APPENDIX 12

Rehabilitation Management Plan
Rehabilitation Management Plan

The Rehabilitation Management Plan is in accordance with the Development Application (Appendix 10) which will result in a final void when the quarry is complete. During the quarrying process, a maximum area of 10 hectares may be disturbed at any one time as per the Development Approval Conditions. The current disturbed area on site is approximately 6.4 ha and this will not increase for at least 4 years. The site is one of the few areas in the Helidon sandstone area that has an excellent buffer on all sides of the extraction area. This reduces the visibility of the operations from Seventeen Mile Road. This area includes the quarrying area, stockpile areas, site infrastructure and site roads.

Helidon Resources plans to reduce the amount of waste material on site. This will involve:

- Periodic crushing and screening of waste material. Oversized material is used for landscaping and all sub 150 mm material is stockpiled and used as road base or fill. As indicated in Appendix 10 there is approximately 24,000 t of stockpiled material on site, the removal of which is equivalent to the first two to three years operation.
- Removal of material for fill as required.

This waste management programme will eliminate the need to rehabilitate the waste stockpiles on site and it is predicted that, as extractive industry material production proceeds, existing stockpiles will be eliminated.

The Rehabilitation Management Plan will incorporate the key recommendations in the AARC Report (2006) in regard to management of flora and fauna, as well as key points from the DA which were not addressed in the AARC Report (2006) and Schedule 1 (Appendix 9 - DA Conditions).

The following are the key components of the Quarry Rehabilitation Plan:

- Rehabilitation must be completed in accordance with the Rehabilitation Plan and to the satisfaction of the administering authority.
- Rehabilitation of disturbed areas must take place progressively and must commence within six months of cessation of the ERA in an area.
- No further clearing of vegetation on site required, other than re-growth on existing cleared areas. No clearing around Wrights Creek.
- No further site disturbance will occur prior to the submission of this document.
- All vegetation buffer boundaries (Refer Site Drainage Plan in Appendix 11 and FIGURE A of this document) will be identified with signage.
- Use of appropriate sediment controls.
- The buffer area on the eastern boundary and the area surrounding the site access will be maintained in its current good condition. No additional trees will be cleared and locally occurring native species will be planted along the fence line and access road to improve the environmental amenity of the site.
- The vegetation community immediately outside the fenced equipment storage compound is to be left in its current state. This area is to be used as
a showpiece for environmental management as it is the first area observed when entering the site working area. Additionally, it contains a considerable amount of vegetation, topsoil and humus suitable as a source of seed for rehabilitation works. Native seeds endemic to this site are to be collected and propagated for use in revegetation.

- Buffer zones as described in Attachment A (Appendix 10) are to be maintain and improved.
- No burning of cleared vegetation is to take place.
- The ERA must be conducted so as to prevent the land becoming contaminated.
- Spillage of any chemicals including hydrocarbon liquids must be contained within the site and rectified whereby environmental harm is not caused. Storage of flammable or combustible liquids shall be in accordance with AS 1940- Storage and Handling of Flammable and Combustible Liquids.
- Topsoil must be removed and stockpiled prior to carrying out the ERA.
- Any vegetation or topsoil that has been removed should be placed inside the buffer zone adjacent to the disturbed area for future access and use.
- Where possible, site landscaping should be carried out to improve the visual amenity of the site. Areas disturbed by the ERA must be rehabilitated to a stable land form similar to that of the surrounding undisturbed areas.
- In addition to the use of plants propagated from seeds collected on site, natural regeneration will be allowed to occur on site where extraction has been completed. A visual example of natural regeneration on the site is provided in Appendix 10.
- Carry out the weed management strategy as recommended by AARC in their September 2006 report (p32).
- Excavations less than three metres deep must be backfilled with available overburden and waste rock as soon as practical following the completion of the ERA.
- Where it is impractical to return overburden and waste rock to excavations deeper than three metres, overburden and waste rock stockpiles must be in accord with condition PL2 of the rehabilitation plan.
- The water quality of any residual water bodies must comply with the water quality guidelines for livestock drinking water as stated in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000.
TABLE A addresses the key issues of the Rehabilitation Plan

**TABLE A: Key Issues – Rehabilitation Plan**

<table>
<thead>
<tr>
<th>Key Issue</th>
<th>Methodology</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staging of Rehabilitation</td>
<td>Year 1-4. No further disturbance. Improve buffer areas and existing areas of vegetation value. Year 5 on. Increase size of quarry void, clearing regrowth around existing void.</td>
<td>Clearly identify buffer areas. Assess rehabilitation performance annually. Limit quarry benches to 10 m high. Advance quarry to south and east.</td>
</tr>
<tr>
<td>Final landform design</td>
<td>Final landform will be a benched quarry. This will take 50 years plus to achieve.</td>
<td>Natural revegetation will occur on old benches.</td>
</tr>
<tr>
<td>Proposed species list</td>
<td>Refer AARC September Report.</td>
<td>Natural propagation of brown bloodwood, spotted gum, black wattle and silver wattle occurs.</td>
</tr>
<tr>
<td>Rehabilitation success criteria</td>
<td>Assess annually (photograph)</td>
<td>Natural regrowth is evident on site. (Appendix 10)</td>
</tr>
<tr>
<td>Finishing Date for Rehabilitation</td>
<td></td>
<td>Unable to provide this due to longevity of operation</td>
</tr>
<tr>
<td>Methods of planting, mulching</td>
<td>Replanting of species that regenerate in restoration areas containing pushed up vegetation. Trial native seed collection if required.</td>
<td>Plant during wet season (limited water available)</td>
</tr>
<tr>
<td>Company completing rehabilitation</td>
<td></td>
<td>Helidon Resources</td>
</tr>
</tbody>
</table>
APPENDIX 13

Stormwater Management Plan
The Stormwater Management Plan addresses the management of water flows on site. The following are the key issues regarding stormwater management on site:

- Aim is for no additional sediment from extraction should enter Wrights Creek.
- The site should be prepared for the wet season.
- If a dam overflow occurs then appropriate sediment monitoring (using Coffey Mining) should be instigated.

The catchment area for the proposed sediment dam at the western boundary of the main working area is approximately 10 ha and non disturbed areas can be bunded to allow clean water diversion. A 100 year ARI would be 100 mm falling continuously for 2 hours. The disturbed area for this dam is approximately 4 ha.

Based on the data provided in APPENDIX 10 (Section 4.4) a sedimentation dam volume of 800 m³ will be required. This dam will be approximately 40 m long x 20 m wide and 1.5 m deep with sedimentation barriers on the inlet side. The designed freeboard is 0.5 m. Appendix 11 shows the flows to this dam. An additional dam, which is formed, will be located adjacent to the access track (just north). This dam of 400 m³ capacity (approx 20 m x 20 m) will also have a freeboard of 0.5m (i.e. 1.5 m deep). All dams are designed with 50% excess capacity to account for residual water and excessive overflows due to stormwater events. Due to the flat nature of the quarry floor, flow velocities are not expected to be high (less than 5m/s) and this will reduce the turbidity in the dams. Where possible, runoff from undisturbed areas will be directed away from the sedimentation dams. The plan for stormwater management is shown in APPENDIX 11. TABLE A shows the key issues in relation to the Stormwater Management Plan.

**TABLE A: Key Issues – Stormwater Management Plan**

<table>
<thead>
<tr>
<th>Key Issue</th>
<th>Methodology</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build up of sediments, deterioration of bunds</td>
<td>Before each wet season (Nov – March), carry out a site clean up</td>
<td>Use site machinery and possibly a grader. Check and rehabilitate erosion areas. Re-establish sedimentation barriers.</td>
</tr>
<tr>
<td>Sedimentation Dams fill up during wet season</td>
<td>Check dam levels during wet season. Coffey assess storage capacity.</td>
<td>If dam likely to overflow, create diversion. Clean out dam. Sediment to be used for rehabilitation (blend with mulch). Grade roads during wet season to reduce mud build up on tyres.</td>
</tr>
</tbody>
</table>

Note: Due to the drought, HR have been unable to get background water quality data for wrights Creek. There is a small natural spring east of the current workings.
APPENDIX 14

Bushfire Management Plan.
Helidon Resources Bushfire Management Plan

The main source of potential bushfires is to the State Forest to the north of the site. The current firebreak will be maintained along the fence-line to the north to ensure that a small fire does not spread to the State Forest. All firebreaks were cleaned in March 2009 using a bulldozer. A secondary follow up took place in January 2010.

The Queensland Parks and Wildlife Service (QPWS) in Toowoomba (Tel 0746350918; 07 46994334) are developing a Fire Management Strategy for the Helidon area. This strategy will apply to National Parks and Forestry Reserves and will be a guide to freehold landholders. The following are of particular importance in regards to the fire management strategy on the proposed extraction area:

- Fire breaks are currently maintained on all sides of the property. These include (refer AARC Report, Figure 5, reproduced as Figure 1 in this plan):
  - Seventeen Mile Road on the eastern property boundary – cleared area approximately 10m wide.
  - The firebreak to the north adjacent to the State Forest.
  - The east-west access track which runs to the north of the proposed extraction area.
  - The east-west track at the southern boundary of the property.
  - The power line easement running from the south west to the northeast of the property
  - 145m buffer fence line.
- The “drop off” to the west of the cleared extraction area acts as a natural barrier to fires coming from the west.
- Discussions with the QPWS have indicated that burning off should be carried out within certain parts of the site (within the site “mosaics” which are established within boundaries).
- There is a limited amount of understorey varying from grasses and wattles in the cleared areas to eucalyptus wattles and casuarinas in the north.
- The prevailing wind directions which are:
  - From the east (varying from south east to north easy) in summer.
  - From the west during winter months.

The Site Manager is responsible for keeping the firebreaks clear and to ensure access is maintained at all times. This is achieved by:

- Annual clearing of all firebreaks and access roads.
- Weekly checking of fallen trees across firebreaks and removal of these trees.
- Checking of firebreaks immediately after high wind events.
The following procedures relate to the risk of bushfires and fire management.

- Site Manager to monitor surrounding fires and wind direction during the High Fire Danger Periods.
- Contact to be made with the QPWS and surrounding quarry site during High Fire Danger periods.
- All employees to ensure that equipment is not producing sparks through the exhaust system.
- All employees to ensure that cigarettes are extinguished properly.
- All mobile machinery to have on-board fire extinguishers and all personnel trained in the use thereof.
- In the event that an uncontrolled fire occurs, the Site Manager should contact the QPWS and Emergency Services (000).
- Should the Emergency Fire Crew arrive on site, the Site Manager will liaise with them to organise the evacuation of equipment and personnel. The Site Manager will also supply a plan showing available water sources.
- The Evacuation Point for site employees is the cleared area at the main gate.
- It is recommended that the bushfire risk be assessed at the end of October each year and appropriate action taken.
APPENDIX 15

Weed Management Plan.
Helidon Resources Quarry Weed Management Plan

The spread of weed to and from the site will be controlled using an active weed management approach and in accordance with the Project Vegetation Management Plan (PVMP) – Refer to Attachment A. Guidelines will be set so that vehicles/plants that come into contact with contaminated soil will be washed down in the designated wash down bay. Any listed noxious weeds identified on site will be actively eradicated in an ongoing site rehabilitation program.

The weed management strategy and management of native flora, proposed by AARC (p31,32) should be followed. This includes,

- Monitoring in the form of annual observations by site personnel for weeds of management concern (groundsel etc.);
- Eradication of weeds of concern in accordance with the Pest Fact Sheets issued by the Department of Natural Resources (DNR);
- Promotion of weed management and identification in site induction, and

- A minimum 145 m no disturbance buffer along the border of the State Forest to the north.
- Native vegetation removal outside the current cleared area should only be conducted only after:
  - Approval is given for the clearing
  - The areas to be cleared have been clearly delineated and identified to equipment operators and supervisors.
- Appropriate erosion and sediment controls are recommended to prevent sediment deposition in Wrights Creek.
- Disturbed areas to be kept to a minimum.
- Firebreaks to be maintained.
Attachment A

Property Vegetation Management Plan (PVMP)

The following plan had been developed in accordance with the Vegetation Management Act 1999 and the Regional Management Code for Ongoing Clearing Purposes in the South East Queensland Region 2004. The recommendations in the AARC Report (September 2006) Sections 8-10 are used as the basis for the PVMP. It should be noted that the area to be extracted contains minimal native vegetation.

The recommendations are:

- Every effort should be made to keep proposed disturbance areas to a minimum.
- Retain a minimum 145m buffer from the State Forest.
- Appropriate enclosure barriers (three strand wire fence) should be established around the State Forest buffer.
- A vegetation buffer will be maintained on all sides of the extraction. The boundaries of this buffer are:
  - The existing vegetation to the east including the vegetation around the site access road.
  - The 220m contour (approx) to the west
  - The proposed fenced State Forest buffer.
- Appropriate erosion and sediment controls are recommended to prevent sediment deposition in the Wrights Creek area.
- Maintain retained areas of native vegetation, where possible, as a seed source for rehabilitation. In particular, the small stand of trees to the east of the fenced compound should be maintained and vegetation pushed up to this area when re-clearing the site.
- Avoid the creation of shallow water areas.
- Removal of native animals during vegetation clearing (existing cleared areas).
- Introduce a Weed Management Plan.
- Introduce a pest animal strategy.

With regard to the bushfire environment refer to the Bushfire Management Plan.

It is recommended that the bushfire risk be assessed at the end of October each year and appropriate action taken.

Location and Extent of Area Proposed for Clearing:
The site is located approximately 80 km west of Brisbane and coordinates are 27°29'55" South and 152° 10' East. The extent of the cleared area is shown in the SBMP (Plan 1) The clearing is for extraction, infrastructure, road access and storing product.

Performance Requirements:
The details of the proposed clearing meets the performance requirements (PR) set out by the DME's Regional Vegetation Management Code for Ongoing Clearing Purposes in The South East Queensland Region 2004.

Part A –
PR A.1, A.2, A.3, A.4, A.6
Clearing will not occur in any area (identifiable on the Regional EcoSystem map) that is essential habitat for a species of wildlife listed as vulnerable, rare near threatened or endangered under the Nature Conservation Act 1992. This includes the northern section of Lot 2.

The area designated for extraction, crushing and storage and the haul road is located on the map in a ‘Remnant-Not of Concern’ vegetation area which indicates that no wildlife species under threat would be significantly affected.

PR A.5

Clearing will not occur in any area (identifiable on the Regional EcoSystem map) that is essential habitat for a species of wildlife listed as vulnerable, rare, near threatened or endangered under the Nature Conservation Act 1992. As shown on the map, ‘Remnant Not of Concern’ Regional EcoSystems exist within the property which indicates that no wildlife species under threat would be significantly affected.

"Essential Habitat" Regional EcoSystems also exist within the property however no clearing will be conducted in or near this area.

Part X –
Acceptable solutions to the performance requirements have been offered in the code for Part X. These solutions have been compared to details relating to the site and proposed activities. No significant disparities were found, meaning all of the Performance Requirements have been met.

PR X.1a
No natural wetlands, lakes or springs are located within or near the site.

PR X.1b
There are no purpose built wetlands and/or lakes on site.