Government of **Western Australia**
Department of **Water and Environmental Regulation**

Annual Audit Compliance Report Form

Environmental Protection Act 1986, Part V

Once completed, please submit this form either via email to info-der@dwer.wa.gov.au, or to the below postal address:

Department of Water and Environmental Regulation
Locked Bag 33 Cloisters Square
PERTH WA 6850

Section A – Licence Details			
Licence number:	L9224/2019/1	Licence file number:	DER2019/000563
Licence holder:	Yara Pilbara Fertilisers Pty Ltd		
Trading as:			
ACN:	095 441 151		
Registered address:	Level 5, 182 St Georges Terrace PERTH WA 6000		
Reporting period:	01 / 01 / 2020 **to** 31 /12 / 2020		

Section B – Statement of Compliance with Licence Conditions
Did you comply with all of your licence conditions during the reporting period? (please tick the appropriate box)
☐ Yes – please complete: • section C; • section D if required; and • sign the declaration in Section F.
☒ No – please complete: • section C; • section D if required; • section E; and • sign the declaration at Section F.

Section C – Statement of Actual Production	
Provide the actual production quantity for this reporting period. Supporting documentation is to be attached.	
Prescribed Premises Category	**Actual Production Quantity**
31: chemical manufacturing	616,323 T Ammonia
85: sewage facility	781 m^3

Section D – Statement of Actual Part 2 Waste Discharge Quantity	
Provide the actual Part 2 waste discharge quantity for this reporting period. Supporting documentation is to be attached.	
Prescribed Premises Category	**Actual Part 2 Waste Discharge Quantity**

Section D – Statement of Actual Part 2 Waste Discharge Quantity	
NA	NA

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:	14	Date(s) of non-compliance:	1st June – 13th August 2020
Details of non-compliance:			
Primary Reformer CEMS unit was unable to comply with the CEMS Code by the 31st of May 2020.			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
No environmental impact. Stack testing was undertaken to confirm compliance with the Licence limit and the limit was not exceeded.			
Cause (or suspected cause) of non-compliance:			

- The CEMS units for the Package Boiler and the Primary Reformer were installed on the 14th of November 2019 and fully commissioned by the vendor on the 26th November.
- Due to YPF's forced shut down on the 17th of November 2019 following the SWCT failure, final testing of the CEMS units, in accordance with the CEMS Code was not able to be completed.
- In January 2020 the boilers were started to enable the use of utilities onsite (CPP etc.) This enabled the Package Boiler CEMS unit to undergo the Conditioning and Operational Testing required by the CEMS Code, with RATA for the Package Boiler CEMS completed on the 27th of February.
- During preparation for the RATA testing of the Package Boiler it was identified that the heated line for the Primary Reformer was not heating as designed.
- In consultation with the vendor (who is based in Queensland and was unable to travel to site due to the COVID-19 travel restrictions), several attempts to resolve this issue in both April and May were unsuccessful.
- At the end of May 2020 it was advised by the vendor that the CEMS testing can proceed so long as "no condensation has been observed at site along the sampling line and within the filter housing proving that the sample temperature is kept above its dew point". The main function of the heated line is to maintain the sample gas above its dew point to prevent moisture from interfering with the analysers.
- Observations on the 28th of May identified condensation within one of the filters. The filter pump was replaced, however this did not eliminate the condensation, and a complete new filter was required.
- New filters were installed and we were given confirmation by the vendor to proceed with RATA testing.
- The Primary Reformer CEMS system passed RATA testing for NOx (as NO2) on the 13th of August 2020.

Section E – Details of Non-Compliance with Licence Condition	
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:	
• No adverse effects anticipated. On the 29th May 2020 stack testing of the Primary Reformer stack (A5) was conducted by Ektimo to confirm compliance with Licence emission limits. The Primary Reformer was compliant.	
Was this non-compliance previously reported to DWER?	
☐ No	
☒ Yes, and	
☐ Reported to DWER verbally	Date: / /
☒ Reported to DWER in writing	Date: 5th June 2020

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:	14	Date(s) of non-compliance:	13th August 2020
Details of non-compliance:			
The Primary Reformer CEMS's flow rate failed RATA testing, therefore is non-compliant with the CEMS Code.			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
Non-compliance is not expected to have any environmental impact. Licence Limits are based on the concentration of emissions - NO_x (as NO_2) is compliant with the CEMS Code.			
Cause (or suspected cause) of non-compliance:			
The CEMS's flow rate failed the relative accuracy test. Measured 24.6% relative accuracy, required to have less than 20%.			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
RATA testing will be undertaken again in March 2021.			
Was this non-compliance previously reported to DWER?			
☒ No			
☐ Yes, and			
☐ Reported to DWER verbally		Date: / /	
☐ Reported to DWER in writing		Date: / /	

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the Licence holder was non-compliant at a time during the reporting period.			
Condition no:	6	Date(s) of non-compliance:	13/08/2020 - Ongoing
Details of non-compliance:			
Following installation of the CEMS unit on the Primary Reformer stack it was identified that the NO_x (as NO_2) emissions are exceeding the Licence limit of 180 mg/m3 NO_x (as NO_2) once every 26-32 hours, for approximately 90 mins per event.			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
Given the short duration of the NO_x exceedances no immediate environmental impact is expected from this limit exceedance.			
Cause (or suspected cause) of non-compliance:			
Analysis has shown that these high NO_x readings are correlating with a recurring production process step that was not otherwise observable without CEMS installed.			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
DWER was notified of this recurring exceedance on the 8th of September 2020 and regular updates on the status of this issue and the actions that have been and will be taken were also submitted on the following dates: • 2 October 2020; • 4 November 2020; • 4 December 2020; and • 21 January 2020.			
Was this non-compliance previously reported to DWER?			
☐ No			
☒ Yes, and			
☐ Reported to DWER verbally		Date: / /	
☒ Reported to DWER in writing		Date: 8/09/2020	

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:	6	Date(s) of non-compliance:	22/11/2020
Details of non-compliance:			
Primary Reformer stack exceeded Licence limit of 180 mg/m^3 of NO_x (as NO^2). Measured value of 236.09 mg/m^3 on the 22nd of November 2020.			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
Given the short duration of the NO_x (as NO_2) exceedance no immediate environmental impact is expected from this limit exceedance.			
Cause (or suspected cause) of non-compliance:			
High cooling water temperatures, due to (1) high ambient temperature conditions, (2) three of the cooling tower cells being offline, and (3) several cooling tower bays being partially isolated for maintenance, has resulted in high pressure and temperatures in the low pressure ammonia scrubber to the point that it was required to be bypassed, and the flare valve was opened to 100% to manage the high levels of ammonia and maintain safe operations. Once the flare capacity was reached the additional ammonia was sent in the waste gas to the primary reformer, where the ammonia burns with oxygen and NO_x is produced. The bypass of the low pressure ammonia scrubber is an abnormal operation, and in addition to this it is not common practice to have the flare valve open 100% when the scrubber is bypassed. However due to the high temperatures more ammonia than normal was being vaporised from the ammonia condenser which then feeds to the low pressure scrubber.			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
There is a bypass valve around the valve to the flare which if opened will reduce the amount of ammonia that is sent to the flare. This is however an abnormal operation as it is not common practice to bypass the low pressure ammonia scrubber. A communication has been sent to each crew to use the bypass valve when the flare saturates, rather than sending the ammonia back to the Primary Reformer. Procedures were updated.			
Was this non-compliance previously reported to DWER?			
☐ No			
☒ Yes, and			
☐ Reported to DWER verbally		Date: / /	
☒ Reported to DWER in writing		Date: 26/11/2020	

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:	6	Date(s) of non-compliance:	28/11/2020
Details of non-compliance:			
Primary Reformer stack exceeded Licence limit of 180 mg/m3 of NO_x (as NO_2). Measured value of 439.09 mg/m^3 on the 28th of November 2020.			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
Given the short duration of the NO_x (as NO_2) exceedance no immediate environmental impact is expected from this limit exceedance.			
Cause (or suspected cause) of non-compliance:			
On Saturday 28 November maintenance works were being undertaken on the cooling tower, with one cooling tower taken offline and one bay of another cooling tower isolated. Reduced capacity in the cooling tower has resulted in an increase in the cooling water temperature into the ammonia condenser (127-MC). The ammonia condenser (127-MC) cools down and condenses ammonia vapours into a liquid. The liquid ammonia from ammonia condenser (127-MC) flows to the ammonia receiver (149-MD). The ammonia receiver (149-MD) has an ammonia wash section which functions to give an efficient purge of hydrogen and nitrogen. Hydrogen and nitrogen are entrained inerts in the refrigeration circuit. The hydrogen and nitrogen is then sent to a low pressure ammonia scrubber (123-MD) where water is added to absorb any trace ammonia in the hydrogen and nitrogen vapor. The water, with absorbed ammonia is sent to a distillation column and the clean hydrogen and nitrogen are sent to the Primary Reformer as waste gas. The increase in the cooling water temperature has caused the ammonia in the ammonia condenser (127-MC) to not be cooled enough and therefore an increase in pressure in accordance with the ammonia liquification equilibrium. The temperature, pressure and the amount of ammonia vapor in the ammonia receiver purge (149 MD) has increased, and as a result more ammonia vapors at higher temperatures were then sent to the low pressure ammonia scrubber (123MD). Due to the high volume and temperature of the ammonia that was being sent to the low pressure ammonia scrubber (123MD), the capacity of ammonia scrubber (123-MD) was exceeded and it was not possible for all the ammonia to be absorbed. At the same time the valve to the Primary Reformer was opened further to reduce the pressure in the ammonia receiver (149-MD) and refrigeration loop to prevent PRV's from lifting due to the increased system pressure. Whilst the focus from the process operators remained on keeping the back pressure low, so that the ammonia receiver (149-MD) was not over-pressurised, and PRVs were not lifted, the overheads from the low pressure ammonia scrubber (123MD) were not changed from their normal automated control mode. This resulted in the ammonia concentration of the Primary Reformer waste gas increasing thereby causing the NO_x exceedance. The exceedance lasted for approximately 2 hours and peaked at an hourly average of 439.90 mg/m^3. Once the process was stabilised, the valve to the Primary Reformer was closed and the valve to the flare was opened immediately reducing NO_x levels to below Licence limits. This event is a non-routine event.			

Section E – Details of Non-Compliance with Licence Condition	
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:	
Following the NO_x exceedance on the 23 November and this exceedance on the 28 November the below actions have been developed to prevent further non-compliances: • Include in the operational instructions requirement to close flow to primary reformer and direct to flare if NO_x starts increasing. • Change to alarm system to include more conservative alarm limits allowing for more forewarning on potential excursions. • Improve alarm messaging to include actions to be taken to prevent high NO_x. • Investigate performance and optimisation of Ammonia Recovery Unit and cooling water systems when cells are isolated. Establish the safest and most efficient way to run units that avoid elevated NO_x.	
Was this non-compliance previously reported to DWER?	
☐ No	
☒ Yes, and	
☐ Reported to DWER verbally	Date: / /
☒ Reported to DWER in writing	Date: 4/12/2020

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:	8	Date(s) of non-compliance:	11/11/2020
Details of non-compliance:			
Exceeded 5°C temperature limit to the MUBRL.			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
Exceedance is not expected to have any environmental impact.			
Cause (or suspected cause) of non-compliance:			
Blowdown tower was taken off-line for maintenance. Once back on-line temperature dropped to beneath licence limit.			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
Rebuild of the cooling tower continues, with scheduled completion end-2021. Once all cells are back in service, issues attributed to elevated temperature will be mitigated.			
Was this non-compliance previously reported to DWER?			
☐ No			
☒ Yes, and			
☐ Reported to DWER verbally		Date: / /	
☒ Reported to DWER in writing		Date: 17/11/2020	

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:	16	Date(s) of non-compliance:	6/01/2020
Details of non-compliance:			
In November 2019 a significant amount of water from the cooling tower failure was discharged to the WSB. Weeks following this event it was noted that the levels within the WSB decreased more rapidly than would be expected from evaporation. On the 6th January 2020 the valve was checked and found to be partially open. On the 22nd of March 2019 the Western Sedimentation Basin (WSB, W2) was empty. In preparation for a cyclonic event (Cyclone Veronica) the valve to WSB was opened to prevent flooding as per the sites cyclone procedure. After the cyclone the valve to WSB was not fully closed. As there was only minimal rainfall during 2019 WSB remained at low levels (below the level of the discharge valve) and thus it was not detected that the valve was partially open.			
What was the actual (or suspected) environmental impact of the non-compliance? **NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.			
No environmental impact is expected from water that was unintentionally discharged from the WSB. A sample from the WSB was taken after it was realised the valve was partially open. All parameters except TSS were under Licence limits (aMDEA= 0.40 mg/L, TSS= 91 mg/L, pH= 8.73, and TRH= <250 µg/L).			
Cause (or suspected cause) of non-compliance:			
It is suspected that in the lead up to and post cyclone it was not communicated correctly between shifts that the basin valves were still open.			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
Procedural changes have been implemented.			
Was this non-compliance previously reported to DWER?			
☒ No			
☐ Yes, and			
☐ Reported to DWER verbally		Date: / /	
☐ Reported to DWER in writing		Date: / /	

Section F – Declaration

I / We declare that the information in this Annual Audit Compliance Report is true and correct and is not false or misleading in a material particular[1].

I / We consent to the Annual Audit Compliance Report being published on the Department of Water and Environmental Regulation's (DWER) website.

Signature[2]:		Signature:	
Name: (printed)		Name: (printed)	
Position:	Plant Manager	Position:	
Date:	31/03/2021	Date:	
Seal (if signing under seal):			

[1] It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular.

[2] AACRs can only be signed by the licence holder or an authorised person with the legal authority to sign on behalf of the licence holder.