

## Noise & Vibration- Requested additional information

### Shutdown of LVI – Noise Levels at Nearest Sensitive Receptors

Section 9.2.3.5 of the EIS (page 9-7) and Section 5.5 of Appendix H of the EIS outlines that “In the unlikely occurrence of an emergency shutdown of the LVI system the re-starting would produce a high tone noise for a maximum 36 hours. This would produce a noise level of approximately 80dB within the LVI compound for a maximum 36 hours”.

A worst-case scenario using a noise level of 83.5dB generated during the restarting of the LVI was used in order to assess the potential noise impact at the nearest sensitive receptor. The worst-case scenario considered that the noise generated by the valve was at ground level rather than allowing for the noise attenuation that will be provided by virtue of the fact that the valve will be buried approximately 1.2m below ground level. The predicted noise levels associated with the restarting of the LVI and the combined baseline and predicted LVI restart (i.e. the cumulative noise levels) at the noise sensitive receptors in the vicinity of the site are presented in the following table. The location of the sensitive receptors is illustrated on Figure 9.1 of the EIS.

Noise Sensitive Location	Measured Daytime Baseline Level dB(A) $L_{Aeq}$	Predicted LVI Restart Noise level dB(A) $L_{Aeq}$	Cumulative Daytime Noise level dB(A) $L_{Aeq}$	Measured Night-time Baseline Level dB(A) $L_{Aeq}$	Predicted LVI Restart Noise level dB(A) $L_{Aeq}$	Cumulative Daytime Noise level dB(A) $L_{Aeq}$
N2 (F)	54	29	54	40	29	40

At the nearest sensitive receptor to the LVI noted as N2 (i.e. receptor F) on Figure 9.1 of the EIS, the predicted noise level associated with the restart of the LVI is 29dB(A). The existing ambient daytime noise level at this property is 54dB(A). Given that the predicted LVI daytime noise level at N2 is only 29dB(A), the predicted cumulative daytime noise level will not be impacted and will remain unchanged at 54dB(A), indicating that noise from the LVI will have a negligible impact at the nearest sensitive receptor. The existing ambient night-time noise level at N2 is 40dB(A), and the predicted cumulative night-time noise level is also 40dB(A), (as the predicted LVI night-time noise level at N2 is also 29dB(A)).

Therefore, in the unlikely event of a shutdown and subsequent restart of the system, noise from the LVI will not have any impact on the existing daytime or night-time ambient noise levels at N2, which effectively is the nearest noise sensitive receptor to the LVI. Noise levels at all other properties will be less than those predicted, as they are located further away from N2.

### Construction - Vibration Monitoring & Mitigation

Section 9.5.2 of the EIS (page 9-2) and Section 7.2 of Appendix H of the EIS “recommends that a structural survey be undertaken on any receptors, which may be deemed susceptible to vibration impacts, prior to construction works beginning”.

It is proposed that an independent structural survey company undertake pre-construction surveys at properties along the proposed pipeline route and haul route, which they deem may be susceptible to vibration impacts from either the proposed construction works or construction haulage.

If deemed necessary, vibration measurements can be carried out at any requisite monitoring points. This would help to ensure that if any rock breaking or piling should be required at the site, it would not give rise to nuisance in the vicinity of proposed development. If vibration-monitoring results were to indicate that levels were approaching the standard limits, the rate and force at which rock breaking and piling was being undertaken would be reduced to ensure that vibration levels were reduced to acceptable levels. Given the degree of control that can be exercised for these works, it is considered

that these works can be carried out with minimal nuisance for sensitive residential dwellings in the vicinity of the site

Similar vibration monitoring can be undertaken at any requisite monitoring points in proximity to the haulage routes to be utilised during the construction phase. If vibration-monitoring results were to indicate that levels were approaching the standard limits, further speed restrictions with lower speeds may be implemented on specific sections of the haulage route as appropriate may be undertaken as appropriate in order to eliminate potential vibration generated by traffic on the haulage routes.

On completion of construction, properties subject to preconstruction structural surveys will be subject to repeat surveys to assess if there has been any impact during the construction phase. Any damage to properties resulting from the construction will be repaired by the Developer. It is considered that the degree of control over potential vibration impacts that can be achieved by way of vibration monitoring surveys at potentially susceptible properties will ensure preventative measures are implemented if necessary to prevent damage to properties arising.

Similarly, if damage is reported during the construction phase at any property where vibration monitoring has not previously been undertaken, a structural survey and subsequent vibration monitoring will also be undertaken as appropriate.

The programme of vibration monitoring at sensitive receptors will be detailed prior to works beginning. Mitigation measures to minimise vibrations on properties susceptible to potential impact along the haul routes, will include reducing the speed limit for construction traffic along sections of road adjacent to such properties. Furthermore, as outlined in Section 9.5.2 of the EIS and Section 7.2 of Appendix H, if vibration monitoring results indicate that levels are approaching the standard limits, the rate and force activities such as rock breaking and piling can then be reduced to ensure that vibration levels are reduced to acceptable levels.

As outlined in Section 9.5.3 of the EIS the vibration monitoring programme will allow for a constant review of vibration levels generated by the construction works and will highlight the need for further mitigation measures should they be required.

The Environmental Officer appointed to supervise the construction activities from an environmental perspective will communicate results of vibration surveys and ongoing monitoring with the owners of all properties along the pipeline route and haul route.