground;
- e) hospital, surgery or other medical institution;
- f) an area identified under the *Nature Conservation Act 1992* as a protected area or an area identified as a critical habitat or an area of major interest in a conservation plan;
- g) marine park under the *Marine Parks Act 2004*;
- h) park or garden that is open to the public (whether or not on payment of an amount) for use other than for sport or organised entertainment; or
- i) a place used as a workplace, an office or for business or commercial purposes and includes a place with in the curtilage of such a place reasonably used by persons at that place.

‘Pond’ means a structure used for the interim storage of effluent.

‘Pre-existing’ means known groundwater contamination prior to August 2013.

‘Rehabilitation’ means the process of reshaping and revegetating land to restore it to a stable landform and, where relevant, includes remediation of contaminated land.

‘Relevant guidelines’ (in relation to groundwater monitoring) means:

- a) for initial groundwater monitoring guidelines - National Environmental Protection Measures (2013), Volume 3, Section 8;
- b) for statistical trend analysis- Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009, EPA 530/R-09-007, Chapter 7, Table 8.1, and Chapter 17.3.2; and
- c) for determination of impact- National Environmental Protection Measures (2013), Volume 9 Section 3.

‘RAP / remediation action plan’ means an environmental management document that details the remediation process to be used including specific actions, timeframes and expected outcomes to manage the potential environmental impact of groundwater contamination.

‘Representative of actual operating conditions’ means stack testing must be carried out when production rates are within 15% or greater than the average production rate of 3 months prior (excluding shutdowns) to when the testing is to be undertaken.

‘Shutdown period’ means the time between when ammonia has ceased flowing to the converter on a nitric acid plant and when ammonia has been re-introduced to that converter.

‘Site’ means the lot and plan locations to which the environmental authority relates.

‘Specialist in the field’ means a person or body possessing the relevant experience and qualifications to perform the required measurements and subsequent interpretation, evaluation and explanation of the monitoring results, trends and programs.

‘Stable’ in relation to land, means land form dimensions are and will remain within tolerable limits now and in the foreseeable future. Issues to be properly considered in regard to whether or not the landform is stable include geotechnical stability, settlement and consolidation allowances, load bearing capacity, erosion resistance and geochemical stability with respect to seepage, leachate and related contaminant generation.

‘Start-up period’ means the initial one hour while a nitric acid plant is being brought up to normal operation following a period of inactivity.

‘Start-up period of the Tail Gas Burner DeNox unit’ means the one hour after the introduction of the tail gas to the Tail Gas Burner.

‘Suspended operation’ means when a chemical plant or part of a chemical plant has been shut-down in a planned and controlled manner for scheduled maintenance or suspension of production; or an un-scheduled plant outage once air emissions from permitted release points cease.

‘SWRS’ means the Stormwater Retention System.

‘Tolerable limits’ means a range of parameters regarded as being sufficient to meet the objective of protecting relevant environmental values.

‘TWF’ means the Trade Waste Facility operated by Gladstone Regional Council.

‘Trade waste approval’ means the approval given by the service provider to discharge trade waste to the provider's infrastructure.

‘Visible dust event’ means an event that results in visible dust moving beyond the site boundaries where the relevant environmentally relevant activity is carried out.

‘Waters’ includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and banks of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater .

‘Watercourse’ means a river, creek or stream in which water flows permanently or intermittently (a) in a natural channel, whether artificially improved or not; or (b) in an artificial channel that has changed the course of the watercourse. *Watercourse* includes the bed and banks and any other element of a river, creek or stream confining or containing water.

‘Wetland’ means an area shown as a wetland on a ‘Map of referable wetlands’, a document approved by the chief executive (environment). A map of referable wetlands can be viewed at www.ehp.qld.gov.au.

END OF ENVIRONMENTAL AUTHORITY