Report of the Committee constituted to Re-examining the distance criteria for the existing and new Stone Crushers

Tamil Nadu Pollution Control Board

April 2019

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Report of the Committee constituted by TNPCB for re-examining the distance criteria for the existing and new stone crushers in the state of Tamil Nadu

Preamble

The Tamil Nadu Pollution Control Board vide B.P. Ms. No. 4 dated 02.07.2004 (read with B.P. Ms. No. 55 dated 06.10.2005), has issued norms for the location of stone crushing industries. The highlights of the norms for New / Proposed Stone Crushing units are as follows:

- No new / proposed stone crushers should be located within 500 metres from any National Highways or State Highways or inhabited site or places of public and religious importance.
- The minimum distance between new / proposed stone crushers should be 1 KM to avoid dust pollution influence of one over the other.
- Green Belt Development: The stone crushing units shall provide adequate green belt cover around the periphery as suggested by the Board depending on site and meteorological conditions.
- The stone crushing units should provide dust containment and dust suppression systems suggested by National Productivity Council and should also adhere to the recommendations furnished in the NEERI report.

River sand is the essential material for the construction activities. Extensive use of river sand as fine aggregate in the construction works results in scarcity of river sand. Further, indiscriminate mining of sand affects the river eco system and lowers the ground water table. Therefore, the Government is now encouraging the use of M-Sand in construction in place of river sand. M-sand is manufactured by crushing of blue metal jellies either in stone crushers as an extended facility or in standalone M- Sand units. In order to regulate the activities of M- Sand units, the Board vide B.P. No. 26 dated 30.07.2018 has issued guidelines for M-Sand units.

Stone Crushers Associations have made representation to the Hon'ble Minster for Environment that the norms for maintaining 1 KM distance from crusher to crusher shall be waived off so that the existing crushers can go for expansion to manufacture M-Sand in addition to the existing consented production

of blue metal jellies and new crushers can be permitted so as meet the demand for supply of blue metal and M-sand for construction activities. Further, they stated that all the existing stone crushers are functioning with full-fledged Air Pollution Control measures.

In order to sort out the issue, a meeting was convened by the Hon'ble Minister for Environment with the Principal Secretary to Government, Environment & Forests Department & Chairman, TNPCB, and Member Secretary, TNPCB. After detailed discussion, it was decided to re-examine the 1 KM distance criteria mentioned in the B.P Ms No. 4 dated 02.07.2004 in view of the latest development in pollution control technologies, the present demand for construction materials and difficulties faced by the entrepreneurs to find suitable site.

In this regard, a proposal was placed before the Board. The Board vide circulation No. BM/CA/04/2019, dated 01.03.2019 has resolved to approve the proposal and to issue guidelines for the existing consented stone crushing units. Accordingly B.P. No. 8 dated 05.03.2019 was issued by the Board by issuing following guidelines for the existing consented stone crushing units

- The existing consented stone crushing units shall be permitted to increase their production along with or without M-sand production unit, such units shall comply with all the norms as prescribed in B.P. Ms. No. 4 dated 02.07.2004 (read with B.P. Ms. No. 55 dated 06.10.2005) except 1 KM distance criteria from crusher to crusher.
- The stone crushing units shall meet Ambient Air Quality standards at all times. The suspended particulate matter (measured between three metres and ten metres from any processes equipment of stone crushing unit shall not exceed 600 microgram per cubic metre) from a controlled isolated as well as from a unit located in a cluster should be less than 600µg/Nm^3.
- The Standalone M-Sand units (within / outside stone crushing unit) shall comply with all the norms as prescribed in B.P. No. 26 dated 30.07.2018 except the distance criteria as prescribed under A-II of said B.P.
- The stone crushing units & M-Sand units shall not store raw materials & products more than one month capacity and all the open storage should be properly covered with Tarpaulin to avoid dust emanation due to wind action.

The Board has also approved the proposal to re-examine the 1 KM distance criteria for the new stone crushers by conducting a study through a reputed institution like NEERI.

The above subject matter was again discussed in the meeting held with Hon'ble Minister for Environment at TNPCB Head Office on 6.3.2019. In the meeting it was discussed that the stone crushing units are now adopting latest technologies for dust suppression. In view of the establishment of M-Sand unit as integral part of stone crushing unit, they adopt spraying of fine water mist through special nozzles which suppress the particulate matter emission. In view of the above, it was decided to re-examine the 500 metre distance criteria fixed for the stone crushers from Habitations, NH (or) SH through a detailed study.

Considering the above, the Board vide proceeding No. TNPCB/O&G/F. 4792/2019/Stone Crusher/dated 07.03.2019 has constituted a Committee with the following officers to study and submit a report.

Thiruvalargal

1 R.Vijayabaskaran, JCEE, TNPCB, Chennai
2 G.Ramaraj, DEE, TNPCB, Sriperumpudur
3 A.Shanmugam, DEE, TNPCB, Tiruppur (South)
4 Dr. M.Senthilkumar, DEE, TNPCB, Thiruvannamalai
5 Dr. R.Sivacoumar,
Senior Principal Scientist, CSIR-NEERI, Chennai
6 Dr. D.Sreenivasalu,
Deputy Director, NPC, Chennai.

Terms of Reference for Committee

- The Committee shall study the performance of existing stone crushers (cluster and isolated) with M-sand unit and without M-sand unit.
- The study shall focus on the air pollution control measures, dust suppression systems, green belt development, dust influence to the nearby habitations, National/State Highways.
- The Committee shall furnish its recommendation on the minimum distance criteria to be maintained between crusher to crusher, NH and SH, Habitations for the existing stone crushers and for the proposed stone crushers.

- The Committee shall suggest pollution control measures to be adopted by the units.
- The Committee can engage the service of TNPCB laboratories for carrying out AAQ survey.
- The Committee shall furnish its report with 10 days.

Committee Report

The Committee has met on 12.03.2019 at TNPCB Head Office and discussed in detail. The Committee has felt that since the time given for the study is 10 days, the study shall be planned accordingly. The Committee decided to conduct Ambient Air Quality in the existing stone crushers in various districts representing the entire state to get the primary data on the ambient air quality in the vicinity of the crushers. Four clusters and four single stone crushers were selected for the survey. It was decided to fix 1 station at the upwind direction at 250m, 1 station at the cross wind direction at 250m, and 2 stations each at 100 metres, 250 metres and 500 metres at the down wind direction from the line joining the emission sources. Totally 8 stations for each location. The survey shall be conducted for 24 Hours. PM_{10}& $PM_{2.5}$ shall be monitored. The committee also decided to get the details on the distance criteria norms adopted by the other SPCBs.

Survey Report

As decided, Ambient Air Quality Survey was conducted by TNPCB laboratories. Consolidated report is given below.

AAQ Survey conducted in Single Stone Crushers in 2nd week of March 2019

Sl. No.	Name and address of stone Crusher	Direction	Distance in metres	PM_{10} in $\mu g/m^3$ (24 Hrs Average)	$PM_{2.5}$ in $\mu g/m3$ (24 Hrs Average)
1	M/s. P A Properties and Developers (P) Ltd, Unit - I, Pinayur, Uthiramerur Taluk, Kancheepuram District. PIN 601 301 (Crushing capacity 700 TPD)	NE	250	92	-
		SE	250	126	-
		SW	100	485	95
		SW	250	248	80
		SW	500	138	61

2	M/s. Suganya Blue Metal, Achankulam, Thirumangalam Taluk, Madurai District. (Crushing capacity 300 TPD)	NE	250	108	16.31
		SSE	250	230	56.56
		SW	100	281	-
		SW	250	112	65.23
		WSW	500	97	52.96
		WNW	500	88	58.2
		WNW	250	100	39.4
		WNW	100	275	-
3	M/s. Balamurugan Blue Metal, Nedungal, Cheyyar, Thiruvannamalai District (Crushing capacity 60 TPD)	N	250	79	110
		NE	100	89	99
		NE	250	99	44
		NE	500	61	100
		ENE	100	79	53
		ENE	250	383	35
		ENE	500	142	70
		SW	250	171	51
4	M/s. S.S. Blue Metal S.F. No. 36/1,2 & 45/2, Sukkampalayam village, Palladam TK, Tiruppur Dist. (Crushing capacity 250 TPD)	SW	100	133	67
		S	100	128	65
		SW	250	88	61
		S	250	78	60
		SW	500	87	58
		S	500	76	57
		SW	250	72	52
		S	250	84	59
Note: AAQ Standard 24 Hours Average: PM_{10} = 100 µg/m^3, $PM_{2.5}$ = 60 µg/m^3					

The RoA reveals that the PM_{10} in the downwind direction at 100 metres was in the range of 79 – 485 µg/m^3, at 250 metres was in the range of 78 - 383 µg/m^3, at 500 metres was in the range of 76 - 142 µg/m^3, whereas the standard is 100 µg/m^3. $PM_{2.5}$ in the downwind direction at 100 metres was in the range of 53 – 99 µg/m^3, at 250 metres was in the range of 35 – 80 µg/m^3 at 500 metres was in the range of 53 – 100 µg/m^3, whereas the standard is 60 µg/m^3.

AAQ Survey conducted in Cluster of Stone Crushers in the 2nd week of March 2019

Sl.No.	Name and address of stone Crusher	Direction	Distance in metres	PM_{10} in µg/m^3 (24 Hrs Average)	$PM_{2.5}$ in µg/m^3 (24 Hrs Average)	Remarks
1	Cluster of stone crushers at Alur Village, Hosur TK, Krishnagiri Dt	NE	250	96	58	
		E	250	74	44	
		NW-1	100	511	200	
		NW-2	250	202	88	
		NW-3	500	124	63	

2	Cluster of stone crushers in Chinnamanaickanpatty and Tatampatty Village, Vadipatti Taluk, Madurai District	SSW	100	181	-	Road widening work carried out
		SW	250	174	40.41	Road widening work carried out
		WSW	500	107	10.4	
		WNW	500	115	33.33	
		NW	250	116	35	
		NNW	100	183	-	
		E	250	66	6.25	
		S	250	136	9.58	
3	Cluster of Stone Crushers in Thiruneermalai Village, Alandur Taluk, Kancheepuram District	NE (upwind)	210	84	-	
		E (Cross wind)	200	87	-	
		SSE	100	169	84	
		SW	250	120	64	
		WSW	500	93	52	
4	Kodangipalayam Cluster, Karanampettai, PalladamTk, Tiruppur Dt.	SW	100	137	71	
		S	100	116	75	
		SW	250	96	60	
		S	250	84	57	
		SW	500	92	56	
		S	500	87	54	
		SE	250	84	53	
		NE	250	83	57	
Note: AAQ Standard 24 Hours Average: PM_{10} = 100 µg/m^3, $PM_{2.5}$ = 60 µg/m^3						

The RoA reveals that the PM_{10} in the downwind direction at 100 metres was in the range of 137 – 511 µg/m^3, at 250 metres was in the range of 84-202 µg/m^3, at 500 metres was in the range of 87-124 µg/m^3, whereas the standard is 100 µg/m^3. $PM_{2.5}$ in the downwind direction at 100 metres was in the range of 75 – 200 µg/m^3, at 250 metres was in the range of 35 – 88 µg/m^3 at 500 metres was in the range of 10.4 – 63 µg/m^3, whereas the standard is 60 µg/m^3. Thus the survey results conclude that even at the 500 metres distance from the crushers, the PM_{10} and $PM_{2.5}$ level in the ambient air exceeded the standards.

The Committee also collected inventory of the existing stone crushers in the State. The stone crushers located in clusters and stand-alone crushers existence prior to 10.5.1999 (Date of Supreme Court Order in SLP (C) No. 13564/1998) and after 10.5.1999 were collected. The details are given below:

Stone Crushers in Cluster			
S.No	District Office	Name of the cluster	No. of stone crushers in operation
Chennai Zone			
1	Chennai	-	-
2	Ambattur	-	-
3	Gummidipoondi	-	-
4	Tiruvallur	-	-
5	MM Nagar	Keerapakkam	8
		Oonamanjeri	55
		Thirusulam	53
		Thiruneermalai	38
		Pammal	18
		Chettipunniyam	2
		Akkinampattu, Nerkunapet, Balur (Cheyyur Taluk)	6
		Edayankodumanthankal, Panankottur, Nerkunapettu (Chengalpattu)	3
6	Sriperumpudur	Erumaiyur Village	52
		Magaral village	16
		Kunnavakkam village	8
		Arappakkam village	14
		Madhoor village	25
Vellore Zone			
7	Dharmapuri	-	-
8	Villupuram	-	-
9	Vaniyambadi	Vinnamangalam, AmburTk	5
		Veppamarasalai, Alangayam Road, VaniyambadiTk	3
10	Vellore	Musiri	4
		Nandhiyalam	5
		Narayanavaram	2
		Kannigapuram	3

		Sirukalambur	8
		Chitteri	20
		Otteri	7
		Rangapuram	3
		Pallaedayampatti	3
		Vaniyankulam	2
		Mettuedayampatti	3
		Edayansathu	2
11	Hosur	Alur	6
		Venkatesapuram	3
12	Thiruvannamalai	Vadakalpakkam	10
Salem Zone			
13	Salem		
14	Namakkal		
15	Kumarapalayam		
16	Erode		
17	Perundurai		
18	Karur	Anjur Village	8
Coimbatore Zone			
19	Coimbatore - North	-	-
20	Coimbatore - South	Pachapalayam, SulurTk	12
		Mailkal Cluster, MadukkaraiTk	4
21	Tiruppur - North	Morattupalayam	29
		Parachervazhi	8
22	Tiruppur - South	Kodangipalayam	24
		Itchipatti	4
		Velampalayam	7
		Myvadi	6
23	Ooty	-	-
Trichy Zone			
24	Trichy	Poolancheri Village	3

25	Ariyalur	-	-
26	Pudukkottai	Muthudaiyanpatty	14
27	Thanjavur	-	-
28	Nagapattinam	-	-
29	Cuddalore	-	-
Madurai Zone			
30	Madurai	Thathampatti Village	16
31	Sivagangai	-	-
32	Theni	-	-
33	Ramanathapuram	-	-
34	Dindigul	-	-
Tirunelveli Zone			
35	Virudhunagar	-	-
36	Thoothukudi	-	-
37	Tirunelveli	-	-
38	Nagercoil	-	-
	Total		**522**

Status on Single Stone Crusher Units in Tamilnadu

S.No.	District Office	No. of single stone crushers in operation (established prior to 10.05.1999)	No. of single stone crushers in operation (established after 10.05.1999)
Chennai Zone			
1	Chennai	-	-
2	Ambattur	-	-
3	Gummidipoondi	-	-
4	Tiruvallur	1	1
5	MM Nagar	1	1
6	Sriperumpudur	18	56
Vellore Zone			
7	Dharmapuri	2	21

8	Villupuram	72	193
9	Vaniyambadi	4	13
10	Vellore	6	13
11	Hosur	12	123
12	Thiruvannamalai	38	86
Salem Zone			
13	Salem	35	49
14	Namakkal	19	20
15	Kumarapalayam	10	31
16	Erode	1	1
17	Perundurai	15	20
18	Karur	25	91
Coimbatore Zone			
19	Coimbatore - North	8	19
20	Coimbatore - South	16	91
21	Tiruppur - North	47	42
22	Tiruppur - South	46	75
23	Ooty	-	-
Trichy Zone			
24	Trichy	13	14
25	Ariyalur	37	74
26	Pudukkottai	23	44
27	Thanjavur	Nil	1
28	Nagapattinam	Nil	Nil
29	Cuddalore	Nil	1
Madurai Zone			
30	Madurai	32	54
31	Sivagangai	6	7
32	Theni	15	41
33	Ramanathapuram	0	1
34	Dindigul	16	42

Tirunelveli Zone			
35	Virudhunagar	20	57
36	Thoothukudi	6	40
37	Tirunelveli	21	154
38	Nagercoil	53	52
	Total	**618**	**1528**

In total there are 2668 stone crushers in the State. Photographs of stone crushers provided with air pollution control measures is given as annexure in this report.

Distance criteria adopted in other SPCBs

S.No.	SPCB	Guidelines adopted

1	Karnataka PCB	The Government of Karnataka has notified 'The Karnataka Regulation of Stone Crushers Act, 2012'.
		• The stone crusher shall not be established outside the safer zone.
		• The safer zone shall be within a location of,-
		  • Two kilometres away from the National Highways, habitats, temples, schools, and river.
		  • One and half kilometres away from the State Highway.
		  • Five hundred metres away from the link roads.
		  • Eight kilometres away from the limits of Municipal Corporations.
		  • Four kilometres away from the limits of District Head Quarters.
		  • Two kilometres away from the boundary limits of a Taluk Head Quarters
		  • One kilometre away from the limits of an inhabited village or any land recorded as forest in Government records or any private land which is shown as cultivable land in the revenue records.
		• No two safer zones shall be located within a radius of fifty kilometres.

2	Kerala PCB	Siting criteria for crusher shall be as per circular no. PCB/TAC/St.Cr.Com/65/2005 dated 17-10-2007 • There should be a minimum clear distance of 200 m from the centre of the proposed crusher unit to the periphery of the structure of any residence, public building or place of worship.

		Exception is allowed for store room and office room. • In cases where environmental factors such as terrain and greenery are conducive to reduce spread of pollution and where advanced technology that reduces noise and dust is employed, the minimum distance may be further reduced to 150m with stringent control measures such as enclosure of crushers, classifiers, screens and other noise/dust producing units with 40 cm thick solid wall (not hollow brick), false roofing and dust extraction system. • There should be a minimum clear distance of 100 m from the centre of crusher of one industry to the centre of crusher of another industry. • There should be a clear distance of 200 m from the centre of the proposed crusher to State or National Highway. For crushers fulfilling the requirements of 2nd above, the minimum distance is reduced to 150m. • The crusher unit should be located within the applicant's own site providing a minimum distance of 30 m in the case of crushers of capacity 30 HP from the centre of the crusher unit to the boundary of the site.
3	Telangana SPCB	Siting Criteria of Industries <u>Stone Crushing units</u> • The distance between the boundary of the site and boundary of the i). National Highway shall be – 500 metres ii). State High way, MDR and other roads shall be – 100 metres. • The distance between the boundary of the site and human habitation (boundary of Town, Village etc.) shall not be less than 800m. • Preferably located near the quarries. • There shall be a 5 m width of green belt along the boundary of the site in the 50 m width buffer zone of the stone crushing unit. This green belt shall be developed on outer side of the buffer zone so as to act as barrier.
4	Maharashtra PCB	M.P.C. Board in its 123rd meeting of the Board held on 30/3/99 has laid down the criteria for siting of stone crusher which is as under:- • The stone crusher will be located at minimum 500 meters from the nearest human habitation (Minimum 1000 souls). • The minimum distance of the stone crusher from State

<table>
<tr><td></td><td></td><td>Highway/National Highway shall be 500 meters.</td></tr>
<tr><td>5</td><td>Gujarat PCB</td><td>Environmental Guidelines for Stone Crushing Units:
Sitting criteria of new stone crushing units shall be as follow:
<table>
<tr><th>Sr.no.</th><th>Distance from</th><th>Distance</th></tr>
<tr><td>1</td><td>Class A and above cities; Other cities & towns; villages and approved continuous habitations.</td><td>1 KM</td></tr>
<tr><td>2</td><td>Wild Life Sanctuary</td><td>5 KM or buffer zone declared for the same.</td></tr>
<tr><td>3</td><td>National Highway (from boundary line)</td><td>200 metres</td></tr>
<tr><td>4</td><td>State Highway (from boundary line)</td><td>200 metres</td></tr>
<tr><td>5</td><td>Sensitive areas such as educational institute / religious places</td><td>500 metres</td></tr>
<tr><td>6</td><td>Railway (from boundary line)</td><td>200 metres</td></tr>
<tr><td>7</td><td>River: Identified as per Survey of India by name.
Canal: main and branch canal
Lake: Notified</td><td>200 metres</td></tr>
<tr><td>8</td><td>Places of historical importance</td><td>1 KM</td></tr>
</table></td></tr>
<tr><td>6</td><td>Madhya Pradesh PCB</td><td>Guideline of M.P Pollution Control Board for controlling pollution from stone crushers.
Siting of stone crushers:
<table>
<tr><th>S No.</th><th>Cluster / Crusher</th><th>Distance between Crusher / Cluster and National/State Highways</th><th>Green Belt Area at the periphery</th></tr>
<tr><td>1</td><td>Single crusher</td><td>100 metres</td><td>05 metres</td></tr>
<tr><td>2</td><td>10 crushers</td><td>150 metres</td><td>10 metres</td></tr>
<tr><td>3</td><td>25 crushers</td><td>250 metres</td><td>30 metres</td></tr>
<tr><td>4</td><td>50 crushers</td><td>300 metres</td><td>50 metres</td></tr>
</table>
• If the distance between two crushers is more than 100metres, it will be considered as a single crusher. If the distance between the crusher boundaries is less than 100 metres, it will be considered as a cluster.
• In respect of Residential area, No stone crushing industries are to be allowed to operate within 500 metres from Residential area as per the orders of Hon'ble Supreme Court of India in the Civil Appeal No. 10732 / 1995 dated 25.4.1996.</td></tr>
</table>

		• Existing crushers which are near the National or State Highway and not meeting the above criteria should provide a 15 to 20 feet wall on all the three sides (parallel to National/State Highway and both sides) and upto the length to be stipulated on the alignment of road and boundary of the crusher.
7	Orissa PCB	Government of Orissa, Forest and Environment Department Order No. ENV.1-19/2010. • No stone crusher unit shall be allowed to operate within 500* metres from the established authorized habitation, educational institutions, hospitals, courts and public offices. The stone crusher will not be considered to be violating the siting criteria, if new habitation comes up within the restricted area of 500 metres after consent to establish is granted by the SPCB. • No stone crusher shall be established / operated within 200 metres from the State Highway (SH) and National Highway (NH). • No stone crusher shall be allowed to operate within 1 KM from the Municipality / NAC area as notified by the Government of Orissa. • Permission for temporary stone crusher exclusively for construction of NH/SH may be allowed for the construction period.
8	Rajasthan SPCB	Guidelines for Abatement of Pollution in Stone Crusher Industry issued vide Notification No. F.14 (38) Policy/RPCB/Plg./4629-56, dated 15th March, 2010). <u>Location of Land</u> A Stone Crusher can be established on a land owned by the promoter (this also includes land taken on lease for at least 10 years) provided that:- • The land is not located within a radius of 1.5 Kms. (aerial distance) from Abadi area of any revenue village as defined under the provisions of Land Revenue Act. • Provided that the minimum aerial distance from revenue village will be 500 Mts, in case where the stone crusher already is in operation with valid consent prior to issuance of these guideline and seeks to expand its capacity. • Aerial distance of the nearest point of boundary of the land from the State/ National Highway must be at least 100 meters and from the other roads at least 50 meters. • Aerial distance of the nearest point of boundary of proposed

		crusher site must be at least 500 meters from National Park & Sanctuaries and 25 meters from Reserve Forest/Protected Forest/Unclassified Forest. • Aerial distance of the nearest point of boundary of the proposed stone crusher must be at least 500 meters from any Prominent Public Sensitive places/ Prominent Places of Worship/ School/ Hospital/ Notified Archaeological Monuments. • If there is any Water Body in the down-stream side of the proposed land, the aerial distance of the nearest point of boundary of the proposed stone crusher must be least 500 meters from the Water Body. Provided that permission to establish stone crusher shall not be granted if the proposed land fall in the catchment of a water body even if the land is located beyond 500 Mts. From such water body.
9	Punjab PCB	Government of Punjab, Department of Science, Technology, Environment and Non-Conventional Energy - Notification No. 3/7/96-STE(5)562, dated 17th March 1998.(Read with Amendment No. 6080-6122 dt 20.08.2013) For New Stone Crusher/ Screening Plant:- No new stone crushing unit / screening-cum-washing plant shall be allowed to be installed and operated within the limits of:- • 500 metres on National Highway/State Highway / Scheduled Roads in plain areas and 250 metres in sub-mountainous areas. • 5 KM of the city limit of metropolitan cities / Municipal Corporations. • 2 KM of the city limits of A-Class Towns • 1.5 KM of the city limits of B-Class Towns. • 1.0 KM of other cities / Towns • 500 metres of village phirni / Lalakir / Approved Residential Colony / Zoological Park / Wildlife Sanctuaries • 300 metres of Historical Places / Educational Institutions / Protected Monuments. • 100 metres of Link Roads and other district roads. • 300 metres of all major roads in plain areas and 150 metres in sub-mountainous area. • No stone crusher / screening-cum-washing plant be allowed to

		be set up in a choe, vivulet, stream or river bed within their Flood Protection Embankments. The stone crusher / screening-cum-washing plant shall be setup at a minimum distance of 50metres from the Flood Protection Embankment on the outer side of the river and 25 metres from the Floor Protection Embankment on outer side of rivulet / stream / choe. Where there is no Flood Protection Embankment, the stone crusher / screening-cum-washing plant shall only be set-up at the minimum distance of 50 metres from the outer edge of the Gair-Mumkin land as per revenue record recorded as Gair-Mumkinnadi, choe or similar nomenclature identifying a water body on the outer side of the choe / river. <u>For Existing Stone Crusher:-</u> • No dust emitting point within 100 metres from right of way of scheduled roads within the Chandigarh Capital Periphery Control Area / Communication Zone. • No dust emitting point within 30 metres from right of way of Highways/Scheduled Roads in the other parts of the State. • 250 metres from Municipal / Notified Area Committee Limit / Village LalLakir / Approved Residential Colonies / Historical Places / Zoological Parks / Wild Life Sanctuaries / Protected Monuments.
10	Himachal Pradesh PCB	Notification No. STE-E(3)-17/2012, dated 29th May 2014 (1). Minimum distance from National Highway • 50 metres for the crushers prior to year 2004. • 150 metres for the crushers after year 2004 to May 2014 • 150 metres for the crushers from 29.05. 2014 (2). Minimum distance from State Highway • 50 metres for the crushers prior to year 2004. • 150 metres for the crushers after year 2004 to May 2014 • 100 metres for the crushers from 29.05. 2014 3). Minimum distance from Link Road • 75 metres for the crushers after year 2004 to May 2014 • 50 metres for the crushers from 29.05. 2014 4). Minimum distance from District Headquarters • 1500 metres for the crushers prior to year 2004 and after 2004. 5). Minimum distance from town or notified area. • 1500 metres for the crushers prior to year 2004. • 1500 metres for the crushers after year 2004 to May 2014 • 1000 metres for the crushers from year 29.05. 2014

		6). Minimum distance from village • 250 metres for the crushers prior to year 2004. • 500 metres for the crushers after year 2004 to May 2014 • 500 metres for the crushers from year 29.05. 2014 7). Minimum distance from Hospital & Educational Institutions • 300 metres for the crushers prior to year 2004. • 1000 metres for the crushers after year 2004 to May 2014 • 1000 metres for the crushers from year 29.05. 2014 8-a). Minimum distance from spring, canal, functional water supply scheme including its reservoir. • 100 metres for the crushers prior to year 2004. • 100 metres for the crushers from year 29.05. 2014 (excluding spring, canal) 8-b). Minimum distance from a percolation well, sewerage treatment plant, water infiltration galleries. • 100 metres for the crushers from year 29.05. 2014. 9). Minimum distance from lakes, wetlands and reservoirs of irrigation scheme, hydro power projects. • 500 metres for the crushers prior to year 2004. • 500 metres for the crushers after year 2004 to May 2014 • 500 metres for the crushers from year 29.05. 2014. 10). Minimum distance from natural water spring. • 500 metres for the crushers after year 2004 to May 2014 • 100 metres for the crushers from year 29.05. 2014. 11). Minimum distance from notified parks. • 2000 metres for the crushers after year 2004 to May 2014 • 2000 metres for the crushers from year 29.05. 2014. 12). Minimum distance from sanctuaries. • 1000 metres for the crushers after year 2004 to May 2014 • 1000 metres for the crushers from year 29.05. 2014. 13). Minimum distance from bridge site. • 200 metres and 300 metres downstream for the crushers after year 2004 to May 2014 • 200 metres upstream and 300 metres downstream for the crushers from year 29.05. 2014 14). Minimum distance from the canal and perennial rivulets. • 100 metres from the canals for the crushers before year 2004. • 100 metres for the crushers from year 29.05. 2014.
11	Assam PCB	The Assam Stone Crusher Establishment and Regulation Rules, 2013. The following are the distance criteria:-

		• A Stone Crusher shall be established at least 300 meters away from residential area having a minimum population of 100-150 people or 20 houses including both kachcha/thatched and pucca house, 500 meters from a residential area having a population more than 150 or more than 20 houses including both kachcha/thatched and pucca house. However, the distance from notified municipal area / town committee shall be not less than 1.0 Km. • The aerial distance of Stone Crusher shall be at least 500 meters from the areas like registered hospitals, school, public building or religious place. Stone crusher shall not be allowed within a radius of 1.0 Km in notified sensitive areas like zoo, wild life sanctuary, historic monuments, museum etc. The distance to be verified by an officer not below the rank of Forest Range Officer/Revenue Circle Officer or the Board Official not below the rank of Assistant Executive Engineer. • A stone crusher shall not be constructed within 200 meters (aerial distance) from the sides of railway tracks. • The distance between two stone crusher boundaries shall not be less than 300 meters to avoid clustering of stone crushers in an area if a new stone crusher is being installed. • The plot area for the stone crusher shall be at least 100 meters by 100 meters.
12	Jharkhand SPCB	Notification No. B-12 dated 07.12.2019 – Stone Crushers • Minimum distance from Forest / Forests land as notified earlier – 500 metres. • Minimum distance from Forest / Forests Land as per revised notification – 250 metres.

Abstract

Sl.No.	SPCB	Minimum Distance to be maintained (Distance in metres)			
		Residential	Schools/ Temples	NH/SH	Crusher to Crusher
1	Tamil Nadu	500	500	500	1000
2	Karnataka	1000	2000	2000	-
3	Kerala	200	200	200	100
4	Telangana	800	-	500	-
5	Maharashtra	500	-	500	-

6	Gujarat	1000	500	200	-
7	Madhya Pradesh	500	-	300	-
8	Orissa	500	500	200	-
9	Rajasthan	500	500	100	-
10	Punjab	500	300	500	-
11	Himachal Pradesh	500	1000	150	-
12	Assam	300	500	-	300

From the above, it is noted that the distance criteria adopted varies from State to State. By and large the minimum distance maintained from the residential area is 500 metres, except Kerala where the minimum distance is 200 metres. With respect to distance from the National Highways, it varies from State to State. 2 KM distance is adopted in Karnataka and 200 metres is adopted in Kerala.

With respect to distance between the crusher to crusher, except Kerala and Assam, no other State has fixed the distance. Kerala has fixed 100 metres and Assam has fixed 300 metres from crusher to crusher. Whereas, in Tamilnadu the minimum distance prescribed from crusher to crusher is 1000 metres.

Siting Criteria issued by TNPCB for stone crushers

Initially TNPCB has issued siting criteria for the stone crushers in year 1986. Latter it was reviewed based on the scientific studies and various court orders. Accordingly the siting criteria was revised and B.Ps were issued. The abstract is as follows:

Sl.No.	B.P. No.	Distance Criteria
1	B.P. No. 142 dated 10.10.1986	• No stone crushers should be located within two kilometres from any National and State Highways. • The distance between two stone crushers should be four kilometres to avoid dust pollution influence of one over the other. • If for other pressing reasons more than one stone crusher is required to come in existence, then they should be as much close to each other as may be permitted without causing difficulty in operation. In such a situation the source should be recognised as a collective one and the distance is to be estimated accordingly.

<table>
<tr><td></td><td></td><td>(Note: The above norms were fixed based on study conducted by CPCB)</td></tr>
<tr><td>2</td><td>B.P.Ms. No. 609 dated 09.12.1992</td><td>• No stone crushing units should be located within 500 metres from any NH or SH or Primary residential area or mixed residential area or places of public and religious importance.
• The minimum distance between two stone crushers should be 1 K.M to avoid dust pollution influence of one over the other.
(Note: The above norms were fixed based on Committee constituted by TNPCB)</td></tr>
<tr><td>3</td><td>B.P. Ms. No. 48, dated 09.09.1998</td><td>• All the stone crushing units should provide Air Pollution Control Measures as suggested by the National Productivity Council.
• If the distance between two crushers is more than 100 meters, each one will be considered as a single crusher. If the distance between the crusher boundaries is less than 100 meters, combinedly they will be considered as a cluster.
• The distance between the crusher boundaries and the boundary of the National / State Highways shall be as specified below.
<table>
<tr><th>Sl.No.</th><th>Cluster of crushers</th><th>Distance between crusher / cluster</th><th>Green belt area at the periphery</th></tr>
<tr><td>1</td><td>Single crusher</td><td>50 metres</td><td>10 metres</td></tr>
<tr><td>2</td><td>10 Crushers</td><td>150 metres</td><td>30 metres</td></tr>
<tr><td>3</td><td>25 Crushers</td><td>250 metres</td><td>50 metres</td></tr>
<tr><td>4</td><td>50 Crushers</td><td>300 metres</td><td>100 metres</td></tr>
</table>
Note :-
a. There should be bilane road system to approach the crushers.
b. Within the cluster a minimum distance of 20 meters should be made for roads.
c. The crusher boundary implies the line joining all the emission sources such as jaw crusher, conveyer belt, head, rotary screen etc., in the crushing unit.
• Existing crushers, which are near the National or State Highways and not meeting the above criteria should provide a 15 to 20 feet wall on all the three sides (parallel to National / State Highways and both the sides) and upto the length to be stipulated on the alignment of road and boundary of the crusher.
• In respect of Residential area, No stone crushing industries are to be allowed to operate within 500 meters from Residential areas as per the orders of Honourable Supreme Court of India in the Civil</td></tr>
</table>

		Appeal No.10732/1995, dated 25.4.96. (Note: *The above norms were fixed based on study conducted by NEERI)*

It is to be noted that in the B.P. Ms No. 48 dated 09.09.1998, it was stipulated that no stone crushing units are to be allowed to operate within 500 metres from Residential area as per the Supreme Court Order. There is no exemption even for the existing crushers from this 500 metre criteria from Residential area. However, the distance for existing crushers from NH/SH has been fixed as 50 metres to 300 metresbased on number of crushers in cluster. Further, it is to be noted that there is no restriction of 1 KM distance from crusher to crusher as mentioned in the earlier B.P.Ms. No. 609 dated 09.12.1992.

The Hon'ble Supreme Court in the order dated 10.5.1999 in SLP (C) No. 13564/1998 issued directions that the existing stone crushers, who have valid licenses are permitted to carry out their work subject to the complying with the conditions of the NEERI's report. In another order dated 08.08.2000 in SLP (C) No. 13564/1998, the Hon'ble Supreme Court has clarified that the earlier decision of the Supreme Court is confined to the facts of that case and will not stand in any way of the Pollution Control Board / State Government reconsidering the amendment of Notification and or Resolution or Rule as the case may be and option is given to take into consideration of earlier expert Committee report dated 3.7.1991 and also the NEERI Report for framing appropriate Rule.

In view of the above, the Board vide B.P. Ms. No. 4 dated 02.07.2004 has adopted the distance criteria for the existing stone crushers (prior to Supreme Court order dated 10.05.1999 in SLP (C) No. 13564 / 1998) as given in the B.P. Ms. No. 48 dated 9.9.1998. For the New / Proposed Crusher, the Board has adopted the earlier B.P. Ms. No. 609, dated 1992. (i.e)

- No new / proposed stone crushers should be located within 500 metres from any National Highways or State Highways or inhabited site or places of public and religious importance.
- The minimum distance between new / proposed stone crushers should be 1 KM to avoid dust pollution influence of one over the other.

The above distance criteria were adopted by the Board for past 15 years. Whereas in view of the Government Policy (i.e) using the M-Sand in construction

purpose, most of the existing stone crushing units have proposed for the expansion of the plant capacity to meet the M-Sand demand. When these units apply for consent for expansion, the DEEs have applied the distance criteria (considering it as new activity) as stipulated in B.P.Ms. No.4 dated 2.7.2004, in that case maintaining 1 KM from crusher to crusher was found to be difficult and hence it lead to rejection of application. In order to meet the M-Sand demand and at the same time reduce the river sand use, the Board vide B.P. No. 8 dated 05.03.2019 has permitted the existing consented stone crushing units to increase their production by relaxing 1 KM distance from crusher to crusher.

However, when a new stone crusher applies for consent, the 1 KM distance from crusher to crusher is insisted. This leads to difficulty to find suitable site by complying the above distance norms. Again representations were received from the Stone crushers Association to relax the 1 KM norms for new crushers. In order to sort out the issue, the Board vide proceeding dated 7.3.2019 has constituted this committee to study the existing stone crushers and furnish recommendations on minimum distance criteria to be maintained between crusher to crusher, NH and SH, Habitations for the existing crushers and for the proposed stone crushers. Based on the above, the committee carried out the study. The Committee has again met on 22.3.2019 and gone through the survey reports and norms adopted by other States. After detailed discussions, the committee has arrived the following conclusions.

Committee's Conclusion

I. 1 KM Distance between crusher to crusher

The Board in B.P. Ms. No. 4 dated 02.07.2004 has fixed that the minimum distance between new / proposed stone crushers should be 1 KM to avoid dust pollution influence of one over the other.

The dust pollution influence depends on various factors including wind speed, wind direction, humidity, and ambient temperature. It is to be noted that the MoEF&CC has notified the standards for the stone crushers that the suspended particulate matter (measured between three metres and ten metres from any processes equipment of stone crushing unit shall not exceed 600 microgram per

cubic metre) from a controlled isolated as well as from a unit located in a cluster should be less than 600 $\mu g/m^3$.

NEERI in the study report 1998 conducted in stone crushing units in Pammal made one of the recommendations that the stone crushers should be located only near the quarries. The consideration for this recommendation being the cluster of stone crushers nearby the stone quarry site will reduce the transportation, vehicle movement which ultimately reduces the air pollution. When the crushers are in cluster, they can develop green belt jointly, use common approach road, watering of roads etc.,

Due to boom in infrastructure sector especially roads, highways, and buildings, several stone crushing units are coming-up. If 1KM distance from crusher to crusher is insisted, then at the quarry site one crusher can only be permitted and other crushers have to move to far-away places from quarry site posing difficulties in finding a suitable site, due to the present urbanization, land use pattern and public awareness.

While reviewing the distance criteria prescribed by other States, it is found that other than Kerala and Assam no other state prescribed distance criteria for crusher to crusher. Whereas Kerala has fixed 100 metres and Assam has fixed 300 metres from crusher to crusher. Telangana SPCB states that stone crushers shall preferably be located near the quarries.

Considering the need to balance infrastructure requirements and economic growth with environmental protection and keeping in view the availability of advanced pollution control technologies and capability of units to deploy them to meet the SPM levels of 600 $\mu g/m^3$, it is recommended that the minimum distance of 1 KM between New / Proposed crushers as stipulated in B.P. MS No. 4 dated 02.07.2004 may be dispensed with.

II. Pollution Control Measures

The stone crushers shall provide air pollution control measures as per NPC and NEERI Recommendations.

Recommended Dust Containment and Dust Suppression System by National Productivity Council

Dust Containment System

Dust containment system comprises of building enclosures over the major dust emission sources so as to contain the dust within the housing.

Salient Features of Dust Containment System

- Enclosures to be constructed of G.I. sheets (1.66 mm and 1.25 mm thick) and supported on angle structures so that it can withstand strong wind.
- Wherever there is a persistent of wind speed is blowing in particular direction or high wind speed in a particular sector/directions construction wind breaking wall or net in such a way that it will bring down wind speed by 90%
- Roof to be given a gradual slope / curvature so as to prevent accumulation of water.
- Material transfer point such as hopper bottom / product unloading conveyor to be covered suitably to prevent dust release into the atmosphere.
- Locations where complete enclosures are not possible such as openings in jaw crushers side and bottom, are to be covered suitably (GI sheets / rubber flap or any other material) to prevent dust release into the atmosphere.
- Telescopic chutes are to be provided at product unloading conveyor to prevent dust release into the atmosphere during free fall off material from height. These chutes can be adjusted in length according to size of the heap.
- Openings in the enclosures over shafter, motor driver, conveyor belts etc., are to be covered with rubber flaps (wherever possible) to prevent release of dust.
- Openings fitted with doors are to be provided for inspection and access in the enclosures
- Paving of all the roads inside the crushing units and transport areas to avoid re-entrainment of dust into the atmosphere

- All fine dust other than aggregates need to be collected below the ground level or completely covered to avoid blow away of fine dust which suspends in air for longer time and behaves like gas

Dust Suppression System

Dust generation from material transfer points is quite substantial. Therefore dust suppression system shall be provided in these points. Dust suppression system, comprising of spraying of fine water mist through special nozzles. It should be carried out over the dust generation sources to suppress the dust cloud.

Recommendations in NEERI's Final Report on 'Assessment of Dust Emission from Stone Crushing Industry' in June 1998

- Periodical cleaning of water spray nozzles should be carried out to avoid choking.
- Fine dust accumulated in the crushing area should be periodically cleaned and the dumps should be covered with tarpaulins to arrest erosion by wind.
- The drop height of the processed material should be kept at a minimum during loading and unloading.
- Conveyor chutes should be provided at the discharge points.
- There should be bilane road system to approach the crushers.
- The approach road should be properly laid with tar and concrete and should be sprayed with water. Similarly, the approach roads to individual crusher should be made in good condition and watered.
- Within the crusher, a minimum distance of 20 metres should be made for roads.
- The green belt will restrict the spread of particulate matter and trees should be evergreen high foliage type like neem, tarmarind, gold-mohar, fire of the forest and any other local varieties are recommended. Cash crops like cashewnut, mango, lemon and sapota may be encouraged to get back financial benefits.

- Ornamental trees like Asoka along the roads on both sides leading to crushing area should be encouraged to improve the aesthetics of the working environment.
- As an occupational safety, all the workers should be provided with nose masks.

APC measures as per TNPCB circular Memo No. T16/TNPCB/13086/2008/ Orange, dated 22.4.2008

- All the stone crushing units shall provide enclosures to the primary, secondary crushers. The entire conveyor belt shall be covered with GI sheet. Telescopic chute is to be provided at the product unloading conveyor so as to adjust the length according to size of heap.
- Water sprinkler arrangement at appropriate transfer points shall be provided.
- All the units shall provide compound wall / wind net arrestor of 20 feet height all around the unit premises.
- Green belt of evergreen high foliage type like neem, tarmarind, and gold-mohar shall be developed within and outside the boundary of the unit.

III. 500 metres Distance between crusher to NH and SH, Habitations

In order to examine the 500 metres distance criteria, the Committee has carried out Ambient Air Quality survey, through TNPCB laboratories at four different locations covering single

crusher and cluster of crushers. Sampling was taken for 24 hours at 100 metres, 250 metres and 500 metres. The report reveals that PM_{10} and $PM_{2.5}$ level in the ambient air even at 500 metres were exceeded the standard. Though the wind speed, wind direction, capacity of crushers plays a major role, the exceedance shows that the stone crushers should improve the air pollution control measures. From guidelines issued by the other States, it is noted that except Kerala and Assam, all other States have fixed 500 metres criteria for Residential areas, Schools & Temples.

With respect to NH & SH, Kerala, Gujarat, Orissa, Madhya Pradesh, Rajasthan, Himachal Pradesh have fixed a distance lesser than 500 metres. Whereas Karnataka fixed 2 KM distance for NH and 1.5 KM distance for SH.

In year 2007, NEERI has conducted a detailed study titled 'Assessment of Dust Emissions from Stone Crushing Industry in Trisoolam Area, Tamil Nadu' for TNPCB. In Trisoolam area, 72 crushers were in operation. Based on the survey and air quality modeling, NEERI has recommended safe distance for single crusher and cluster of crushers on various scenarios.

Sl.No.	Scenario	Based on measured concentration	Based on Predicted concentration using AERMOD	Based on Predicted concentration using ISCST3	Based on Predicted concentration using FDM
1	When all the crushers in operation	211 to 1350 m with mean of 784 m	59 to 1225 m with mean of 679 m	45 to 1056 m with mean of 501 m	55 to 2650 m with mean of 1335 m
2	When half of the crushers in operation	126 to 1750 m with mean of 776 m	47 to 1395 m with mean of 582 m	35 to 883 m with mean of 433 m	26 to 1650 m with mean of 1216 m
3	When 1/4th of the crushers in operation	126 to 1242 m with mean of 696 m	15 to 481 m with mean of 262 m	38 to 537 m with mean of 260 m	74 to 1138 m with mean of 731 m
4	When 1/8th of the crushers in operation	25 to 1095 m with mean of 524 m	27 to 325 m with mean of 116 m	22 to 335 m with mean of 501 m	50 to 1109 m with mean of 184 m
5	When only one crusher in operation	116 to 771 m with mean of 379 m	32 to 95 m with mean of 59 m	11 to 174 m with mean of 90 m	13 to 263 m with mean of 111 m

The NEERI has concluded that for cluster of crushers in Trisoolam area, a minimum distance of 500 metre with a green belt of 100 m width should be provided around the periphery of the crushing area. For a single crusher a minimum distance of 100 metres with a 25 m green belt within the periphery shall be maintained.

The above study was conducted in year 2007. In the past 12 years there are lots of advancements in air pollution control measures and installation of M-Sand unit as an integral part of stone crushers, the units can go for advance technologies in pollution control measures. In view of the above, the Committee has concluded that a detailed scientific study may be taken-up again through a

reputed technical institution like NEERI. Based on the detailed study the minimum distance to be maintained from habitations, NH, SH, Religious Important places may be decided.

Recommendations

- The minimum distance of 1 KM between New / Proposed crushers as prescribed in the B.P. Ms No.4 dated 02.07.2004 may be dispensed with.
- The stone crushing units shall meet Ambient Air Quality standards at all times. The suspended particulate matter (measured between three metres and ten metres from any processes equipment of stone crushing unit shall not exceed 600 microgram per cubic metre) from a controlled isolated as well as from a unit located in a cluster should be less than 600µg/m^3.
- The crushers may be encouraged to establish nearby quarry site so as to avoid transportation and to reduce air pollution.
- All the existing and the new crushers shall provide air pollution control measures as suggested by National Productivity Council, NEERI and Board circular as mentioned in this report.
- A detailed scientific study may be taken-up again through a reputed technical institution like NEERI. Based on the detailed study the minimum distance to be maintained from inhabited site, National Highway, State Highway, Places of public and religious importance may be decided. Until such time, the existing distance norms as prescribed in B.P. Ms No.4 dated 02.07.2004 may be continued.

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TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY, CHENNAI - 32
AMBIENT AIR QUALITY SURVEY – REPORT OF ANALYSIS.

Report F.No Stone Crusher /AAQS/2018-19 Dated 18.03.19

1	Name of the Industry	M/s P A Properties and Developers (P) Ltd, Unit - I
2	Address of the Industry	Pinayur Village, Uthiramerur Taluk, Kanchipuram Dt - 601 301.
3	Date of Survey	15.03.19 to 16.03.19
4	Duration of Survey	24 Hours
5	Category	Orange - Large
6	Land use classification	Un Classified

Meteorological Conditions.

Ambient Temperature (°C)	Min	Max	Relative Humidity(%)	Min	Max
	26	38		20	74
Weather condition	Clear Sky		Rain Fall (mm)	Nil	
Predominant Wind Direction	NE to SW		Mean Wind Speed (Km/hr.)	12.1	

Ambient Air Quality Survey Results

Sl. No	Location (On Top of Scaffolding Near)	Direction*	Distance (m)*	Height from GL (m)	Pollutants Concentration (µg/m³)				
					PM_{10}				$PM_{2.5}$ 24hrs
					Shift 1	Shift 2	Shift 3	24hrs Avrage	
1	At NE Direction	NE	250	1.5	78	88	109	92	-
2	At SE Direction	SE	250	1.5	52	116	209	126	-
3	At SW Direction	SW	100	1.5	688	333	433	485	95
4	At SW Direction	SW	250	1.5	311	105	327	248	80
5	At SW Direction	SW	500	1.5	168	100	146	138	61

Note:* With respect to major emission sources
The analytical results are restricted to the sampling period of 8 hrs/24 hrs

Test Performed	Test Method
PM_{10}	IS 5182 (Part 23)-2006
$PM_{2.5}$	IS 5182 (Part 23)-2006
SO_2	IS 5182 (Part 2)-2001 RA:2012
NO_2	IS 5182 (Part 6)-2006 RA:2012

18/3/19
DCSO

18/3
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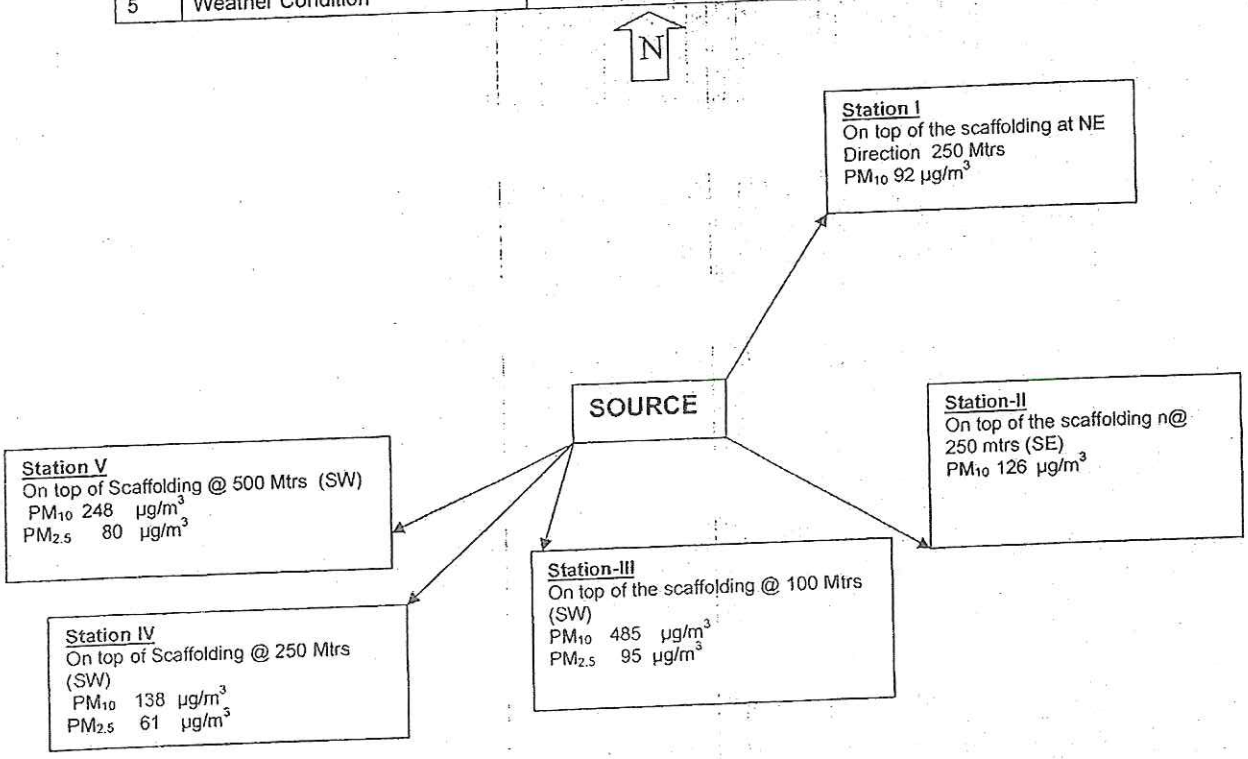
TNPC Board, CHENNAI – 32.

TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY, CHENNAI - 32.
AMBIENT AIR QUALITY SURVEY
Schematic Diagram Showing Location of Sampling

Report F. No Stone Crusher /AAQS/2018-19 Dated 18.03.19

1	Name of the Industry	M/s P A Properties and Developers (P) Ltd, Unit - I
2	Address of the Industry	Pinayur Village, Uthiramerur Taluk, Kanchipuram Dt - 601 301.
3	Date of Survey	15.03.19 to 16.03.19
4	Predominant Wind Direction	NE to SW
5	Weather Condition	Clear Sky



Meteorological Conditions	
Predominant wind direction	NE to SW
Average Wind Speed	12.1 KMPH
Weather condition	Clear sky
Rain fall	NIL

18/3/19
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18/3
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TNPC Board, CHENNAI - 32

TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY, CHENNAI - 32.
General Particulars.

Report F.No Stone Crusher /AAQS/2018-19, Dated 18.03.19

1	Name of the Industry	M/s P A Properties and Developers (P) Ltd, Unit - I
2	Address of the Industry	Pinayur Village, Uthiramerur Taluk, Kanchipuram Dt - 601 301.
3	Date of Survey	15.03.19 to 16.03.19

Sl. No.	Description	General Particulars
1	Process Description	Manufacturing of M – Sand and Blue Metals
2	Emission Sources	Jaw Crushers and Power Generators
3	Fugitive Emission Sources	Open Storing of M Sand , Various sizes of Blue metals and frequent movement of Heavy Vehicles
4	Raw Material Consumptions	600 to 700 Tons of Boulders per day
5	Production Capacity as per Air Consent order No. & Date	M- Sand 1200T/Day as per consent order No. 1805213253528 dated: 27.07.2018 Blue Metal Aggregates of - 20mm size 220T/D Blue Metal Aggregates of - 12mm size 50T/D Blue Metal Aggregates of - 06mm size 50T/D Stone Powder 30T/D Intermediate Product: 50mm to 20mm Aggregate 75T/D 63mm to 57mm Aggregate 75T/D as per Consent order No170825916509 Dated:21.03.2017
6	Production on the day of survey.	M – Sand 350 T : 50 to 20 mm 60T : 20 mm 150T 6 to 12mm 75T : Stone Dust 100T
7	Percent production with respect to Air Consent order	M Sand 29%, 50 to 20mm: 27%, 6 to 12 mm 75%,
8	Air Consent Order No. Validity	1805213253528 dated: 27.07.2018 Valid up to31.03.2028 170825916509 Dated:21.03.2017 Valid Up to 31.03.2020
9	Details of APC measures	-
10	Functional status of APC measures.	-
11	Compliance with consent conditions	Not Complied
12	Field Observations	Crusher was operated between 10 Hrs to 19 Hrs on 15.03.19 & 16.03.19. Frequent Heavy Vehicle Movement was observed throughout the period of Survey

18/3/19
DCSO

18/3/19
Assistant Director (Lab),
Advanced Environmental Laboratory,
TNPC Board, CHENNAI - 32.

TAMILNADU POLLUTION CONTROL BOARD Advanced Environmental Laboratory, Madurai.

AMBIENT AIR QUALITY SURVEY – REPORT OF ANALYSIS

Report F.No. 0330/AEL/TNPCB/MDU/AAQS/SM/208-2019, Dated: 16.03.2019

Name and Address of the Unit:	M/s.Suganya Blue Metal, Achankulam Village, Thirumangalam Taluk, Madurai District.	Date of Survey : 14, 15.03.2019	Category: Orange / Small

Meterological Data

Duration in Hrs	07.50 to 15.50 (I shift)		15.50 to 23.50(II shift)		23.50 to 07.50 (III shift)	
	Min	Max	Min	Max	Min	Max
Ambient Temperature (°C)	27	38	28.6	33.8	26.4	26.8
Relative Humidity (%)	28	68	28	33.3	43.2	61.6
Rainfall(mm)	NIL		NIL		NIL	
Weather condition	Clearsky		Clearsky		Clearsky	
Predominant Wind Direction	NE to SW		ENE to WSW		NE to SW	
Mean Wind Speed (Km/hr.	10.17		9.75		1.90	

AMBIENT AIR QUALITY SURVEY RESULTS

Sl. No	Location of the sampling station	Direction	Distance in metre	Height From GL (m)	Pollutants concentration PM10 (Microgram/m3)				PM2.5
					I Shift	II Shift	III Shift	24 Hrs Aver	
1.	On top of scaffolding near loadman room	NE	250	2	110	121	93	108	16.31
2.	On top of scaffolding near Power House backside	SSE	250	2	355	216	120	230	56.56
3.	On top of scaffolding near near kitchen	SW	100	2	411	314	119	281	-
4.	On top of scaffolding near Transformer yard	SW	250	2	162	102	73	112	65.23
5.	On top of scaffolding near Jeyapandi Crusher	WSW	500	2	137	82	71	97	52.96
6.	On top of scaffolding near Ravi Crusher Office	WNW	500	2	109	81	75	88	58.2
7.	On top of scaffolding near Fence	WNW	250	2	125	108	68	100	39.40
8.	On top of scaffolding near workshop backside	WNW	100	2	481	262	81	275	-

Note : Frequent Vehicle Movement observed during the time of Survey

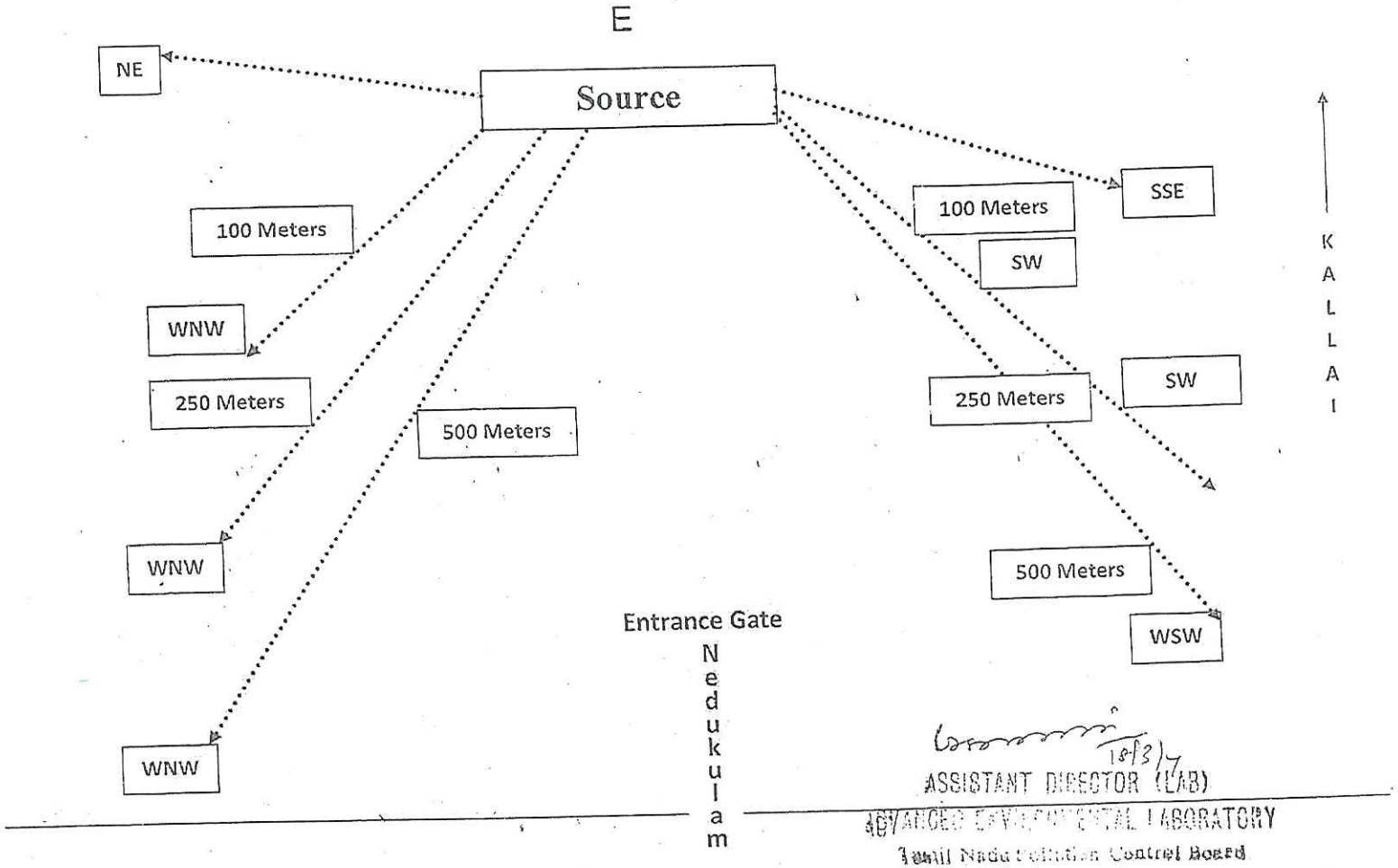
Parameter PM_{10}	Testing Method IS 5182 (Part 23)

S. M. A. Hakim
Environmental Scientist

Authorised Signatory
18/3/19
(U.S.KARUNAKARAN)
Assistant Director (Lab), AEL, TNPC Board, Madurai.

Diagram showing Eight numbers of sampling locations

M/s.Suganya Blue Metal Achankulam Village, Thirumangalam Taluk, Madurai District,



18/3/19
ASSISTANT DIRECTOR (LAB)
ADVANCED ENVIRONMENTAL LABORATORY
Tamil Nadu Pollution Control Board
MADURAI-8.

18.3.19

TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY
VELLORE

AMBIENT AIR QUALITY SURVEY – Report of Analysis

Report No. 83/ AEL-VLR/AAQS/ 2018 - 2019 / Dt. 18.03.2019

1. Name of the Industry : M/s.Balamurugan Blue metal,
2. Address of the Industry : Nedungal, Cheyyar, Tiruvannamalai District.
3. Date of Survey : 14,15.03.2019
4. Duration of Survey : 24 Hours
5. Category : Crusher Unit.

Meteorological Conditions

Ambient Temperature (°C)	Min	Max	Relative Humidity (%)	Min	Max
	25	36		61	98
Weather Condition	Clear Sky		Rain Fall (mm)	NIL	
Predominant Wind Direction	SW to NE, W to E		Mean Wind Speed (Kmhr)	3	

Ambient Air Quality Survey Results

Sl. No.	Location	Direction	Distance (m) **	Height from GL (m)	Pollutants Concentration µg/m³				
					I Shift PM_{10}	II Shift PM_{10}	III Shift PM_{10}	24 Hr Avge. PM_{10}	24 Hr Avge. $PM_{2.5}$
1	On top of Scaffolding at Open field at N side to the Unit.	N	250	3.0	55	103	79	79	110
2	On top of Scaffolding at Open field at NE side to the Unit.	NE	100	3.0	128	77	63	89	99
3	On top of Scaffolding at Open field at NE side to the Unit.	NE	250	3.0	109	86	103	99	44
4	On top of Scaffolding at Open field at NE side to the Unit.	NE	500	3.0	51	67	65	61	100
5	On top of Scaffolding at Open field at ENE side to the Unit.	ENE	100	3.0	93	46	98	79	53
6	On top of Scaffolding at Open field at ENE side to the Unit.	ENE	250	3.0	813	132	203	383	35
7	On top of Scaffolding at Open field at ENE side to the Unit.	ENE	500	3.0	174	128	125	142	70
8	On top of Scaffolding at Mango field at SW side to the Unit.	SW	250	3.0	199	156	157	171	51

Note:-* With respect to major emission sources. The analytical results are restricted to the sampling period of 24 hrs.

Test Performed	Test Method
PM_{10}	IS 5182: (Part 23) – 2006

18/03

D.C.S.O

18/03

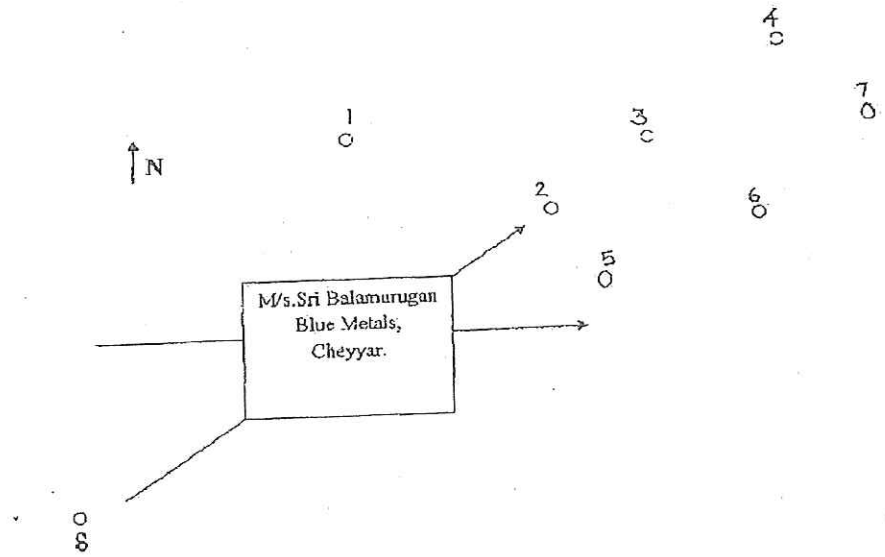
Assistant Director,
Advanced Environmental Laboratory,
Tamil Nadu Pollution Control Board,
Vellore.

TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY
VELLORE
AMBIENT AIR QUALITY SURVEY
Schematic Diagram Showing Location of Sampling stations

Report No. 83 /AEL-VLR/AAQS/2018 - 2019 / DT: Dt. 18.03.2019

1. Name and Address of the Industry	M/s.Sri Balamurugan Blue Metals, Nedungal, Cheyyar, Thiruvannamalai District.
2. Date of Survey	14,15.03.2019
3. Predominant Wind	SW to NE and W - E

LOCATIONS OF THE AAQ STATIONS



Note:- All the values are expressed in $\mu g/m^3$ and restricted to the sampling period of 24 Hrs.

METEOROLOGICAL CONDITIONS	
Predominate Wind Direction	SW to NE, W to E
Wind Speed	3 Km/Hr.
Weather condition	Clear Sky
Rainfall	Nil

18/03

D.C.S.O

18/03

Assistant Director,
Advanced Environmental Laboratory,
Tamil Nadu Pollution Control Board,
Vellore.

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Tiruppur – I

AMBIENT AIR QUALITY SURVEY – Report of Analysis

Report No.48 / AAQS/2018-2019 Date. 21.03. 2019

1. Name of the Industry : M/s. S.S.Blue Metal,
2. Address of the Industry : S.F.No.36/1,2 & 45/2, Sukkampalayam Village, Palladam (TK), Tiruppur District.
3. Date of Survey : 15.03.2019 & 16.03.2019
4. Duration of Survey : 24 Hours
5. Category : Orange

Meteorological Conditions

Ambient Temperature (^{0}C)	Min	Max	Relative Humidity (%)	Min	Max
	26	33.9		27	53
Weather Condition	Partially Cloudy		Rain Fall (mm)	Nil	
Predominant Wind Direction	NE – SW		Mean Wind Speed (km/hr)	-	

Ambient Air Quality Survey Results

Sl. No.	Location	Direction *	Distance (m) *	Height Form GL(m)	Pollutants Concentration (microgram / m^3)	
					$PM_{2.5}$	PM_{10}
1.	On top of Scaffolding near Point - I	SW	100	2	67	133
2.	On top of Scaffolding near Point – II	S	100	2	65	128
3.	On top of Scaffolding near Point – III	SW	250	2	61	88
4.	On top of Scaffolding near Point - IV	S	250	2	60	78

note: * With respect to major emission sources.

21/3/19

Dy. Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
TIRUPPUR.

Test Performed	Test Method
PM10	IS 5182 : (Part 23) – 2006
SO2	Modified West – Graeke / IS 5182 : (Part 2) – 2001 RA: 2012
NO2	Jacobs – Hochheiser / IS 5182 : (Part 6) – 2006 RA:2012

21/3/19

Dy,Chief Scientific Officer
DEL, TNPCB, Tiruppur.

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Tiruppur – I

AMBIENT AIR QUALITY SURVEY – Report of Analysis

Report No.48 / AAQS/2018-2019 Date. 21.03. 2019

1. Name of the Industry : M/s. S.S.Blue Metal,
2. Address of the Industry : S.F.No.36/1,2&45/2, Sukkampalayam Village, Palladam (TK), Tiruppur District.
3. Date of Survey : 15.03.2019 & 16.03.2019
4. Duration of Survey : 24 Hours
5. Category : Orange

Meteorological Conditions

Ambient Temperature (^{0}C)	Min	Max	Relative Humidity (%)	Min	Max
	26	33.9		27	53
Weather Condition	Partially Cloudy		Rain Fall (mm)	Nil	
Predominant Wind Direction	NE – SW		Mean Wind Speed (km/hr)	-	

Ambient Air Quality Survey Results

Sl. No.	Location	Direction *	Distance (m) *	Height Form GL(m)	Pollutants Concentration (microgram / m^3)	
					$PM_{2.5}$	PM_{10}
5.	On top of Scaffolding near Point – V	SW	500	2	58	87
6.	On top of Scaffolding near Point – VI	S	500	2	57	76
7.	On top of Scaffolding near Point – VII	SW	250	2	52	72
8.	On top of Scaffolding near Point - VIII	S	250	2	59	84

note: * With respect to major emission sources.

21/3/19

Dy. Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
TIRUPPUR.

Test Performed	Test Method
PM10	IS 5182 : (Part 23) – 2006
SO2	Modified West – Graeke / IS 5182 : (Part 2) – 2001 RA: 2012
NO2	Jacobs – Hochheiser / IS 5182 : (Part 6) – 2006 RA:2012

21/3/19

Dy.Chief Scientific Officer
DEL, TNPCB, Tiruppur.

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Tiruppur – 1.

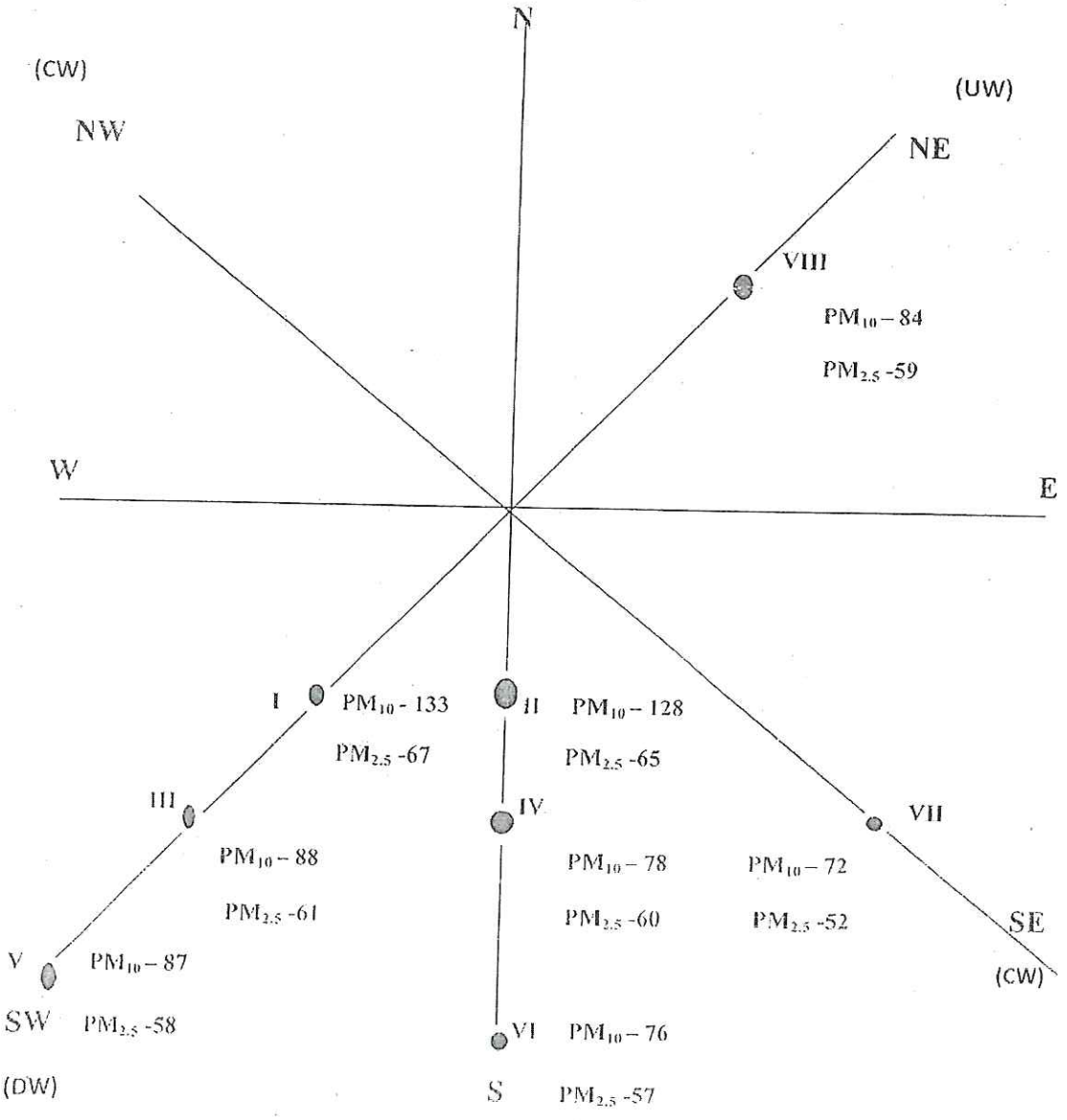
AMBIENT AIR QUALITY SURVEY

Schematic Diagram Showing Location of Sampling

Report No 48 /AAQ/SM/2018-2019

1.Name and Address of the Industry : M/s. S.S.Blue Metal,
S.F.No.36/1,2&45/2, Sukkampalayam Village
Palladam (TK), Tiruppur District

2. Date of Survey : 15.03.2019 & 16.03.2019



21/3/19

Dy,Chief Scientific Officer
DEL, TNPCB, Tiruppur

TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Hosur.

AMBIENT AIR QUALITY SURVEY - Report of Analysis

Report No. 94 / AAQS / 2018 - 19.

1. Name of the Industry : Stone Crushers - Cluster
2. Address of the Industry : Alur Village ,
   Hosur - TK
   Krishnagiri District.
3. Date of Survey : 14.03.2019 , 17.00 hrs to 15.3.2019 17.00 hrs
4. Duration of survey : 24 hours
5. Category : Orange
6. Land use classification : un classified.

Meteorological Conditions

Ambient	Low	High	Relative	Low	High
Temperature °C	24.0	37.2	Humidity (%)	43.0	64.0
Weather condition	Clear sky		Rain fall (mm)	Nil	
Predominant wind Direction	NE To SW SE TO NW		Mean wind Speed (km / hr)	8.00	

Ambient Air Quality Survey Results

Sl. No	Location	Direction	Distance (m)	Height (m)	Concentration in Micrograms/m^3			
					PM_{10}	PM_{10}	$PM_{2.5}$	$PM_{2.5}$
1	Top of Scaffolding Up Wind Direction 250 mts From source line Joining	NE	250	3	96		58	
2	Top of Scaffolding Cross Wind Direction 250 mts From source line Joining	E	250	3	74		44	
3	Top of Scaffolding Down Wind Direction 100 mts From source line Joining	NW1	100	3	559	462	220	180
4	Top of Scaffolding Down Wind Direction 250 mts From source line Joining	NW2	250	3	182	221	80	96
5	Top of Scaffolding Down Wind Direction 500 mts From source line Joining	NW3	500	3	124	123	64	62

16/03/19
DCSO/ TNPBCBd/ DEL/ Hosur

16/3/2019
Deputy Chief Scientific Officer,
Disctrict Environmental Laboratory,
TamilNadu Pollution Control Board,
Hosur.

TAMILNADU POLLUTION CONTROL BOARD Advanced Environmental Laboratory, Madurai.

AMBIENT AIR QUALITY SURVEY – REPORT OF ANALYSIS

Report F.No.0331/AEL/TNPCB/MDU/AAQS/SM/2018-2019, Dated: 16.03.2019

Name and Address of the Unit:	Cluster of Stone Crushers in Chinnamanaickanpatty and Tatampatty village,Vadipatti Taluk, Madurai District	Date of Survey : 15, 16.03.2019	Category: Orange / Small

Meterological Data

Duration in Hrs	10.15 to 18.15 (I shift)		18.15 to 02.15(II shift)		02.15 to 10.15 (III shift)	
	Min	Max	Min	Max	Min	Max
Ambient Temperature (°C)	29.1	37.0	21.3	33.0	19.0	30.8
Relative Humidity (%)	20.0	39.0	21.0	99.0	70.0	100
Rainfall(mm)	NIL		NIL		NIL	
Weather condition	Clear		Clear		Clear	
Predominant Wind Direction	E to W		E to W		E to W	
Mean Wind Speed (Km/hr.	6.0		4.5		2.8	

AMBIENT AIR QUALITY SURVEY RESULTS

Sl. No	Location of the sampling station	Direction	Distance in metre	Height From GL (m)	Pollutants concentration PM10 (Microgram/m3)				PM2.5
					I Shift	II Shift	II Shift	24 Hrs Aver	
1.	On top of scaffolding near Antony Blue Metal	SSW	100	2	277	165	102	181(*)	-
2.	On top of scaffolding near Antony Blue Metal	SW	250	2	197	179	145	174(*)	40.41
3.	On top of scaffolding near Vivek Blue Metal	WSW	500	2	112	90	120	107	10.4
4.	On top of scaffolding near Quality Textile	WNW	500	2	180	113	53	115	33.33
5.	On top of scaffolding near Quality Tex Main Gate	NW	250	2	101	120	127	116	35
6.	On top of scaffolding near Royal Blue Metal	NNW	100	2	202	162	186	183	–
7.	On top of scaffolding backside of AB Blue Metal	E	250	2	77	49	73	66	6.25
8.	On top of scaffolding near KSK Blue Metals	S	250	2	202	108	97	136	9.58

Note : (*) Road widening work carried out on 16.3.19 from 07 to 10.15Hrs

Parameter PM_{10}	Testing Method IS 5182 (Part 23)

Environmental Scientist

Authorised Signatory

(U.S.KARUNAKARAN) 19/3/19

Assistant Director (Lab), AEL, TNPC Board, Madurai

18-3-19

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory,M.M.Nagar.

Ambient Air Quality Survey Report

Report No. 92 /AAQS/DEL-M.M.Nagar/2018-19 Dated: 15/03/2019.

1. Name of the Industry : **M/s.STONE CRUSHER UNITS (Cluster)**
2. Address of the Industry : Thiruneermalai Village
   Alandur Taluk ,
   Kancheepuram Dt,
3. Date of survey : 14/03/2019
4. Duration of Survey : Eight hours
5. Category : Other
6. Classification :
7. Consent Order No. :
8. Time of survey started in Hrs : 7.00
9. Time of survey closed in Hrs : 14.30

Shift-I

Ambient Temperature (^{0}C)	Min	Max	Relative Humidity (%)	Min	Max
	25.5	34.0		43	89
Weather Condition	Clear Sky		Rain Fall (mm)	Nil	
Predominent Wind Condition	W-E		Mean Wind Speed (Km/hr)	4.58	

Ambient Air Quality Survey Report of Analysis

Sl. No	Location	Direction *	Distance (m)	Height from GL (m)	Pollutants Concentrations (µg/m^3)			
					PM2.5/ 24 Hrs	PM_{10}	SO_2	NO_2
1	On House top of Thiru Jayaram at D.No.7.Mallima St,Thiruneermalai Village Chennai-44 **(UP WIND)**	NE	210	3.0	---	84	13.6	15.1
2	On House top of Thiru J,Pon annan at D.No.14/B,Oyalliamman Kovil St, Thiruneermalai Village **(Cross Wind)**	E	200	3.0	---	91	15.5	18.9
3	On House top of Thiru Dhanasekarn at D.no.250.Thirumagai Alwarpuram Village Thiruneermalai	SSE	100	3.0	84	178	17.8	22.4
4	On House top of Tmt Gomathi at D.No.26.Vettiyan gundu Village,Pulikondar, Thiruneermalai	SW	250	3.0	64	122	18.8	24.6
5	On House top of at D.No.211/11A Pulikondar Village Thiruneermalai.	WSW	500	3.0	52	92	16.1	22.4

18/3/19

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory,M.M.Nagar.

Ambient Air Quality Survey Report

Report No. 92 /AAQS/DEL-M.M.Nagar/2018-19 Dated: 15/03/2019.

1. Name of the Industry : **M/s.STONE CRUSHER UNITS (Cluster)**
2. Address of the Industry : Thiruneermalai Village
   Alandur Taluk ,
   Kancheepuram Dt,
3. Date of survey : 14/03/2019
4. Duration of Survey : Eight hours
5. Category : Other
6. Classification :
7. Consent Order No. :
8. Time of survey started in Hrs : 15.00
9. Time of survey closed in Hrs : 23.30

Shift-II

Ambient Temperature (^{0}C)	Min	Max	Relative Humidity (%)	Min	Max
	27.5	33.0		39	78
Weather Condition	Clear Sky		Rain Fall (mm)	Nil	
Predominent Wind Condition	W-E & NNW-SSE		Mean Wind Speed (Km/hr)	3.11	

Ambient Air Quality Survey Report of Analysis

Sl. No	Location	Direction *	Distance (m)	Height from GL (m)	Pollutants Concentrations (µg/m^3)			
					PM2.5/ 24 Hrs	PM_{10}	SO_2	NO_2
1	On House top of Thiru Jayaram at D.No.7.Mallima St,Thiruneermalai Village Chennai-44 **(UP WIND)**	NE	210	3.0	---	86	11.8	17.3
2	On House top of Thiru J,Pon annan at D.No.14/B,Oyalliamman Kovil St, Thiruneermalai Village **(Cross Wind)**	E	200	3.0	---	84	12.3	16.5
3	On House top of Thiru Dhanasekarn at D.no.250.Thirumagai Alwarpuram Village Thiruneermalai	SSE	100	3.0	---	198	13.1	18.3
4	On House top of Tmt Gomathi at D.No.26.Vettiyan gundu Village,Pulikondar, Thiruneermalai	SW	250	3.0	---	132	11.7	15.8
5	On House top of at D.No.211/11A Pulikondar Village Thiruneermalai.	WSW	500	3.0	---	96	14.7	19.8

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory,M.M.Nagar.

Ambient Air Quality Survey Report

Report No. 92 /AAQS/DEL-M.M.Nagar/2018-19 Dated: 15/03/2019.

1. Name of the Industry : **M/s.STONE CRUSHER UNITS (Cluster)**
2. Address of the Industry : Thiruneermalai Village
   Alandur Taluk ,
   Kancheepuram Dt,
3. Date of survey : 15/03/2019
4. Duration of Survey : Eight hours
5. Category : Other
6. Classification :
7. Consent Order No. :
8. Time of survey started in Hrs : 23.00
9. Time of survey closed in Hrs : 7.00

Shift-III

Ambient Temperature (^{0}C)	Min	Max	Relative Humidity (%)	Min	Max
	24.0	27.5		78	85
Weather Condition	Clear Sky		Rain Fall (mm)	Nil	
Predominent Wind Condition	NNW-SSE		Mean Wind Speed (Km/hr)	3.86	

Ambient Air Quality Survey Report of Analysis

Sl. No	Location	Direction *	Distance (m)	Height from GL (m)	Pollutants Concentrations (µg/m^3)			
					PM2.5/ 24 Hrs	PM_{10}	SO_2	NO_2
1	On House top of Thiru Jayaram at D.No.7.Mallima St,Thiruneermalai Village Chennai-44 **(UP WIND)**	NE	210	3.0	---	82	9.3	12.5
2	On House top of Thiru J.Pon annan at D.No.14/B,Oyalliamman Kovil St, Thiruneermalai Village **(Cross Wind)**	E	200	3.0	---	86	11.8	14.1
3	On House top of Thiru Dhanasekarn at D.no.250.Thirumagai Alwarpuram Village Thiruneermalai	SSE	100	3.0	---	132	10.4	12.6
4	On House top of Tmt Gomathi at D.No.26.Vettiyan gundu Village,Pulikondar, Thiruneermalai	SW	250	3.0	---	107	10.3	13.4
5	On House top of at D.No.211/11A Pulikondar Village Thiruneermalai.	WSW	500	3.0	---	91	9.8	12.4

18/3/19

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Tiruppur – 1

AMBIENT AIR QUALITY SURVEY – Report of Analysis

Report No.47 / AAQS/2018-2019 Date. 21.03. 2019

1. Name of the Industry : M/s. Stone Crusher Kodangipalayam Cluster
2. Address of the Industry : Karanampettai, Palladam (TK), Tiruppur District.
3. Date of Survey : 14.03.2019 to 15.03.2019
4. Duration of Survey : 24 Hours
5. Category : Orange

Meteorological Conditions

Ambient Temperature (^{0}C)	Min	Max	Relative Humidity (%)	Min	Max
	27	34.8		18	57
Weather Condition	Partially Cloudy		Rain Fall (mm)	Nil	
Predominant Wind Direction	NE – SW		Mean Wind Speed (km/hr)	-	

Ambient Air Quality Survey Results

Sl. No.	Location	Direction *	Distance (m) *	Height Form GL(m)	Pollutants Concentration (microgram / m^3)	
					$PM_{2.5}$	PM_{10}
1.	On top of Scaffolding near A.Thangavelu, S.F.No.165, Kodangipalayam Village, Karanampettai,Palladam(Ground)	SW	100	2	71	137
2.	On top of Scaffolding near Mr.Kumarasamy, S.F.No.45, Arathottam	S	100	2	75	116
3.	On top of Scaffolding near S.F.No.238, (pond)	SW	250	2	60	96
4.	On top of Scaffolding near Mr.Sivakumar, S.F.No.248, (oil Mill)	S	250	2	57	84

note: * With respect to major emission sources.

21/3/19

Dy. Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
TIRUPPUR.

Test Performed	Test Method
PM10	IS 5182 : (Part 23) – 2006
SO2	Modified West – Graeke / IS 5182 : (Part 2) – 2001 RA: 2012
NO2	Jacobs – Hochheiser / IS 5182 : (Part 6) – 2006 RA:2012

21/3/19

Dy,Chief Scientific Officer
DEL, TNPCB, Tiruppur.

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Tiruppur – I

AMBIENT AIR QUALITY SURVEY – Report of Analysis

Report No.47 / AAQS/2018-2019 Date. 21.03. 2019

1. Name of the Industry : M/s. Stone Crusher Kodangipalayam Cluster
2. Address of the Industry : Karanampettai, Palladam (TK), Tiruppur District.
3. Date of Survey : 14.03.2019 to 15.03.2019
4. Duration of Survey : 24 Hours
5. Category : Orange

Meteorological Conditions

Ambient Temperature (^{0}C)	Min	Max	Relative Humidity (%)	Min	Max
	27	34.8		18	57
Weather Condition	Partially Cloudy		Rain Fall (mm)	Nil	
Predominant Wind Direction	NE – SW		Mean Wind Speed (km/hr)	-	

Ambient Air Quality Survey Results

Sl. No.	Location	Direction *	Distance (m) *	Height Form GL(m)	Pollutants Concentration (microgram / m^3)	
					$PM_{2.5}$	PM_{10}
5.	On top of Scaffolding near Mr.Selavaraj, S.F.No.235, (Textile Mill)	SW	500	2	56	92
6.	On top of Scaffolding near S.F.No.244, (MGR Nagar)	S	500	2	54	87
7.	On top of Scaffolding near R.Shanmugam's house	SE	250	2	53	84
8.	On top of Scaffolding near Mr.Dhanapal, Bach ride of Rajesh Crusher, S.F.No.107	NE	250	2	57	83

note: * With respect to major emission sources.

21/3/19

Dy. Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
TIRUPPUR.

Test Performed	Test Method
PM10	IS 5182 : (Part 23) – 2006
SO2	Modified West – Graeke / IS 5182 : (Part 2) – 2001 RA: 2012
NO2	Jacobs – Hochheiser / IS 5182 : (Part 6) – 2006 RA:2012

21/3/19

Dy,Chief Scientific Officer
DEL, TNPCB, Tiruppur.

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Tiruppur – 1.

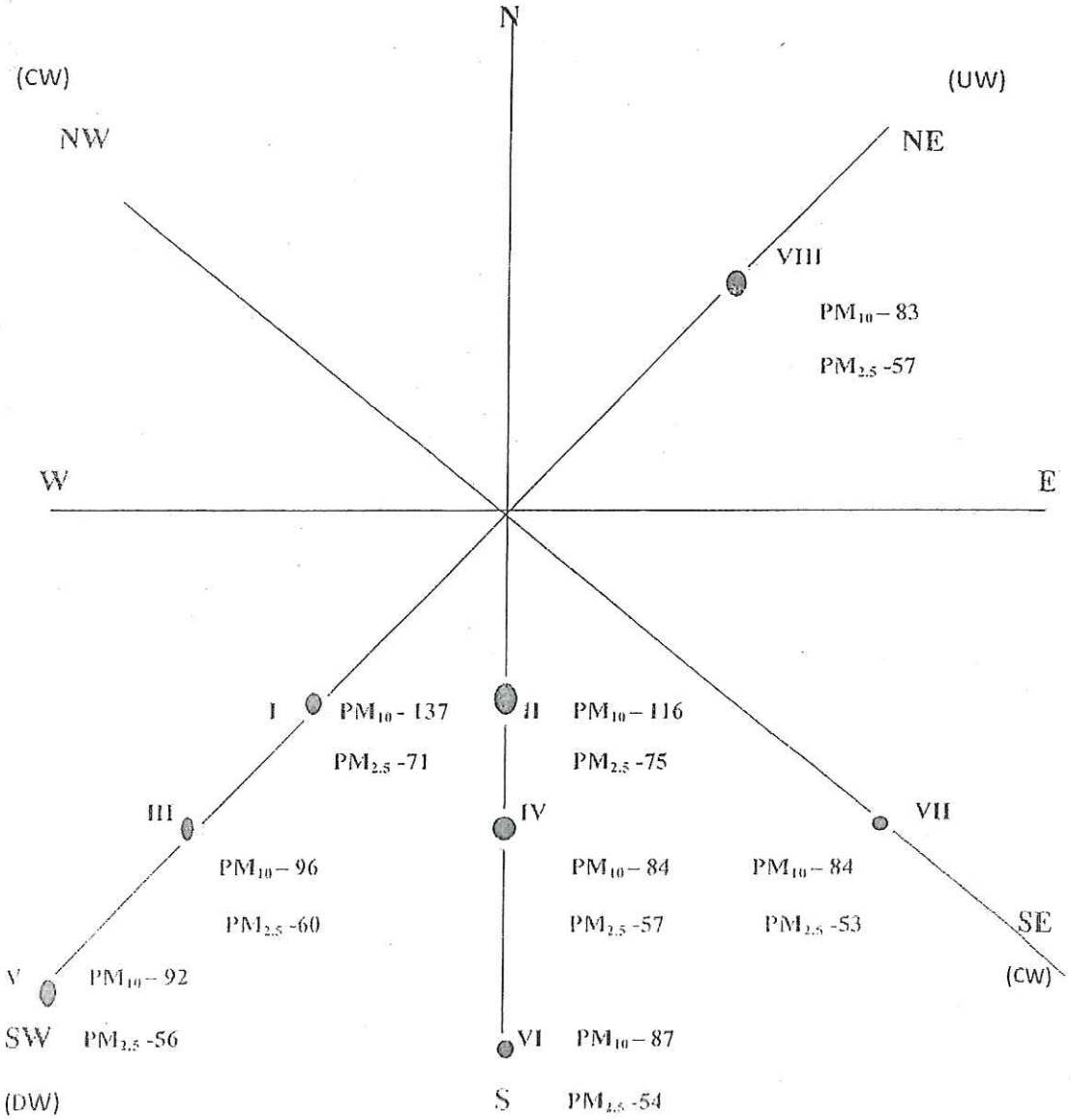
AMBIENT AIR QUALITY SURVEY

Schematic Diagram Showing Location of Sampling

Report No 47 /AAQ/SM/2018-2019

1.Name and Address of the Industry : M/s. Stone Crusher Kodangipalayam Cluster, Karanampettai, Palladam (TK), Tiruppur District.

2. Date of Survey : 14.03.2019 & 15.03.2019



Dy,Chief Scientific Officer
DEL, TNPCB, Tiruppur

Photographs of a stone crusher with air pollution control measures

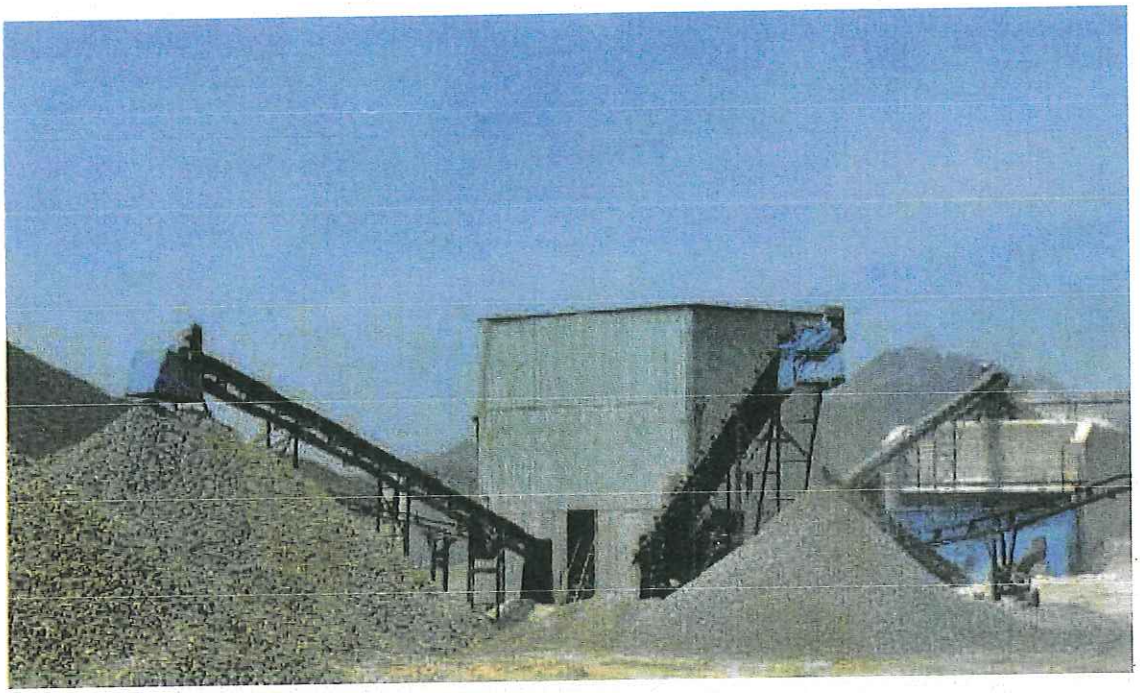
DG Set – 320 KVA

Primary Crusher- MS cover with water Spraying Arrangement

Secondary Crusher - 3 Nos - Common MS cover with water Spraying Arrangement

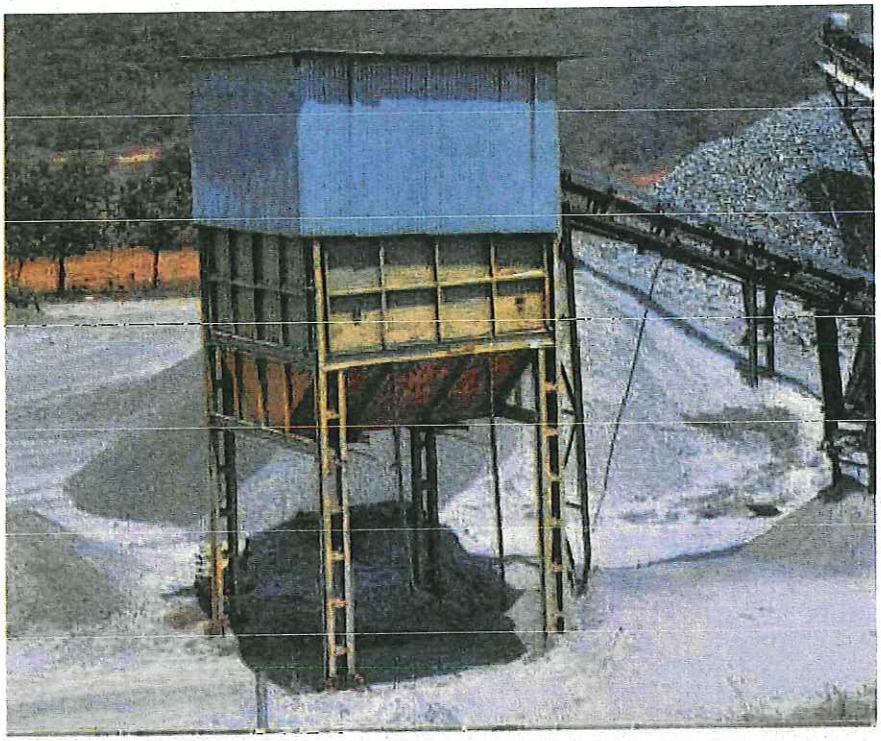
Secondary Crusher - 3 Nos - Common MS cover with water Spraying Arrangement

Vibrator – (To segregate 1.1/2", ¾" & dust) – MS Cover



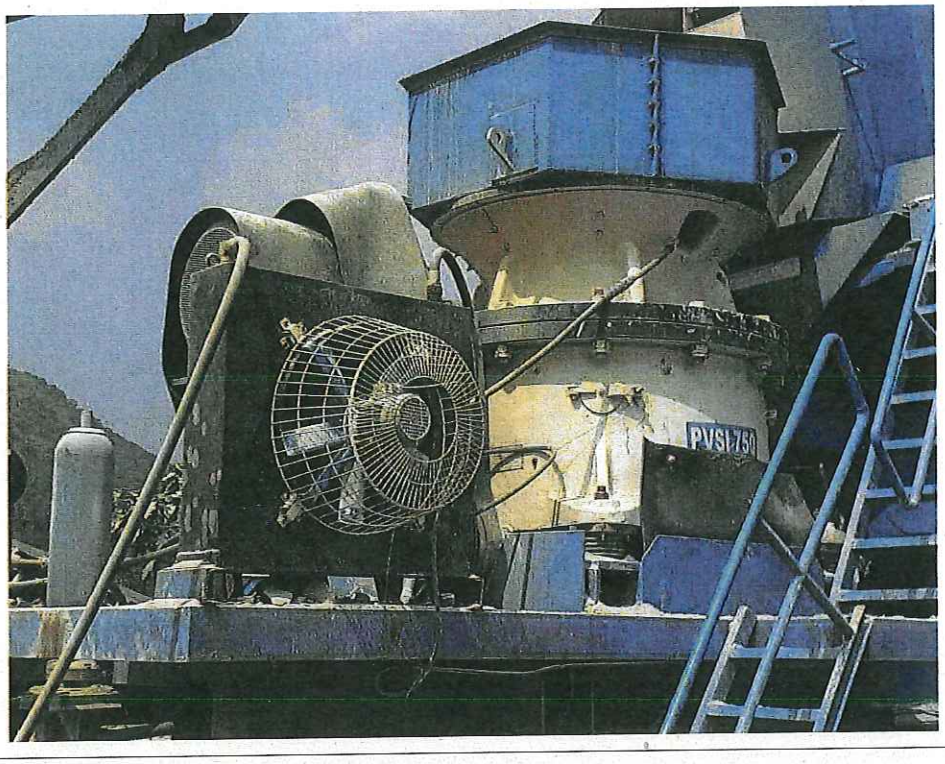
Additional Vibrator – (To segregate 1/2", Chips) – MS Cover

Dust Collection Tank



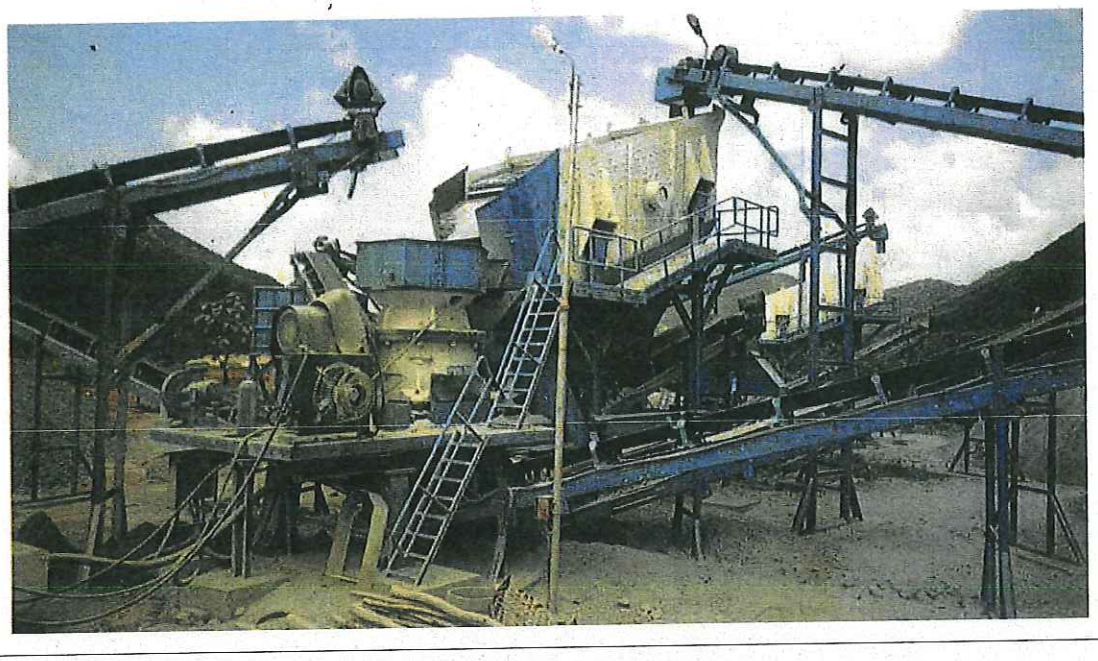
VSI Feeder Tank

Primary VSI – 40 mm



Secondary VSI – 30 mm

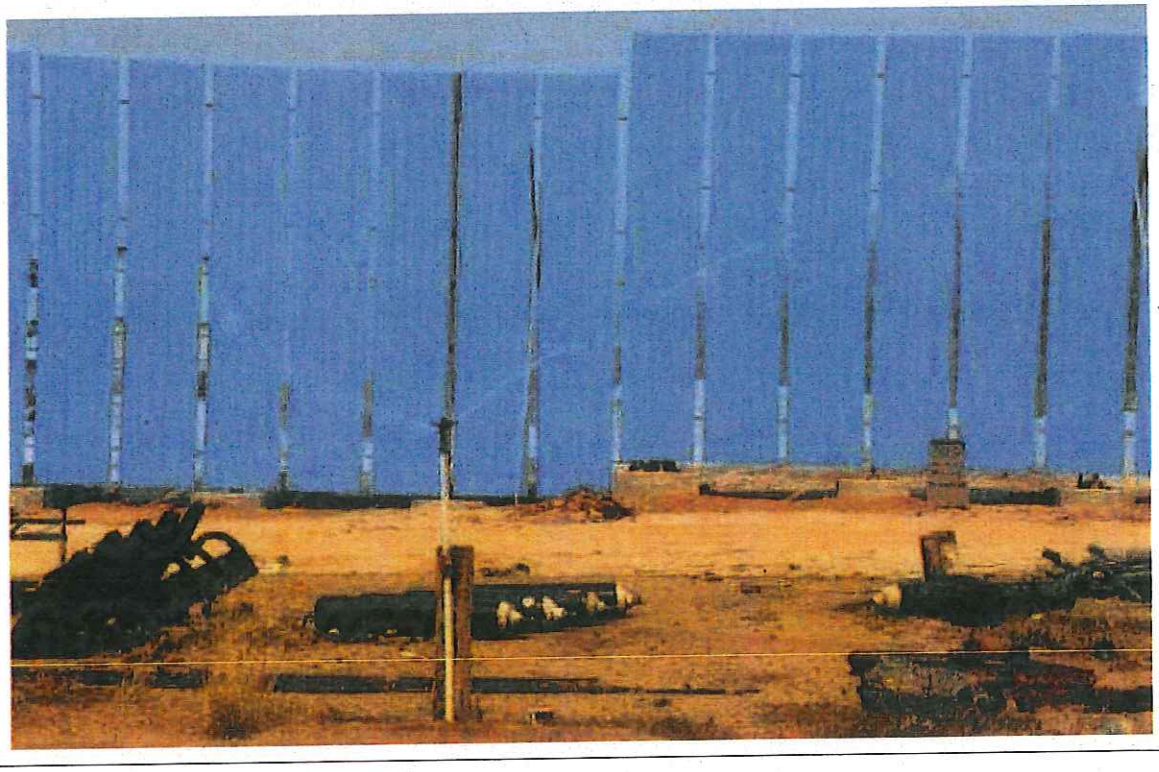
Primary VSI - Vibrator



Secondary VSI - Vibrator

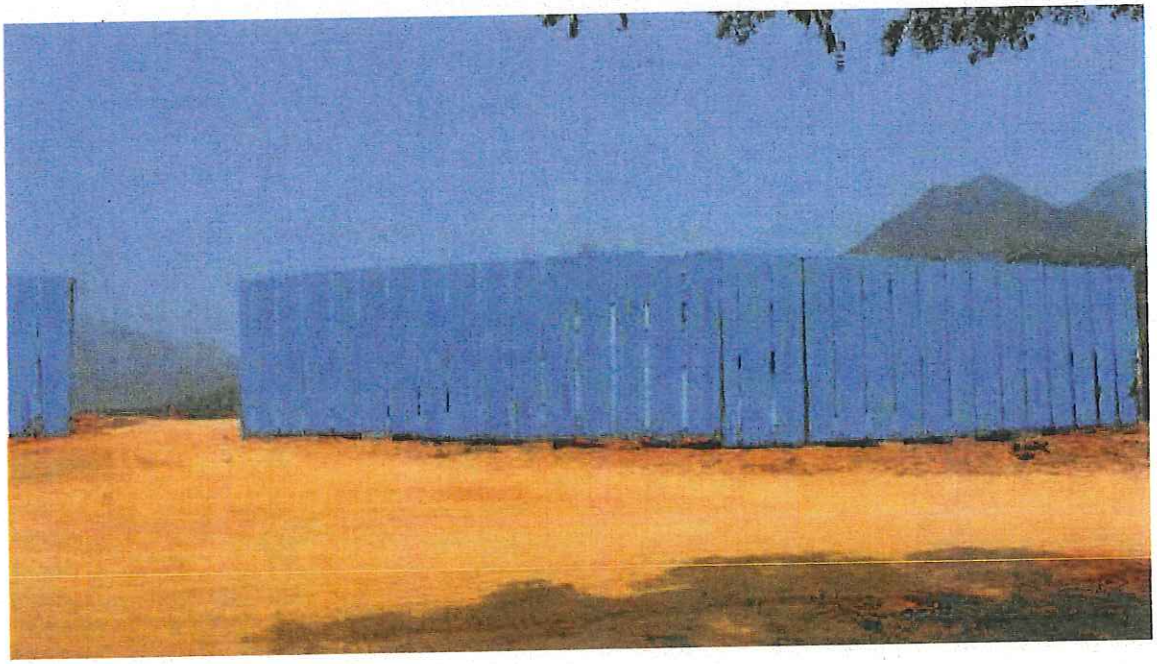
Material discharge Point - Conveyor chutes

Water Sprinkler Arrangement



Water Sprinkler Arrangement in vehicle movement area

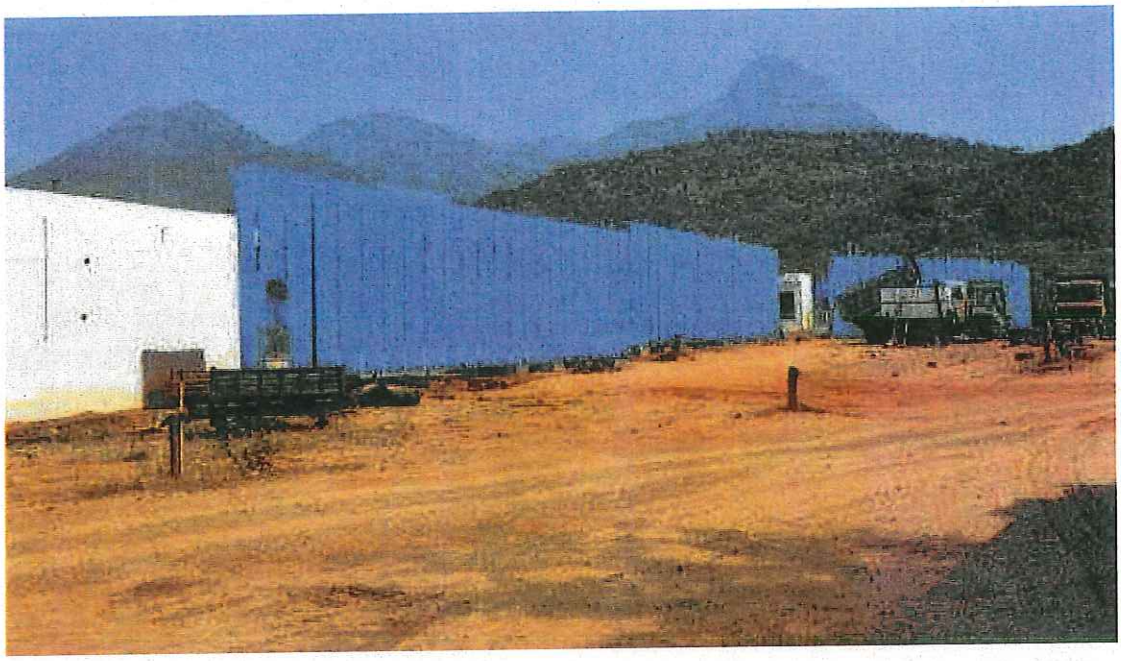
G.I Sheets barrier of 20 feet height on Southern side



G.I sheet barrier of 10 feet height on Eastern side

G.I sheet barrier of 20 feet height to a length of 24 meter on western side

G.I Sheets barrier of20 feet height on Southern side (Outside view)

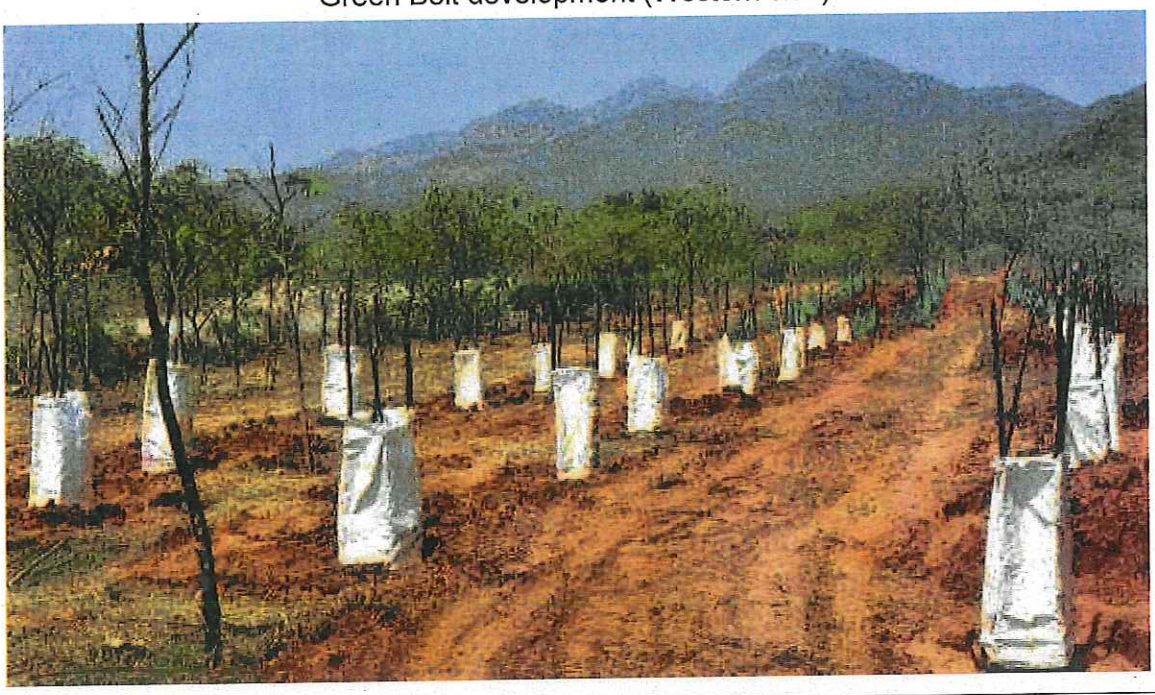


G.I Sheets barrier of 20 feet height on Southern side (inside view)

Green Belt Parallel to NH (South side)

Green Belt Development (South - East Direction)

Green Belt development (Western side)



Green belt development (Unit's approach road side)

TAMIL NADU POLLUTION CONTROL BOARD

Proceeding No. TNPCB/O&G/F. 4792/2019/Stone Crusher/dated 07.3.2019

Sub: TNPCB – Industries – Stone Crusher Units – Re-examining the distance criteria for existing and new stone crushers – Committee constituted - orders issued – Reg.

Ref:
1. B.P. Ms. No. 4 dated 02.07.2004
2. B.P. Ms. No. 55 dated 06.10.2005
3. B.P. No. 26 dated 30.07.2018
4. B.P. No. 08 dated 05.03.2019.

The Board vide B.P. Ms. No. 4 dated 02.07.2004 (read with B.P. Ms. No. 55 dated 06.10.2005), has issued norms for the location of stone crushing industries. The highlights of the norms for New / Proposed Stone Crushing units are as follows:

i). No new / proposed stone crushers should be located within 500 metres from any National Highways or State Highways or inhabited site or places of public and religious importance.

ii). The minimum distance between new / proposed stone crushers should be 1 KM to avoid dust pollution influence of one over the other.

iii). Green Belt Development: The stone crushing units shall provide adequate green belt cover around the periphery as suggested by the Board depending on site and meteorological conditions.

iv). The stone crushing units should provide dust containment and dust suppression systems suggested by NPC.

River sand is the essential material for the construction activities. Extensive use of river sand as fine aggregate in the construction works results in scarcity of river sand. Further, indiscriminate mining of sand affects the river eco system and lowers the ground water table. Therefore, the Government is now encouraging the use of M-Sand in construction in place of river sand. M-sand is manufactured by crushing of blue metal jellies either in stone crushers along with blue metal jellies or in standalone M- Sand units. In order to regulate the activities of M- Sand units, the Board vide B.P. No. 26 dated 30.07.2018 has issued guidelines for M-Sand units.

Stone Crushers Associations have made representation to the Hon'ble Minster for Environment that the norms for maintaining 1 KM distance from crusher to crusher shall be waived off so that the existing crushers can go for expansion to manufacture M-Sand in addition to the existing consented production of blue metal jellies and new crushers can be permitted so as meet the demand for supply of blue metal and M-sand for construction activities. Further, they stated that all the existing stone crushers are functioning with full fledged Air Pollution Control measures as suggested by the NPC.

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Email : tnpcb@md3.vsnl.net.in www.tnpcb.gov.in

In order to sort out the issue, a meeting was convened by the Hon'ble Minister for Environment with the Principal Secretary to Government, Environment & Forests Department & Chairman, TNPCB, and Member Secretary, TNPCB. After detailed discussion, it was decided to re-examine the 1 KM distance criteria mentioned in the B.P Ms No. 4 dated 02.07.2004 in view of the latest development in pollution control technologies, the present demand for construction materials and difficulties faced by the entrepreneurs to find suitable site.

In this regard, a proposal was placed before the Board. The Board vide circulation No. BM/CA/04/2019, dated 01.03.2019 has resolved to approve the proposal and to issue guidelines for the existing consented stone crushing units. Accordingly B.P. No. 8 dated 05.03.2019 was issued with the following guidelines for the **existing consented stone crushing units**

1. The existing consented stone crushing units shall be permitted to increase their production along with or without M-sand production unit, such units shall comply with all the norms as prescribed in B.P. Ms. No. 4 dated 02.07.2004 (read with B.P. Ms. No. 55 dated 06.10.2005) except 1 KM distance criteria from crusher to crusher.
2. The stone crushing units shall meet Ambient Air Quality standards at all times. The suspended particulate matter contribution value at a distance of 40 metres from a controlled isolated as well as from a unit located in a cluster should be less than 600mg/Nm^3.
3. The Standalone M-Sand units (within / outside stone crushing unit) shall comply with all the norms as prescribed in B.P. No. 26 dated 30.07.2018 except the distance criteria as prescribed under A-II of said B.P.
4. The stone crushing units & M-Sand units shall not store raw materials & products more than one month capacity and all the open storage should be properly covered with Tarpaulin to avoid dust emanation due to wind action.

The Board has also approved the proposal to re-examine the 1 KM distance criteria for the new stone crushers by conducting a study through a reputed institution like NEERI.

The above subject matter was again discussed in the meeting held with Hon'ble Minister for Environment at TNPCB Head Office on 6.3.2019. In the meeting it was discussed that the stone crushing units are now adopting latest technologies for dust suppression. In view of the establishment of M-Sand unit as integral part of stone crushing unit, they adopt spraying of fine water mist through special nozzles which suppress the particulate matter emission effectively. In view of the above, it was decided to re-examine the 500 metre distance criteria fixed for the stone crushers from Habitations, NH (or) SH through a detailed study. It is decided to form a Committee for the study.

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TAMIL NADU POLLUTION CONTROL BOARD

In view of the above, a Committee with the following officers hereby constituted to carryout the study with above objective and submit a report.

Thiruvalargal

1 R.Vijayabaskaran, JCEE
2 G.Ramaraj, DEE, Sriperumpudur – Convenor of the Committee
3 A.Shanmugam, DEE, Tiruppur (South)
4 Dr M.Senthil Kumar, DEE, Thiruvannamalai
5 Dr R.Sivacoumar,
Senior Principal Scientist, CSIR-NEERI, Chennai
6 Dr D.Srinivasalu,
Deputy Director, NPC, Chennai.

Terms of Reference for Committee

1. The Committee shall study the performance of existing stone crushers (cluster and isolated) with M-sand unit and without M-sand unit.
2. The study shall focus on the air pollution control measures, dust suppression systems, green belt development, dust influence to the nearby habitations, National/State Highways etc.,
3. The Committee shall furnish its recommendation on the minimum distance criteria to be maintained between crusher to crusher, NH and SH, Habitations for the existing stone crushers and for the proposed stone crushers.
4. The Committee shall suggest pollution control measures to be adopted by the units.
5. The Committee can engage the service of TNPCB laboratories for carrying out AAQ survey.
6. The Committee shall furnish its report within 10 days.

Members under Sl. (5) and (6) are eligible for TA&DA and sitting fee as per the Government norms.

The receipt of this proceeding shall be acknowledged.

7/3/2019
For Chairman

To

All the Committee Members.

Copy to

ACEEs, TNPCB

JCEE (M), TNPCB, Chennai, Salem, Coimbatore.

PS to Chairman & PA to Member Secretary

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