# Compliance Report

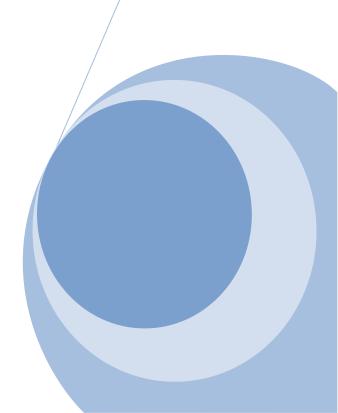
APRIL 2018 - SEPTEMBER 2018

M/s. Srí Lakshmí Stone Crusher

(Quarry project)

**Kannur District** 

Kerala





Dt.31-12-2018

The Additional Principal Chief Conservator of Forests (C) Ministry of Environment, Forests & Climate Change, 4<sup>th</sup> Floor, E& F Wing, Kendriya Sadan, Koramangala, Bangalore - 560034

Ref :- File No. 09/KNR/2017/ DEIAA

Sub :- Environment Clearance - Quarry project at Survey No. 1561, Kanichar Village, Iritty Taluk, Kannur District, Kerala - Compliance Report -First half - Reg.

Respected Sir,

The Quarry (Building stone) project was accorded Environmental Clearance for 0.9898 Ha. by order No. 09/KNR/2017/ DEIAA dated 01-07-2017 by District Environmental Impact Assessment Authority, Kannur, Kerala. The compliance report of First half (April 2018 – September 2018) to the specific and general conditions of the Environment Clearance order is enclosed.

Thanking you,

Yours respectfully,

For SRI LAKSHMI STONE CRUSHER

Managing Partner

M/s SRI LAKSHMI STONE CRUSHER

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#### **COMPLIANCE REPORT**

TO

THE CONDITIONS

**OF** 

#### **ENVIRONMENTAL CLEARANCE ORDER**

NO: 09/KNR/2017/ DEIAA

Dated: 01-07-2017

BY

# DISTRICT ENVIRONMENT IMPACT ASSESSMENT AUTHORITY (DEIAA)

**FOR** 

BUILDING STONE QUARRY
(MINOR MINERAL MINING) PROJECT

AT

SURVEY NO. 1561

KANICHAR VILLAGE, IRITTY TALUK,

KANNUR DISTRICT, KERALA

BY

M/s. SRI LAKSHMI STONE CRUSHER

KANNUR DISTRICT

KERALA

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#### INTRODUCTION

Quarry project of **M/s. Sri Lakshmi Stone Crusher** is situated at Survey No. 1561, Kanichar Village, Iritty Taluk, Kannur District, Kerala.

The quarry project was accorded with the Environmental Clearance (EC) by District Environmental Impact Assessment Authority (DEIAA), Kannur on 01-07-2017. As part of general condition No.37 of Environmental Clearance order, half yearly compliance report needs to be submitted by the project proponent. The compliance report of Second half to the specific conditions and general conditions of the Environmental Clearance order for the period of April 2018- September 2018 is being submitted.

## **COMPLIANCE REPORT**

(SPECIFIC CONDITIONS)

**PART A** 

#### **PART - A - SPECIFIC CONDITIONS**

01	A mines manager shall be appointed to control ,direct, manage   compli	ed
	and supervise the quarrying operations required under the	
	mines Act ,1952	

To control, direct, manage and supervise the quarrying operations in the quarry the project proponent has appointed a mines manger as per the Mines Act 1952. The certificate of Mines engineer and Form D is attached as **Annexure No8**.

02	Health	and	welfare	for	the	persons	employed	shall	be	complied
	implem	ented								

The project has been provided facilities like housing, food, water and sanitation to the workers. The project kept a First aid box in the project site. In association with Primary Health Centre of Local Self Government, the project proponent has conducted health check up for the labours.

03	Controlled blasting should be practiced and blasting shall be	Complied
	done only during day time. The mitigate measures for control of	
	ground vibration to arrest the fly rocks and boulder should be	
	implemented.	

The blasting is carrying out in controlled manner by using ordinary delayed detonators. All blasting activities are carrying out with the stipulated guidelines of explosive department and other concerned agency. No work will be there in the quarry site at Night. The mitigate measures to arrest ground vibration and fly rock is detailed in General condition No 11. The blasting time in the quarry is in day time at 9.00-10.30 am, 2-3 pm and 4.00 - 5.30pm.

04	Plantation	shall	be	done	which	include	s a	green	belt	of	Being
	adequate	width	aroui	nd the	mining	g lease	area	exclud	ding	the	Complied

rocky area, along roads, overburden dumps and nonmineralized area by planting suitable native species in consultation with the local DFO/Agriculture department.

The green belt is important in the mining site. In order to that the project has taken the suggestion of agricultural department to plant the native species. The project proponent has started to plant various saplings in the project site to develop a green belt around the project area. Avenue tress also planted along the road side to minimise the dust emission.

The drains should be regularly de silted and maintained properly check dam and gully checks shall be constructed wherever to required to arrest siltation.de siltation shall be done every year before the onset of monsoon

To arrest the quarry waste entering in to the public drain and stream, the project has constructed De siltation chambers. These chambers will be de silted during summer season.

06	Fencing shall be maintained properly all around the lease area.	Complied
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To demarcate the land, the project has done fencing around the lease area. This was done by barbed metal wire.

07	The CSR need redrafting with inclusion of felt needs of the	Complied
	locality with special emphasize for implementing ground water	
	recharging water recharging techniques in and at the vicinity of	
	the proposed site.	

The project proponent has redrafted the CSR by including the ground water recharging techniques.

80	Appropriates sign boards should be displayed.	Complied	
			1

The project proponent has installed appropriate sign boards in the project site.

### The blasting time must be displayed and strictly adhered to. Complied

To give warning to the labours and community people prior to the blasting in quarry, the project installed warning alarms as per the stipulation of Explosive department in the quarry site.. The blasting time is 9.00-10.30 am, 2-3 pm and 4.00 - 5.30pm. The photograph of the board showing blasting time is attached as **Plate No.4** 

### 10 Dust suppression mechanism must be in place. Complied

The project splashes the haulage road and critical areas with the help of vehicles in regular intervals to arrest dust emissions from the road while transportation of materials.

Ī	13	A separate small plot to be maintained in the premise to	Being
		preserve rare and endemic species. If any, listed in the	Complied
		biodiversity assessment etc.	

A Separate small plot has demarcated to preserve the endemic species by the project proponent. Various saplings were started to plant by the project proponent in the project site.

### 14 The PPV values must be less than 10 mm/sec. Noted

All mining activities are progressing under the supervision of qualified personals. To enhance safety and to make environment friendly quarrying, the excavation activity in the project is progressing by creating benches of 5m width x 5m height.

15	The green belt shall be provides around the periphery.	being
		complied

The project has provided Green belt around the project area. This will reduce air and noise pollution.

16	Where the height of the bench formed during earlier workings	Noted
	exceeds the maximum each of the excavator engaged for work,	
	such bench height shall be reduced from top to bottom.	

The maximum height of all benches will be 5 meters. The extraction of minerals will be from top to bottom.

17	Loose or hanging rock or mineral boulder on the side wall shall	Being
	be dressed down before engaging persons for work at the	Complied
	bottom of the bench.	

The project proponent deploys JCB like vehicles to remove the loose or hanging mineral boulders on the side wall. The labours will work on the bottom bench only after clearing such loose minerals form the side wall.

18	Permanent boundary pillars should be fixed by the proponent	complied
	before commencing quarrying	

`To demarcate the mining area, permanent Boundary pillars were fixed at each end of the lease area.

19	No quarry blasting to be undertaken and sustained till warning	Noted
	time limit expires and /or when continues 48 hours cumulative	
	rainfall exceeds 8 cm and blasting shall be resumed until 24hrs.	
	of rain free situation arises in the quarry locality based on the	
	evaluation by the revenue officials.	

The condition will be complied by the project proponent when such situation arises. No quarry blasting to be undertaken and sustained till warning time limit expires

and /or when continues 48 hours cumulative rainfall exceeds 8 cm and blasting shall be resumed until 24hrs

ed

The waste dumps and topsoil dumps are stabilised by using coir mats or bio regeneration. Proper drainages are constructed by the project proponent, which will help to manage the storm water during monsoon season.

21	All dumps slopes shall be sufficiently stabilized by using	Noted
	appropriate species mix of grass .creepers, shrubs &trees. This	
	shall be done in consultation with the forest department and	
	local research institution and experts in stabilization of mine	
	dumps.	
ı		

The overburden and topsoil stacking is progressing, once it is attain its maximum capacity, the project will plant appropriate grass on the dump to prevent sliding and soil erosion.

22	Garland drains of at least 2m width shall be provided all along	Noted
	7.5 m buffer zone to divert the water from entering the quarrying	
	slopes. These drains shall be cleaned every year before the	
	monsoon season.	

The project proponent has constructed garland drain to catch the rain water along 7.5 m buffer zone. This can divert the storm water entering the quarrying slopes.

23	The water from the garlands drainage shall directed to the silt	Being
	settling ponds. The clarified overflow from silt settling ponds	complied

shall be directed to a Rain Water Harvesting (RWH) pond before releasing the clarified water to the natural watercourse.

The water from the garlands drainage will direct to the silt settling ponds. The clarified overflow from silt settling ponds shall be directed to a Rain Water Harvesting (RWH) pond before releasing the clarified water to the natural watercourse.

A retaining wall of stone rubbles with wire mesh, of sufficient width and strength (not less than 2m)shall be constructed at the bottom of the slope of the quarry .lease area to arrest any likely roll of boulders during heavy rainfall.

The project will construct a retaining wall with stone rubbles at the bottom of the slope. This will prevent sliding and slumping. This will be done at appropriate place in the mining area.

# **COMPLIANCE REPORT**

(GENERAL CONDITIONS)

**HEALTH** 

01	First Aid kit provide in the work site. It shall be periodically	Complied
	maintained property .some labourers shall be trained on First	
	Aid.	

In the project site the project has kept first aid box. The project has given training for the selected labours in the project site to use first aid box.

### 02 Whole some drinking water should be provided. Complied

In the project area pure drinking water is available at all time for everyone in the project site.

### O3 Premises should be maintained as wet to suppress the dust. complied

To reduce the emission of dust, the project proponent splashes water on haulage roads and loading and un loading point.

### 04 Sanitary type of latrines and urinals should be provided. Complied

The project proponent gives importance to the sanitary needs of workers in the project site. So the project proponent has given sanitary type of latrine and urinals to every labours in the project site.

05	Resting place should be provided for workers.	Complied
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The project proponent has provided adequate rest rooms in the project area to get proper rest to the labours. **Plate No. 6** shows the photograph of resting room.

06	'No Smoking' board should be exhibited according to COTPA	Complied
	Act.	

The project proponent has displayed No smoking area in the project site. The photograph of the no smoking board is provided at **Plate No. 7** 

07 Work should not be done in night.	Complied
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To reduce the inconvenience of community, the quarrying activities are limited to day time only as per KSPCB guidelines. The working time of quarry is from 7 am to 6 pm.

C	8(	Details of nearest hospitals, shortest route to hospitals and	Complied
		contact no etc. Should be available.	

Details of nearest hospital, Fire station, Police station, etc are available in the project site. **Plate No. 8** shows the photograph of details of emergency contact numbers.

09	Approach roads should be maintained properly.	Being
		complied

One of the main sources of dust emission is roads The approach road has been properly maintaining by the project proponent to arrest the dust emission and easy transportation.

# **COMPLIANCE REPORT**

(GENERAL CONDITIONS)

**PART B** 

#### **PART - B - GENERAL CONDITION**

Ī	01	Rain	Water	Harvesting	capacity	should	be	installed	as	per	the	Complied
		preva	iling pro	ovisions of K	MBR / KP	BR, unle	ess o	otherwise	spe	cified	l.	

#### Compliance:

Rain Water Harvesting ponds are important structure in the mining area. To utilize the rain water, this Rain Water Harvesting (RWH) structure is properly maintaining in the area. The storm water from all mining areas is properly channelized to this pond. It is situated in the lowest level of quarry area. The rain water is used for irrigation purposes, watering of plants, wetting of roads and for dust suppression system (mainly sprinklers system).

(	02	Environment Monitoring Cell (EMC) as agreed under the affidavit	Complied
		filed by the proponent should be formed and made functional.	

#### Compliance:

The Environmental Monitoring Cell (EMC) formed and made functional with Mr. C G George as head of the monitoring cell. The EMC meeting arranges regularly for a sustainable environment. The EMC meeting arrange regularly for a sustainable environment. The details of the EMC members is given in **Table No. 1** 

Table 1 - Environmental Monitoring Cell (EMC)

SI. No.	Post		Name
1	Head of monitoring cell		C G George
2	2 Member		Nigil
3	Member		Chandrasekhar G P

03	Suitable avenue trees should be planted along either side of the	Complied
	tarred road and open parking areas, if any, inclusive of approach	
	road and internal roads.	

To reduce air and noise pollution, the project proponent has planted different avenue trees along either side of the road. There is also natural vegetation including trees, shrubs and climbers are presents in the sides of road and parking area. The project could plant more suitable avenue trees along either side of the tarred road and open parking areas, where there is less vegetation. The photograph of the avenue tress is attached as **Plate No.1**.

04	Maximum possible solar energy generation and utilization shall be	Will be
	ensured as an essential part of the project.	Complied

#### Compliance:

The project has yet to install solar panels/solar street lights in the project site to use maximum renewable energy to reduce electrical consumption from KSEB.

05	Sprinklers shall be installed and used in the project site to contain	Complied
	dust emissions.	

#### Compliance:

The project splashes the haulage road and critical areas with the help of vehicles in regular intervals to arrest dust emissions from the road while transportation of materials. The sprinklers are also installed in the critical area to reduce the dust emission. The photograph of the sprinklers is attached as **Plate No.2**.

06	Eco-restoration including the mine closure plan shall be done at the	Noted
	own cost of the project proponent.	

#### Compliance:

The eco restoration plan prepared by the project will be executed in a good manner. The project started to plant various saplings in and around the project site. The mine closure plan will be done at the own cost of project proponent as agreed in the proposal.

07	At least 10 percent out of the total excavated pit area should be	Will be
	retained as water storage areas and the remaining area should be	complied
	reclaimed with stacked dumping and overburden and planted with	
	indigenous plant species that are eco-friendly, if no other specific	
	condition on reclamation of pit is stipulated in the EC.	

To conserve rain water, ten percent of the excavated pit area will be retained as water storage area. This will help to improve the ground water table. It is proposed to develop a vegetative cover in the remaining area with indigenous plant species after reclamation of the mined area with stacked top soil and overburden.

80	Corporate Social Responsibility (CSR) agreed upon by the proponent	Complied
	should be implemented.	

#### Compliance:

The project proponent has carrying out many activities for social integration nd community development. The activities under Corporate Social Responsibility (CSR) activities are executed in the sector of Health, Housing. The project proponent is intending to carry out more activities under CSR for inclusive growth in the community. The details of CSR provided in the period of second half is mentioned in the **Table No.2** 

No.2 - Detail of performed activities under CSR

Table Sectors	Activities	Partners	Beneficiaries	Amount spent in Rs.
Education	Donation	Sparrow nest(malabar awareness)	Public	55000
Donation		ubrella (bekklam aided up school perinthodi)	Students	8000

		Total		3,87,600.00
			Arayangad	24,600.00
	Donation		Snehabhavan	
			Poolakutty	
			House, 27TH Mile	1,00,000.00
	Donation		Regi, Mootradan	
			27TH Mile Poolakutty	
			Moothradan House,	1,00,000.00
	Donation		Sivaraman,	
			Poolakutty	
Development			House, 27TH Mile,	1,00,000.00
Infrastructure	Donation		P. Chandran, Palmi	

09	The lease area shall be fenced off with barbed wires to a maximum	Complied
	height of 4ft around, before starting of mining. All the boundary	
	indicators (boards, stores, markings etc) shall be protected at all	
	times and shall be conspicuous.	

As part of demarcation and enhance safety, the project proponent has erected barbed metal wire fencing around the mining area with height of 5 ft. This will help to prevent falling of animals/human being/dumping of garbage etc.

10	Warning	Warning alarms indicating the time of blasting (to be done at specific									complied
	timings)	has	to	be	arranged	as	per	stipulations	of	Explosive	
	Department.										

#### Compliance:

To give warning to the labours and community people prior to the blasting in quarry, the project installed warning alarms as per the stipulation of Explosive department in the quarry site.

Ī	11	Control	measures	on	noise	and	vibration	prescribed	by	KSPCB	Complied
		should b	oe impleme	nted	l.						

To reduce noise and vibration, the following measures are adopting in the project site.

- Proper maintenance of machinery and equipments
- ➤ The machineries like breaker and excavator has well sound proof cabin so that the machine operators can work without stress due to the sound.
- Personal protective devices i.e., ear plugs are provided to workers working in high noise areas.
- The mining activity held in day time only.
- Noise level at quarry site checked periodically.

#### Blast vibrations and control measures

- Controlled blasting technique is adopted in this project in order to reduce blast vibrations.
- Ordinary detonators are using for the blasting
- ❖ The maximum charge per delay is not more than 10kg to limit the PPV values to 10mm/sec.
- Optimum delay sequence and stem to column ratio is maintaining to minimize the ground vibration intensity.

12	Quarrying activities should be limited to day time as per KSPCB	Complied
	guidelines/specific conditions.	

#### Compliance:

To reduce the inconvenience of community, quarrying activities are limited to day time only as per KSPCB guidelines. The proposed working time of the quarry will be from 7.00am to 6.00 pm.

1	13	Blasting should be done in a controlled manner as specified by the	Complied
		regulations of explosives department or any other concerned agency.	

To reduce fly rock and ground vibration, the blasting is done in controlled manner by using ordinary/electric delayed detonators. All blasting activities are carrying out with the stipulated guidelines of explosive department and other concerned agency. The blasting time in the quarry is in day time at 9.00-10.30 am, 2-3 pm and 4.00 - 5.30pm. The photograph of the board showing blasting time is attached as **Plate No.4** 

14	A licensed person should supervise/control the blasting operations.	Will	be
		Comp	lied

#### Compliance:

The project has appointed a mines manager to supervise/control the blasting operations for the exploitation of minor minerals from the project site. The certificate of Mines engineer and Form D is attached as **Annexure No8**.

15	Access roads to the quarry shall be tarred to contain dust emissions	Being
	that may arise during transportation of materials.	Complied

#### Compliance:

To contain dust emissions and for the trouble free transportation of materials, the project has tarred the access road to the quarry site. The project will splash water on the road to arrest the dust production during summer season.

10	6	Overburden materials should be managed within the site and used   Co	omplied
		for reclamation of mine pits as per mine closure plan/ specific	
		conditions.	

#### Compliance:

Overburden is an inevitable byproduct of building stone quarry. There is no old quarry in the site for restoration. The overburden materials are stored within the site at designated place. This will be used to restore the exploited area in future.

17	Height of the benches should not exceed 5m, and width should not	Complied
	be less than 5m, if there is no mention is the ining plan/specific	
	conditions.	

To enhance safety and conserve environment, the project extract the minerals by creating benches as per mining plan. The benches will not exceed 5 meters of height and the width of the bench will have minimum of 5 meters. The photograph of the benches is attached as **Plate No. 3** 

18	Mats to reduce fly rock blast to a maximum of 10 PPV should be	Noted
	provided.	

#### Compliance:

The project proponent is using ordinary/electric delayed detonator. The blasting is under the supervision of qualified person. The blasting through delayed detonators can reduce the incident of fly rock. The project assures that the PPV will be below 10 in all blasting.

19	Maximum depth of mining from general ground level at site shall not	Will be
	exceed 10m.	complied

#### Compliance:

Maximum depth of Mining will not exceed beyond 10 meter or not below the level of the nearest stream bed, whichever is less.

20	No mining	g operations should be carried out at places having a slope	Noted
	greater	than 45 <sup>0</sup> .	

#### Compliance:

No mining operation will carry out with a slope greater than 45°.

21	Acoustic	enclosures	should	be	provided	to	reduce	sound	Being
	amplificati	ions in addition	on to the	prov	visions of g	reen	belt and	hollow	Complied
	brick env	elop for crus	shers so	that	the noise	leve	el is kept	within	
	prescribed	d standards g	iven by C	РСВ	/KSPCB.				

To reduce the impact of sound to the labours in the mine, the project has provided ear plugs. All machines are new. Vegetation around the mining area will help to reduce noise and air pollution. This helps the noise level kept within prescribed standards. There is no crusher unit in the project site.

22	The	workers	on	the	site	should	be	provided	with	the	required	Complied
	prote	ective equ	iipm	ents	such	as ear r	nuffs	s, helmet,	etc.			

#### Compliance:

The project proponent has provided adequate Personnel Protective Equipments (PPE) such as helmets, ear muffs, safety belts, glows, etc. to ensure the safety of workers in working site.

23	Garland drains with clarifiers to be provided in the lower slopes	Complied
	around the core area to channelize storm water.	

#### Compliance:

The proponent is very conscious to prevent all quarry waste to enter in the the public drainage or stream. The project proponent ensured that all storm water from the mining area is flowing in to the pond created at mining area. The project proponent has created garland drains in the lower slopes. The project will create garland drains where it is necessary in the project area for the effective storm water management.

24	The transportation of minerals should be done in covered trucks to	complied
	contain dust emissions.	

To avoid dust emission from the vehicle while transportation of materials the project assure that the loaded trucks are covered with appropriate sheets.

25	The proponent should plant trees at least 5 times of the loss that has	Being
	occurred while clearing the land for the project.	complied

#### Compliance:

The project proponent has started to plant various saplings in the project area as a compensation of loss of trees while the project is clearing the land for mining. The project proponent is planning to plant more tree saplings in the project site.

26	Disposal of spent oil from diesel engines should be as specified	Being
	under relevant Rules/Regulations.	complied

#### Compliance:

The volume of used oil is used as lubricant in the project site. The project proponent is using the used oil as lubricant for machineries and other equipments. The excess used oil will be sold only to the approved recyclers.

27	Explosives should be stored in magazines in isolated place specified	complied
	and approved by the explosives department.	

#### Compliance:

The magazine situated in an isolated place specified and approved by the explosives department. As per the stipulation of competent authority, the project has been storing the explosives in magazine. The area surrounded to the magazine was fenced with barbed metal wire. The photograph o the magazine is attached as **Plate No. 9** 

28	A minimum buffer distance of 100m meter from the boundary of the	complied
	quarry to the nearest dwelling unit or other structures, not being any	
	facility for mining shall be provided.	

To prevent possible fly rock and vibration to nearby houses, the norms of Kerala State Pollution Control Board regarding the distance criteria of residences, roads, rivers and worship places is adhered by the project.

29	100 m buffer distance should be maintained from forest boundaries.	Complied	
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#### Compliance:

The project has left more than 100 meters as buffer distance from the project site.

30	Consent from Kerala Pollution Control Board under Water and Air	Complied
	Act(s) should have been obtained before initiating activity.	

#### Compliance:

The project has obtained consent from KSPCB under Water and Air Act(s). The copy of certificate of "Consent to Operate" (Renewal) from Kerala State Pollution Control Board is provided. The consent is attached as **Annexure No. 1.** 

3	1	All other statutory clearances should have been obtained, as Complied	
		applicable, by project proponents from the respective competent	
		authorities including that for blasting and storage of explosives.	

#### Compliance:

The certificates obtained from concerned statutory authorities are enclosed in **Annexure No.1, 2, 3, 4 & 5.** The details are given in **Table No 3** 

#### **TABLE 3 – APPROVALS FROM COMPETENT AUTHORITIES**

Name of the Statutory approval Name of the Statutory authority	
"Consent to Operate"	Kerala State Pollution Control Board
Environmental Clearance order	State Environmental Impact Assessment
	Authority, Kerala

Explosive License	Ministry of Commerce & Industry – Petroleum & Explosives Safety Organization (PESO)
License for quarry operations	Gram Panchayath
Permit order	Directorate of Mining and Geology

32	In the case of any change(s) in the scope of the project, extent	Will be
	quantity, process of mining technology involved or in any way	complied
	affecting the environemental parameters/impacts as assessed, based	
	on which only the EC is issued, the project would require a fresh	
	appraisal by this Authority, for which the proponent shall apply and	
	get the approval of this Authority.	

At present there is no change in the scope of the project. The project will seek for a new Environmental clearance in the case of any change(s) in the scope of the project.

33	The Authority reserves the right to add additional safe guard	Noted
	measures subsequently, if found necessary, and to take action	
	including revoking of the environment clearance under the provisions	
	of the Environmental (Protection) Act 1986, to ensure effective	
	implementation of the suggested safeguard measures in a time	
	bound and satisfactory manner.	

#### Compliance:

The project is willing to add all possible additional safe guard measures subsequently if the authority found necessary.

34	The stipulations by Statutory Authorities under different Acts and Noted
	Notifications should be complied with, including the provisions of Wate
	(Prevention and Control of Pollution) Act, 1974, the Air (Prevention and

Control of Pollution) Act 1981, The Environment (Protection) Act, 1986 the public liability (Insurance) Act, 1991 and EIA notification, 2006.

#### Compliance:

The stipulated orders and directions under different act and notification including EIA notification will be scrupulously followed. A brief list of various Acts and notifications which are followed by the proponent is given below

- > Kerala Minor Mineral Concession Rules, 2015.
- **➤ Mines Act, 1952**
- > Explosive Rules, 2008
- > Kerala Panchayat Raj Act, 1994
- > Water Pollution (Prevention & Control) Act, 1974
- > Air Pollution (Prevention & Control) Act, 1981
- > Environment Protection Act, 1986
- > EIA Notification, 2006 / 2009
- > The Kerala Promotion of Tree Growth in Non-Forest Areas (Amendment) Act, 2007.

35	The project proponent should advertise in at least two local	Complied
	news papers widely circulated in the region, one which (both	
	advertisement and the newspaper) shall be in the vernacular	
	language informing that the project has been accorded	
	Environmental Clearance and copies of clearance letters are	
	available with the Department of Environment and Climate	
	Change, Govt. of Kerala and may also be seen on the website	
	of the Authority at www.seiaakerala.org. The advertisement	
	should be made within 10 days from the date of receipt of the	
	Clearance letter and the copy of the same signed in all pages	
	should be forwarded to the office of this authority as	
	confirmation.	

An advertisement in two local newspapers regarding Environmental Clearance accorded to the quarry project was given within the stipulated period and the copy of the same was submitted at SEIAA Kerala. The copy of the advertisement given in two local newspapers is provided at **Annexure No.6.** The details of the news papers are given in the **Table No.4.** 

Table No.4- Details of advertisement in news papers

SI. No.	News paper	Language	Date of edition
1	Mangalam	Malayalam	21-10-2017
2	The Hndu	English	21-10-2017

36	A copy of the clearance letter shall be sent by the proponent to	Complied
	concerned Grama/District Panchayath / Municipality / Corporation /	
	Urban Local Body and also to the Local NGO, if any from whom	
	suggestions / representations, if any were received while processing	
	the proposal. The Environmental Clearance shall also be put on the	
	website of the company by the proponent.	

#### Compliance:

A copy of the Environment Clearance letter was submitted to the Panchayat Office. The project proponent did not receive any suggestions / representation from anywhere while the processing the proposal therefore did not give the copy of clearance latter to anyone. At present the project does not have a website this will be created soon. The copy of the acknowledgement is attached as **Annexure No.7** 

37	The proponent shall submit six monthly reports on the status of	Complied
	compliance of the stipulated EC conditions including results of	
	monitored data (both in hard copies as well as by e-mail) and upload	
	the status of compliance of the stipulated EC conditions including	
	results of monitored data on their website and shall update the same	
	periodically. It shall simultaneously be sent to the respective	
	Regional Office of MoEF, Govt. of India and also to the State	
	Environment Impact Assessment Authority (SEIAA) office.	

The compliance report is being submitted along with the results of monitored data to the District Environmental Impact assessment Authority, Kannur, State Environmental Impact assessment Authority, Kerala and the Regional Office of MoEF&CC, Bangalore both in hard copy as well as mail. The Monitoring result of Ambient air. Sound and water is attached as **Annexure Nos 8, 10 & 11.** 

38	The details of Environmental Clearance should be prominently	complied
	displayed in a metallic board of 3 ft x 3ft with green background and	
	yellow letters of Times New Roman font of size of not less than 40.	
	Sign board with extent of lease area and boundaries shall be	
	depicted at the entrance of the quarry, visible to the public.	

#### Compliance:

The specific conditions of the environmental clearance prominently displayed in a metallic board of 3 ft x 3 ft with green background and yellow letters of Times New Roman font was installed. Sign board is also displayed showing lease area and boundaries at the entrance of the quarry. The photograph of metallic board is attached as **Plate No.10** 

39	The proponent should provide notarized affidavit (indicating the	Complied
	number and date of Environmental Clearance proceedings) that all	
	the conditions stipulated in the EC shall be scrupulously followed.	

#### Compliance:

An assurance in the form of affidavit was already submitted to DEIAA

40	No change in mining technology and scope of working should be	Noted
	made without prior approval of the SEIAA, No further expansion or	
	modification in the mine shall be carried out without prior approval of	
	the SEIAA, as applicable.	

The project proponent is not intending to expand the area of mine, technology and scope of working at the present working condition. The project will appear SEIAA for Environment Clearance if the project wants to expand its scope. The mining is progressing as per submitted plan.

41	The project proponent shall ensure that no natural water course	Noted
	and/or water resources shall be obstructed due to any mining	
	operations. Necessary safeguard measures to protect the first order	
	streams, if any originating from the mine lease shall be taken.	

#### Compliance:

The project proponent will take all necessary safeguards to prevent contamination of stream as well as ground water. The project proponent will install additional clarifiers in the project site to prevent sediments and wastes from quarry site to enter in to the main stream. There is no stream originating from the mining area.

42	Monitoring of Ambient air Quality to be carried out based on the	Complied
	notification 2009, as amended from time to time by the Central	
	Pollution Control Board. Water sprinkling should be increased at	
	places loading and un loading points & transfer point to reduce	
	fugitive emissions.	

#### Compliance:

Ambient air quality as per National Ambient Air quality Standard (NAAQS) has monitored by the project proponent. The project installed sprinklers and increased splashing of water and at loading, unloading and transfer points to reduce the fugitive emission of dust

43	The top soil, if any, shall be temporarily stored at earmarked site(s)			
	only for the topsoil shall be used for land reclamation and plantation.	complied		
	The Over Burden (OB) generated during the mining operations shall			
	be staked at earmarked dump site(s) only. The maximum height of			

the dumps shall not exceed 8m and width 20m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the bump. The entire excavated area shall be backfilled. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining.

#### Compliance:

Top soil and overburden are being stacked in a designated place within the project site. Top soil will only used for plantation purposes. Overburden will be used for landfill and to construct haulage roads in the mining area. The excess will be stored in a designated place as per the direction of District Environment Impact Assessment Authority (DEIAA).

Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc., The drains shall be regularly de silted particularly after monsoon and maintained properly.

#### complied

#### Compliance:

Effective garland drains has constructed by project proponent to catch all the storm water during the time of monsoon season. These channels will be directed to the rain water collection pond. All sediments and silts will be settled at the bottom of the pond and only cleared water let out. The water from the pond is used for splashing of water on roads to arrest the dust.

45 Effective safeguard measures such as regular water sprinkling Noted shall be carries out in critical areas prone to air pollution and having high levels of PM<sub>10</sub> and PM<sub>2.5</sub>, such as haul road, loading

an un loading points and transfer points – it shall be ensured that the Ambient Air Quality Parameters confirm to the norm prescribed by the Central Pollution Control Board in this regard.

#### Compliance:

The project splashes water in critical areas prone to air pollution with the help of vehicle and sprinklers regualrly. The project proponent initiated steps to increase the number of sprinklers in critical area to reduce the dust emission such as loading and unloading points, haul roads and transfer points.

46	Fugitive dust emission from all the sources should be controlled	complied
	regularly. Water spraying arrangements on haul roads, loading	
	and unloading and at transfer point should be provided and	
	properly maintained.	

#### Compliance:

The sprinklers and vehicle for water spraying are properly maintained by the project proponent. The project splashes water in critical area to reduce the dust emission such as loading and unloading points, haul roads and transfer points.

47	Measures should be taken for control of noise levels below 85	Complied
	dBA in the work environment.	

#### Compliance:

The main sound generating activities in the mining industries are the playing of jack hammer, breaker, vehicles and blasting operations. The level noise from all these activities will not go beyond 85dBA. The project proponent will take appropriate action to reduce the sound by employing possible measures.

48	A separate Environmental Management Cell with suitable Complie	∍d
	qualified personal should be set up under the control of a senior	
	executive, who will report directly to the Head of the	
	Organization.	

To monitor all conditions stipulated in the Environment Clearance and environment Management Plan, the project proponent constitutes an Environment Monitoring Cell with Mr. C.G George as the head of the Cell.

49	The funds earmarked for environmental protection and CSR	Being
	activities should be kept in separate account and should not be	complied
	diverted for other purpose. Year wise expenditure should be	
	reported to the State Environment Impact assessment authority	
	(SEIAA) office.	

#### Compliance:

The project proponent executes many activities under Corporate Social Responsibility (CSR) for community development. To implement these activities in a good manner, the project proponent will open an account for keeping the funds earmarked for environmental protection and CSR.

50	The Region	nal Office	of MoEl	F &CC located	at Bang	galore shall	Will	be
	monitor compliance of the stipulated conditions. The project					comp	lied	
	authorities should extend full cooperation to the officer(s) of the							
	regional	Office	by	furnishing	the	requisite		
	data/information/monitoring reports.							

#### Compliance:

The project proponent scrupulously follows the condition stipulated in the EC order and keeping all records with a good documentation system. The project will extent all possible cooperation to the officers form regional office of MoEF &CC and can produce all data/information/reports when they are asking for the same.

51	Any appeal against this environmental clearance shall lie with	Noted
	the National Green Tribunal, if preferred within a period of 30	
	days as prescribed under section 16 of the National Green tribunal Act, 2010.	

52	Concealing the factual data or submission of false/ fabricated	Noted
	data and failure to comply with any of the conditions mentioned	
	above may result in withdrawal of this clearance and attract	
	action under the provisions of Environment (Protection) Act,	
	1986.	

The SEIAA may revoke or suspend the order, for non implementation of any of the specific or this implementation of complied any of any of the above conditions is not satisfactory. The SEIAA reserves the right to alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

# Compliance:

The project proponent has been implementing conditions stipulated in this Environment Clearance order. The project can execute all possible measures in the project site for the conservation of environment.

54	The above conditions shall prevail not withstanding anything to	Will be
	the contrary, in consistent, or simplified, contained in any other	complied
	permit, license on consent given by any other authority for the	
	same project.	

#### Compliance:

The project will give priority to the conditions stipulated in the Environment clearance Order.

55	This order is valid for a period of 5 years or the expiry date of	Noted
	mine lease period issued by the Govt. of Kerala, whichever is	
	earlier.	

56	The environmental clearance will be subject to the final order of	Noted
	the courts in any pending litigation related to the land or project,	
	in any court of law.	

57	The mining operation shall be restricted to above ground water	Will be	Ì
	table and is should not intersect ground water table.	complied	

## Compliance:

The project proponent is following approved mining plan for the extraction of building stones. The project will restrict its mining operations above the ground water table.

58	All vehicle used for transportation and within the mine shall	complied
	have "PUC" certificate from authorized pollution taking centre.	
	Washing of all vehicles shall be inside the lease area.	

# Compliance:

As part of reduce air pollution, the project proponent is monitoring the pollution level of all vehicles playing in the project site. This monitoring has conducting in authorized pollution checking centre.

59	Project proponent should obtain necessary prior permission of	Noted
	the competent authorities for drawl of requisite quantity of	
	surface water and ground water for the project.	

# Compliance:

At present, the need of prior approval is not necessary to draw ground water and surface water for the project.

60	Regular monitoring of flow rates and water quality upstream and	Being	
	down streams of the springs and perennial nallahs flowing in	complied	
	and around the mine lease area shall be carried out and reported		
	in the six monthly report to SEIAA.		
		1	- 1

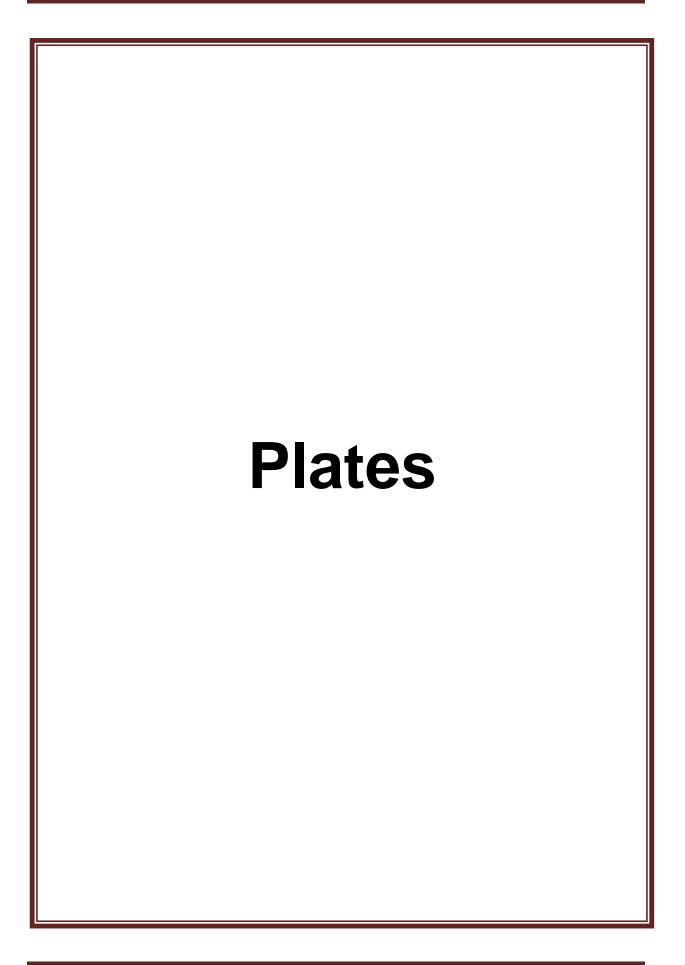
# Compliance:

There is no stream or springs flowing in and around to the mine lease area. The project installed de siltation trap and other mechanism to prevent sediments and wastes from the mining area entering in to the public drainage system.

61	Occupational health surveillance programe of the workers	complied
	should be under taken periodically to observe any contractions	
	due to exposure to dust and take corrective measures, if	
	needed.	

# Compliance:

The project proponent has started occupational health surveillance programme in association with Primary Health Centre (PHC) of Kerala government for the labours working in mining area and crusher.

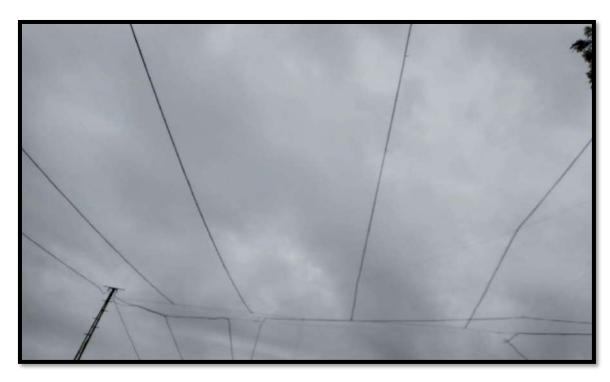


# Plate 1



Avenue Tree

Plate 2



Sprinklers in the Quarry Site

Plate 3



**Mining- Benches** 

Plate 4



**Blasting Time** 

# Plate 5



Sign Boards

Plate 6



**Resting Room** 

Plate 7



**No Smoking Board** 

Plate 8



**Emergency Contact Numbers** 

# Plate 9

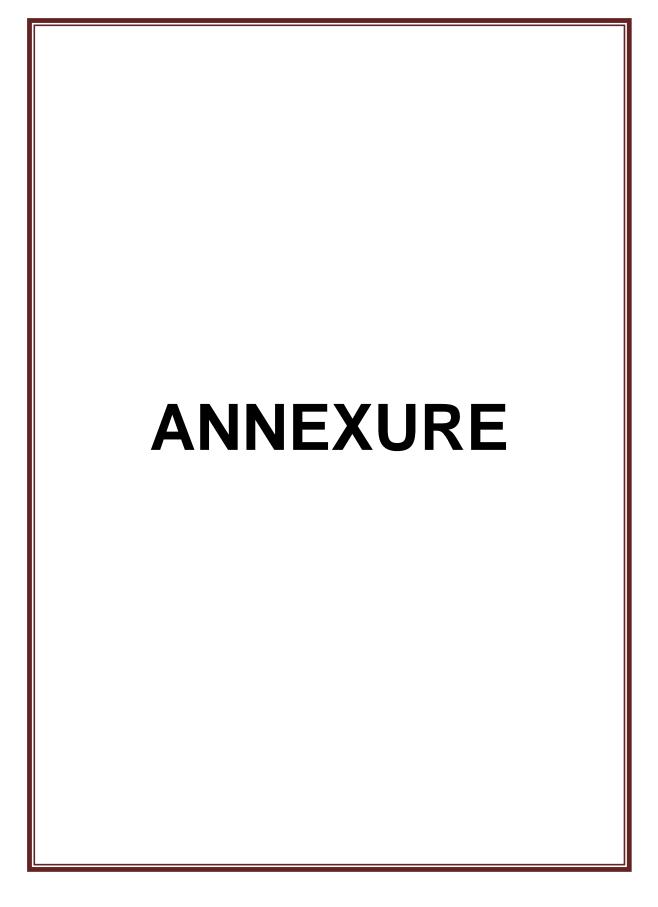


Magazine

Plate 10



**Metallic Board** 







#### KERALA STATE POLLUTION CONTROL BOARD

FILE NO. :PCB/KNR/ICO/3200/2015

Date of issue :2017-07-07

#### CONSENT VARIATION ORDER

Consent No: PCB/KNR/ICO/424/2016

Ref: 1. PCB/KNR/ICO/424/2016 dated 20/05/2016 2. Environmental Clearance No.09/KNR/2017/DEIAA dated 01/07/2017 and valid upto 30/06/2020

The 'Integrated Consent to Operate' issued as per reference above to M/s SREELAKSHMI STONE CRUSHER,27TH MILE, P.O.POOLAKKUTTY,VIA.NEDUMPOYIL-670650 is hereby modified & issued to M/s SREELAKSHMI STONE CRUSHER,27TH MILE, P.O.POOLAKKUTTY,VIA.NEDUMPOYIL-670650 The consent(s)/ variation order(s) cited under reference are integral part of this consent variation order and this order is subject to the conditions stipulated therein and the following modifications/ additions.

#### I. GENERAL

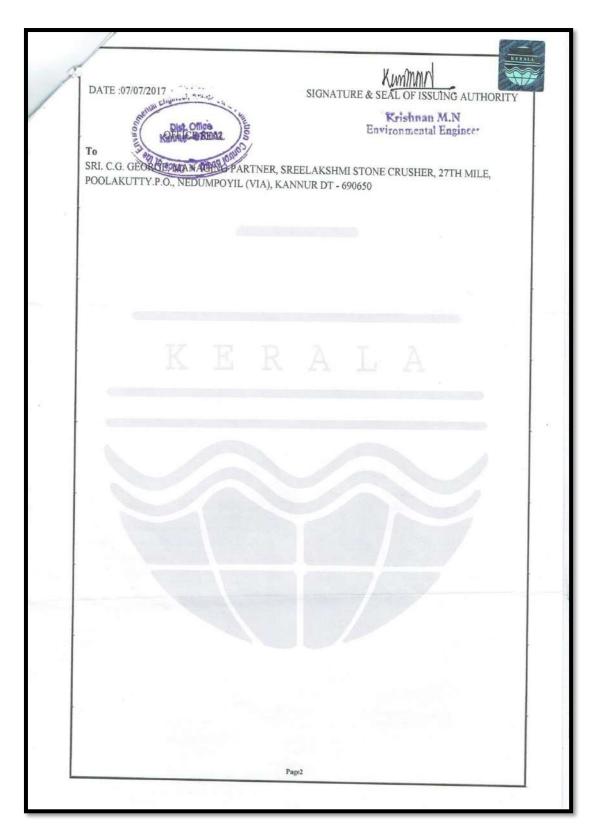
S.No.	Items	Description
1	AREA OF QUARRYING (HECTARE)	0.9898
2	Capital Investment(in Lakhs)	25
3	VALIDITY	30/06/2020

#### II. CONDITIONS

- 5.2 Application for renewal of consent shall be submitted before 31/03/2020.
- 5.8 Deleted.
- 5.9 Deleted.
- 5.12 Deleted.
- 5.13 Deleted.
- 5.14 Deleted.

All other conditions of the Integrated Consent to Operate issued as per reference above remain unchanged.

Page1



Copy of Consent form PCB



Validity expires on 30.06.2020

#### Proceedings of the District Environment Impact Assessment Authority Kannur

Present: Sri.Mir Mohammed Ali I.A.S, Chairman; Sri. O Jayarajan I.F.S (Rtd), Member ;Sri.Suneel Pamidi.I.F.S, Member and Sri. S Chandrasekar, I.A.S. Member Secretary.

Sub: DEIAA- Environmental clearance for the proposed Granite (Building Stone) Quarry project of M/s Sri Lakshmi Stone Crusher, 27 Mile, Poolakutty.P.O., Nedumpoyil, Kannur District for an area of 0.9898 Hectares in Survey No. 1561 of Kanichar Village, Iritty Taluk, Kannur District

#### DISTRICT ENVIRONMENTAL IMPACT ASSESSMENT AUTHORITY, KANNUR

No. 09/KNR/2017/DEIAA

Ref:1. Online Application dated 28/04/2017 from Mr.C.G.george, Managing Partner, M/s Sri Lakshmi Stone Crusher, 27 Mile, Poolakutty.P.O., Nedumpoyil,.
2. Minutes of the 5<sup>th</sup> meeting of DEAC held on 04/05/2017.

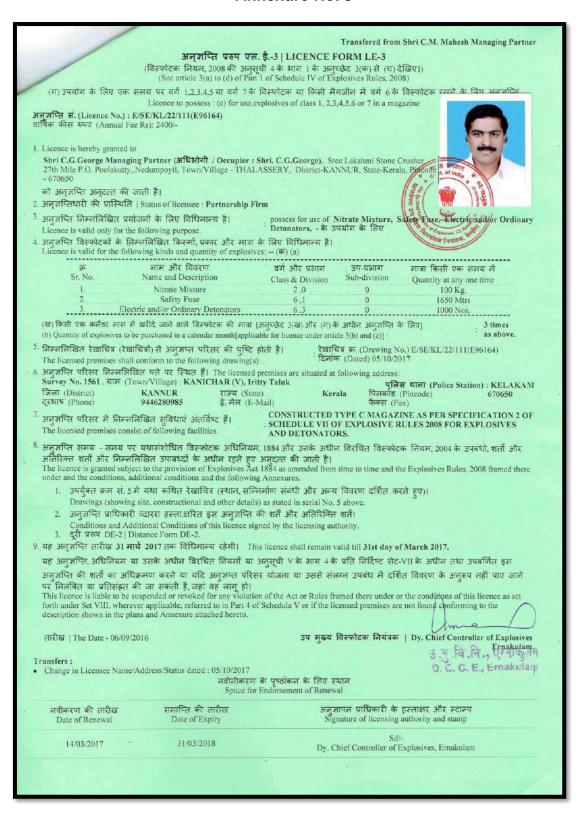
- 3.Minutes of the 6<sup>th</sup> meeting of DEAC held on 15/06/2017.
  4. Minutes of the 7<sup>th</sup> meeting of DEIAA held on 28/06/2017.

#### **ENVIRONMENTAL CLEARANCE NO. 14/2017**

Sri.C.G.George, Managing Partner, M/s Sri Lakshmi Stone Crusher, 27 Mile, Poolakutty P.O., Nedumpoyil, Kannur, Kerala-670650, vide his application received on 28/04/2017, has sought Environmental Clearance under EIA Notification, 2006 for the quarry project for an area of 0.9898Hectares in Survey No. 1561 of Kanichar Village, Iritty Taluk, Kannur District The project comes under Category B, Activity 1(a), (i) as per the Schedule of EIA Notification 2006 and as per O.M. No. L-11011/47/2011-IA.II (M) dated 18th May 2012 of Ministry of Environment and Forests. It is further categorized as Category B2 as per the O.M. No. J-13012/12/2013-IA-II (I) dtd. 24.12.2013 of Ministry of Environment and Forests, since the area of the project is below 25 hectares. As per gazette notification no SO 190(E)dtd 20/01/2016, Government of India and GO(Ms)no.05/2016/Envt Dtd 04/04/2016, Govt: of Kerala, DEIAA and DEAC constituted for considering the applications for environmental clearance less than 5 hectares in individual cases and 25 hectares in cluster

The proposed project site falls within 11°50'50.41"N to 11°50'53.87"N 75°46'54.94"E to 75°46'59.15"EThe land area consists of 0.9898 hectares, which is private land.

Copy of Environmental Clearance



Copy of Explosive



Copy of license from Gram Panchayat



Copy of Lease





Advertisement in Newspaper

# M/s SRI LAKSHMI STONE CRUSHER

BUILDING NO.VIII/14, 27TH MILE, PO POOLAKUTTY, NEDUMPOYIL KANNUR, KERALA-670650 Ph:0490-2448400

The Secretary, Kancihar Panchayat, Iritty Taluk, Kannur District, Kerala.

Dt. 03/07/2017

Sub:- Environmental Clearance (E.C.) - Proposed Quarry Project at Survey No. 1561, Kanichar Village, Kanichar Panchayat, Iritty Taluk, Kannur District, Kerala - Submission of the E.C. Order - Compliance to the condition of Environment Clearance - Reg.

Respected Sir,

- This refers to the Environmental Clearance obtained to the proposed Quarry Project at Survey No. 1561, Kanichar Village, Kanichar Panchayat, Iritty Taluk, Kannur District, Kerala vide Order No. 09/KNR/2017/DEIAA dt. 01/07/2017.
- We hereby submit a self attested copy of the Environment Clearance Order No. 09/KNR/2017/DEIAA dt. 01/07/2017. This is in compliance to the condition of the E.C. Order.

Kindly acknowledge the receipt of the same.

Thanking you,

Yours respectfully,

for Srilakshmi stone crusher,

C.G George, (Managing Partner)

Encl: As above

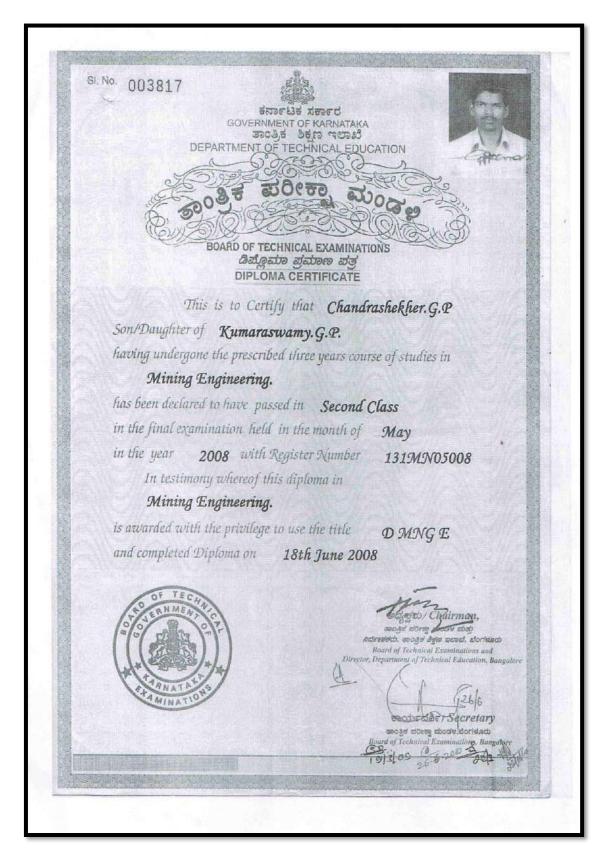
SUTHES AN MAMMALI SESPETARY, Kericher Grame Panchayet 1900 - 2010 - 670674 Phr. 0490 2412065, 9496049152

Copy of Acknowledgement

## FORM D [See clause (a) of rule 10 and clause (m) of sub-rule (1) of rule 40] NOTICE

The District Magistrate, Kannui District,	
	M/S Srilakshmi Stone crush
	Office: 27 th Mile Poolskut

1	a. Name of Mine	M/S Srilakshmi Stone crusher Office: 27 th Mile , Poolakutty P.O, Nidumpoyil – 670 650. Kannur District, Kerala State.
	b. Name of Mineral	Granite Building Stone
	c. Situation of Mine	Village: Kanichar Village, Post office: Poolakutty P.O Town: Nidumpoyil, Taluk:Iritty District: Kannur, State: Kerala State.
	d. Date when work was first started	02.01.2008
2	a. Name & postal address of present owner(s)	Shri.C.G.George , Managing Partner Srilakshmi stone crusher 27 th mile Poolakutty PO Iritty Taluk, Kannur District, Kerala State – 670 650
	b. Name & postal address of agents if any	
3	a. Name & postal address of manager if any	Mr.Chandrasekhara G P , S/o Kumaraswamy G P Deogiri PO Sandur, Bellary , Karnataka -583112
	b. His age	32 Years
	c. His qualification	Diploma in mining
	d. His experience in Mining	4 years in open casting
4	Whether working are likely to be Extended below ground	Yes in future
5	Maximum depth of open cast excavation measured from its highest to its lowest point	Above ground 4 metersfrom its highest to lowest point
	b. Date when depth exceeded 6 meter	Not Yet
6	a. Nature, amount and kind of explosives used if any	Nitrate Mixture Slurry emulasion explosives Class 2 division 0 Class 6 division 3
	b. Date when explosives were first used	06.09.2016



Certificate of Mines manager





## TEST REPORT

Test Report No: TC540218000000888F	Date: 26.12.2018	Page 1 of 1

	CUSTO	MER DETAILS		
Customer Details	Name & Address	Mr. C.G George  Managing Partner  M/s Sri. Lakshmi Stone Crusher  27 th mile, Poolakutty,  Nidumpoyi, Kannur District		
	Survey No	1561		
Location Of Site	Village	Kanichar		
	Taluk	Iritty		
	District	Kannur		
	State	Kerala		
Customer Reference		Test Request form dated 22.12.2018		
Monitoring Site		27 th mile		
	SAMI	PLE DETAILS		
Source of Sample	Ambient Air	Sample Code	TC540218000000888F	
Location of Monitoring	South West Side	Sampled By	Laboratory	
Date of Monitoring	22.12.2018	Test Started On	24.12.2018	
Sample Received On	24.12.2018	Test Completed On	26.12.2018	
Humidity	58 %	Sampling Procedure	IS 5182 Part V & XIV	

SL NO	TEST PARAMETER	TEST METHOD	UNIT	RESULTS	NAAQ STANDARD
01	Particulate matter (PM <sub>10</sub> )	IS 5182 Part 23: 2006 RA 2012	μg/m³	66.4	100
02	Particulate matter (PM <sub>2.5</sub> )	EPA 40 CFR Part 50 Appendix - L	μg/m³	21.7	60.0
03	Sulphur dioxide (SO <sub>2</sub> )	IS 5182 Part 2: 2001 RA 2012	μg/m³	< 2.00	80.0
04	Nitrogen dioxide ( NO <sub>2</sub> )	IS 5182 Part 6: 2006 RA 2012	μg/m³	< 2.00	80.0

\*\*\*End of Report\*\*\*

For and on behalf of Standards Environmental & Analytical Laboratories

Authorized Signatory

Rija Joseph Technical Manager

The results are related only to the samples submitted for analysis and this test report shall not be reproduced except in full, without the written approval of the laboratory.

Standard<sup>S</sup> Environmental & Analytical Laboratories

Result of Air



# TEST REPORT NABI

Test Report No: TC540218000000890F Date: 26.12.2018 Page 1 of 1

	CUST	OMER DETAILS		
Customer Details	Name & Address	Mr. C.G George  Managing Partner  M/s Sri. Lakshmi Stone Crusher  27 th mile, Poolakutty,  Nidumpoyi, Kannur District		
	Survey No	1561		
	Village	Kanichar		
Location Of Site	Taluk	Iritty		
	District	Kannur		
	State	Kerala		
Customer Reference		Test Request Form Dated 22.12.2018		
Monitoring Site		27 th mile		
	SAN	MPLE DETAILS		
Source of sample		Ambient Sound Level		
Sample Code		TC540218000000890F		
Location of Monitoring		North Side Boundary		
Date of Monitoring		22.12.2018		

DAYTIME	RESULT	NIGHTTIME	RESULT	
06.00 Hrs	35.4 dB (A)	23.00 Hrs	35.1 dB (A)	
07.00 Hrs	38.0 dB (A)	00.00 Hrs	37.6 dB (A)	
08.00 Hrs	42.0 dB (A)	01.00 Hrs	38.4 dB (A)	
09.00 Hrs	45.3 dB (A)	02.00 Hrs	38.0 dB (A)	
10.00 Hrs	47.5 dB (A)	03.00 Hrs	38.7 dB (A)	
11.00 Hrs	50.4 dB (A)	04.00 Hrs	37.6 dB (A)	
12.00 Hrs	47.8 dB (A)	05.00 Hrs	39.5 dB (A)	
13.00 Hrs	47.1 dB (A)	RESULTS		
14.00 Hrs	47.5 dB (A)			
15.00 Hrs	47.8 dB (A)		45.9 dB (A)	
16.00 Hrs	48.9 dB (A)	T		
17.00 Hrs	49.3 dB (A)	Noise Level (Leq) Daytime		
18.00 Hrs	44.2 dB (A)			
19.00 Hrs	40.9 dB (A)		, , , , , , , , , , , , , , , , , , , ,	
20.00 Hrs	37.2 dB (A)		4 1/4	
21.00 Hrs	36.8 dB (A)	Noise Level (Leq) Nighttime	37.9 dB (A)	
22.00 Hrs	34.3 dB (A)			

\*\*\*End of Report\*\*\*

For and on behalf of Standards Environmental & Analytical Laboratories

The results are related only to the samples submitted for analysis and this test report shall not be reproduced except in full, without the written approval of the laboratory.

Standard<sup>S</sup> Environmental & Analytical Laboratories

Result of Sound



#### TEST REPORT



Test Report No: TC540218000000889F	Date: 26.12.2018	Page 1 of 1

	CUSTOME	R DETAILS		
Customer Details	Name & Address	Mr. C.G George  Managing Partner  M/s Sri. Lakshmi Stone Crusher  27 th mile, Poolakutty,  Nidumpoyi, Kannur District		
	Survey No	1561		
	Village	Kanichar		
Location of Site	Taluk	Iritty		
	District	Kannur		
	State	Kerala		
Customer Reference		Test Request Form dated 22.12.2018		
Monitoring Site		27 th mile		
	SAMPLE	DETAILS		
Sample Code	TC540218000000889F	Sample Received On	24.12.2018	
Sample Name	Water	Sampling Procedure		
Sample Description	Borewell	Sampling Location	North West	
Identification By Customer		Sample Condition	Good	
Sampled On		Test Started On	24.12.2018	
Sampled By	Customer	Test Completed On	26.12.2018	

SL NO	TEST PARAMETER	TEST METHOD	UNITS	RESULT	ACCEPTABLE LIMIT (IS 10500 - 2012)
01	Colour	IS 3025 Part 4:1983 RA 2012	Hazen	1.00	5.00 (Max)
02	Odour	IS 3025 Part 5:1983 RA 2012	***	Unobjectionable	Unobjectionable
03	Turbidity	IS 3025 Part 10:1984 RA 2012	NTU	1.00	1.00 (Max)
04	pH	IS 3025 Part 11:1983 RA 2012	***	6.52	6.50 - 8.50
05	Total Dissolved Solids	IS 3025 Part 16:1984 RA 2012	mg/L	113	500 (Max)
06	Total Hardness (as CaCO3)	IS 3025 Part 21:2009 RA 2014	mg/L	48.5	200 (Max)
07	Calcium (as Ca)	IS 3025 Part 40:1991 RA 2014	mg/L	16.2	75.0 (Max)
08	Magnesium (as Mg)	IS 3025 Part 46:1994 RA 2014	mg/L	1.97	30.0 (Max)
09	Chloride (as Cl)	IS 3025 Part 32:1988 RA 2014	mg/L	27.9	250 (Max)
10	Total Alkalinity (as CaCO <sub>3</sub> )	IS 3025 Part 23:1986 RA 2014	mg/L	41.4	200 (Max)
11	Iron (as Fe)	IS 3025 Part 53:2003 RA 2014	mg/L	0.42	1.00' (Max)
12	Sulphate (SO <sub>4</sub> )	IS 3025 Part 24:1986 RA 2014	mg/L	4.68	200 (Max)
13	Total Coliform Bacteria	IS 1622:1981 RA 2014		Absent/100 ml	Absent/100 ml
14	E coli	IS 15185: 2016		Absent/100 ml	Absent/100 ml

\*\*\*End of Report\*\*\*

For and on behalf of Standard's Environmental & Analytical Laboratories

Vidhyalakshmi Das Microbiologist

Authorized Signatory

Authorized Signatory

The results are related only to the samples submitted for analysis and this test report shall not be reproduced except in full, without the written approval of the laboratory.

Standard<sup>S</sup> Environmental & Analytical Laboratories

Result of Water