

Appendix 10

Appendix 10.1	Professional Experience
Appendix 10.2	Consultation Correspondence
Appendix 10.3	Construction Dust Assessment Procedure
Appendix 10.4	EPUK and IAQM Planning for Air Quality Guidance
Appendix 10.5	Construction Dust Management plan
Appendix 10.6	Odour Management Plan
Appendix 10.7	Glossary



Air Quality Appendices: Cannon Bridge Refuse Transfer Station

October 2020



Experts in air quality
management & assessment



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Contents

10.1	Professional Experience.....	2
10.2	Consultation Correspondence	4
10.3	Construction Dust Assessment Procedure	5
10.4	EPUK & IAQM Planning for Air Quality Guidance.....	12
10.5	Construction Dust Management Plan	18
10.6	Odour Management Plan	21
10.7	Glossary.....	22

Tables

Table A3.1:	Examples of How the Dust Emission Magnitude Class May be Defined	6
Table A3.2:	Principles to be Used When Defining Receptor Sensitivities.....	8
Table A3.3:	Sensitivity of the Area to Dust Soiling Effects on People and Property	9
Table A3.4:	Sensitivity of the Area to Human Health Effects	10
Table A3.5:	Sensitivity of the Area to Ecological Effects	10
Table A3.6:	Defining the Risk of Dust Impacts.....	11
Table A5.1:	Best-Practice Mitigation Measures Recommended for the Works.....	19

10.1 Professional Experience

Dr Denise Evans, BSc (Hons) PhD MEnvSc MIAQM

Dr Evans is an Associate Director with AQC, with more than 20 years' relevant experience. She has prepared air quality review and assessment reports for local authorities, and has appraised local authority air quality assessments on behalf of the UK governments, and provided support to the Review and Assessment helpdesk. She has extensive modelling experience, completing air quality and odour assessments to support applications for a variety of development sectors including residential, mixed use, urban regeneration, energy, commercial, industrial, and road schemes, assessing the effects of a range of pollutants against relevant standards for human and ecological receptors. Denise also has experience of completing assessments for the purposes of Permit applications. She has acted as an Expert Witness and is a Member of the Institute of Air Quality Management.

Lucy Hodgins, BSc (Hons) MEnvSc MIAQM

Miss Hodgins is a Principal Consultant with AQC, with over ten years' experience in the field of air quality. She has extensive experience in the assessment of air quality impacts for a range of industrial, commercial and residential projects, using qualitative and quantitative methods to assess road traffic and point source emissions utilising a variety of models, including ADMS-Roads, Breeze Roads, ADMS-5 and Breeze Aermod. She has prepared assessments for energy from waste, anaerobic digestion and waste biomass facilities for a range of air pollutants, along with nuisance dust and odour assessments. Lucy has also been involved in air quality management and assessment work for local authorities, including air quality modelling for Clean Air Zones as well as microsimulation modelling for junction improvement schemes. She has also undertaken numerous operational dust assessments for mineral and waste facilities, as well as assessments of construction dust emissions. She is a Member of the Institute of Air Quality Management and the Institution of Environmental Sciences.

Dr Frances Marshall, MSci PhD AMEnvSc AMIAQM

Dr Marshall is a Senior Consultant with AQC, having joined the company in September 2016. Prior to joining AQC, she spent four years carrying out postgraduate research into atmospheric aerosols at the University of Bristol. Dr Marshall has experience preparing air quality assessments for a range of projects, including residential and commercial developments, road traffic schemes, energy centres, energy from waste schemes and numerous power generation schemes. She has experience in producing air quality assessments for EIA schemes, and has also assessed the impacts of Local Plans on designated ecological areas, prepared Annual Status Reports for Local

Authorities, and undertaken diffusion tube monitoring studies. She is an Associate Member of both the Institute of Air Quality Management and the Institution of Environmental Sciences.

10.2 Consultation Correspondence

Frances Marshall

From: Frances Marshall
Sent: 24 August 2020 09:38
To: Whitehurst Stephen
Cc: James Langley
Subject: Connon Bridge Waste Transfer Station - Air Quality Assessment

Hi Stephen,

I hope you are keeping well.

I am emailing regarding the Connon Bridge Waste Transfer Station. AQC has been commissioned to complete an air quality assessment to accompany the planning submission for the proposed expansion to Connon Bridge WTS. The proposals include a new food waste stream and an increase in tonnage of recyclables processed by the site. I understand the application falls under EIA regulations due to the size of the site, and a formal scoping opinion has been received from Cornwall Council (dated 30th July 2020). I am writing to detail and agree our assessment methodology for the AQ assessment. Initially I think that air quality and odour were 'scoped out', however they will now be included within the ES.

The proposed expansion will lead to an increase in the number of Waste Collection Authority (WCA) vehicles. The transport consultant has advised that the expansion will lead to an additional 83 WCA vehicles; these will then distribute across the local road network. As the development traffic flows are below the IAQM/EPUK screening criterion for outside of an AQMA (100 HDVs), we intend to provide a qualitative assessment based on local traffic flows, local monitoring, Defra's latest background maps and proximity to sensitive receptors. As noted in your consultation response, we will also consider the Tideford and Bodmin AQMAs. I should also point out that these development flows incorporate the increase in traffic flows associated with the changes to the collections contract (implemented by the Council), which will be considered as part of the cumulative impacts assessment. As part of the EIA regulations, we will also include a construction dust assessment to identify the impacts associated with the construction of the new food waste building, and detail any necessary mitigation to ensure the overall effect is not significant. We will also include the Dust Management Plan that has been prepared to minimise dust escape from the site.

The chapter will include any good design and best practice measures, in accordance with the EPUK/IAQM guidance. I record from previous correspondence regarding similar sites that Cornwall Council has declared a climate change emergency; I will discuss with our client whether there will be any EV parking on site, and this will be noted within the chapter. As with previous SUEZ sites, they will investigate the potential for electric vehicles in the fleet, although note that the technology for HGVs is not as advanced as for LGVs. I will also confirm, however, believe that all of the WCA vehicles will be Euro VI compliant, and the fleet will abide by the 'six pillars of operational fleet efficiency'. This will be confirmed within the chapter.

The Scoping Opinion identifies that the new food waste stream could be a source of odour. As such, our assessment will include the Odour Management Plan that the site will adhere to. The nature of the waste delivery is such that odours are unlikely to migrate from the site, but this appendix will outline the series of measures that will be in place to prevent the escape of odour.

I would be grateful if you could review the above information, and advise whether you are happy with our proposed approach.

I look forward to hearing from you,

Kind regards,
Frances

Dr Frances Marshall

10.3 Construction Dust Assessment Procedure

A1.1 The criteria developed by IAQM¹ divide the activities on construction sites into four types to reflect their different potential impacts. These are:

- demolition;
- earthworks;
- construction; and
- trackout.

A1.2 The assessment procedure includes the four steps summarised below:

STEP 1: Screen the Need for a Detailed Assessment

A1.3 An assessment is required where there is a human receptor within 350 m of the boundary of the site and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s), or where there is an ecological receptor within 50 m of the boundary of the site and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).

A1.4 Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is *negligible* and that any effects will be ‘not significant’. No mitigation measures beyond those required by legislation will be required.

STEP 2: Assess the Risk of Dust Impacts

A1.5 A site is allocated to a risk category based on two factors:

- the scale and nature of the works, which determines the potential dust emission magnitude (Step 2A); and
- the sensitivity of the area to dust effects (Step 2B).

A1.6 These two factors are combined in Step 2C, which is to determine the risk of dust impacts with no mitigation applied. The risk categories assigned to the site may be different for each of the four potential sources of dust (demolition, earthworks, construction and trackout).

¹ IAQM (2016), ‘Guidance on the Assessment of Dust from Demolition and Construction v1.1’

Step 2A – Define the Potential Dust Emission Magnitude

A1.7 Dust emission magnitude is defined as either ‘Small’, ‘Medium’, or ‘Large’. The IAQM guidance explains that this classification should be based on professional judgement, but provides the examples in Table A10.3.1.

Table A10.3.1: Examples of How the Dust Emission Magnitude Class May be Defined

Class	Examples
Demolition	
Large	Total building volume >50,000 m ³ , potentially dusty construction material (e.g. concrete), on site crushing and screening, demolition activities >20 m above ground level
Medium	Total building volume 20,000 m ³ – 50,000 m ³ , potentially dusty construction material, demolition activities 10-20 m above ground level
Small	Total building volume <20,000 m ³ , construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10 m above ground, demolition during wetter months
Earthworks	
Large	Total site area >10,000 m ² , potentially dusty soil type (e.g. clay, which will be prone to suspension when dry to due small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >8 m in height, total material moved >100,000 tonnes
Medium	Total site area 2,500 m ² – 10,000 m ² , moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 4 m – 8 m in height, total material moved 20,000 tonnes – 100,000 tonnes
Small	Total site area <2,500 m ² , soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <4 m in height, total material moved <10,000 tonnes, earthworks during wetter months
Construction	
Large	Total building volume >100,000 m ³ , piling, on site concrete batching; sandblasting
Medium	Total building volume 25,000 m ³ – 100,000 m ³ , potentially dusty construction material (e.g. concrete), piling, on site concrete batching
Small	Total building volume <25,000 m ³ , construction material with low potential for dust release (e.g. metal cladding or timber)
Trackout ^a	
Large	>50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100 m
Medium	10-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 m – 100 m
Small	<10 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50 m

^a These numbers are for vehicles that leave the site after moving over unpaved ground.

Step 2B – Define the Sensitivity of the Area

A1.8 The sensitivity of the area is defined taking account of a number of factors:

- the specific sensitivities of receptors in the area;

- the proximity and number of those receptors;
- in the case of PM₁₀, the local background concentration; and
- site-specific factors, such as whether there are natural shelters to reduce the risk of wind-blown dust.

A1.9 The first requirement is to determine the specific sensitivities of local receptors. The IAQM guidance recommends that this should be based on professional judgment, taking account of the principles in Table A10.3.2. These receptor sensitivities are then used in the matrices set out in Table A10.3.3, Table A10.3.4 and Table A10.3.5 to determine the sensitivity of the area. Finally, the sensitivity of the area is considered in relation to any other site-specific factors, such as the presence of natural shelters etc., and any required adjustments to the defined sensitivities are made.

Step 2C – Define the Risk of Impacts

A1.10 The dust emission magnitude determined at Step 2A is combined with the sensitivity of the area determined at Step 2B to determine the *risk* of impacts with no mitigation applied. The IAQM guidance provides the matrix in Table A10.3.6 as a method of assigning the level of risk for each activity.

STEP 3: Determine Site-specific Mitigation Requirements

A1.11 The IAQM guidance provides a suite of recommended and desirable mitigation measures which are organised according to whether the outcome of Step 2 indicates a low, medium, or high risk. The list provided in the IAQM guidance has been used as the basis for the requirements set out in Appendix **Error! Reference source not found.**

STEP 4: Determine Significant Effects

A1.12 The IAQM guidance does not provide a method for assessing the significance of effects before mitigation, and advises that pre-mitigation significance should not be determined. With appropriate mitigation in place, the IAQM guidance is clear that the residual effect will normally be ‘not significant’.

A1.13 The IAQM guidance recognises that, even with a rigorous dust management plan in place, it is not possible to guarantee that the dust mitigation measures will be effective all of the time, for instance under adverse weather conditions. The local community may therefore experience occasional, short-term dust annoyance. The scale of this would not normally be considered sufficient to change the conclusion that the effects will be ‘not significant’.

Table A10.3.2: Principles to be Used When Defining Receptor Sensitivities

Class	Principles	Examples
Sensitivities of People to Dust Soiling Effects		
High	users can reasonably expect enjoyment of a high level of amenity; or the appearance, aesthetics or value of their property would be diminished by soiling; and the people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land	dwellings, museum and other culturally important collections, medium and long term car parks and car showrooms
Medium	users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or the appearance, aesthetics or value of their property could be diminished by soiling; or the people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land	parks and places of work
Low	the enjoyment of amenity would not reasonably be expected; or there is property that would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or there is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land	playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads
Sensitivities of People to the Health Effects of PM₁₀		
High	locations where members of the public may be exposed for eight hours or more in a day	residential properties, hospitals, schools and residential care homes
Medium	locations where the people exposed are workers, and where individuals may be exposed for eight hours or more in a day.	may include office and shop workers, but will generally not include workers occupationally exposed to PM ₁₀
Low	locations where human exposure is transient	public footpaths, playing fields, parks and shopping streets
Sensitivities of Receptors to Ecological Effects		
High	locations with an international or national designation and the designated features may be affected by dust soiling; or locations where there is a community of a particularly dust sensitive species	Special Areas of Conservation with dust sensitive features
Medium	locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or locations with a national designation where the features may be affected by dust deposition	Sites of Special Scientific Interest with dust sensitive features
Low	locations with a local designation where the features may be affected by dust deposition	Local Nature Reserves with dust sensitive features

Table A10.3.3: Sensitivity of the Area to Dust Soiling Effects on People and Property ²

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

² For demolition, earthworks and construction, distances are taken either from the dust source or from the boundary of the site. For trackout, distances are measured from the sides of roads used by construction traffic. Without mitigation, trackout may occur from roads up to 500 m from sites with a *large* dust emission magnitude for trackout, 200 m from sites with a *medium* dust emission magnitude and 50 m from sites with a *small* dust emission magnitude, as measured from the site exit. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge of the road.

Table A10.3.4: Sensitivity of the Area to Human Health Effects ²

Receptor Sensitivity	Annual Mean PM ₁₀	Number of Receptors	Distance from the Source (m)				
			<20	<50	<100	<200	<350
High	>32 µg/m ³	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	28-32 µg/m ³	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24-28 µg/m ³	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<24 µg/m ³	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	>32 µg/m ³	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	28-32 µg/m ³	>10	Medium	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	24-28 µg/m ³	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	<24 µg/m ³	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

Table A10.3.5: Sensitivity of the Area to Ecological Effects ²

Receptor Sensitivity	Distance from the Source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Table A10.3.6: Defining the Risk of Dust Impacts

Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
Earthworks			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Construction			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Trackout			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

10.4 EPUK & IAQM Planning for Air Quality Guidance

10.4.1 The guidance issued by EPUK and IAQM³ is comprehensive in its explanation of the place of air quality in the planning regime. Key sections of the guidance not already mentioned above are set out below.

Air Quality as a Material Consideration

“Any air quality issue that relates to land use and its development is capable of being a material planning consideration. The weight, however, given to air quality in making a planning application decision, in addition to the policies in the local plan, will depend on such factors as:

- *the severity of the impacts on air quality;*
- *the air quality in the area surrounding the proposed development;*
- *the likely use of the development, i.e. the length of time people are likely to be exposed at that location; and*
- *the positive benefits provided through other material considerations”.*

Recommended Best Practice

10.4.2 The guidance goes into detail on how all development proposals can and should adopt good design principles that reduce emissions and contribute to better air quality management. It states:

“The basic concept is that good practice to reduce emissions and exposure is incorporated into all developments at the outset, at a scale commensurate with the emissions”.

10.4.3 The guidance sets out a number of good practice principles that should be applied to all developments that:

- include 10 or more dwellings;
- where the number of dwellings is not known, residential development is carried out on a site of more than 0.5 ha;
- provide more than 1,000 m² of commercial floorspace;
- are carried out on land of 1 ha or more.

10.4.4 The good practice principles are that:

- New developments should not contravene the Council’s Air Quality Action Plan, or render any of the measures unworkable;

³ Moorcroft and Barrowcliffe et al. (2017), ‘Land-Use Planning & Development Control: Planning For Air Quality v1.2’

- Wherever possible, new developments should not create a new “street canyon”, as this inhibits pollution dispersion;
- Delivering sustainable development should be the key theme of any application;
- New development should be designed to minimise public exposure to pollution sources, e.g. by locating habitable rooms away from busy roads;
- The provision of at least 1 Electric Vehicle (EV) “rapid charge” point per 10 residential dwellings and/or 1000 m² of commercial floorspace. Where on-site parking is provided for residential dwellings, EV charging points for each parking space should be made available;
- Where development generates significant additional traffic, provision of a detailed travel plan (with provision to measure its implementation and effect) which sets out measures to encourage sustainable means of transport (public, cycling and walking) via subsidised or free-ticketing, improved links to bus stops, improved infrastructure and layouts to improve accessibility and safety;
- All gas-fired boilers to meet a minimum standard of <40 mgNO_x/kWh;
- Where emissions are likely to impact on an AQMA, all gas-fired CHP plant to meet a minimum emissions standard of:
 - Spark ignition engine: 250 mgNO_x/Nm³;
 - Compression ignition engine: 400 mgNO_x/Nm³;
 - Gas turbine: 50 mgNO_x/Nm³.
- A presumption should be to use natural gas-fired installations. Where biomass is proposed within an urban area it is to meet minimum emissions standards of 275 mgNO_x/Nm³ and 25 mgPM/Nm³.

10.4.5 The guidance also outlines that offsetting emissions might be used as a mitigation measure for a proposed development. However, it states that:

“It is important that obligations to include offsetting are proportional to the nature and scale of development proposed and the level of concern about air quality; such offsetting can be based on a quantification of the emissions associated with the development. These emissions can be assigned a value, based on the “damage cost approach” used by Defra, and then applied as an indicator of the level of offsetting required, or as a financial obligation on the developer. Unless some form of benchmarking is applied, it is impractical to include building emissions in this approach, but if the boiler and CHP emissions are consistent with the standards as described above then this is not essential”.

10.4.6 The guidance offers a widely used approach for quantifying costs associated with pollutant emissions from transport. It also outlines the following typical measures that may be considered to offset

emissions, stating that measures to offset emissions may also be applied as post assessment mitigation:

- Support and promotion of car clubs;
- Contributions to low emission vehicle refuelling infrastructure;
- Provision of incentives for the uptake of low emission vehicles;
- Financial support to low emission public transport options; and
- Improvements to cycling and walking infrastructures.

Screening

Impacts of the Local Area on the Development

“There may be a requirement to carry out an air quality assessment for the impacts of the local area’s emissions on the proposed development itself, to assess the exposure that residents or users might experience. This will need to be a matter of judgement and should take into account:

- *the background and future baseline air quality and whether this will be likely to approach or exceed the values set by air quality objectives;*
- *the presence and location of Air Quality Management Areas as an indicator of local hotspots where the air quality objectives may be exceeded;*
- *the presence of a heavily trafficked road, with emissions that could give rise to sufficiently high concentrations of pollutants (in particular nitrogen dioxide), that would cause unacceptably high exposure for users of the new development; and*
- *the presence of a source of odour and/or dust that may affect amenity for future occupants of the development”.*

Impacts of the Development on the Local Area

10.4.7 The guidance sets out two stages of screening criteria that can be used to identify whether a detailed air quality assessment is required, in terms of the impact of the development on the local area. The first stage is that you should proceed to the second stage if any of the following apply:

- 10 or more residential units or a site area of more than 0.5 ha residential use; and/or
- more than 1,000 m² of floor space for all other uses or a site area greater than 1 ha.

10.4.8 Coupled with any of the following:

- the development has more than 10 parking spaces; and/or

- the development will have a centralised energy facility or other centralised combustion process.

10.4.9 If the above do not apply then the development can be screened out as not requiring a detailed air quality assessment of the impact of the development on the local area. If they do apply then you proceed to stage 2, which sets out indicative criteria for requiring an air quality assessment. The stage 2 criteria relating to vehicle emissions are set out below:

- the development will lead to a change in LDV flows of more than 100 AADT within or adjacent to an AQMA or more than 500 AADT elsewhere;
- the development will lead to a change in HDV flows of more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere;
- the development will lead to a realigning of roads (i.e. changing the proximity of receptors to traffic lanes) where the change is 5m or more and the road is within an AQMA;
- the development will introduce a new junction or remove an existing junction near to relevant receptors, and the junction will cause traffic to significantly change vehicle acceleration/deceleration, e.g. traffic lights or roundabouts;
- the development will introduce or change a bus station where bus flows will change by more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere; and
- the development will have an underground car park with more than 100 movements per day (total in and out) with an extraction system that exhausts within 20 m of a relevant receptor.

10.4.10 The criteria are more stringent where the traffic impacts may arise on roads where concentrations are close to the objective. The presence of an AQMA is taken to indicate the possibility of being close to the objective, but where whole authority AQMAs are present and it is known that the affected roads have concentrations below 90% of the objective, the less stringent criteria are likely to be more appropriate.

10.4.11 On combustion processes (including standby emergency generators and shipping) where there is a risk of impacts at relevant receptors, the guidance states that:

“Typically, any combustion plant where the single or combined NO_x emission rate is less than 5 mg/sec is unlikely to give rise to impacts, provided that the emissions are released from a vent or stack in a location and at a height that provides adequate dispersion. As a guide, the 5 mg/s criterion equates to a 450 kW ultra-low NO_x gas boiler or a 30kW CHP unit operating at <95mg/Nm³.

In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings

(including situations where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emission rates.

Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable”.

10.4.12 Should none of the above apply then the development can be screened out as not requiring a detailed air quality assessment of the impact of the development on the local area, provided that professional judgement is applied; the guidance importantly states the following:

“The criteria provided are precautionary and should be treated as indicative. They are intended to function as a sensitive ‘trigger’ for initiating an assessment in cases where there is a possibility of significant effects arising on local air quality. This possibility will, self-evidently, not be realised in many cases. The criteria should not be applied rigidly; in some instances, it may be appropriate to amend them on the basis of professional judgement, bearing in mind that the objective is to identify situations where there is a possibility of a significant effect on local air quality”.

10.4.13 Even if a development cannot be screened out, the guidance is clear that a detailed assessment is not necessarily required:

“The use of a Simple Assessment may be appropriate, where it will clearly suffice for the purposes of reaching a conclusion on the significance of effects on local air quality. The principle underlying this guidance is that any assessment should provide enough evidence that will lead to a sound conclusion on the presence, or otherwise, of a significant effect on local air quality. A Simple Assessment will be appropriate, if it can provide this evidence. Similarly, it may be possible to conduct a quantitative assessment that does not require the use of a dispersion model run on a computer”.

10.4.14 The guidance also outlines what the content of the air quality assessment should include, and this has been adhered to in the production of this chapter.

Assessment of Significance

10.4.15 There is no official guidance in the UK in relation to development control on how to describe the nature of air quality impacts, nor how to assess their significance. The approach within the EPUK/IAQM guidance has, therefore, been used in this assessment. This approach involves a two stage process:

- a qualitative or quantitative description of the impacts on local air quality arising from the development; and
- a judgement on the overall significance of the effects of any impacts.

10.4.16 The guidance recommends that the assessment of significance should be based on professional judgement, with the overall air quality impact of the development described as either 'significant' or 'not significant'. In drawing this conclusion, the following factors should be taken into account:

- the existing and future air quality in the absence of the development;
- the extent of current and future population exposure to the impacts;
- the influence and validity of any assumptions adopted when undertaking the prediction of impacts;
- the potential for cumulative impacts and, in such circumstances, several impacts that are described as '*slight*' individually could, taken together, be regarded as having a significant effect for the purposes of air quality management in an area, especially where it is proving difficult to reduce concentrations of a pollutant. Conversely, a '*moderate*' or '*substantial*' impact may not have a significant effect if it is confined to a very small area and where it is not obviously the cause of harm to human health; and
- the judgement on significance relates to the consequences of the impacts; will they have an effect on human health that could be considered as significant? In the majority of cases, the impacts from an individual development will be insufficiently large to result in measurable changes in health outcomes that could be regarded as significant by health care professionals.

10.4.17 The guidance is clear that other factors may be relevant in individual cases. It also states that the effect on the residents of any new development where the air quality is such that an air quality objective is not met will be judged as significant. For people working at new developments in this situation, the same will not be true as occupational exposure standards are different, although any assessment may wish to draw attention to the undesirability of the exposure.

10.4.18 A judgement of the significance should be made by a competent professional who is suitably qualified. A summary of the professional experience of the staff contributing to this assessment is provided in Appendix O.

10.5 Construction Dust Management Plan

10.5.1 Best Practicable Measures (BPM) will be used to ensure that the construction works will not generate air quality or dust impacts. SUEZ has identified the following measures that will be implemented throughout the entirety of the works to ensure dust is kept to a minimum:

- any vehicles carrying loose or potentially dusty materials to or from site shall be fully sheeted;
- personnel on site will be briefed to ensure that they recognise the importance of dust minimisation. Specific personnel should ensure that dust generation is effectively controlled;
- provision of training for relevant personnel on controlling dust emissions;
- minimising mobile plant and vehicle emissions through careful management (e.g. engines not to be left running);
- site traffic should be controlled appropriately and access routes set up;
- excavation and construction works should not commence until the dust suppression measures have been put in place;
- the double handling of material will be avoided where practicable;
- the drop heights from vehicles into stockpiles will be minimised;
- water will be regularly applied, when necessary (e.g. when dry or when dust is visibly being generated), especially on regularly trafficked internal haul routes;
- an on-site speed limit of 15 mph will be enforced;
- the internal and external haul routes will be regularly cleaned with a road sweeper. This will be regularly maintained with essential spares retained onsite and
- all heavy plant will be fitted with upswept exhausts and radiator fan shields.

10.5.2 Table A10.5.1 sets out a list of additional best-practice measures from the IAQM guidance¹ that should also be incorporated into the specification for the works. Some of the measures may only be necessary during specific phases of work, or during activities with a high potential to produce dust, and the list should be refined and expanded upon in liaison with the construction contractor when updating the Dust Management Plan.

Table A10.5.1: Best-Practice Mitigation Measures Recommended for the Works

Measure	Desirable	Highly Recommended
Communications		
Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environmental manager/engineer or the site manager		✓
Display the head or regional office contact information		✓
Site Management		
Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken		✓
Make the complaints log available to the local authority when asked		✓
Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book		✓
Monitoring		
Undertake daily on-site and off-site inspections where receptors (including roads) are nearby, to monitor dust. Record inspection results, and make the log available to the Local Authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of the site boundary, with cleaning to be provided if necessary	✓	
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the Local Authority when asked		✓
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions		✓
Preparing and Maintaining the Site		
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period	✓	
Avoid site runoff of water or mud		✓
Keep site fencing, barriers and scaffolding clean using wet methods	✓	
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below	✓	
Cover, seed, or fence stockpiles to prevent wind whipping	✓	
Operating Vehicle/Machinery and Sustainable Travel		
Ensure all vehicles switch off their engines when stationary – no idling vehicles		✓
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery-powered equipment where practicable		✓
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with	✓	

suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate)		
Operations		
Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems		✓
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate		✓
Use enclosed chutes, conveyors and covered skips		✓
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate		✓
Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods	✓	
Waste Management		
Avoid bonfires and burning of waste materials		✓
Measures Specific to Construction		
Avoid scabbling (roughening of concrete surfaces), if possible	✓	
Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place	✓	
Measures Specific to Trackout		
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use	✓	
Avoid dry sweeping of large areas	✓	
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport	✓	

10.6 Odour Management Plan

- 10.6.1 SUEZ has provided the following measures that will be in place to ensure that migration of odours from incoming waste are minimised as far as possible. All incoming food waste will be stored inside the building.
- 10.6.2 Putrescible wastes accepted on site will be removed from site within 48 hours, or 72 hours over a bank holiday weekend.
- 10.6.3 To minimise the risk of the incoming waste stream generating odours that could migrate from the site, any particularly odorous materials delivered to the site will be rejected following the rejection procedure. Should the situation occur where a load does contain particularly odorous waste, this will be immediately placed in a quarantined area and removed by the end of the working day.
- 10.6.4 Routine olfactory monitoring will be undertaken daily by an appointed person to detect any odours that may be migrating beyond the site boundary. Monitoring will be undertaken by site operatives during waste handling operations. Odour is continually assessed by all staff present on site, and any odours identified outside the regular inspections are reported to site management for investigations
- 10.6.5 Should an odour be detected at the boundary during routine assessments then an odour inspection shall be undertaken at key sensitive receptors and recorded on the external odour assessment survey which will clearly indicate whether or not odour was detected.
- 10.6.6 The Site Manager will be informed immediately of any findings of odour attributed to the site and will authorise remedial measures to be taken. Remedial actions may include, but not be limited to:
- Checking the storage area to identify the source of the odour to a particular waste;
 - Removal of the odorous waste at the earliest opportunity and within 24 hours;
 - Cleaning of the storage area;
 - Use of an odour suppression system for the dispersal of odour-neutralising or masking agents.
- 10.6.7 In addition, the site will be subject to a good housekeeping regime which assists with the aim of proactive management and associated environmental compliance. Regular cleaning will be undertaken in the waste storage areas, including floors and bays to ensure the removal of any residues or debris to reduce the potential for odour.
- 10.6.8 In addition to operating a first in and first out policy, the putrescible waste storage areas will be regularly emptied to allow a thorough cleanse.
- 10.6.9 Additional quantitative monitoring will only be undertaken should problems be reported by the Environment Agency and where it is considered necessary by the operator in order to investigate such problems.

10.7 Glossary

AADT	Annual Average Daily Traffic
AQC	Air Quality Consultants
AQAL	Air Quality Assessment Level
AQMA	Air Quality Management Area
AURN	Automatic Urban and Rural Network
CAZ	Clean Air Zone
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DMP	Dust Management Plan
EPUK	Environmental Protection UK
Exceedance	A period of time when the concentration of a pollutant is greater than the appropriate air quality objective. This applies to specified locations with relevant exposure
EU	European Union
HDV	Heavy Duty Vehicles (> 3.5 tonnes)
HMSO	Her Majesty's Stationery Office
HGV	Heavy Goods Vehicle
IAQM	Institute of Air Quality Management
JAQU	Joint Air Quality Unit
kph	Kilometres Per hour
LAQM	Local Air Quality Management
LDV	Light Duty Vehicles (<3.5 tonnes)
LGV	Light Goods Vehicle
µg/m³	Microgrammes per cubic metre
NO₂	Nitrogen dioxide
NPPF	National Planning Policy Framework
NRMM	Non-road Mobile Machinery
Objectives	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the

standards should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides

OLEV	Office for Low Emission Vehicles
PM₁₀	Small airborne particles, more specifically particulate matter less than 10 micrometres in aerodynamic diameter
PM_{2.5}	Small airborne particles less than 2.5 micrometres in aerodynamic diameter
PPG	Planning Practice Guidance
RDE	Real Driving Emissions
Standards	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal
TEA	Triethanolamine – used to absorb nitrogen dioxide