12 NOISE

12.1 Introduction

The development proposals will involve the transfer, deposition and spreading of up to 75,000m^3 of peat. There is the potential for a noise impact generated by the transfer of material to the site and movement within the site. This section assesses the extent of that impact in the context of current relevant standards and guidance, and identifies any requirements or possibilities for mitigation. It is important to note that this process was ongoing from in 2005 and 2007, during which time approximately 448,000m^3 of peat was deposited on site, with no significant noise impact. The proposed activity is only a fraction of this previous tonnage.

12.2 Methodology

12.2.1 Noise Terminology

The primary noise measurement parameters used in this assessment are $L_{Aeq,T}$, $L_{Amax,T}$ and $L_{A90,T}$. These represent the average, maximum and minimum levels occurring during a given period, T, and are referred to as such elsewhere in this section. Comparisons between ambient prevailing values of these indices and those likely to be generated by the scheme are useful indicators of noise impact, as are benchmark comparisons against standards set as absolute values.

All references to sound pressure level are in decibels, related to the standard reference pressure of 20 μPa. Sound power level references are in decibels relative to the standard reference power level of 1pW.

12.2.2 Guidance and Policy

Published Irish standards and guidance are relied upon wherever possible, or in their absence suitable EU or UK documents have been used. The consultation draft Guidelines for Noise Impact Assessment recently published by the Institute of Acoustics and Institute of Environmental Management and Assessment have also been referred to for additional technical guidance.

12.2.3 Overview of Assessment Procedure

The assessment procedure involves determining noise levels likely to be generated by the proposed development, comparing these with measured baseline conditions, and with other sources of existing impact in the area, and assessing this effect in the context of the duration of the project and other relevant factors. To provide comparisons with baseline conditions,

surveys of background noise levels around the site have been carried out. Baseline surveys and noise impact predictions for the main peat haul route, along with a road condition overview survey and observations of traffic movements, were carried out in the original EIS for the site and as such have not been repeated in this assessment.

12.3 Baseline

12.3.1 Background Noise Survey

It is accepted practise to carry out measurements of pre-existing background noise levels to assess the likely impact of any new noise source introduced into that climate. Baseline conditions are established in this way. Detailed surveys of background noise conditions around the peat deposition site was carried out in February 2010 and the results of the most recent survey are shown in Table 12.1 below.

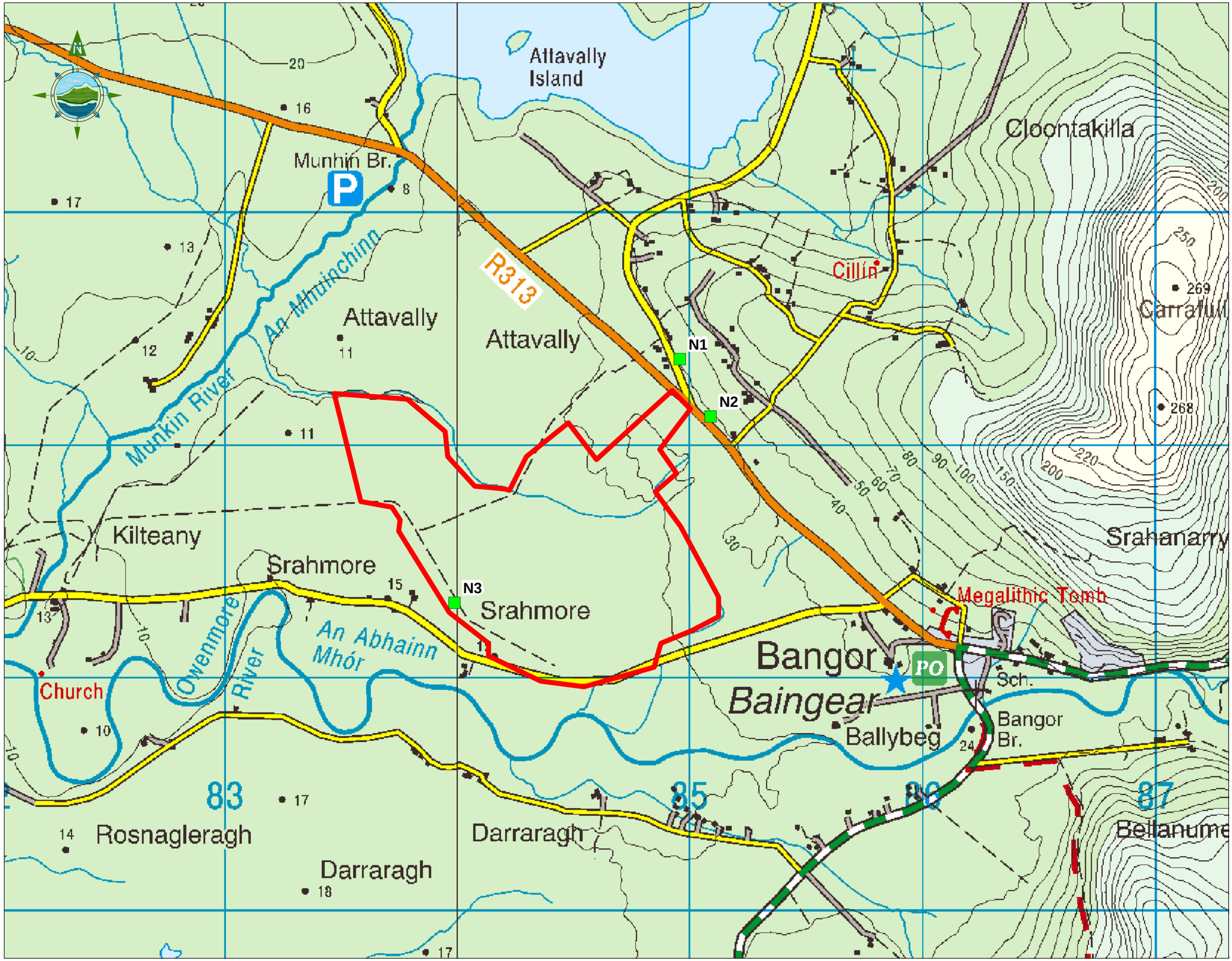
Detailed survey measurements were carried out employing manned sound level meter assessments to establish dominant ambient noise sources in the local noise climate. Full details of monitoring are provided below for the Noise Monitoring locations N1 – N3.

12.4 Survey results

Daytime noise levels around the site are dominated by traffic movements along the R313, which carries significant volumes of traffic, with a high proportion of heavy commercial vehicles and agricultural machinery. Proximity to this and the Geesala road determines ambient noise levels in the area around the Srahmore Peat Deposition site. The closest and potentially most affected noise sensitive receptors are residential properties closest to the existing daytime traffic noise sources. Daytime minimum background noise levels have been measured at around 39 to 48 dB L_{A90}, but typical L_{Aeq} levels are generally above 52 dB, increasing to 72 dB in close proximity to road noise sources.

Table 12.1: Baseline Noise Survey Results- February 2010

N1							
Date	Time	Duration	L_{Aeq}	L_{A10}	L_{A90}	L_{AMax}	L_{AMin}
23-Feb-10	12:55:32	30:00:00	63.9	59.5	41.7	88	36.8
N2							
Date	Time	Duration	L_{Aeq}	L_{A10}	L_{A90}	L_{AMax}	L_{AMin}
23-Feb-10	13:35:20	30:00:00	71.9	74.3	48.3	91.9	41.2
N3							
Date	Time	Duration	L_{Aeq}	L_{A10}	L_{A90}	L_{AMax}	L_{AMin}
23-Feb-10	12:14:13	30:00:00	52.4	56.3	39.0	68.3	35.1



NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd.
F	14.05.10	ISSUED FOR RE-SUBMISSION	A.G.	S.F.

Applicant: Shell E&P Ireland Limited, Corrib House, 52 Leeson Street Lower, Dublin 2, REpublic of Ireland

Operator: Bord na Móna

Project: CORRIB ONSHORE PIPELINE DEVELOPMENT

Aspect: SRAHMORE PEAT DEPOSITION SITE

Title: NOISE MONITORING LOCATIONS

Scale @ A3: 1:15,000

Prepared by:	Checked:	Date:
A.Gruschka	S.Finlay	May 2010

Project Director: S.Finlay

TOBIN
Patrick J. Tobin & Co. Ltd.
Consulting, Civil and Structural Engineers,
Block 10-4, Blanchardstown Corporate Park,
Dublin 15, Ireland.
tel: +353-(0)1-8030406
fax:+353-(0)1-8030409
e-mail: info@tobin.ie
www.tobin.ie

Drawing No.: Figure 12.1 F

6013

In compliance with the requirements of the existing Waste Licence (W0199-01), Bord Na Móna Energy Ltd. was required to carry out an assessment of ambient environmental noise levels at the Srahmore Peat Deposition Site. Noise surveys were undertaken in 2005 and 2007 and are included in Appendix 9.1, Book 3 of this Volume of the EIS. These noise assessments indicate that the noise emanating from on-site activity on the Srahmore Peat Deposition Site did not have any significant impact on the existing noise environment at that time.

12.4.1 Wind Data, Background Noise Levels and Noise Propagation

The 2003 Srahmore Peat Deposition EIS (TES Consulting Engineers) determined that the modal wind direction for the period studied is from 190 degrees, with a mean wind speed in that direction of 16.7 knots, or 8.6 m/s.

Prevailing conditions, therefore, can be assumed to assist noise propagation from the proposed Peat Deposition Site to the north and north-east, and impede its propagation in a southerly and south-westerly direction. Calculations indicate that this would result in a downwind increase in noise levels of the order of 5dB, and a similar decrease in noise upwind of the site.

Background noise levels increase with wind speed also, however, and serve to offset some of the increase in downwind noise levels due to increased masking effects. Research on this relationship carried out for wind farm developments indicates that vegetation and meteorological noise due to wind speeds above 5m/s becomes significant in elevating background noise levels.

12.5 Predicted Impact of the Proposed Development

12.5.1 Construction phase

For the purposes of this assessment, the construction phase consists of traffic on a small number of access roads to facilitate peat spreading in existing peat deposition bays. Existing hardstanding and site infrastructure will be used throughout the deposition phase. There will be very little noise impact from the construction phase of the project, as all required infrastructure is largely already in-situ. There will be some improvements such as maintenance of the tracking surface of the internal roads and the construction of a rock road within existing bays. The noise impact from these works has been predicted using noise data from British Standard BS 5228: *Noise and vibration control on construction and open sites.* The results of this assessment are presented in Table 12.2 below.

Table 12.2: Construction Phase Noise Levels at Nearest Sensitive Receptors

Construction Phase		
BS5228 Calculations	**Estimated Operational noise levels at sensitive receptors LAeq 1 hour**	
Plant	**279m**	**865m**
Dumper truck	48	36
Road Lorry	36	24
Tracked excavator	51	39
Road Grader	42	30
Combined Level LAeq 1hour	**52**	**40**

12.5.2 Operational phase

Although the proposed peat deposition project is not a common operation, the day to day operational noise generated by the deposition process can be likened to that of activities associated with a landfill operation, of which there are numerous comparable examples.

The peat distribution and grading process, involving tracked mobile plant and Heavy Commercial Vehicles, is estimated to result in typical average (LAeq) noise levels as described in table 12.2 below. These noise levels have been predicted using noise data from British Standard BS 5228: *Noise and vibration control on construction and open sites.*

The noise impact should also be considered against the existing and previous use of the site, as peat milling and extraction processes carried out previously are likely to have generated equivalent (if not greater noise) levels.

If there were an imperative to continue operation of the site later into the evening than the intended 20:00, a significantly greater noise impact could be expected. As the original EIS determined that ambient noise levels decrease by 10dB (A) during the course of the evening, the subjective intrusion of noise from the site would double. The site operating hours will continue to be the same as during previous deposition activities in 2005 and 2007 which were permitted under the existing waste licence.

There is no planned night-time operation at the Srahmore Peat Deposition site after 21:00 hours as this would give rise to very significant noise impact, in comparison with very low background noise levels established in the original EIS.

The predicted noise levels for the operational phase of the proposed activates are presented in Table 12.3.

Table 12.3: Operational Phase Noise Levels at Nearest Sensitive Receptors

Operational Phase		
BS5228 Calculations	**Estimated Operational noise levels at sensitive receptors LAeq 1 hour**	
Plant	**279m**	**865m**
Dumper truck	48	36
Road Lorry	36	24
Tracked excavator	51	39
Combined Level LAeq 1hour	**52**	**40**

12.5.3 Traffic

Traffic noise from peat deliveries to the proposed site are assessed in Chapter 8 of the onshore pipeline development (Volume 1 & 2 of the EIS) for the development using CRTN: 1988: 'Calculation of Road Traffic Noise: Department of Transport & the Welsh Office'. The proposed 75,000m^3 of peat comprising this project will have a considerably less significant noise impact than that which was in operation previously at the site.

The magnitude of traffic and the peat to be transported on the established haul route is far less than that already successfully completed for the original scheme on the same haul route, without significant impact. As such it is not predicted that there will be a significant noise and vibration impact, as the amount of peat to be deposited is less than that of the original scheme.

12.6 Mitigation

Noise emissions from the site throughout the deposition process are not expected to be significant considering the location and previous history of the site, and the projected duration of the scheme. The noise from the site is predicted to be below the 55dB criterion for day time activities, from the EPA *Guidance Note For Noise In Relation To Scheduled Activities*. There will be no night time operations at the site.

It is of note that previous compliance noise monitoring during ongoing peat deposition (Appendix 9.1, Book 3), records similar noise levels to those presented in Table 12.1. As such it can be concluded that the proposed activity will have no significant impact in this instance as was the case with the previous deposition activities on site.

A form of natural mitigation is provided by prevailing wind conditions which promote noise propagation in the direction of the higher ambient noise levels (close to the R313) and generate significant background noise.

In accordance with methodologies recommended by several authorities within Ireland, general control of noise emissions from the site will be provided by observing the guidance given in BS5228 'Noise Control on Construction and Open Sites', and by using modern and well maintained plant and vehicles.

12.7 Monitoring

The existing waste license (W199-01) for the Srahmore site states that the development shall not exceed a noise level of 55 dB(A) LAeq(30 minutes) by day and of 45 dB(A) LAeq(30 minutes) by night. The proposed operations will be in accord with this licence condition.

12.8 Conclusion

The proposed development is not predicted to cause any significant noise and/or vibration impact to the surrounding climate.