Permit

Environmental Protection Act 1994

Environmental authority EPPR00971913

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

Environmental authority number: EPPR00971913

Environmental authority takes effect on 15 December 2021

Environmental authority holder(s)

Name(s)	Registered address
STANWELL CORPORATION LIMITED	Level 2 180 Ann Street BRISBANE CITY QLD 4000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Prescribed ERA ERA 07 - Chemical Manufacturing, 6: Manufacturing, in a year, the following quantities of inorganic chemicals, other than inorganic chemicals to which items 1 to 4 apply, (a) 200t to 1000t	Lot 2/SP138386 Lot 3/SP138386
Prescribed ERA ERA 08 - Chemical Storage, 3: Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1) (c)	Lot 1/SP138386 Lot 2/SP138386 Lot 3/SP138386 Lot 90/FY2695
Prescribed ERA ERA 14 - Electricity Generation, 2: Generating electricity by using a fuel, other than gas, at a rated capacity of, (b) more than 150MW electrical	Lot 1/SP138386 Lot 2/SP138386 Lot 3/SP138386 Lot 90/FY2695
Prescribed ERA ERA 16 - Extraction and Screening, 2: Extracting, other than by dredging, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 1/SP138386 Lot 90/FY2695
Prescribed ERA ERA 33 - Crushing, milling, grinding or screening, Crushing, grinding, milling or screening more than 5000t of material in a year	Lot 1/SP138386
Prescribed ERA	Lot 1/SP166389

Queensland Government

Environmentally relevant activity/activities	Location(s)
ERA 60 - Waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1) (a), (a) less than 50,000t	
Prescribed ERA ERA 60 - Waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1) (a), (d) more than 200,000t	Lot 1/SP138386 Lot 90/FY2695
Prescribed ERA ERA 63 - Sewage Treatment, 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of, (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	Lot 1/SP138386 Lot 90/FY2695
Prescribed ERA ERA 64 - Water treatment, 3: Treating 10ML or more raw water in a day	Lot 1/SP138386 Lot 90/FY2695
Prescribed ERA, ERA 55 – Other waste reprocessing or treatment, Operating a facility for receiving and either reprocessing or treating, in a year, the following quantity of category 2 regulated waste (c) more than 10, 000t.	Lot 1/SP138386 Lot 2/SP138386

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.

RCopp	15 December 2021
Signature	Date

Rachel Copp
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Energy and Extractive Resources Business Centre
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)

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).

Conditions of environmental authority

The environmentally relevant activities conducted at the location/s as described above must be conducted in accordance with the following site specific conditions of approval.

Agency interest: General	
Part 1 – Conditions relevant to all activities	
Condition number	**Condition**
G1	Any breach of a condition of this environmental authority must be reported to the **administering authority** as soon as practicable within 24 hours of becoming aware of the breach. **Records** must be kept including full details of the breach and any subsequent actions taken.
G2	All reasonable and practicable **measures** must be taken to prevent or minimise environmental harm caused by the activities.
G3	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; and b) Establish and maintain control measures that minimise the potential for environmental harm; and c) Ensure plant, equipment and measures are calibrated and maintained in a proper and effective condition; and d) Ensure plant, equipment and measures are operated in a proper and effective manner; and e) Ensure that staff are trained and aware of their obligations under the Environmental Protection Act 1994; and f) Ensure that reviews of environmental performance are undertaken at least annually.
G4	All **records** must be kept for a period of at least five years and provided to the **administering authority** upon request.
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	All analyses required under this environmental authority must be carried out by a laboratory that has National Association of Testing Authorities (**NATA**) **certification**, or an equivalent **certification**, for such analyses. The only exception to this condition is for the following: • In situ monitoring of release quality characteristic limits associated with the release of contaminants to waters, including pH, temperature, electrical conductivity, dissolved oxygen and turbidity; and • Monitoring of sulphur content of any fuel burned.
G7	When required by the **administering authority**, monitoring must be undertaken in the manner prescribed by the **administering authority** to investigate a complaint of **environmental nuisance**

	arising from the **activity**. The monitoring results must be provided within 10 business days to the **administering authority** upon its request.
G8	All bunding must be constructed and maintained so as to be sufficiently impervious to allow retention and recovery of any materials being stored within the bund.
G9	Spillage of all chemicals and fuels must be contained within an on-site containment 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 – 2004: Storage and handling of flammable and combustible liquids.
G10	The holder of this environmental authority must ensure that the results of all monitoring performed in accordance with this environmental authority are submitted to the administering authority upon request.
G11	**You** must participate in any community liaison committee established in respect of the downstream uses (including for irrigation of crops) with regards to **cooling water** blowdown discharged from Meandu Creek **Dam** to Meandu Creek with the intention of providing information on the quality and quantity of this water. **You** must provide information to the community liaison committee on how its members can manage use of the water in a way that: a) Promotes the environmental sustainability of application of the water (and the salts and other contaminants that it contains) to **land**; and b) Prevents or minimises environmental harm or adverse effects on human health resulting from use of the water.
Part 2 – Conditions relevant to ERA 60-1(a)(d) only.	
G13	The use of the **site** is deemed to have happened for the purposes of the *Integrated Planning Act 1997* (Qld) from the time the **spillway** raise is completed on Lot 1 on SP138386 and Lot 90 on FY2695.
G14	In consultation with the **administering authority**, cooperate with and participate in any community environmental liaison committee established in respect of the **site**.
Part 3 – Conditions relevant to ERA 16-2(b) only.	
G15	In consultation with the **administering authority**, cooperate with and participate in any community environmental liaison committee established in respect of either the **site** specifically, or the industrial estate where the **site** is located.
Agency interest: Air	
Part 1 – Conditions relevant to all activities	
Condition number	**Condition**

A1	Other than as permitted within this environmental authority, odours or airborne contaminants must not cause environmental nuisance to any **sensitive place**.

Part 2 – Conditions relevant to Tarong Power Station and TN Power Station activities only.

Condition number	**Condition**
A2	Contaminants resulting from the operation of the sources described in *Table 1 – Point source air release limits* must only be released to the atmosphere from those release points specified in *Table 1 - Point source air release limits*.

Table 1 - Point source air release limits

Source Description	**Release Point Number And Stack Description ***	**Minimum Release Height (above ground level) (metres)**	**Minimum Efflux Velocity @ Maximum Rated Load (metres/second)**
TPS Unit 1 Main Flue	A1-1	210	25
TPS Unit 2 Main Flue	A1-2		
TPS Unit 3 Main Flue	A1-3		
TPS Unit 4 Main Flue	A1-4		
TPS Gas Turbine Stack	A2	12	10
TNPS Flue Gas of Unit 1 Main Stack	A2-1	210	24
TNPS Flue Gas of Unit 2 Main Stack	A2-2		
TNPS Auxiliary Boiler	A2-3	40	15

* Release Point A2-1 - Between **TN Power Station's** baghouse filters and Unit 1 Main Stack exit
Release Point A2-2 - Between **TN Power Station's** baghouse filters and Unit 2 Main Stack exit

A3	Contaminants released from each release point specified in *Table 1 - Point source air release limits* must be directed vertically upwards without any impedance or hindrance.
A4	Contaminants must be released to the atmosphere from a release point at a height not less than the corresponding height stated for that release point in *Table 1 - Point source air release limits*.
A5	Contaminants must be released to the atmosphere from a release point at a velocity not less than the corresponding velocity stated for that release point in *Table 1 - Point source air release limits.*

<table>
<tr><td>A6</td><td>The concentration of solid particles in the effluent gas, under normal operating conditions, at the release points in Table 2 – Solid particles in effluent gas release limits is not to exceed the values specified in Table 2 – Solid particles in effluent gas release limits.

Table 2 – Solid particles in effluent gas release limits
<table>
<tr><th>Source description</th><th>Release point number and stack description</th><th>Maximum concentration of particles (mg/Nm^3) of effluent gas corrected to 12% by volume of carbon dioxide</th><th>Calculation method</th></tr>
<tr><td>TPS Unit 1 Main Flue</td><td>A1-1</td><td rowspan="4">458</td><td rowspan="4">4 hour moving average</td></tr>
<tr><td>TPS Unit 2 Main Flue</td><td>A1-2</td></tr>
<tr><td>TPS Unit 3 Main Flue</td><td>A1-3</td></tr>
<tr><td>TPS Unit 4 Main Flue</td><td>A1-4</td></tr>
<tr><td>TNPS Flue Gas of Unit 1 Main Stack</td><td>A2-1</td><td rowspan="2">80</td><td rowspan="2">1 hr moving average</td></tr>
<tr><td>TNPS Flue Gas of Unit 2 Main Stack</td><td>A2-2</td></tr>
</table></td></tr>
<tr><td>A7</td><td>The limits set out in condition A6 are not applicable to a unit of the power station if:

1. The correlation between dust burden and opacity meters is being determined/tested.</td></tr>
<tr><td>A8</td><td>The holder of the environmental authority must notify the administering authority, of a direction made by the Australian Energy Market Operator (AEMO) under section 116 of the National Electricity (Queensland) Law or clause 4.8.9 of the National Electricity Rules, no later than 24 hours after the direction is given.
The notification must include:
a) The date and time that the direction was issued by AEMO; and
b) The duration that the relevant direction remained in force.</td></tr>
</table>

A9

The limits prescribed in conditions A6, WT9 and WT10 are not applicable to a unit of the power station if the unit is operating in accordance with a direction made by AEMO as stated in Condition A8. During a direction as stated in Condition A8 the holder of the environmental authority must comply with the limits defined in *Table 3 – Temporary exceedances of authorised release limits during a direction by AEMO*.

Table 3 – Temporary exceedances of authorised release limits during a direction by AEMO

Emission or release	Release limit	Release point(s)	Duration of release limit
Air			
Particulate emissions	1374mg/Nm3 (4-hour moving average)	A1-1, A1-2, A1-3 and A1-4	For the duration of a direction by AEMO plus the 5-hour period immediately following the end of a direction.
Water			
Contaminated water released from Tarong Power Station	52,000 cubic metres per day	W1	For the duration of the day in which a direction by AEMO is given.
Contaminated water released from Tarong North	33,000 cubic metres per day	W5	For the duration of the day in which a direction by AEMO is given.

A10

Prior to commencing trial burns, the registered operator must provide the **administering authority** with written details of the **measures** that it will take to minimise particulates in flue gas emissions, and have due regard to any comments the **administering authority** may make with respect to these **measures.**

A11

The emission limit for the **Tarong Power Station** set out for solid particles in Condition A6 is not applicable when the registered operator is conducting a test program of trial burns of potential new coal fuel sources for the Tarong Power Station, for the duration of the test program.

A12

The emission limit for the **TN Power Station** set out for solid particles in Condition A6 is not applicable during the process of changing out bags in the bag filter when the following conditions apply:

a) When load is less than 50%; and
b) an inlet damper to a bag filter pass has moved off its open limit.

This exemption applies for a maximum of a 3 hour period after these conditions are met or until the inlet damper has remade its open limit.

A13

The concentration of oxides of nitrogen (NO_x) in the effluent gas at the release points specified in *Table 4 – NO_X in effluent gas release limits*, under **normal operating conditions**, is not to exceed values specified in *Table 4 – NO_X in effluent gas release limits* in each **normal cubic metre** of effluent gas calculated as NO_2 at a 7 percent oxygen reference level.

Table 4 – NO_X in effluent gas release limits

Source Description	Release Point Number And Stack Description	Maximum Concentration of NO_X (mg/Nm^3)
TPS Unit 1 Main Flue	A1-1	1600
TPS Unit 2 Main Flue	A1-2	
TPS Unit 3 Main Flue	A1-3	
TPS Unit 4 Main Flue	A1-4	
TNPS Flue Gas of Unit 1 Main Stack	A2-1	800
TNPS Flue Gas of Unit 2 Main Stack	A2-2	

A14

The **holder** of this environmental authority must conduct and keep records of a monitoring program of contaminant releases, under **normal operating conditions,** to the atmosphere at the release points, frequency, and for the parameters as specified in *Table 5 – Required release point determinations* and which complies the following:

a) All determinations be made by a person or body registered by the National Association of Testing Authorities (**NATA**) or by a person or body possessing appropriate experience and qualifications to perform the required determinations.
b) Monitoring provisions for the release point determinations listed in *Table 5 – Required release point determinations* must be contained within a procedure.
c) The following tests must be performed for each required determination specified in *Table 5 – Required release point determinations*:
   (i) gas velocity and volume flow rate;
   (ii) temperature; and
   (iii) water vapour concentration.
d) Where practicable samples taken must be representative of the contaminants discharged under normal operating conditions.
e) During the non-continuous sampling period the following additional information must be gathered:
   (i) time, date and duration of sampling;
   (ii) electricity generation rate during sampling period;
   (iii) hourly consumption of fuel for the sampling period.

Table 5 - Required release point determinations

Determination Required	Source Description	Release Point Numbers[1]	Frequency	Monitoring Location
Total Suspended Particulates (TSP)	**TPS** Unit 1, 2, 3 & 4 Main Flue	A1-(1-4)	**Continuous**, measured using dynamic opacity	**Unit Flue** (120 meter level) [3]
Nitrogen Oxides (NO_x)	**TPS** Unit 1, 2, 3 & 4 Main Flue	A1-(1-4)	Quarterly	**Unit Flue** (120 meter level) [2]
Sulphur Dioxide (SO_2)	**TPS** Unit 1, 2, 3 & 4 Main Flue	A1-(1-4)	Quarterly	**Unit Flue** (120 meter level) [2]
Mass emission rate and concentration of total suspended particulates (TSP)	**TNPS** Flue Gas of Unit 1 & 2 Main Stack	A2-1 and A2-2	**Continuous**	Between baghouse filters and Main Stack exit
Mass emission rate and concentration of nitrogen oxides (NO_x)	**TNPS** Flue Gas of Unit 1 & 2 Main Stack	A2-1 and A2-2	Quarterly	Between baghouse filters and Main Stack exit
Mass emission rate and concentration of sulphur dioxide (SO_2)	**TNPS** Flue Gas of Unit 1 & 2 Main Stack	A2-1 and A2-2	Quarterly	Between baghouse filters and Main Stack exit

[1] Release Point A2-1 - Between baghouse filters and Unit 1 Main Stack exit
Release Point A2-2 - Between baghouse filters and Unit 2 Main Stack exit

[2] In the event of access issues to the **Unit Flue**, NO_x and SO_2 monitoring to occur at the outlet of

	Electrostatic Precipitators before Main Stack. [3] In the event the Unit Flue TSP instrument is out of service, the TSP will be measured as opacity at the alternative monitoring location at the outlet of the Electrostatic Precipitators before the Main Stack.
A15	Monitoring provisions for the release point determinations listed in *Table 5 – Required release point* determinations must be contained within a procedure.
A16	The only type of fuel to be burnt in the **TN Power Station's** main boilers under **normal operating conditions** is coal.
A17	The only type of fuel to be burned in the **TN Power Station's** auxiliary boiler is fuel oil.
A18	The sulphur content of any fuel burned in power generation at the **TN Power Station** is not to exceed 0.5 percent by weight (85 percentile compliance, on a moving yearly basis, on a representative number of samples).
A19	Effluent gases from the **TN Power Station** must be collected and treated by baghouse filters prior to release to the atmosphere.
A20	An audible and/or visual alarm must warn the operator in charge of the baghouse filters at the **TN Power Station** in the event that the concentration of solid particles in the effluent gas is above the limit set out in this environmental authority.
Part 3 – Conditions relevant to ERA 60-1(a)	
A21	The **holder** of this environmental authority must use all reasonable and practicable means to limit dust emissions associated with **fly ash** disposal which emanate from the **activity** on the **site**.
Agency interest: Water	
Part 1 – Conditions relevant to all activities.	
Condition number	**Condition**
WT1	Other than as permitted within this environmental authority, contaminants must not be released to any **waters**.
WT2	Stormwater contaminated by the **activity** must be managed to minimise or prevent any adverse impacts on the values of the receiving environment.
WT3	The **holder** of this environmental authority must maintain a stormwater management system which provides for the following functions: a) Avoidance and minimisation of contaminated stormwater; and b) Reuse, treatment and disposal of contaminated stormwater.
WT4	Erosion and sediment control **measures** must be implemented and maintained to minimise erosion and the release of sediment.

<table>
<tr><th colspan="2">Part 2 – Conditions relevant to Tarong Power Station and TN Power Station activities only.</th></tr>
<tr><td>WT5</td><td>The only contaminant permitted to be released from the licensed place at release point W1 is Cooling Water from the Tarong Power Station.</td></tr>
<tr><td>WT6</td><td>The only contaminant permitted to be released from the licensed place at release point W5 is cooling water from the TN Power Station.</td></tr>
<tr><td>WT7</td><td>Contaminants, including Coal Combustion Product’s, must not be released to waters or the bed and banks of any waters.</td></tr>
<tr><td>WT8</td><td>All oil-contaminated or potentially oil-contaminated waters generated at the TN Power Station must be directed to an oil-water separator prior to any release.</td></tr>
<tr><td>WT9</td><td>Release points authorised under this environmental authority for the release of Cooling Water include:
1. W1: Tarong Power Station releases, located at the outfall of the cooling water blowdown discharge pipeline.
2. W3: Located at the discharge outlet from Meandu Creek Dam to Meandu Creek.
3. W5: TN Power Station releases, located at the cooling water outfall to Meandu Creek Dam
The location of these release points are identified as W1, W3 and W5 on the Tarong Power Station Surface Water Sample/Release Points map, dated 27/02/2015, as shown in Schedule 1 – Approved plans (Figure 1- Tarong Power Station Surface Water Sample/Release Points).</td></tr>
<tr><td>WT10</td><td>The total quantity of contaminated water released from release point W1 (Tarong Power Station) during any day must not exceed 38,000 cubic metres.</td></tr>
<tr><td>WT11</td><td>The total quantity of contaminated water released from release point W5 (TN Power Station) must not exceed 17,000 cubic metres per day, based on one week average.</td></tr>
<tr><td>WT12</td><td>If cooling water is directly or indirectly released into Meandu Creek from the TN Power Station then the holder of this environmental authority must ensure that titanium or stainless steel tubes are used in the condenser unit.</td></tr>
<tr><td>WT13</td><td>The release of contaminants to waters must comply with each of the limits specified in Table 6 – Release Quality Characteristic Limits.
Table 6 - Release Quality Characteristic Limits
<table>
<tr><th>Source of Water</th><th>Boondooma Dam Water Level</th><th>Quality Characteristics</th><th>Release Point Number [1]</th><th>Release Limit</th><th>Limit Type</th></tr>
<tr><td rowspan="2">Boondooma Dam /
Wivenhoe Dam /</td><td rowspan="2">> 40%</td><td>pH (pH Units)</td><td>W1 & W4</td><td>6.5 - 9.0</td><td>range</td></tr>
<tr><td>Electrical Conductivity (µS/cm @ 25˚C)</td><td>W1 & W4</td><td>1,870 µS/cm [2]</td><td>10-week moving average</td></tr>
</table></td></tr>
</table>

	<table><tr><td rowspan="4">Purified Recycled Water</td><td rowspan="2">≤ 40%</td><td>pH (pH Units)</td><td>W1 & W4</td><td>6.5 - 9.0</td><td>range</td></tr><tr><td>Electrical Conductivity (µS/cm @ 25˚C)</td><td>W1 & W4</td><td>2,243 µS/cm [2]</td><td>10-week moving average</td></tr><tr><td rowspan="2">≤ 30%</td><td>pH (pH Units)</td><td>W1 & W4</td><td>6.5 - 9.0</td><td>range</td></tr><tr><td>Electrical Conductivity (µS/cm @ 25˚C)</td><td>W1 & W4</td><td>2,804 µS/cm [2]</td><td>10-week moving average</td></tr></table> [1] Sample Point W1 – At the outfall of the **Tarong Power Station cooling water** blowdown discharge pipeline. Sampling Point W4 – **TN Power Station** Blowdown Line valve between **Cooling Water Dam** and Nanango Gatehouse Road. [2] Changes in the Electrical Conductivity of the release must be sufficiently gradual so as to maximise acclimation of invertebrates in Meandu Creek and prevent or minimise adverse impacts on the aquatic ecosystem.
WT14	When the Electrical Conductivity (EC) in discharges of evaporative cooling tower water from the **TN Power Station** exceeds 2,804 µS/cm, the holder of the environmental authority **must**, if requested, participate in the development of a Dam Release Management Plan (DRMP), the purpose of which is to mitigate potential adverse environmental impacts of releases of contaminants in water (including EC, copper, chromium and arsenic) from Meandu Creek **Dam** to Meandu Creek. **You** must provide relevant information to the person, committee or company developing the DRMP.
WT15	Not less than once every three years, the **holder** of this environmental authority must conduct studies and lodge a report on the studies with the **administering authority** to determine the impact of **cooling water** releases on: a) Surface water and sediment quality of Meandu Creek **Dam** and Meandu Creek (including the biota within Meandu Creek); and b) Groundwater quality.
WT16	The **holder** of this environmental authority must submit a monitoring procedure for the studies, as required by condition WT15, to the administering authority. This monitoring procedure must address at least the following: a) Sampling practices and procedures for contaminant testing; b) The selection of sampling locations to demonstrate that samples collected will be representative; and c) The quality parameters for contaminant testing.
WT17	The **holder** of this environmental authority must have due regard to comments made by the **administering authority** regarding the monitoring procedures as required by condition WT16.
WT18	The **holder** of this environmental authority is responsible for the making of determinations and keeping of **records** of the quality of the contaminants released for the release points, quality characteristics, and at the frequency specified in *Table 7 – Sampling quality characteristics and frequency.*

<table>
<tr><td></td><td>

Table 7 - Sampling quality characteristics and frequency

Quality Characteristic Determination	Sampling Points*	Frequency
pH	W1 & W4	Weekly
Electrical Conductivity (@ 25˚C)	W1 & W4	Weekly
Temperature	W4	Weekly
Total Aluminium	W1	Monthly
Total Copper	W1	Monthly
Total Zinc	W1	Monthly
Total Selenium	W1	Six Monthly
Total Chromium	W1	Monthly
Total Arsenic	W1	Monthly
Dissolved Oxygen	W2	Quarterly

* **Tarong Power Station** Sample Point W1 - At the outfall of the **cooling water** blowdown discharge pipeline

Tarong Power Station Sample Point W2 - Meandu Creek at Nanango Road Bridge

TN Power Station Sampling Point W4 – Blowdown Line valve between **Cooling Water Dam** and Nanango Gatehouse Road.

</td></tr>
<tr><td>WT19</td><td>Water quality monitoring as required by condition WT18 is not applicable if cooling water is discharged to the Ash Dam.</td></tr>
<tr><td>WT20</td><td>Determinations of the quality of contaminants released to waters to check conformity with the release quality characteristics specified in the Water Schedule of this environmental authority must be undertaken at the sampling and measurement point(s) described as:

1. Tarong Power Station Sample Point W1 - At the outfall of the cooling water blowdown discharge pipeline.
2. Tarong Power Station Sample Point W2 - Meandu Creek at Nanango Road Bridge.

The location of these sampling and measurement points are identified as W1 and W2 on the Tarong Power Station Surface Water Sample/Release Points map, dated 27/02/2015, as shown in Schedule 1 – Approved plans (Figure 1 – Tarong Power Station Surface Water Sample/Release Points).

3. TN Power Station Sampling Point W4: Blowdown Line valve between Cooling Water Dam and Nanango Gatehouse Road

The location of this sampling and measurement point is identified as W4 on the Tarong North Power Station Surface Water Sample/Release Points map, dated 02/03/2015, as shown in</td></tr>
</table>

	Schedule 1 – Approved plans (Figure 2 – Tarong North Power Station Surface Water Sample/Release Points).
WT21	All determinations of the quality of contaminants released to **waters** must be made in accordance with methods prescribed in the **administering authority's** Monitoring and Sampling Manual.
WT22	The method of assessment of the daily volume of contaminated water released must be contained within a procedure.
WT23	**Records** must be kept of the results of all determinations of the daily quantity of contaminants released into **waters** from the **TN Power Station**.
WT24	The method of assessment of the 10-week moving average figure for Electrical Conductivity (@ 25˚C) at the **Tarong Power Station** must be contained within a procedure.
WT25	The **holder** of this environmental authority is responsible for ensuring the Meandu Creek impact monitoring program, required by condition WT15, complies with at least the following **groundwater** monitoring requirements: a) All determinations of the quality of **groundwater** must be made in accordance with methods prescribed in the **administering authority's** Monitoring and Sampling Manual. b) Standing water levels in metres must be measured and recorded on each occasion that samples are obtained. Such measurement must be undertaken prior to any disturbance by sampling, and must be reported as the depth in metres from ground level to the water surface within the bore. c) Samples of **groundwater** must be taken from each of the bores at quarterly intervals each year.
Part 3 – Conditions relevant to ERA 60-1(a)(d) only.	
WT26	The **holder** of this environmental authority must maintain bores for the purpose of sampling and analysing **groundwater** at not less than three locations near the **Ash Dam**.
WT27	The **holder** of this environmental authority must take all reasonable and practicable **measures** to obtain **groundwater** samples that are representative of the **groundwater** around bores maintained for the purpose of sampling and analysing groundwater.
WT28	For the purposes of condition WT25, the **holder** of this environmental authority is responsible for ensuring a **groundwater** monitoring program is performed which complies with the following requirements: a) All determinations of the quality of **groundwater** must be made in accordance with methods prescribed in the **administering authority's** Monitoring and Sampling Manual. b) Standing water levels in metres must be measured and recorded on each occasion that samples are obtained. Such measurement must be undertaken prior to any disturbance by sampling, and must be reported as the depth in metres from ground level to the water surface within the bore. c) Samples of groundwater must be taken from each of the bores at quarterly intervals each year (excluding total selenium which must be measured from each of the bores at six monthly intervals each year).

	d) The samples obtained in accordance with paragraph (c) of this condition must be analysed for: i. pH ii. specific electrical conductivity iii. total dissolved salts (calculated) iv. total boron v. total selenium vi. total molybdenum vii. total vanadium viii. chloride (Cl) ix. sulphate (SO4) x. fluoride (F).
Part 4 - Conditions relevant to ERA 16-2(b) only.	
WT29	**You** must take all reasonable and practicable **measures** to ensure that stormwater from the **authorised place** that contains or is likely to contain contaminants not authorised for discharge by this environmental authority and that could cause environmental harm, drains to a designated sediment pit or the **ash dam**.
WT30	Erosion protection **measures** and sediment controls must be provided and maintained at all times, and repaired or replaced as required after each rainfall event, until **rehabilitation** related to the environmentally relevant activity is completed.
WT31	Erosion protection **measures** and sediment controls required by condition WT30 must be in place prior to or in conjunction with **site** disturbance.
Part 5 - Conditions relevant to ERA 33 only.	
WT32	Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from entering any ponds or other structures used for the storage or treatment of contaminants or wastes.
Agency interest: Noise	
Part 1 – Conditions relevant to all activities.	
Condition number	**Condition**
N1	Noise generated by the **activity** must not cause **environmental nuisance** to any **sensitive place**.
N2	The operation of the **TN Power Station** shall not increase the **background noise level** at the nearest residences by- a) more than 5 dB(A) during day-time (7 am -6 pm) and evening (6 pm -10 pm); and b) more than 3 dB(A) during night-time (10 pm -7 am).
N3	In the event of a complaint about noise from the **TN Power Station** that the **administering authority** considers is reasonable, then the **holder** of this environmental authority must monitor

	and record the "L(Amax adj,T)" and "Background" noise level at the place from where the complaint originates during the operation period.
N4	The method of measurement and reporting of noise levels from the **TN Power Station** must comply with the latest edition of the **administering authority's** Noise Measurement Manual.
N5	The measurement and reporting of noise levels from the **TN Power Station** must be undertaken by an **appropriately qualified person** or body.
Agency interest: Waste	
Part 1 – Conditions relevant to all activities.	
Condition number	**Condition**
W1	All waste generated in carrying out the **activity** must be lawfully reused, recycled or removed to a facility that can lawfully accept the waste.
W2	**Incompatible wastes** must not be mixed in the same container or waste storage area.
W3	All collected material removed from the baghouse filters from the **TN Power Station** must be removed and disposed of in a manner that will not cause the release of contaminants to the atmosphere or to **waters**.
Part 2 – Conditions relevant to Tarong Power Station and TN Power Station activities only.	
Condition number	**Condition**
W4	The construction and operation of the designated **regulated waste** disposal facility within the licensed place must comply with *Table 8 – Name and purpose of regulated waste disposal facilities.*

Table 8 - Name and purpose of regulated waste disposal facilities

Name of designated regulated waste disposal facility	Maximum surface area of dam (ha)	Maximum volume of ash stored in dam (m^3)	Maximum depth of dam (m)	Purpose of facility
Ash Dam	273	46 million	50.5	Storage of ash and effluents from power stations, including **residual waste** generated by the processing of the power stations' coal combustion products under a relevant approval.

<table>
<tr><td>W5</td><td>The designated regulated waste disposal facility within the licensed place must be located within the polygonal area defined by the co-ordinates defined in Table 9 – Location of regulated waste disposal facility.

Table 9 - Location of regulated waste disposal facility
<table><tr><th>Name of regulated waste disposal facility</th><th>Easting
(GDA 94)</th><th>Northing
(GDA 94)</th></tr><tr><td rowspan="10">Ash Dam</td><td>393501.0</td><td>7037894.6</td></tr><tr><td>393665.2</td><td>7039173.5</td></tr><tr><td>394277.7</td><td>7039093.8</td></tr><tr><td>394354.5</td><td>7039692.0</td></tr><tr><td>394035.7</td><td>7040037.3</td></tr><tr><td>393764.6</td><td>7040071.9</td></tr><tr><td>393282.7</td><td>7040682.7</td></tr><tr><td>392006.9</td><td>7040825.7</td></tr><tr><td>391432.5</td><td>7038008.0</td></tr></table></td></tr>
<tr><td>W6</td><td>The Ash Dam detailed in Condition W4 and W5 must be operated in accordance with the Ash Dam Management Plan required by Condition W7.</td></tr>
<tr><td>W7</td><td>The holder of this environmental authority must develop and implement an Ash Dam Management Plan which provides for the following functions:
a) minimisation of waste;
b) operation, maintenance, surveillance, and decommissioning of the Ash Dam;
c) optimisation of ash disposal facilities;
d) suppression of dust under extreme dry weather conditions;
e) reporting on the integrity of the ash dam, the storage capacity of the Ash Dam, the development of alternative ash disposal facilities and long term leachate migration from the Ash Dam, and
f) controlling the risk of discharge from the Ash Dam.</td></tr>
<tr><td>W8</td><td>The Ash Dam Management Plan required by Condition W7 must:
a) include the management of activities associated with the recovery, handling and transport of Coal Combustion Products (CCP) generated at the Tarong Power Station and TN Power Station to Meandu Coal Mine in accordance with Condition W33;
b) include a figure of the disposal location of the CCP’s that are transferred in accordance with condition W33;
c) be prepared and certified by a suitably qualified and experienced person;
d) be submitted to the administering authority upon request.</td></tr>
</table>

W9	Upon construction of any modifications to the **Ash Dam**, the **Ash Dam** Management Plan must be amended to incorporate the modifications and this amendment is to be **certified** by a suitably qualified and experienced person.
W10	The **Ash Dam** Management Plan must be reviewed at least every three years. If the **Ash Dam** Management Plan is amended, the **holder** of this environmental authority must submit the revised **Ash Dam** Management Plan and **certification** to the **administering authority** within three months of the amendment.
W11	The **holder** of this environmental authority must use all reasonable and practicable means to limit dust emissions which emanate from activities associated with **fly ash** collection, transportation and disposal.
W12	For the purpose of condition W11, examples of reasonable and practicable **measures** for the control of dust emissions include the following: a) Enclosure of conveyors and storage silos; b) Provision of dust suppression systems on conveyors; c) Installation of dust extraction systems on storage silos; and d) Water and additives may be added to the ash to form a dense slurry.
W13	The **Ash Dam** must be designed and operated so that the target for the annual risk of a discharge through the **spillway** is less than 0.01 **AEP**, measured at 1 November each year and calculated utilising the **operational water balance model** referred to in condition W14.
W14	The **holder** of this environmental authority must maintain an **operational water balance model** for the **Ash Dam** and its catchments and utilise this to determine and manage the risk of a discharge through the **spillway**. The **operational water balance model** must be prepared by a suitably qualified and experienced person, updated at least annually and be made available to the **administering authority** on request.
W15	On becoming aware that the risk of a discharge through the **spillway** of the **Ash Dam** is greater than 0.01 **AEP** for a single 72 hour storm, or there is insufficient freeboard to meet the allowance for wave action generated by a 0.01 **AEP** wind, the **holder** of this environmental authority must: a) Notify the **administering authority** (in writing) within 24 hours; and b) Submit a contingency plan to the **administering authority** and have due regard to its comments. c) The plan must detail the management **measures**, risk of discharge, the quantity of possible discharge, and monitoring required to assess the level of environmental impact.
W16	If the risk of a discharge through the **spillway** of the **Ash Dam** exceeds 0.01 **AEP** measured at 1 November each year, the **holder** of this environmental authority must implement a Contingency Plan to reduce the risk of spill to below 0.01 **AEP**.
W17	The **Mandatory Reporting Level** (the MRL) must be marked on or adjacent to the manual gauge in such a way that during routine inspections of the **Ash Dam**, it is clearly observable.

W18	Before constructing or modifying the **Ash Dam**, a **suitably qualified and experienced person** must: a) Prepare a **design plan** in accordance with an appropriate engineering standard; and b) Certify that the **design plan** meets an appropriate engineering standard and is consistent with the conditions in the environmental authority.
W19	Before construction of modifications to the **Ash Dam**, the **holder** of this environmental authority must submit the **certified design plan** to the **administering authority**.
W20	Construction or modification shall be done only in accordance with an accepted **design plan**.
W21	The **design plan** is deemed to be accepted if the **administrating authority** has not rejected the **design plan** within 28 days of its submission.
W22	When construction of the modification to the **Ash Dam** is complete the **holder** of this environmental authority must: a) Obtain **certification** from a **suitably qualified and experienced person** that the construction of the modification to the **Ash Dam** is in accordance with the **certified design plan**; and b) If the modification is in accordance with the design plan, submit the construction certification to the administering authority, or, c) If changes have occurred, submit a set of "as built" drawings and the construction certification to the administering authority.
W23	The **Ash Dam** must be inspected each calendar year by a **suitably qualified and experienced person.**
W24	At each annual inspection, the condition and adequacy of all components of the **Ash Dam** must be assessed. The **suitably qualified and experienced person** must prepare an **annual inspection report** containing details of the assessment and include recommended actions to ensure the integrity of the **Ash Dam**.
W25	The **suitably qualified and experienced person** who prepared the **annual inspection report** must **certify** the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.
W26	The **holder** must: a) Within 20 business days of receipt of the **annual inspection report**, provide to the administering authority: (i) The recommendations section of the **annual inspection report**; and (ii) If applicable, any actions being taken in response to those recommendations; and b) If, following receipt of the recommendations and (if applicable) actions, the **administering authority** requests a full copy of the **annual inspection report** from the **holder**, provide this to the **administering authority** within 10 business days of receipt of the request.
W27	A Decommissioning Strategy for inclusion in the **Ash Dam** Management Plan must be documented and submitted to the **administering authority**.

W28	The **Ash Dam** must be decommissioned in accordance with the Decommissioning Strategy to a **stable land** form.
W29	At least two years prior to the decommissioning of the **Ash Dam**, the **holder** of this environmental authority must develop and implement a Final Land Use and Rehabilitation Plan (FLURP). The Plan must include, but is not limited to, the following: a) Disturbance type; b) Disturbance area; c) The proposed suitability of land for a particular use; d) Proposed final surface level and contours, final drainage system and species of vegetation to be planted for the rehabilitation program; e) A description of rehabilitation management techniques incorporating works and monitoring programs and timetables; f) Indicators for success; and g) Keeping of appropriate records of rehabilitation measures implemented including taking of photographs demonstrative of rehabilitation achieved and the preparation of annual rehabilitation progress reports.
W30	A summary of the annual **rehabilitation** progress report must be submitted to the **administering authority** with each **annual return**, from when the FLURP (condition W29) is implemented, until the environmental authority is surrendered or the **administering authority** advises that this reporting is no longer required (whichever is the earlier).
W31	The **holder** of this environmental authority is responsible for ensuring a seepage water monitoring program is performed at the **Ash Dam** Toe Drain System which complies with the following requirements: a) All determinations of the quality of seepage water must be made in accordance with methods prescribed in the **administering authority's** Monitoring and Sampling Manual. b) Samples of seepage water must be taken (if available) at quarterly intervals each year (excluding total selenium which must be measured at six monthly intervals each year). c) The samples obtained in accordance with paragraph (b) of this condition must be analysed for: (i) pH (ii) specific electrical conductivity (iii) total dissolved salts (calculated) (iv) total boron (v) total selenium (vi) total molybdenum (vii) total vanadium (viii) chloride (Cl) (ix) sulphate (SO4) (x) fluoride (F).
W32	The **holder** of this environmental authority must take all reasonable and practicable **measures** to obtain seepage water samples that are representative of the **Ash Dam** Toe Drain Seepage water system for the purpose of sampling and analysing.

Part 3 - Conditions relevant to ERA 60-1(a)(d) only – Transfer of Coal Combustion Products (CCPs) to Meandu Coal Mine

Condition number	Condition
W33	CCPs generated at the Tarong Power Station and Tarong North Power Station under normal operating conditions, may be transferred offsite to Meandu Coal Mine to be used for the following purposes: a) Used as fill material in the mine voids described in the Ash Dam Management Plan as per Condition W8.
W34	Prior to the transfer of CCPs Meandu Coal Mine in accordance with Condition W33, the holder of this environmental authority must ensure that: a) the CCPs meet the criteria in *Table 10: Coal Combustion Products quality criteria*; b) the responsibility of the CCPs transferred in accordance with a written agreement (the third party agreement) signed by both parties to the agreement; c) the third party is made aware of the General Environmental Duty (GED) under s. 319 of the *Environmental Protection Act 1994*, environmental sustainability of the CCPs disposal and protection of environmental values of waters and land.

Table 10: - Coal Combustion Products quality criteria

Quality criteria	Limits for specific uses *		
	Bound applications	Total Maximum Concentration (mg per kg)	
		Unbound applications	Soil ameliorant and land applications
Arsenic (total)	NS	20	20
Beryllium	NS	NS	60
Boron	NS	100	10**
Cadmium	NS	1	1
Chromium (total)	NS	100	100
Chromium (III)	NS	NS	100
Chromium (VI)	NS	1.5	1
Cobalt	NS	100	100
Copper	NS	100	100
Lead	NS	50	50

	<table><tr><td>Mercury</td><td>NS</td><td>1</td><td>1</td></tr><tr><td>Molybdenum</td><td>NS</td><td>NS</td><td>10</td></tr><tr><td>Nickel</td><td>NS</td><td>60</td><td>60</td></tr><tr><td>Selenium</td><td>NS</td><td>10</td><td>5</td></tr><tr><td>Zinc</td><td>NS</td><td>200</td><td>200</td></tr><tr><td>Electrical conductivity</td><td>NS</td><td>NS</td><td>10,000(µS/cm)</td></tr><tr><td>pH</td><td>NS</td><td>5 – 12.5 (pH units)</td><td>5 – 12.5 (pH units)</td></tr></table> NS = Not specified (monitoring of each element is still required). * measured using **reference test methods** ** measured using hot $CaCl_2$ method
W35	In addition to meeting the criteria in *Table 10: Coal Combustion Products quality criteria*, the CCPs must not have any properties nor contain any other **contaminants** at concentrations which may cause **environmental harm** when transferred in accordance with Condition W34.
W36	The holder of the environmental authority must conduct monitoring of the CCPs to determine compliance with *Table 10: Coal Combustion Products quality criteria* and at a minimum of the following frequency: a) annually, where statistical analysis has been undertaken that demonstrates no significant (at minimum 95% Confidence Interval) difference in the mean and standard variation of contaminant concentrations; otherwise, b) every six months.
W37	Where the composition of the CCPs has changed or is likely to change, additional monitoring must be conducted which is sufficient to detect and characterise the extent of any change, until such time that the composition is no longer likely to change and results demonstrate that the material is compliant with *Table 10: Coal Combustion Products quality criteria* before it is transferred in accordance with Condition W34.
W38	When the CCPs are transferred in accordance with Condition W33, the holder of the environmental authority must retain the following records of the CCPs: a) quantity of the CCPs supplied measured in tonnes; b) quality characteristics of the CCPs (for at least the parameters stated in *Table 10: Coal Combustion Products quality criteria*; and c) any written procedures developed to manage the CCPs.
W39	The written agreement as per Condition W34 must include the following in writing: a) confirmation that the CCPs meet the criteria in *Table 10: Coal Combustion Products quality criteria*; b) confirmation that the CCPs being provided is compliant with the environmental authority conditions; and c) a current and complete laboratory certificate of analysis that outlines the quality of the

	CCP's as per *Table 10: Coal Combustion Products quality criteria*.
W40	The holder of this environmental authority must cease transferring CCPs in accordance with Condition W33 immediately upon becoming aware that: a) The CCPs do not meet the criteria in *Table 10: Coal Combustion Products quality criteria*; or b) The CCPs are found to have properties or contain other contaminants at concentrations that may cause environment harm.
Part 4 - Conditions relevant to ERA 60-1(a)(a) only.	
W41	Condition W1 does not apply to the removal of ash or effluent from the **authorised place** for disposal directly into the **Ash Dam**.
Agency interest: Land	
Part 1 – Conditions relevant to ERA 60-1(a)(a) only.	
Condition number	**Condition**
L1	The only contaminants permitted to be released on the **authorised place** are ash and effluent from the **Ash Dam**. The release must only occur in the event that the **ash dam** is approaching or is at full supply level.
L2	**Ash Dam** contents may only be released within the Probable Maximum Flood (PMF) level of the **Ash Dam** specified on the *Survey of Probable Maximum Flood level (PMF) of Ash Dam* map, as shown in Schedule 1 – Approved plans (Figure 3 – Survey of Probable Maximum Flood Level (PMF) of Ash Dam), in accordance with condition L1.
L3	In the event that **regulated wastes** have been deposited on the **site**, the **site** must be rehabilitated in accordance with a FLURP.
L4	The FLURP required by condition L3 must be consistent with that prepared for the **Ash Dam** (and may be included in the same document) and must include the following: a) Disturbance type; b) Disturbance area; c) The proposed suitability of land for a particular use; d) Proposed final surface level and contours, final drainage system and species of vegetation to be planted for the rehabilitation program; e) A description of rehabilitation management techniques incorporating works and monitoring programs and timetables; f) Indicators for success; and g) Keeping of appropriate records of rehabilitation measures implemented including taking of photographs demonstrative of rehabilitation achieved and the preparation of annual rehabilitation progress reports.
L5	The FLURP must be implemented at the same time as the implementation of the FLURP for the

	Ash Dam.
L6	A summary of the annual **rehabilitation** progress report must be submitted to the **administering authority** with each **annual return**, from when the FLURP is implemented, until the environmental authority issued under the *Environmental Protection Act 1994* is surrendered or the **administering authority** advises that this reporting is no longer required (whichever is the earlier).
L7	The **authorised place** must be rehabilitated such that: a) Suitable native species of vegetation are planted and established; b) Potential for erosion of the site is minimised; c) The quality of stormwater, water and seepage released from the site is such that releases of contaminants such as suspended solids, turbidity, total dissolved salts, pH, total iron, total aluminium, and total manganese are not likely to cause environmental harm; d) The likelihood of environmental nuisance being caused by release of dust is minimised; e) The water quality of any residual water bodies meets criteria for subsequent uses and does not have potential to cause environmental harm; f) The final landform is stable and not subject to slumping; and g) Any actual and potential acid sulfate soils in or on the site are either not disturbed; or, submerged, or treated so as to not be likely to cause environmental harm.
Part 2 – Conditions relevant to ERA 16-2(b) only.	
L8	**Land** that has been disturbed for activities conducted under this environmental authority must be rehabilitated in a manner such that: a) Suitable native species of vegetation for the location are established and sustained for earthen surfaces b) Potential for erosion is minimised c) The quality of water, including seepage, released from the **site** does not cause environmental harm d) Potential for **environmental nuisance** caused by dust is minimised e) The water quality of any residual water body does not have potential to cause environmental harm f) The final landform is **stable** and protects public safety.
L9	**Rehabilitation** of **disturbed areas** required under condition L8, must take place progressively as **works** are staged and new areas of extraction are commenced.
L10	**Rehabilitation** of **disturbed areas** must commence within 30 days of ceasing the environmentally relevant activity at the **site**.
Part 3 – Conditions relevant to ERA 33 only.	
L11	All reasonable and practicable **measures** must be undertaken to minimise the release of **Coal Combustion Products** to **land** outside of the ash screening area.
L12	Upon permanent cessation of the ERA, the **site** must be rehabilitated in a manner such that: a) **Coal Combustion Products** are removed from the ash screening area;

	b) Suitable species of vegetation (native species where practicable) are planted and established or such that the land is returned to a use suitable for the area; c) **Potential** for erosion of the **site** is minimised; d) The quality of stormwater, other water and seepage released from the site is such that releases of contaminants such as suspended solids, turbidity, total dissolved salts, pH, electrical conductivity, total boron, total selenium, total molybdenum, total vanadium, chloride, sulphate and fluoride are not likely to cause environmental harm; e) The likelihood of environmental nuisance being caused by release of dust is minimised.
Agency Interest – Co-firing Trial of bio-solids and coal	
Part 1 – Conditions relevant to the site.	
T1	The co-firing trial of up to 3% of **bio-solids** used as an alternative fuel source with coal is not permitted beyond 12 months from the date of commencement of the trial.
T2	The operation of the co-firing trial must not result in concentrations of contaminants exceeding the maximum limits specified in *Table 11 – Co-firing Trial maximum stack emission limits* when operated at 3% bio-solids**.**

Table 11 – Co-firing Trial maximum stack emission limits

Contaminant	Maximum concentration[2]	Monitoring Frequency
Hydrogen chloride	60 mg/Nm^3 (dry) at 11% O_2	In accordance with condition T3
Total Fluoride (as HF)	4 mg/Nm^3 (dry) at 11% O_2	In accordance with condition T3
Total volatile organic compounds (TVOC)	20 mg/Nm^3 (dry) at 11% O_2	In accordance with condition T3
Total Heavy Metals[1]	0.5 mg/Nm^3 (dry) at 11% O_2	In accordance with condition T3
Dioxins and furans (I-TEQ for PCDDs and PCDFs, including half LOD)	0.1 ng/Sm^3 (dry) at 11% O_2	In accordance with condition T3
PFAS[3] extended suite containing 28 compounds	-	In accordance with condition T3

[1] Total heavy metals limit is for the total of antimony, arsenic, cadmium, lead, mercury, beryllium, chromium, cobalt, manganese, nickel, selenium, vanadium and their compounds.

[2] All maximum concentrations (100% compliance) refer to 11% O_2 reference level and 30 minutes averaging time.

[3] The samples must be analysed to quantify the PFAS, by applying the total oxidisable precursor analysis (TOPA), to provide analysis of PFAS extended suite of 28 compounds. PFAS extended suite containing 28 compounds must be analysed from the following sources:

- Biosolids used in the co-firing trial;

	• Boiler ash and ESP; and • Stack emissions during the co-firing trial where emissions are expected to be maximum.
T3	The monitoring frequency of contaminants listed in *Table 11 – Co-firing Trial maximum stack emission limits* must include the monitoring of contaminants upon initial burn and in the event of a **significant** change to: a) bio-solids feed rate; b) bio-solids percent composition within coal blend; c) PFAS concentration in bio-solids feedstock; d) bio-solids residence time in the boiler; e) amount of primary air (oxygen) introduced into the boiler; f) flue gas temperature and ESP operating conditions.
T4	Stack monitoring must be conducted to align with the latest edition of the administering authority's *Air Quality Sampling Manual.*
T5	Prior to commencement of the bio-solids co-firing trial, an air management program must be developed and certified by an **appropriately qualified person** demonstrate compliance with the limits in *Table 11 – Co-firing Trial maximum stack emission limits***.**
T6	The air management program must be provided to the administering authority upon request.
T7	The air management program must include, but not be limited to: a) The delineation of the relevant air shed(s); and b) The identification of background reference sites and impact monitoring sites within the relevant are shed(s), including sensitive places; and c) Upon receipt of stack emission test results in exceedance with the limits in *Table 11 – Co-firing Trial maximum stack emission limits the* co-firing trial of bio-solids and coal must cease.
T8	At the time of sampling in accordance with *Table 11 – Co-firing Trial maximum stack emission limits,* records of the below must be kept: a) Plant throughput; and b) Electricity/Steam generation; and c) Ambient Temperature; and d) Coal Characteristic Sampling; and e) Reference to test methods and accuracies.
T9	Storage of bio-solids must be contained to prevent the release of contaminants to land or water(s).
T10	Ash generated from the co-firing trial of bio-solids and coal must not be released to the Ash Dam if the ash is found to have properties or contain other contaminants at concentrations that may cause environmental harm.
T11	Prior to commencement of the bio-solids co-firing trial, a PFAS monitoring program must be developed by an **appropriately qualified person** and implemented to align with the monitoring requirements outlined in the **PFAS National Environmental Management Plan**.
T12	A post trial report which has been developed and certified by an appropriately qualified person must be submitted to the administering authority no later than 60 business days after the completion of the co-firing trial and include:

	a) A description of the trial process including boiler operating conditions during the co-firing trial. b) Type and total quantity of bio-solids processed during the co-firing trial. c) Description of bio-solids feed rate. d) Status of air pollution control equipment (ESP) during the co-firing trial. e) Results of stack emission testing required by *Table 11 – Co-firing trial maximum stack emission limits*. f) Records of the bio-solids feed rate and percent composition blend with coal. g) A summary of continuous stack monitoring results. h) Present the concentrations at standard temperature and pressure, and provide the mass emission rate, exit velocity, volume flow rate and temperature at exit. i) Description of test methods and quality assurance procedures adopted during the monitoring program. j) A comparison of the air emissions throughout the co-firing trial with the target limits in *Table 11 – Co-firing trial maximum stack emission limits.* k) An assessment of all monitoring results including verification that the co-firing trial was carried out without incident or environmental harm. l) An assessment of compliance with the conditions of this environmental authority.

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.

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 successors or predecessors.

Annual return means the return required by the annual notice (under section 316 of the *Environment Protection Act 1994*) for the environmental authority.

Annual exceedance probability (AEP) means the probability that a particular storm or event will be exceeded in any year.

Annual inspection report means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan);

a) against recommendations contained in previous annual inspections reports;
b) against recognised dam safety deficiency indicators;
c) for changes in circumstances potentially leading to a change in consequence category;
d) for conformance with the conditions of this authority;
e) for conformance with the 'as constructed' drawings;
f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the **dam** (or network of linked containment systems);
g) for evidence of conformance with the current operational plan.

Appropriately qualified person(s) means a person or persons who has professional qualifications, training, skills and experience relevant to the EA requirement and can give authoritative assessment, advice and analysis in relation to the EA requirement using the relevant procedures, standards, methods or literature.

Ash Dam means the ash dam operated by Stanwell Corporation Limited at the Tarong Power Station site as authorised under environmental authority number EPPR00971913 or subsequent equivalent approvals issued under the *Environmental Protection Act 1994*.

Authorised place means the place authorised under this environmental authority for the carrying out of the specified environmentally relevant activities.

Background noise level means either:

$L_{A90,T}$ being the A-weighted sound pressure level exceeded for 90 percent of the time period of not less than 15 minutes, using Fast response, or

$L_{Abg,T}$ being the arithmetic average of the minimum readings measured in the absence of the noise under investigation during a representative time period of not less than 15 minutes, using Fast response.

Bio-solids means pelletised sewage sludge from a Wastewater Treatment process.

Cenospheres means inert, hollow, essentially thin-walled glass spheres of approximately 10–350 microns having a typical density of 0.4–0.8g/cm3, comprised largely of silica and alumina and filled with air and/or gasses which are formed from coal combustion ash when in a molten state.

Certification means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the Manual, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

Certifying, **certify or certified** have a corresponding meaning as 'certification'.

Coal Combustion Products (CCP) or CCP's means fly ash, furnace bottom ash and cenospheres produced primarily from the combustion of pulverised black coal within coal fired power stations.

Contaminants (as defined in Section 11 of the *Environmental Protection Act 1994*), means -

a) a gas, liquid or solid; or
b) an odour; or
c) an organism (whether alive or dead), including a virus or parasite; or
d) energy, including noise, heat, radioactivity and electromagnetic radiation; or
e) a combination of contaminants.

Contaminants does not include:

- stormwater;
- potable ("Domestic") water;
- de-ionised ("Demineralised") water;
- clarified ("Filtered") water; or
- untreated ("Raw") water;

but does include **cooling water** for the purpose of the water schedule.

Continuous for the purpose of *Table 5 – Required release point determinations*, means the use of automatic monitoring and recording instrumentation where data is logged at regular intervals, with a minimum data capture rate of 80 percent.

Cooling water means water discharged from the body of water circulating through the cooling tower, condenser and associated pipe work (i.e. cooling water blowdown).

Dam means a containment or proposed containment whether permanent or temporary, which is designed to contain, divert or control flowable substances. However this does not include a fabricated or manufactured tank or container designed to a recognised standard.

Design plan in the context of a dam design is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, the procedures and criteria to be used for operating the dam and the decommissioning and rehabilitation objectives in terms procedures, works and outcomes at the end of dam life, The documents can include design and investigation reports, drawings, specifications and certifications.

Disturbed areas includes areas:

1. that are susceptible to erosion;
2. that are contaminated by the activity; and/or
3. upon which stockpiles of soil or other materials are located.

Environmental harm means environmental harm as defined in Chapter 1 of the *Environmental Protection Act 1994.*

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

Fly ash is the solid material extracted from the flue gases of a boiler fired with pulverised coal.

Furnace bottom ash means the agglomerated particles formed at the bottom of the furnace. Furnace bottom ash is typically grey to black in colour, is quite angular, and has a porous surface structure.

Groundwater means water that occurs naturally in, or is introduced artificially into, an aquifer.

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

Incompatible waste means waste that may chemically react when:
1. placed in proximity to other wastes; and/or
2. mixed with other wastes.

Land does not include **waters**.

Mandatory reporting level or MRL means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

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

mg/L means milligrams per litre.

NATA means National Association of Testing Authorities.

Normal cubic metre ("**Nm^3**") means the volume of dry gas which occupies 1 cubic metre at a temperature of zero degrees Celsius and at an absolute pressure of 101.3 kiloPascals.

Normal operating conditions is the normal operating state of a unit, and means that the Unit is operating on a stable coal flame (oil/gas support no longer necessary) operating all times other than under the co-firing trial conditions

Operational water balance model means purpose built, adapted software for use in making decisions regarding a dam and/or catchment hydrology, prepared by a suitably qualified and experienced person. It is dynamic, able to be regularly updated and takes into account catchment hydrology, inputs and outputs, estimated and simulated rainfall runoff and evaporation.

PFAS National Environmental Management Plan means the latest edition of the PFAS National Management Plan developed to manage potential impacts from exposure to per and poly-fluoroalkyl substances.

Person(s) means an individual or a corporation.

Purified Recycled Water means recycled water that has been purified by the Bulk Authority as defined under the conditions of the Bulk Water Supply Agreement between the Queensland Bulk Water Supply Authority and Stanwell Corporation Limited pursuant to section 360G of the *Water Act 2000*.

Records include breach notifications, written procedures, analysis results, monitoring reports and monitoring programs required under a condition of this authority.

Reference test methods - The reference test methods for determining the contaminant and as described in the most recent version of the United States Environmental Protection Agency's *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* [available December 2013 at www.epa.gov/epaoswer/hazwaste/test/sw846.htm, also known as SW-846].

Regulated waste means non-domestic waste mentioned in Schedule 7 of the *Environmental Protection Regulation 2008* (whether or not it has been treated or immobilised), and includes:
- for an element - any chemical compound containing the element; and
- anything that has contained the waste.

Rehabilitation means the process of reshaping and revegetating land to restore it to a stable landform in accordance with the rehabilitation requirements set out in this environmental authority and, where

relevant, includes remediation of contaminated **land**.

Residual waste means the by-product, including ash, dirt, rocks and vegetative material, resulting from the processing of cenospheres harvested from the Tarong Power Station's Ash Dam and the Meandu Coal Mine K2W-N mine void.

Sensitive place includes the following and includes a place within the 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 2004* or a World Heritage Area; or
6. a public thoroughfare, park or garden; or
7. for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2008.

Significant means for application to condition T3 an increase greater than 10% of the average measure or unit being monitored.

Site means the land to which this environmental authority relates or the place/ premises to which this environmental authority relates.

Spillway means passage or outlet from the **Ash Dam** through which surplus water flows.

Stable means land form dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (traffic ability), erosion resistance and geochemical stability with respect to seepage and contaminant generation.

Suitably qualified and experienced person in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:

- for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.
- for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

Total when referring to "total Copper" etc in the monitoring requirements of this licence means: that concentration of metal found after pre-treatment as described in the "Preliminary Treatment of Acid-Extractable Metals" in APHA (1991)" as recommended in the Section 7.1.4 of "Australian Water Quality Guidelines for Fresh and Marine Waters, Nov. 1992."

TN or **TNPS** or **TN Power Station** means the Tarong North Power Station.

TPS means the **Tarong Power Station**.

Tarong North Power Station means the following activities at the following location

Environmentally relevant activity/activities	Location(s)
14-(2b) Electricity generation >150MW fuel 7-(6a) Chemical manufacturing >200t but <1000t yr inorganic 8-(3) Chemical storage >500m^3 class C1 or C2	Tarong North Power Station Nanango – Tarong Road, NANANGO, QLD, 4615 Lot 2 Plan SP138386 and Lot 3 Plan SP138386

Tarong Power Station means the following activities at the following location

Environmentally relevant activity/activities	Location(s)
14-(2b) Electricity generation >150MW fuel 60-(1d) Waste disposal >200000t yr (1)(a) 63-(1b)(i) Sewage treatment >100 to 1500EP - IT or IR 64-(3) Water treatment >10ML raw water day 8-(3) Chemical storage >500m^3 class C1 or C2	Tarong Power Station, Nanango-Tarong Road NANANGO QLD 4615 - Lot 1 Plan SP138386 and Lot 90 Plan FY2695

Trial operating conditions means operating the site to include up to 3% bio-solids co-firing with coal on a trial basis.

Unit Flue for the purpose of *Table 5 – Required release point determinations*, means the vertical section of duct that is not in close proximity to any flow restrictions

Waters includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water, natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), and any underground water, any part-thereof, and includes the Black Creek Dam Diversion Channel but does not include the **Ash Dam**, Effluent Dam, Cooling Water Dam, Stormwater Diversion Dam, Drains Reclaim Dam, or other site dams except Meandu Creek Dam.

Works or operation means the activities approved under this environmental authority.

You means the holder of the environmental authority.

Schedule 1—Approved plans

Figure 1 – Tarong Power Station Surface Water Sample/Release Points



Figure 2 – Tarong North Power Station Surface Water Sample/Release Points

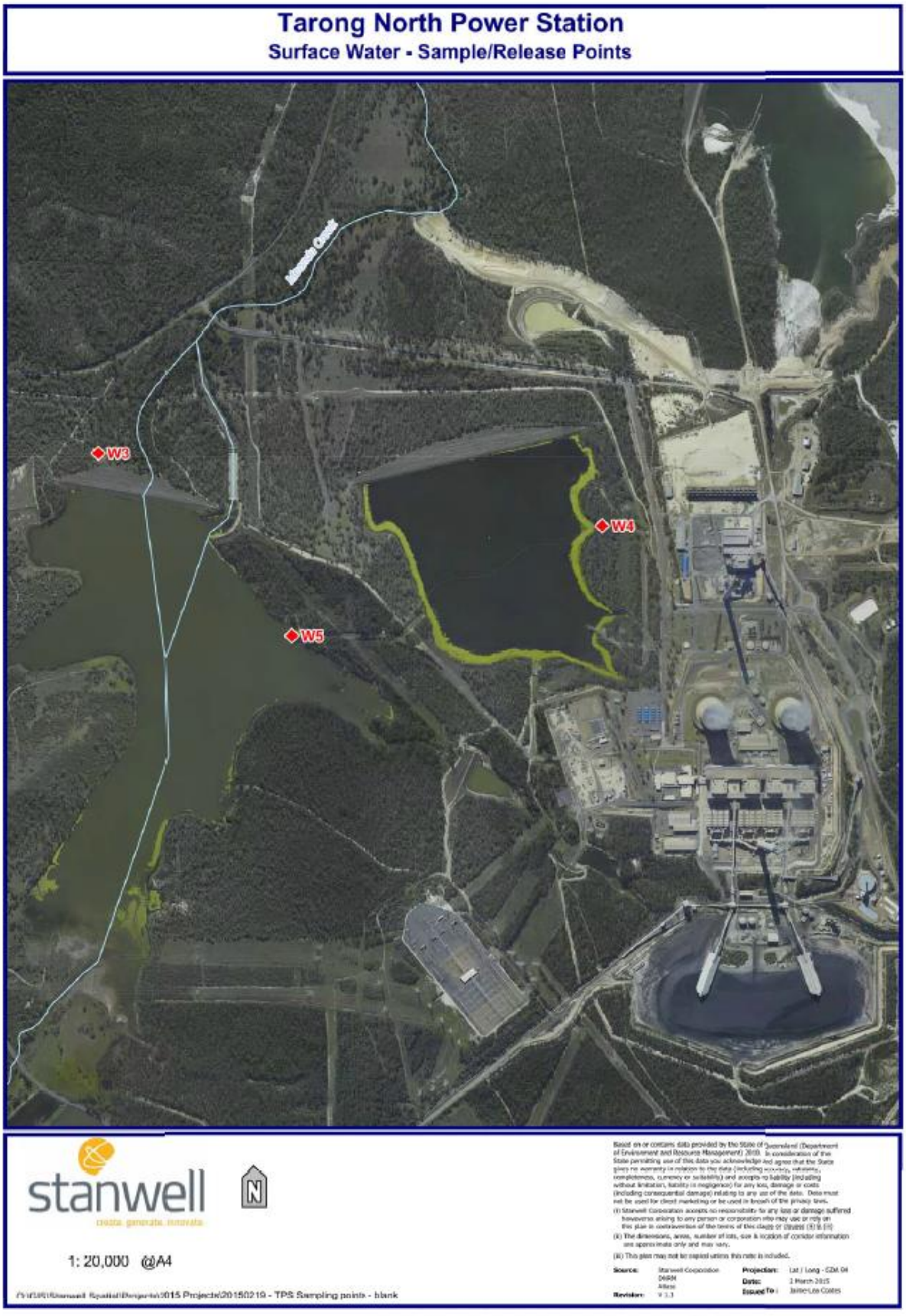
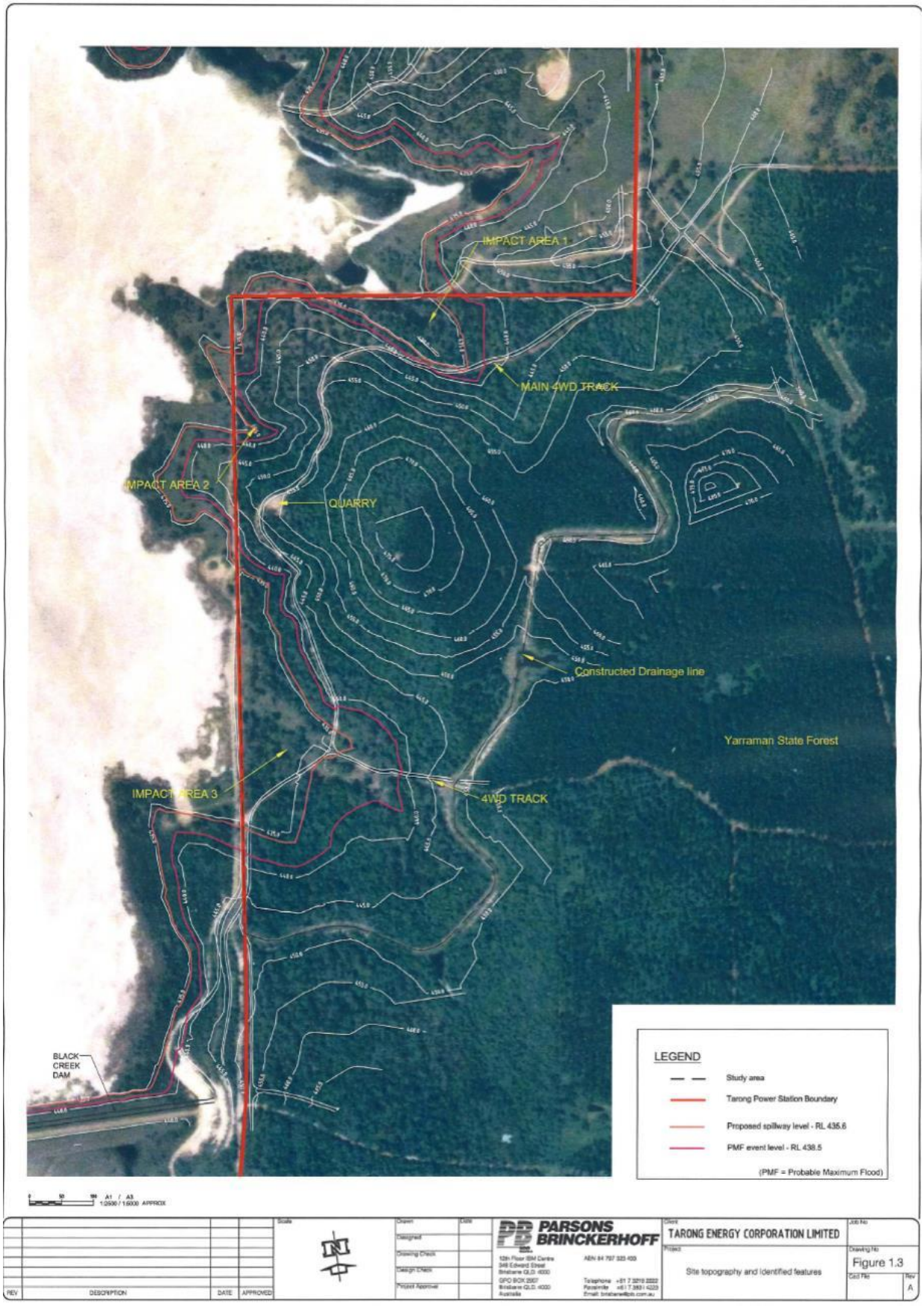


Figure 3 – Survey of Probable Maximum Flood level (PMF) of Ash Dam



END OF ENVIRONMENTAL AUTHORITY