

Annex I: Comments regarding the IPPC application – Amino Chemicals Ltd.

Section A: Status of Improvement Programme

| Issue | Details | Amino Chemicals Replies 15.5.17 | ERA replies 13.11.17 | Amino Chemicals Replies 04.12.17 | ERA replies 26.01.18 | Amino Chemicals replies 02.02.2018 |
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| <p>IP Item (9) Submission of an energy consumption breakdown and an energy efficiency programme of the waste recovery unit once the site is fully operational.</p> | <p>Original deadline for this item was on the 30th December 2015. Amino at that time, had informed ERA that even though the process has started they could not meet the imposed deadline.</p> <p>With regards to the energy audit for the A61 site, this has been submitted however may need to be revised to cater for the infrastructural changes (office</p> | <p>The energy consumption breakdown and energy efficiency program of the waste recovery unit will be submitted within 30th June 2017.</p> <p>Energy audit for A50 area has been done by Eng. L. Scicluna, the report will be submitted to ERA within 30th May 2017.</p> | <p>Submission for A50 site has been noted.</p> | | | |

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| | <p>layout and nitrogen generator plant).</p> <p>With regards to the energy audit for the A50 site Amino Chemical Ltd. has informed ERA that the submission of the report was expected to take place by 30th April 2017. Ultimately when the maintenance workshop is transferred to the A50 site a new energy audit will be performed.</p> | | | | | |
| <p>IP Items (14) Submission of a proposal for bunding of chemicals currently stored within the A61 warehouse</p> | <p>Amino Chemicals Ltd. was instructed to ensure bunding provisions were in place for chemicals stored in the A61 warehouse. The deadline for this task was due on the 30th December 2015. In earlier correspondences Operator stated that additional</p> | <p>Amino will complete the installation of additional drip trays under all the shelves containing liquid raw materials within 30th June 2017.</p> | <p>Amino is to confirm whether drip trays have been included under all of the shelves. Moreover Amino is to clarify if a spill occurred in the warehouse where would it drain to?</p> <p>Kindly provide a drainage map of the warehouse in A51 site.</p> | <p>All drip trays have been manufactured; remain to install remaining 10 during the December shutdown period. Reference attachment 1</p> <p>There are no drains in the warehouse. If a liquid spill occurs at the warehouse, it has to be collected or</p> | <p>Noted. Item will be deemed closed upon inspection of the facility.</p> <p>Noted.</p> | |

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| | <p>trays have been installed under the shelving in the raw materials warehouse. Photographic evidence was provided in this regard, however during an inspection held on 27.2.17 it was noted that drip trays were in place only on certain shelving. Amino had informed ERA that more drip trays had to be ordered and are set to be in place in the coming months.</p> | | | absorbed by mechanical means. | | |
| <p>IP Item (15) Submission of a proposal aimed at optimising the process of solid API handling into the reactors.</p> | <p>Amino Chemicals Ltd. had installed specialised aspiration equipment on a single reactor on trial-basis so as to minimise API dispersion during loading. Given that this endeavour proved to be successful, the</p> | <p>The aspiration system will be installed in all the other reactors of the PP (main production plant) within 30th August 2017.</p> <p>We already ordered a loading funnel to be used to load hazardous powders in the small volume reactors of SPP (small production plant).</p> | <p>Regarding the aspiration system of the reactors in the main production plant kindly clarify whether these have been installed.</p> <p>With regards to the small-scale reactors kindly clarify whether the loading funnels have been</p> | <p>Aspiration in the main production plant are still pending, we plan to</p> | <p>Noted.</p> | |

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| | <p>Operator stated that the intention is to install the same aspiration system on the rest of the reactors.</p> <p>Correspondences with the Operator indicated that the installation to the other reactors should be in place within Q2 of 2017. Amino had to propose timeframes for the installation for the other 9 reactors.</p> <p>Additionally, discussions are also underway with the Operator to assess the feasibility of a redesign of the current method of unloading in such a way that the loading funnel encapsulates the drum opening completely.</p> | We will evaluate additional solution for the loading of powders into the reactors on the base of the hazard of the material used. | installed. | install in the first half of 2018. Portable loading funnel purchased and is in use. Kindly Reference attachment 2 | | |
| IP Item (16) Submission of a proposal for odour | Amino Chemicals Ltd. had informed ERA that a lid | The air extraction systems are already installed in all the centrifuge rooms | Kindly provide details regarding the air extraction system | Lid with Suction Reference picture 4 | IP16 will remain in view of the fact that | IP 16: the air extraction installation in the |

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| <p>minimisation within the centrifuge rooms ID 210 & ID 220.</p> | <p>extractor (to a scrubber) has been set-up so as to mitigate solvent vapour emissions from the usage of this equipment. Whilst ERA noted that the proposed system seemed to adequately address this item, confirmation of its effectiveness shall be assessed during a site-visit <i>which needs to coincide during utilisation of the system.</i> Item will be deemed as being closed once this is verified. Moreover Amino were instructed to inform ERA on the installation timeframes for the remaining 4 centrifuges.</p> | <p>except for the small centrifuge ID-250 due to the small dimension; we are evaluating a different solution for ID-250 and the installation will be done within 30th August 2017. A similar system will be installed in the Finishing Department in order to minimize the solvent vapours during loading of wet product in the dryers.</p> | <p>which was installed on the small centrifuge ID-250. Also kindly indicate as to whether the other centrifuge ID 260 has been fitted with a similar system.</p> <p>Regarding the finishing department kindly provide photographic evidence of the installed equipment.</p> | <p>Air extraction in ID 250 centrifuge is still pending.</p> <p>For Finishing department kind reference attachment 5 & 6</p> | <p>the installation of the equipment for ID250 is not yet complete. Amino Chemicals Ltd is to kindly propose a timeline for its the installation.</p> <p>Noted.</p> | <p>centrifuge ID-250 will be completed within 28th February 2018</p> |
| <p>IP Item (11) Installation of bunding (with a minimum capacity of 110% of the total volume to be</p> | <p>With regards to the A50 site the main compliance issue was due to the temporary storage of IBCs and drums</p> | <p>Amino is re-evaluating the most appropriate solution and then will submit the application for approval to ERA and PA.</p> | <p>Kindly indicate whether there are any further updates in relation to the storage of waste within the A50 yard.</p> | <p>Amino is not storing IBC's in the open yard.</p> <p>No additional projects have been</p> | <p>Noted. Operator indicated that the original intention of setting up a canopy in the A50 yard has been scrapped.</p> | <p>A project for the new warehouse will be submitted in advance for your evaluation within end of March 2018</p> |

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| <p>stored) in the A50 warehouse prior to storage of hazardous liquid wastes.</p> | <p>in the outside yard. To mitigate this problem, Amino Chemicals Ltd. had submitted plans for the installation of a canopy as part of the application for renewal. Moreover <i>lips</i> were also installed to redirect any spillages to the underground liquid waste recovery sump. During the 27.2.17 inspection it was noted that the canopy had still not been constructed. To this effect Amino Chemicals Ltd were instructed to provide a copy of the DNO application and timeframe for the installation pertaining to this proposal. To this effect, Amino were instructed to ensure that no waste is stored in</p> | <p>In the meantime no storage of containers will be kept in the designated area.</p> | | <p>developed.</p> | <p>Additionally there is also the intention to move the chemical storage warehouse in the A61site to the A50 site in a future project.</p> | |
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| | the yard. | | | | | |
| IP Item (12) - Submission of a monitoring strategy and baseline report in line with European Commission and MEPA guidance pursuant to Regulations 9(3) and 16(2) of the Industrial Emissions (IPPC) Regulations | Land & groundwater monitoring plan has been approved in 2016. Item will be deemed closed after the necessary results are submitted to ERA. Amino Chemicals Ltd. had to provide timeframes for the completion of the monitoring. | Land & groundwater monitoring results report will be submitted to ERA within 30 th September 2017. | Kindly submit the land & groundwater monitoring results. | Currently Amino is working on completing the required documentation for each borehole as per Subsidiary Legislation 423.12 To submit to REWS. | Noted. IP item to remain. | IP 12: Coring will be performed within end of March; we expect to provide the monitoring report within end of April 2018 |
| IP Item (13) Installation of bunding around the fuel storage of the generator located within the A50 site. | ERA had reviewed the submitted documentation and the item is deemed as addressed. This was verified during the 27.2.17 inspection of the facility. | Noted | | Work to change roof of Boiler house and install roof over the fuel storage bund is in progress. Reference attachment 7 | IP13 has been deemed closed already. | |
| IP Item (17) Submission of an outline site closure plan. | Given that Amino Chemicals Ltd. is awaiting the land & groundwater monitoring results prior to the submission of the site closure plan. This item is to be kept pending until such time that a | Refer to IP Item 12 | Deadline to be determined following submission of IP item 12. | Deadline to be determined following submission of IP item 12. | | |

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| | <p>final Baseline report is submitted, vetted and approved by the Authority. Amino were instructed to provide to propose new timeframes in tandem with IP Item (12).</p> | | | | | |
| <p>IP Item (19) Submission of technical specifications of differential pressure gauge including normal operating pressures and over and under pressure detection limits.</p> | <p>Amino Chemicals Ltd. had submitted the necessary specifications for IP items (19-21) to ERA. Consequently the aforementioned items are deemed as concluded and addressed. The requested requirements were</p> | Noted | | | | |
| <p>IP Item (20) Installation of a differential pressure gauge connected to an acoustic and visual alarm to detect over & under pressure of the exhaust filters to ensure abnormalities are</p> | <p>verified during the 27.2.17 inspection of the facility.</p> | | | | | |

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| detected. | | | | | | |
| IP Item (21) Submission of a copy of updated preventive maintenance programme addressing the requirements of replacement/ servicing of filters in the new air handling unit. | | | | Reference attachments 8 & 9 | IP21 has been deemed closed already, as indicated above. | |
| IP Item (22) A noise monitoring exercise shall be carried out once commissioning of Air Handling Units is completed as per condition 2.2.9.5 | Amino Chemicals Ltd. had submitted specifications to ERA the necessary submissions and thus the item was deemed as concluded and addressed. This was verified during the 27.2.17 inspection. | Noted | | | | |

Section B: Comparison of current practices with the Commission Implementing Decision (EU) 2016/902 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for common waste water and waste gas treatment/management systems in the chemical sector.

In view of the fact that since the latest issue of IP003/06, the European Commission has published Commission Implementing Decision 2016/902 which describes the best available techniques (BAT) for setting permit conditions of installation covered by Chapter II of the IED (2010/75/EU) the operator is

requested to carry out a comparison with the these BAT conclusions. As you are aware, IPPC installations are obliged to use BAT in their operations, article 14(3) of the IED has made the BAT conclusions mandatory. Moreover kindly note for existing installations must be compliant with BAT conclusions within four years from the publication of the Commission Implementing Decision.

Doc: Commission Implementing Decision 2016/902

http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2016.152.01.0023.01.ENG

For your reference kindly note that the entire Doc Best Available Techniques (BAT) Reference Document for Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector is available in the following link.

http://eippcb.jrc.ec.europa.eu/reference/BREF/CWW_Bref_2016_published.pdf

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| ERA comments 26.1.18 | Exercise was not completed by Amino Chemicals Ltd. The assessment will be included as an improvement item in the upcoming renewal. |
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Section C: Other issues:

| | Issue | Details | ERA 26.1.18 |
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| 1 | Operator is to clarify whether the change in layout of the QA/QC laboratories has been carried out as per DN 2190/15. | Project not yet started | Amino Chemicals Ltd. to indicate date of completion. |
| 2 | Operator is to clarify whether the two existing cooling towers (CTW-01 & CTW-02) have been replaced by a single cooling tower CTW-04 as indicated in the Renewal request covering letter. | Yes | Amino Chemicals to indicate whether the equipment (CTW04) has been registered with the Environment Health Directorate and provide a copy of the registration form. Additionally, Operator is to provide site plan indicating its location. |