

WORKS APPROVAL APPLICATION / ENVIRONMENTAL MANAGEMENT PLAN

Quartzite Quarry Lot 325 Daddow Road, Warralakin

PREPARED FOR
Q Stone Pty Ltd

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PROVIDED UNDER SEPARATE COVER:

- LEASE AGREEMENT
- ASIC EXTRACT

1 Introduction

1.1 Background

This Environmental Management Plan (EMP) outlines the environmental management practices for a proposed quartzite crushing and screening operation at Lot 325, 483 Daddow Road Warralakin. The aim is to minimise potential environmental impacts associated with quarrying and ensure compliance with relevant legislation and environmental standards. This report supports an application or a Works Approval and subsequent registration for this use.

The purpose of this Environmental Management Plan (EMP) is to document the appropriate procedures to be implemented by Q Stone Pty Ltd for its quartzite extraction operation at Lot 325, 483 Daddow Road Warralakin. The EMP incorporates separate chapters detailing appropriate procedures on:

- Site background
- Operations
- Dust and Air Quality
- Noise
- Refuelling
- Waste
- Complaints monitoring.

1.3 Property Details

The site is located on Lot 325, 483 Daddow Road, Warralakin, in the Shire of Westonia, approximately 110 km northeast of Southern Cross.

The Lot is 461ha in area and bounded by Daddow Road to the South and Warralakin Road to the West.

Table 2 - Property Details

Lot Details	Lot 325, 483 Daddow Road, Warralakin
Area	461 hectares
Land Use	305 ha cleared (cropping/pasture), 156 ha vegetated
Ownership	Apache Investments Australia Pty Ltd
Local Government	Shire of Westonia

1.4 Prescribed Premises Category

The operation falls under Category 70: *Crushing and Screening* under *Schedule 1* of the Environmental Protection Regulations 1987.

Table 3 - Prescribed Premises

Category	Description	Capacity
70	Crushing and Screening	50,000 tonnes per annum (>5,000 but <50,000 tpa)

1.5 Other approvals

The applicant has approval of the landowner to undertake this activity.

In addition, the Shire of Westonia has issued Development Approval for the entire operation (including the crushing and screening component subject to this approval).

A copy of this approval is attached at Appendix A.

A separate Clearing Permit will be applied for associated activities (outside of the proposed Works Approval/Registration area).



PROPOSED CRUSHING AND SCREENING FACILITY

Figure 1 - Proposed Site Facility

2 Site conditions

2.1 Climate

The south-west region of Western Australia is characterised by a Mediterranean climate, with warm to hot, dry summers and cool, wet winters. Climate data for the project area has been sourced from the Bureau of Meteorology's Climate Data Online service.

The closest weather station, located at Bencubbin, records an average annual rainfall of 313.0 mm, with the majority of precipitation occurring between May and August. January is typically the hottest month, with an average maximum temperature of 34.6°C, while July and August are the coldest, with mean minimum temperatures around 6.0°C.

Prevailing wind patterns in the region generally originate from the east during summer and shift to westerly directions during the winter months. The prevailing winds throughout the majority of the year are predominantly from the east in summer months and from the west in winter (Bureau of Meteorology, 2022).

The wind speed and directions for Summer and Winter months for 9am and 3pm are provided below.

The wind speed and directions for Summer and Winter months for 9am and 3pm are provided below.

Wind speed and direction rose

Product ID code: IDCJCM0021

Location: SOUTHERN CROSS

Latitude: 31.23°S

Period: 9am Summer

Download: [PDF | Wind Frequency Data](#)

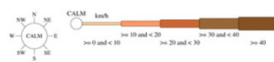
Longitude: 119.33°E

Start year: 1957

Site Number: 012074

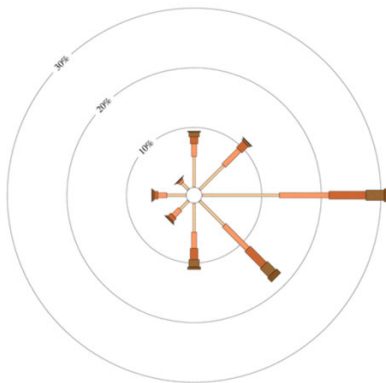
Elevation: 355 metres (above sea level)

End year: 2007



9 am Summer
4457 Total Observations

Calm 7%



Wind speed and direction rose

Product ID code: IDCJCM0021

Location: SOUTHERN CROSS

Latitude: 31.23°S

Period: 3pm Summer

Download: [PDF | Wind Frequency Data](#)

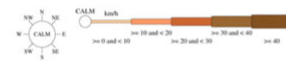
Longitude: 119.33°E

Start year: 1957

Site Number: 012074

Elevation: 355 metres (above sea level)

End year: 2007



3 pm Summer
4432 Total Observations

Calm 10%

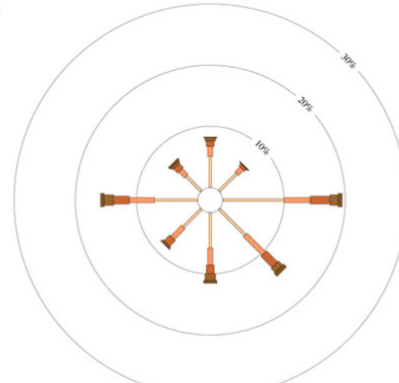


Figure 2- Summer Wind Speeds (9am and 3pm)

Wind speed and direction rose

Product ID code: IDCJCM0021

Location: SOUTHERN CROSS

Latitude: 31.23°S

Period: 9am Winter

Download: [PDF](#) | [Wind Frequency Data](#)

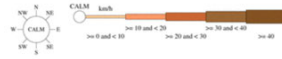
Longitude: 119.33°E

Start year: 1957

Site Number: 012074

Elevation: 355 metres (above sea level)

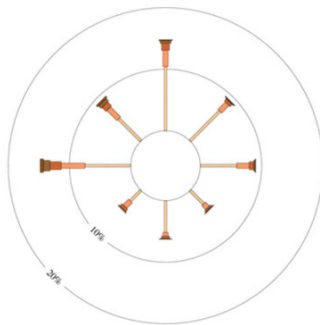
End year: 2007



9 am Winter
4638 Total Observations

Calm 28%

Wind Roses for selected location - 012074 Winter 9am



Wind speed and direction rose

Product ID code: IDCJCM0021

Location: SOUTHERN CROSS

Latitude: 31.23°S

Period: 3pm Winter

Download: [PDF](#) | [Wind Frequency Data](#)

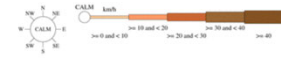
Longitude: 119.33°E

Start year: 1957

Site Number: 012074

Elevation: 355 metres (above sea level)

End year: 2007



3 pm Winter
4555 Total Observations

Calm 11%

Wind Roses for selected location - 012074 Winter 3pm

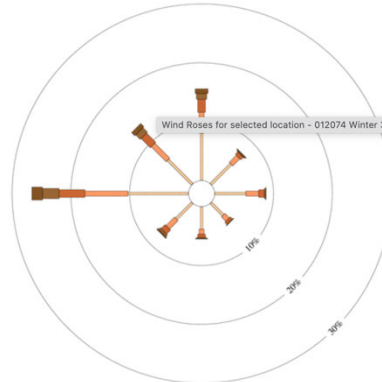


Figure 3 - Winter Wind Speeds (9am and 3pm)

2.2 Topography and Landform

Lot 325, Warralakin is situated within a low-relief agricultural landscape typical of the eastern Wheatbelt region. The site is generally flat to gently undulating, with gradual variations in elevation across the lot.

Topographic mapping indicates that elevations across Lot 325 and the surrounding area range approximately between 240 m and 270 m AHD, with no steep slopes or prominent landform features present. Surface drainage is poorly defined and typically occurs as diffuse sheet flow during and following rainfall events, consistent with the low-gradient terrain.

The generally flat topography reduces the risk of significant erosion; however, the combination of gentle relief, sandy surface soils and seasonal rainfall has been considered in the design and implementation of erosion and sediment control measures for the site.

The following figure shows the topography of the property and surrounds.



PROPOSED CRUSHING AND SCREENING FACILITY - TOPOGRAPHY

Figure 4 - Topography of the property and surrounds

2.3 *Geology and Soils*

Geology

Lot 325, Warralakin is located within the eastern Wheatbelt region of Western Australia, which is underlain by ancient, weathered geological formations typical of the Yilgarn Craton. The geology of the area generally comprises weathered regolith over crystalline basement rocks, with bedrock not exposed at the surface.

Soils

Soils within Lot 325 are characteristic of the eastern Wheatbelt and have been extensively modified through historical agricultural land use. Soils across the cleared portions of the property are generally sandy loams to loamy sands, commonly underlain by gravelly or lateritic subsoils, with clay horizons present at depth in some areas.

No detailed soil landscape unit mapping has been undertaken for the site. However, soils are considered typical of the surrounding cleared farmland.

2.4 *Vegetation*

Lot 325 comprises a combination of cleared agricultural land and areas of retained native vegetation. Approximately 305 hectares of the property has been cleared for pasture and cropping, while the remaining approximately 150 hectares retains native vegetation.

The proposed crushing and screening facility will be located within the south-eastern corner of Lot 325, within an area that has been previously cleared and is currently used for agricultural purposes. The development footprint will avoid vegetated areas where practicable, and no clearing of native vegetation is proposed as part of the current development scope.

2.5 *Hydrology*

Lot 325, Warralakin is located within the Avon River System Proclaimed Surface Water Area. While the property contributes to the broader Avon River catchment, no part of the Avon River or its major tributaries occurs within or adjacent to the site.

2.6 *Heritage*

There are no known Aboriginal or European heritage sites on or near the proposed use.

2.7 *Separation Distances*

The site is relatively isolated from nearby dwellings. The nearest dwelling is located on the same lot, approximately 1.8km from the excavation area. The nearest dwelling on a neighbouring lot is 3.2km away at 536 Warralakin Road. A nominal separation distance of 500-1,000m is recommended by the Environmental Protection Authority Guidance Statement No.3 – Separation Distances between Industrial and Sensitive Land Uses.

The quarry and processing will be situated in an ideal location well away from surrounding dwellings. It will also be located suitably to allow for the normal farming operations on the property to continue. This has been shown in **Figure 5** for a visual comparison on distance from site operations.



Figure 5 - Separation Distances

3 Site Plant and Equipment

Quarry operations will utilise a combination of fixed and mobile plant to support extraction, processing, washing and loading of material. All plant and equipment will be operated and maintained in accordance with manufacturer specifications, relevant Australian Standards, and site-specific management plans contained within this Environmental Management Plan (EMP).

3.1 Processing Plant

The processing plant will be used to crush and screen quarried material to produce saleable aggregates. The processing plant comprises the following equipment:

- Primary Crusher – Metso Lokotrack LT106 mobile jaw crusher
- Scalper – Terex Finlay 883 double-deck scalping screen
- Secondary Crusher – Metso Lokotrack LT220GP mobile cone crusher
- Sizing Screen – Powerscreen H6 203R triple-deck screen
- Associated conveyors as required.

The processing plant will be positioned within the designated operational area of the quarry and operated in a manner that minimises dust generation, noise emissions and vibration, with controls implemented through the Dust, Noise and Refuelling Management Plans.

3.2 Mobile Plant

The mobile plant will be used for extraction, loading, haulage and drilling activities within the quarry. The mobile plant fleet includes:

Excavators

- Sumitomo 37-tonne excavator
- Case 35-tonne excavator

Front End Loaders

- Two Komatsu WA480 front end loaders

Haul Trucks

- Two Komatsu HM400 articulated dump trucks

Drill Rig


- Atlas Copco FL9 drill rig.

All mobile plant will be subject to daily pre-start inspections to identify potential mechanical issues, including hydrocarbon leaks. Refuelling, maintenance and repairs will be undertaken in accordance with the Refuelling Management Plan and relevant Standard Operating Procedures.

3.3 Aggregate Washing Plant

An aggregate washing circuit will be used to remove fines and produce washed material. The washing plant includes the following components:

- **Coarse Material Washer** – M&Q Equipment coarse material washer

- 
- **Dewatering Screen** – Honnert single-deck dewatering screen
 - **Stacker Conveyor** – for stockpiling washed aggregates
 - **Water Storage Pits** – four (4) wedge-shaped pits, each with a capacity of approximately 60 kL.

Water used in the washing process will be managed as part of a closed-loop system where practicable, with wash water retained within the wedge pits for reuse. The pits will be managed to prevent uncontrolled discharge, erosion or off-site sedimentation.

3.4 Equipment Management

All plant and equipment will be:

- Operated by trained and competent personnel
- Maintained in accordance with manufacturer requirements
- Inspected regularly for mechanical integrity and environmental risks
- Shut down or removed from service if defects present a safety or environmental risk.

4 Risk assessment

4.1 Risk assessment methodology

The risk assessment methodology is based on the Department of Water and Environmental Regulation's Guidance Statement: Risk Assessments (2017). Environmental and amenity factors considered are based on EPA environmental factors and objectives as listed in Statement of Environmental Principles, Factors, Objectives and Aims of EIA (EPA, 2021).

Risk ratings are determined by considering both the likelihood and consequence of potential environmental and amenity impacts. The risk matrix criteria are set out in Table 4.1, with likelihood and consequence criteria defined in Table 5.2.

Table 4 - Risk Matrix

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost Certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

The following criteria has been used to determine the likelihood and consequence of the risk occurring.

Table 5 -Likelihood and consequence

Likelihood		Consequence	
Almost Certain	The risk event is expected to occur in most circumstances.	Severe	On-site impacts: catastrophic (significant impact to the environment) Off-site impacts local scale: high level or above Off-site impacts wider scale: mid-level or above Mid to long term or permanent impact to an area of high conservation value or special significance ^A Significant long-term damage/loss of ecosystem function and loss of individuals of species locally
Likely	The risk event will probably occur in most circumstances.	Major	On-site impacts: high level (moderate impact to the environment) Off-site impacts local scale: mid-level Off-site impacts wider scale: low level Short term impact to an area of high conservation value or special significance ^A Moderate damage to ecosystem function and major loss of individuals of species locally.
Possible	The risk event could occur at some time.	Moderate	On-site impacts: mid-level (Minor adverse effect to the environment) Off-site impacts local scale: low level Off-site impacts wider scale: minimal Moderate loss of individuals of species locally.
Unlikely	The risk event will probably not occur in most circumstances.	Minor	Off-site impacts local scale: minimal Off-site impacts wider scale: not detectable Minor number of individuals of species may be affected locally.
Rare	The risk event may only occur in exceptional circumstances.	Slight	On-site impact: minimal (No discernible adverse impact).

Source: DWER, 2017

^A Determination of areas of high conservation value or special significance should be informed by the Guidance Statement: Environmental Siting.

*onsite' means within the Lot boundary.

4.2 Operational Risk Assessment

The risk assessment for the operation is summarised in Table 4.3 below. It identifies environmental and amenity features, assesses the inherent risk if unmanaged, and determines the residual risk after avoidance, mitigation and management measures are applied.

Table 6 presents the risk assessment in two parts:

- Inherent risk (first part) - assumes no management, avoidance or mitigation measures are in place
- Residual risk (second part) - considers the operation managed in accordance with applicable management actions and approvals

The assessment demonstrates that all identified risks can be effectively managed. No environmental or amenity factor presents an inherent risk greater than "medium". With appropriate management measures in place, all residual risks are reduced to "low".

Where residual risks remain, these are managed through specific environmental management actions detailed in this report.

Table 6 -- Risk Assessment

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	Risk		L	C	Risk
Native vegetation may be significantly impacted by the development. The "unmanaged risk" entails no avoidance or mitigation of impact to native vegetation (i.e. it is not clearly defined, mapped and assessed).	N/A			The crushing and screening component of this project will not impact native vegetation.	N/A		
Threatened Ecological Communities may be impacted if present on the site.	Rare	Moderate	Low	There are no registered TECs located on the proposed extraction site.	NA	NA	NA
Threatened and Priority flora species may be impacted if present on the site.	Rare	Minor	Low	There are no threatened or priority flora species located on the site.	NA	NA	NA

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	Risk		L	C	Risk
Declared Weeds/Weeds of National Significance may be introduced to the site.	Possible	Moderate	Med	<p>The site has been previously cleared and does not contain remnant native vegetation.</p> <p>As a result, the risk of introducing or spreading Declared Weeds or Weeds of National Significance is considered low. No standalone Weed Management Plan is required. Standard site management practices will be implemented, including maintaining clean plant and equipment and routine visual inspections during operations.</p>	Unlikely	Moderate	Low
Dieback may be introduced and impact on native vegetation.	Possible	Moderate	Med	<p>The likelihood that the operation will contribute to further spread of dieback is considered to be “unlikely” as a number of management procedures are already in place. The consequence is considered to be “minor” as the on-site impacts are low-level, there is no remnant native vegetation on the site, and offsite local impacts are expected to be minimal.</p>	Rare	Minor	Low
Fragmentation to vegetation and ecological linkages.	Rare	Minor	Low	<p>The crushing and screening activities will be undertaken within an existing disturbed and previously cleared area. No native vegetation will be removed and no new access tracks or infrastructure are required. As a result, the proposal will not result in vegetation fragmentation or disruption to ecological linkages.</p>	Rare	Slight	Low

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	Risk		L	C	Risk
Native fauna (individuals and communities) can potentially be significantly impacted through clearing of habitat, introduction of weeds and disease and activities on site.	Unlikely	Minor	Low	The proposal does not involve clearing of native vegetation or disturbance to remnant habitat. Activities will be confined to an existing disturbed footprint, and therefore the risk of direct or indirect impacts to native fauna individuals or communities is considered low.	Unlikely	Minor	Low
Native fauna (individuals and communities) can potentially be significantly impacted through clearing of habitat, introduction of weeds and disease and activities on site.	N/A			Crushing and screening operations will occur within a previously cleared area with no suitable habitat for native fauna. Consequently, impacts to native fauna are not expected.	N/A		
Impact to hydrological regimes such as groundwater level changes, flooding, modification of watercourses etc.	Unlikely	Minor	Low	The likelihood of significant impact is "rare" as there are no watercourses or drainage lines. The project will not intersect groundwater.	Rare	Minor	Low
Intersection with the groundwater table (confined aquifer) which could potentially lead to dewatering requirements and contamination.	Unlikely	Minor	Low	The project will not intersect groundwater.	Rare	Minor	Low
Impact to surface water quality due to erosion and transport of sediment. Sedimentation can result in higher turbidity levels and suspended solids.	Possible	Moderate	Med	The likelihood of impact with management is "rare" and the consequence of impact is considered to be "minor" as the on-site impacts are low-level and offsite local impacts are minimal. The site will be banded as explained later in this report.	Rare	Minor	Low

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	Risk		L	C	Risk
Impact to surface water and groundwater from hydrocarbons (fuel and oil) and chemicals as a result of spills and leaks from equipment and machinery used.	Unlikely	Minor	Med	<p>The site will operate in accordance with its Standard Operating Procedure for management and maintenance of machinery and training of staff. Refer to the Refuelling Management Actions in this report which address the management of hydrocarbon spills and leaks.</p> <p>The likelihood of impact with management is "rare" and the consequence of impact is considered to be "minor" as the on-site impacts are low-level and offsite local impacts are minimal.</p>	Rare	Minor	Low
Pathogens from staff amenities posing a risk to water quality and public health.	Unlikely	Minor	Med	<p>The toilet block will be connected to a septic system in accordance with Shire requirements. This will be maintained as required.</p> <p>Rubbish is collected daily and transported to the local landfill for disposal.</p> <p>The likelihood of impact with management is "rare" and the consequence of impact is considered to be "minor" as the on-site impacts are low-level and offsite local impacts are minimal.</p>	Rare	Minor	Low
Soils subject to significant water and wind erosion.	Possible	Minor	Med	<p>Wind erosion can be managed through the Dust Management Actions.</p> <p>The likelihood of impact is "rare" and the consequence of impact is considered to be "minor" as the on-site impacts are low-level and offsite local impacts are minimal.</p>	Rare	Minor	Low

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	Risk		L	C	Risk
Risk of acid sulphate soils forming.	N/A			State government mapping does not show the site as located in an acid sulphate soils risk area. It is unlikely that they would occur within this soil profile. In addition, the proposed development will not involve excavation to any significant depth.	N/A		
Impact to Aboriginal Heritage Sites.	Unlikely	Minor	Low	There are no registered or known Aboriginal heritage sites within the site. The proposal is confined to previously disturbed areas and the likelihood of impact is considered rare. The provisions of the Aboriginal Heritage Act 1972 guide any inadvertent discovery of a site.	Rare	Minor	Low
Impact to sites of European heritage.	N/A			No registered European heritage sites are located on or surrounding the site.	N/A		
Noise levels exceed the assigned noise levels as prescribed by the Noise Regulations to noise sensitive premises.	Unlikely	Minor	Med	<p>Refer to the management provided in the Noise Management chapter. The nearest non-associated sensitive premises are located approximately 3.2 km from the site, with intervening bushland and a substantial hill acting as physical barriers. These natural features significantly reduce the likelihood of noise transmission and off-site impacts.</p> <p>The likelihood of significant impact with noise management in place is "rare", as events exceeding prescribed levels would only occur in exceptional circumstances. The consequence of impact is considered "slight", given that both on-site and off-site impacts are minimal due to the distance and existing physical barriers.</p>	Rare	Minor	Low

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	Risk		L	C	Risk
Dust emissions leave the property boundary and have off-site impact on sensitive premises.	Unlikely	Minor	Med	<p>Refer to the management measures outlined in the Dust Management Actions. The nearest sensitive premises are situated approximately 3.2 kilometres from the site, with substantial bushland and a prominent hill providing effective physical barriers between the site and these premises. These natural features significantly reduce the potential for dust to travel off-site.</p> <p>With the proposed dust management actions in place, the likelihood of a significant dust impact is considered "rare", as such events would only be expected under exceptional circumstances. The consequence of any impact is assessed as "slight", given that both on-site and off-site effects are minimal due to the considerable distance and the presence of intervening bushland and topographical barriers.</p>	Rare	Minor	Low
Separation distances are not adequate enough to reduce impact on sensitive land uses.	N/A			<p>Separation distances to sensitive land uses are greater than the recommended distance of 500-1000 metres as recommended by EPA Guidance Statement No. 3. The closest sensitive residence sits outside of the prescribed 500m buffer.</p>	N/A		
Impact of truck use on local and regional roads and traffic.	Unlikely	Minor	Med	The likelihood of impact to local roads is considered to be "rare" as the road contributions will be made by the operator and the consequence of impact is "minor" as any impact is likely to be low-level.	Rare	Minor	Low

Potential Impact Without Management	Inherent Risk			Managed Risk Assessment	Residual Risk		
	L	C	Risk		L	C	Risk
Impact of the operation on visual amenity and that the pit area can be seen from the public realm.	Unlikely	Minor	Med	<p>The quarry has been designed to utilise existing landforms, with extraction activities located around and below the natural hill profile. This design provides effective visual screening from surrounding public viewpoints.</p> <p>The likelihood of adverse visual amenity impacts is considered to be rare, with the consequence of any residual impact assessed as minor. The overall risk is therefore considered low and acceptable.</p>	Rare	Minor	Low

5 Dust and Air Quality Management Plan

5.1 Purpose and Scope

The purpose of this Dust Management Plan is to outline the strategies and procedures that will be implemented to prevent, monitor, and mitigate dust emissions associated with the adjoining extraction activities. Implementation of this management plan ensures the protection of human health, amenity, and the environment while maintaining compliance with relevant Western Australian environmental legislation, including the Environmental Protection Act 1986, and Guidelines for Managing Dust (Department of Water and Environmental Regulation, 2019).

This plan supports the overall environmental management framework of the operation and will be reviewed and updated as necessary throughout the life of the project. It is noted that the nearest non-associated sensitive receptor (residence) is 3.2 km from the site. Therefore, the focus of dust suppression will be on-site impacts and transport.

5.2 Dust Suppression

Dust suppression is generally achieved using a 'dust suppression agent', most commonly water. The application of water over areas prone to generation of dust helps to reduce the likelihood that small particles will be picked up by the wind. Dust suppression will be achieved through the regular application of water to haul roads, working areas, and during drilling or crushing, particularly in dry, windy conditions.

Chemical dust suppressants (such as Dustex) can be used on unsealed tracks that are planned to be unused for extended periods if required.

5.3 Monitoring Weather Conditions

The Quarry Manager will review the predicted weather conditions from the Bureau of Meteorology (BOM) on the day before the excavation and carting is scheduled to take place.

However, dust levels will additionally be visually monitored during active work periods, with further control measures applied during high-risk times (e.g., strong winds or extreme heat).

By combining operational design with proactive dust control, the site can maintain compliance with the Environmental Protection Act 1986 (WA) and associated Guidelines for Managing Dust (DWER 2019).

5.4 Management Actions

The risk assessment (Chapter 4) identifies the Inherent Risk as "Medium". After application of the management actions below, the Managed Risk will be "Low".

Table 6 - Dust management / Actions

Management/Action	Responsibility	Timing
1. QM to review the Bureau of Meteorology forecast regarding wind and temperature at the pre-start team meeting and discuss the likely weather impacts (and to decide whether the conditions mean that operations should not commence for the day or should be monitored for worsening conditions). QM's use the latest weather technology apps to review weather conditions, particularly wind.	QM	Ongoing
2. During periods of extreme weather, quarry operations will be suspended until conditions improve and compliance with environmental requirements can be maintained. All personnel are authorised to cease works immediately if visible dust emissions are observed, particularly where adverse or deteriorating wind conditions occur.	QM & Team	Ongoing
3. Maintain all equipment in good condition.	QM	Ongoing
4. Keep vehicle speed limits low throughout the quarry and on the haul road.	QM & Team	Ongoing
5. Crushing and screening operations will be undertaken with consideration of surrounding land uses, with natural barriers including existing hills and bushland providing effective visual and dust screening. The nearest non-associated sensitive receptor is located approximately 3.2 kilometres from the site, significantly reducing the potential for off-site impacts.	QM	Ongoing
6. Ensure that all site operators are trained to observe whether dust is leaving the property boundary or if adverse weather conditions are present.	QM	Ongoing
7. Ensure that all site operators are trained in procedures should dust be observed leaving the boundary or if there are adverse weather conditions such as when to stop operations or when to increase dust management measures (such as wetting down areas etc.)	QM	Ongoing
8. Should dust visibly cross the site boundary at any time, dust suppression measures shall be increased immediately and if works are taking place they shall be modified accordingly. Should dust continue to be generated all works shall cease immediately and the site shall be sufficiently stabilised by application of water until the wind conditions are appropriate to resume works.	QM	Ongoing
9. Quarry Manager to inspect the site on excavation and carting days to review dust management.	QM	Ongoing

Management/Action	Responsibility	Timing
10. Cover truck loads with a tarp before exiting the site.	QM	Ongoing
11. QM to inspect the site on excavation and carting days to review dust management.	QM	Ongoing
12. Chemical dust suppressants (such as Dustex) can be used on unsealed areas if they are planned to be unused for extended periods	QM	Ongoing
13. The team have authority to stop work if they see visible dust issues, especially if wind conditions deteriorate	QM	Ongoing
14. Limit stockpile disturbance by only loading from one face.	QM	Ongoing
15. Monitor prevailing wind speeds and direction during crushing and screening activities.	QM	Ongoing
16. Regular inspections of the stockpiling area to ensure dust management is adhered to.	QM	Ongoing
17. Watercarts will be utilised during dry weather conditions to wet down areas to prevent dust generation.	QM	Ongoing
18. Crushing and screening of material to be wet down at all times during operation of the plant.	QM	Ongoing
19. Shrouding encapsulation hoods for plant.	QM	Ongoing
20. All operators monitored for silica dust exposure – monitors to be worn 3-4 times per year.	QM	Ongoing

Note: QM = Quarry Manager

6 Noise Management Plan

6.1 Purpose and Management measures

The purpose of this MP is to minimise the impact of noise emissions on nearby sensitive receptors, mitigation measures will be implemented (as seen in Table 8.1). All site equipment will be fitted with appropriate mufflers and acoustic shielding where possible, and regular maintenance will be conducted to ensure machinery operates within noise design parameters.

The nearest non-associated residential receptor is located approximately 3.2km from the project area. Given this separation distance, and the intermittent and short-duration nature of blasting activities, blasting-related noise and vibration are not expected to result in adverse impacts at residential receptors. Blasting will be managed in accordance with relevant regulatory requirements and industry best practice as discussed in section 5.

Operational hours for high-noise activities will be adjusted to reflect the 2:1 roster system. High-noise activities, including crushing, screening, and other high-impact operations, may occur from 6:00am to 6:00pm on any day of the week, including weekends and public holidays, while personnel are rostered on site. Prior notification will still be provided to affected stakeholders when high-noise work is planned for weekends or public holidays.

Mobile plant and equipment will be positioned to take advantage of natural shielding, such as topography or stockpiles, and high-noise equipment will be used sequentially rather than concurrently wherever feasible. During adverse weather conditions (particularly strong winds blowing toward sensitive receptors) noisy activities may be rescheduled to minimise impact.

All site personnel will be trained in noise minimisation techniques, including avoiding unnecessary engine idling and operating machinery with care to reduce peak sound levels.

6.2 Legislative and Regulatory Framework

Noise emissions from the extraction site will be managed in compliance with the Environmental Protection Act 1986 (WA) and the Environmental Protection (Noise) Regulations 1997 (WA). These regulations establish assigned noise levels for sensitive premises and outline methods for measurement and assessment.

This plan is also informed by the EPA Guidance Statement No. 3 – Separation Distances Between Industrial and Sensitive Land Uses (2005) and Noise Management: Environmental Guidelines for Mining and Extractive Industries published by the Department of Water and Environmental Regulation (DWER).

6.3 Management Actions

It is to be noted that the nearest non-associated sensitive receptor (residence) is 3.2km from the site.

The risk assessment (Chapter 4) identifies the Inherent Risk as “Medium”. After application of the management actions below, the Managed Risk will be “Low”.

Table 7 - Noise Management / Actions

Management/Action	Responsibility	Timing
1. Adhering to the “daylight hours” as set out in the Regulations, with work conducted in the hours identified in the application or on the approval.	QM & Team	Ongoing
2. All machinery and vehicles being fitted with appropriate noise suppression equipment to reduce noise levels so far as is practicable, with machines the quietest reasonably available.	QM	Ongoing
3. Maintain equipment inspections and appropriate maintenance.	QM	Ongoing
4. External maintenance contractors will attend site and undertake regular maintenance as required, usually at request of the Quarry Manager.	QM & Team	Ongoing
5. Undertake training programmes on noise control requirements to all workers and contractors, including any new methods as proposed by this plan.	QM	Ongoing
6. All noise and vibration related complaints immediately reported to the Quarry Manager.	QM	Ongoing
7. Following substantiated complaints, the source of any excessive noise or vibration will be identified and work practices will be modified or re-scheduled to reduce or eliminate the risk of future events.	QM	Ongoing

Note: QM = Quarry Manager

7 Refuelling Management Plan

7.1 Purpose and Management Measures

This Refuelling Management Plan (RMP) outlines the procedures to be implemented for the safe handling and storage of fuels on site. The objective of the RMP is to minimise the risk of fuel spills, fire, and potential environmental harm associated with refuelling activities. The site operations involve the use of heavy mobile plant and equipment requiring routine refuelling.

The site will include one self-bunded fuel dispenser tank (double skinned) with a capacity of approximately 20,000 litres. All fuel storage and dispensing infrastructure will be installed and operated in accordance with relevant Australian Standards and regulatory requirements.

- The dispenser tank will be fitted with secure locking systems incorporating tagging and pin-controlled access to restrict fuel dispensing to authorised personnel only.
- When the site is unattended or not operational, all fuel systems will be securely locked and isolated to prevent unauthorised access or misuse.
- Refuelling activities will be undertaken within designated refuelling areas or via mobile fuel trailer, as dictated by operational requirements.
- Prior to refuelling, operators will inspect plant, equipment, and refuelling hoses for signs of damage, leaks, or excessive wear. Fuel nozzles will be fitted with automatic shut-off mechanisms to prevent overfilling.
- Records of fuel volumes dispensed will be recorded.
- Spill response equipment, including spill kits, fire extinguishers, and appropriate personal protective equipment (PPE), will be readily available at all refuelling locations.
- Suitable signage will be installed, and all equipment will be inspected and maintained at regular intervals to ensure ongoing effectiveness.

7.2 Legislation and Regulatory Framework

Refuelling activities must comply with the following legislation and environmental guidelines:

- Environmental Protection Act 1986
- Contaminated Sites Act 2003
- Dangerous Goods Safety Act 2004
- Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007
- Work Health and Safety Act 2020
- Guidelines for the Storage and Handling of Dangerous Goods
- Australian Standard AS 1940: The Storage and Handling of Flammable and Combustible Liquids

These regulations require adequate spill prevention, storage compliance, and emergency preparedness when handling fuels and other hazardous substances on site.

7.3 Management Actions

Refuelling of plant and equipment will be undertaken on site with fuel being stored in self-bunded tanks or mobile fuel trailers that are compliant with AS 1940. Storage containers will be located away from traffic areas and ignition sources and regularly inspected for leaks or damage.

All fuel tanks will be labelled in accordance with dangerous goods regulations. In addition, secondary containment systems (bunds or double-walled tanks) will be used to contain any spills or leaks. Access to fuel storage will be limited to authorised personnel only.

Refuelling activities will be undertaken in accordance with the site-specific Standard Operating Procedure (SOP) – Refuelling Mobile Equipment (SOP-QUA-WA-HME-PRC03), which details step-by-step controls, competency requirements, PPE, emergency response actions and verification of training. The SOP supports and implements the Refuelling Management Plan.

The management actions are identified in table below.

Table 8 - Refuelling Management / Actions

Management/Action	Responsibility	Timing
<i>General</i>		
1. Inspect all machinery for hydrocarbon leaks in all pre-starts.	QM	Ongoing
2. Refuelling and lubricating to be completed in designated areas or following mobile refuelling procedures..	QM	Ongoing
3. Spill kits and Spill procedures to be provided on the site.	QM	Ongoing
4. Train fuel truck driver and other site workers in Standard Operating Procedures, in the proper use of the spill kits and any other procedures from this Refuelling Management Plan.	QM	Ongoing
<i>When a spill is identified</i>		
5. Isolate the spill area and identify the spilt substance.	All staff	As soon as a spill or leak is identified.
6. Ensure the source of the spill is restricted or stopped.	All staff	As soon as a spill or leak is identified.
7. Appropriate remediation of the spill to be completed.	All staff	As soon as a spill or leak is identified.
8. Contact the QM to advise them of the spill for appropriate reporting.	All staff	Once the spill is contained and cleaned up.
9. Ensure restocking of any used items from the Spill kits.	All staff	Once the spill is contained and cleaned up.
<i>Minor spills</i>		
10. Minor spills should be scooped up with the resource.	QM	In the event of a spill
11. The resource containing the spill should be placed in a bunded area and disposed of at an appropriate location (Bio-remediation pads)/ facility.	QM	In the event of a spill
<i>Major Spills</i>		

Management/Action	Responsibility	Timing
12. Large spills can be absorbed using polypropylene pads and scooped up with the resource.	QM	In the event of a spill
13. Appropriate remediation to be taken place (case by case).	QM	In the event of a spill
14. Depending on advice from DWER, soils containing large spills can be removed from the site and disposed of at an appropriate location/facility.	QM	In the event of a spill
<i>Reporting</i>		
15. All spills and leaks incidents are to be reported to the Quarry Manager and followed up with an Incident Form.	QM	In the event of a spill or leak.
16. The Incident Form is to be followed up and investigated to determine the cause of the spill and to assist with prevention of future incidents.	QM	In the event of a spill or leak.
17. The Quarry Manager is to report large spills to DWER and follow up any additional reporting or remediation requirements.	QM	In the event of a spill or leak.

8 Waste Management Plan

8.1 Purpose and Management Measures

The purpose of this Management Plan is to ensure that the generation of all wastes during day-to-day operations adopts the principles of the waste hierarchy: reduction, reuse, recycling, treatment and disposal.

This Waste Management Plan (WMP) provides a structured approach to managing all waste generated from the quartzite extraction activities at Lot 325, Warralakin. The plan outlines procedures for the proper handling, segregation, storage, transport, and disposal of waste to minimise environmental impacts and ensure compliance with relevant Western Australian legislation. Effective waste management on-site supports sustainable operations, protects surrounding land and water quality, and helps maintain community confidence.

The quartzite extraction operation will not generate any industrial or hazardous waste. The only residual materials remaining on-site will include subgrade rock, overburden of weathered rock, and topsoil (natural products with no pollution potential). These materials will be managed responsibly within the extraction footprint and may be used for progressive rehabilitation or backfilling during site closure stages.

There is no anticipated need for industrial waste storage or removal, significantly reducing environmental risk over the site's 15-year lifespan.

8.2 Unauthorised Disposal

All staff and contractors will be briefed on the correct procedures for waste segregation and disposal as part of site inductions and ongoing training. Illegal dumping or mishandling of waste will result in corrective action or disciplinary measures.

Only licensed contractors will be used for transporting and disposing of controlled and hazardous (if any) wastes. Waste will not be buried, burned, or disposed of on-site unless specifically permitted by regulatory authorities.

All waste transporters and receiving facilities must be licensed under the Controlled Waste Regulations, and waste tracking documentation will be maintained for all waste movements off-site. This ensures traceability and regulatory compliance.

8.3 Management Actions

Wherever practicable, waste generation will be minimised through appropriate procurement practices and efficient site operations. Reusable and intact materials, such as wooden pallets and containers, will be recovered for reuse where feasible. Recyclable materials, including metals and cardboard, will be segregated and transported to appropriately licensed recycling facilities.

Designated waste storage areas will be established on site for the segregation and temporary storage of different waste streams. These areas will be clearly signposted and, where required, provided with bunding or secondary containment to prevent environmental releases.

The on-site septic tank system will be routinely inspected and managed to prevent leaks, failures, or overflow. Records of all inspections, maintenance activities, and pump-out events will be retained.

Waste oils:

- will be stored in sealed containers on bunded pallets to provide secondary containment and prevent leaks or spills. The drums will be transported to Perth so that any oil inside can be recycled as needed.

Contamination:

- to manage site runoff, bunding will be installed around the perimeter of the site fencing to a height of approximately 1 to 1.5 metres. This bunding will prevent surface water from transporting contaminants off site.

The generation of waste from the operation is expected to be minimal and easily managed. These actions, responsibilities and timing is present in Table 10.1 below:

Table 9 - Waste Management / Actions

Management/Action	Responsibility	Timing
1. Keep the site tidy and remove rubbish from the quarry to an approved waste disposal facility as required.	QM	Ongoing
2. Recycle waste where possible	All staff	Ongoing
3. The site will be secured with fences and gates to reduce the potential for trespassers to enter the site for illegal dumping mitigation.	QM	Ongoing
4. Maintain public signage for awareness of the extractive industry site.	QM	Ongoing
5. Maintain fences throughout the site perimeter.	QM	Ongoing
6. Ensure any ablution facilities are maintained in accordance with the manufacturer's instructions.	QM	Ongoing
7. Inspect and maintain septic tank system and arrange regular pump-outs.	QM	Ongoing



9 Complaints Procedure

9.1 *Purpose and Scope*

This procedure ensures that concerns raised by stakeholders (including nearby Farmers/residents, road users, and the broader community) are managed respectfully, transparently, and effectively.

However, with the nearest sensitive receptors being located approximately 3km away, the risk of major amenity impacts is low

9.2 *Complaints register*

A Complaints Register will be established for the site and managed by the Quarry Manager. All complaints will be documented, promptly addressed, and a record of their resolution will be recorded in the register.



APPENDIX A

Correspondence from Shire of Westonia



Shire of Westonia

“Where Old is Gold”

19 December 2025

[REDACTED]
PO Box 289,
MOUNT LAWLEY WA 6929.

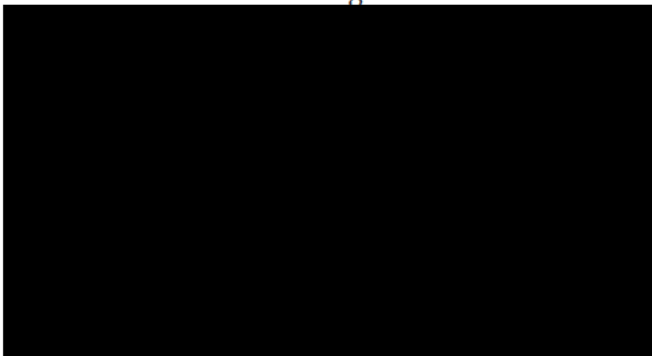
[REDACTED]
Quartz Extraction – 483 (Lot 325) Daddow Road, Warralakin

Thankyou for your presentation and application to Council seeking planning approval for a proposed Quartz Extraction Pit located at 483 (Lot 325) Daddow Road, Warralakin, which was discussed at a meeting of Council held on Thursday 18th December 2025.

I am pleased to advise that Council have resolved to approve the Development Application for the proposed Quartz Extraction Quarry Project by Q Stone PTY LTD located at Lot 325 Daddow Road, Warralakin, subject to the following conditions

- Relevant approvals as per regulation are obtained.
- Negotiation with Council on contribution to upgrade and maintenance of road access (Daddow Road)
- Truck movements be restricted on Warralakin Road during school bus times 7.30am – 8.30am and 3.30pm – 4.00pm.

We hope you find this satisfactory and if you have any further enquiries, please do not hesitate to contact the undersigned





APPENDIX B

Typical Plant Equipment



Typical Mobile Site Arrangement (photo of existing operation at nearby location)



Ablution facilities



20,000 litre fuel storage- double skinned with electronic security and despatch metering.