

Attendance Register

Event: <u>CONSULTATION MEETING WITH STEC PROPERTY RESIDENTS</u>	
Venue: <u>STEC DEPOT</u>	Date: <u>15/03/2018</u>
	Time: <u>4.00 PM</u>
Intro/Chair: <u>PATEA LOU MALO SETEFANO</u>	Organiser: <u>DOWNER.</u>
Presenter(s): <u>JEFF OLDMAN, JASLYN</u>	
Name: <u>MARINER - LEOTA</u>	Contact:
<p><i>[Handwritten signatures and notes in the Name column:]</i></p> <p>Leota Pate FAMIE Togisala. OLIVE 7783375 7247501.</p>	

Downer Review of Issue and Response

Consultation: STEC Houses Residents

Response Date: 15/03/2018

#	Issue/Concern	Downer Response
1.	Is the haul road being tar-sealed?	Downer will improve the existing road condition by clearing vegetation from the side of the road, widening the existing carriageway, upgrading drainage where required and strengthening the pavement with imported aggregate. This will greatly improve the road condition and therefore Downer does not intend to seal the road.
2.	How will Downer make sure that truck drivers keep to the speed limits?	Downer has entered into a formal contract with our cartage subcontractor which includes a requirement to comply with Downer's safety measure. Driving behaviors will be monitored throughout the course of the project and if measures are breached, individual drivers will be disciplined which may result in removal from the project.
3	On dry days how will the dust generated from the trucks be controlled?	Downer will have a water truck applying water to the haul road as required to depress dust generated by truck movements.
4	Will there be any job opportunities on the project for locals?	Downer will be looking to employ local resources to undertake the works at Faleolo Airport which is scheduled to start in June.
5	What is the duration of the work?	Physical works are due to start at the quarry around mid-April (after Easter) and the entire project is expected to take 18 months. The quarry works and cartage of aggregates will only take 6 months.
		Additional Note: If you have a complaint or grievance arising from the project the Grievance Redress Mechanism (GRM) can be accessed by phone, e-mail or post. Refer to information sheet in the handout notes for more detail.

Downer Review of Issue and Response

Consultation: [Mulifanua Community](#)

Response Date: [17/03/2018](#)

#	Issue/Concern	Downer Response
1.	The Olo bore is a key source of water for the Mulifanua community, how will Downer make sure that the water source isn't compromised?	<p>Downer and the Samoan Water Authority (SWA) have agreed on several mitigation measures to greatly reduce the risk of damage to the Olo Bore site from quarry operations.</p> <p>Measures will include;</p> <ul style="list-style-type: none"> - Maintaining a safe distance from the bore site to Quarry blasting operations (400m). - Limiting the extent of the drilling depth and using modern emulsion explosive techniques which reduce vibration and fly rock. - A condition assessment survey using an underwater camera prior to commencement and on completion of the operation to determine if any damage has occurred. Downer has a responsibility to remediate any damage caused by the quarry activity.. - The SWA will undertake weekly testing of the bore site and if any change in water quality is observed work will be stopped until the cause of the change is determined. <p>The SWA has given Downer their support and approval to undertake these works.</p>
2.	STEC advised the community that these works will be going ahead and we are to stay clear, however there are some plantations in the area and how will we maintain access?	The Olo quarry site is a relatively small area of the STEC property and from our previous works on site is located some distance from the nearest plantation. Downer will have security on site 24 hours a day to monitor access to the site. No unauthorized persons will be given entry.
3	Can the advanced warning siren time be extended from 5 minutes to 10 minutes before blasting?	Downer will extend the advanced warning siren time to 10 minutes before blasting.
4	When and where will signs be installed to control traffic?	Downer has a diagram sheet of all the signage that will be installed along the haul route for your information (copy supplied at meeting for viewing) and all signage will be installed prior to starting cartage operations from the quarry.
5	What is engine braking and why will it be banned?	Some trucks have engine braking capabilities to assist with braking typically on steep hills. This function creates a lot of noise and given the flat terrain and nearby to some residential house engine braking is unnecessary.
6	How long will the project take?	Physical works are due to start at the quarry around mid-April (after Easter) and the entire project is expected to take 18 months. The quarry works and cartage of aggregates will only take 6 months.

7	Will you be undertaking blasting operations on Public Holidays such as religious holidays like Easter?	<p>The intention is to carry out blasting work every second day at approximately the same time (early afternoon). Downer will provide a notice of the blasting schedule for the upcoming week to the SAA so it can be displayed in the community.</p> <p>Downer will not carry out any blasting work on Public Holidays or Sundays. The Olo Quarry works are to start after Easter.</p>
8	We understand that there is a lot of material and truck movements planned along the haul road in STEC land. If the haul road deteriorates will Downer use the public road as an alternative route?	No. It is Downer's responsibility to maintain the haul road for the duration of the project.
9	Is there a chance that people could be injured by flying rock from the blasting?	Downer will employ a modern blasting technique using emulsion rather than the packaged explosives that were using by the previous contractor in 1999/2000. This technique creates significantly less vibration and fly-rock. All fly rock will be contained within the quarry site so there is no risk to the public.
10	Can Downer use a car service to drive around the village to warn people?	<p>As part of the blasting process, the person responsible for detonating the explosive shall undertake an inspection of the site to satisfy themselves that the area is clear and it is safe to detonate the explosive.</p> <p>Downer will use a 4WD vehicle fitted with signs, lights and sirens to undertake the inspection.</p>
11	Where is your office located and do you have any jobs available?	<p>Downer are currently in the process of establishing an office on Airport land, which will be accessed by Airport Gate 4 from the Main Rd.</p> <p>Downer will be employing people from New Zealand to manage the project and undertake specialized activities such as quarry and asphalt work, however they intend to employ local subcontractors and labour for other activities.</p> <p>Once the office is established, applications can be lodged at the site office.</p>
12	Will there be any surplus material at the quarry that we can purchase?	All surplus material that is leftover at the Quarry will become the property of STEC. Downer will not be selling any materials from Olo Quarry.

13	Will the vibrations from the blasting damage the houses close to the quarry?	<p>Downer are using a very conservation blasting technique to ensure that vibrations from blasting operations do not disturb the rock beneath the quarry floor. The extent of the impact from blasting has been calculated to be less than a 20m radius. All vibrations are expected to be contained with the quarry.</p> <p>Downer are happy to undertake a pre-condition survey of any houses that are close to the quarry for the purpose of determining if any damage has occurred as a result of blasting activities.</p> <p>Pre-condition surveys will be arranged by Downer as requested & use a suitably experienced local company.</p>
		<p>Additional Note: If you have a compliant or grievance arising from the project the Grievance Redress Mechanism (GRM) can be accessed by phone, e-mail or post. Refer to information sheet in the handout notes for more detail.</p>

Event: <u>COMMUNITY CONSULTATION - Faleolo Int'l Airport</u>	
Venue: <u>Faleolo Catholic Hall</u>	Date: <u>17/03/2018</u>
	Time: <u>10:00 AM</u>
Intro/Chair: <u>RUSITA TAALOGA - KOLIA / Moli Lata</u>	Organiser: <u>Downer</u>
Presenter(s): <u>JEFF OLDMAN, Anna ARLINGTON</u>	
Name:	Contact:
1 Maniyatu Kafe Mafua	7729168
2 Lenuwai Tofu	9274713
3 Pouti Atuwana	Pouti Atuwana
4 Tanti Fashi	
5 Tafa.1	
6 Lavo	
7 Muteete	
8 Fafafetai Nautiti	
9 Oli Oliva	Oli 7734824
10 Tojia Tulani	Tojia 7580444
11 Mafua	Mafua 174635
12 Mataiva M	Mataiva 7733084
13 Pouti Tufu	7797839
14	
15 Mafataga	7272108
16 Falute Tafia	775516
17 Sulu Sulu	7204991
18 Sulu Sulu	
19 Tona Tona	7261979
20 Sulu Sulu	7613622
21 Sulu Sulu	
22 Sulu Sulu	

Event: _____	
Venue: _____	Date: _____
Intro/Chair: _____	Time: _____
Presenter(s): _____	Organiser: _____
Name:	Contact:
23 Kenu Kone	[Signature]
24 Vete Taula	[Signature]
25 Lavila Tafa	[Signature]
26 Vava Togie	[Signature]
27 Petoai Iese	[Signature]
28 Tutasi. Tavita.	[Signature]
29 Tamou Samu	[Signature]
30 Hsa	[Signature]
31 Fiohi	[Signature]
32 Selualagi, Ther.	[Signature]
33 Yaimaula. Sopa.	[Signature]
34 Lomafon. Laga	[Signature]
35 Peppelua	[Signature]
36 Mau	[Signature]
37 Faatosika	[Signature]
38 Maiva	[Signature]
39 Imelela Mau.	[Signature]
40 Tery Mau.	[Signature]
41 Tika Mau	[Signature]
42 Medelina. Lakeria	[Signature]
43 Iholo FAITZ JAHNKE	[Signature]
44 Jane O'Connor	[Signature]
45 Meleini Josefe.	[Signature]



Attendance Register

Event: _____	
Venue: _____	Date: _____
	Time: _____
Intro/Chair: _____	Organiser: _____
Presenter(s): _____	
Name:	Contact:
46 Makereta Tulea	Makereta
47 Epenesh Finau-Jahnke	EJ
48 Takaleonuaie Pritchard	JP Pritchard
49. Per. Jahnke	Per. Jahnke

Extra cost - \$200 (venue hired)

Downer Proposal: Reason & Scope: Why reopen Olo Quarry?

Faleolo International Airport is a vital part of Samoa's infrastructure. However the runway has deteriorated since 2000 when it was last resurfaced, with some parts now rated "poor" to "very poor" it needs work. We estimate the Faleolo Airport Project needs 98,000 tonnes of aggregate.

The closer we can find a good quality aggregate source to the airport the lesser will be the impact of transporting the aggregate. Less damage to roads, less disturbance to communities.

We think there are some very positive points for using Olo Quarry;

- *Much closer to the airport than other quarries*
- *Only 200m travel on W C Road*
- *Ample quantity of good quality rock*
- *Has access route that avoids settlements*
- *Used for airport work previously*
- *Less damage to public roads*

However there are some negative points as well. SAA have had concerns that blasting at Olo could damage the nearby Olo bore or contaminate the aquifer. Also people who use or live along the quarry access route between Olo and Faleolo could be affected.

Our proposal to use Olo may affect people/communities in unexpected ways and we would now appreciate feedback on what we propose. If work at Olo is not properly managed possible impacts from the quarry could be;

- *Blasting*
- *Worker & Public Safety*
- *Access Route Traffic*
- *Noise*
- *Environmental Damage*
- *Site left in poor condition at end of work*
- *Dust*
- *Accidental Spills*

Downer's Planned Mitigation Measures for Quarry Operations

We plan to apply the same operating procedures as we would for a similar quarry in NZ, as well as meet the Samoa Code of Environmental Practice #8 for quarries. This means;

- *High standards of operation & safety*
- *Well qualified staff*
- *Precise blasting*
- *Modern well maintained plant and machinery*
- *Good worker facilities*
- *Control of noise & dust*
- *Downer will rehabilitate the site to STEC requirements when we finish work.*
- *Good environmental practices*

We understand blasting may be a particular concern and propose the following;

- Use liquid emulsion ammonia nitrate not "old style" dynamite or gelignite. This is a very safe material and is not explosive until mixed with a sensitizing agent in the drill hole.
- We will also limit blast size so that the vibration is low. This reduces the distance at which blast can be felt to a hundred metres or so and heard to a kilometre or so (depending on wind direction/atmospheric conditions).
- Sound a warning siren 5 mins and another 30 secs before blasting
- Give an all clear signal after blast has safely detonated
- Hold a procedures and warnings practice in lead up to first blast
- Close access road at safe point
- Blast every second day at a regular time in afternoon (and never on Sundays)
- Give 24 hrs notice of blasting

Do you think these measures will be effective? Are there other things to consider?

2) SWA Olo Bore

After discussion with SWA we have been advised they only have a concern for the bore closest to Olo quarry. To prevent damage to the bore and its aquifer Downer propose to do the following;

Before Work Starts

- Inspect the bore with submersible camera – this will let tell us the state of the bore
- Obtain water quality records – as baseline for future testing
- Limit depth of excavation at quarry – to increase distance between quarry floor (ie the lowest part of the quarry) and the aquifer and thus lessen the chance of contamination

During Work & After Work Finishes

- Limit the amount of explosive used for each blast – reduces noise and vibration
- Monitor bore water quality – compare to records before quarry work started
- Re-inspect bore with submersible camera – see whether there have been any changes
- If any water contamination or bore damage is observed cease blasting while blasting method is reviewed & modified

Do you think these measures will be effective? Are there other things to consider?

3) Access Route Traffic (See the Route and Traffic Management Layout diagrams)

This proposed quarry route is the shortest possible from any quarry to the airport and avoids settlements (although it does go past several STEC worker houses – which we recognise and have provided for in our planning). We think the access route shown on the attached plan avoids most of the problems identified for other possible quarries and other possible routes.

However this route may affect people/communities in unexpected ways and we would appreciate your feedback on our proposals.

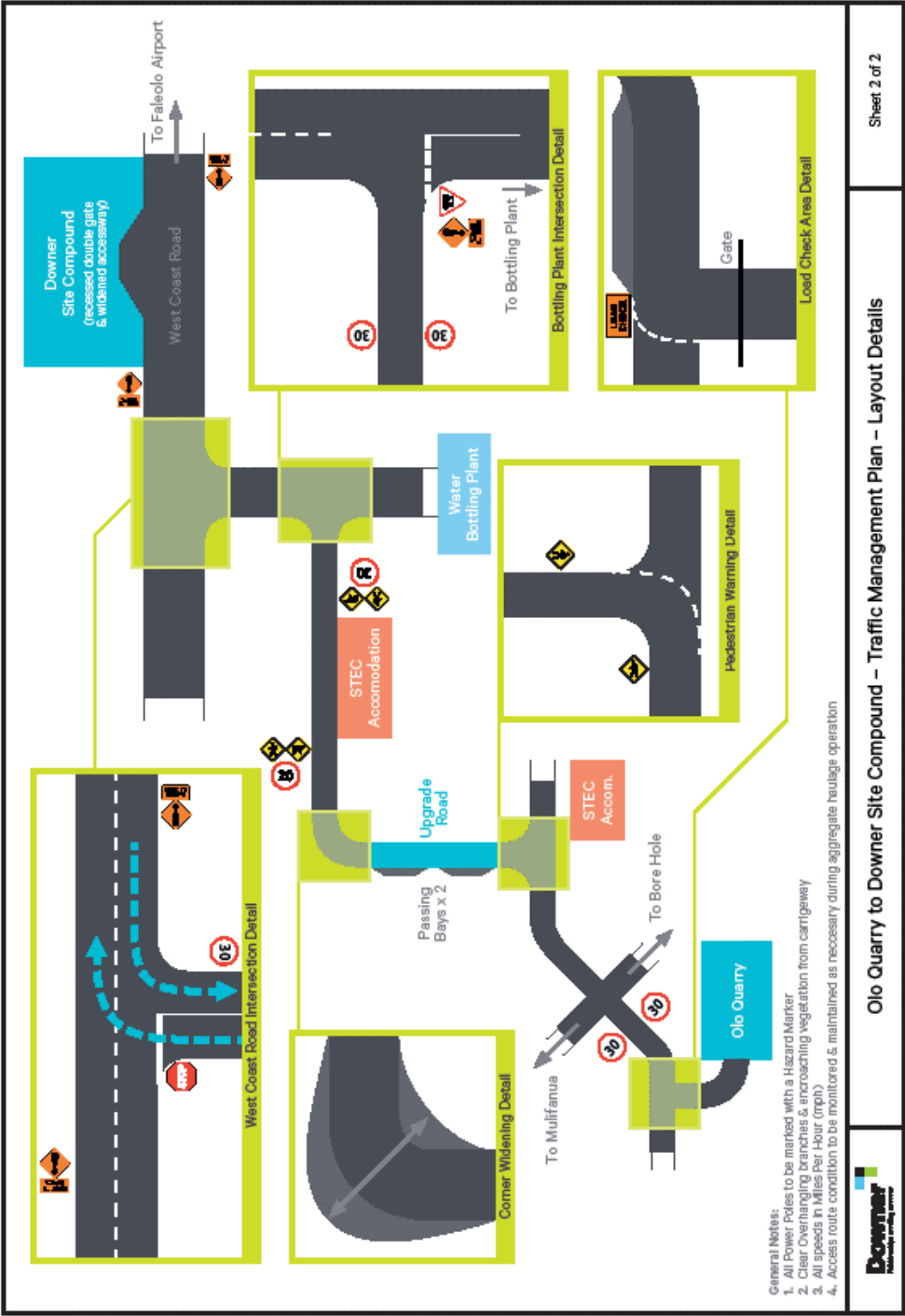
A diagram summarising our proposed access route improvements and traffic management measures is attached.

We propose the following traffic management measures to address the possible problems of a poorly chosen or poorly managed access route.

The things we propose to do include;

- | | | |
|--------------------------------|------------------------------|--------------------------------|
| • <i>Clear vegetation</i> | • <i>Install speed signs</i> | • <i>Install warning signs</i> |
| • <i>Upgrade surface</i> | • <i>Widen corners</i> | • <i>Inspect truck loads</i> |
| • <i>Improve spot drainage</i> | • <i>Limit truck speeds</i> | • <i>Ban engine breaking</i> |
| | • <i>Limit cartage hours</i> | |

Do you think these measures will be effective? Are there other things to consider?



Sheet 2 of 2

Olo Quarry to Downer Site Compound - Traffic Management Plan - Layout Details

Grievance Redress Mechanism (GRM)

The Grievance Redress Mechanism offers remedies appropriate to the scale of the grievance to anybody who considers they have a complaint or grievance arising from the Project.

The GRM is an important provision, intended to be used by anybody and easily accessible. There are multiple ways to access the GRM.

1) By telephone, e-mail or post to any one of the following:

Samoa Aviation Authority	Employers Engineer	Contractor
SAA- PST	The Engineer to the Contract	The Project Manager
C/O SAIP Project Manager	Mr Tom Yundt	Downer NZ
Faleolo International Airport	Lyon Associates Inc.	PO Box 2018
Private Mail Bag, Apia	45 North King Street, Suite 501	Matafele Chief Post Office
Contact: Rusetaneti Taaloga	Honolulu, Hawaii. 96817	Apia
24 Hrs Phone: +685 7502602	United States of America	Ph +685 7705001
Alternative Ph: +685 44330	Email:	Email: peter.murr@downer.co.nz
Email: ruseta.taaloga@saip.ws	Tom.Yundt@LYON.US.com	or craig.smart@downer.co.nz
or: moli.latu@saip.ws		

2) On-line via; <http://saip.ws/index.php/complaints/make-a-complaint>

All complaints will be acknowledged within 24 hours. All complaints are recorded and followed up. Physical work related complaints will be directed to the Contractor for action and resolution.

The SAA PST will track the complaint and report on its resolution through the online 'Grievance Redress and Complaints Logging System'

If it is impossible to resolve the complaint, or the complainant is not satisfied with the resolution, the case may be first escalated to the PUMA division of MNRE and, if still unable to be resolved, it may be referred to legal proceedings in accordance with Samoan laws and procedures.

Signage at site entrances, at the airport and at other key public locations will be displayed by the Contractor outlining the above complaints procedures and contact details.

High Level, Very Personal or Sensitive Issues

In addition to the above project level GRM, communities and individuals who believe that they are adversely affected by a WB supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns.

There may be instances where the grievance may be of a very personal or sensitive nature. In these case the above project level GRM may not be the most appropriate method of reporting and SAA PST will identify a local organisation, NGO or intermediary who would be an appropriate first point of contact

For information on how to submit complaints to the World Bank's corporate GRS, please visit <http://www.worldbank.org/GRS> . For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org .

Consultation Feedback: Comments & Concerns

Consultation:_____ **Date:**_____

Are there some Key Participants names or contact details that we should record for further contact? _____

#	Participant	Issue Raised

Downer Review of Issue and Response

Consultation:_____ **Response Date :**_____

#	Issue/Concern	Downer Response




Project:	Samoa Aviation Investment Project (SAIP) Faleolo International Airport Design & Construct, Physical Works: Pavement, Drainage & Service Infrastructure	
Contract No:	ICB: SAA/ICBW/S-A15.4	 <small>Health & Safety AS/NZS 4801</small>
Client:	Samoa Airport Authority	
World Bank:	P 143308	
Contract Plan Issue Date	Document Preparation & Control Contract Manager	Document Authorisation General Manager – Pacific
6 March 2018 Rev 6	Peter Murr	Stephen Delaney
Comment on this Issue: Reviewed throughout to reflect current policies, processes, practices and relationships to NZS 4804/ 4801 and the requirements of ACC's Workplace Safety Management Practices (Partnership Programme) to TERTIARY level. This includes Protection of Persons and Property section 5.7 of NZS 3910:2003 Conditions of Contract for Building and Engineering Construction.		
Copyright: This Contract Plan is owned by Downer New Zealand Limited ("Downer") and except as may be necessary for you to evaluate this plan you are not entitled to make copies of this plan or any part thereof without Downer's' prior written consent. This plan contains confidential information belonging to Downer and this information may not be used for any other purpose without Downer consent nor may any of that information be given to any other party."		

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1 Introduction

This Quarry Management Plan (QMP) applies to the proposed operation of the existing basalt rock quarry known as Olo Quarry (“the quarry”), which is located approximately 4.9 kilometres to the south west of the main entrance to Faleolo International Airport, Samoa.

This QMP was originally written to support the application for a Development Consent (DC) for the operation of the quarry from the Ministry of Natural Resources and Energy, Government of Samoa.

A DC has now been granted and the quarry site cleared of vegetation allowing a survey to be undertaken and a topographical plan prepared.

This revision (Rev 6) of the QMP incorporates;

- Conditions to which DC (ref DCA No. 047/18) is subject
- Requirements of Samoa’s Code of Environmental Practice or COEP 8 – Quarry Development and Operations and the Quarry Management Plan Guideline given in App G of the PSEMP.
- Quarry Layout, Site Facilities, Erosion & Sediment Control Plan and Development Plan based on the completed topographic survey

The Table in Appendix A shows how the DC conditions are incorporated in this QMP.

The Table in Appendix B shows how the requirements of COEP 8 are incorporated in this QMP.

2 Associated Plans, Ambit and Application

2.1 Associated Management Plans

This QMP is one of a series of Management Plans prepared for the Faleolo Airport Project and is a sub-plan of the Contractor’s Environmental and Social Management Plan (CESMP). A Traffic Management Plan has also been prepared to document how traffic on the quarry access roads and the aggregate haulage route to the Contractor’s Compound at Faleolo Airport will be managed.

The full suite of Management Plans is;

- Contractor’s Environmental & Social Managements Plan, with sub-plans;
 - Quarry Management Plan
 - Traffic Management Plan
 - Occupational Health & Safety Plan
 - Solid Waste Management Plan
- Quality Management Plan
- Method of Works Plan (MOWP - for all work within an operational airfield)

The location and coverage of the CESMP, QMP, TMP & MOWP is shown by the following graphic.

2.2 Ambit

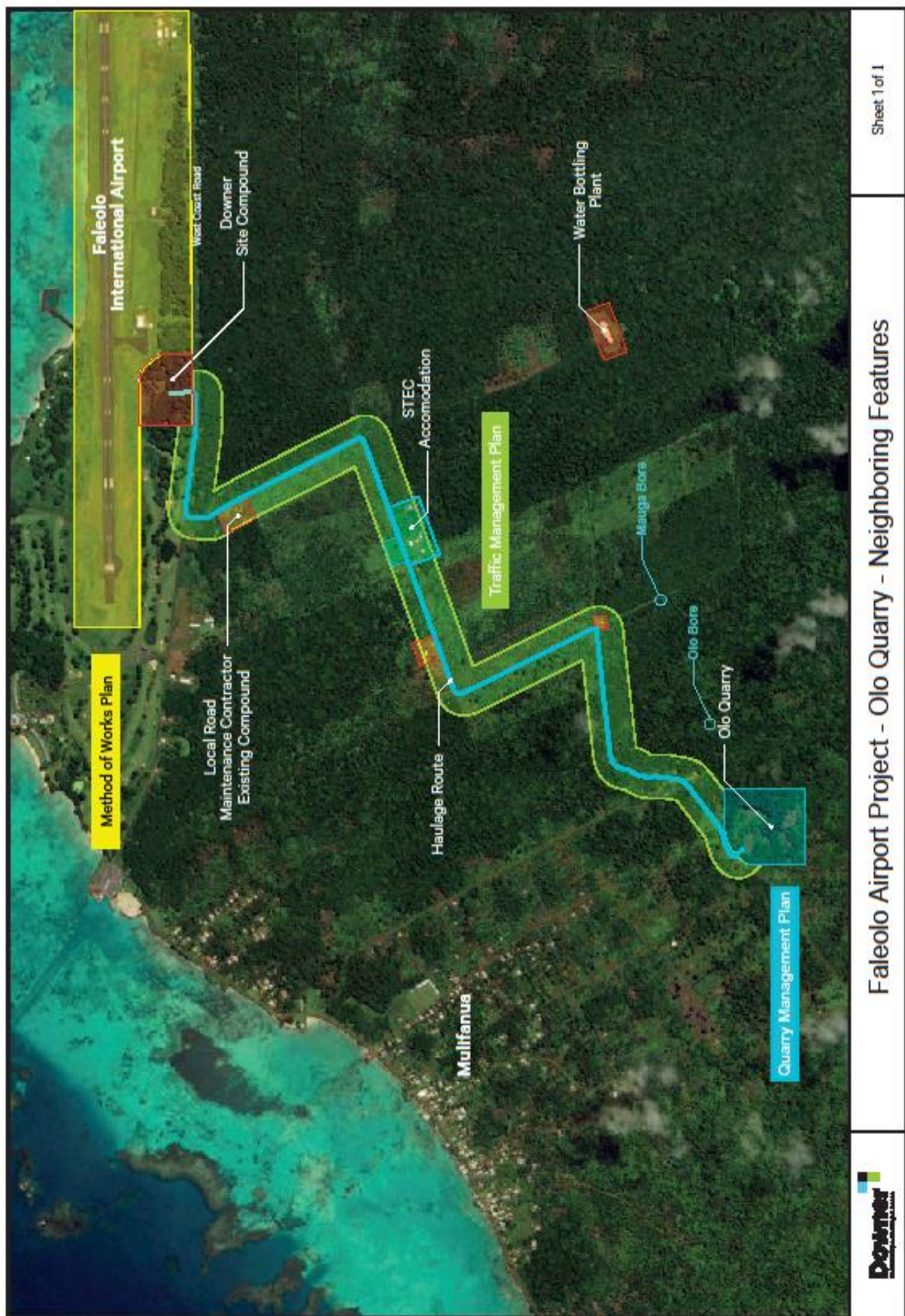
This plan establishes the principles and procedures to be followed for the operation of the quarry and to document all matters relevant to its operation.

2.3 Application

This plan applies to all persons working within or visiting the quarry and incorporates details of quarry opening activities, quarry extraction operations and quarry closing activities, including potential environmental effects and how these will be managed.

It is intended that the principles of Worksafe New Zealand’s guidance on health and safety in quarries (<http://tinyurl.com/quarry-guide>) be generally followed and the associated pocket guide (<http://tinyurl.com/quarry-pocket-guide>) be available to workers.

Olo Quarry and Environs.



Sheet 1 of 1

Faleolo Airport Project - Olo Quarry - Neighboring Features



Diagram showing the neighbouring features of Olo Quarry & access route from quarry to airport.

3 Responsibilities

3.1 Process Management

The appointed Quarry Manager, who is responsible for the proper performance, safety and general management of the quarry operation is:

Mr Brett Swain – mobile phone +64 27 435 3979

Mr Swain holds an A Grade Quarry Manager Certificate issued by Worksafe NZ. A copy is provided in App C).

In his absence, the Acting Quarry Manager will be:

Mr Bryan McConkey – mobile phone +64 27 442 1472

When extraction commences the Shot Firer will be Mr Daniel Skilton. He holds an Approved Handler Certificate issued by ICS. A copy is provided in App C).

3.2 Process Implementation

All quarry staff are responsible to ensure that this plan is maintained and correctly implemented to ensure safe and effective quarry management.

The Quarry Manager has the authority to review this procedure.

3.3 Licences / Permits

The original version of this QMP was formulated for inclusion with the application for a Development Consent (DC) for the operation of the quarry from the Ministry of Natural Resources and Energy, Government of Samoa.

This QMP has now been reviewed and amended to incorporate the conditions imposed following the issuance of the DC.

This plan has been compiled following agreement with the land owning authority for the quarry site, Samoa Trust Estates Corporation (STEC), to extract and process rock from the site for the Faleolo Airport project.

3.4 Environmental Monitoring

The Contractor is responsible for monitoring in accordance with this QMP and general compliance with the Contractors Environmental and Social Management Plan (CESMP). The Downer Safeguards Specialist, Craig Smart is responsible for the CESMP and overview of the environmental aspects of the QMP.

4 Documents Referenced in this QMP

While this QMP is intended to contain all the information required to manage Olo Quarry, it makes reference to a number of other documents. These documents are located as follows;

Documents appended to this QMP

- Olo Development Consent (ref DCA No. 047/18) – Appendix A
- Requirements for a QMP as Given by COEP 8 – Appendix B
- Significant Hazard Control Plans – Appendix H

Documents contained in the CESMP and CESMP Sub-plans

- EIA (provided as an Annexure to the CESMP)
- Code of Conduct for Gender Based Violence and Violence Against Children.
- Code of Conduct for Workers in regard to Environmental, Social, Health and Safety.
- Occupational Health and Safety Plan.
- Traffic Management Plan.
- Waste Management Plan

Separate Management Plan

- Contract Quality Management Plan.

5 Site Description

The site is inland from Faleolo International Airport in a southwest direction from the main access road to the airport terminal at a direct distance of 4,900m. At its closest point the coast is approximately 3,500m due west of the quarry.

The quarry site consists of an existing rock face that has previously been quarried. It is understood that the last major extraction of rock from this site occurred for the resurfacing of the Faleolo runway in 1999/2000. The rock face is approximately 15m high and extends for 450m in an approximate north – south direction. To the west of the face, previous quarrying has created a level quarry “floor” that appears to extend over a large area of approximately 40,000m². Low vegetation and regrowth covers most of this quarry floor area and the rock face and original ground contour on top of the face is completely covered in medium sized trees 2m to 8m in height including significant regrowth on the face.



A panorama looking east showing the tree covered rock face and low vegetation on quarry “floor” in foreground.

6 Quarry Layout

6.1 Outline

The facilities to be developed at Olo Quarry include working faces and benches, processing and stockpiling areas, a hardstand area for the storage of plant, equipment and fuel tank, and office/rest amenities for use by workers during working hours. The quarry development will overlay and extend the working area of the previous quarry operations.

Once the quarry site has been stripped of vegetation, a physical survey will be undertaken, and a topographical plan will be prepared showing the existing contours of the site. This will serve as the basis for a Site Layout Plan detailing where the various facilities and sediment controls will be located, and a Development Plan showing the planned location of faces and benches formed as extraction proceeds. Copies of all these plans will be submitted to the DC issuing authority for approval prior to quarry extraction activities commencing.

6.2 Access

Currently the quarry site can be accessed via a series of roads commencing on the south side of the Main Coast Road near the west end of the Faleolo runway and heading south then west in a number of short stretches of access road.

Alternatively, the site can be accessed more directly from the Main Coast Road just south of the Mulifanea Wharf. However, this later route is not preferred as it traverses a coastal community and requires quarry traffic to negotiate the wharf intersection which can be busy during the arrival and departure of interisland shipping.

The slightly longer but preferred route commencing opposite the west end of the runway will be cleared and widened to improve visibility. The pavement will be strengthened where required and corners widened to allow quarry trucks hauling the processed rock products to the airport to safely pass each other. Traffic signs will be erected in accordance with the Traffic Management Plan on the Main Coast Road to warn traffic approaching from either direction of heavy vehicles exiting/entering the roadway.

Vehicle and personnel access to the quarry floor and stockpile area will be controlled by physical barriers and security personnel. Vegetation and spoil produced during the initial clearing and

development of the site will be windrowed along the boundary of the processing and stockpiling area to provide a physical barrier. A locked chain will be strung across the quarry entrance to prevent unauthorised vehicular access during out of work hours.

6.3 Infrastructure

No permanent infrastructure will be constructed on the site; however, the following temporary facilities will be erected and remain for the operational life of the quarry:

- Demountable site office & workers facilities,
- Storage containers (for minor equipment, spare parts, oil and lubricants),
- Self-bunded bulk fuel storage tank,
- Water storage tank for domestic use,
- Securely locked magazines for explosive detonators and boosters,
- Suitably located and screened temporary toilet with storage tank to be regularly emptied and disposed of in approved waste water facility,
- Materials stockpiles (for each of the products produced at the quarry),
- Plant, equipment, parking and storage area including generator,
- Tally hut and security guard shelter.

6.4 Fuel & Oil Storage

Bulk fuel, oils and lubricants will be stored in selected areas on site, with a spill kit situated near by. The bulk fuel storage tank is a double skinned or self-bunded tank to prevent accidental puncturing and leakage to ground water. No hydrocarbons to be discharged to ground ie waste oil collected and stored in drums, no spent oil/fuel filters discarded on ground, care taken to avoid spills when refuelling.

6.5 Explosives

Explosives will be required in the quarrying process and ammonium nitrate emulsion which is rated as an oxidising agent (UN rating 5.1) will be employed.

Packaged explosives (UN rating 5.1D) will not be used.

“Emulsion” is a liquid form of ammonium nitrate dissolved in water and is not an explosive until mixed with sensitising chemicals. These chemicals are added/mixed during pumping the emulsion into the drilled blast area. Once in ground, the chemicals react and the emulsion is sensitised to become an explosive, which can be initiated with detonators and boosters.

Non-electric detonators called Nonels and booster (150 grams) will be used to initiate the blast. All explosives will be provided by the New Zealand Company, “Prime Explosives”.

The booster and detonators will be stored in separate, secure magazines located in an appropriate area of the quarry to be shown on the Site Layout Plan. There are no storage or safety issues with emulsion.

6.6 Waste Management & Disposal

Any waste from the site will be stored in a suitably protected area on the site and disposal will be as detailed in the Waste Management Plan (WMP).

In a nutshell this means that;

- A septic tanker truck will pump stored waste from the site toilet holding tank and take it to the Tafaigata Landfill for disposal.
- Hazardous waste eg waste oil, will either be disposed of as permitted at Tafaigata or shipped to NZ.
- Domestic waste from site office and worker facilities will be subject to recycling as per the WMP with any refuse taken to Tafaigata.
- Cleared vegetation, surplus spoil, processing by-pass etc will stay on site and be incorporated in the rehabilitation and closure works.

7 Operations

7.1 Clearing and Stripping

Clearing of the vegetation currently covering the access routes and the base of previous quarrying activities will allow for the processing and stockpiling of extracted rock. The area required for this activity is approximately 25,000m². The exact location of the cleared area will be selected to minimise the distance from the quarry face to the processing plant that crushes and screens the rock creating aggregate stockpiles.

Clearing will be conducted so that a vegetation screen is maintained around the working area, coupled with the site topography, this means that the new works are not expected to be visible from adjacent access roads or settled areas.

Processing and stockpiling activities will be located so that any runoff will drain to silt detention ponds that are lined with an impervious material to prevent soakage into the ground. These ponds will be designed to allow runoff from rainfall to settle before slowly outflowing to the natural water courses that currently take rain runoff from the area. An accurate level survey of the entire quarry site will be undertaken before works commence to record the existing ground levels including all existing water courses.

7.2 Site Development

Following the removal of vegetation and the ground level survey of the quarry, access to the top of the rock face for an excavator and bulldozer will be constructed. This will start at the existing quarry floor entrance at low point at the south-east end of the rock face, and follow the top edge of the rock face tracking north-west for approximately 500m. Working away from the edge of the rock face, the bulldozer will push the topsoil up into heaps, and the excavator will stockpile for later remediation of the quarry site. The extent of clearing on top of the rock face is expected to be approximately 7500m² or 300m x 25m including a safety margin from the edge of the final rock face.

The access road to be used for the cartage of processed aggregate products will follow existing tracks that travel north-west from the quarry location to exit on the Main Coast Road opposite the west end of Faleolo Airport. The use of this route will avoid community or village housing areas and the Main Road intersection at the Mulifanua Wharf, minimising social impact and avoiding road safety issues. The access route to be used will be graded and shaped to eliminate existing pot holes and a new layer of crushed road base will be applied to improve the surface characteristics. A speed limit of 50km/hr will apply to all trucks hauling aggregate products along the access route to minimise noise and avoid dust generation.

7.3 Drilling

The drilling of holes to receive explosive materials will be undertaken from the top of the rock face. It is proposed to drill the holes approximately 12m deep from the cleared rock surface.

The depth and diameter of drill holes determines the amount of explosive used to loosen the rock for excavation. We propose that the bottom of the drill hole that will receive explosives is always above the level of the adjacent quarry floor formed during previous extraction works at the quarry. Based on an estimated existing rock face height of 15m we propose drilling only 12m deep. This will allow us to minimise the amount of explosive materials to achieve a satisfactory quantity of rock for excavation without adverse impact on the integrity of the rock below the existing quarry floor. This conforms with the undertaking Downer have given to protect the Olo aquifer, that new extraction will stop at a level 2m above the low point of the existing quarry floor. The Topographic Map, prepared after vegetation clearing, and included as Appendix C, shows the low point on the old floor is 43.88m, meaning that new extraction will be above RL 45.88m.

This method of working means that there will only be a working face without intermediate benches. The single face will maintain the safe slope of the current face and steadily recede as material is blasted and extracted for processing through the crushers and screens.

7.4 Blasting

The vibration that results from an explosion is related to the amount of explosive charge used. The measure used to determine how damaging the vibration resulting from an explosion is called Peak Particle Velocity (PPV). Experience has shown us that when working with solid basalt rock like that at Olo Quarry, minimal damage occurs at PPV of 200mm/second or less.

The explosive to be used is a very safe material: emulsified liquid form ammonia nitrate, an oxidising agent rated with the UN rating 5.1.

It is NOT packaged explosive that carries a UN rating 5.1D and can be dangerous to handle.

The liquid emulsion ammonia nitrate is not an explosive until it is mixed with a sensitising agent and initiated with non-electric detonators. The mixing is carried out in a special purpose plant mounted on a 4x4 truck that mixes and pumps the explosive into the drill hole in a single procedure.

Once plant arrives and has been set up on site, blasting is expected to occur at a regular time mid to late afternoon every second day (except Sunday's). A siren and loud speaker will give a five minute warning then a 30 second warning prior to each blast. The loud speaker will give an all clear after the blast.

In conjunction with community consultation and site development a programmed trial of the warning system will be held prior to any blasting occurring. Twenty four hours notice of the commencement of blasting will be given to all adjoining neighbours. Check points will stop traffic on the quarry access route prior to each blast until the all clear has sounded.

7.5 Extraction & Processing

The rock that is won following the drill and blast operation will be processed in a series of mobile crushers and screens. The large particles of rock initially removed from the rock face by excavators will enter a "processing train" consisting of primary, secondary and tertiary crusher units that, combined with the screening plant, create the products required for the project. Most of the rock will be used to manufacture an AP40 basecourse and Mix 14 and Mix 20 asphalt.

Tracked excavators and wheeled loaders will be used to load the crushers and create stockpiles of finished aggregate products. These stockpiles will be constructed on compacted aggregated bases with cut off and perimeter drains intercepting any storm water flowing from the area. The finer aggregate product stockpiles will be covered with large tarpaulins to minimise water ingress and avoid dust.

The crushing plant and associated equipment will be regularly maintained and operated in accordance with the manufactures instructions. Only trained personnel shall operate the plant with an experienced designated supervisor on site whenever the plant is running. Operators will be provided with dust protection as required.

In the case of any dust or noise complaints (whether written or verbal) arising from operation of the crusher, immediate and reasonable steps will be taken to rectify the situation.

The products will be transported to the Faleolo site in road trucks using the access route described above. The quantity of material to be extracted from the site will be in the order of 95,000 tonnes over a time frame of 12 months.

7.6 Operating Hours

Hours for quarry extraction and processing operations are:

Monday to Friday 0600 hours to 1800 hours

Saturday 0600 hours to 1600 hours

Sunday No quarry operations except possible plant maintenance

These operating hours do not apply to, or restrict access to the sites, for the maintenance of vehicles, plant and machinery, or the delivery of fuel.

7.7 Noise

The DC provides the following noise limits;

"Noise Source" (Average dBA, L _{10mins})	"Receiving Property" (LAeq, 10 minutes)											
	Residential Use			Commercial Use			Religious Use			Industrial Use		
	Day	Even ⁿ	Night	Day	Even ⁿ	Night	Day	Even ⁿ	Night	Day	Even ⁿ	Night
Industrial use	65	60	55	70	65	60	70	65	60	75	70	65

The quarry is surrounded by vegetation and isolated from houses or villages and will not be operating during evenings or at night, in addition the mitigation measures outlined in the 'Noise' Significant Hazard Control Plan (see Appendix H) mean that the noise audible on any receiving property will be minor. On site personnel will be issued with and wear PPE (ear plugs or muffs) as working conditions require.

7.8 Sensitive Receptors and Community Liaison

The quarry will operate in the same location as previous quarrying activities. The quarry perimeter is located within a larger land estate that provides a buffer from sensitive receptors. Water pumping and reticulation infrastructure operated by Samoa Water Authority is the closest feature, and mitigation measures have been agreed with the Authority during consultation for the Quarry Development Consent.

The closest housing community or village is at Mulifunua which is approximately 3 kilometres from the quarry, In regard to community liaison, contact person is:

Safeguards Specialist – Craig Smart

As part of the quarry development and in advance of major operations at the quarry commencing it is intended to consult with, and provide information to, nearby communities - such as Mulifanua, that may be within hearing distance of the quarry. In addition to discussing the intended traffic management measures, the key message will be advising details of the system that warns when blasting is about to occur and the need to stay clear of the quarry area. Separate consultation will be held with the STEC workers in conjunction with STEC management.

An outline consultation programme identifying receptors and key messages is given in Appendix F.

7.9 Truck Loading

Trucks will be loaded out of stockpiles at the quarry using loaders fitted with scales ("Loadrite" or similar) that record how much aggregate is loaded into each truck and ensure that trucks are not overloaded. At the quarry gate all aggregate trucks will pass through a load check to ensure the load is free of loose material that could dislodge during transport and that the load is contained within the body of the truck. Any dust generating material will be covered or dampened.

7.10 Environmental Controls and Monitoring

The quarry must operate with minimal impact on the surrounding environment. Key environmental issues that need to be managed are:

- Protection of the water supply infrastructure installed and operating in the general area of the quarry,
- Physical controls to avoid the risk from spills of liquids such as fuel including the use of spill mats when refuelling mobile plant.
- Control of stormwater runoff such that silt contaminated water does not enter natural water courses or penetrate sub surface rock,
- Control noise and dust generated from truck movements in the quarry area and on access roads.

The Quarry Manager will do a daily inspection to check environmental controls are operating effectively and take immediate corrective action where required. This inspection will be recorded and available for inspection by the authorities.

7.11 Health & Safety

This quarry forms part of the Faleolo International Airport Design and Construct Pavement, Drainage and Services Infrastructure Contract and as such will operate under cover of the Contractor's Occupational Health and Safety Plan.

A Hazard Register/Hazard ID sheet for project hazards and mitigations including the quarry operations will be prepared. Workers at the quarry will have a weekly toolbox meeting to review work procedures and the Hazard ID sheet. Any new hazards will be added to the Hazard ID sheet as identified.

Significant Hazard Sheets referenced in this QMP or the Hazard Register/Hazard ID sheet will be attached to this plan.

A construction site warning sign written in English will be posted prominently at the entry to the quarry detailing the site name, the safety equipment and procedures required to be used on site and general messages advising authorised visitors to report to the Site Supervisor and warning against unauthorised entry.

A well equipped first-aid box will be provided with the contents checked regularly and any used supplies replaced by the Quarry Manager. A suitable stretcher will also be provided. A person trained in first-aid will also be available when the quarry is operating.

7.12 Traffic Management

The Quarry Manager will be responsible for quarry traffic on the quarry access route and a Traffic Management Plan (TMP) has been prepared to show how the route will be improved and traffic managed to mitigate anticipated impacts of its use. This TMP details the working hours of the aggregate haulage trucks, the warning signs, pavement improvements and maintenance intended for the access route etc. The Quarry Manager has authority to adapt this TMP to better address specific or changed circumstances.

Signs (Trucks Crossing and Speed Restriction) will be erected on the Main Coast Road on either side of its intersection with the quarry access haul road and the airport construction access road, warning approaching traffic of heavy vehicles exiting/entering the public road.

8 Sediment and Water Management

Storm water runoff will be managed to prevent sediment laden water discharging into natural watercourses or ponding on pervious ground that may allow the runoff to percolate into subsurface aquifers. The site has been previously worked as a quarry

Storm water falling within the site will be captured by bunds or catch drains and directed to a settlement pond(s) constructed at the low point(s) on the site as shown on the Erosion and Sediment Control Plan. The catch drains and perimeter bunds will generally have slight grades to slow runoff and avoid scouring. Grit traps constructed from cleared vegetation and rock rip-rap may also be installed along these drains to allow for the initial settlement of sediment.

The settlement pond will have an impervious floor, a silt curtain on the outlet and, if flow velocities require, a protected (ie geotextile lined) spillway will be installed. The impervious floor is likely to be constructed from concrete, designed such that an excavator positioned adjacent to the pond can excavate accumulated silt on a regular basis for disposal in an area within the quarry where it will be protected from future storm water runoff. The measures intended to control water runoff and mitigate sediment generation are shown on the quarry specific Erosion and Sediment Control Plan (ESCP) included in Appendix D.

The facilities and stockpile area will be bunded and silt curtains will be constructed where necessary to channel the overland flow to the settlement pond. Grit traps will be installed on the longer drains.

9 Air Discharges

In the event of dust becoming an issue the Contractors water cart will be used to spray water over the site to mitigate the problem.

Water will be drawn from approved water sources or retained rainfall.

Dust from the screening plant and mechanical crusher could pose a safety hazard in the area immediately surrounding the plant and staff will be issued with PPE (masks/respirators).

10 Accidental Discovery

The site has been previously quarried but should the new quarrying work encounter any artefact or archaeological evidence the following procedure should be followed;

Stop work and withdraw from the scene, delineate the area of interest so that the discovery is not further disturbed and notify PUMA of the situation.

11 Rehabilitation and Closure

The Quarry Agreement with the landowner, Samoa Trust Estates Corporation, requires that “Upon completion of the Quarry Operations rehabilitate the Quarry site as agreed with the Landowner to at least the condition of the land surface (excluding vegetation) prior to commencement of the Quarry Operation”. While subject to consultation at the time of closure it is anticipated that this will be given effect by the following measures;

- Remove all plant, equipment and temporary structures from the site
- Remove all non organic rubbish and waste material from the site (and properly dispose of off site)
- Leave any surplus processed product in stockpile as agreed with the Landowner
- Spread material windrowed during initial clearing and stripping work over those parts of the site that are to be rehabilitated while leaving those parts which the landowner wants to retain access too (after consultation with the landowner a plan detailing the rehabilitation requirements will be submitted one month prior to closure of the quarry for the Faleolo Airport Contract needs).
- Rehabilitated areas shaped to smoothly transition into adjacent areas without angular or linear features (using scalloped edges etc) with no hollows that retain water.
- Any disturbed areas no longer required for quarry operations may be progressively restored with any highly visible areas given priority.

The rehabilitation and closure work will be subject to review and the satisfaction of the Employer's Engineer & PUMA.

12 Monitoring and Reporting

12.1 Dust

Dust from the screening plant, mechanical crusher and plant moving within the quarry may impact the area immediately surrounding the plant and staff will be issued with PPE (masks/respirators).

12.2 Inspections and Maintenance

Each day the Quarry Manager will carry out a number of checks and inspections of the quarry equipment and the quarry site.

These will include:

- Integrity of the site.
- prestart plant checks.
- plant and equipment operating hours.

- health & safety issues eg PPE, proper access & storage of hazardous substances etc
- potential environmental effects eg noise, dust, water and sediment controls.

The plant related information will be recorded on a standard plant sheet while the other inspections will be recorded on the Daily Monitoring Record. The Quarry Manager should take corrective action upon identifying an issue and record the action taken (or still required to be taken) on the form. This form is available for inspection on a weekly basis.

In addition the quarry will be included in the weekly schedule of site compliance inspections and any exceptions included in the weekly report.

12.3 SWA Olo Water Bore

The Samoa Water Authority (SWA) were concerned that blasting could affect bores in the general vicinity of Olo. After discussing the intended quarry work with them, SWA have advised that their concern only relates to the Olo bore. Downer have undertaken to inspect the Olo bore with a submersible camera before and after the blasting/aggregate extraction work is carried out. Downer will also get test results to establish the baseline water quality in the Olo, Mauga & Satui bores. If any contamination or damage is detected Downer will stop work and rectify the situation.

13 Emergency Procedures

The Emergency Assembly Point for emergencies occurring within the quarry will be at a prominent sign posted location at or near the quarry entrance. Safe evacuation paths are via the internal and external roads shown on the Site Layout Plan.

The Emergency Contact List, Spill Response and standard Emergency Procedures contained in the Occupational Health & Safety Plan are replicated as Appendix J and placed at the extreme end of this document for speed of access.

14 Appendices

- A. Olo Development Consent - Conditions Cross Referenced to this QMP
- B. COEP 8 – Requirements for a QMP – Cross Referenced to this QMP
- C. Topographic Plan
- D. Site Layout and Erosion & Sediment Control Plan
- E. Site Facilities Plan
- F. Outline Consultation Programme – Olo Quarry & Access Road
- G. Daily Monitoring Record
- H. Significant Hazard Control Plans
 - Plant and Machinery
 - Dust
 - Noise
 - Working in the Sun
 - Hazardous Substances
 - Electrical
 - Quarry
- I. Quarry Staff Qualification
 - Quarry Manager: Brett Swain
 - Shot Firer: Daniel Skilton
- J. Recommended Emergency Procedures (inc Spill Response)

In addition, further Appendices will be developed as quarry planning progresses:

- Emergency Contacts List

Appendix A: Olo Development Consent - Conditions Cross Referenced to this QMP

Government of Samoa

**MINISTRY OF NATURAL RESOURCES AND
ENVIRONMENT***Matagaluega o Puna'oa Faalenatura ma Siosiomaga*

Level 3, Tui Atua Tupua Tamasese Efi Building (TATTE),
Sogi., P.O Private Bag, Apia, SAMOA Website : <http://www.mnre.gov.ws/>

Telephone: (+685) 67200
Fax: (+685) 23176
Email : info@mnre.gov.ws

*Please address all correspondence to the Chief
Executive Officer, Private Bag , Apia, Samoa .
Faamolemole faatuatausi uma mai fesootaigo
uma i le Ofisa Sili*

14 February 2018

General Manager Downer NZ
Ltd **FALEOLO**

Afioga e,

Notice of Decision for Development Consent Application to extract aggregates for the airport runway development and undertake crushing activities, Olo Mulifanua (our ref: DCA 047/18)

We hereby advise that your application for development consent to extract aggregates for the airport runway development and undertake crushing activities at Olo Mulifanua has been approved subject to conditions by the Planning and Urban Management Board. (see attached).

Please ensure that you comply with all conditions of the consent as per attached document. The conditions aim to prevent and minimize adverse environmental impacts and set standards for acceptable environmental management of the project.

As a legal document, it is important that the development consent is kept for your record. For further information, please contact the undersigned or Ms. Ferila Brown on telephone 67200.

Sincerely,



Toleafoa Fetoloai Yandall-Alama
Administrative Head/ACEO
Planning and Urban Management Agency For:
Chief Executive Officer

Encl
Notice of Decision

Government of Samoa

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

Matiigaluega o Puna'oa Faalenatura ma Siosiomaga

Level 3, Tui Atua Tupua Tamasese Efi Building (TATTE),
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Please address all correspondence to the Chief Executive Officer, Private Bag, Apia, Samoa. Faamolemole faatuausi uma mai fesootaiga uma i le Ofisa Sili

SUSTAINABLE DEVELOPMENT

NOTICE OF DECISION

Application Reference: DCA N2: 047/18

DECISION DATE: 8 February 2018

<u>Applicant:</u> Site	Downer NZ Ltd
<u>Location:</u>	Olo Mulifanua, Aiga i le Tai District
<u>Proposal:</u>	To extract aggregates for the airport runway development and undertake crushing activities
<u>Legal Description:</u>	Government Land: Survey Plan NQ 3 200; Lot 178; Size Area 92,952m ²
<u>DCA Received:</u>	18 January 2018
<u>Supporting Documentation:</u>	<ol style="list-style-type: none"> 1. Environmental Impact Assessment (EIA) report prepared by Downer New Zealand Limited and dated January 2018, submitted 18 January 2018 2. Quarry Management Plan prepared by Downer New Zealand Limited, dated January 2018, submitted 18 January 2018 3. Copy of the Survey Plan, submitted 18 January 2018 4. Written Consent from Samoa Trust Estate Corporation (STEC), dated 09 January 2018, submitted 18 January 2018 5. Revised EIA report prepared by Downer New Zealand Limited, dated January 2018, submitted 01 February 2018 6. Site Plan, submitted 01 February 2018 7. Written Confirmation from Samoa Water Authority and dated 30 January 2018, submitted 01 February 2018 8. Written Confirmation from Downer NZ Ltd & Samoa Airport Authority to fully fund any damaged boreholes, dated 31 January 2018, submitted 01 February 2018

Other

1. The development application is currently being notified in the Samoa Observer Newspaper. The timeframe for the submission of any objection is from 30 January to 19 February 2018.

THE DECISION

The Planning and Urban Management Agency, under delegated authority from the Board, pursuant to sections 34(2), 47, 48, 50 of the Planning and Urban Management Act 2004, grant development consent, to the above application, subject to the following conditions:

Conditions**General:**

#	Development Consent Condition	QMP Ref
1	The proposed activity shall be carried out in accordance with the plans and all information submitted as part of the application DCA 047/18, being:	The underlying purpose of this document.
	a) Report titled, <i>"Environmental Impact Assessment Report for The Proposed Land Use of the Olo Properties for Quarry Works"</i> , prepared by Downer New Zealand Limited, dated January 2018, submitted on 01 February 2018.	This is provided as an Annexure to the CESMP
	b) Report titled, <i>"Contract Quality Management Plan for Olo Quarry Samoa, Quarry Management Plan"</i> , prepared by Downer New Zealand Limited, dated January, submitted 01 February 2018.	This QMP is an updated revision of the QMP submitted with the DC Application
2	Any other development works not included in this development consent application (including construction of building(s) or other structures on site), requires a separate development consent application.	All site facilities are either demountable, shipping containers or otherwise temporary structures. No buildings intended.
3	15 The quarrying operations, including extraction of rock and aggregate processing, storage and loading, shall not exceed a period of 3 years. This period shall commence following the start date of aggregate extraction activities for the airport runway development.	16 Sec 7.5 (final para) 17 Intended duration is 12 months.
4	In the event that any of the existing nearby boreholes is contaminated or damaged from the proposed activities, the consent holder shall immediately cease all works on site and inform the Planning and Urban Management Agency ("the Agency").	Sec 12.3 SWA Water Bores
5	The consent conditions may be amended by the Planning and Urban Management Board ("the Planning Board") upon completion of the notification period on 19 February 2018.	No amendments advised by end Feb 18
6	The consent holder shall provide and operate plant and equipment for maintaining all surfaces in a damp condition to minimise the generation of dust. All haul roads shall be kept continually damp and appropriate water spray (such as water trucks) shall be available to dampen crushing and screening operations and stockpiled material as appropriate.	Sec 9 Air Discharges

7	The consent holder shall develop/put in place procedures to address and respond to all encounters with archaeological evidence or artefacts during the construction works. When an artefact is discovered work shall stop, delineate the area of interest and notify the Agency.	Sec 10 Accidental Discovery
8	All run-off from working areas, which contains sediment shall be collected in settling ponds before being discharged from the premises. Water from washing facilities shall be treated in a like manner.	Sec 8 Sediment & Water Management
9	The consent holder shall obtain a permit from the Land Management Division of the Ministry for extracting of aggregates.	Required for extraction from marine areas. Not applicable to Olo
10	The proposed activity shall not have an undue detrimental environmental impact on the environmental quality of the site or land adjoining the site and likely future development.	Sec 3.2 Process Implementation, Sec 3.4 Environmental Monitor & Sec 11 Rehabilitation & Closure
11	The consent holder shall ensure that all workers on site shall wear appropriate safety gears for safety which shall be in accordance with the <i>Occupational Safety and Health Act 2002</i> .	Sec 7.11 Health & Safety
12	The use and development shall be managed so that the amenity of the area is not compromised, by excessive noise, excessive dust, visually offensive signage, poor airspace, excessive traffic generation, smell, fumes and waste materials.	Sec 3.2 Environmental Monitor Sec 6/6 Waste Disposal Sec 7.7 Noise Sec 9 Air Discharges Also TMP & WMP

Operation:

13	That all earthworks shall be in accordance with the <i>Code of Environmental Practice for Earthworks and Quarry Development and Operations 2007</i> .	Sec 7 Operations
14	During development and operation of the quarry the consent holder shall progressively reinstate areas of the quarry.	Sec11 Rehabilitation & Closure
15	The consent holder shall take all practicable measures to avoid spills of fuel or any other contaminants stored or used during construction and within the site.	Sec 7 Operations
16	The consent holder shall ensure that in the event of any spill of fuel or any other contaminant, the spill shall be cleaned up as soon as practicable and take measures to prevent reoccurrence.	Sec 6.6 Waste Disposal Appendix J Spill Response
17	The consent holder shall ensure that all person(s) engaged in the operation of the quarry shall be adequately supervised.	Sec 3.1 & App E Personal Qualifications
18	The consent holder shall ensure that the toe of all batters and intermediate bench shall be drained and such drains discharged to a silt retention pond.	Sec 7.3 Drilling
19	The consent holder shall ensure that the overburden or tops of the quarry, and all loose ground or material, shall be cleared far enough back from the edge of the quarry to prevent the persons employed.	Sec 7.1 Clearing & Stripping
20	As soon as practicable after completion of overburden all exposed batters shall be protected from the effects of surface erosion.	Sec 11 Rehabilitation & Closure

21	The consent holder shall ensure that soil erosion (and any other material) shall be limited by rapidly vegetating exposed areas, planting the surfaces of overburden and topsoil mounds, progressively restoring worked-out areas (where practicable) and limiting the topsoil/overburden stripping exposed at any one time.	Sec 8 Sediment & Erosion Control Sec 11 Rehabilitation & Closure
22	All erosion and sediment controls shall be installed prior to commencement of extraction activities and maintained in an effective capacity at all times during operation works.	Sec 8 Sediment & Water Management
23	The consent holder shall ensure that trucks shall be loaded and covered to prevent spillage and no mud shall be carried out onto the public road. In the case that deposition of dirt/mud on road occurs, the consent holder shall ensure that it is cleaned forthwith.	Sec 7.9 Truck Loading
24	The loading and unloading of all vehicles and stockpiling of materials and equipments associated with the development shall take place within the site boundaries of the application.	Appendix D Layout Plan
25	The consent holder shall ensure that the quarry site is enclosed with warning signs .e.g. Authorised personnel only.	Sec 7.11 Health & Safety
26	The hours of operation shall be limited to between the hours of 7:00am and 6:00pm on Mondays to Saturdays and no activities shall be carried out on Sundays or public holidays unless there is a written agreement with the Planning Board.	Sec 7.3 Opening Hours

Benching:

27	Orientation of benches shall take into account the underlying geology and vantage points from which the quarry is visible.	Sec 7.3 & Sec 8 Drilling and Sediment & Water Management
28	All benches shall be self-draining. Each bench shall act as a table drain, carrying water along the bench to a suitable discharge point or settling pond.	Sec 7.3 Drilling
29	Benches shall not overhang and batters shall be constructed at a safe angle. Quarrying activity shall generally not extend 10 meters of a boundary.	Sec 7.3 Drilling
30	For rehabilitation, benches shall be irregularly shaped and the top of the quarry face scalloped to blend in with the surrounding landscape.	Sec 11 Rehabilitation & Closure

Blasting

31	The consent holder shall ensure that at least 24 hours' notice is provided to adjoining neighbours and nearby families in advance of any blasting operations.	Sec 7.4 Blasting
32	The consent holder shall ensure that blasting operations shall be conducted in a manner that will not cause danger to life or property.	Sec 7.4 Blasting
33	The consent holder shall ensure that blasting operations are carried out within 500 metres of any road and shall be stationed thereon with warning notices to warn travellers of danger and to prevent access to the danger area.	Sec 7.4 Blasting

Noise:

34	The consent holder shall ensure that noise from the quarry plant shall be controlled to ensure compliance with noise levels in the Agency's <i>Noise Policy 2012</i> .	Sec 7.7 Noise
35	Noise levels from any activity occurring on site shall be in accordance with the Agency's <i>Noise Policy 2012</i> and shall not exceed the following limits:	Sec 7.7 Noise

Noise source" Average BA, L10mins)	" Receiving Property" (LAeq, 10 minutes)											
	Residential Use			Commercial Use			Religious Use			Industrial Use		
	Day	Even"	Night	Day	Even"	Night	Day	Even"	Night	Day	Even"	Night
Industrial use	65	60	55	70	65	60	70	65	60	75	70	65

Rock Crushing Activities:

36	The consent holder shall ensure that the crusher operator cabs will be properly sealed with dust filters.	Sec 7.5 Extraction & Processing
37	The consent holder shall ensure that proper maintenance of the crusher should be carried out to prevent excessive noise and other problems.	Sec 7.5 Extraction & Processing
38	The consent holder shall ensure that waste oil and other residues from machinery maintenance are stored in proper containers or cemented pits to avoid seepage to ground water and surrounding soil.	Sec 6.6 Waste Management & Disposal
39	The consent holder shall ensure that trucks carrying crusher products to development sites should properly cover the material to prevent wind whipping.	Sec 7.9 Truck Loading
40	The consent holder shall ensure that material loaded into the trucks should be below the body level encapsulated	Sec 7.9 Truck Loading
41	Once the consent holder is made aware of any noise and dust complaints as a result of operation of the crusher whether written or verbal, the consent holder shall take all immediate and reasonable steps to remedy the situation.	Sec 7.5 Extraction & Processing
42	The consent holder shall ensure that all stockpiling on site shall not be less than 5 meters from the nearest property.	Appendix D Site Layout Plan
43	All crusher operations shall be carried out with properly set management chart, indicating the individual responsibilities.	Sec 7.5 Extraction & Processing
44	During crusher operations, at least one competent engineer or manager should be present at the site at all time.	Sec 7.5 Extraction & Processing

Waste Management:

45	Hazardous materials shall only be disposed of at an approved hazardous waste disposal facility. The consent holder shall seek approval from the Agency and the Division of Environment and Conservation of the Ministry of Natural Resources and Environment to dispose of any hazardous waste.	Sec 6.6 Waste Management & Disposal
46	On completion of works, all debris, rubbish and any other waste material brought on site during construction shall be removed from the site and disposed of at the Tafaigata Landfill	Sec 6.6 Waste Management & Disposal

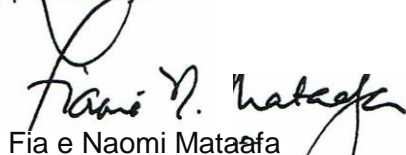
Rehabilitation:

47	The consent holder shall comply with the Rehabilitation Plan submitted as part of this development application.	Sec 11 Rehabilitation & Closure
48	The consent holder shall ensure that the quarry is fully rehabilitated in accordance with the following timeframes:	Sec 11 Rehabilitation & Closure
	a) Within 6 months of the final extraction of materials from the site; or	Sec 11 Rehabilitation & Closure
	b) Within 6 months before the expiration of the term of consent, whichever is the earlier.	Sec 11 Rehabilitation & Closure
49	Sections of the quarry that will be highly visible from frequently used roads or vantage points shall be given high rehabilitation priority.	Sec 11 Rehabilitation & Closure
50	The consent holder shall ensure that all proposed extractive development proposals shall be accompanied by detailed restoration.	Sec 11 Rehabilitation & Closure
51	Plans for removal and disposal of wastes and any hazardous or contaminated materials (fuel drums, soil contaminated by leaked fuel or oil, and weed infested soil) shall be described in the Quarry Management Plan, as appropriate for the scale of the operation.	Sec 6.6 Waste Management & Disposal
52	Upon completion of activities, all areas which were disturbed by the development must be stabilized to the satisfaction of the Planning Board so that accelerated erosion or sedimentation or both will be prevented.	Sec 11 Rehabilitation & Closure

Advisory notes:

- 1 *The Agency has considered all submitted information as accurate, if proven otherwise, this consent may be revoked.*
- 2 *The Agency or any employee is not liable for any damage, or loss resulting from any act, omission, or default in the exercise of the development consent function.*
- 3 *A copy of this consent should be held on site at all times during the construction.*
- 4 *The consent holder is responsible for ensuring that all contractors carrying out works under this consent are made aware of the relevant consent conditions, plans and associated documents.*
- 5 *Non-compliance with this development consent may result in enforcement and legal proceedings under the Planning and Urban Management Act 2004.*
- 6 *The consent shall lapse two (2) years after the date on which it was granted unless it has been given effect before the end of that period.*

approved by:

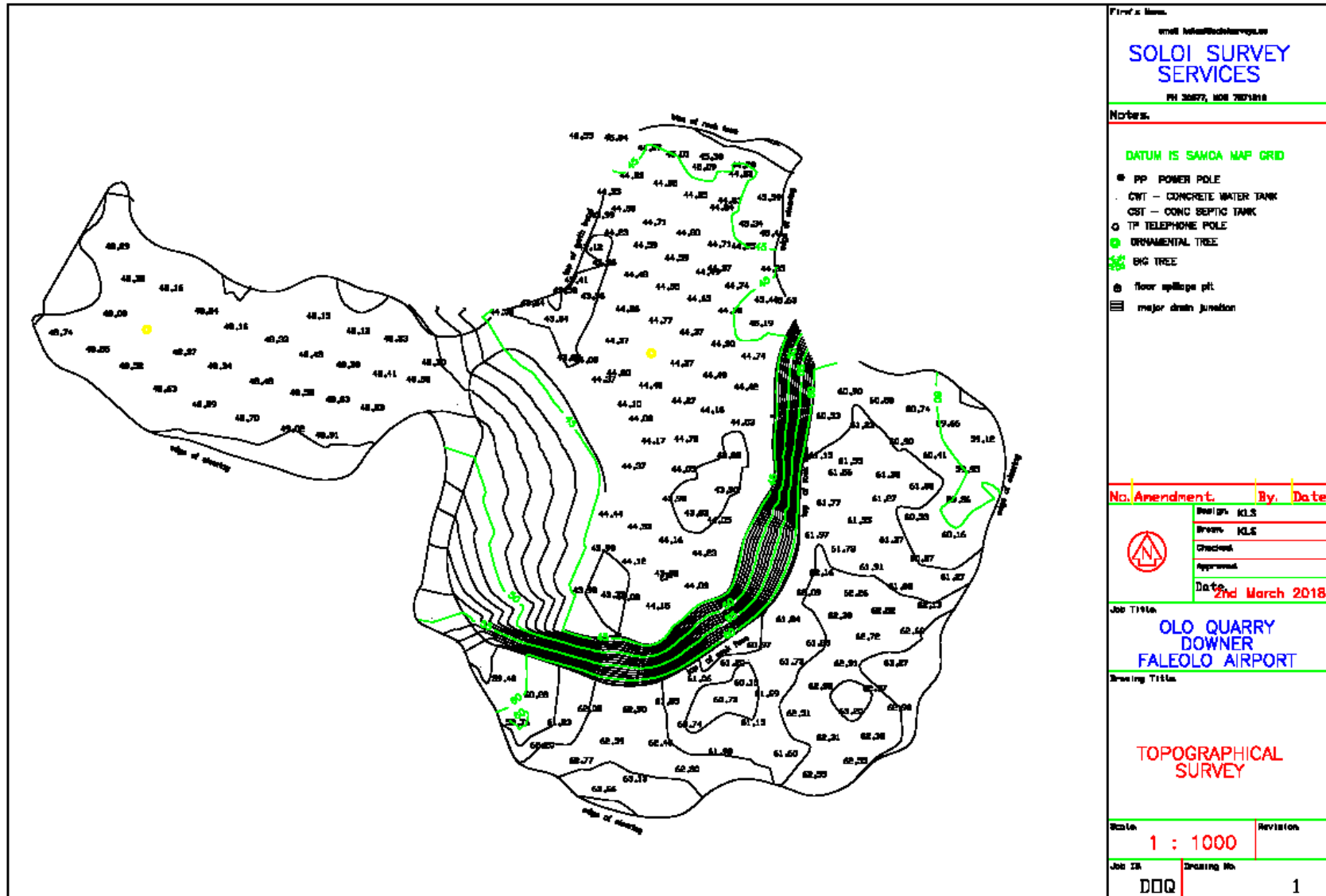


Fia e Naomi Mataafa
Chairperson, Planning n Urban Management Board

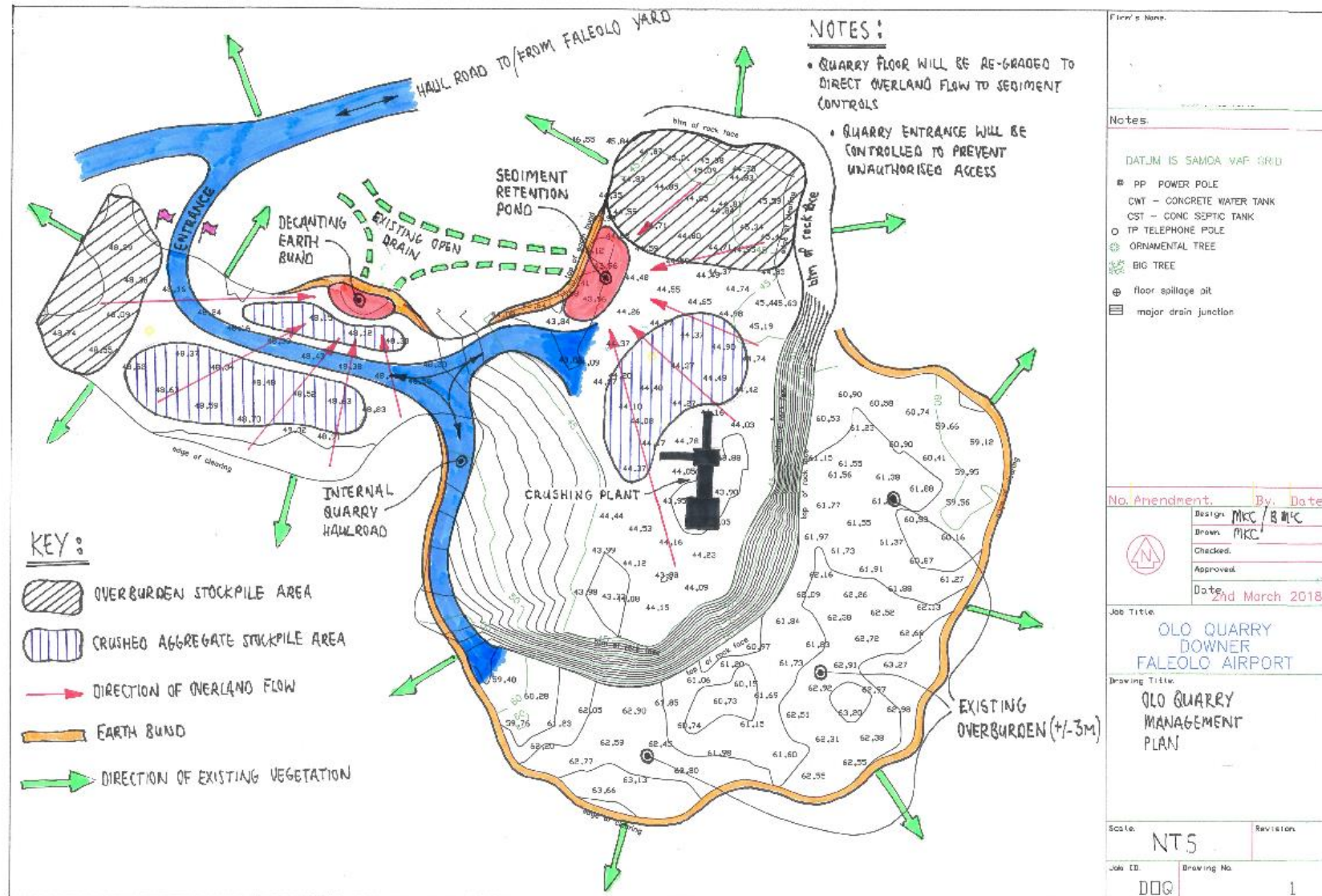
Appendix B: Requirements for a QMP (from COEP 8): Cross Referenced to this QMP

#	COEP 8 (Sec 8.3.1): Required Contents of a QMP	Where Located in this QMP
1	All operations shall comply with the laws of Samoa.	3.3 Licences / Permits
2	Show the extent of overburden stripping and the stockpiling of same for later site restoration.	7.1 Clearing and Stripping. Appendix D - Site Layout & Facilities Plans
3	Show the details and location of surface water drainage from the quarry site and the silt retention pond that will be constructed to settle silt and soil contaminated water prior to its discharge to a natural water course.	7.1 Clearing and Stripping 8.0 Sediment and Water Management. Appendix D Erosion & Sediment Control Plan
4	State details of pond maintenance and the method of loading and transporting settled material to a waste soil disposal site as COEP6.	8.0 Sediment and Water Management. Appendix D Erosion & Sediment Control Plan
5	Show details of catch drains installed to intercept overland flow of surface water to prevent its discharge into the quarry area. Details of catch drains shall be as COEP 6.	8.0 Sediment and Water Management. Appendix D Erosion & Sediment Control Plan
6	State safety precautions to be implemented.	7.6 Health and Safety
7	Show facilities such as guardhouse, amenities block and other facilities to be constructed.	6.3 Infrastructure. Appendix E Site Facilities Plan
8	Show location of aggregate stockpiles.	7.2 Material Extraction and Processing. Appendix D Layout Plan (also ESCP)
9	List plant and equipment to be used in the development and operation of the quarry.	7.2 Material Extraction and Processing *Site Layout and Development Plans
10	Show the site of the proposed magazine for the storage of explosives.	6.5 Explosives & Appendix E Site Facilities Plan
11	Show sensitive environmental receptors (vegetation, waterways, neighbouring land uses)	7.4 Sensitive Receptors and Community Liaison
12	Community engagement strategy – how the community will be consulted, warned of blasting, traffic will be controlled, site safety maintained.	7.4 Sensitive Receptors and Community Liaison. Appendix F Outline Consultation Plan
13	Other relevant environmental controls based on an environmental impact assessment	7.2 Materials Extraction & Processing (drill hole depth re quarry floor)
14	Basic rehabilitation plan	10 Rehabilitation and Closure Plan
15	Copies of all relevant licences (environmental permits, mining licences)	Appendix A, Development Consent – Olo Quarry, issued by PUMA

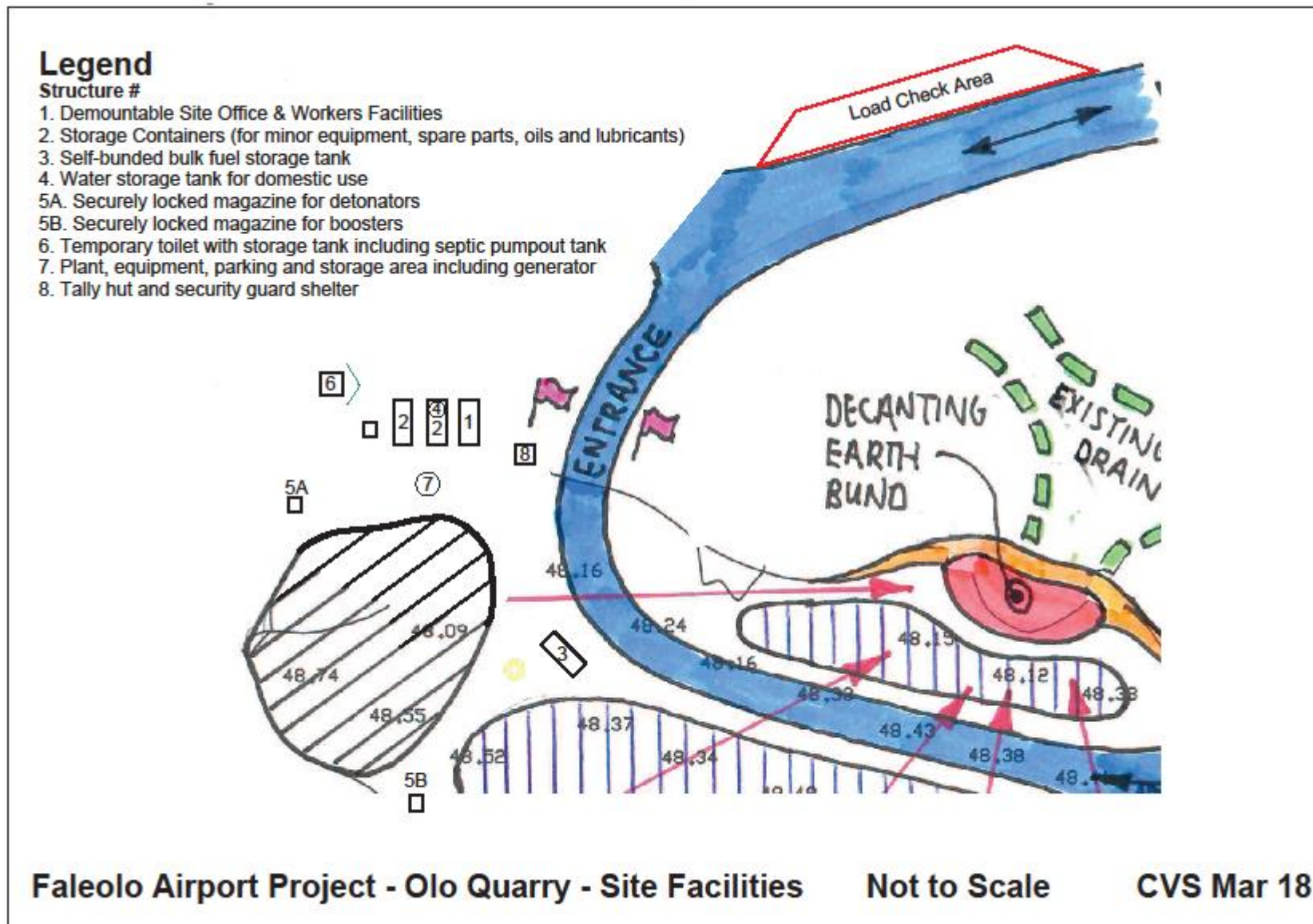
Appendix C: Topographical Plan



Appendix D: Layout Plan and Sediment & Erosion Control Plan



Appendix E: Site Facilities Plan




Appendix F: Outline Consultation Programme

Faleolo Airport: Outline Consultation Programme: Olo Quarry & Access Route Phase

Project Activity	Receptor/Target Group(s)	Key Messages	Contact Method	Time/Place
Quarry Specifically commencement of extraction work	Nearby Communities espec Mulifanua Residents in STEC houses	Blasting warning system Noise/dust mitigation Water bore protection Planned rehabilitation GRM	Meeting in community. Contact via Residents meeting at a convenient location along access route.	Mid March Parallel information provided to churches for noticeboard etc
Aggregate haulage Specifically commencement of access route upgrade works and commencement of aggregate haulage	Residents in STEC houses Nearby Communities espec Mulifanua Main Coast Road users	Route to be used. Upgrade, monitoring & maintenance TMP provisions Traffic speed, truck loading, noise, dust, GRM	Residents meeting at a convenient location along access route. Contact via STEC Meeting in community Contact via Info to LTA, media	In parallel with Quarry above, or standalone late March Also provide info to churches Late April
Contractor's compound development & asphalt plant assembly	Airport personnel, SCG, Main Coast Road users	Location & purpose Worker safety & environmental protection	Airport noticeboards General media Community notices Info to LTA, media	Early April
Commence airside construction work/asphalt trials	Airport personnel, SCG	Programme & scope	Airport noticeboards & general media	Mid May

With further material to be added as project planning develops

Appendix G: Quarry Daily Monitoring Record

 Downer <small>Relationships creating success</small>	<h1 style="margin: 0;">Daily Monitoring Record</h1> <h2 style="margin: 0;">Quarry Visual Inspection</h2>	Form Q 10 Faleolo International Airport: Design & Construct: Pavements, Drainage & Service Infrastructure
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Site: Olo Quarry
 Quarry Manager: _____

Week Beginning: _____
 Signed: _____

Issue	Specific Requirements	Record Daily Findings							Comment/Results If Fail or ✖ Give Event Report or NCR Ref
		Pass/Fail or ✓/✖							
		M	T	W	T	F	S		
Standard PPE	All staff wearing (as appropriate); Hi-Vis Vests, steel toe capped boots, safety helmets, safety glasses, ear protection								
First Aid Site Management	First Aid box and stretcher provided								
	Vegetation & spoil in stable stockpiles								
	Dust levels monitored & controlled								
	Noise levels monitored & controlled								
Enhanced PPE (if site conditions require) Hazardous Substances	Access road traffic management adequate								
	Dust upgraded PPE used (masks/respirators)								
	Noise, upgraded PPE used (ear protection)								
	Diesel tank – bund functional, no spills								
Waste Management	Grease/oil/petrol appropriately stored								
	Waste bins used & regularly emptied								
	Disposed of appropriately off site								
Environment	Erosion & Sediment Control Plan installed								
	Cut off drains & bunds intact & functional								
	Silt fences intact & clear								
	Sediment/grit traps clear								
Of -site Emissions	Dust acceptable at boundary or controlled								
	Noise acceptable at boundary or controlled								
	Fumes acceptable at boundary or controlled								
Plant	Plant & equipment pre-start checks done								
	Trucks loaded correctly (no overload or spills)								
	Trucks using load check area at quarry gate								
	Other (add further items as required)								

Document Distribution (Circle): Original/Copy - For: Base Office/Quarry File/Other

Appendix H: Significant Hazard Control Plans

The following Significant Hazard Control Plans follow;

- Plant and Machinery
- Dust
- Noise
- Working in the Sun
- Hazardous Substances
- Electrical
- Quarry

If further Significant Hazards are identified then appropriate Significant Hazard Control Plans will be prepared.



SIGNIFICANT HAZARD CONTROL PLAN

Department: PacificReview Date: 10/01/2018Register: SHCP# 002Item/Process/Area: WORKING WITH, AND AROUND, PLANT & MACHINERYRisk Rating : HIGH MSDS No: N/A WI or JSEA No:

Action (Yes or No)		1. Eliminate		2. Isolate	✓	3. Minimise
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Hazard / Impact Controls:

CONTROL METHOD	ACTION REQUIRED	BY WHOM	BY DATE
1. Planned Operations	<p>All staff to participate in a toolbox meeting before beginning work. This meeting is to plan and discuss the job/Hazard ID review any change (Personnel, Plant, and Environment) during the day.</p> <p>Use the appropriate item of plant for the job, meeting all relevant legislative requirements.</p> <p>Modifications are only to be made by a competent person, and an engineer's certificate issued prior to use.</p>	Foreman/ Supervisor	
2. Competent Plant Operators	<p>Ensure operators are competent (trained and assessed) in operating the appropriate item of plant, or in the case of trainee operators they must be directly supervised by a competent operator.</p> <p>Operators must hold the appropriate license and endorsement for the plant they operate(W.T.R.F)</p> <p>Keep the implements as close to the ground as possible (about 300mm above ground) while in transit.</p> <p>Check that loose clothing is clear of machine levers before operating plant</p> <p>Operators to ensure that any attachments have been lowered to the ground before dismounting the machine and before leaving site.</p>	Foreman/ Supervisor	
3. Personal Protective Equipment (PPE)	At all times appropriate PPE must be worn by all staff ie. Hi-Visibility clothing Downer Long/Long Policy & steel capped safety boots. Hearing protection, safety glasses and hard hats where required.	All Staff	
4. ROPS/FOPS/ Guards/ Flashing Lights	<p>Ensure that ROPS/FOPS are fitted to plant when required by COP/Regulations and seatbelts are worn at all times when operating the plant.</p> <p>Suitable guards in place over all moving parts.</p> <p>All plant to be fitted with flashing lights and are to be used at all times.</p>	Foreman/ Supervisor	
5. Pre-Start Plant Inspections	<p>All operators to conduct and document a pre-start check of their machinery before undertaking work.</p> <p>Check and confirm that COF/WOF, Registration, RUC/ Time License are current before driving.</p> <p>If any faults are identified, report them immediately. If the faults cause a safety or compliance issue, tag the vehicle out and do not operate until the issue has been addressed.</p>	Operators	



SIGNIFICANT HAZARD CONTROL PLAN

Department: PacificReview Date: 10/01/2018Register: SHCP# 003Item/Process/Area: DUST – NATURAL / LIME / CEMENT / CONCRETE / ASPHALTRisk Rating : HIGH MSDS No: N/A WI or JSEA No:

Action (Yes or No)		1. Eliminate		2. Isolate	Yes	3. Minimise
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Hazard / Impact Controls:

CONTROL METHOD	ACTION REQUIRED	BY WHOM	BY DATE
Planned Operations	All staff to participate in a toolbox meeting before beginning work. This meeting is to plan and discuss the job/Hazard ID for the day. Plan operations to reduce time work area is left exposed, select methodologies that will reduce the amount of dust generated. Work upwind of work area to minimize dust exposure.	Foreman/Supervisor & Contract Manager	
Planned Operations	Where possible dampen areas with water – use water cart when necessary	Foreman/Supervisor & Contract Manager	
Planned Operations	Ensure wet cutting methods are used for saws when cutting concrete or asphalt.	Foreman/Supervisor & Contract Manager	
Personal Protective Equipment (PPE)	At all times appropriate PPE must be worn by all staff eg. Safety goggles, overalls. Where dust is present or while using a cutting saw, staff must wear P-2 Dust masks.	All Staff	

Additional Information:

Medical Research Data : Various
 Technology Available : Not Applicable

Reason For Methods Used:

Some dust is naturally occurring and cannot be avoided in many situations. Other dusts may contain hazardous particles such as silica and are potentially hazardous to health. Uncontrolled exposures to concrete, asphalt and rock cutting dust have been associated with all 3 types of Silicosis, therefore employees must be protected where possible and the hazard should be minimized.

- Code of Practice for the Management of Substances Hazardous to Health
- Workplace Exposure Standards

Health Monitoring Required	Yes		
Type of Monitoring	Lung Function		
Frequency	Annual		
Review Date	January 2019	By Whom:	Zero Harm



SIGNIFICANT HAZARD CONTROL PLAN

Department: PacificReview Date: 10/01/2018Register: SHCP# 008Item/Process/Area: NOISERisk Rating: HIGH MSDS No: N/A WI or JSEA No:

Action (Yes or No)		1. Eliminate	Yes	2. Isolate	Yes	3. Minimise
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Hazard / Impact Controls:

CONTROL METHOD	ACTION REQUIRED	BY WHOM	BY DATE
1. Planned operations	Consider soundproofing requirements and/or noise levels in purchasing and design decisions for plant and machinery. Plan your work. All staff to participate in Job START/ Hazard ID for the day	Managers / Supervisors All	
2. Noise Reduction	Use barriers to isolate people from noise source where practicable. Regularly service plant. Ensure exhaust mufflers etc. are in place and functioning correctly. Turn off plant / machinery when not required for use	Managers/ Supervisors All	
3. PPE	Wear appropriate class of hearing protection - earmuffs / earplugs	All	
4. Health Check	Monitor effectiveness of ear protection through regular health checks	All	

Additional Information:

Medical Research Data Various
Technology Available Soundproof cabs, mufflers

Reason For Methods Used:

Approved Code of Practice for the Management of Noise in the Workplace

Working with and around plant and machinery is something that we do everyday, it is not possible to eliminate this hazard and therefore we must find ways to minimize the risk for employees working alongside mechanical plant

Health Monitoring Required	Yes		
Type of Monitoring	Hearing Checks		
Frequency	Yearly		
Review Date	January 2019	By Whom:	Zero Harm



SIGNIFICANT HAZARD CONTROL PLAN

Department: PacificReview Date: 10/01/2018Register: SHCP#020

Item/Process/Area: WORKING IN THE SUN – SUNBURN, HEAT EXHAUSTION, SUN STROKE, SKIN CANCER

Risk Rating : High

MSDS No: _____ WI or JSEA No: _____

Action (Yes or No)	1. Eliminate	Y	2. Isolate	Y	3. Minimise
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Hazard / Impact Controls:

CONTROL METHOD	ACTION REQUIRED	BY WHOM	BY DATE
1. Personal Protective Clothing	Sun burn and skin damage Cover exposed skin with lightweight clothing. Long/Long Downer Policy Wear a hardhat with sun protection flap Cover any exposed skin with a high factor sun screen and reapply regularly especially when sweating. Wear UV Protection safety glasses. Examine skin regularly for any freckles or moles that change size, colour, surface characteristics, shape, or outline, and any bleeding or crusted sores that won't heal. If skin changes are found, have a doctor check and treat as early as possible.	All staff	
2. Personal Protective Clothing	Sun stroke - heat exhaustion When working in the sun, keep your fluid intake up by drinking 3 – 5 litres of water per day. Avoid caffeine fluids (tea, coffee, fizzy drinks) Wear a hardhat, and light weight long/long clothing that allows moisture to evaporate quickly. Do not work in the sun on an empty stomach. Where possible, programme work to avoid hard manual work during the hottest part of the day. Seek immediate medical attention for victims of Heat Exhaustion and Heat Stroke.	All staff	

Reason For Methods Used:

Working in the sun cannot be avoided, effects can only be minimized.

Health Monitoring Required	Yes.
Type of Monitoring	Skin examination of moles freckles unusual growths
Frequency	Bi Annual
Review Date	April 2015
By Whom:	Zero Harm



SIGNIFICANT HAZARD CONTROL PLAN

Department: PacificReview Date: 10/01/2018Register: SHCP# 026Item/Process/Area: HAZARDOUS SUBSTANCESRisk Rating: HIGHMSDS No: N/A

WI or JSEA No: _____

Action (Yes or No)	Yes	1. Eliminate	Yes	2. Isolate	Yes	3. Minimise
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Hazard / Impact Controls:

CONTROL METHOD	ACTION REQUIRED	BY WHOM	BY DATE
1. Eliminate	Substitute a non hazardous substance wherever possible to eliminate exposure to hazardous substances.	Managers	Ongoing
2. Isolate	Use closed pipe work and computer controlled systems to transfer hazardous substances from tank/containers to processing vessels.	Managers	Ongoing
3. Storage	Storage areas must clearly show signage in accordance with HSNO Regulations. This includes Class Diamonds; HAZCHEM; no smoking and naked flame warning signs. Ensure that all containers are correctly labelled, stored and segregated as required by HSNO Regulations. Ensure that Location Test Certificates and Stationery Container Certificates are current for all hazardous substances stored on site. Ensure storage racks are weight certified. Shrink wrap loose items together on pallets to prevent them falling from shelves. Ensure that safe stacking of containers is adhered to (IBC's 2 high, drums 2 pallets high if strapped). Ensure Cylinders are not left in vehicle access ways	Managers/ Operators	
4. Planned operations	Tank wagons must be clearly placarded in accordance with the RNZ 9904 Code of Practice. Dangerous Goods documentation and Emergency Procedure Guides must be carried with every load in a clearly labelled folder inside the driver's door. Drivers must have a "Dangerous Goods" endorsement on their driver's licence. Ensure that Approved Handlers are certified for required substances and certification is current. Ensure safety showers and eyewashes are located in close proximity to chemical handling areas.	Managers / Supervisors	
5. Training	Ensure that staff are trained to handle substances, wear specialised PPE and have access to current		



SIGNIFICANT HAZARD CONTROL PLAN

Department: PacificReview Date: 10/01/2018Register: SHCP# 049Item/Process/Area: Electricity and Electrical AppliancesRisk Rating: HIGHSDS No: N/A WI or JSEA No:

Action (Yes or No)	1. Eliminate	Yes	2. Isolate	Yes	3. Minimise
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Hazard Controls:

	Control Method	Action Required	By Whom	By Date
1.	JobSTART	Discuss in depth the electrical issues on site and an action plan as to who is going to do what in the work. Consider a rescue plan in the event of electrocution, and document what is to happen and who will be involved.		
	Prescribed Electrical Work	Only to be done by authorized and appropriately qualified people (registered electricians).	All Staff	
2.	Isolation/ Protection of power sources	Regularly inspect and maintain signs, fences, cages or cabinets which are in place to protect people from power sources (switchboards, transformers, etc).	All Staff	
3.	Use of Electrical appliances and tools	Ensure that all items are appropriately tested and tagged at appropriate intervals (as per AS/NZS 3012:2010 for Construction Sites or AS/NZS 3760:2010 for other sites including workshops). Inspect prior to use for any damage or exposed conductors.	All Staff	
4.	Working on electrical equipment	Do not work on any electrical equipment unless it has been shut-down and isolated and tagged out from all power-sources (see Lock Out – Tag Out procedure, HSM/26).	All Staff	
5.				

Additional Information:

Medical Research Data:

Technology Available:

Reason For Methods Used:

Electricity, and electrical appliances, are an integral part of the workplace, but there are strict controls on who can do certain work (Electricity Act 1992). There are also legal requirements for ensuring that electrical equipment and appliances are maintained in good, safe condition (AS/NZS 3012:2010 – Electrical Installations – Construction and Demolition Sites, and AS/NZS 3760:2010 – Safety and Inspection of Electrical Equipment)

See also SHCP#05 (Underground Services) and SHCP#10 (Working near Overhead Service Lines & Poles)

Health Monitoring Required	No		
Type of Monitoring	Not applicable		
Frequency	Not applicable		
Review Date	January 2019	By Whom:	Zero Harm Team



SIGNIFICANT HAZARD CONTROL PLAN

Department: PacificReview Date: 10/01/2018Register: SHCP# 050Item/Process/Area: QUARRIES, GENERALRisk Rating: HIGHMSDS No: N/A

WI or JSEA No: _____

Action (Yes or No)	Yes	1. Eliminate	Yes	2. Isolate	Yes	3. Minimise
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Hazard / Impact Controls:


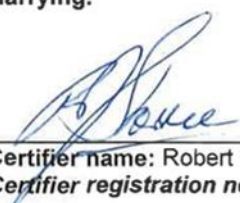

HAZARD	ACTION REQUIRED	BY WHOM	BY DATE
1. Visitors – un-inducted, supervised	Warning signage on quarry gates. All visitors to report to office, sign in and be escorted at all times by quarry staff.	Quarry Manager	
2. Plant Movement	Refer to Significant Hazard Control Plan No. 2	Quarry Manager	
3. Noise	Refer to Significant Hazard Control Plan No. 8	All staff	
4. Rooding within the quarry	<u>Haul Roads –</u> shall all have gradients less than 1 : 10 or have the Mines Inspectors dispensation to be steeper. Runaway lanes shall be provided where needed, with crash barriers along the sides of dangerous drop offs. <u>All Roads –</u> shall be regularly inspected by the Site Supervisor to ensure that they are maintained at a safe trafficable width for the type of vehicles using them, have well shaped running surfaces clear of spillage and watertables and side drains that are clear and free from scour.	Quarry Manager	
5. Nip-points/ moving parts	Guarding to be installed at all accessible nip-points and regularly checked. Only to be removed when plant is shut down and Locked-out. Guards must be bolted or fixed	Quarry Manager	
6. Building stockpiles	No loading out while stockpile building is in progress. Safety buffers shall be formed on the top of dump stockpiles and angles of repose shall be at 48°. Height of stockpiles to be limited to the maximum reach of the machine. Personnel to keep well away from stockpiles when dump trucks are stockpiling.	Quarry Manager	
7. Untidy walkways	All walkways to have floor planking, kickboards and rails in place. Maintain good housekeeping practices by ensuring that all walkways are clear and tidy. Monthly inspection schedule for housekeeping and condition	Quarry Manager	
8. Conveyors	Ensure that daily and weekly defect checks are completed.	Quarry Manager	

Appendix I: Quarry Staff Qualifications

Quarry Manager: Brett Swain



Shot Firer: Daniel Skilton

 INDEPENDENT CONSULTANCY SERVICES LTD	
TEST CERTIFICATE	
Approved Handler	
Certificate Number: AH000012-2372	
Replaces certificate AH1572	
Issued pursuant to Section 82 of the Hazardous Substances and New Organisms Act 1996	
Issue date: 18th February 2015	Expiry date: 17th February 2020
 Name: <i>Daniel Rex Skilton</i> 	
Date of Birth: 23/09/89	
Residential contact details: 49B Caledonian Road Westport Telephone: (021) 298 5374	Work contact details: Geotech Ltd PO Box 76 Charleston (03) 280 8603
<p>This certificate is issued in accordance with Regulation 5 of the Hazardous Substances and New Organisms (Personnel Qualifications) Regulations 2001. This certifies that the handler has met the relevant requirements for the substances and lifecycles specified below:</p>	
<u>Substances/Classes</u> Explosives – Blasting (Classes 1.1B, 1.1D & 1.4S)	<u>Lifecycles</u> Use, Storage & Transport
Conditions: <ol style="list-style-type: none">1) Unless surrendered or revoked beforehand, this certificate shall remain in force until the expiry date above and may be renewed thereafter by an authorised test certifier.2) This certificate must be produced at the request of an enforcement officer appointed under the HSNO Act 1996.	
Special conditions: <ol style="list-style-type: none">1) The certificate is limited to handlers in control of class 1 explosives in Surface Mining & Quarrying.	
  Test Certifier name: Robert John Storrie Test Certifier registration no: TST00012	
<div style="border: 1px solid black; padding: 5px;"> INDEPENDENT CONSULTANCY SERVICES LTD PO Box 17-556 Sumner, Christchurch Phone: (03) 326 3101 Fax: (03) 326 3102 Mobile: 027 269 0601 E-mail: rob@ics.co.nz</div>	

Appendix J: Recommended Responses to Potential Emergencies (inc Spill Response)

A copy of this information should be posted in a prominent location on site.

FIRE/EXPLOSION

Action in the event of a fire should be, if possible, attempt to prevent small fires from developing into larger ones. As a rule paper/fabric/wood fires can be extinguished with water. **ALL ELECTRICAL FIRES MUST BE EXTINGUISHED WITH DRY POWDER or CO₂**

If you are attempting to control a fire ensure some other staff member carries out the fire procedure as given below. They should:

- ◆ Raise the alarm immediately, warn any nearby personnel and (if functional) operate the nearest fire alarm.
- ◆ Ensure that the fire service (if available) is notified. Clearly state the location and nature of the emergency.
- ◆ Potentially dangerous machinery and fuel sources should be shut down if it is safe to do so. Leave lights on.
- ◆ Leave immediately by the nearest safe exit route. Move quickly but DO NOT RUN.
- ◆ Report to the designated **assembly point**.
- ◆ Stay at the assembly point until the “All Clear” is given by the Safety Officer.
- ◆ Only if it is safe to do so should any attempt to fight the fire be made.

DO NOT ATTEMPT TO PUT OUT A FIRE IF IT INVOLVES PERSONAL RISK

CHEMICAL SPILL

If large quantities of fuel, or a hazardous or unknown chemical is spilt:

- ◆ Call the fire service and advise the nature of the spill and the quantity involved.
- ◆ If there is a possible risk to people, evacuate the area, ensuring that people remain upwind and the spill area is closed to public access by roping or taping off the area. Post warning signs.
- ◆ Remove all sources of ignition to prevent an explosion of flammable vapours.
- ◆ Only attempt to contain a spill if you have been trained in spill cleanup for the substance involved and have the proper equipment to do so. Otherwise, do not approach or come into contact with the substance.
- ◆ If safe to do so, reposition leaking containers to prevent further leakage.
- ◆ Refer to Emergency Spill Response Flowchart in Environmental Plan

EARTHQUAKE/TSUNAMI

At the first signs of an earthquake:

- ◆ If outside, stay away from buildings and power lines. If indoors, stay indoors
- ◆ Take cover under any substantial item of furniture, such as a desk, counter work table, or in a doorway and hold on firmly.
- ◆ Stay away from glass doors and windows, tall shelves, light fixtures and objects that might fall.
- ◆ Turn off power, water and gas at the mains
- ◆ The GKD site is adjacent to the harbour and at risk from a tsunami. Follow PV escape routes.

SEVERE WIND OR STORM

- ◆ Open a window on the side of the building AWAY from the wind – this will help relieve the pressure on the roof.
- ◆ Put tape across very large windows to stop them shattering.
- ◆ Don't go driving unless absolutely necessary.
- ◆ Listen to the nearest operating radio station for information.

Emergency Spill & Runoff Procedure

