SECTION 11: NOISE POLLUTION

11.1 OBJECTIVE
To ensure that any noise (process and use of plant) generated on the site does not cause a nuisance to the environment and neighboring areas.

11.2 REFERENCES
Environmental Protection Act 1994 – Application requirements for activities with Noise Impacts.
Lockyer Valley Regional Council DA Conditions
Code of Environmental compliance ERA 16 Crushing and Screening.
Existing Site based Management Plan.
Helidon Resources - Plan of Operations.
DEHP Noise Management Manual – August 2013
DEHP Environmental Protection (Noise) Policy 2008 – August 2012
DEHP Explanatory Notes for Environmental Protection (Noise) Policy 2008
EMP Section 3 – Process Flow Chart
EMP Section 3.1- General Description of Operations
EMP Section 4 – Aspects Procedure
EMP Section 4.1 – Aspects and Impacts register
EMP Section 8 - Communication
HR-2-003 - Aspects and Impacts Assessment Register

11.3 Environmental Values

11.3.1 Sensitive Places and Surrounding Land
The Helidon Resources Site is located approximately 40km north-east of Gatton and access to the quarry site is via a long driveway from Seventeen Mile road which is lined by natural vegetation.

An aerial photograph of the site forms part of this section and can be found in 10.3.2 of this document.

The location of the quarry (disturbed area) on Lot 2, 293 Seventeen Mile Road is in between four existing quarries. To the north, on the far side of the national park is J.H. Wagners and Sons and further north the B.R.S Quarry. Both quarries have significantly larger operations and larger equipment. To the south of the quarry along Seventeen Mile Road is Helidon Sandstone Industries (HSI) which also adjoins Lot 2 to the west. Further south there is a residence at a distance of 1760m from our quarry area (Fig1). To the northeast on the opposite side of Seventeen Mile Road is the Brooks Stone quarry (ML 50094).

HSI quarry lies in between the Helidon Resources work area and the nearest residence south on Seventeen Mile Road. HSI’s processing plant and sawing facilities are in a direct line between our quarry and this residence. The HSI operation is significantly larger than ours and with larger equipment, including crushing and screening and larger equipment numbers. The nearest residence is approximately 1760m from our work area and 810m from the HSI operation.

There is a natural vegetation barrier to the road and it is planned to leave this buffer in place (refer drawing HR-SMP-008). The Helidon Resources Extraction / Mining area (Lot 2) is surrounded by treed natural vegetation and it is also surrounded by other Sandstone Quarries on neighboring properties. A 145m non disturbance buffer zone has also been fenced and implemented to the north west boundary of lot2

As indicated on the aerial photograph, the nearest residence (sensitive receptor house) is located on the western side of Seventeen mile road and it is approximately 1.7 km from the main gate to the site. It is also important to note that there are active quarry operations, which are larger in scale, closer to this residence than that of Helidon Resources.

Adjacent to the dwelling, and much shorter in distance is also a neighboring mine / quarry with a stone processing plant comprising of static and mobile plant.
11.3.2 Aerial Photograph

As indicated from the aerial photograph in 10.3.2 the Helidon Resources Site is surrounded by dense natural vegetation and adjacent to Wrights Creek which runs through the Helidon Resources Property. This creek is usually dry and only runs when large rain events occur. It is located in a steep valley approximately 25m below the existing quarry face and 40m below the proposed mining area for dimensional stone.

While the process at Helidon Resources is styled to minimize noise, the dense natural vegetation which surrounds the site is a vital tool for excellent containment of any noise to neighboring properties. The location of the actual mine area is surrounded by this vegetation.

To decrease the transmission of noise from the quarry work, the use of the natural vegetation buffer zones encompassing the disturbed area shall be kept as natural barriers. Additionally the natural formations to the south and west of the property namely the deep gully along Wrights Creek shall further limit noise transmission.

Approved operating hours for Helidon Resources is as follows:

<table>
<thead>
<tr>
<th>Operations on Site (Approved Operating Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday to Friday 6am - 6pm</td>
</tr>
<tr>
<td>Saturday 6am - Noon</td>
</tr>
<tr>
<td>Sunday – No Operations</td>
</tr>
</tbody>
</table>

11.3.4 Wind Direction
Prevailing winds across the site are from the east in the summer months and changing to the west in the winter months.

11.3.5 Background Noise Levels
The nearby activities to the site are of the same nature, but larger in scale to those of Helidon Resources. There has never been any instance where the site has been inundated with noise from these neighboring sites as most sites are surrounded by similar natural vegetation.
The Helidon Resources activities should have less impact than these sites as its operations are much smaller in scale and this is evident by comparing the amount of plant on site that is operated by a small number of employees.

This EMP will use the nearest (and only) sensitive receptor that is approximately 1.7km from the site to evaluate background noise. This evaluation is based on column 1, schedule 1 of the Environmental Protection (Noise) Policy 2008 – August 2012.

Acoustic Quality Objective dB(A) (Measured at the Receptor) for a Dwelling is

\[
\begin{align*}
L_{A1,\text{adj,1hr}} &= 50 & L_{A10,\text{adj,1hr}} &= 55 & L_{A1,\text{adj,1hr}} &= 65
\end{align*}
\]

A background Noise Reading taken, in accordance with the DEHP Noise Measurement Manual at the dwelling’s front gate was \( L_{A1,\text{adj,1hr}} = \text{??????} \). **TO BE ADDED**

Also, as previously mentioned, adjacent to this dwelling, and much shorter in distance is also a neighboring mine / quarry with a processing plant comprising of static and mobile plant.

### 11.4 Possible Impacts to Identified Environmental Values and Control Methods

A process flow diagram of operations can be found in the section 3 of this EMP and a general description of Operations in section 3.1. Section 4 details the procedure in place for used to identify and classify the impacts on the environment and section 4.1 identifies and classifies the significance of those identified from the process and this includes noise and how it impacts the community.

The Aspects and Impacts Assessment Register HR-2-003 takes the identified items in section 4.1 and provides a risk score to each item, thus providing the site management with a clear list of priorities to focus on in order to protect the environment of the site.

It is unlikely that noise from the operations on the site shall impact the dwelling, (which is the only identifiable sensitive place) due to the distance and topography of the site where such natural vegetation is evident.

Noise pollution on the site can be summarized as;

<table>
<thead>
<tr>
<th>Noise Source</th>
<th>Control Method</th>
<th>Audibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Plant and Machinery</td>
<td>All plant to be operated within the approved Operating hours only. All plant are to be maintained to the manufacturers standards in regards to noise suppression devices such as engine mufflers etc.</td>
<td>Tonal - Continuous at a steady level.</td>
</tr>
<tr>
<td>Wheel Sawing of Rock with Excavator</td>
<td>All plant to be operated within the approved Operating hours only. All plant are to be maintained to the manufacturers standards in regards to noise suppression devices such as engine mufflers etc.</td>
<td>Tonal - Continuous at a steady level.</td>
</tr>
<tr>
<td>Wire Cutting of Rock with Power from Generator</td>
<td>All plant to be operated within the approved Operating hours only. The generator will be maintained to the manufacturer’s standards in regards to noise suppression devices such as engine mufflers etc. Wire saw is solely driven by electric motor.</td>
<td>Tonal - Continuous at a steady level.</td>
</tr>
<tr>
<td>Transportation of Product off site</td>
<td>All loading and unloading of product is undertaken within approved Operating hours only. All plant and Road Transport are to be maintained to the manufacturer’s standards in regards to noise suppression devices such as engine mufflers etc. Transport Drivers to strictly adhere to Truck Drivers Brief</td>
<td>Tonal - Continuous at a steady level.</td>
</tr>
</tbody>
</table>
It must be noted that due to the damage that they can do to the product being mined, no percussion equipment such as jack hammers / rock breakers are used on site, hence the reason no Impulsive noises have been identified.

11.5 Background Creep
The Helidon Resources site is located in the Key Resource Area (KRA) for sandstone in Queensland and is surrounded by existing operations. All neighbouring operations are in present operation and rapid growth in the area is unlikely where background creep may become a concern.

11.6 Complaints about Noise
As mentioned, noise from the site should not cause community complaints. Should any complaints be received, the reason for the complaints will be investigated and documented. If the problem is likely to occur again, investigation into modification of process or introduction of pollution control devices or other equipment will be necessary. If required, as an aid in any investigation of a noise complaint, the site management will follow the Noise Assessment Procedures as detailed in the DEHP Noise Management Manual – August 2013. Community complaints will be handled in accordance to the Communications section of this EMP.

11.7 RESPONSIBILITIES
The Site Manager and Safety / Environmental Representative will be responsible for ensuring all noise control measures are carried out and maintained on site. All employees are responsible for conducting regular housekeeping in their work area. The Site Manager is responsible for handling / responding to environmental complaints.

11.8 DOCUMENTATION
HR-3-002 – SWP - Rock Sawing with Excavator
HR-3-003 – SWP - Operation of Wiring Saw
HR-3-004 – SWP – Loading of Quarry Trucks with FE Loader
HR-2-005 – Truck Drivers Brief