



ENVIRONMENTAL STATEMENT: 6.3 APPENDIX 6-7: UNCERTAINTY MATRIX

DECARBONISATION

Cory Decarbonisation Project

PINS Reference: EN010128

March 2024

Revision A

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Table 1 below identifies the process WSP has undertaken to reduce uncertainty in the BS 4142 assessment for the Proposed Scheme.

Table 1: WSP Uncertainty Assessment Matrix

Uncertainty Control Measures	Applicable?	Adopted?/Comments
Measurement		
Only use in calibration Type/Class 1 equipment and check (and record) calibration level before and after measurements.	✓	Yes
Take measurements using the time and frequency weighting specified by the relevant standard.	✓	Yes
Make detailed notes, including details of the equipment, weather, survey positions (including approximate distances), contributing noise sources, presence of screening etc.	✓	Yes
Take photographs, and record survey locations.	✓	Yes
Avoid standing waves/interference – listen for effects, take spatial average from several locations or conduct a sweep.	✓	External measurements only.
Take measurements at different distances to establish propagation.	✓	Measurements taken in multiple locations.
Take measurements at different heights where relevant.	x	N/A
Don't just measure at the "noisiest" parts of site, but establish how "quiet" it is, too, where relevant to the assessment.	x	N/A
Measure under different operating conditions relevant to your assessment / adopt worst case if known.	x	N/A
Measure more than one cycle/ event (ideally at least three).	x	N/A
Determine state of repair of any associated source, where relevant.	x	N/A

Uncertainty Control Measures	Applicable?	Adopted?/Comments
Use a windshield and avoid windy conditions (i.e., gusts regularly exceeding 5 m/s).	✓	Windshield was utilised, exposure to high wind speed was minimised as far as practicable.
Avoid wet conditions (particularly in terms of rain on the windshield/mic and on neighbouring surfaces).	✓	Yes
Avoid electrical and electromagnetic interference (such as from power cables and radio transmitters).	x	N/A
Avoid extreme temperatures – traffic conditions can be different in freezing conditions, whilst meters can overheat and fail in a case when in direct sunlight during the summer.	✓	Yes
Make measurements during different weather conditions (particularly relevant in terms of wind direction for sites affected by aircraft movements, but also for sites affected by other distant, but significant, sources of noise, in different directions).	x	N/A
Where only one source is dominant (such as a main road), as a minimum, measure during conditions favourable to propagation (i.e., when wind direction is within +/-45° of the line between the source and receiver or during temperature inversion, such as on clear calm nights).	x	N/A
Avoid tree/leaf (movement) sound where possible – ideally take measurements at comparable distance to receptor locations.	✓	Yes
Avoid dawn chorus sound where possible – ideally take measurements the same distance from trees and bushes as any receptors of interest.	x	N/A
Measure outside the receptor in question where possible; however, it is worst case typically to measure under free-field conditions and apply +3 dB correction to convert to “façade” where applicable – for most planning (new residential development) assessments, free-field is preferable.	x	N/A

Uncertainty Control Measures	Applicable?	Adopted?/Comments
Where it is not possible to install a meter outside the receptor in question, install a meter elsewhere and undertake additional attended measurements, either outside the receptor or at a representative location (when not adequately covered by the installed meter).	✓	Yes
Avoid atypical traffic conditions (such as during school holidays and road works – road traffic incidents can significantly affect flows, but which can't be predicted, and their occurrence can't always be established after the survey – check the data for anomalies).	✓	Yes
Avoid presence of you and/or the microphone resulting in atypical conditions.	✓	Yes
Data Handling		
Download data immediately after survey and process promptly whilst details are fresh in your head.	✓	Yes
Use digital transfer methods and double check data read-off manually.	✓	Yes
Look at the time-history (in as fine a resolution as possible) for any unexpected events – preferably with active spectral data (i.e., in dBTRAIT).	✓	Yes
If removing any data (due to an atypical event, for example), 'save as' a new file and provide a note to the data.	✓	Yes
Prediction		
Use measurement data at different distances to verify propagation.	✓	Yes
Different height measurements to verify screening effects, if relevant.	x	N/A
Use propagation calculation procedure relevant to source and distance.	✓	Yes
Use detailed traffic flow data applicable to the methodology.	x	N/A

Uncertainty Control Measures	Applicable?	Adopted?/Comments
Use detailed sound source data (including octave-bands levels), accounting for size, height and directivity, where known.	✓	Yes
Use detailed topographical data and base mapping.	✓	Yes
Identify different ground types.	✓	Yes
Apply an order of reflections of at least one.	✓	Yes
Use 3D view feature to check model accuracy of the model.	✓	Yes
Produce contour plots as a further means of identifying any abnormalities or errors in the model.	x	N/A



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