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**Our Ref: 7625**

**3<sup>rd</sup> September, 2021**

EPA  
Environmental Licensing Programme  
Office of Environmental Sustainability  
Johnston Castle  
Wexford

RE E0007-01  
Air Emissions Appeal AP13/20

On behalf of John Madden and Sons

**RE: Air Pollution Act, 1987 Licensing of Industrial Plant - Air Emissions Licence**

Dear Inspector,

Further to the EPA letter dated the 18<sup>th</sup> August 2021, we were made aware of two additional submissions were made to the EPA in 2020 (7/12/2020 and 21/12/2020). We hereby respond to the submissions. In dealing with the air emissions issued raised, the proposed plant will be in compliance with the highest standards and will not give rise to breaches of the national air quality standards. A detailed response from AWN is included in Appendix A. Air dispersion modelling demonstrates that the asphalt plant site emissions from the proposed activity will not result in ground level concentrations which exceed the relevant air quality standards for the protection of the environment. The emissions proposed are achievable based on the extensive experience of the manufacturer – see Appendix B.

The proposed stack is located on an elevated part of the site which provides the required dispersion. The stack modelled, is as detailed in the application. The dispersion modelling assessment was conducted to ensure that emissions from the plant under maximum emission limits complied with

**Directors:** Michael Shelly (Chairman) C. McGovern (Managing Director) E. Connaughton (Company Secretary)  
B.J. Downes D. Grehan M. McDonnell R.F. Tobin

**Associate Directors** B. Carroll M. Casey P. Cloonan P. Cunningham B. Gallagher  
B. Heaney A. Mulligan S. Tinnelly C. Kelly T. Mackey

the Ambient Air Quality Standards 2011 (S.I. No. 180 of 2011) which have set limit values for NO<sub>2</sub>, SO<sub>2</sub>, CO and PM<sub>10</sub> / PM<sub>2.5</sub>. The model results show that predicted ambient concentrations of all modelled pollutants are well within their respective limit values even when it is assumed that the emission concentrations at licenced emission limit values are maintained for a full year. Thus, the study was able to confirm that even under worst-case operations NO<sub>2</sub>, CO, particulates (PM<sub>10</sub> / PM<sub>2.5</sub>) and SO<sub>2</sub> ambient concentrations will be well below the air quality limits and will pose no health risk to the nearby community.

The objections indicate there are 35 dwellings in close proximity to the asphalt plant. As detailed in the application, the emission stack is over 365m from the nearest dwelling. One additional dwelling is located within 500m to the southwest the asphalt plant. Asphalt plants in Ireland and the UK are located in urban, suburban and rural locations. Similar Parker asphalt plants in the UK and Ireland achieve the emission limits and air quality standards as set out in the application. The plant provider has confirmed that the emission standards are realistic for the proposed plant.

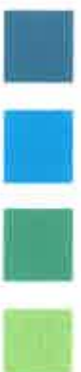
As the predicted pollutant concentrations are within the ambient air quality limits using the conservative screening model further detailed air dispersion modelling was not deemed necessary as per the EPA AG4 guidance. Overall, there will be no risk to the ambient air quality environment due to emissions from the asphalt batching plant.

The results of the dispersion model for the plant operation indicate no breaches of the relevant air quality standards for the protection of human health and vegetation. The applicant considers that emissions from the exhaust stack should be restricted to those modelled.

## Conclusion

The assessment was carried out to ensure that the air emissions from the Asphalt Batching Plant, based on the proposed licence limit values, would not lead to levels of pollutants which would exceed the air quality guideline values. The assessment determined the ambient impact at the boundary of the site and beyond to ensure that ambient air quality standards are not exceeded. Under this scenario, all pollutants were found to be well below the environmental assessment levels, peaking at 70% of the limit values when worst case background values are included, and thus will pose no health risk to the nearby community.

Maximum annual mean concentrations of NO<sub>2</sub> and SO<sub>2</sub> were also predicted within the nearby designated sites of the Castletaylor Complex SAC & pNHA and Ardrahan Grassland SAC. Concentrations were well within their respective limit values for the protection of ecosystems and will not pose an issue to the designated ecological receptors.



The proposed development will be completed as designed and will not

- (i) Be Injurious to public health.
- (ii) Have a deleterious effect on flora and fauna or damage property.
- (iii) Impair or interfere with amenities or with the environment as set out in section 4 of the Air Pollution Act.

The applicant is concerned and wishes it to be noted that the appeals submitted bear remarkable resemblance to multiple appeals previously submitted to applications for Air Emissions Licences for Asphalt Plants (required by other operators locations). A number of these appeals were submitted by or on behalf of commercial competitors, thus causing delay to licence process and plant use commencements. The applicant would therefore most appreciate that the appeals process is addressed expeditiously and allay the concerns submitted on 7/12/2020 and 21/12/2020 respectively by the appellants.

As you will appreciate the operation of this asphalt plant is commercially significant for the operations of the company and given that the process is now ongoing for quite some time, the delay is becoming detrimental to their business and we therefore wish to respectfully request, on their behalf, if the decision could be made at the earliest possible date.

Please do not hesitate to contact us if you have any queries or if you would like to discuss any aspect of our submission in more detail.

Yours sincerely,

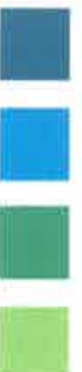


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For and on behalf of TOBIN Consulting Engineers



# APPENDIX A





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**27<sup>th</sup> August 2021**

**Reg No. E0007-01  
PA Reg. Ref: AP13/20**

**CN/20/11427AL01**

**Office of Environmental Sustainability  
Environmental Protection Agency  
Headquarters, PO Box 3000  
Johnstown Castle Estate,  
Co. Wexford  
Y35 W821**

To whom it may concern,

**RE: Appeal – Licence for the operation of an asphalt batching plant to John Madden and Sons Limited at Tonroe, Ardrahan, County Galway**

Two submissions have been received in relation to the Air Pollution Licence appeal for an asphalt plant at Tonroe, Ardrahan, Co. Galway. These are from Michael and Rosario Brennan and the Tonroe/Castletaylor (Ardrahan Co. Galway) Action Group Against Air Pollution. Both submissions make similar points. The objections raised within the submissions in relation to air quality have been addressed below.

There is a concern that the chimney stack for the asphalt plant is insufficient to provide adequate dispersion of pollutants. In addition, there is a concern that the emissions from the asphalt plant have not been properly assessed and will lead to significant impacts to human health and the surrounding environment. It is noted there are a number of residential properties in close proximity to the site which may be impacted by emissions. Primarily, the objectors state that an impact assessment was not conducted to determine whether emissions from the plant will be in compliance with the Ambient Air Quality Standard Regulations 2011 (S.I No. 180 of 2011).

An air dispersion screening model was conducted and submitted as part of the licence application. Modelling was conducted as per the guidance issued by the EPA in their document 'Air Dispersion Modelling from Industrial Installations Guidance Note (AG4)'. The EPA guidance states that "A screening air dispersion model is a simple tool for the conservative assessment of single sources.... Should the results of a screening model predict

an exceedance of the air quality standards then a more advanced model should be used". This was the approach applied to the assessment for the permitted asphalt plant.

Air emissions from the facility were modelled using the USEPA approved AERSCREEN air dispersion model<sup>1</sup>. AERSCREEN is an approved regulatory screening model which uses a full set of meteorological conditions including all stability classes and wind speeds to find the maximum short-term impact. Screening models are usually applied before a refined air quality model to determine if more detailed modelling is needed. Thus, AERSCREEN is designed to be conservative in its prediction of ambient pollutant concentrations.

Modelling was conducted for nitrogen dioxide (NO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), carbon monoxide (CO) and particulates (modelled as PM<sub>10</sub> and PM<sub>2.5</sub>) as these are the emissions of concern from the asphalt plant operations. Modelling was conducted at the proposed maximum licence limits (pollutant concentrations and volume flow rate) as requested in the licence application. It was assumed that the plant was operating continuously for a full year at the proposed maximum licenced limits to ensure a worst-case approach was undertaken for the modelling. Design details for the asphalt plant stack were provided to AWN Consulting from Tobin Consulting Engineers for input into the dispersion model. The stack was modelled at a height of 47.3 mOD (18.3 m). The modelling input parameters are detailed in Table 1 and Table 2 below as per the air dispersion modelling report (ref. CN/20/11427AR01\_2). The suppliers of the plant have confirmed that compliance with the modelled limits can be achieved.

Stack Reference	Stack Height (mOD)	Exit Diameter (m)	Temp (K)	Volume Flow (Nm <sup>3</sup> /hr)	Exit Velocity (m/sec actual)
Asphalt Batching Plant	47.3	1.24	343.15	70,000	21.29

**Table 1** Process Emission Details.

Parameter	Worst-Case Emission Concentration (mg/Nm <sup>3</sup> )	Emission Rate (g/s)
NO <sub>2</sub>	200	3.89
CO	850	16.53
TSP (PM <sub>10</sub> ) <sup>Note 1</sup>	20	0.39
SO <sub>2</sub>	100	1.94

**Note 1** For the purposes of the modelling assessment it has been assumed that 100% of TSP emissions are of the size fraction PM<sub>10</sub>

**Table 2** Air Emission Rates From Permitted Asphalt Batching Plant at Tonroe Quarry in Ardrahan, Co. Galway Under Worst-Case Conditions.

The dispersion modelling assessment was conducted to ensure that emissions from the plant under maximum emission limits complied with the Ambient Air Quality Standards 2011 (S.I. No. 180 of 2011) which have set limit values for NO<sub>2</sub>, SO<sub>2</sub>, CO and PM<sub>10</sub> / PM<sub>2.5</sub>. The dispersion model predicted the worst-case ground level concentrations of these pollutants at distances from 40 m – 1000 m from the source. The maximum predicted concentration for all pollutants peaks at a distance of 107 m from the stack. Pollutant concentrations decrease with increasing distance from the source. The closest property (i.e. sensitive receptor) is

<sup>1</sup> USEPA (2011) AERSCREEN Model User's Guide



approximately 365 m from the stack and concentrations by this point have significantly decreased from the peak ground level concentration.

As the Air Quality Standards 2011 specify both short-term and long-term (annual) limit values for pollutants, modelling of both short-term and long-term concentrations was conducted. The short-term and long-term (annual) limit values are set for the protection of human health. Background concentrations were also included within the modelling assessment based on the guidance outlined in EPA Guidance Note AG4. The short-term modelling results for NO<sub>2</sub>, SO<sub>2</sub>, CO and PM<sub>10</sub> indicated that the worst case pollutant is SO<sub>2</sub> at 70% of the short-term daily EAL (Environmental Assessment Level) when a background concentration is included (background SO<sub>2</sub> concentrations contribute 5% of the overall result). In terms of long-term modelling results, the annual average concentrations of NO<sub>2</sub> and particulates (PM<sub>10</sub> / PM<sub>2.5</sub>) were compared to the long term EALs. The worst case scenario peaks at 35% of the long-term EAL for PM<sub>2.5</sub> when background concentrations are included (background PM<sub>2.5</sub> concentrations contribute 24% of the overall result). The results are reported in Table 3 and Table 4 below for each pollutant.

It should be noted that the worst-case results were reported in the modelling assessment regardless of whether a sensitive receptor was present at that location. Therefore, the results reported in the modelling assessment are worst-case and impacts at individual nearby receptors are likely lesser than those reported within the modelling study.

Parameter	Mass Emission (g/sec)	Background Concentration (µg/m <sup>3</sup> ) <sup>Note 1</sup>	Short-term Process Contribution (µg/m <sup>3</sup> )	Short-term Predicted Environmental Concentration (µg/m <sup>3</sup> )	Short-term Environmental Assessment Level (µg/m <sup>3</sup> )
NO <sub>2</sub> – Hourly	3.89	26.9	106.80	133.70	200
CO – 8-Hour	16.53	500	1037.12	1537.12	10,000
PM <sub>10</sub> – Daily	0.39	17.7	16.27	33.97	50
SO <sub>2</sub> – Hourly	1.94	9.8	135.57	145.37	350
SO <sub>2</sub> – Daily	1.94	5.7	81.34	87.04	125

**Note 1** Background values based on guidance issued in Air Dispersion Modelling from Industrial Installations Guidance Note (AG4)

**Table 3** Predicted Short-Term Ground Level Concentrations at the Worst-Case Location

Parameter	Mass Emission (g/sec)	Background Concentration (µg/m <sup>3</sup> ) <sup>Note 1</sup>	Annual Average Process Contribution (µg/m <sup>3</sup> )	Annual Average Predicted Environmental Concentration (µg/m <sup>3</sup> )	Annual Ambient Environmental Assessment Level (µg/m <sup>3</sup> )
NO <sub>2</sub>	3.89	3	10.68	13.68	40
PM <sub>10</sub>	0.39	9	2.71	11.71	40
PM <sub>2.5</sub> <sup>Note 2</sup>	0.39	6	2.71	8.71	25

**Note 1** Background values based on guidance issued in Air Dispersion Modelling from Industrial Installations Guidance Note (AG4)

**Note 2** It is assumed that 100% of PM<sub>10</sub> emissions are also PM<sub>2.5</sub> as a conservative case

**Table 4** Predicted Annual Mean Ground Level Concentrations at the Worst-Case Location

In addition, there are two designated ecological sites in the vicinity of the permitted asphalt plant, these include the Castletaylor Complex SAC and pNHA (site code 000242) approximately 195m to the direct north of the emission point and the Ardrahan Grassland SAC (site code 002244) approximately 635m to the direct south of the emission point. Modelling of annual mean NO<sub>2</sub> and SO<sub>2</sub> concentrations within these designated sites was conducted and results compared against the ambient air quality standards for the protection of ecology.

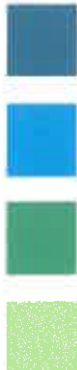


Concentrations peak at 64% of the annual limit value for SO<sub>2</sub> in the Castletaylor Complex SAC & pNHA. While concentrations within the Ardrahan Grassland SAC peak at 47% of the limit value for SO<sub>2</sub>. In terms of NO<sub>2</sub>, concentrations peak at 43% and 33% of the annual limit value in the Castletaylor Complex SAC & pNHA and Ardrahan Grassland SAC respectively.

The model results show that predicted ambient concentrations of all modelled pollutants are well within their respective limit values even when it is assumed that the emission concentrations at licenced emission limit values are maintained for a full year. Thus, the study was able to confirm that even under worst-case operations NO<sub>2</sub>, CO, particulates (PM<sub>10</sub> / PM<sub>2.5</sub>) and SO<sub>2</sub> ambient concentrations will be well below the air quality limits and will pose no health risk to the nearby community.

As the predicted pollutant concentrations are within the ambient air quality limits using the conservative screening model further detailed air dispersion modelling was not deemed necessary as per the EPA AG4 guidance. Overall, there will be no risk to the ambient air quality environment due to emissions from the asphalt batching plant.

# APPENDIX B





2<sup>nd</sup> September 2021

**RE: John Madden & Sons - Asphalt Plant & Associated Equipment**

Dear Sirs

I write to confirm environmental standards met by the Parker asphalt plant and associated equipment.

The primary and secondary dust collection (bag filter) on the plant is guaranteed to meet emission levels of less than 20mg/cu m.

Whilst writing I note that Parker Plant Ltd has been established since 1911 and has sold thousands of mobile and static asphalt plants throughout the world.

Those sold in the US, Europe, Scandinavia, UK, and Ireland etc. incorporate dry filtration systems which meet and surpass each country's environmental standards.

In the UK Parker Plant has installed asphalt plants in inner city locations and has completed many commercial and military airport installations which have been undertaken with the same filtration system (bag filter) as currently installed on John Madden & Sons asphalt plant.

As you are probably aware, environmental compliance for commercial and military airports is particularly stringent so I am confident that the filtration system we have installed on John Madden & Sons asphalt plant will meet with the local environmental requirements and will surpass those on other asphalt plants already installed in the area.

If you require any further technical information, please do not hesitate to contact us so we can assist you.

Yours sincerely

Glenn Dalby  
Managing Director