Joint Inspection Report

OA No. 776/2018

This has reference to the Direction of Hon'ble NGT, order of OA No.776/2018 hearing on 21.11.2019 order uploaded on 05.12.2019 in the case of Ramchandra Chaurasia Vs State of Jharkhand. The issue was earlier taken up in O.A. No. 23/2017 (EZ), Syed Arsad Nasar Vs Union of India & Ors. A committee was constituted by the NGT which is as given below:

- Ministry of Environmental ,Forest and Climate Change, Regional Office, Ranchi.
  Shri Rajeev Ranjan, Scientist-'E'
- Central Pollution Control Board
  Dr.(Mrs) Rita Saha, Scientist-'D'
- Jharkhand State Pollution Control Board
  Shri Ravindra Prasad, Regional Officer, Dumka
- State Environment Impact Assessment Authority: **No representative from SEIAA was present**. Member Secretary SEIAA Jharkhand informed that SEIAA Jharkhand is not in existence and its tenure has expired w.e.f 08.11.2019.New body of SEIAA Jharkhand is under constitution.

In relation to the Stone Mines and Stone Crushing units in the Sahebganj Dist, Jharkhand, NGT directed the committee to give the details of the Stone Mines and Stone Crusher separately with following particulars:

a) Name of the mines and crusher units and its locational depiction on the map of appropriate scale

b) Dates of grant of Consent to Establish, Consent to Operate and, Environmental Clearance (EC) in respect of stone mines. The area of stone mines and distance with adjoining mine(s) may clearly be stated.

c) Adequacy of pollution control devices of stone crushing units

d) Details of individual violation of conditions of EC/Consent to Operate w.r.t mining units and details of violation of consent to Operate w.r.t stone crushing units

e) Action taken against those which do not have EC and Consent to Operate and against those which have violated the conditions of EC/Consent to Operate w.r.t mining units

f) The amount of environmental compensation assessed and recovered along with the individual computation sheets indicating period of default

The team as constituted by NGT inspected mines and crushers in Sahebganj district on 16th, 17th & 18th Jan 2020 that were previously(before the hearing of 21.11.2019) not visited. The details of the mining and crushing units inspected from 16th Jan to 18th Jan, 2020 are given hereunder followed by the details of those units:

A. Details of Crushing Units Inspected

Sl No.	Date of inspection	Area of the Units	Name of the Unit	Lat/Long
1.	16/01/2020	Bakudi ,Sahebganj	Jial Das and co stone crusher	24.932972 N 87.803803 E
2.	16/01/2020	Bakudi,Sahebganj	Swastika mineral agency	24.931044 N 87.797123 E
3.	16/01/2020	Bakudi ,Sahebganj	Bihar bentonite supply and company	24.931011 N 87.793777 E
4.	17/01/2020	Mirzachowki , Sahebganj	Maa Vaishnavi	25.244933N 87.496888E
5.	17/01/2020	Mirzachowki ,Sahebganj	CTS industries-1	$25^0$14'09"N $87^0$29'31"E
6.	17/01/2020	Mirzachowki , Sahebganj	M/s Ecofriendly Pvt ltd.	Near to CTS Industries crusher and Yashin illegal mine
7.	17/01/2020	Mirzachowki , Sahebganj	Ma Laxmi Stone works	$25^{0}\cdot$236810N $87^{0}\cdot$488181E
8.	17/01/2020	Mirzachowki , Sahebganj	SS Black Stone works	$25^{0}\cdot$238735N $87^{0}\cdot$486785E

B. Details of Mining Units Inspected

Sl No.	Date of inspection	Area	Name of the Unit	Lat/ Long
1.	16/01/2020	Bakudi , Sahebganj	Jial Das and co stone crusher	24.934984 N 87.804513 E
2.	16/01/2020	Bakudi,Sahebganj	Narshing lagdhir stone mines	24.92962 N 87.799701 E
3	16/01/2020	Bakudi, Sahebganj	Bihar bentonite supply company	24.930117 N 87.795421 E
4	17/01/2020	Mirzachowki,Sahebganj	Maa Vaishnavi	25.244307 N 87.496765 E
5	17/01/2020	Mirzachowki,Sahebganj	Manoj Kr. Sah	25.244103 N 87.495610 E
6	17/01/2020	Mirzachowki, Sahebganj	Bhudawa Paharia	25.24333 N 87.493077 E
7	17/01/2020	Mirzachowki,Sahebganj	Pradhan Murmu & Others	25.242325 N 87.501457 E
8	17/01/2020	Mirzachowki,Sahebganj	Star India Stone mine s	25^{o}14'32" N 87^{o}30'09" E
9	17/01/2020	Mirzachowki ,Sahebganj	Illegal Mines (Dildhar Hussain)	Very near to CTS ind mine.
10	17/01/2020	Mirzachowki,Sahebganj	CTS Industries Mines	25.182701 N

				87.487788 E
11	**17/01/2020**	**Mirzachowki ,Sahebganj**	**Yashin Illegal Mines**	25°14’14” N 87°29’29” E
12	**17/01/2020**	**Mirzachowki ,Sahebganj**	**SS Black Stone works**	25.239683 N 87.486957 E

Crusher units inspected on 18.01.2020 –(illegal units with details and action taken)

S. No	Name of crusher units	Place/ Mauza	Latitude ,Longtitude	Present status as on 18.01.2020	Action taken by district admistration
1.	M/s Sanjay Gupta	Badi Kodarjana, Pratapganj.	N25.259955 E87.547443	The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed on 01.03.2019 and legal action had been taken but once again user agency have made it operational.
2.	M/s Dinesh kumar Mahto	Badi Kodarjana, Pratapganj	25.261712 87.545793	The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and legal action had been taken but once again user agency have made it operational.(no supporting document available)
3.	M/s Sunil kr shah	Badi Kodarjana, Pratapganj	25.261712 87.545692	The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed on 01.03.2019 and legal action had been taken but once again user agency have made it operational.
4.	Owner not known	Badi Kodarjana, Pratapganj		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and legal action had been taken but once again user agency have made it operational.(no supporting document available)
5	M/s Arvind Gupta alias Sah	Badi Kodarjana, Pratapganj	25.261665 87.544783	The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed on 01.03.2019 and legal action had been taken but once again user agency have made it operational.
6.	M/s Vishnu Deo Singh	Pratapganj,	25.262018 87.539705	The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and legal action had been taken but once again user agency have made it operational.(no supporting document available)
7.	Unnamed	Pratapganj,	25.261828 87.538373	The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and legal action had been taken but once again user agency have made it operational.(no supporting document available)
8.	Shri Nath Choudhary	Bartalla		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.
9.	Sohail Ansari	Bartalla		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.
10.	Md. Azad	Bartalla		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.
11.	Binod Choudhary	Bartalla	N25.257243 E87.501393	The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.
12.	Maa Durga Stone works	Bartalla		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.

13.	Ravi Shankar Singh	Bartalla		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.
14.	Ashok Singh	Bartalla		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.
15.	Binode Kumar Shah	Bartalla		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.
16.	Rupesh Choudhary	Bartalla		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.
17.	MD. Fazzu Ansari	Bartalla		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.
18.	MD. Jabbar Ansari	Bartalla		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.
19.	MD. Sohail Ansari	Bartalla		The crusher unit was not running during inspection but all the installations were present, which indicated that the unit was operational.	DMO,Sahebgunj informed that the crusher had been sealed and FIR lodged vide letter no 551 dated 11.05.2019 on 01.03.2019 in Mirachwki PS (documents submitted) but once again user agency have made it operational.

Details of <u>mines</u> inspected on 16, 17 & 18 Jan 2020

S. No	Name of mines	Water spraying system		Haul Road		Systematic & Scientific mining	OB Dump/ Stock yard	Sump/ Water Storage	Drainage Catch drainage/ Siltation Pond	Plantation	Remarks
		Vehicular spray	Spray system as mist	Katcha	Pucca						
1.	Jial Das	No	No	YES	NO	No. Improper bench height and width.	Yes	No	No	Very scanty	Poor compliance No documents made available
2.	Narshing Lagdhir Stone mines	No	No	YES	NO	No. Improper bench height and width.	No	No	No	Very scanty	Poor compliance No documents made available
3.	Bihar Bentonite	No	No	YES	NO	No. Improper bench height and width.	No	No	No	Very scanty	Poor compliance No documents made available

4.	Maa Vaishnavi	Yes	No	Yes	No	No. Improper bench height & Width	Yes	Yes	No	Scanty	Poor compliance No documents made available
5.	Manoj Kr. Sah	Yes, but quite ineffective	No	Yes	No	No. Improper bench height & Width	No	No	No	Very Scanty	Poor compliance No documents made available
6.	Bhudawa Paharia	No	No	Yes	No	No. Improper bench height & Width	Yes	No	No	No	Poor compliance No documents made available
7.	Pradhan Murmu & Others	No	No	Yes	No	No. Improper bench height & Width	Yes	No	No	No	Poor compliance No documents made available
8.	Unnamed, Gilamari Mauza										Written complain has been made in Mirjachowki PS vide letter no 299 dated 2.3.2019.
9.	Star India Stone mine s	No	No	Yes	No	No. Improper bench height & Width	Yes	No	No	No	Poor compliance No documents made available
10	Illegal Mines (Dildhar Hussain)										Written complian against the illegal miner has been done in the Mirzachouki PS.Documents to be submitted
11.	CTS Industries Mines	No	No	Yes	No	No. Improper bench height & Width, except at one place	Yes	Yes	No	Very Scanty	No documents made available
12.	Yashmine Illegal Mines										Showcause has been done by DMO and legal action will be taken up. (documents to be submitted)
13.	SS Black Stone works	No	No	Yes	No	No. Improper bench height & Width, except at one place	Yes	No	No	Very Scanty	Poor compliance No documents made available
14	Illegal Mines (North –West Side of SS Black Stone works)										DMO and JSPCB has not any action the illegal mining here
15.	Mines of Pathru Singh	No	No	Yes	No	No Improper bench height & Width, except at one place	Yes	No	No	Very Scanty	Poor compliance No documents made available
16	Ram Sewar Tiwary	No	No	Yes	No	No Improper bench height & Width, except at one place	Yes	No	No	Very Scanty	Poor compliance No documents made available

Illegal Mines inspected on 18.01.2020 in Sundre , Sahebganj

S. No	Name of mining units	Place/ Mauza	Latitude ,Longtitude	Present status as on 18.01.2020	Action taken by district admistration

1.	Unnamed	Sundre	N25.249483 87.532268	The mining unit was not running during inspection but mine pit and benches present which indicated that the mine was operational recently	DMO,Sahebgunj informed that there was no lease on that location so FIR has been lodged vide letter no 551dated 11.05.2019 in Mirzachauki PS. (documents submitted)
2.	Unnamed	Sundre	25.249385 87.53196	The mining unit was not running during inspection but mine pit and benches present which indicated that the mine was operational recently	DMO,Sahebgunj informed that there was no lease on that location so FIR has been lodged vide letter no 551 dated 11.05.2019 in Mirzachauki PS. (documents submitted)
3.	Unnamed	Sundre	25.25266 87.531282	Illegal small pit was observed with stone/rocks broken.	No action taken till now.But District administration is in the process of identifying the persons behind.

The crushing units that were inspected in last visit i.e. during 10th to 11th October 2019 are as given below for ready reference(report already submitted to Hon'ble NGT in October).

A. <u>Crushing Units Inspected on 10th to 11th October 2019</u>

Sl No.	Date of Inspection	Area of the Units	Name of the Unit	Lat/Long
1.	10/10/19	Borna, Sahebganj	Shiv Shakti Stone Works & Mines	24^0 49' 21" N 87^0 43' 21" E
2.	10/10/19	Borna, Sahebganj	Borna Stone Crusher & Mines	24^0 49' 31" N 87^0 43' 19" E
3.	10/10/19	Borna, Sahebganj	Deo Black Stone Works & Crushers	24^0 49' 59" N 87^0 43' 17" E
4.	10/10/19	Borna, Sahebganj	Neha Stone Works	24^0 49' 23" N 87^0 43' 25" E
5.	11/10/19	Gudwa, Sakrigali, Sahebganj	Prakash Chandra Yadav Stone Crusher #1	25^0 13' 51" N 87^0 43' 14" E
6.	11/10/19	Gudwa, Sakrigali, Sahebganj	Mineral India Crusher	25^0 13' 51" N 87^0 43' 19" E
7.	11/10/19	Gudwa, Sakrigali, Sahebganj	Prakash Chandra Yadav Stone Crusher #2	25^0 13' 51" N 87^0 43' 29" E
8.	11/10/19	Gudwa, Sakrigali, Sahebganj	Shetla Stone Works	25^0 19' 39" N 87^0 43' 27" E
9.	11/10/19	Gudwa, Sakrigali, Sahebganj	Lalan Singh Crusher	25^0 23' 27" N 87^0 43' 21" E
10.	11/10/19	Gudwa, Sakrigali, Sahebganj	Ganesh Tiwari Crusher	25^0 29' 23" N 87^0 43' 21" E
11.	11/10/19	Gudwa, Sakrigali, Sahebganj	Gowardhan Yadav Crusher	25^0 29' 33" N 87^0 43' 29" E
12.	11/10/19	Gudwa, Sakrigali, Sahebganj	Kishore Kumar Stone Crusher	25^0 30' 23" N 87^0 45' 29" E
13.	11/10/19	Gudwa, Sakrigali, Sahebganj	Mohan Singh Stone works	25^0 14' 16" N 87^0 43' 16" E
14.	11/10/19	Gudwa, Sakrigali,	Harinder Yadav Stone	25^0 17' 26" N

		Sahebganj	Works	87^0 37’ 53” E
15.	11/10/19	Mahadevganj, Sahebganj	Yash Raj Black Stone Works	25^0 14’ 26” N 87^0 34’ 53” E
16.	11/10/19	Mahadevganj, Sahebganj	Arjun Black Stone Works	25^0 14’ 23” N 87^0 34’ 59” E
17.	11/10/19	Mahadevganj, Sahebganj	BPY Infra Build	25^0 14’ 33” N 87^0 34’ 29” E
18.	11/10/19	Mahadevganj, Sahebganj	Ascent Infra Build	25^0 14’ 53” N 87^0 33’ 29” E
19.	11/10/19	Mahadevganj, Sahebganj	Rajeev Ranjan Stone Works	25^0 14’ 17” N 87^0 34’ 33” E
20.	11/10/19	Mahadevganj, Sahebganj	Maa Amba Stone Crushers	25^0 14’ 09” N 87^0 34’ 37” E

B. <u>Details of Mining Units Inspected on 10th to 11th October 2019</u>

Sl No.	Date of inspection	Area	Name of the Unit	Lat/ Long
1.	10/10/19	Borna, Sahebganj	Borna Mines	24^0 49’ 31” N 87^0 43’ 19” E
2.	10/10/19	Borna, Sahebganj	Deo Black Stone Mines	24^0 49’ 59” N 87^0 43’ 17” E
3.	10/10/19	Borna, Sahebganj	Md Abdur Razzak Mines	24^0 49’ 23” N 87^0 43’ 29” E
4.	11/10/19	Gudwa, Sakrigali, Sahebganj	Bajrangwalee Stone Mines	25^0 14’ 32” N 87^0 43’ 33” E
5.	11/10/19	Gudwa, Sakrigali, Sahebganj	Mineral India Mines	25^0 14’ 43” N 87^0 43’ 39” E
6.	11/10/19	Gudwa, Sakrigali, Sahebganj	Hill Movement Mines	25^0 14’ 35” N 87^0 43’ 41” E
7.	11/10/19	Mahadevganj, Sahebganj	Demba Mines	25^0 14’ 37” N 87^0 43’ 41” E
8.	11/10/19	Mahadevganj, Sahebganj	Bikash Stone Works	25^0 14’ 39” N 87^0 43’ 43” E
9.	11/10/19	Mahadevganj, Sahebganj	Maa Amba Stone Works Mines	25^0 14’ 38” N 87^0 43’ 45” E
10.	11/10/19	Mahadevganj, Sahebganj	Mahabir Eng. Construction Pvt Ltd.	25^0 14’ 47” N 87^0 43’ 49” E
11.	10/10/19	Borna, Sahebganj	Md Abdur Razzak Mines	24^0 49’ 23” N 87^0 43’ 29” E

Major observation by the team for the above stated individual crushing unit and mining units are as given below:

Summary of the stone crusher units inspected:

A. The details of the mining and crushing units inspected from 16th Jan to 17th Jan, 2020 is depicted below.

a. Crusher units list:

Crusher units visited on 16.01.2020 & 17.01.2020

Name of crusher units	Water spraying system			Haul Road		Dump/ Stock yard	Covered Wall	Drainage Catch drainage,/sump/ drains	Plantation	Remarks
	Vehicular spray	Water tap near conveyor	Spray system as mist	Katcha	Pucca					
1.Jial Das	No	Crude Method	Nil	Yes	Nil	Yes	Present in one side	Nil	scanty	Poor compliance
2.Swastika mineral agency	No	Crude Method	Nil	Yes	Nil	Yes	Present in one side	Nil	scanty	Poor compliance
3. Bihar Bentonite	No	Crude Method	Nil	Yes	Nil	Yes	Nil	Nil	scanty	Poor compliance
4. Maa Vaishnavi	No	Yes, but the system was not very effective	No	Yes	No	Yes	Two sides covered with tin sheet	No	Scanty	
5. CTS industries-1	No	Crude method, not effective	No	Yes	No	Yes	One side covered with pucca wall, but not sufficient to prevent the dust for propagating	No	Very Scanty	
6. CTS industries - 2	No	Yes, but the system was partially effective	No	Yes	No	Yes	One side covered with tin sheet, but not sufficient to prevent the dust for propagating	No	Very Scanty	Dust laden floor all around
7. Laxmi Stone works	No	Yes, but the system was not very effective	No	Yes	No	Yes	Yes, brick wall was observed on three sides	No	Yes	Groundwater recharge system observed
8. SS Black Stone works	No	Yes, but the system was not very effective	No	Yes	No	Yes	One side covered with tin sheet, second side by brick wall	No	Scanty	Dust emission was observed even though some water spraying arrangement was arranged

B. The details of the mining and crushing units inspected from 10th Oct to 11th Oct, 2019 is depicted below.

a. Crushers list(for ready reference) : Report already submitted to Ho'ble NGT in October 2019

Name of crusher units	Water spraying system	Haul Road	Dump/ Stock yard	Covered Wall	Drainage Catch drainage,/sump/ drains	Plantation	Remarks

	Vehicular spray	Water tap near conveyor	Spray system as mist	Katcha	Pucca					
1.Shiv Shakti Stone Works	Partially Complied.mot effective	Crude method not effective.	Not complied.	YES	Nil	YES , but dumped in the periphery of the crushing unit	no	Little silted catch drain.no siltation ponds, retaining wall around OB dumps.	Very scant	Compliance status poor
2. Borna stone Crusher	nil	nil	Nil	yes	nil	Yes	no	Some catch drain made.Siltation ponds nil.	negligible	Compliance status poor
3.Deo Black Stone Works & Crushers	nil	Partially complied.	Nil	Yes	nil	Yes	no	Nil	veryscant	Compliance status poor
4.Neha Stone Works	nil	nil	Nil	yes	nil	yes	Wall present in one side	nil	nil	Compliance status poor
5. Prakash Chandra Yadav Stone Crusher #1	Yes	Crude method . not effective	Nil	Yes	Nil	Yes, Large	Nil	Nil	Very Scanty	Compliance status poor
6.Mineral India Crusher	No	Nil	Nil	Yes	Nil	Yes	Nil	Nil	Very Scanty	Compliance status poor
7. Prakash Chandra Yadav Stone Crusher #2	No	Nil	Nil	Yes	Nil	Yes	Nil	Nil	Very Scanty	Compliance status poor
8. Shetla Stone Works	Yes	Yes	Nil	Yes	Nil	Yes	Yes	Nil	Satisfectory	Efforts made for compliance
9. Lalan Singh Crusher	No	No	Nil	Yes	Nil	Yes, Small	Nil	Nil	Nil	Compliance status poor
10. Ganesh Tiwari Crusher	No	No	Nil	Yes	Nil	Yes, Small	Nil	Nil	Nil	Compliance status poor
11. Gowardhan Yadav Crusher	No	No	Nil	Yes	Nil	Yes, Small	Nil	Nil	Nil	Compliance status poor
12. Kishore Kumar Stone Crusher	No	No	Nil	Yes	Nil	Yes, Small	Nil	Nil	Nil	Compliance status very poor
13. Mohan Singh Stone works	No	No	Nil	Yes	Nil	Yes, Small	Nil	Nil	Nil	Compliance status very poor
14. Harinder Yadav Stone Works	No	No	Nil	Yes	Nil	Yes, Small	One side wall present.	Nil	Nil	Compliance status poor
15. Yash Raj Black Stone Works	No	No	Nil	Yes	Nil	Yes, Small	Yes	Nil	Moderate	Partially Complied
16. Arjun Black Stone	No	No	Nil	Yes	Nil	Yes	Yes	Nil	Moderate	Compliance status Poor,

Name of crusher units	Water spraying system			Haul Road		Dump/ Stock yard	Covered Wall	Drainage Catch drainage,/sump/ drains	Plantation	Remarks
	Vehicular spray	Water tap near conveyor	Spray system as mist	Katcha	Pucca					
Works										Non operational
17. BPY Infra Build	No	No	Nil	Yes	Nil	Yes	Yes	Nil	Moderate	Compliance status Poor, Non operational
18. Ascent Infra Build	Nil	Nil	Nil	Yes	No	Yes	No	No	No	Compliance status Poor, Non operational
19. Rajeev Ranjan Stone Works	Nil	Yes	Nil	Yes	No	Yes	Yes	No	Yes	Partially complied but Non operational
20. Maa Amba Stone Crushers	Nil	Nil	Nil	Yes	No	Yes	No	No	Very Scanty	Compliance status Poor, Non operational

b.Mines list (for ready reference) : Report already submitted to Ho'ble NGT in October 2019

Name of mines	Water spraying system			Haul Road		Systematic & Scientific mining	OB Dump/ Stock yard	Sump/Water Storage	Drainage Catch drainage/ Siltation Pond	Plantation	Remarks
	Vehicular spray	Water tap near conveyor	Spray system as mist	Katcha	Pucca						
1.Shiv Shakti Stone Mines – 1	Yes	NA	NA	Yes	No	No	Yes	Compliance status Poor, Non operational	Silted Catch Drains at some places	Very Scanty	Compliance status Poor, Non operational
1.Shiv Shakti Stone Mines – 2	No	NA	NA	Yes	No	No	No	Yes	Nil	Not Found	Compliance status Poor, Non operational
2.Borna Mines	No	NA	NA	Yes	No	No	Yes	Yes	Catch Drains at some places. Siltation Pond Nil	Very Scanty	Compliance status Poor, Non operational
3.Deo Black Stone Mines	No	NA	NA	Yes	No	No	Yes	Yes	Catch Drain Nil Siltation Pond Nil	Scanty	Compliance status Poor, Non operational
4.Md Abdur Razzak Mines	No	NA	NA	Yes	No	No	No	Yes	Catch Drain Nil Siltation Pond Nil	Scanty	Compliance status Poor, Non operational
5.Bajrangwalee Stone Mines	Yes	NA	NA	Yes	No	No	Yes	Yes	Catch Drains at some places. Siltation Pond Nil	Moderate	Partially complied.
6.Mineral	Yes	NA	NA	Yes	No	No	Yes	Yes	Catch Drains at	Moderate	Partially

Name of mines	Water spraying system			Haul Road		Systematic & Scientific mining	OB Dump/ Stock yard	Sump/Water Storage	Drainage Catch drainage/ Siltation Pond	Plantation	Remarks
	Vehicular spray	Water tap near conveyor	Spray system as mist	Katcha	Pucca						
India Mines									some places. Siltation Pond Nil		complied.
7.Hill Movement Mines	Yes	NA	NA	Yes	No	No	Yes	Yes	Catch Drains at some places. Siltation Pond Nil	Moderate	Partially complied.
8.Demba Mines	No	NA	NA	Yes	No	No	Fine stone dust dump	Yes	Catch Drains nil Siltation Pond Nil	scanty	Compliance status Poor, Non operational
9.Bikash Stone Works	No	NA	NA	Yes	No	No	Yes	Yes but very little water	Catch Drains nil. Siltation Pond Nil	nil	Compliance status Poor, Non operational
10.Maa Amba Stone Works Mines	No	NA	NA	Yes	No	No	N0	Yes	Catch Drains nil. Siltation Pond Nil	Moderate	Compliance status Poor, Non operational
11.Mahabir Eng. Construction Pvt Ltd.	No	NA	NA	Yes	No	No	no	Yes	Catch Drains nil . Siltation Pond Nil	Moderate	Compliance status Poor, Non operational

A brief description of the mines and crushers and inspected by committee members on 16.01.2020.

The committee members visited the crushers and Mines in Bakudi. Details of inspected mines and crushers are given in table **B & A** respectively. Details of violations of the EC & CTO conditions in inspected mines and CTO conditions of the inspected crushers are provided in table **7** photo no. 1 to 20 is also provided in annexure for depiction of the conditions prevailing in mines &crushers. Most of the crushers violated the rules of EC and CTO. No boundary wall or metal sheet was found in the boundary but Jial Das unit these were present. Scanty plantation in all the unit. Presence and effectiveness of pollution control equipments especially water sprayers were present but their implementation is poor . Stone mines visited in Bakudi Sahebganj by the committee and revealed that almost all the mines bench height and width was not proper. Unscientific and unsystematic mining was being done in all mines visited . Haul roads were kutcha inadequate arrangement for water spraying on haul road.

A brief description of the mines and crushers and inspected by committee members on 17.01.2020.

I. The committee members visited Mundli area in Mizrachowki, Sahebganj district. There were large number of crushers (approx 40-50 crushers) in that area (see photos 31 to 35). Most of the crushers had no boundary wall or metal sheet boundary around their periphery (see photo 31 to 34).There was no plantation around the crushing units (see photo 31 to 35) except in a very few. The trees in the area were laden with dust. Roads were full of trucks (see photo 31 &32). Human habitation was not far away and appeared to be in impact zone of these crushers (see photo 31&34). There was mining activities carried out in the hills adjacent to these crusher units (see photo 32&33). Most of the crushers were not running and no officials/staff were present to

explain the measures taken to comply the CTO conditions. Therefore presence and effectiveness of pollution control equipments especially water sprayers could not be ascertained.

One of the crusher units of M/s Maa Vaishnavi Stone works was visited. The crusher owners & staff were present and showed the status of compliance of CTO conditions. Water sprayers on some of the crusher transfer points in their unit were provided but they were not able to prevent dust emissions while running of crusher (see photos 24 & 25). Some plantations had been done (see photo 26 & 27). It was instructed to grow more plants/trees around the crusher periphery in all sides. On one side metal sheet boundary has been provided but its height was not adequate (see photo 26). Rainwater harvesting/Groundwater recharge arrangements were not provided in the unit. Some workers of the crushers units were provided dust mask and helmet (see photo 28)

A large number of crushers in Mundli, Mirzachaouki would have many adverse impacts on the environment of the area that are enumerated below:

a) Dust pollution and subsequently adverse impact on health of workers and nearby population (habitations & dwellings were not very far from the crusher area, see photo 31&34).

b) There was no large water tank, water storage area in the crusher premises. Generally crusher units withdraw groundwater for water spraying, etc and therefore groundwater resources of the area may get depleted.

c) Due to very large number of vehicles the roads gets chocked, traffic jams occurs i.e. roads are not wide for such high traffic load vehicular emissions also add to air pollution. Besides such large number of vehicles plying on road at night also may lead to noise pollution in the area and other sleep related problems.

II. Some stone mines were also visited in Mundli & Bhutha Mauza in Mirzachouki by committee members on 17.01.2020. Details of mines are given in table B **above** Some of the observations are as given below:

i. **In almost all the mines bench height and width was not proper. Bench height was very high compared to the loading equipment posing danger to man and machinery** (see photo 21,22,29,30,37 & 38)**. Unsystematic, unscientific mining was being done in all mines visited**.

ii. Environmental & pollution control measures were inadequate or not followed such as:Sump/ rainwater storage area was not provided and if provided in one or two mines the sump is very small & water in them would finish within 1-3 months of end of rainy season(see photo 21). Haul roads were Kutcha and inadequate arrangement for water spraying on haul roads was done. Overburden/ waste material was also dumped improperly. Mine plan/drawing sections were not made available so it was difficult to ascertain whether the O/B dump is within the lease area or outside. O/B was dumped without any catch drain, siltation ponds & retaining wall in its periphery (see photo36,40,44,45). No grassing and vegetation on O/B dump was done (see photo 36,40,44,45). There was no separate dump for top soil storage.

iii)There was one illegal mine approximately 300 to 400 m from the Mines of M/s Star India Mines as reported by DMO, Sahebganj (see photo 43) where O/B was dumped improperly without catch drains, retaining wall.

III) One of the crusher (of M/s Tarkershwar Jaiswal) could be observed from the hills of Bhutha Mauza. The waste material which was used to fill & make the landfill was very improper thrown and lead to destruction of green belt in the surrounding, in fact the land fill was destroying the green belt in periphery (**see photo 43**). In the further low lying side there were two ponds and silt of O/B materials from mines and the M/s Tarkeshwar Jaiswal crusher would flow into these ponds in rainy season.

IV. The committee members visited Kirtania, Mirzachowki where again there was a large number of crushers). Due to such large number of crushers there were numerous trucks moving, standing in the area which resulted in traffic jams, air pollution, noise pollution, etc. The details of mines and crushers inspected in this area in Mirzachowki is given in table **A & B**. Mining was done in hills. In almost all the mines bench height and width was not proper Bench height was very high compared to the loading equipment posing danger to man and machinery. Unsystematic, unscientific mining was being done, sump/ rainwater storage area was not provided and if provided (in one mine of CTS industries ltd.) the sump is small & water in them would finish within 3-4 months of rainy season. Haul roads were Kutcha and there was no arrangement for water spraying on haul roads. Overburden water material was also dumped im- properly. Mine plan/drawing sections were not made available so it was difficult to ascertain whether the O/B dumped is within the lease area or outside. O/B was dumped without any catch drain, siltation ponds & retaining wall in its periphery (see photo 63,67). No grassing and vegetation on O/B dump was done (see photo 63,67). There was no separate dump for top soil storage. Illegal mines of Md. Yashin was visited (see photo 55&56) in Belbhadri Mauza (details in table **B**). Illegal Mines adjacent to mine of M/s S.S Blackstone can also be seen(see photo 66). District Mining Officials & JSPCB members were not aware of the person responsible for illegal mining at that place (i.e adjacent to M/s S.S Blackstone Mine in Belbhadri Mouza).

Thick dust layers seen on the floor of the Crusher units (see photo 54,62) would lead to dust propagation wherever wind blows. Housekeeping should be improved & floor should be cleared of dust regularly.

V.One important point of observation at that place at other places in Sahebganj district was that crushers are established on the hill, hill slopes and therefore they are at higher altitude. The metal sheet used for boundary in the periphery become useless since it is in the lower portion of these crushers & therefore useless in control in propagation of dust to far areas.

Crushers should be located in the bottom of the hills, in low altitude or else the brick wall should be high enough to prevent the dust from propagation to flung areas.

VI. Objectionable location of crusher resulting in close cluster causing accumulation of pollution in excess of carrying capacity. Such close clusters of stone crusher should not be established in the first place , if at all necessary or unavoidable ,prior EIA with appropriate EMP is essential.

A brief description of the mines and crushers and inspected by committee members on 18.01.2020.

I.Some crushers were observed adjacent to the road in the Badi Kodarjana,Pratapganj, Dt: Sahenganj(see table **9** and see photo 68to 76). The crushers were within a distance of 50-100 m from the road. A railway line was also seen within 75-125m from the above crushers(68,72,76). Crushers were not running during inspection. One old fort was observed within 100-200 distance from one the crushing unit(see photo 76). Trees near these crushers were laden with dust (see photo 71,73 & 74). **There was no wall/metal sheet at the**

boundary of these crushers. No/negligible plantation was observed in the periphery of these crushers. Other details of these crusher units are given in table 9 District Mining officer & Regional Officer JSPCB informed that these crushers were sealed and FIR has been lodged against these crushers. Since these were illegal units, action had been taken on these crusher units (see table 9). However, during inspection it was observed that all the equipments & installations were in place & the crushers were operational before inspections. At some crushers the water was warm in tanks, DG set was in place in some other, etc. which indicated that even though action had been taken by district administration the crushers units have not stopped working implying that the closure action taken by authority has not been fully effective.

II.The committee member visited the Hill in Sundre Mauza. On the way to the hill one small mine pit was observed (see photo 77). DMO Sahebganj informed that it was on illegal mines. (see table above for lat,long) On the top of hill two legal mines of Shri Patru Singh & Shri Ramsewak Tiwary were observed (see table above). Scientific & systematic mining was not observed in these mines (see photo 79,81,82 &83). Bench height was too high which posed danger to men and machinery. Bench width was not proper/very less/ negligible.There was no storage of water in the mines for water sprinkling to minimize/control dust emissions. Green belt development was not done. Overburden/waste material was dumped without any Catch drain, siltation ponds & retaining wall in its periphery. No grassing & vegetation on O/B dump was done. There was no dump for top soil storage. No water tanker or fixed water sprinklers was observed for water sprinkling system for control of dust emissions. Roads were kutcha roads. Mine plan/drawing/sections were not made available so it was difficult to ascertain whether the O/B dump is within the lease area or outside.

Near the mines of Shri Ram Sewak Tiwary O/B material/waste was thrown over a natural nala flowing in the hills (see photo 84& 85). Even though water was passing through the waste material but it carried silt with it and ultimately silt would reach the main drainage system/river of the area. Below the hills there was a large lake (see photo86). Mines projects there should follow the conditions of EC and CTO so as to prevent pollutions in the lakes/rivers nearby.

On the hills near Sundre Mauza there were illegal mining also being carried out (see photo 87& 89). DMO, Sahebganj informed that action has been taken on the owners of some of the illegal mines (see table 8). At one place of illegal mines different people mined different portions of the hills adjacent to each other (see photo 89) without any systematic & scientific approach. Between the low lying areas of two hills there was a local nala (jharna) as reported by some local people (see photo 88) but it had turned dry due to mining in the hills. The committee members also observed signs of many illegal mining operations that were carried out on that hill and tried to approach those portions for closer look. However at one place a truck blocked the road (see photo 91) and the members had to return from that place since driver of the truck could not be found and the truck covered the whole road.

III. The committee members visited some illegal crushers near Mirzachowki Railway station (approx 0.5 km to 1 km from Mirzachowki Railway Station). **There were a 12-14 different crushers units at that place (see photo 92 &93). DMO Sahebganj informed that 12 crushers at that location (Bartalla in Mirzachawki) had been sealed and FIR lodged vide letter no. 551 dated 11.5.2019 on 01.03.2019 in Mirzachawki P.S but once again the user agency have made it operational violating the closure.**

An enlistment of environmental protection and pollution control measures,norms and good practices meant for stone crushers in Sahebganj, which have not been followed in general .

1. Location of crusher point. **Crushers should be located in the bottom of the hills, in low altitude or else the brick wall should be high enough to prevent the dust from propagation to far flung areas**
2. Mostly the crusher units that were visited have installed some water spraying arrangements but the sprayers were ineffective. Dust emissions took place when the crushers were in running conditions. Some of the measures that can be taken up for minimizing the dust emissions are:

a. **Fogging/Misting arrangement at the hopper (where trucks unload the large stones) and other transfer points/loading/unloading points should be installed**. Although the system is bit expensive than general water sprayers it is very effective method for dust control. Also **consumption of water would be considerably reduced through the use of this system.**

b. **Use of G.I water pipes instead of plastic pipes that break with the rocks/boulders**.

c. **Mist guns should be kept/utilised** in the crusher area so that even after fogging, water spraying some dust generates & emission occurs there mist guns suppress them.

d. Roads should be made pucca within the crusher premises & the approach road from mine to crushers should also be made pucca.

e. **Availability of enough water for water spraying/sprinkling should be ensured. Large storage tanks may be constructed within the crusher area, Rainwater harvesting measures, accumulation of rainwater must be done so that there is no/negligible dependency on the groundwater, local rivers.**

3. Green belt development should be done in and around the crusher area.
4. CGWB/State Ground Water Board should be consulted and measures taken for groundwater recharge/rainwater harvesting.
5. Housekeeping should be done regularly,layers of dust should not be allowed to accumulate on floor of the crusher premises.

6. Almost in all the premises of Crushers there is a hug accumulation of fines very small size crushed stones, huge dumps of such fines/ fine chips could be observed at many places (see photos 5,15,35,54). **The dumps of these fines/fine chips are very steep and there can be slope failures posing risk to man & machinery, etc. If the demand of those fines/fine chips in the market is very less/negligible they can be used for backfilling in the nearby mines. This can prove to be win-win situation for both mine owners and crusher owners.**

7. JSPCB has made PM10 analyzers mandatory for the crushing units. It is recommended that stringent action including closure should be taken on these units that don't install PM10 analysers within one month/stipulated time given by JSPCB. JSPCB has given show cause to **340** Crushers during the month of November 2019 after their inspections. After that **Environmental Compensation have also be done on many crusher units in November 2019. Still during inspections on 16, 17, 18 Jan 2020 most of the CTO conditions are partially complied or are not complied. In such a case units can be given closure notice after hearing.**

8. **JSPCB should not give CTE/CTO to large number of crushers in an area** (for example Mundli (30-40 crushers), Kirtania (more than 60 crushers) without proper carrying capacity study, cluster EIA-EMP (either by JSPCB or by Project proponents in the cluster).
9. Mass awareness program should be conducted by JSPCB & District Administration explaining the adverse effects of dust on the lungs, human body, irreversible nature of diseases like silicosis, etc. Local people, workers, crushers owners should be the target audience of such mass awareness program. Awareness program should also include best practices/techniques to control dust in crushers with photographs, scarcity of groundwater & methods to recharge it, greenbelt development & their use.
10. **Some of the illegal units in which action has been taken by district administration have again started to operate as was observed during inspection. It is recommended that for such illegal units demolition of crusher units & other penalties levied be done.**

<u>An enlistment of environmental protection and pollution control measures,norms and good practices meant for stone mines in Sahebganj, which have not been followed in general .</u>

1. **Mines should strictly follow mine plans**. Bench height, width should be as per the mine plan approved. In any case bench height should not be more than boom height of the loading equipment. Bench width should not be less than the bench height.In almost all the mines bench height was more than stipulated posing danger to man & machinery. DGMS(**Directorate General of Mines Safety**) should look into the matter and actions may be taken for not following the Metal Mining regulations, Mine Rules, DGMS guidelines.
2. **Pillars should be installed to demarcate the mine boundary**. No O/B or waste material should be dumped outside the lease boundary. **Surface plan/drawing/sections should be made available to the inspecting officers** (DMO, JSPCB, MoEFCC, DGMS, etc.) by mine owners during inspections.
3. Catch drains, siltation ponds, retaining walls in the periphery of O/B dumps should be made. Grassing and vegetation on the O/B dumps should also be done.
4. Sump/lower portion in a mine where rainwater can be stored in plenty so that it caters to all seasons should be made and water stored in it. This accumulated rainwater could be used for water sprinkling on haul roads & other places in mines and also used for green belt development, etc.
5. **At least two water tankers should be kept in the mines. A log book of water tanker should be filled/maintained mentioning registration number, running hours, kilometer reading, place of water sprinkling, shift wise. Log book of water tanker should be signed by competent person in the mine. Copy of log book should be sent with six-monthly compliance reports.**
6. Green belt development should be done in and around the mine

7. Approach roads to and from the mine should be made black top.

8. Top soil should be stored on a site as submitted on the mine plan.

9. Backfilling should be practiced as per the approved mine plan**. Mine owners should keep in view that mine closures have to be done as per the progressive & final closure plan. DMO should also keep in mind that mine closure is extremely important aspect for sustainable and environment friendly mining and ensure that it takes place** as provided in mine plan.

10.**The committee member visited Mundli, Bakudi, Sundre,etc. and observed that most mines were in the hills & were located near to each other. Mine leases were given adjacent to other/adjoing mine which means hill may be excavated altogether at one go(see table B and map. Fig 1). A decision may be taken by State Government/ District administration after discussion with experts in environment,ecology, as to whether mining is essential in the hills . If mining in hills is very essential the mine lease should be so given that mining is done in one portion of mine, mine operated, mine closure plan implemented and then other lease adjacent to previous mine lease executed. In such a manner the hills may not plundered haphazardly and DMO also can ensure implementation of mine plan/mine closure plan effectively.**

11. **Mass awareness program should be made including knowledge about mine plans, mine safety rules (involving DGMS), affect of dust on workers & local, affect of silt on nearby rivers/nallas, depletion of groundwater resource, systematic & scientific mining, etc., targeting mine owners and works, local people. JSPCB, DMO should conduct such awareness program taking the help of Indian Bureau of Mines and Directorate General of Mines safety. Model Mines following the condition of EC& CTO may be developed in all the tehsils where mining activity is taking place. Capacity enhancement of District mining officials and JSPCB RO should be done (both quantitatively & qualitatively) to ensure the implementation of conditions of EC& CTO.**

All the above stipulations are generally provided in EC & CTO but they were not found to be implemented in any of the mines visited by committee members. JSPCB has issued show case notices to111 Mines in Sahebganj District. Also they have charged Environmental Compensation to Mines. But still the conditions of EC&CTO are not complied as can be seen from tables (B) and photos annexed with this report.

As per the direction of the NGT following particulars are given to the committee to work upon it with relevant facts:

a) Name of the mines and crusher units and its locational depiction on the Map of Appropriate scale	Name of the Mines **Table-1** **Annexure 1** Name of the Crusher-**TABLE 2** **Annexure 2** MAP detail-Fig 1 **Annexure 3** --DMO Sahebganj gave a list of 118 mines in Sahebganj that have EC with their latitude and longitude. A map depiction of these mines (with the help of Google Earth) has been shown in map In **Annexure3A, 3B, 3C and 3D**. --The team constituted by Hon,ble NGT also visited many mines & crushers units in Sahabganj and took their latitude & longitudes. These points are shown in a map 3D made with the help of Google Earth.
b) Dates of grant of Consent to Establish, consent to operate and also Environmental Clearance in respect of stone mines The area of stone mines and distance with adjoining mines may clearly be stated.	Details is given in the **Table-(3)** Consent to Establish & Consent to Operate **Annexure 4** **Table -3 (A)** List of mines having valid CTO **Annexure 4** **Table -3 (B)** List of mines having expired CTO **Annexure 4** **Table No-4**: List of stone crusher in Sahibganj district of Jharkhand **Annexure 5** **Table No.4(A):**List of crusher having valid CTO **Annexure 5** **Table No-4(B**):List of crusher having invalid CTO **Annexure 5** **Table-(5) EC As per SEIAA Annexure 6** However, An attempt has been made to find out the distance of adjoining mines from the Google map/earth. (Attached as an **Annexure 3A, 3B, 3C and 3D**) ■ DMO Sahebganj also provided Mines boundary map of four places (Mauzas/tehsils: see **Annexure 7**) in which mines are situated. With the help of mines boundary demarcation and scale given an attempt has been made to calculate distance between adjacent mines /mines that are near to each other. The calculation is shown in **Annexure 8**. It has been requested to DMO Sahebganj to provide similar maps/mine boundary demarcation so that distance between mines can be calculated for whole of Sahebganj district.
c) Adequacy of Pollution Control Devices of Stone Crushing units	Adequacy data of Pollution Control Devices of Stone Crushing unit is depicted in the **Table-(6) Annexure 9**
d) Details of individual violations of conditions of EC/ Consent to Operate w.r.t mining units and details of violation of Consent to Operate w.r.t stone crushing units	a) Violation of EC/Consent to Operate w.r.t mining units is given in the **table-(7) Annexure 10** b) Violation of Consent to Operate w.r.t stone crushing units is given in the **Table-(6) Annexure 9**

e) i) Action taken against those which do not have EC and CTO	The team communicated the DMO, Sahibgunj & Local Officials of RO, Dumka, JSPCB and could visit five Illegal Mines (Details of action taken given in **Table No(8) Annexure 11** and 19 crushers (Details of action taken given in Table(9) **Annexure 12.** DMO Sahebganj also submitted some list of action taken on Illegal crushers and Mines a summary of which is enclosed herewith as **Annexure 13**
ii) Action taken against those which have violated the conditions of EC/ Consent to Operate w.r.t mining units	Show cause has been done on those crushers and Mines that have violated the conditions of CTO. Environmental compensation has also been done on the mines and crusher units that have violated the conditions of CTO. **Annexure 14**
f) The amount of Environmental Compensation Assessed and recovered individually computation sheets indicating period of default	Details will be supplemented by R.O., Dumka Details is given in **Annexure 15**
g) Photographs attached	93 photographs have been attached with this report for inspections between 16.01.2020 to 18.01.2020. **Annexure 16**

12/3/2020

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RO,JSPCB Dumka

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Additional information for the Hon'ble Tribunal w.r.t. the measures taken by the Jharkhand State Pollution Control Board for curbing the air pollution caused by the stone mines/crushers in Sahebganj district.

1) Source Apportionment Study, Carrying Capacity Assessment and preparation of Clean Air Action Plan for Sahebganj district has been awarded to Centre for Environment and Energy Development (CEED), New Delhi. The preliminary Clean Air Action Plan for Sahebganj district has been submitted by them and the final Report is expected by January 2021. The final Clean Air Action Plan will be implemented after rectification by the Jharkhand State Pollution Control Board with Suitable changes. (*The copy of preliminary Clean Air Action Plan for Sahebganj district is attached as Annexure – A.*)

2) Fresh Consent to Establish (CTE) is not being accorded to any stone Crusher/Mine in Sahebganj district. Decision of granting CTE will be taken based on the report of Carrying Capacity Assessment which will be submitted by CEED.

3) The units have to submit the Ambient Air Quality test reports from NABL accredited laboratories prior to the grant of CTO. The CTO is granted to only those stone crusher/mine units which are conferring with the environmental norms and are compliant.

4) JSPCB has also monitored the Ambient Air Quality (AAQ) at various locations and the parameters were found within the permissible limits as per the standard laid down by the MoEF&CC. The significant improvement in Air quality of the Sahebganj District has been observed. (*The copy of Ambient Air Quality of different representative locations and the standard laid down by the MoEF&CC is attached as Annexure – B*)

5) As of now some stone crushers have installed online PM_{10} analyzer with connectivity provided to JSPCB server. The data shows that the PM_{10} values are well within the prescribed limits.

6) Total Environmental Compensation of INR 6,33,57,000/- had been imposed by JSPCB cumulatively on the stone mines and stone crusher units out of which INR 2,36,25,000/- was upon 55 stone mines and INR 3,97,32,000/- against 141 stone crushing units. An Environmental Compensation amounting to INR 1,66,71,000/- has been collected by JSPCB cumulatively from the stone mines and stone crusher units. Due to Covid – 19 pandemic the Occupiers have requested for some extra time to deposit the Environmental compensation. Accordingly time has been granted till December 2020 with a clause that interest as per the guidelines of CPCB will be charged on the Units till the deposition of the Compensation to the Board.

Member Secretary
Jharkhand State Pollution
Control Board, Ranchi.

COMPREHENSIVE CLEAN AIR ACTION PLAN FOR SAHIBGANJ

SUMMARY

Air Pollution has become a great topic of debate at all levels as it violates the 'Right to life' and 'Right to live' in a healthy and sustainable environment. Though air pollution has devastating consequences on a National scale, the people of Sahibganj also suffer from air pollution. The state-level disease burden estimates released by IHME, ICMR and PHFI in year 2017 showed that air pollution ranks as the third-largest risk factor responsible for the premature deaths in Jharkhand. Several ground reports and surveys have also indicated towards the serious health complications due to air pollution in Sahibganj.

The district, famous for the stone chips making industry, is witnessing severe levels of air pollution but is unable to understand the actual situation due to limited or no air quality monitoring efforts. The large industries have not developed in the district, although many mining related activities are flourishing in the area due to the ample availability of minerals. There are total 6 Red category industries involving mining and clay processing units in region. In addition, according to the survey report of Sahibganj prepared by the Jharkhand government, 77764.26 million tones of minor minerals (stones and kaolin) are present in seven blocks of Sahibganj, indicating the possibility of more mining activities in the district. These minings give rise to substantial quantity of fine fugitive dust emissions which create health hazards to the workers as well as surrounding ambient air quality.

Given the critical state of air quality in this landscapes, the Jharkhand State Pollution Control Board (JSPCB) has taken a lead in formulating a Comprehensive Clean Air Action Plan (CCAAP) for Sahibganj. The clean air action plans involves the identification and quantification of sources that contribute to pollution levels and the evaluation of scenarios for future emissions to assess the effectiveness of mitigation measures, the source profiling and capacity assessment best serves the purposes. However, at present time no such study is available for Sahibganj, so it is difficult to ascertain the quantitative contribution. Thus, the comprehensive Action Plan (CCAAP) has been prepared using available information and studies. Once the source profile and capacity assessment are in place, the proposed plan will form the basis of detailed plans.

The major sources of air pollution in entire Sahibganj have been identified qualitatively and by analysis of available secondary information. Moreover, meetings, surveys and physical visits have been helpful in assessing key sources. The information available with JSPCB and on various public domains has helped in identifying the major sources of air pollution. The information collated with the Pollution Control Board, Census Bureau, National Sample Survey, and annual surveys of publications

from industries, municipal waste management, and academic and non-governmental institutions.

Further, the CCAAP has taken into account several ongoing initiatives of the Jharkhand government. The Action Plan also focuses on strengthening the air quality-monitoring network with a wider spatial coverage and better calibration and validation of data, which will bring greater transparency and accountability in air pollution in Sahibganj. And a detailed source profiling and carrying capacity assessment is also being proposed in the action plan.

The proposed action plans can be further refined and tightened based on new evidence and carrying capacity assessment and source apportionment studies. Similarly, the budgetary estimations will also be defined.

The document is divided into two parts.

Chapter I : It presents an analysis of the challenges of each source of pollution. In this chapter, a brief overview of sources of air pollution such as use of solid fuels in domestic cooking, industries, vehicles, construction activities, waste burning, road dust and of mining is given. Also, information about current policies and programs in each sector is discussed.

Chapter II : It lays out the proposed CCAAP and GRAP for each of the eight cities in tabular form. The CCAAP identifies specific measures in each sector, enlisting the agencies responsible for the implementation of each of the measures with a fixed timeline. The CCAAP is based on existing studies and reports, official databases and information available from implementing agencies. CCAAP provides short term, medium term and medium to long-term measures; short-term measures need to be implemented immediately. On the other hand, medium-term measures should be implemented within a 1-year period. Medium to long-term measures should be implemented in 1-2 years. A draft Response Action Plan (GRAP) based on GRAP (Delhi and National Capital Region) has also been prepared, which will help in taking stringent measures and reducing emissions during severe 'air pollution' days. However, GRAP can be implemented only after the introduction of air quality monitoring.

It should also be noted that these action plans can be further revised / refined after the source profile and carrying capacity assessment of Sahibganj.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF GRAPHS

ABBREVIATIONS

Jharkhand Bijli Vitran Nigam Limited	JBVNL
Central pollution control board	CPCB
Comprehensive Clean Air Action Plan	CCAAP
Compressed Nitrogen Gas	CNG
Construction and Demolition Waste	C & D
Department of Forest, Environment and Climate Change	DoFECC
Electric Vehicles	EV
End of life	EOL
Environment Protection	EPCA
Graded Response Action Plan	GRAP
HC+Nox	Hydrocarbon+ Nitrogen oxides
ICMR	Indian council for Medical Research
Jharkhand State pollution control board	JSPCB
Ministry of Environment, forest and climate change	MoEFCC
Ministry of Health and Family welfare	MoFHW
National Air Monitoring Program	NAMP
National Air Quality Index	NAQI
National Ambient Air Quality Standards	NAAQS
National Clean Air Program	NCAP
Nitrogen dioxide	NO2
Operation and continuous emission monitoring system	OCEMS
Particulate matter	PM10
Particulate Matter	PM
PHFI	Public Health foundation of India
Sulphur dioxide	SO2
Suspended Particulate matter	SPM
Pardhan Mantri Ujjwala Yojna	PMUY
Indian Meteorological Department	IMD
District of Science & Technology	DST
Heavy Motor Vehicles	HMV
Light Motor Vehicles	LMV

CHAPTER I - OVERVIEW

1. PREAMBLE

1. 1 LOCATION, TOPOGRAPHY & ECONOMIC PROFILE

Sahibganj (also known as Sahebganj) is situated at the North-Eastern part of Jharkhand and it has a predominantly tribal population largely of Santhals and Paharia along with non-tribal communities. The district comes under the Santhal Pargana and forms the eastern part of the region. The Rajmahal and Pakur subdivisions of old Santhal Pargana district were carved out on 17 May, 1983 to form a new district, Sahibganj. Now, Pakur is a separate district as well. Sahibganj is bounded on north by the river Ganges and Katihar district (Bihar), on the south by the Godda district (Jharkhand), on the east by Maldah and Murshidabad districts (West Bengal), and on the west by Bhagalpur district (Bihar). Sahibganj lies approximately between 240 42' North and 250 21' North latitude and between 87025' and 87054' east longitude, and situated at the height of 37.185m from the sea level. The geographical area of the district is 1599.00 sq. km.[1]

As per the Census-2011, the population of Sahibganj is 1,150,567 of which male and female were 589,391 and 561,176 respectively. Sahibganj district ranks thirteenth in terms of total population in the state. It has an average literacy rate of 53% which is lower than the national average of 74.4%. For administrative purpose the district has been divided into 2 sub-divisions and 9 Blocks, where Sahibganj town is the Division headquarter itself. The district may be divided into two natural divisions on the basis of its geographical location and cultivable land. First region consists of Borio, Mandro, Barhait, Pathna and Taljhari blocks and lies under Damin-I-koh area which characterises hills and slopes. The second region, which is largely plain area, consists of Sahibganj, Rajmahal, Udhwa and Barharwa blocks.

Sahibganj has sub-tropical climate and during winter it becomes cool and record average temperature of 15°C but during summer temperature ranges from 30°C to 40C with humidity. The district receives an annual rainfall of 1500 mm, but due to its hilly topography the water during the rainy season flows away to nearby states. Since the Ganges flows in the district, this area is often prone to flood in rainy season. The district has agrarian economy and more than 64% of the total workers are engaged in agro and its allied activities. The major crops are Paddy, Maize, Pulse, Moong, Groundnut, Soyabean, Mahua, Wheat, Gram and Sunflower. Owing to large scale unscrupulous felling the region is now bereft of much of its jungle wealth although it was once known for its thick and extensive forests and scenic beauty.

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[1] https://sahibganj.nic.in/profile/

2. AIR POLLUTION IN SAHIBGANJ

2.1. AIR QUALITY MONITORING

The district Sahibganj, which is famous for making stone chips, is witnessing severe levels of air pollution. Known sources of air pollution, such as vehicles, industries and mining, solid fuel usage, brick kilns, road dust etc. are also responsible for the air pollution in Sahibganj. The use of solid fuel in cooking and mining activities is grim and they contribute more to the air pollution. However, no air quality monitoring exists in the district, making it difficult to establish baseline air quality data and understand pollution levels.

The required number of minimum air quality stations needed for understanding the trends of the pollutants is recommended in the guidelines for ambient air quality monitoring developed and published by CPCB. Based on the thumb rule proposed by CPCB and district level population (2011 census), the minimum number of air quality monitoring stations required in Sahibganj is given below. The calculated required stations have also been correlated with the analysis and findings of several other reports.

City	Existing Monitoring stations	Minimum no. of required stations
Sahibganj	0	5

Table 1. Requisite expansion of air-quality monitoring network based on CPCB guidelines[2]

Moreover, the possibility of low cost sensor based air quality monitors and use of satellite-driven air quality data should also consider. This can help in assessing a much larger area to generate baseline data for local action.

2.2 AIR QUALITY (PM2.5) TREND : 1998-2016

Sahibganj district is witnessing unprecedented air quality and worrisome public health status. Due to the absence of monitoring stations the air pollution data for the district is not available but pollution is expected to be high due to the prevalence of stone mining and crusher units in the area. The establishment and operation of six red category industries in Sahibganj also make a case for air pollution. Further, several ground reports and surveys have also indicated towards the serious air pollution. And as mentioned mining as a major activity in the region, particulate matter is of

[2] http://www.indiaairquality.info/wpcontent/uploads/docs/2003_CPCB_Guidelines_for_Air_Monitoring.pdf

major concern in Sahibganj; Gaseous pollution is comparatively less compared to particle pollution in mining areas.

The satellite-based data available in public domain is used to understand the morbid picture of air pollution in the district. It is to be noted; two main sources used to create $PM_{2.5}$ exposure data are ground-based measurements (especially regulatory monitoring) and satellite retrievals (especially aerosol optical depth, AOD)[3]. Aerosol Optical Depth (AOD) is a quantitative estimate of the amount of aerosol present in the atmosphere, and it can be used as a proxy for surface Particulate Matter PM2.5[4].

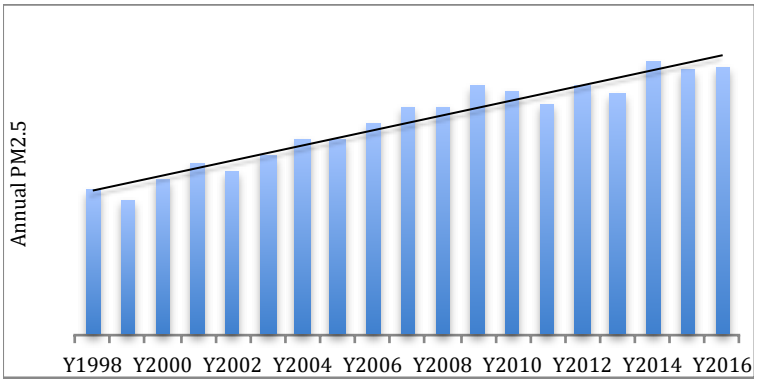

Figure 1 Air quality trend (PM2.5): 1998-2016

Analysis of satellite-based PM2.5 in Sahibganj district shows that from 1998 to 2016, the PM2.5 concentration increased by 45% (Figure.1). Sahibganj's air quality index (AQI) based on the satellite data suggests that Sahibganj's air quality remains in 'healthy' air quality for only 1-2% of total days[5].

3. DRIVERS OF AIR POLLUTION AND EXISTING EMISSION CONTROL ACTIONS

Formulation of air quality plans involves basic task, first the identification and quantification of sources that contribute to pollution levels; and second the evaluation of scenarios for future emissions to assess the effectiveness of mitigation measures to control air quality levels. The source profiling and capacity assessment study best serves this purpose and is a guiding factor in the implementation of pollution abatement plans. However as there is no such study for Sahibganj, it is difficult to ascertain the exact quantitative contributions, thus Comprehensive action plans (CCAAP) have

[3] https://www.tandfonline.com/doi/abs/10.1080/10962247.2019.1668498?journalCode=uawm20

[4] http://cimss.ssec.wisc.edu/goes/OCLOFactSheetPDFs/ABIQuickGuide_BaselineAerosolOpticalDepth.pdf

[5] https://air.plumelabs.com/air-quality-in-sahibganj-5hd0

been prepared using available information and studies on sources of pollution. The proposed plan can form the basis for a detailed plans once the source profile and capacity assessment is in place.

The major sources of air pollution in entire Sahibganj have been identified qualitatively and through assessment of secondary information available. Meetings, surveys and physical visits have been helpful in assessing key sources. ***The information available with JSPCB and on various public domains has helped in identifying the major sources of air pollution. The information collated from the pollution control board, census bureau, national sample survey, and annual survey of industries, municipal waste management, and publications from academic and non-governmental institutions.***

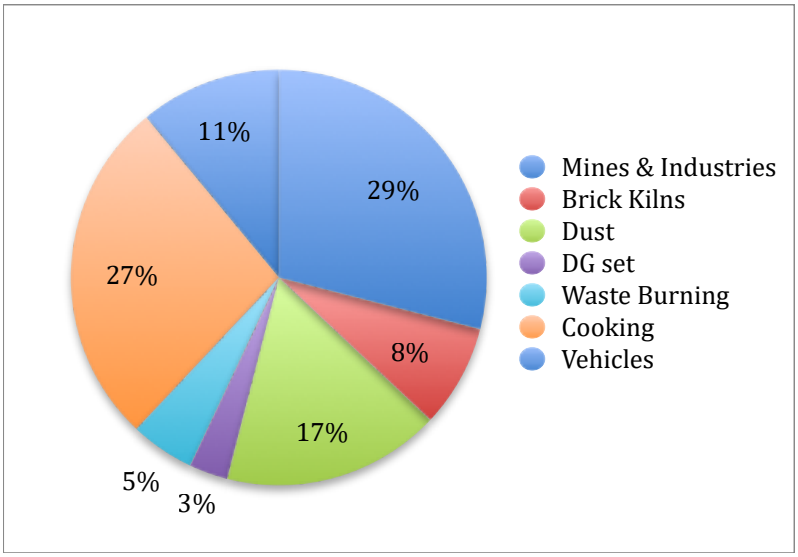

Figure 2: Source profile of Particulate matter in Sahibganj[6]

A major source responsible for air pollution has been extrapolated and assumed using the National Emissions Inventory and the source profile of similar cities[7]. The action plan is based on the simulation of the emission profile to prioritize measures and will be revised and made accurate using more information and modeling techniques. A detail status of major sources of pollution in Sahibganj is elaborated below.

3.1 MINING AND POWER PLANTS

The district does not have large industries, but is famous for the stone, pottery, clay washing industry and mining is an important commercial activity there. ***Six red-category industries involving mining and clay processing unit are operational in the re-***

[6] It has been extrapolated and assumed using the National Emissions Inventory and the source profile of similar cities

[7] https://urbanemissions.info/india-apna/

gion. Mining is estimated to be providing direct employment to large number of people engaged in activities like mining, crushing plant, transportation of mined stones and crushed products etc. Although there is no large-scale industry in Sahibganj, the abundance of minerals increases the possibility of establishing new industries in the future, which is also expected to increase pollution.

Further, air pollution has a trans-boundary impact and sources outside and around the district can also affect the air quality. Therefore, the presence of thermal power plants is also taken in consideration while formulating the action plan of Sahibganj. Major plants around the periphery of the district like ***NTPC-Farakka, NTPC-Kahalgaon, ECL-Pakur*** and their emission potential have been considered while formulating the plan.

3.1.1 STONE MINING

Sahibganj district ***has total 604 registered small industrial units; and as the district is brimful of minor minerals like Black stone, Kaolin, China clay etc*** and maximum of these units are based on stone mining and related query activities. These mining activities give rise to substantial quantity of fine fugitive dust emissions which create health hazards to the workers as well as surrounding population by way of causing respiratory diseases.

S. No	Head	Total Units
1	Registered Industrial Units	604
3	Registered Medium & Large Unit	NA
4	Number of Industrial area	NA

Table 2 Sahibganj's Industrial setup

The problem of air pollution is significant in the mining area and around; activities such as stone mining and crushing causes the emission of suspended particulate matter (SPM). Many activities involving distinct physical operations, including quarrying (like drilling, blasting, loading, hauling) and plant process operations (such as crushing, screening, conveying and transfer operations) generates considerable emissions (Table.3). Further, in mining area the internal transportation is also contributes to total particulate matter emission.

Activity	Process Sources	Fugitive Dust Sources
Mining	Drilling	Blasting
		Loading and hauling
Transportation	N/A	Haul roads
Stone Crushing	Crushing	Stockpiles
	Screening	Conveying
	Conveyor transfer points	

Table 3 Stone Mining emission Sources

There are 320 stone crushers, 155 stone mines + stone crushers operative in the district. It should also be noted that according to the District Profile of Sahibganj-2018, there are 282 non-operational mines in the district[89]. The production of minor minerals increased by about 38% between three years (2015-2018), indicating the contribution of mining activities to the increasing air quality of the district (Table.4). Further, it can be noted that most of the non-operational mines in the district have not followed any restoration plans and are also of concern.

S.No	YEAR	PRODUCTION (cft)
1	2015-2016	118,019,586
2	2016-2017	140,699,287
3	2017-2018	195,042,738

Table 4 Detail of production of Minor Minerals (2015-2018)

According to the survey report of Sahibganj prepared by the Government of ***Jharkhand, there are 77764.26 million tonnes of minor minerals (stone and kaolin) in*** seven blocks of Sahibganj, indicating the possibility of more mining activities in the district. And if the proper emission control measures are not followed, pollution will increase further.

[8] https://cdn.s3waas.gov.in/s369421f032498c97020180038fddb8e24/uploads/2018/08/2018082857.pdf

[9] Data Shared by JSPCB

Name of Block	No. of Potential Blocks identified	Total Area (Ha)	Calculated Reserve in Million Tton
Total	27	36601	77764.26

Table 5 Minor Mineral Reserve in Sahibganj District as on August 2018

Interventions like 'mist sprinkler, fixed sprinklers and dust extraction' should be implemented with utmost stringency to control the dust suppression and fugitive emissions. Mobile tankers are to be augmented to sprinkle water on haul road and concrete pavement, along with many other measures to reduce the pollution impacts of mining on local and urban air quality.

3.1.2 VEHICLES

The road transport sector in Sahibganj is not a major cause of rising air pollution, but Heavy Motor Vehicles (HMVs), especially those involved in mining activities, contribute a lot. The movement and the loading and unloading factor contribute a significant percentage to air pollution.

The information on registration of total vehicles in Sahibganj clearly shows the large number of vehicles used for transport mining materials and excavation. In addition, there are many buses and trucks, which are not registered in the district, but they are moving within the district and across the district, also contribute to pollution.

Data available in the public domain by the Transport Department, Government of Jharkhand, states that there are more than ***48000 vehicles registered in Sahibganj till September 2020 and a major proportion of them are at the end of life stage***. And this particularly raises concern on the air pollution. This estimate is being made in view of the data present in the CAG report of Transport Department of Jharkhand. That ***report states that 26% of the total registered vehicles*** in the state are over 15 years old.

Further, new vehicles are added every year on the roads of Sahibganj. Between January 2017 and January 2020***, around 29,000 new vehicles were registered in Sahibganj, where motorbikes and scooters share the main ratios***[10]. On an average it has been ***calculated that every year around 9000 new vehicles are coming on the road of Sahibganj and the way the number of vehicles in the district is increasing,*** espe-

[10] https://cdn.s3waas.gov.in/s369421f032498c97020180038fddb8e24/uploads/2020/07/2020071625.pdf

cially the exponential growth of HGV vehicles is a serious concern for air pollution and needs to be tapped.

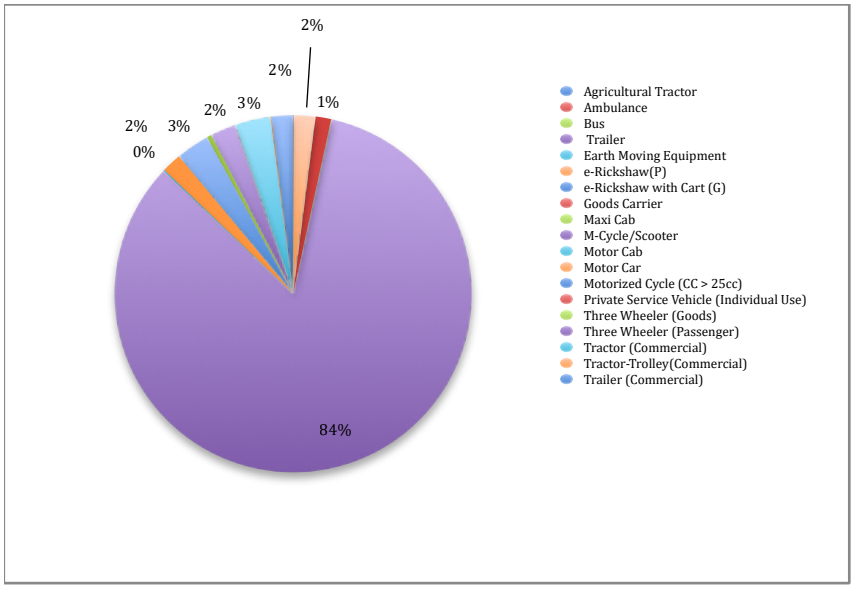

Figure 3 Vehicles Classification in Sahibganj

The high number of Heavy Motor Vehicles (HMVs) is a concern for the district as these vehicles emit more as compared to Light Motor Vehicles (LMVs) as most of these are diesel vehicles. Impact of movement of transportation for carrying mined material on ambient air quality of surrounding area including traffic congestion on roads.

Further, the increase in purchasing capacity and the way the automobile industry is booming there is a possibility of more vehicles coming on road and further worsening of the air quality

3.1.3 SOLID FUEL IN DOMESTIC PURPOSE FOR COOKING & HEATING

Coal consumption in massive amounts by households has led to the increase in the pollution levels. This will have to be strongly curtailed. Majority of the population in district relies on solid fuels for domestic cooking and lighting purposes due to their inability to access cleaner and more efficient sources of energy. The Census of India-2011 in its 'Household and Amenities Survey' has presented a morbid scene for Jharkhand (88%), the state ranks third among the highest consumers of biomass and charcoal.

The district level data of Sahibganj shows that the majority of the households use solid fuel as a household fuel (Figure.4). **Merely 5% of the total population uses LPG/PNG for cooking in households.**

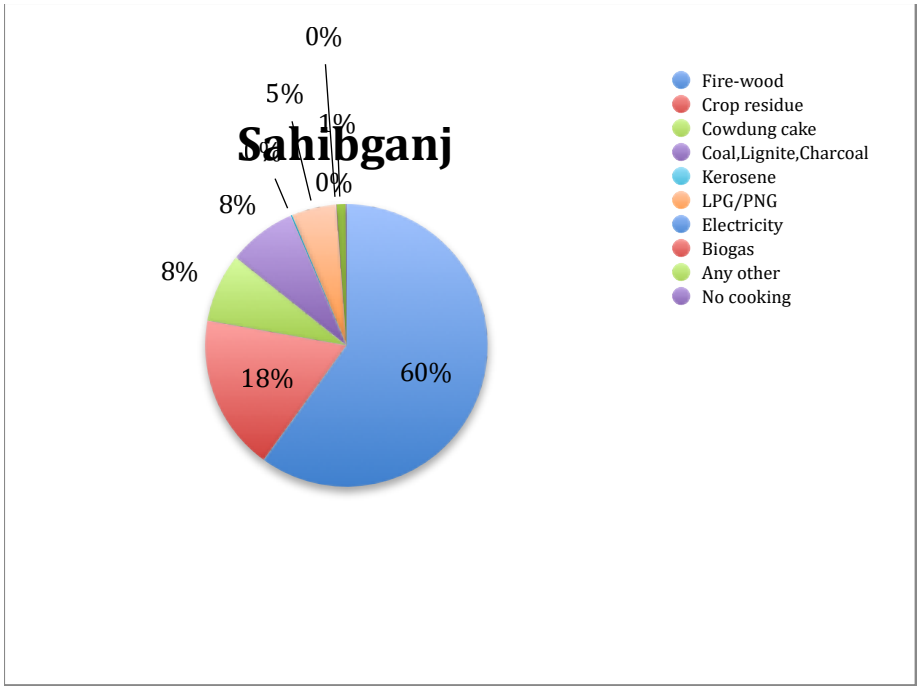

Figure 4 State of inefficient fuel usage in districts Ranchi, Hazaribagh, Dumka, Pakur, Ramgarh and Sahibganj of Jharkhand (in percent)

However, due to Pradhan Mantri Ujjwala Yojna (PMUY) and several other initiatives to promote cleaner energy options the number of households using solid fuel decreases in the district. But, still the situation is far from favorable.

Clean fuels should be made economically viable for domestic use as compared to cheaper solid fuels such as coal, firewood and crop residues. Sahibganj requires 100 percent LPG penetration and reliable supply for domestic and commercial usage, which will also require strong public awareness program support.

3.1.4 SOLID WASTE BURNING

With incompetent waste management systems in the district there are chances that waste deliberately burned to free up space at dumpsites, to facilitate scavenging of non-combustible materials (such as metals) for profit, or for use as a heat source. Further, in uncontrolled landfills and dump sites, waste may also spontaneously combust adding much to already polluted air. Therefore clean air action plan will push for decentralized management of waste and recycling and strict enforcement of MSW rules 2016.

3.1.5 CONSTRUCTION & ROAD DUST

The construction and road dust share a major proportion of burden in the PM concentration and measures like strict compliance of construction and demolition wastes should be done including other measures like penalty and use of C&D debries

in road making etc. The measures like end-to-end road pavement, plantations along road sides, strict compliance of existing policies and the introduction of mechanical sweepers can also help to reduce suspended road dust particles.

3.1.6 BRICK KILNS AND OTHER SOURCES

Owing to presence of river Ganges in the district few brick kilns also flourishes in the district. Six major brick kilns have been found operating in the region out of which 5 are illegal and closer notice has been given. Reliable power supply is also a major challenge in the district and most commercial establishments and industrial sets are completely dependent on diesel generator sets.

3.2. EXISTING POLICIES AND PROGRAMS

Any clean air action plan should be developed based on the review of the current challenges in each sector and existing and emerging policy both at the State and National level. The current status of the ongoing policy action in each sector is important to align the emerging policy initiatives and actions for reducing the pollution level. Thus, a brief of every policies and programs pertaining to the sector concern for air pollution has been undertaken. The current policies and programs in each region are given below.

3.2.1 INDUSTRIES

Over the last few years JSPCB has undertaken many steps to improve regulatory framework for industrial emissions. Few important policies and action exists in the state

3.2.1 (a) Compliance of Emission Standards, OCEMS & Environment (Siting for Industrial Projects) Rules, 1999

Industries release large quantum of pollutants through air emissions and effluent discharge. In order to regulate such emissions and discharges to safe limits, CPCBs have prescribed standards for various pollutants emitted/ discharged by the industries as notified under the Environment (Protection) Act, 1986. Further to strengthen the compliance monitoring and also to ensure that industries and facilities comply with emission standards in June 2015, installation of OCEMS in 17 categories of highly polluting industries has been mandated[11]. Six category industries is in Sahibganj.

However it is also important to have an immediate implementation of the new SOx and Nix standards that have been notified by the MoEF&CC in March 2018. The

[11] http://www.indiaenvironmentportal.org.in/files/file/Revised%20Guidelines%20for%20Real-time%20Effluent%20Quality%20Monitoring%20System.pdf

stringent compliance of the Environment (Siting for Industrial Projects) Rules, 1999 should also be ensure during the implementation of the new industrial development projects or shifting of the current projects.

3.2.1(b) Star Rating Program

JSPCB is also implementing the star-rating program. The program utilizes the continuously monitored emissions data from major industrial plants to categorize industry from least complaint to most compliant. The program is bringing more transparency to control emissions from industries and also incentivize quicker uptake of improved emissions control system.

3.2.1(c) Emissions from thermal power plants

The thermal power plants emit harmful gases and particulate matter and most important among them are sulphur oxides, nitrogen oxides and particulate matter. MoEFCC had set standards to limit the concentration of pollutants like sulphur oxides, nitrogen oxides and particulate matter from coal power plants. Further in December 2015, they had come out with new standards to limit the concentration of pollutants, which has been further extended to 2022. Few thermal power plants are in around the district and it is crucial to ensure that the power plants comply with the new standards by an early date.

Emission Parameter	TPSs (Units) Installed		
	Before 31.12.03	After 31.12.03 – 31.12.16	From 01.01.17
Particulate Matter (PM)	100mg/N3	50 mg/Nm3	30 mg/N3
SO2	600 mg/Nm3 (For < 500 MW Unit)	200 mg/Nm3 (For => 500 MW Unit)	100 mg/Nm3
NOx	600 mg/Nm3	300 mg/Nm3	100 mg/Nm3
Mercury	NIL (< 500 MW Unit) 0.03 mg/Nm3 (=>500 MW Unit)	0.03 mg/Nm3	0.03 mg/Nm3

Water	1. All plants with once through cooling (OTC) shall install cooling tower and achieve specific water consumption (SWC) up to maximum of 3.5 m3 /MWh within a period of 2 years from the date of publication of the notification. 2. All CT-based plants reduce SWC up to maximum of 3.5 m3 /MWh within a period of 2 years from the date of publication of the notification. 3. New plants to be installed after 1 January 2017 shall have to meet SWC up to maximum of 2.5 m3 /MWh and achieve zero wastewater discharge.

Table 6 New environmental norms for thermal power stations (MoEFCC 2015)[12]

For each thermal power plants a transition plan need to be drawn up and stringent stack monitoring to be scaled up for the plants which have higher emissions. This will enable the emission control and ensure compliance.

3.2.2 VEHICLES

3.2.2 (a) Emission Control of on road vehicles

The emission standards were set by the central government to keep a check on the pollutant levels emitted by vehicles that use combustion engines. Following the national roadmap, Jharkhand has implemented the Bharat Stage VI (BSVI) emission norms for new vehicles in April 2020. As per BS-VI emission norms, it is expected to reduce the pollution level in the state; petrol vehicles will have 25% reduction in their NOx while diesel engine will reduce their HC+NOx by 43%, NOx level by 68% and particulate matter by 82%. It helps to ensure low emissions of new vehicles.

However, the on-road emissions from older vehicles are also important to regulate as usually their emissions are higher than those from newer ones because of deteriorated engine, decreased fuel efficiency, low maintenance, etc. Due to the presence of a large number of old and ill-maintained vehicles in the state, the benefits of strict emission norms and introduction of BS VI vehicles will not be reflected in the ambient air quality. To check emissions from these vehicles and to ensure proper maintenance, Central Motor Vehicle Rules (1989) mandates every one-year-old transport and non-transport vehicle to be tested for emission compliance and obtain a PUC certificate. However, due to fraud, ineffective implementation, and infrastructural constraints, the current system (PUC) is failing to effectively control emissions from vehicles. A robust implementation and strengthening of the current emission control system (PUC) is needed to effectively mitigate vehicular emission.

[12] https://www.teriin.org/sites/default/files/2020-02/emissions-control-thermal-power.pdf

3.2.2 (b) CNG and Electric Mobility

Compared to petrol and diesel, CNG vehicles are pollution free as it is made up of methane and results in less carbon emissions. Additionally, it has close to zero emissions of particulate matter. In a major push towards CNG transportation in the personal mobility space, rollout of 200 to 250 CNG stations within the next few years has been announced for Jharkhand[13].

In partnership with the Energy Efficiency Services Limited (EESL) Jharkhand government has adopted an E-mobility program for the deployment of 50 electric vehicles (EVs) for various Jharkhand Bijli Vitran Nigam Limited (JBVNL) offices in Ranchi. However the state does not have a statewide comprehensive Electric Vehicle policy yet. The state wise number of electric/battery operated vehicles in India shows that as on 9 July 2019, 5257 electric/battery-operated vehicles exist in Jharkhand. Out of the total 36 are the electric cars[14].

National Urban Electric Mobility Mission by the Union Government gives a considerable opportunity in Jharkhand to adopt electric mobility and to reduce the vehicular emission. Converting maximum fleet to electric powered, will result in reduction in air pollution to a large extent. Sahibganj is favorable for quicker adoption of the electric vehicles because of their compact periphery, urban design and being small. Given the fact that these places have a very large usage of two-wheelers that are contributing much to the pollution can be prioritize for electric mobility program.

3.2.2 (c) Phasing of old vehicles

Many studies have highlighted that the emission rate of vehicles generally increases with usage over time, and diesel and petrol vehicles should be scrapped as they reach their end-of-life (EOL) stage after 10 and 15 years respectively. Jharkhand has been articulating the need to phase out all the old polluting vehicles. But despite repeated directives and drafts, implementation has not been done. As of now no cities in Jharkhand have phase out program for older vehicles.

3.2.2 (d) Movement of Heavy-duty Motor Vehicles (HMV)

The heavy-duty vehicles (Trucks and Trollies) play a major role in the economy of the state especially in Sahibganj; the vehicle movement and operations like hauling coals from mines to industries and transporting thousands of raw materials around cities. But these vehicles also greatly affect the air pollution and public health. The heavy-

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[13] https://auto.economictimes.indiatimes.com/news/oil-and-lubes/cng-png-project-launched-in-jharkhand/70815043

[14] https://www.indiastat.com/transport-data/30/transport/30/vehicles/289/stats.aspx

duty vehicles comprise only about mere percent of all vehicles on the road, yet they contribute to large emissions that come from the transportation sector. The movement and the loading and unloading factor contribute a significant percentage to air pollution.

A spatial planning and development of road network to bypass the highly populated cities should be done, ensuring the norms like covering the loading and pavements of pathway in coal yard. Continuing to lower emissions from heavy-duty vehicles is an important step.

3.2.2 (e) Public Transport

The public transport produces significantly less air pollution per passenger mile than a standard car carrying a single driver and also helps to keep traffic congestion lower, which in turn reduces air pollution from idling vehicles and convey many more people in much less space than individual automobiles. Apart from rising affluence and economic progress, lack of effective and convenient public transport can be seen as the major reason for high growth of private vehicles.

4. AIR POLLUTION HEALTH IMPACTS AND IMPORTANCE OF GRAP AND CCAAP

Air pollution is one of the most serious public health risks we face today and over the last two decades many scientific researches have demonstrated that particulate matter is a major pollutant of concern from a health perspective. The study published by British Journal 'Lancet Commission' ranks India first in terms of air pollution-related deaths with 1.24 million deaths recorded in the year 2017. It predicts that out of the total deaths in India in 2017, 12·5% could be attributed to air pollution[15]. The same report has predicted that nearly 100.2 deaths per 100,000 in Jharkhand occurred due to air pollution[10].

The National Health Policy Document of the Ministry of Health and Family Welfare (MoHFW), which was released first time in 2017, listed air pollution exposure as a priority area for action. The state-level disease burden estimates released by IHME, ICMR and PHFI showed that air pollution ranks as the third-largest risk factor responsible for the premature deaths in Jharkhand. Ischaemic heart disease and lower respiratory infections have been identified as the leading cause of disability in year 2017[16].

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[15] https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(18)30261-4/fulltext

[16] https://phfi.org/wp-content/uploads/2018/05/Jharkhand-Disease-Burden-Profile.pdf

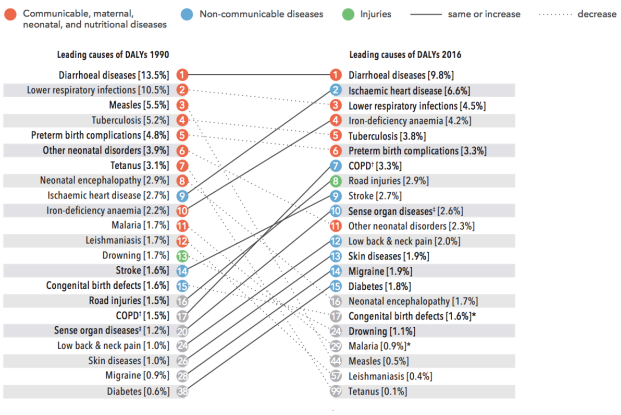

Figure 5 Leading causes of disability in year 2016 in Jharkhand[17]

The air pollution exposure is associated with a broad range of health effects ranging from minor physical morbidity to death from acute-respiratory and cardiovascular diseases. The effect can also be broken down into short-term effects and long-term effects. Given the extent of impact, a well-defined strategy should be in place - GRAP is critical for immediate response, emergency action and public health advisory during sudden increase of air pollution. While comprehensive clean air action plan to cap emissions from identified sources by taking strong and sustained action has great significance.

4.1 HEALTH IMPACTS & NEED OF GRADED RESPONSE ACTION PLAN (GRAP)

The short-term impacts of high air pollution exposer include discomfort such as irritation to the nose, throat, eyes, or skin, headaches, dizziness, and nausea. However individual reacts differently to different level of exposer of air pollution like, children and older adults with pre-existing lung or heart condition, are often more sensitive to pollution. Conditions such as asthma, heart disease, and lung disease can be made worse by high exposure to air pollution and even sometimes leads to death.

Generally, the high exposer and incidences of smog episodes largely occur when weather is adverse with calm atmosphere or no wind, cold temperature, and lower mixing height of air that traps air and pollution very close to the ground. In this case the emergency response action can control further loading of emissions and reduces exposure and associated health risk.

Although air quality monitoring is not present in Sahibganj, the physical visits and survey indicates towards smog like situation for some days in winter. Thus, it is important to have health advice recommendations and GRAP in the district. Low cost sensor based air quality monitors may also be considered.

[17] https://phfi.org/wp-content/uploads/2018/05/Jharkhand-Disease-Burden-Profile.pdf

4.2 HEALTH IMPACTS & NEED OF COMPREHENSIVE CLEAN AIR ACTION PLAN (CCAAP)

The long-term daily exposer of air pollution can cause many health effects. They can even lead to a person's death. Research suggests that long-term exposure to air pollution increases the risk of wide range of health effects ranging from cancer, COPD, ischaemic heart diseases, hypertension, diabetes, effect on brain to kidney and other organs. Some scientists suspect air pollutants cause birth defects. World Health Organization (WHO) classified a group of air pollutants as Class I carcinogens in year 2012 and has specially classified diesel emissions as Class I carcinogen for its strong links with lung cancer[18]. And the best way to control this long-term pollution is through sustained and comprehensive actions. The comprehensive clean air action plan (CCAAP) best serves the purpose. It identifies control strategies to reduce pollution from every source within a definite time frame involving all stakeholders and shared responsibility. It is also equip with stringent regulations to ensure the enforcement.

[18] https://www.iarc.fr/wp-content/uploads/2018/07/pr221_E.pdf

CHAPTER II- CLEAN AIR ACTION PLAN AND GRAP

1. COMPREHENSIVE CLEAN AIR ACTION PLAN (CCAAP)

The Comprehensive Clean Air Action Plan identifies strategies to reduce pollution from every source with a time bound (Small, Medium, Medium to Long term and Long term) control strategies involving all stakeholders with shared responsibility. The Action Plan will also set interim milestone and monitoring provisions. A comprehensive clean air action plan for Sahibganj is as follows:

S.NO.	ACTION	IMPLEMENTATION PERIOD	AGENCY RESPONSIBLE	TIMELINE
AIR QUALITY MONITORING AND STUDIES				
1	The air quality monitoring does not exists in Sahibganj. The air quality monitoring needs to be improved gradually both in terms of number of stations and types of pollutants measured. According to CPCB guidelines of air quality monitoring the minimum number of stations required is 5. Corporate funding can be sought under the CSR activities to extend monitoring networks with enhanced monitoring capability.	Medium	JSPCB with support of CPCB and CSR activities	1 years
2	Setting dissemination of daily Air Quality Index along with health advisory to public through website and local media	Medium to long	JSPCB with support of Urban bodies	2 Years
3	Modeling capabilities for understanding the current and future air quality	Medium to long	JSPCB with support of CPCB, IMD, State remote sensing center, DST	2 Years

4	A source profile study to understand the source-wise contribution. The regional impacts should also be considered in the study	Medium	JSPCB with Department of Forests, Environment & Climate Change	1 Years
5	Health impact studies, carrying capacity assessment to further refine and inform the action plan	Medium to long	JSPCB with Department of Forests, Environment & Climate Change (DoFECC)	2 Years
MINING AND THERMAL POWER PLANTS				
1	Effective enforcement of SOx and NOx standards notified by MOEF&CC in 2018.	Short	JSPCB	6 Months
2	Strict vigilance and Inspection of industries in and around district periphery to reporting of violations.	Short	JSPCB	6 Months
3	Six Red category industries is operational in Sahibganj. Installation of OCEMS and transmission of generated data simultaneously to JSPCB and CPCB	Medium	JSPCB	1 Years
4	Ensuring Environmental guidelines of mining like sitting criteria, operation and environmental standard as specified by CPCB	Medium	JSPCB	1 Years
5	Mist sprinkler, fixed sprinklers, dust extraction and dust doom should be implemented in Stone mining and clay processing unit with utmost stringency	Medium	JSPCB/ District Mining Officer	1 Years
6	Regular wetting of roads to suppress the ground level dust within the premises and all approach roads and ramps shall be metaled	Short	JSPCB/ District Mining Officer	6 Months

7	Ensuring green belt development along the periphery.	Medium	JSPCB/ District Mining Officer	1 Years
8	More than 200 mines are non operational and Immediate closure plan and restoration plan should be made and implemented	Medium	JSPCB/ District Mining Officer	1 Years
9	Curtain or wind breaking wall shall be provided surrounding the stone crusher unit.	Short	JSPCB/ District Mining Officer	6 Months
10	Prepare and implement local Action Plan for pollution hotspots and ensuring the Implementation of air pollution control measures in all mines.	Medium	JSPCB/ District Mining Officer	1 Years
11	Adoption of cleaner fuel in the Industries and restriction of new industries which are based low efficient energy	Medium to Long	JSPCB with Department of Forests, Environment & Climate Change (DoFECC)	2 Years
VEHICLES				
1	10-year-old commercial vehicles should be phased out	Medium	Transport Department	1 Years
2.	Regular checking of vehicular emission and Pollution under Control Certificate (PUC) especially for HTV	Short	Transport Department & Traffic Police	6 Months
3	Ensuring adequate number of PUC centers for emissions testing of on-road vehicles.	Medium	Transport Department & Oil Companies	1 Years
4	Ensuring periodic auditing and calibration of equipment of PUC centres	Short	Transport Department	6 Months

5	Strengthening the PUC program by linking of PUC centers with remote server and eliminate manual intervention in PUC testing.	Medium to Long	Transport Department	2 Years
6	Linking PUC certificates with annual vehicle insurance	Medium	Transport Department	1 Years
7	Checking of fuel adulteration	Short	District Administration and oil marketing company	6 months
8	Developing a state level electric vehicle policy and programme.	Medium	Transport Department/Urban local bodies	1 Years
9	Feasibility assessment of diversion of non-destined trucks into the city. Alternate routes need to be identified and improved to ensure that non-destined commercial traffic does not enter the city.	Medium to Long	Transport department, Traffic Police, Urban Local Body and District Administration	2 Years
BRICK KILNS				
1	Monitoring and checking for ensuring compliance in Brick Kilns	Short	JSPCB	6 Months
2	Adoption of cleaner technology in brick kilns and Enforce restrictions on operations of brick kilns within urban airshed zones	Medium	JSPCB	1 Years
SOILD FUEL IN COOKING & LIGHTING				
1	Leveraging government programmes like Ujjwala and others to penetrate 100% distribution of LPG/ PNG in all households	Medium to long	Department of Energy, Civil supplies department & Rural Department	2 Years

2	Prohibit use of coal in hotels and restaurants and mandate and link commercial license to clean fuels	Medium	Department of energy, Civil supplies department & District Administration	1 Years
3	In roadside eateries/ dhabas/ restaurants etc promote and incentivize use of LPG	Medium to long	Dept. of energy, power and Natural gas, Urban local bodies	2 Years
ENERGY SECTOR				
1	Operation of DG sets that meet the emissions standards specified design of chimneys/ exhaust and acoustic enclosures.	Medium	JSPCB and District Administration	1 Years
2	Regular inspection and maintenance of DG sets to ensure the emissions with strict penality on polluting one	Short	JSPCB and Municipal Bodies	6 Months
3	Leveraging the solar roof top program in big commercial buildings	Medium to long	Department of Energy, Distribution Companies	1-2 years
C&D and Road Dust				
1	Ensuring the compliance of norms of C & D waste management handling rules and imposing penalty for non-compliance.	Short	Municipal corporations/ Urban Local Bodies	6 Months
2	Adopt and implement dust control measures (water sprin- kling, curtains, barriers and dust suppression units) for all types of construction	Medium	Municipal corporations/ Urban Local Bodies	1 Years
4	Mechanical / vacuum-based street sweeping, Sprinkling of recycled water (without compromising other uses); introduce water fountains at major traffic intersection	Medium to long	District and local administration, PWD, Road owning agencies	1-2 Years

5	Maintain pot hole-free roads for free flow of traffic to reduce emissions and dust.	Medium to long	Municipal corporation	1-2 Years
6	Increase green cover in the region. (Based on City mapping)	Medium to long	DoFE, Municipal corporation, regional development authority, Urban local bodies	1-2 Years
OPEN WASTE BURNING				
1	A complete ban on waste burning. Stringent action and penalty, spot fine against open burning of waste	Medium to long	Municipal corporations, Regional Development Authority	1-2 Years
2	Decentralized waste management for hotels, apartments, institutions as per Solid Waste Management Rules, 2016.	Medium to long	Municipal corporations, Regional Development Authority	1-2 Years
3	Proper management of landfill and dumping sites to prevent spontaneous fire	Short	Municipal corporations, Regional Development Authority, JSPCB	6 Months
4	Transportation of Municipal solid waste, construction waste in covered system	Short	Municipal corporations	6 Months
PUBLIC AWARNESS & CAPACITY BUILDING				
1	Training and capacity building of SPCBs to ensure successful and effective implementation of strategies of CCAAP.	Medium to Long	DoFE, Department of Personnel and Training, District and local administration	1-2 Years
2	Public grievance rederssal portal	Short	DoFE, Department of Personnel and Training, District and local administration	6 Months

3	Public participation, sensitization and capacity building initiatives with academic institutions and local communities	Short	DoFE, Department of Personnel and Training, District and local administration	6 Months

Table 7 Comprehensive Clean Air Action Plan of Sahibganj

2. GRADED RESPONSE ACTION PLAN

In the longer term, Clean Air Action Plan is required to permanently reduce emissions, while GRAP serves as an emergency response plan to rising pollution. Generally, during winter months the pollution levels may increase drastically due to anthropogenic and natural phenomena and combined impact of meteorological factors and higher emissions**.** However nothing can be done to control the weather or to remove trapped emissions already emitted, an immediate action can control further loading of emissions and prevent higher smog peaks and exposure. To control this unexpected increase in pollution levels, the state government must develop a graded response action plan and start issuing health advisory. However, also note that the GRAP implementation requires a daily AQI level for which installation of real-time monitors is important.

Ministry of Environment, Forests and Climate Change, Govt. of India vide its notification S.O. 118 (E), dated January 12, 2017 CPCB has formulated Graded Response Action Plan for Delhi & NCR based on Air Quality Index and concentration of particulate matter. In consistent with the same, a Graded Response Action Plan has been formulated for Sahibganj which can be implemented after the introduction of air quality monitoring.

Severe + or Emergency (ambient $PM_{2.5}$or PM_{10}concentration values of 300µg/m^3or 500 µg/m^3 respectively persist for 48 hours or more)	**Agency responsible/Implementing Agency**
Stop entry of truck traffic	Municipal Corporations and Traffic Police
Stop construction activities	JSPCB/ Municipal Corporations and District Administration

Task Force to take decision on any additional steps including shutting of schools	District Administration & JSPCB
Severe (ambient $PM_{2.5}$or PM_{10}concentration value is more than 250 µg/m^3or 430µg/m^3 respectively)	**Agency responsible/Implementing Agency**
Close brick kilns, Hot Mix plants, Stone Crushers	JSPCB and District administration
Increase frequency of mechanized cleaning of road and sprinkling of water on roads. Identify road stretches with high dust generation.	Municipal Corporations, Public Works Departments
Stop use of diesel generator sets	Municipal Corporations & District Administration
Stop use of coal/firewood in hotels and open eateries	Municipal Corporations & District Administration
Alert in newspapers/TV/radio to advise people with respiratory and cardiac patients to avoid polluted areas and restrict outdoor movement	JSPCB & Municipal Corporations

Table 8 Graded Response Action Plan

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JHARKHAND POLLUTION CONTROL BOARD, RANCHI

AMBIENT AIR QUALITY REPORT

Name of Industry :- **Mouza.- Gadwa, Dist.- Sahibganj**

Date of Sampling : **13.09.2020 to 13.09.2020**
Weather condition: **Cloudy**

Sampling Position :
1. **Gadwa (22 mtr away from crusher)**

Time	So_2	NOx	RSPM
Point 1			
7.00 AM to 12.00 PM	10.70	19.20	179.40
12.00 PM to 5.30 PM	11.50	21.80	
Maximum	**11.50**	**21.80**	**179.40**
Average	**11.10**	**20.50**	**179.40**

NOTE : All values are expressed in micro gram/cubic metre.

15/9/2020 15/09/2020

Lab in Charge | Regional Officer | Board Analyst

JHARKHAND POLLUTION CONTROL BOARD, RANCHI

AMBIENT AIR QUALITY REPORT

Name of Industry :- **Mouza.- Borna, Barharwa, Dist.- Sahibganj**

Date of Sampling : **12.09.2020 to 12.09.2020**

Weather condition: **Cloudy**

Sampling Position :

1. **Borna (25 mtr away from crusher)**

Time	So_2	NOx	RSPM
Point 1			
9.30 AM to 1.30 PM	10.20	22.70	194.50
1.30 PM to 6.30 PM	11.50	24.50	
Maximum	**11.50**	**24.50**	**194.50**
Average	**10.85**	**23.60**	**194.50**

NOTE : All values are expressed in micro gram/cubic metre.

14/9/2020

Lab in Charge

15/09/2020

Regional Officer

Board Analyst

JHARKHAND POLLUTION CONTROL BOARD, RANCHI

AMBIENT AIR QUALITY REPORT

Name of Industry :- **Mouza.- Bakudih, Barharwa, Dist.- Sahibganj**

Date of Sampling : **12.09.2020 to 12.09.2020**

Weather condition: **Cloudy**

Sampling Position :

1. **Bakudih (20 mtr away from crusher)**

Time	So_2	NOx	RSPM
Point 1			
8.30 AM to 12.30 PM	10.60	20.60	185.60
12.30 PM to 5.30 PM	11.70	23.80	
Maximum	**11.70**	**23.80**	**185.60**
Average	**11.15**	**22.20**	**185.60**

NOTE : All values are expressed in micro gram/cubic metre.

15/9/2020

Lab in Charge

Kamal 15/09/2020

Regional Officer

Board Analyst

JHARKHAND POLLUTION CONTROL BOARD, RANCHI

AMBIENT AIR QUALITY REPORT

Name of Industry :- **Jirwabari, Dist.- Sahibganj**

Date of Sampling : **13.09.2020 to 13.09.2020**

Weather condition: **Cloudy**

Sampling Position :
1. **Jirwabari (1000 mtr(approx) away from crusher site)**

Time	So_2	NOx	RSPM
Point 1			
7.30 AM to 1.00 PM	08.60	12.20	75.50
1.00 PM to 7.00 PM	07.55	11.70	
Maximum	**08.60**	**12.20**	**75.50**
Average	**08.07**	**11.95**	**75.50**

NOTE : All values are expressed in micro gram/cubic metre.

17/9/2020

15/09/2020

Lab in Charge | Regional Officer | Board Analyst

JHARKHAND POLLUTION CONTROL BOARD, RANCHI

AMBIENT AIR QUALITY REPORT

Name of Industry :- **Mouza.- Mahadeoganj, Dist.- Sahibganj**

Date of Sampling : **11.09.2020 to 11.09.2020**

Weather condition: **Cloudy**

Sampling Position :

1. **Mahadeoganj (18 mtr away from crusher)**

Time	So_2	NOx	RSPM
Point 1			
7.00 AM to 1.30 PM	09.50	20.50	195.70
1.30 PM to 5.30 PM	10.55	23.10	
Maximum	**10.55**	**23.10**	**195.70**
Average	**10.02**	**21.80**	**195.70**

NOTE : All values are expressed in micro gram/cubic metre.

Lab in Charge | Regional Officer | Board Analyst

JHARKHAND POLLUTION CONTROL BOARD, RANCHI

AMBIENT AIR QUALITY REPORT

Name of Industry :- **Mouza.- Belbhadri, Dist.- Sahibganj**

Date of Sampling : **11.09.2020 to 11.09.2020**

Weather condition: **Cloudy**

Sampling Position :

1. **Belbhadri (20 mtr away from crusher)**

Time	So_2	NOx	RSPM
Point 1			
9.00 AM to 1.00 PM	11.80	22.05	187.30
1.00 PM to 6.00 PM	10.30	21.50	
Maximum	**11.80**	**22.05**	**187.30**
Average	**11.05**	**21.77**	**187.30**

NOTE : All values are expressed in micro gram/cubic metre.

Lab in Charge

Regional Officer

Board Analyst

JHARKHAND POLLUTION CONTROL BOARD, RANCHI

AMBIENT AIR QUALITY REPORT

Name of Industry :- **Mouza.- Pakturi, Dist.- Sahibganj**

Date of Sampling : **12.09.2020 to 12.09.2020**
Weather condition: **Cloudy**

Sampling Position :
1. **Pakturi (15 mtr away from crusher)**

Time	So_2	NOx	RSPM
Point 1			
7.30 AM to 1.00 PM	09.60	20.80	185.60
1.00 PM to 5.30 PM	10.50	23.30	
Maximum	**10.50**	**23.30**	**185.60**
Average	**10.05**	**22.05**	**185.60**

NOTE : All values are expressed in micro gram/cubic metre.

15/9/2020

Lab in Charge

Kamal 15/09/2020

Regional Officer

Board Analyst

झारखण्ड
JSPCB

JHARKHAND POLLUTION CONTROL BOARD, RANCHI

AMBIENT AIR QUALITY REPORT

Name of Industry :- **Near Sakrigali Railway Station, Dist.- Sahibganj**

Date of Sampling : **11.09.2020 to 11.09.2020**

Weather condition: **Cloudy**

Sampling Position :

1. **Sakrigali Railway Station, Road side**

Time	So_2	NOx	RSPM
Point 1			
8.30 AM to 12.30 PM	10.50	22.10	210.50
12.30 PM to 5.30 PM	11.05	24.20	
Maximum	**11.05**	**24.20**	**210.50**
Average	**10.77**	**23.15**	**210.50**

NOTE : All values are expressed in micro gram/cubic metre.

Lab in Charge | Regional Officer | Board Analyst

JHARKHAND POLLUTION CONTROL BOARD, RANCHI

AMBIENT AIR QUALITY REPORT

Name of Industry :- **Mouza.- Ambadiha, Dist.- Sahibganj**

Sampling Position :

Date of Sampling : **13.09.2020 to 13.09.2020**

1. **Ambadiha (25 mtr away from crusher)**

Weather condition: **Cloudy**

Time	So_2	NOx	RSPM
Point 1			
8.30 AM to 12.30 PM	10.30	21.80	195.60
12.30 PM to 5.30 PM	11.60	19.30	
Maximum	**11.60**	**21.80**	**195.60**
Average	**10.95**	**20.55**	**195.60**

NOTE : All values are expressed in micro gram/cubic metre.

15/9/2020

Lab in Charge

Kamal 15/09/2020

Regional Officer

Board Analyst

ANNEXURE-II

(For the purpose of Part-D)

The State Boards shall follow the following guidelines in enforcing the standards specified under Schedule VI:

(a) In case of cement plants, the total dust (from all sections) shall be within 400 mg/Nm^3 and 250 mg/Nm^3 for the plants upto 200 t/d and more than 200 t/d capacities respectively.

(b) In respect of calcinations process (e.g. Aluminum Plants) Kilns. and step Grate Bagasse fired-Boilers. Particulate Matter (PM) emissions shall be within 250 mg/Nm^3.

(c) In case of thermal power plants commissioned prior to 01.01.1982 and having generation capacity less than 62.5 MW, the PM emission shall be within 350 mg/Nm^3.

(d) In case of Lime Kilns of capacity more than 5 t/day and upto 40 t/day, the PM emission shall be within 500 mg/Nm^3.

(e) In case of horse shoe/pulsating Grate and Spreader Stroker Bagasse-fired-Boilders, the PM emission shall be within 500 (12% CO_2) and 800 (12% CO_2) mg/Nm^3 respectively. In respect of these boilers, if more than attached to a single stack, the emission standards shall be fixed, based on added capacity of all the boilers connected with the stack.

(f) In case of asbestos dust, the same shall not exceed 2mg/Nm^3.

(g) In case of the urea plants commissioned after 01.01.92, coke ovens and lead glass units, the PM emission shall be within 50 mg/Nm^3.

(h) In case of small boilers of capacity less than 2 tons/hour and between 2 to 5 tons/ hour, the PM emissions shall be within 1000 and 1200 mg/Nm^3.

(i) In case of integrated Iron and Steel Plants, PM emission upto 400 mg/Nm^3 shall be allowed during oxygen lancing.

(j) In case of stone crushing units, the suspended PM contribution value at a distance of 40 meters from a controlled, isolated as well as from a unit located in cluster should be less than 600 micrograms/Nm^3. [1][* * *] These units must also adopt the following pollution control measures :

(i) Dust containment cum suppression system for the equipment;

(ii) Construction of wind breaking walls;

(iii) Construction of the metalled roads within the premises;

(iv) Regular cleaning and wetting of the ground within the premises;

(v) Growing of a green belt along with periphery.

(k) In case of Ceramic industry, from the other sources of pollution, such as basic raw materials and processing operations, heat recovery dryers, mechanical finishing operation, all possible preventive measures should be taken to control PM emission as far as practicable.

2. The total fluoride emission in respect of Glass and Phosphatic Fertilizers shall not exceed 5 mg/Nm^3 and 25 mg/Nm^3 respectively.

[2]3. [In case of copper, lead and zinc smelting, the off-gases may, as far as possible, be utilized for manufacturing sulphuric acid]

[3]4. [In case of cupolas (Foundries) having capacity (melting rate) less than 3 tonne/hour, the particulate matter emission shall be within 450 mg/Nm^3. In these cases it is essential that stack is constructed over the cupolas beyond the charging door and the emissions are directed through the stack, which should be at least six times the diameter of cupola. In respect of Arc Furnaces and Induction Furnaces, provision has to be made for collecting the fumes before discharging the emissions through the stack].

[No. Q-15017/24/89-CPW]
MUKUL SANWAL, Jt. Secy.

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1 Omitted by Rule 2(i)(iii) of the Environment (Protection) Third Amendment Rules, 1993, vide G.S.R. 801(E) dated 31.12.1993.

2 Substituted by Rule 2(1)(i); Ibid.

3 Added by Rule 2(1)(ii), Ibid.