



Our reference: DOC15/282500

Mr Ashley Cheong
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

28 July 2015
Electronic Mail and Standard Post

Dear Mr Cheong

**Comments on Further Response to Submissions
Kings Park Waste Metal Recovery, Processing and Recycling Facility (SSD-5041)
23-43 and 45 Tattersall Road, Blacktown**

I refer to Department of Planning and Environment's (DP&E) email dated 3 July 2015 to the Environment Protection Authority (EPA) requesting the EPA review and provide comments on further responses to submissions for SSD-5041.

Following the EPA's letter refusing to recommend General Terms of Approval dated 22 April 2015 (DOC15/132025) and a meeting between Sell & Parker Pty Ltd (the proponent), EPA and the DP&E on 18 May 2015, the proponent provided the DP&E further responses to the submissions.

The further response to submissions included:

1. A letter from Adam Coburn to the Secretary, Department of Planning and Environment dated 30 June 2015;
2. Air Quality Assessment;
3. Air Quality Health Risk Assessment;
4. Storm Water Management Plan; and
5. Supplementary Noise Impact Assessment.

The EPA is generally pleased with the new direction in environmental compliance proposed by the further response.

Prior to recommending GTAs the EPA will require further clarification and updates outlined in Attachment 1.

The EPA's detailed review and comments on the further submissions is outlined in Attachment 2.

Should you have any further enquiries please contact Alex Bourne on 02 9995 5595.

Yours sincerely


Jacqueline Ingham
Unit Head – Waste Compliance
ENVIRONMENT PROTECTION AUTHORITY

ATTACHMENT 1 – FURTHER CLARIFICATION AND UPDATES TO ASSESSMENTS REQUIRED

The EPA is generally satisfied with the further response to submissions, however prior to recommending GTAs, the EPA requires the following points addressed:

SUPPLEMENTARY NOISE IMPACT ASSESSMENT

The EPA has reviewed the Kings Park Waste Metal Recovery Processing and Recycling Facility – Supplementary Noise and Vibration Impact Assessment prepared by Renzo Tonin & Associates (Ref TG616-03F01 EIS Supplementary Report (r8) dated 30 June 2015).

In Section 6.1.3 (Table 6.2), the EPA notes that the intrusiveness criteria are the controlling project-specific noise goals at Receivers R1, R2 and R3 for the morning shoulder and daytime periods. This appears contrary to the text in the paragraph following which states that “the amenity criteria shown are the project specific noise goals”.

1. The proponent should update Section 6.1.3 to identify whether the intrusiveness or amenity criteria is determining the project specific goals at Receivers R1, R2 and R3 for the morning shoulder and daytime periods and explain why this criteria is used.
2. The proponent should provide an assessment of the maximum noise levels from the premises, including the proposed modification for operations, during the morning shoulder period.

The EPA understands that EPA officers have previously experienced vibrations (possibly airborne) that are allegedly attributable to a shaker associated with the hammermill. It is unclear whether these vibrations have been included in the sound power level for the hammermill in the SNVIA (and/or the hammermill vibration measurements), and there is no explicit discussion of this issue in the report.

3. The proponent should clarify whether the sound power level and vibration levels include emissions from the shaker.

STORM WATER MANAGEMENT PLAN

The EPA has reviewed the *Storm Water Management Plan* (the SWMP) prepared by ERM, June 2015 for the proposed expansion of the Sell and Parker Pty Ltd scrap metal recycling operation in Kings Park. The EPA considers that the proposal is an improvement on current wastewater management practices for the existing operation, but some water quality issues have not been addressed by the SWMP.

Uncontrolled discharges

1. The EPA recommend that the proponent provide details of the design criteria for the basin, including the circumstances under which uncontrolled discharges are expected.

Controlled discharges

The EPA considers that the proposed mean annual levels are not appropriate discharge limits and the proposed levels of some analytes will not protect or restore the environmental values of the receiving waters.

2. The EPA recommend that the SWMP be updated to include discharge limits (including maximum [100th percentile] discharge limits) determined with regard to section 45 of the POEO Act, including:
 - a. the potential impacts on all the relevant environmental values of the receiving waters with reference to the NSW Water Quality Objectives and ANZECC (2000) Guidelines; and
 - b. the practical measures that could be taken to prevent pollution and maintain or restore the environmental values of the receiving waters.

The EPA has provided recommended discharge limits in Attachment 2.

3. The proposed list of contaminants is appropriate with the exception that iron should be added. Benzene and o-xylene could be removed assuming BTEX is managed appropriately.

The SWMP proposes a limit for TSS of 50 µg/L. The EPA believes this is a typographical error with the units of measurement and that the proponent meant 50 mg/L, a value consistent with *Managing urban stormwater: soils and construction, Landcom, 2004*. However, 50mg/L is a threshold recommended for sites that do not

pose a contamination risk and is not appropriate in this case. Potential sediment contamination from the proposed activity needs to be considered when determining an appropriate threshold value.

4. The EPA requires the proponent to propose a discharge limit for TSS that considers: the potential for contamination of the sediment; the beneficial use of receiving waters and its ecological sensitivity; and the capability of the treatment system.

Treatment devices

The SWMP states that the Spel Ecoceptor will achieve a total nitrogen removal rate of 45%. The manufacturer's specifications indicate that the device can achieve 45% removal of particulate nitrogen and does not state the expected total nitrogen removal rate.

5. The EPA recommend that the proponent demonstrate that total nitrogen concentrations will not exceed the discharge limit.

The report also proposes use of the proprietary sorbent (Osorb) in the treatment system. It is understood this sorbent has the potential to remove perfluorinated chemicals.

6. The EPA recommends that a method to treat perfluorinated chemicals is included as part of the trial of the treatment system.

Maintenance of treatment devices

Assuming the TSS concentration of the existing basin is representative of the concentration in the untreated wastewater expected to be generated on site (this is likely an underestimate) and the TSS removal rates as stated in the Plan are applied, then the 'Ecoceptor' and 'Stormceptor' will typically capture >700kg and >1,000kg respectively each year. Substantial volumes of sludge will also accumulate in the basin over time.

7. The EPA recommends that the proponent demonstrate that all treatment devices, including proprietary devices and the basin, will be adequately monitored and maintained to ensure performance. Waste removed during maintenance must be disposed of at an appropriate licenced waste disposal facility.

AIR QUALITY ASSESSMENT

The proponent has submitted *ERM, Waste Metal Recovery, Processing and Recycling Facility 45 and 23-43 Tattersall Road, Kings Park, Blacktown Air Quality Assessment, June 2015*, a revised Air Quality Assessment ("AQA") which includes assessment of the proposed additional mitigation measures. The EPA has reviewed the revised AQA and the assessment has been conducted generally in accordance with the *Approved Methods for Modelling and Assessment of Air Pollutants in NSW*.

Particulates

In Appendix A of the AQA it is stated that the emissions of pollutants from the hammermill are based on supplier guarantee for total solid particles (TSP) of 100 mg/m³. However, in Section 3.1 of the AQA, the manufacturer's guarantee is 2 mg/m³ and therefore complies with the Standard of Concentration for Solid Particles (total) in the *Protection of the Environmental Operations (Clean Air) Regulation 2010*.

1. The EPA recommends the proponent provide clarification on the TSP emissions used in the air dispersion modelling from the hammermill stack. Emission concentration of 2 mg/m³ is considered to be low and the manufacturer's guarantee should be included as an appendix for transparency. It should be noted that the TSP emission concentration of 100 mg/m³ in Appendix A will not comply with the POEO (Clean Air) Regulation's standard of concentration.
2. Additionally, NO₂ and Type 1 and 2 substances should also be assessed against the POEO (Clean Air) Regulation in the AQA for completeness.

Air Toxics

Where there is a criterion for a pollutant in the *Approved Methods for Modelling and Assessment of Air Pollutants in NSW*, the pollutant has been assessed against the *Approved Methods*. There are no criteria for iron (metallic), titanium, vanadium and zinc in the *Approved Methods* and the Ontario Ministry of the Environment 24-hour average limits have been applied.

The Ontario Ministry of Environment's Regulation¹ also provides half hour limits for iron (metallic), titanium, vanadium and zinc. Air dispersion modelling was completed in hourly time steps.

3. In order to provide an assessment of acute exposure to iron (metallic), titanium, vanadium and zinc similar to the air toxics assessed in the AQA, the EPA recommends assessing 1-hour average predictions against the half hour average Ontario limits.

It is noted that potential air toxic emissions from activities downstream (e.g. transfer points, wind erosion, etc) of the hammermill was not included in the modelling. However, major air toxic activities are accounted for (e.g. hammermill and oxy cutting) and the predicted impacts are well below the relevant criteria.

4. The EPA recommends that if the revised assessment of acute exposure show values approaching the relevant criteria, the downstream sources must be included in the assessment.

¹ Ontario Ministry of the Environment and Climate Change, *Ontario Regulation 419/05, Air Pollution – Local Air Quality* (<http://www.ontario.ca/laws/regulation/050419#BK23>)

ATTACHMENT 2 – EPA COMMENTS ON FURTHER SUBMISSIONS

THE PROPOSAL

Sell and Parker currently operate a waste metal processing and recycling facility at Lot 5 on Deposited Plan 7086, 45 Tattersall Rd, Blacktown. Scheduled activities at the Premises are regulated by environment protection licence no. 11555 and development consent no. DA/7797 issued by Blacktown City Council and modified by Land and Environment Court Proceedings No. 10336 of 2013.

The Premises currently has approval to process 90,000 tonnes per annum as per the DA and the EPL.

The proposal is to increase the throughput capacity from 90,000 tpa to 350,000 tpa. This will require physical expansion of the facility to an adjacent parcel of land (Lot 2 on Deposited Plan 550522).

Noise and vibration

The EPA has reviewed the Kings Park Waste Metal Recovery Processing and Recycling Facility – Supplementary Noise and Vibration Impact Assessment prepared by Renzo Tonin & Associates (Ref TG616-03F01 EIS Supplementary Report (r8) dated 30 June 2015).

The EPA is generally satisfied with the supplementary assessment, however prior to recommending GTAs, the EPA requires the following comments addressed:

1. In Section 6.1.3 (Table 6.2), the EPA notes that the intrusiveness criteria are the controlling project-specific noise goals at Receivers R1, R2 and R3 for the morning shoulder and daytime periods. This appears contrary to the text in the paragraph following which states that “the amenity criteria shown are the project specific noise goals”.

The proponent should update Section 6.1.3 to identify whether the intrusiveness or amenity criteria is determining the project specific goals at Receivers R1, R2 and R3 for the morning shoulder and daytime periods and explain why this criteria is used.

2. The proponent should provide an assessment of the maximum noise levels from the premises, including the proposed modification for operations, during the morning shoulder period.
3. The EPA understands that an air emissions control system is proposed for the hammermill which may involve a high velocity/high volume air handling plant.

The proponent should ensure that any air emissions control system is designed appropriately so that noise impacts to surrounding sensitive receivers are minimised.

4. The EPA understands that EPA officers have previously experienced vibrations (possibly airborne) that are allegedly attributable to a shaker associated with the hammermill. It is unclear whether these vibrations have been included in the sound power level for the hammermill in the SNVIA (and/or the hammermill vibration measurements), and there is no explicit discussion of this issue in the report.

The proponent should clarify whether the sound power level and vibration levels include emissions from the shaker.

Water balance/discharge

The EPA has reviewed the *Storm Water Management Plan* (the SWMP) prepared by ERM, June 2015 for the proposed expansion of the Sell and Parker Pty Ltd scrap metal recycling operation in Kings Park. The EPA considers that the proposal is an improvement on current wastewater management practices for the existing operation, but some water quality issues have not been addressed by the SWMP.

Uncontrolled discharges

The Plan does not identify the circumstances under which uncontrolled discharges could occur (rainfall depth) or the expected frequency and volume of these.

The EPA recommend that the proponent provide details of the design criteria for the basin, including the circumstances under which uncontrolled discharges are expected.

The EPA can regulate uncontrolled discharges by conditions which seek to minimise the environmental impact and ensure that other practical measures are taken.

It is recommended that the licence include requirements for maintaining a minimum freeboard and monitoring rainfall depth.

Controlled discharges

The EPA considers that the proposed mean annual levels are not appropriate discharge limits and the proposed levels of some analytes will not protect or restore the environmental values of the receiving waters.

The SWMP proposes discharge limits for a range of parameters (Table 3.6 of the SWMP). The proposed limits are mean annual levels in discharge and maximum levels (150% of mean annual limits). These limits were determined based upon the *Australian and New Zealand guidelines for fresh and marine water quality* guidelines (ANZECC (2000)) Guidelines, the levels in samples from Breakfast Creek, or the expected performance of the proposed treatment system.

The background levels in Breakfast Creek should not be used as benchmarks for discharges, as the creek does not represent a reference condition for a slightly to moderately disturbed system in accordance with the ANZECC (2000) guidelines. The expected performance of the treatment system is also not an appropriate basis for determining limits.

The EPA recommend that the SWMP be updated to include discharge limits (including maximum [100th percentile] discharge limits) determined with regard to section 45 of the POEO Act, including:

- the potential impacts on all the relevant environmental values of the receiving waters with reference to the NSW Water Quality Objectives and ANZECC (2000) Guidelines; and
- the practical measures that could be taken to prevent pollution and maintain or restore the environmental values of the receiving waters.

The proposed list of contaminants is appropriate with the exception that iron should be added. Benzene and o-xylene could be removed assuming BTEX is managed appropriately.

The EPA recommend the adoption of the mean annual discharge limits proposed by the proponent for pH, oil & grease, BTEX, naphthalene, aluminium, arsenic, cadmium, manganese, molybdenum, strontium **as the 100th percentile limits** (Table 1 below).

Table 1. Lists the mean annual discharge limits proposed by the proponent that would be acceptable as 100th percentile limits.

Pollutant	Units	Proposed limit	Basis	Comments
Oil & grease	mg/L	5	Detection limit/ Background Breakfast Ck	Appropriate as a limit on oxygen depletion due to BOD
pH	-	7-8	Range Breakfast Ck	Within appropriate range for SE Australia waters (AWQGs)
Benzene	µg/L	1	Background Breakfast Ck	May not need to include if limit for BTEX is set at 1 µg/L
Xylene (o)	µg/L	1	Background Breakfast Ck	May not need to include if limit for BTEX is set at 1 µg/L
BTEX	µg/L	1	Detection limit/ Background Breakfast Ck	BTEX includes benzene and xylene (o)
Naphthalene	µg/L	16	ANZECC & ARMCANZ 2000	Correct trigger value (TV)
Aluminium	µg/L	55	ANZECC & ARMCANZ 2000	Correct TV
Arsenic	µg/L	13	ANZECC & ARMCANZ 2000	Appropriate TV for unspeciated (total) arsenic
Cadmium	µg/L	1	Hydrosystem performance	Equivalent to AWQG TV rounded to one significant figure
Manganese	µg/L	200	Background Breakfast Ck	Below AWQG TV
Molybdenum	µg/L	1	Background Breakfast Ck	Acceptable in absence of AWQG TV
Strontium	mg/L	0.2	Background Breakfast Ck	Acceptable in absence of AWQG TV

The EPA propose the following 100th percentile discharge limits for the remaining contaminants, subject to further assessment (summarised Table 2):

- Total phosphorus (25 µg/L) and total nitrogen (350 µg/L): set according to the ANZECC (2000) Guidelines.
- PFOS and PFOA: conduct further measurements in Breakfast Creek to determine typical background concentrations. Determine extraction efficiency using additional treatment measure/s. Set 0.02 µg/L as a target limit. Derive enforceable discharge limits following a trial period.
- Chromium (3.3 µg/L), copper (1.4 µg/L), lead (3.4 µg/L), nickel (11 µg/L): ANZECC (2000) Guidelines 95% species protection level unamended for hardness unless the proponent can demonstrate that hardness correction is protective for relevant organisms.
- zinc (8.0 µg/L): acute toxicity has been observed at concentrations as low as 51µg/L (ANZECC, 2000)
- Mercury (0.06 µg/L): ANZECC (2000) Guidelines 99 % species protection level, as is appropriate where secondary poisoning is relevant.
- Iron: adopt the Canadian guideline value (300 µg/L) as recommended by the ANZECC (2000) Guidelines.

Table 2. Outlines the 100th percentile discharge limits proposed by The EPA for remaining pollutants.

Pollutant	Units	Proponent proposed limit	Basis	Comments	The EPA proposed 100th percentile limit ¹
Total P	mg/L	0.2	Hydrosystem performance	System performance is not a basis for environmental protection. ANZECC 2000 trigger value recommended.	0.025 ²
Total N	mg/L	500	Hawkesbury R. catchment objective	Suspected typo in units. ANZECC 2000 trigger value recommended.	0.35 ²
PFOA	µg/L	0.05	Background Breakfast Ck	Persistent chemical	See text (below)
PFOS	µg/L	0.05	Background Breakfast Ck	Stockholm convention relevant	See text (below)
Cr (total)	µg/L	50	Hydrosystem performance	System performance is not a basis for environmental protection	3.3
Cu	µg/L	50	Hydrosystem performance	System performance is not a basis for environmental protection	1.4
Fe	µg/L	Not supplied		Important given nature of facility. Canadian guideline as recommended by ANZECC 2000	300
Hg	µg/L	0.6	ANZECC & ARMCANZ 2000	99 % species protection TV more appropriate than 95 % TV for secondary poisoning	0.06
Pb	µg/L	34	Hardness adjusted TV ²	Hardness adjustment less appropriate than filtering samples	3.4
Ni	µg/L	29	Hardness adjusted TV ²	Hardness adjustment less appropriate than filtering samples	11
Zn	µg/L	50	Hydrosystem performance	System performance is not a basis for environmental protection. Acute toxicity has been observed at concentrations as low as 51µg/L (ANZECC, 2000)	8.0

¹ Limit based on default AWQG trigger values. These values could be amended if the proponent is able to supply more information about dilution in Breakfast Creek and/or speciation of metal contaminants (see Mitigating factors below).

² ANZECC (2000) Guidelines

The SWMP proposes a limit for TSS of 50 µg/L. The EPA believes this is a typographical error with the units of measurement and that the proponent meant 50 mg/L, a value consistent with *Managing urban stormwater: soils and construction, Landcom, 2004*. However, 50mg/L is a threshold recommended for sites that do not pose a contamination risk and is not appropriate in this case. Potential sediment contamination from the proposed activity needs to be considered when determining an appropriate threshold value.

The EPA requires the proponent to propose a discharge limit for TSS that considers: the potential for contamination of the sediment; the beneficial use of receiving waters and its ecological sensitivity; and the capability of the treatment system.

Perfluorinated chemicals (PFCs)

The perfluorinated chemical PFOS has been listed under Annex B of the Stockholm Convention due to concerns about persistence, bioaccumulation, and toxicity. Similar concerns exist for PFOA. Considering these concerns and Australia's obligations as a signatory to the Stockholm convention, concentrations of these chemicals in discharges should be reduced to the minimum achievable.

The proposed limits in the ERM report (0.05 µg/L each for PFOS and PFOA) are based on background concentrations in Breakfast Creek of approximately 0.045 µg/L PFOS and 0.03 µg/L PFOA. There are only two measurements supplied, thus these concentrations may not be typical of the long term concentrations in the creek. In addition, given the persistent nature of these chemicals, it is not desirable to add to the current load.

The EPA recommend a target discharge concentration of 0.02 µg/L (based on the currently achievable analytical reporting limit) should be instated, for each of PFOS and PFOA, for a trial period, as opposed to a strict discharge limit. A discharge limit should be formulated for ongoing regulation once treatment performance has been established.

Discharge monitoring

The SWMP states that discharges will be monitored once in every month there is a discharge. The EPA considers this to be insufficient to characterise the performance of the treatment system, identify potential pollution of waters and facilitate management responses.

The EPA recommends initial more intensive trial/commissioning stage monitoring until the quality of the discharge has been adequately characterised (e.g. 2 years). The monitoring must include:

- the first low rate pumping discharge in each month; and
- the first high rate pumping discharge in each month.

Mitigating factors

The discharge limits suggested above do not take into account any mitigating factors such as dilution or the chemical form of the contaminants (speciation).

Dilution

It is expected that discharge from the treatment system will only occur after rain events, when flow in Breakfast Creek is likely to be high. This suggests allowance could be made for dilution of the some contaminants in the discharge based on conservative dilution calculations for the mixing zone and ensuring existing load is not overly exacerbated.

The EPA recommends that the proponent assess dilution of discharges in Breakfast Creek. This could be done as part of a commissioning/trial period to assess performance of the treatment system.

Filtered samples and metal speciation

For metals, toxicity is generally related to the dissolved metal concentration as opposed to metals associated with particles. It is recommended that analysis of filtered samples is undertaken in assessing compliance with discharge criteria.

The chemical form of metals plays an important role in determining bioavailability, and hence toxicity. If the proponent can demonstrate that a proportion of a metal present in the stormwater is not bioavailable, a simple

factor could be derived to increase the discharge limits appropriately. Appropriate methods for measurement include chemical speciation (EPA can provide advice) or computer-based speciation modelling. These methods require specialist expertise, and it may be appropriate to see if compliance can be achieved based on filtered metal measurements (and dilution if appropriate) before resorting to more complex speciation methods.

Treatment devices

The report does not explicitly address whether the conditions under which the performance of treatment devices have been tested (although some information is available in Annex C to the report), or whether they are appropriate for stormwater from a scrap metal facility. Very limited data for total and filtered metal concentrations presented in the report suggests that most metals are associated with particles. Such data would lead to some confidence that the proposed system will effectively reduce metals in the treated stormwater. The remaining uncertainty does however suggest that a trial period of monitoring and analysis should be conducted.

The EPA recommends that the proponent undertake monitoring during an initial trial period to establish the performance of the treatment system.

The SWMP states that the Spel Ecoceptor will achieve a total nitrogen removal rate of 45%. The manufacturer's specifications indicate that the device can achieve 45% removal of particulate nitrogen and does not state the expected total nitrogen removal rate.

The EPA recommend that the proponent demonstrate that total nitrogen concentrations will not exceed the discharge limit.

The EPA recommends that limits based on more biologically relevant nutrient fractions (for example, free reactive phosphorus instead of total phosphorus) should be developed, based on trial monitoring.

If the proposed treatment system is unable to meet the required limits with any mitigating factors taken into account, other practical measures may need to be investigated. For example, if most contaminants apart from metals meet limits, flocculation using ferric iron may be beneficial.

The EPA recommends that, if the proposed treatment system is unable to meet the required limits, the proponent consider further practical measures. The proponent may need to consider whether the proposed treatment system is appropriate or if additional measures may be needed. These may include, but need not be limited to, source control measures, such as roofing over pollutant source areas and finishing measures such as bioretention basins.

The report also proposes use of the proprietary sorbent (Osorb) in the treatment system. It is understood this sorbent has the potential to remove perfluorinated chemicals.

The EPA recommends that a method to treat perfluorinated chemicals is included as part of the trial of the treatment system.

Maintenance of treatment devices

Assuming the TSS concentration of the existing basin is representative of the concentration in the untreated wastewater expected to be generated on site (this is likely an underestimate) and the TSS removal rates as stated in the Plan are applied, then the 'Ecoceptor' and 'Stormceptor' will typically capture >700kg and >1,000kg respectively each year. Substantial volumes of sludge will also accumulate in the basin over time.

The EPA recommends that the proponent demonstrate that all treatment devices, including proprietary devices and the basin, will be adequately monitored and maintained to ensure performance. Waste removed during maintenance must be disposed of at an appropriate licenced waste disposal facility.

Air Quality

General Comment

The proponent has submitted *ERM, Waste Metal Recovery, Processing and Recycling Facility 45 and 23-43 Tattersall Road, Kings Park, Blacktown Air Quality Assessment, June 2015*, a revised Air Quality Assessment ("AQA") which includes assessment of the proposed additional mitigation measures. The EPA has reviewed the revised AQA and the assessment has been conducted generally in accordance with the *Approved Methods for Modelling and Assessment of Air Pollutants in NSW*.

Additional mitigation measures include:

- Site will be totally sealed;
- Installation of a gas collection system above the hammermill to capture the exhaust gases through an extraction hood. The exhaust gases are captured and treated through a cyclone and wet scrubber and vented through a discharge stack;
- Relocation of discharge stack to center of site with a stack height of 15 m;
- All conveyors and transfer points will be fully enclosed;
- Replace existing 800 tonne shear with 1400 tonne shear. This will enable cutting of thicker metal and reduce the level of oxy cutting required. This will reduce the number of oxy cutters from two to one and the hours of operation from 10 to 6 hours per day; and
- Oxy cutting will be undertaken under wet conditions to reduce the level of emissions.

The conclusion of the AQA states that all pollutants will be in compliance with the relevant EPA criteria with the implementation of reactive management measures. The proponent commits to installation of ambient dust monitors for real time control of dust generating activities.

The revised AQA has indicated there will be significant improvement to air quality compared to the previous AQAs.

A detailed discussion of EPA's review is provided below including a number of discrepancies that have been identified.

The EPA recommends the proponent address and provide clarity on the discrepancies identified prior to issuing General Terms of Approval.

Detailed Air Quality Response

1. Particulates

There are no predicted exceedances of the 24-hour average PM₁₀ criterion at sensitive receptors but the Level 1 cumulative assessment indicates there is potential for exceedances at nearby commercial/industrial receptors beyond the boundary of the site.

In Appendix A of the AQA it is stated that the emissions of pollutants from the hammermill are based on supplier guarantee for total solid particles (TSP) of 100 mg/m³. However, in Section 3.1 of the AQA, the manufacturer's guarantee is 2 mg/m³ and therefore complies with the Standard of Concentration for Solid Particles (total) in the *Protection of the Environmental Operations (Clean Air) Regulation 2010*.

The EPA recommends the proponent provide clarification on the TSP emissions used in the air dispersion modelling from the hammermill stack. Emission concentration of 2 mg/m³ is considered to be low and the manufacturer's guarantee should be included as an appendix for transparency. It should be noted that the TSP emission concentration of 100 mg/m³ in Appendix A will not comply with the POEO (Clean Air) Regulation's standard of concentration.

Additionally, NO₂ and Type 1 and 2 substances should also be assessed against the POEO (Clean Air) Regulation in the AQA for completeness.

With the implementation of additional mitigation measures, the predicted dust impacts have reduced significantly from previous AQAs. It is noted that predicted exceedances of the PM₁₀ criteria have reduced particularly with the implementation of the real time management measure where there is predicted to be no exceedances of the PM₁₀ criteria.

2. Proposed Dust Real Time Management

The proponent commits to installation of two ambient air monitors to enable real time management of dust emitting sources from the site. The proposed monitors will either be Tapered Element Oscillating Microbalances or Beta-Ray monitors. ERM recommended that the monitors be placed on the southwest and northeast boundaries of the site to account for the dominant wind flows.

When the downwind monitor measures a rolling 4-hour average PM_{10} concentration greater than the 24-hour average criteria during working hours and the upwind monitoring demonstrates compliance with the criteria, the proponent has committed to reducing dust generating activities on site. Should an exceedance continue to be monitored in the next hour, all dust generating activities on site will cease until the monitors demonstrate a sufficient baseline level that operations may continue.

Quarterly reporting of 24-hour average data and any stoppages of work will be reported on the company's website as well as in the annual returns.

Air dispersion modelling of the proposed real time management measure was completed in the AQA. When the four hour rolling mean of the normal operation run was above $50 \mu g/m^3$, the time varying emission file for fugitive dust sources and the hammermill was reduced to zero. The results of the sensitivity analysis indicate no additional exceedance of the EPA criterion for 24-hour average PM_{10} .

The meteorological data used for the placement of the monitors is based on data extracted from CALMET modelling as there is no meteorological station located nearby. In order to provide more accurate information regarding the local meteorology and placement of the monitors, it is recommended that a meteorological station is installed at an appropriate location on site.

An Air Quality Management plan should be developed with details of the mitigation measures implemented on site such as the proposed real time dust management system.

3. Air Toxics

Where there is a criterion for a pollutant in the *Approved Methods for Modelling and Assessment of Air Pollutants in NSW*, the pollutant has been assessed against the *Approved Methods*. There are no criteria for iron (metallic), titanium, vanadium and zinc in the *Approved Methods* and the Ontario Ministry of the Environment 24-hour average limits have been applied.

The Ontario Ministry of Environment's Regulation² also provides half hour limits for iron (metallic), titanium, vanadium and zinc. Air dispersion modelling was completed in hourly time steps.

In order to provide an assessment of acute exposure to iron (metallic), titanium, vanadium and zinc similar to the air toxics assessed in the AQA, the EPA recommends assessing 1-hour average predictions against the half hour average Ontario limits.

It is noted that potential air toxic emissions from activities downstream (e.g. transfer points, wind erosion, etc) of the hammermill were not included in the modelling. However, major air toxic activities are accounted for (e.g. hammermill and oxy cutting) and the predicted impacts are well below the relevant criteria.

The EPA recommends that if the revised assessment of acute exposure show values approaching the relevant criteria, the downstream sources must be included in the assessment.

4. Odour

Odorous emissions are reduced through the reduction of oxy cutting and the improved dispersion from the hammermill stack. There is also potential for reduction of odorous emissions with the installation of the wet scrubber system for the hammermill. The predicted results indicate compliance of the EPA criterion of 2 OU at the sensitive receptors.

² Ontario Ministry of the Environment and Climate Change, *Ontario Regulation 419/05, Air Pollution – Local Air Quality* (<http://www.ontario.ca/laws/regulation/050419#BK23>)

It is noted a number of discrepancies were identified in previous reviews mainly around the odour sample in June 2014 which have not been addressed in the revised AQA. The results of oxy cutting monitoring show that odour concentrations were higher for the sample taken upwind compared to the downwind sample. There are a number of uncertainties regarding the operation at the time of sampling that is not specified in the report as follows:

- Distance upwind and downwind from the oxy cutting area;
- The meteorological conditions; and
- The number of oxy cutting operations being undertaken.

Despite the discrepancies identified, the revised AQA indicates that there will be significant improvements to potential odour impacts to previous AQAs. The predicted odour impact is also below 2 OU at the sensitive receptors assessed.

Air Quality Risk Assessment

The NSW Department of Health should be consulted if DP&E requires expert advice in reviewing the Air Quality Health Risk Assessment (AQHRA) prepared by ERM June 2015.

While the EPA is not in a position to comment on the validity of risk assessment methodology itself, the EPA notes the following:

- The basis of the AQHRA is the AQA for which we have made comments above.
- The AQA states all pollutants are in compliance with the relevant EPA criteria with the implementation of reactive management measures.
- The AQHRA concludes that emissions of the proposed development are unlikely to result in potential for unacceptable health risks.