

IMPLIMENTATION OF SINGRAULI ACTION PLAN

SINGRAULI AREA OF DISTT. SONEBHADRA (U.P.)

30/8/2011



U.P. POLLUTION CONTROL BOARD

INTRODUCTION:

Sonbhadra or Sonebhadra is the 2nd largest district of Uttar Pradesh, India. The district has an area of 6788 km² and a population of 1,463,468 (2001 census), with a population density of 216 persons per km². It lies in the extreme southeast of the state, and is bounded by Mirzapur District to the northwest, Chandoli District to the north, Bihar state to the northeast, Jharkhand state to the east, Koriya and Surguja districts of Chhattisgarh state to the south, and Madhya Pradesh state to the west. The district headquarters is in the town of Robertsganj. It is the only district in India which borders four states namely Madhya Pradesh, Chhattisgarh, Jharkhand, and Bihar

GEOGRAPHY:

The Sone River flows through the district from east to west and its tributary the Rihand River, which rises to the south in the highlands of Surguja district of Chhattisgarh, flows north to join the Son in the center of the district. The Govind Ballabh Pant Sagar, a reservoir on the Rihand, lies partly in the district and partly in Madhya Pradesh. The district has historic, cultural, and ecological affinities with the Bagelkhand region. Obra a power project is located in this city. Robertsganj is the main town. Almost 100 km from Varanasi, the cultural centre of Indian epitome of Vedic civilisation, holds a prime importance as the district headquarter.

INDUSTRIES:

This region became an industrial heaven from an area of forest and hills. Some of the hills were having limestone and lot of them were having coal. There were some small rivers running through the area and the major was the Son.

Owing to the limestone hills, initially one cement factory was established at Churk in 1956. Later another cement factory started at Dala in 1971 and ancillary unit of Dala got started at Chunar in 1980. The cement factories became the

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(2)

foundation on which other industries were built. A big dam constructed at Pipri in 1961, named Rihand Dam. The dam produced 300 MW of electricity. Another small dam was constructed at Obra in 1968, 40 km from Rihand dam which generated 99 MW of electricity.

The Birla group then set up an aluminum plant at Renukut, which is one of the biggest aluminum plant of Hindalco. Later, the Birla group set up its own power plant at Renusagar in 1967. This plant has the current capacity of 887.2 MW and supplies the power to Hindalco.

The Birlas also started a company in Renukut called HiTech Carbon. Another industrial group initiated a company in Renukut named Kanoria Chemicals, which produces chemicals and later it started own power plant at Renukoot in 1998 which generates 50 MW of electricity.

A big thermal power plant construction was started at Obra in 1967 with support from Russian engineers and was successfully completed in 1971. This had a capacity to produce 1550 MW of electricity. Another power plant was initiated at Anpara in 1980. It produces 1630 MW of electricity and has proposed to extend the capacity to 2630 MW. The thermal power plant that NTPC started in Shaktinagar, generates 2050 MW. The plant in Vindhynagar generates 2260 MW and another plant at Bijpur generates 2000 MW. Northern Coalfields Ltd. has lot of open coal mines at Bina, Kakri, Dudhichua, Jayant, Kharia, Singrauli.

Three cement factories, one of the biggest aluminum plants, a carbon plant, a chemical factory and an energy hub to India, which generates 11000 MW with plans to reach 20000 MW. The whole country is benefiting from this region, which was once full of forests and hills, which seemed like infertile land. Last but not least, Geological Survey of India found gold in some hills in the form of veins at Mirchadhuri in 1990 and they are doing survey for finding Uranium. Also plan of big extension is running for existing power plant of Obra, Anpara, Rihandnagar. Vindhyanagar.

* * *

1. 1.1 Area details including brief history (background information) : Singrauli Area consists of the area pertaining to Uttar Pradesh and Madhya Pradesh. The part of Distt. Sonebhadra in Uttar Pradesh is covered under the Singrauli area. In District Sonebhadra the boundary of the area surrounded by Sakti Nagar, Rihand Nagar, Dudhichua, & Dala. and river sone makes the boundary of the area. Aerial extent of the area covers approximate 400 square kilometers. Singrauli area in U.P. Distt. is approximately 4328 square km.. Singrauli area is major power hub in the country. The availability of rich natural resources and raw material caters to the need of the Thermal Power Plants, Aluminium Industry, Chemical Industry, Mining Industries, Cement Plants & Stone Crushers established in Sonebhadra District in Singrauli Area. At present Approx. 12000 MW/day power is being generated by the Thermal Power Plants in Singrauli Area. Due to the industrialization of the area environmental problems have been reported since last two decades. CPCB after detail environmental status study identified it has critically polluted area in the year 1991 and Singrauli action plan was formulated in 1996 .Implementation of action plan is being revised from time to time.
- 1.2 Major Water Bodies (Rivers, Lakes, ponds, etc.) : 1. Rihand Reservoir,
2. Sone River
3. Renu River
4. Rihand River
5. Kanhar River
6. Badal River
7. Bagga Nala
8. Murdhawa Nala
9. Dongia Nala
10. Balia Nala
11. Nagua Dam
12. Gaghar Dam
13. Chilka Lake Shaktinagar
14. Rasganda Water Falls
15. Kaanchan Dam
16. Obra Dam
- 1.3 Ecological parks, Sanctuaries, flora and fauna or any eco sensitive zones : 1. Sone Eco point
2. Fossil Park
3. Dear Park

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- Jwalamukhi Devi Temple Shaktinagar,
- Hanuman Mandir Jhingurdah,
- Tippa Jhariya Jhingurdah,
- Lake Park Vindh Nagar,
- Rose Garden Jayant,
- Mada Caves (Prehistoric Rock Paintings)
- Nandankanan Rihandnagar
- Shiva Temple Rihandnagar
- Aanand Vatika, Rihandnagar
- Vaishno Devi Temple, Dala
- Birla Temple, Renukoot
- Radha Krishna Temple, Renukoot
- Vijagarh Fort
- Shivdwar Temple

LAND DETAILS:

S.No.	Category of Land	Areas of Land (Ha.)
1.	Forest Area	237861
2.	Irrigated Area	2111
3.	Un-irrigated Area	58729
4.	Culturable Waste	57804
5.	Area not available for Agriculture	66658

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A: Short term action points

STATUS OF SINGRAULLI ACTION PLAN AS ON 20.08.2011

ISSUES REGARDING NTPC Rihand & Shakti Nagar

Sl. No.	Action Points	Compliance Status	Time Target
1	On line opacity meter has been install in stack of all power plants of NTPC. The matter of linking data of CPCB/UPPCB Network will be carried out with in six months.	Shaktinagar-Data linked to corporate office of NTPC for further connection to CPCB network. Possibility of linkage with CPCB network is being examined by IT department keeping in view the feasibility & operational security. Rihand- Same as above. Vindhya Nagar- Same as above.	Dec.2011
2	Five continuous Ambient Air Quality Monitoring Stations (Rihand 3 & Shakti Nagar 2) are commissioned and the same will be linked with CPCB/UPPCB network within six month. <i>Note: Vindhya Nagar should be included.</i>	Shaktinagar- AAQMS data has been linked with CPCB network. Further data shall be linked to UPPCB for which visit has done at TNPCB by UPPCB & Industries representative on 27 th & 28 th July 2011. Rihand-AAQMS data has already been linked with CPCB network from 28.07.2010	Dec.2011
3	Facility shall be installed for control and treatment of oil spillage	Liquid waste treatment plant already in operation.	Complied.
4	Hazardous Waste shall be treated and disposed properly.	Shaktinagar & Rihand- HW Waste is being sold to registered recyclers through MSTC.	Complied
5	Proper Management of Bio-Medical Waste generated from Hospital of NTPC Units shall be ensured.	Shaktinagar & Rihand- Industry has installed Common Bio Medical waste treatment plant including Incinerator of 100 Kg/Hr., Oil Fired, Double Chamber.	Complied

6	Ensuring of 5 cycle recirculation of cooling water in NTPC Rihand TPP.	<p>Shaktinagar-Not applicable (once through cooling system)</p> <p>Rihand-Optimized at 2.5</p>	Complied
7	The possibility should be explored for co-processing of oil bearing sludge in cement kilns	<p>Shaktinagar-Oil bearing sludge will be burnt in boiler when oil tank will be cleaned.</p> <p>Rihand-The industries have been asked to explore the possibility for co-processing of oil bearing sludge in cement kilns.</p>	Complied

Issues Regarding NTPC Power Plants (Rihand & Shakti Nagar)

Sl.No.	Action Points	Compliance Status	Time Target
1	An action plan to achieve PM emission of 100mg/NM ³	Shaktinagar -Feasibility study completed. Detailed specification is under preparation for ESP retrofit under R&M. Rihand -NIT under preparation.	Dec.,2015
2	Provision of dry ash collection system.	Shaktinagar - Dry ash collection system is installed in two unit of 200 MW. Further, work has awarded in June'10 for DAES installation in all units including Stage-II (2x500 MW) Rihand -100% dry ash collection system is in operation for stage-II (2X500 MW) and provision is made for dry ash collection system in stage - III	March, 2014
3	Road maps for 100% fly ash utilization by 2014.	Shaktinagar - Action Plan already submitted. Rihand - Already submitted time bound action plan to utilize 100 % dry ash up to the year 2013-14	Dec.,2014
4	Complete recirculation of new ash pond over flow to achieve zero discharge effluents shall be achieved by NTPC Shakti Nagar.	Shaktinagar - AWRS installation work of new ash pond is in progress. Work of installation was awarded in June 2010 and completion target is 27 months ie Oct 2012. Around 30% work completed (over flow lagoon construction work 80%completed, pipes received at site) Rihand - Not applicable	Oct.,2012
5	The possibility should also be explored for co-processing of oil bearing sludge in cement kilns.	Shaktinagar - Oil bearing sludge will be burnt in boiler when oil tank will be cleaned. Rihand - The industries have been asked to explore to the possibility for co-processing of oil bearing sludge in cement kilns.	As when required

ACTION PLAN FOR ASH UTILIZATION (Existing Stations/ Units)

Name of Station : NTPC Singrauli

Total Installed Capacity: 2000 MW

(Figures in 000 tonne)

Sl. No.	Year	Total Ash Generation	Ash Utilization Segments								Total Ash Use	Percentage of Ash Utilization
			Cement and other industry	Manufacture of Fly Bricks and Products	Land Fill Activity	Ash dyke Raising work	Mine filling activity	Road and Embankment construction	Agricultural activity	Others		
1	2009-10	3584	361.8	4.24	1403.9	328.5	-	-	0.1	517.7	2616	73.00
2	2010-11	3500	350	10	800	300	440	-	0.2	200	2100	60.00
3	2011-12	3500	350	15	400	-	1700	-	0.2	160	2625	75.00
4	2012-13	3500	350	15	200	-	2475	-	0.2	110	3150	90.00
5	2013-14	3500	1200	15	200	550	1435	-	0.2	100	3505	100.00

The Action Plan for Ash Utilization is subject to fulfillment of the following conditions stipulated in the MoEF's Gazette Notification dated 14-09-1999 and its amendments dated 27-08-2003 & 03-11-2009, ash utilization to be done by other agencies and availability of appropriate technologies on which NTPC does not have any control and implementation of other suggestive government actions towards ash utilization:

- (a) Every construction agency (Central or State or Local Government and Private or Public Sector) engaged in the construction of buildings within a radius of hundred kilometer from a coal or lignite based thermal power plant shall use only fly ash based products for construction.
- (b) All agencies, persons or organizations responsible for construction/approval of construction of road embankment within 100 kilometer from any coal based thermal power station shall ensure use of ash as stipulated in IRC specifications No. SP-58-2001 as amended from time to time.
- (c) All mine agencies under Government, public and private sector and to mines of all minerals or metals or items located within a distance of 50 kilometer (by road) of thermal power station will use ash in filling work along with external dump of overburden and upper benches of mine as specified in the said notification.

- (d) Specifications / guidelines for use of Ash and Ash based building products should be issued by Bureau of Indian Standards (BIS), Indian Bureau of Mines (IBM), Indian Road Congress (IRC), Central Building Research Institute (CBRI), Roorkee, Central Road Research Institute (CRRI), New Delhi, Building Materials and Technology Promotion Council (BMTPC), New Delhi, Central Public Works Department (CPWD), State Public Works Departments (State PWDs) and other Central and State Government agencies.
- (e) Construction agencies viz, Central Public Works Department, Public Works Departments in the State / Union Territory Government, Development Authorities, Housing Boards, National Highway Authority of India and others including those in the private sector should also prescribe use of ash and ash - based products in their respective schedules of specifications and construction applications, including appropriate standards and codes of practice.
- (f) All local authorities should specify the use of ash and ash-based products and construction techniques in building materials, roads, embankments or for any other use in their respective building bye-laws and regulations.
- (g) All Financial institutions and agencies which fund construction activities shall include a clause in their loan or grant document for compliance of the provisions of this notification.
- (h) Environmental Clearance of mines within 50 km from coal based power stations should also be linked to the conditions of use of ash for filling / stowing in a time bound programme.
- (i) Indian Railways should allow special concessional freight for transportation of ash and ash- based products.
- (j) Clearance & Code of practice for use of ash in agriculture (for different soils should be issued by Indian Council of Agricultural Research.
- (k) Govt. should promote ash based product industries by :
- Creating Industrial Estates near thermal power stations where land, power, water etc, would be provided by single agency.
 - Excise duty exemption on all machinery and finished ash based products.
 - Sales Tax/VAT exemption on uniform basis on all machinery & finished ash based products.

Short/ Long term action points

ISSUES REGARDING UPPCL POWER PLANTS (OBRA)

As on 19.08.2011

Sl.No.	Action Points	Compliance Status	Time Target
1.	Complete recycle of ash pond over flow. The clear time should be given with date of completion regarding recycling of Ash pond overflow under refurbishment package. Details of plan should be provided.	The Tenders have already been opened for installation of AWRS by OTPS. Tender specification work is in progress for installation of AWRS by ATPS & time bound action plan has been submitted.	March, 2012 Dec., 2013
2.	Provision of dry ash collection system.	<ol style="list-style-type: none"> 1. The Ash generated from two units of ATPS namely unit no. 1&2 is being taken by J.P. Associates Ltd. They are lifting 70% of the Ash generated from the unit no. 1 &2 unit no. 3,4 & 5 of ATPS have already been closed. 2. Unit no. 6 & 8 has already been closed and unit no 7 is under R& M so there is no ash generation from 100 MW units of ATPS. 3. Presently ash of BTPS units is disposed in G Bundh. 	Feb., 2013 Dec., 2013
3.	High Oil spillage has been observed in the drain. Up-gradation of ETP shall be completed within 2 years by Obra TPS.	The Tenders have already been opened for installation of ETP by OTPS.	March, 2012
4.	Use of low sulphur auxiliary fuel in Obra TPP	Obra Thermal Power Station has been asked to use low sulphur auxiliary fuel	--
5	Installation of Opacity meters	OTPS will install the Opacity Meters with refurbishment & renovation scheme.	March,2013
6	Bank Guarantee		

Short/Long term action points

ISSUES REGARDING UPPCL POWER PLANTS (ANPARA)

As on 20.08.2011

Sl.No.	Action Points	Compliance Status	Time Target
1.	Complete recirculation of Ash pond overflow water from Belwadah to Anpara of UPRVUN Ltd. and its uses.	Tender specification finalized and tender floating is in process by UPRVUN Ltd. Head quarter-Lucknow.	Dec., 2013
2.	Renovation of ESP's to achieve PM emission of 100 mg/NM ³	M/s BHEL will carry out performance evaluation test of ESP of unit no 4 in Sept – 2011 and will submit its report. On the basis of report, work will carried out accordingly. Similarly testing work of Unit no.1,2,3 & 5 will be taken up in overhauling and on the basis of report, work will carried out accordingly.	Feb., 2013
3.	O&M of ESP's to maintain minimum PM emissions.	Under performing collecting plates and emitting electrodes of some fields will be changed during overhauling of unit no. 4 in Aug /Sept – 2011 and some work will be done in unit no. 1,2,3 and 5 during its overhauling.	Dec., 2012
4.	Provision of dry ash collection system in 3 x 210 MW; ATPS, Anpara.	Study and scrutiny is going on for floating tender at UPRVUN Ltd. Head quarter – Lucknow.	Dec., 2013
5.	Road map for 100% fly ash utilization by 2014	An agreement has been done for utilization of fly ash by M/s J P Associate.	Dec.,2014
6.	Installation of Opacity meter on all the five stacks and data should be linked with CPCB / UPPCB network.	Offer received and case is under process.	Dec.,2012
7.	Bank Guarantee		

A: Short term action points

ISSUES REGARDING HINDLACO INDUSTRIES LTD. (CAPTIVE POWER PLANT)

As on 20.08.2011

Sl.No.	Action Points	Compliance Status	Time Target
1.	Installation of continuous Ambient Air Quality Monitoring Station in collaboration with M/s. LANCO Anpara Power Co.	Quotations have been received from various suppliers for continuous ambient air quality sampler, jointly short listed the quotations & supplier for establishing continuous Ambient Air Quality monitoring station. For this a budget has been sanctioned by the management and accordingly purchase requisition has also been raised.	Sept., 2011
2.	Complete recycle of ash pond over flow.	Ash Water Recovery System (AWRS) has already been installed and effluents after treatment is recycled and reused in the process. There is no discharge	Complied
3.	Continuous operation and Maintenance of Air & Water Pollution Control System may be done.	All Air and water pollution control system are working well. For its performance results of ESP, STP, & ETP are being sent regularly.	Complied

B: Long term action points

ISSUES REGARDING HINDLACO INDUSTRIES LTD.(CAPTIVE POWER PLANT)

Sl.No.	Action Points	Compliance Status	Time Target
1.	Road map for 100% fly ash utilization by 2014. Action plan for 100% fly ash utilization to be provided to CPCB	<p>1. In the light of the provisions of ash utilization Notification dated 14.09.1999 amended as on date, HIL-RPD has started proactive approach for utilization of fly ash and developed infrastructure in phased manner.</p> <p>2. Fly ash take off for cement industries had gone to 21.1% in FY 2006-2007 from 0.5% in FY 2003-2004 due to conversion of wet ash disposal system in to dry fly ash collection system and by installation of dry fly ash transportation system in the year 2004.</p> <p>3. Hindalco persuaded the cement industries and transporters by various meeting with them. It has resulted in an increased take off fly ash from 38.96% to 50.51% in FY 2008-2009, FY 2009-10, & achieved 70 % fly ash utilization in FY2010-2011.</p> <p>4 Hindalco has signed a long term agreement with cement companies for lifting, disposal, and utilization of fly ash for next five years with M/s JP cement, Prism Cement, Hyderabad Industries Ltd., Birla Corporation and other companies. This has resulted an increased of fly ash take off 100% in August 2010 . New fly ash loading point Ash Silo No.-5 has also been started from April ,2011. Industry have achieved 100 % fly ash utilization by disposing it to cement companies in April 2011 to July 2011.</p> <p>5. RPD has already been established a brick manufacturing unit in its premises for captive consumption.</p> <p>6. Exhausted coal mines to be made available for refilling fly ash.</p> <p>7. The contractor for road construction should also be forced to use ash instead of earth soil.</p>	Dec., 2014
2.	Provision of dry ash collection system.	Dry ash collection system has been installed in all the units.	Complied

A: Short term action points

ISSUES REGARDING HINDLACO INDUSTRIES LTD. (ALUMINUM DIVISION)

As on 20.08.2011

Sl. No.	Action Points	Compliance Status	Time Target
1.	Installation of one continuous Ambient Air Quality Monitoring Station should be installed in collaboration with Kanoria Chemicals Limited & Hi- Tech Carbon Limited. Time frame for commissioning of CAAQMS to be submitted.	Continuous Ambient Air monitoring equipment Opsis, Sweden has been installed and commissioned at Renukeshwar Mandir, Renukoot jointly with M/s Hi-Tech Carbon and M/s Aditya Birla Chemicals on March 30, 2011. System is operational and data is available at system. Work for upload data on UPPCB/CPCB server through a common vendor is in progress. CAAQMS has been installed & commissiones on 30 th March 2011.	Dec. 2011 Complied
2.	Monitoring of Fluoride in all Stack.	On – line monitoring of PM and F performed in all pot – line stacks is in place.	Complied
3.	Monitoring of Fluoride emission in pot room and roof top. Monitoring of fluoride emissions to be included .	Fluoride emission monitoring system is already in operation and data is being reported to Regulatory Authorities (Ministry, Central And State) regularly	Complied
4.	Monitoring of PAH and HC in Anode Baking stack.	PAH and HC monitoring conducted by certified lab once in a year. Report is being submitted regularly to PCB. This year monitoring will be done by December, 2011.	Complied
5.	Monitoring of Ground water (at least two locations) near the Red mud Pond, for Fe, F, CN & reporting of data to CPCB & UPPCB. Proper interpretation/ analysis of data pertaining to ground water monitoring, be made and if accordingly Action Plan to be prepared for remediation	Four locations 3 Piezo wells and 1 natural Wells are identified by CGWB Officials at Hindalco establishment. Half yearly monitoring is being done by certified lab regularly. M/s Envirochem Test Laboratories, Lucknow has collected samples in the month of June, 2011. The results are attached as Annexure-A .	Complied



Envirochem Test Laboratories

(Approved Environmental Laboratory From Ministry of Env. & Forests (MOEF) Govt. of India, New Delhi Under E. P. Act (1986), UPPCB, Lucknow & RPCB, Jaipur)

Specialist in : Environmental Impact Assessment, Environmental Monitoring & Management
HIG - 79, Sector - E, Aliganj, Lucknow - 226 024

Telefax : 0522-2326668, 2334579, Mobile : 9415028155 E-mail:etl_2@yahoo.com

Website : www.envirochemindia.com



DATE-07.07.2011

Ref. No. ETL/Moni/Hindalco/3211

To,
M/S Hindalco Industries Limited,
Renukoot,
Distt: Sonbhadra

KIND ATTENTION: MR. A.K.SINGH

SUB: WATER ANALYSIS REPORTS

Dear Sir,
We are enclosing here with the Water Analysis Report, sample were collected on 14.06.2011 for your kind perusal and records.

- ETP Outlet
- Domestic Tap Water (Industrial Engineering Office)
- Ground water (Piezometer West of existing Ash disposal yard)
- Ground water (Piezometer near bus stand no. 15 of plant II)
- Ground water (Piezometer East of existing Ash disposal yard)
- Ground water (Well near Aashram North of existing Ash disposal yard)

Kindly acknowledge the receipt.

Thanking you,

Yours faithfully,

For **ENVIROCHEM TEST LABORATORIES**

(AUTHORISED SIGNATORY)



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Telefax : 0522-2326668, 2334579, Mobile : 9415028155 E-mail: etl_3@yahoo.com
Website : www.envirochemindia.com



Report No-3

WATER ANALYSIS REPORT

1. Name & Address : HINDALCO INDUSTRIES LIMITED
RENUKOOT
DISTT. SONEBHADRA (U.P)
2. Sample Collected by : Mr. B.N. Upadav
3. Date of Sample collection : 14.06.2011
4. Date of analysis : 20.06.2011
5. Nature of Sample : Ground Water
(Piezometer depth 27.6 feet West of
existing Ash disposal yard)

Sl. No.	CHARACTERISTICS	OBSERVED VALUE	LIMITING VALUE (IS-10500)
A. ESSENTIAL CHARACTERISTICS			
1.	Colour, Hazen units	Colourless	5
2.	Odour	Odourless	Unobjectionable
3.	Taste	Agreeable	Agreeable
4.	Turbidity NTU, Max	1.2	5
5.	Conductivity in $\mu\text{mho/cm}$	478.2	---
6.	pH	7.8	6.5 to 8.5
7.	Total hardness (as CaCO_3) in mg/l	118.0	300
8.	Iron (as Fe) in mg/l	0.78	0.3
9.	Chlorides (as Cl) in mg/l	18.0	250
10.	Residual free Chlorine in mg/l	BDL	0.2
B. DESIRABLE CHARACTERISTICS			
11.	Dissolved solids in mg/l	280.0	500
12.	Calcium (as CaCO_3) in mg/l	48.0	75
13.	Magnesium (as MgCO_3) in mg/l	70.0	---
14.	Copper (as Cu) in mg/l	BDL	0.05
15.	Manganese (as Mn) in mg/l	BDL	0.1
16.	Sulphate (as SO_4) in mg/l	9.86	200
17.	Nitrate (as NO_3) in mg/l	0.73	45
18.	Fluoride (as F) in mg/l	0.82	1.0
19.	Phenolic c Compounds (as $\text{C}_6\text{H}_5\text{OH}$) in mg/l	BDL	0.001
20.	Mercury (as Hg) in mg/l	BDL	0.001
21.	Cadmium (as Cd) in mg/l	BDL	0.01
22.	Selenium (as Se) in mg/l	BDL	0.01
23.	Arsenic (as As) in mg/l	BDL	0.05
24.	Cyanide (as CN) in mg/l	BDL	0.05
25.	Lead (as Pb) in mg/l	BDL	0.05
26.	Zinc (as Zn) in mg/l	BDL	5.0



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27.	Anionic detergents (as MBAS) in mg/l	Nil	0.2
28.	Total Chromium (as Cr ⁶⁺) in mg/l	BDL	0.05
29.	Polynuclear aromatic hydrocarbons(as PAH) in mg/l	Nil	---
30.	Minerals Oil in mg/l	BDL	0.01
31.	Pesticides	Nil	Absent
32.	Alkalinity in mg/l	227.0	200
33.	Aluminium (as Al) in mg/l	BDL	0.03
34.	Boron in mg/l	BDL	1.0
35.	Sodium as Na ⁺	12.0	---
36.	Potassium as K ⁺	6.0	---
37.	Total Chromium	BDL	---
C. BIOLOGICAL CHARACTERISTIC			
38.	B-Coli	Absent	10MPN/100ml
39.	E-Coli	Absent	Absent

BDL-Below Detectable Level

For Envirochem Test Laboratories
Govt. Analyst / Lab Incharge

Note-1 The above results are related only to the test performed on the sample. Endorsement of product is neither inferred nor implied. 2. This report is not to be reproduced wholly or in part and can not be used as an evidence in the court of law and should not be used in any advertisement media without our special permission in writing. 3. Sample will be destroyed after fifteen days from the date of reporting. 4. Total liability of our lab is limited to the invoiced amount. 5. Report refers to the sample received by Envirochem Test Lab unless mentioned otherwise.



Envirochem Test Laboratories

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Website : www.envirochemindia.com



Report No-4

WATER ANALYSIS REPORT

1. Name & Address : HINDALCO INDUSTRIES LIMITED
RENUKOOT
DISTT. SONEBHADRA (U.P)
2. Sample Collected by : Mr. B.N. Yadav
3. Date of Sample collection : 14.06.2011
4. Date of analysis : 20.06.2011
5. Nature of Sample : Ground Water
(Piezometer depth 16.0 feet near
bus stand no. 15 of plant II)

Sl. No.	CHARACTERISTICS	OBSERVED VALUE	LIMITING VALUE (IS-10500)
A. ESSENTIAL CHARACTERISTICS			
1.	Colour, Hazen units.	Colourless	5
2.	Odour	Odourless	Unobjectionable
3.	Taste	Agreeable	Agreeable
4.	Turbidity NTU, Max	1.6	5
5.	Conductivity in $\mu\text{mho/cm}$	328.6	---
6.	pH	7.42	6.5 to 8.5
7.	Total hardness (as CaCO_3) in mg/l	146.0	300
8.	Iron (as Fe) in mg/l	0.25	0.3
9.	Chlorides (as Cl) in mg/l	30.0	250
10.	Residual free Chlorine in mg/l	Nil	0.2
B. DESIRABLE CHARACTERISTICS			
11.	Dissolved solids in mg/l	324.0	500
12.	Calcium (as CaCO_3) in mg/l	72.0	75
13.	Magnesium (as MgCO_3) in mg/l	76.0	---
14.	Copper (as Cu) in mg/l	BDL	0.05
15.	Manganese (as Mn) in mg/l	0.06	0.1
16.	Sulphate (as SO_4) in mg/l	29.2	200
17.	Nitrate (as NO_3) in mg/l	1.6	45
18.	Fluoride (as F) in mg/l	0.71	1.0
19.	Phenolic c Compounds (as $\text{C}_6\text{H}_5\text{OH}$) in mg/l	BDL	0.001
20.	Mercury (as Hg) in mg/l	BDL	0.001
21.	Cadmium (as Cd) in mg/l	BDL	0.01
22.	Selenium (as Se) in mg/l	BDL	0.01
23.	Arsenic (as As) in mg/l	BDL	0.05
24.	Cyanide (as CN) in mg/l	BDL	0.05
25.	Lead (as Pb) in mg/l	BDL	0.05
26.	Zinc (as Zn) in mg/l	BDL	5.0



Envirochem Test Laboratories

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Telefax : 0522-2326668, 2334579, Mobile : 9415028155 E-mail:etl_2@yahoo.com
Website : www.envirochemindia.com



27.	Anionic detergents (as MBAS) in mg/l	Nil	0.2
28.	Total Chromium (as Cr ⁶⁺) in mg/l	BDL	0.05
29.	Polynuclear aromatic hydrocarbons(as PAH) in mg/l	Nil	--
30.	Minerals Oil in mg/l	BDL	0.01
31.	Pesticides	Nil	Absent
32.	Alkalinity in mg/l	140.0	200
33.	Aluminium (as Al) in mg/l	0.06	0.03
34.	Boron in mg/l	BDL	1.0
35.	Sodium as Na ⁺	14.0	---
36.	Potassium as K ⁺	8.0	---
37.	Total Chromium	BDL	---
C. BIOLOGICAL CHARACTERISTIC			
38.	B-Coli	Absent	10MPN/100ml
39.	E-Coli	Absent	Absent

BDL-Below Detectable Level

For Envirochem Test Laboratories
Govt. Analyst/Lab Incharge

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Website : www.envirochemindia.com



Report No-5

WATER ANALYSIS REPORT

1. Name & Address : HINDALCO INDUSTRIES LIMITED
RENUKOOT
DISTT. SONEBHADRA (U.P)
2. Sample Collected by : Mr. B.N. Yadav
3. Date of Sample collection : 14.06.2011
4. Date of analysis : 20.06.2011
5. Nature of Sample : Ground water
(Piezometer depth 16.3 feet East of
existing Ash disposal yard)

Sl. No.	CHARACTERISTICS	OBSERVED VALUE	LIMITING VALUE (IS-10500)
A. ESSENTIAL CHARACTERISTICS			
1.	Colour, Hazen units.	Colourless	5
2.	Odour	Odourless	Unobjectionable
3.	Taste	Agreeable	Agreeable
4.	Turbidity NTU, Max	0.4	5
5.	Conductivity in $\mu\text{mho/cm}$	1352.8	---
6.	pH	8.2	6.5 to 8.5
7.	Total hardness (as CaCO_3) in mg/l	140.0	300
8.	Iron (as Fe) in mg/l	0.24	0.3
9.	Chlorides (as Cl) in mg/l	32.0	250
10.	Residual free Chlorine in mg/l	Nil	0.2
B. DESIRABLE CHARACTERISTICS			
11.	Dissolved solids in mg/l	416.0	500
12.	Calcium (as CaCO_3) in mg/l	68.0	75
13.	Magnesium (as MgCO_3) in mg/l	52.0	---
14.	Copper (as Cu) in mg/l	BDL	0.05
15.	Manganese (as Mn) in mg/l	BDL	0.1
16.	Sulphate (as SO_4) in mg/l	59.6	200
17.	Nitrate (as NO_3) in mg/l	0.86	45
18.	Fluoride (as F) in mg/l	0.65	1.0
19.	Phenolic c Compounds (as $\text{C}_6\text{H}_5\text{OH}$) in mg/l	BDL	0.001
20.	Mercury (as Hg) in mg/l	BDL	0.001
21.	Cadmium (as Cd) in mg/l	BDL	0.01
22.	Selenium (as Se) in mg/l	BDL	0.01
23.	Arsenic (as As) in mg/l	BDL	0.05
24.	Cyanide (as CN) in mg/l	BDL	0.05
25.	Lead (as Pb) in mg/l	BDL	0.05
26.	Zinc (as Zn) in mg/l	BDL	5.0



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Website : www.envirochemindia.com



27.	Anionic detergents (as MBAS) in mg/l	Nil	0.2
28.	Total Chromium (as Cr ⁺⁶) in mg/l	BDL	0.05
29.	Polynuclear aromatic hydrocarbons(as PAH) in mg/l	Nil	--
30.	Minerals Oil in mg/l	BDL	0.01
31.	Pesticides	NIL	Absent
32.	Alkalinity in mg/l	472.0	200
33.	Aluminium (as Al) in mg/l	BDL	0.03
34.	Boron in mg/l	BDL	1.0
35.	Sodium as Na ⁺⁺	14.0	---
36.	Potassium as K ⁺	6.0	---
37.	Total Chromium	BDL	---
C. BIOLOGICAL CHARACTERISTIC			
38.	B-Coli	Absent	10MPN/100ml
39.	E-Coli	Absent	Absent

BDL-Below Detectable Level

For Envirochem Test Laboratories
Govt. Analyst / Lab Incharge

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Website : www.envirochemindia.com



Report No-6

WATER ANALYSIS REPORT

1. Name & Address : HINDALCO INDUSTRIES LIMITED
RENUKOOT
DISTT. SONEBHADRA (U.P)
2. Sample Collected by : Mr. B.N. Yadav
3. Date of Sample collection : 14.06.2011
4. Date of analysis : 20.06.2011
5. Nature of Sample : Ground water
(Well near Ashram North Depth 21 feet of existing Ash disposal yard)

Sl. No.	CHARACTERISTICS	OBSERVED VALUE	LIMITING VALUE (IS-10500)
A. ESSENTIAL CHARACTERISTICS			
1.	Colour, Hazen units.	Colourless	5
2.	Odour	Odourless	Unobjectionable
3.	Taste	Agreeable	Agreeable
4.	Turbidity NTU, Max	1.4	5
5.	Conductivity in $\mu\text{mho/cm}$	1578.2	---
6.	pH	7.91	6.5 to 8.5
7.	Total hardness (as CaCO_3) in mg/l	104.0	300
8.	Iron (as Fe) in mg/l	0.28	0.3
9.	Chlorides (as Cl) in mg/l	32.0	250
10.	Residual free Chlorine in mg/l	Nil	0.2
B. DESIRABLE CHARACTERISTICS			
11.	Dissolved solids in mg/l	380.0	500
12.	Calcium (as CaCO_3) in mg/l	56.0	75
13.	Magnesium (as MgCO_3) in mg/l	48.0	---
14.	Copper (as Cu) in mg/l	BDL	0.05
15.	Manganese (as Mn) in mg/l	BDL	0.1
16.	Sulphate (as SO_4) in mg/l	72.4	200
17.	Nitrate (as NO_3) in mg/l	0.34	45
18.	Fluoride (as F) in mg/l	0.62	1.0
19.	Phenolic c Compounds (as $\text{C}_6\text{H}_5\text{OH}$) in mg/l	BDL	0.001
20.	Mercury (as Hg) in mg/l	BDL	0.001
21.	Cadmium (as Cd) in mg/l	BDL	0.01
22.	Selenium (as Se) in mg/l	BDL	0.01
23.	Arsenic (as As) in mg/l	BDL	0.05
24.	Cyanide (as CN) in mg/l	BDL	0.05
25.	Lead (as Pb) in mg/l	BDL	0.05
26.	Zinc (as Zn) in mg/l	BDL	5.0

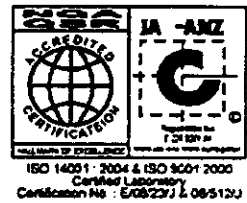


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Website : www.envirochemindia.com



27.	Anionic detergents (as MBAS) in mg/l	Nil	0.2
28.	Total Chromium (as Cr ⁺⁶) in mg/l	BDL	0.05
29.	Polynuclear aromatic hydrocarbons(as PAH) in mg/l	Nil	---
30.	Minerals Oil in mg/l	BDL	0.01
31.	Pesticides	Nil	Absent
32.	Alkalinity in mg/l	188.0	200
33.	Aluminium (as Al) in mg/l	BDL	0.03
34.	Boron in mg/l	BDL	1.0
35.	Sodium as Na	12.0	---
36.	Potassium as K	4.0	---
37.	Total Chromium	BDL	---
C. BIOLOGICAL CHARACTERISTIC			
38.	B-Coli	Absent	10MPN/100ml
39.	E-Coli	Absent	Absent

BDL-Below Detectable Level

For Envirochem Test Laboratories

Govt. Analyst/Lab Incharge

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B: Long term action points

ISSUES REGARDING HINDLACO INDUSTRY LTD. (ALUMINUM DIVISION)

Sl.No.	Action Points	Compliance Status as on 20.08.2011	Time Target
1.	Utilization of Red Mud.	There is no economical process for utilization of Red Mud world-wide till date. Currently red-mud is disposed as 60-70% solids and partially utilized in soil conditioning/plantation. Till now the industry is using red mud for reclaiming land by filling and developing plantation called "Sanjeevani Project" in patches on used disposal sites. Proposal from Aluminium Association of India is still awaited.	-
2.	Up gradation / retrofitting in baking furnace	Retrofitting Job of Baking Furnaces No.3 & 4 has been completed and stabilized. As mentioned in the MOM of SAP meeting, which was held on January 10, 2011 at Varanasi, industry had submitted an application on prescribed format to issue NOC for installation of New Baking furnace in place of old Baking furnace # 1&2 to UPPCB on May 09, 2011. UPPCB has issued NOC on July 05, 2011 to install New Baking Furnace. Technical discussion is in progress with suppliers.	July, 2012
3.	To achieve of PM emission (< 50mg/Nm ³) should be carried out by March, 2011. Action Plan with clear time line should be chalked out in respect of furnace No. 1, 2 & 3 to achieve the PM emission (< 50mg/Nm ³).	Industry has completed first phase of retrofitting work for Furnace # 4 (PM 86-96 mg/Nm ³) and stabilized. Except in case of Furnace # 5 (PM-38-46mg/Nm ³), conc. Of PM in other furnaces (1, 2 & 3) remain in the range of 86-117 mg/Nm ³ . It was proposed by the industry to replace Baking furnace # 1&2 by New Baking Furnace. Action Plan submitted for replacement of baking furnace No. 1 & 2.	July, 2012

A:Short term action points

ISSUES REGARDING ADITYA BIRLA CHEMICALS (INDIA) LIMITED, RENUKOOT

As on 20.08.2011

Sl.No	Action Points	Compliance Status	Time Target
1.	Treatment of brine sludge to reduce mercury concentration in the leachate to less than 0.1 mg/L.	Brine sludge treatment with chlorinated brine started (Hg content in sludge reduced from 90 - 100 mg/Kg to 12 - 15 mg/Kg). Sludge generation is 19 Kg/t of Caustic soda (2010), records maintained. As per ITR report leachable mercury in sludge is of the order of 0.06 mg/l.	Complied
2.	Quantification of brine sludge generation and submission of reports to CPCB and SPCB.	Waste from Lindane plant earth capped, sodium hypo plant installed to reduce calcium hypo sludge generation. TCB sludge and other hazardous sludge being stored in impervious area.	Complied
3.	Reduction in mercury emission to less than 2 gm/T of the product. Action Plan to achieve the Mercury emission standards (2 gm/T of product) should be submitted in detail with clear time line.	The emission in cell room is of the order of 0.6 to 1.0 gm/ton of product. Total Hg loss is 41.5 g/t of product, whereas unaccounted Hg is 3.4 g/t of product. Completed in Dec. 2005. Presently Mercury concentration in cell room is reduced to 0.004 - 0.009 mg/m ³ , which is about 0.6 to 1.0 g/T of product.	Complied
4.	Installation of online mercury analyzer and individual flow meters for quantification of effluent discharge from cell house, brine plant, chlorine handling and HCL plant. Facts to be verified by UPPCB	Not required as total recycling of mercury bearing waste water is done. Flow records maintained. <i>At the time of last joint inspection carried out by UPPCB and CPCB Zonal Office Officers on dt. 14.7.11 It was observed that mercury effluent was not being discharged. The point is needed further inspections and observations.</i>	Complying
5.	Complete recycling of effluent from the plant.	a. Completed for mercury bearing effluent (Cell house). b. For the rest of the effluent to installed recycling system etc. will be completed by Dec. 2012.	March 2011 Dec. 2012

6.	Monitoring of groundwater for at least two locations (Hg, Res. Cl, OCPs and general parameters) near sludge/HW disposal area and reporting of data to CPCB and SPCB.	The sampling and analysis of borewells have been awarded to IITR, Lucknow and reports submitted to UPPCB. The analysis report of 29th July, 2011 is being enclosed as Annexure - A	Complied
7.	Installation of new boilers with adequate APCS.	Boilers of both 25MW power plants are equipped with ESPs. Fly-ash brick plant produces 10 lakh brick/y & rest, ash delivered to cement mfr. New boiler with adequate APCS, commissioned, the old boilers phased out.	Complied
8.	Adequate measures for proper utilization of fly ash to be taken.		Complied
9.	Reduction of Hg conc. In Cell House Ventilation gas to 1 g/T. Clear Action Plan should be given regarding reduction of Mercury concentration in Cell House ventilation gas to 1g/T with proper time line	ABCIL is undertaking 'in-house' R&D efforts., The complete system is under stabilization. As per CPCB Study (2005) the Hg concentration was observed to be 6 g/T. The industry has achieved 0.09 - 0.6 g/T of product.	Complied
10.	Monitoring of HCL furnace stack for HCL and send reports to CPCB and SPCB.	Monitoring reports are receiving regularly.	Complying
11.	Establishment of two AAQMS for Hg, RSPM, SPM, Sox & NOx. Date of completion to be specified. Chlorine monitoring also to be included. Reference of revised AAQM standards notified in 2009 is taken.	On line ambient air monitoring equipment has been installed on 30.03.2011 for parameters PM 10, PM 2.5, SO2, NO2, Chlorine, Mercury & Hydrogen fluoride near Renukeshwar Temple Renukoot in collaboration with M/s Hi-Tech & M/s Hindalco.	Complied
12.	Monitoring ambient air quality as per decision of meeting held on 18.1.10 and reporting data to CPCB and SPCB.	The data is available in office. Data transfer to be done jointly with CPCB & SPCB.	Completed at industry end.



IITR

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भारतीय विषविज्ञान अनुसंधान संस्थान

(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)
(पूर्व नाम औद्योगिक विष विज्ञान अनुसंधान केन्द्र)
महात्मा गाँधी मार्ग, पोस्ट बाक्स नं. 80
लखनऊ - 226 001 (उ.प्र.) भारत

INDIAN INSTITUTE OF TOXICOLOGY RESEARCH
(Council of Scientific and Industrial Research)
(Formerly: Industrial Toxicology Research Centre)

MAHATMA GANDHI MARG, POST BOX NO. 80
LUCKNOW-228 001 (U.P.) INDIA
July 29, 2011

ANALYTICAL REPORT ON GROUND WATER (Bore Well)

Site : M/s. Aditya Birla Chemicals (India) Limited
Source of Sample : Ground Water (Bore Well)
Location of Sampling Site : Sludge Disposal Yard (SDY) at ABCIL, Renukoot
Type of Sample: Grab
Date of Sampling: 24th June, 2011

Sl. No.	Parameters	Unit	Ground Water from	
			A	B
1	Mercury	µg/l	<0.001	<0.001
2	γ HCH	µg/l	<1.0	<1.0

ND= Not Detected

A = Bore Well, about 10 m away in South of SDY

B = Bore Well, about 50 m away in South East of SDY


(G.C. Kisku)

Dr. G. C. Kisku
Scientist
Environmental Monitoring Section
Indian Institute of Toxicology Research
M.G. Marg, Post Box No. 80
Lucknow-228 001 (U.P.) INDIA

B: Long term action points

ISSUES REGARDING ADITYA BIRLA CHEMICALS (INDIA) LIMITED, RENUKOOT

Sl.No.	Action Points	Compliance Status	Time Target
1.	Action Plan for complete changeover to Membrane Cell Process. The process should be completed by December, 2011. There are some operational issues. CPCB should study the EIA clearance given by MoEF to the unit and if need be, move for its revision. The CPCB shall take Bank Guarantee of suitable amount from the Unit for the compliance.	We are committed to have expansion based on Membrane Technology and sequential phase-out of mercury cell based plants. First new plant 110 MT/d Caustic Soda Plant based on Membrane Technology has been commissioned as Phase-I. Another 110 MT/d plant based on Membrane Technology has been installed and commissioned as Phase-II expansion. After commissioning of Phase-II plant, the industry has phased out & dismantled the 32 nos. of 50 KA Mercury Cells producing approx. 60 Ton/d. Another plant of 145 MT/d in Phase-III expansion is to be commissioned by Jan. 2012. After installation of third stream on Membrane Technology, we will phase out balance 28 nos. of 100 KA Mercury Cells producing 85 MT/d by 2012. Hence 100% switch-over shall be achieved (for current capacity of Mercury cell based production of 145 MT/d). However, after the takeover of KCIL by ABCIL, the management has decided not to run the mercury plant.	Dec., 2011
2.	Reduction in mercury consumption to less than 50 gm/T of the product.	Hg consumption reduced from 155 gm/t (2002) to 60 - 90 gm/t (Jan. 2004) 55 gm/t (Sept 2005) and 45 gm/t (2010).	Complied
3.	The Industry should ensure removal and safe disposal of Hazardous waste stored in the Industry premises to the TSDF in time bound manner. Clear time bound road map should be given by the industry for removal and safe disposal of Hazardous Waste stored in industrial premises.	The Industry has become the member of CHW TSDF (U.P. Waste Management, Kanpur) for removal and safe disposal of hazardous waste. 374.17 MT Hazardous mercury bearing brine sludge sent for safe disposal will send rest uncapped sludge to TSDF in phased manner by Dec. 2012.	Dec, 2011

A: Short term action points

ISSUES REGARDING NORTHERN COAL FIELDS LTD. MINE UNITS (BINA, KAKRI, KHADIA, DHUDICHUA & KRISHNASHILA)

Sl.No.	Action Points	Compliance Status	Time Target
1.	Coal characterization in terms of ash, fluoride and mercury and submission of results to CPCB and SPCB.	Bina- The coal samples are regularly analyzed by the project for ash ,Hg Fluorides.Last analysis was done on 20.04.2010 through CFRI Dhanbad.(report copy enclosed) Khadia & Dhudichua- The coal samples are regularly analyzed by NCL Head quarter the analysis result shows Ash-33 % F - BDL. The coal analysis report from Envirotech East Pvt Ltd. Kolkata dt. 24.07.2007 and from CIMFR Dhanbad dt. 20.04.2010 enclosed.	Complying
2.	Monitoring of effluent and noise for compliance of standards and reporting of data to CPCB and SPCB.	Monitoring effluent & noise is being done by CMPDI fortnightly.	Complying
3.	Action Plan needs improvement.	The following points are being included in the action plan:- 1Thick Green belt already made through UP Forest Deptt. 2. All the OB generated dumped in decoaled are in internal dump. 3. All permanent service roads are metalled, temporary haul roads are WBM.	Partially Complied
4.	Recycling plan for achieving zero discharge for NCL should be prepared and submitted by December 2010, and implementation by December 2011.	Time bound Recycling plan for achieving zero discharge for NCL has been prepared, and implemented by December 2011.	Dec.,2011

B: Long term action points

ISSUES REGARDING NORTHERN COAL FIELDS LTD. MINE UNITS (BINA, KAKRI, KHADIA, DHUDICHUA & KRISHNASHILA)

Sl.No.	Action Points	Compliance Status	Time Target
1.	Ensuring supply of washed coal to the power plant/users away from the pithead.	<p>BINA- Power plants / users away from pit head (1000 kms) are supplied deshaled/washed coal through Bina Deshaling plant (cap. 4.5 MTA).</p> <p>KHADIA- The coal is being supplied to the pit head thermal stations.</p> <p>DHUDICHUA- Total coal from Dhudichua Project is being supplied to the pit head thermal power stations near by the mines; hence washing of coal is not required at Dhudichua Project.</p>	-
2.	Regarding supply of washed coal to the power plant, NCL mentioned difficulty and referred this case to corporate level. In view of this situation, possibility may be explored for establishment of common washery to be owned by thermal power plants sourcing coal from NCL	<p>BINA- De-saling plant is working at NCL Bina only at single stage washing.</p> <p>KHADIA- As per MOEF stipulation for using beneficiated / blended / raw coal has been implemented for 34 identified thermal power stations on all India basis situated more than 100 Km from coal source. In case of khadia project the coal is being supplied to the pit head thermal power stations.</p> <p>DHUDICHUA- Matter is referred to NCL Head Quarter.</p>	-
3.	Strengthening of Internal Environmental management.	<p>BINA- Needs to be improve.</p> <p>KHADIA- The Industry has been directed to strengthen of Internal Environmental management.</p> <p>DHUDICHUA- The internal Environmental management is already strengthened and improvement is carried out on regular basis.</p>	Partial Complying

A: Short term action points

ISSUES REGARDING HI-TECH CARBON (HC)

Sl.No.	Action Points	Compliance Status	Time Target
1.	Regular monitoring of Sox, NOx, RSPM, SPM in stack emission and submission of data to CPCB and SPCB.	System for monitoring is in place. Data submission is regular.	Complied
2.	Ambient Air Quality Monitoring.	Continuous Ambient Air monitoring equipment Opsis, Sweden has been installed and commissioned at Renukeshwar Mandir, Renukoot jointly with M/s Hi-Tech Carbon and M/s Aditya Birla Chemicals on March 30, 2011. System is operational and data is available at system. Work for upload data on UPPCB/CPCB server through a common vendor is in progress.	Complied

A: Short term action points

ISSUES REGARDING DALLA CEMENT FACTORY, DALLA

Sl.No.	Action Points	Compliance Status	Time Target
1.	Installation of continuous Stack and AAQ monitoring stations.	Equipments of On-line ambient Monitoring station are Installed and It is under Commissioning Stage. Opacity meters are installed at all stacks for continuous monitoring of dust concentration. To monitor on-line stack emission at UPPCB/CPCB website, possibility is being explored by Expert and Suppliers.	Complied at industry end.
2.	Proper implementation of Mine Management Plan.	Complying.	Complied
3.	The present plan pertains regarding installation of continuous stack & AAQ monitoring stations only whereas important environmental issues like control of fugitive emissions, stack emissions, efficacy of pollution control devices etc. should also be addressed	<p>1 To control fugitive emissions, following activities are being carried out as follows :</p> <ul style="list-style-type: none"> • Bag filters are installed at all transfer points like Lime Stone crushing plant, Lime stone stock pile, transport gantry, Raw Material Hopper, Raw Mill, Raw Mill Silo, Kiln Feed, Preheated, Clinker Silo, transport, Coal feeding, Coal Storage, transport, Coal Mill Coal Feeding, coal Storage Transport, Cement Silo, packing plant, Fly Ash storage, Cement Mill, Coal Handling plant, Bunker and Fly ash silo. • 80 % concrete road has been made. • Automatic Road sweeping machine is deployed. • Treated water of STP is being sprinkling on haul Roads. • Water fogging system on conveyer Belt. • Plantation work is under progress <p>2. To control the stack emission, efficient major Pollution Control Equipments like ESP, Reverse Air Bag House and Bag filter in all process ducts have been already installed with Raw Mill, Coal Mill, Cooler, Cement mill and Boiler stack.</p> <p>3. To maintain the efficiency of Pollution Control devices, industry carry out manually stack monitoring and installed opacity meter for On-line stack Monitoring.</p>	Complied

5.	Monitoring of effluent, reaching Rihand reservoir should also be done and if found polluted its impact on reservoir should be assessed and remedial measures be taken accordingly.	The monitoring is being carried out by UPPCB. The industry has been directed to submit time bound programmed to achieve Zero discharge. In any case the effluent is being discharged in Rihand reservoir after confirming the prescribed standards.	Dec.,2011
6.	Action plan for bio-remediation of OB dumps should be prepared by March 2011.	Biological reclamation of OB dump is being done by plantation of plants through U.P.Forest Deptt.	complying
7.	Possibility of installation of coal conveyance system through closed conveyor belts should be assessed to control fugitive emissions due to hauling of coal.	The Coal Handling Plant (CHP) already installed and efficiently having closed conveyor belts to control fugitive emissions due to hauling of coal.	Complying
8.	Establishment of AAQMS (at least 2) for monitoring SOx, NOx, RSPM and SPM and reporting the data to CPCB and SPCB.	Four nos. of AAQMS established for monitoring of SOx, NOx, RSPM and SPM and reporting data to CPCB and SPCB	Complying

A: Short term action points

ISSUES REGARDING STONE CRUSHERS IN SINGRAULI AREA DISTRICT SONEBHADRA

Sl.No.	Action Points	Compliance Status	Time Target
1.	Installation and proper operation of dry dust collection system, dust containment-cum-suppression system, Wind breaking walls and noise containment system.	1. District Magistrate, Sonbhadra through SADA has sanctioned Rs.10 lacs for installation of Model dry scrubbing APCS in one stone crusher with technical assistance of UPPCB/CPCB 2. Expert committee of members has been established by CPCB. First meeting has been done in CPCB office on dt. 30 May 2011. Field visit of Expert committee members has been done on 13-14 July 2011. First draft for comments, suggestion, additions is attached in Annexure The committee will be provide techno-economical APCS with in 04 months.	March, 2012
2.	Development of green belt along the periphery of their respective units.	As per decision of Mandaliya Udyog Bandhu held on 19.11.10 subsequent meeting of D.M. Sonbhadra with Stone Crusher Owner's Association held on 14.01.2011, in the meeting it has been decided that the green belt (along the road side) and construction and maintenance of link road in stone crusher area will be developed by SADA.	Dec., 2011
3.	Disposal of stone rejects on road side to be strictly avoided by all the stone crushers.	Presently contractors are using stone rejects with grits in road construction.	Complied

6.	Establishment of AAQMS to monitor the impact of stone crushers on ambient air quality (at least one).	Yet to be established with the financial assistance of CPCB.	March, 2012
7.	UPPCB should ensure compliance of pollution control arrangement guidelines issued by CPCB for stone crushers and time bound action plan should be prepared	<p>More than 90% units have installed APCS as per EPA 1986, as wind breaking walls (8 to 10 ft.), covered by Tin Shed (primary & secondary jaw crushers), water sprinklers and trees plantation in side the premises.</p> <p>To implement the provision of EPA, the UPPCB has taken strict action and issued closure orders to 24 units, show cause notices have been issued to 09 units and further 09 stone crusher for Legal Action. Random inspection and air monitoring is being carried out by the UPPCB.</p>	March, 2012

B: Long term action points

ISSUES REGARDING STONE CRUSHERS IN SINGRAULI AREA DISTRICT SONEBHADRA

Sl.No.	Action Points	Compliance Status	Time Target
1.	Wind breaking walls (height > 15 ft) will be provided along with dust suppression system.	The Stone Crushers Association has demanded one year time for the same. The Association has also requested that the height of wind breaking walls should be prescribed approx.10-12 for safety point of view and more high walls will damage during the mining.	Jan.2012
2.	No new stone crusher nor any capacity expansion for existing stone crushers shall be allowed.	UPPCB is not issuing No Objection Certificates to New Units.	Complied
3.	Installation of chute or closed conveyor belt shall be ensured for dust control during loading/unloading operations.	The one year time has been demanded for installation of chute of closed conveyor belt by the Stone Crushers Association. It was discussed in the meeting of Review Singrauli Action Plan held on 10.01.2011 that chute is not economically viable for these units.	March, 2012

Correction from RO sonbhadra

First draft for comments, suggestion, additions

Note on Expert Committee visit to Sonbhadra District, U.P. (13th&14th July 2011)

Background

Considering, the concerns shown by National Commission for protection of Child Rights regarding the problem of air and water pollution and water resource depletion due to stone crushing and related activities in Sonbhadra District, U.P. CPCB constituted an Expert Committee to study the environmental problems due to stone crushers and related activities in Sonbhadra District, U.P. and to suggest preventive and mitigative measures.

During the first meeting of the Expert Committee, it was decided that Expert Committee will make a 2 day visit to the stone crusher area in Sonbhadra District, U.P. The visit was made from July 13 -14, 2011 and involved the following officials:

1. Mr. U. N. Singh, AD & I/c PCI (SSI), CPCB / Member, Expert Committee
2. Mr. M. Q. Ansari, AD & I/c CPCB ZO-North, CPCB / Member, Expert Committee
3. Mr. M. J. Parvez, Director/Gr.Head (Env. Man), NPC / Member, Expert Committee
4. Mr. M. A Patil, Director, Res. Consn. & Management, FICCI / Member, Expert Committee
5. Mr. Kalika Singh, I/c UPPCB, Sonbhadra Regional Office / Member, Expert Committee
6. Mr. Pankaj Yadav, AEE, UPPCB, Sonbhadra Regional Office
7. Mr. Ankush Tewani, AEE, CPCB PCI (SSI), CPCB

General information about problem / the area visited

As on date 264 stone crushers are situated across various areas of Sonbhadra District namely Dalla, Billi, Obra, Chopan Bardia, Sundariya Road. The Expert Committee visited Dalla stone crusher cum mining area in which more than 70 % of the total stone crushers of Sonbhadra District are situated. As informed, the Dalla stone crusher cum mining area is spread on about 652 acre and the stone mines are in equal number to stone crusher to supply the stone boulders. The depth of mining in the area is limited upto 50 feet. The Stone crusher units of the area either rely on ground water wherever possible for operating the (wet) dust suppression system or on the water arranged through tankers which is obtained from near-by sources.

General features of the area are presented below:

Features	Name	Geographical Location/Distance from Stone crusher cum mining area boundary
Rivers	River Sone	East, 3 Kms
	River Rihand	West, 8 Kms
Roads/ Highways	State Highway No. 5/ Varanasi – Shakti Nagar Highway road	East, Along the boundary of stone crusher cum mining area
	Billi-Obra road	Bisecting the Stone crusher cum mining area
Village/ Settlements	Obra	North West, 5 to 6 Kms
	Around 50 – 60 Settlements on Billi- Obra road	On the either side of the road, Around 0.3 – 0.5 Kms
	Around 10-15 Settlements of villagers employed in stone crusher units	Scattered between the agricultural fields
Others	Agricultural and empty fields covering reasonable piece of land/ area	At the edge of stone crusher cum mining area.

Observations regarding Stone crusher cum mining area

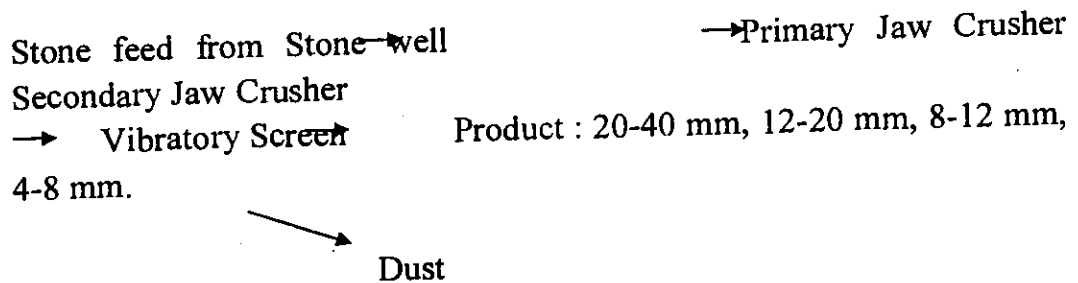
1. None of the stone crusher units were found operational during the visit due to power cut.
2. Partial dust containment system in the form of metal sheet enclosures were found provided in most of the stone crusher units but it was generally limited to covering the screens that too not to full extent in most cases.
3. Almost all the Stone crusher units in the area having wind breaking walls but the height of the wind breaking walls are about 6 ft. to 12 ft.
4. Green belt along the periphery of the stone crushers was found to be absent in the stone crusher units of the area. However, one unit located at the fringe of the area (M/s Raza Sewa Samiti) was shown to the Expert Committee team which was having adequate green belt.
5. Facilities for regular cleaning and wetting of the ground within the premises was found absent in the stone crusher units. However, the unit located at the fringe of the area (M/s Raza Sewa Samiti) shown to the Expert Committee team was found having facility for sprinkling water all around the premises.
6. Neither the link/ approach roads of the stone crusher area nor the road within the premises of the stone crusher units were found properly metalled.
7. Blasting activities were also not carried out during the visit.

Specific observations regarding the two stone crusher units visited

Unit No. 1: M/s Raja Sewa Samiti, Bari-dala Sonbhadra (Production Capacity: 20 tonnes per hour), Dalla,

The unit was non-operational due to power cut but the operation was demonstrated with the help of DG set.

1. Process:



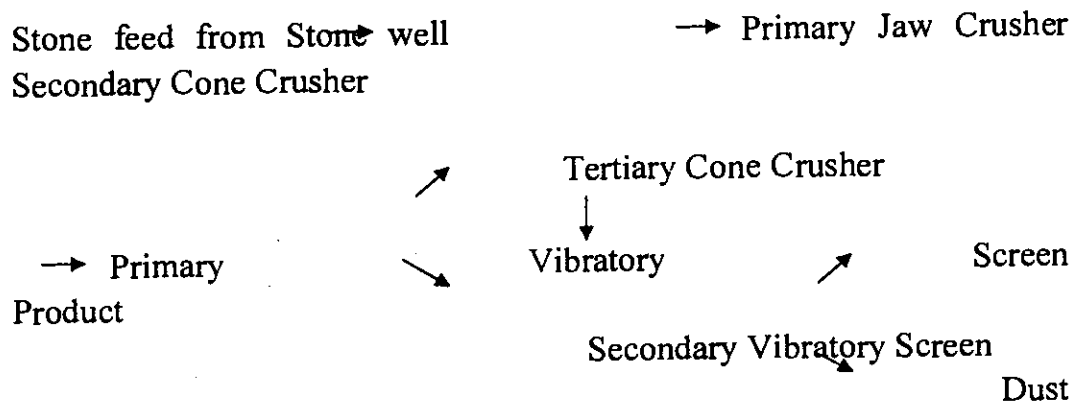
2. Dust containment system in the form of metal sheet enclosures were provided at three sides of vibratory screen but one side was found permanently open. No dust containment system was provided at primary and secondary crusher discharge area. (Wet) Dust suppression system was provided at appropriate places except for two important places - primary and secondary crusher discharge chute.
3. Wind breaking walls and green belt were present.
4. Sprinkler arrangement all around the premises to spray water from a height of 5 to 7 meters for regular wetting the ground was provided.
5. The road inside the premises was not metalled.

Unit No. 2: M/s Vijay Express Way Engineering Ltd. (Production Capacity: 100 tonne per hour), Dalla, Sonbhadra

The unit is based on German design where Dry system i.e. bag filters, were supposed to be incorporated as air pollution control equipment and the dust emanating from various sources was supposed to be sucked through ID fan for conveying it to bag filter. The unit has only adopted the design of the stone crusher unit and not the method to control air pollution.

The unit setup was funded by NHAI and it provides products for the roads being constructed by them. It was non-operational since last three months as there was no requirement of stone products. The following were the salient observations regarding the stone crusher unit: /

1. Process:



1. The crusher and screens design was such that these were almost covered. Spray nozzles for (wet) dust suppression system was provided for all equipments at appropriate places.
2. Wind breaking walls and green belt were absent.
3. Sprinkler arrangement to spray water for regular wetting of the ground through own water tankers.
4. The road inside the premises was not metalled.

Discussion with Stake holders

Various facts and suggestions were put forward before the Expert Committee by various stake holders like Stone crusher association (SCA), Mining officer, Forest officer and PWD during the detailed interaction/ discussion:

1. Production capacity of maximum number of stone crushers present in this region varies between 30 - 50 tonnes per hour.
2. During the operation of stone crusher units, a cloud of dust covering the region can be seen.
3. In case of the implemented (wet) dust suppression system, the size, type of the nozzle as well as rate of application of water was decided by stone crusher owners and not with help of some consultancy. Sometimes, the products get rejected .

4. SCA expressed that Dalla region being a hilly area is associated with the fact of scarcity of water. The Ground water being used for (wet) dust suppression system in the stone crusher units is unavailable during three peak summer months: April, May and June, hence, the possibility of ground water recharging and rain water harvesting should be exploited to raise the ground water table.
5. SCA expressed that wind breaking walls gets damaged because of vibrations originated from blasting operations performed in mines as the blasting and stone crushing operations are being performed quite in close vicinity of each other. Therefore, other options should be explored.
6. SADA (Shakti Nagar Area Development Authority) has sanctioned Rs 10.00 lacs for installation of one model plant of air pollution control system in one stone crusher on the dry scrubbing technology. SCA expressed that the replacement of dust suppression system with dry scrubbing technology should be done, provided, that the alternative is techno-economically feasible.
7. Link road will be developed by SADA in stone crusher area.
8. Regarding Green belt development, Forest Officer expressed the willingness to give plants at government rate and further ready to provide guidance regarding species which would be most suited considering the scarcity of water and maximum foliage for entrapment.

Recommendations/ Suggestive Measures for consideration:

Stone crusher units:

1. Dust containment system in the form of four sided metal sheet enclosures down to the ground level and with roof should be provided for both the crusher equipment / crusher discharge areas and for the screens except for leaving one opening for the conveyor belt. For maintenance of both the equipments, a proper door type opening of required size with opening and closing arrangement in one of the four sides should be provided.
2. Adequate dust containment system should be provided at transfer points.
3. The height of the free fall of product from the conveyor belt i.e. discharge point to the stock pile should be kept minimum / less than 15 ft. and further four sided metal sheet enclosures for enclosing the stock pile should be provided of the same height as that of the discharge point (one

side to be provided with proper opening and closing arrangement for loading trucks)

4. The road inside the premises should be metalled.
5. The stone crusher premises should be cleaned regularly to avoid re-entrainment of settled dust.
6. All the stone crusher units should provide 15ft high boundary walls / metal sheet barricading.
7. SPM concentration for compliance of the E (P) Act, 1986 standards by an individual unit should be checked at individual unit's boundary.

Stone crusher area:

The approach/link roads should be metalled.

Mining area:

The mining activity should not go beyond a certain depth and in all case it should be restricted to 20 feet above the water table.

Green Belt Development:

While green belt development is a positive measure, but if not existing, it cannot be complied within a short time frame thus implementation of this by an enforcement agency becomes difficult. Therefore, it should be taken as an auxiliary control measure.

VISIT report By Mr M A Patil, Director, FICCI

Terms of Reference :

- To study the problem of air and water pollution and water resource depletion due to stone crushing operation and related activities in Sonbhadra District and Singrauli region.
- To suggest measures to prevent and control air and water pollution and prevent depletion of water sources due to stone crushing and related activities in Sonbhadra District and Singrauli region to minimize impact on humans, especially children, animals and agriculture including better / cleaner production / air pollution control technologies.

Dates of field Visits : 13 – 14th July, 2011

The stone raw material is mined from open cast stone mines below ground level on lease basis. The stone is of a good quality black stone (Granite type). The selling value of typical product stone gravel of 20 mm size is about Rs. 1200 per tone at crusher site.

Environmental Issues Observations :

Substantial dust emissions were observed in the stone crusher cluster area, even due to movement of transport vehicles on the dusty roads (crusher units not operating).

The emissions could be classified into three types, primary, secondary and tertiary emissions.

Primary Emissions

These are emissions of fine dust for the process of crushing. During the stone crusher in operation, fine dust gets generated from various points like unloading of raw material, at the primary jaw crusher, at transfer points wherever crushed stones fall from one belt conveyor to other, the emissions from the secondary crushers and at the points of final discharges to stock piles.

Secondary Emissions

Secondary emissions are those where the fine dust (settled on ground or on stock piles or equipments) get air borne due to wind movement. Most of the stone crushers in the cluster store their crushed stone products of different sizes in

open stock piles. The fine dust generated during crushing operation also gets into the stock piles along with the crushed stone. Especially the finer product "dust" of size less than 6 mm contains large percentage of fine particles. As this product is also stored in open stock piles, whenever wind blows (especially during strong wind conditions), substantial fine dust can get air borne from these stock piles.

Tertiary Emissions

These are the emissions caused due to movement of vehicles on the kachha (unpaved) roads during which the fine dust settled on the road get airborne. Every time a vehicle moves on the road the dust would get airborne. The fine dust (less than 10 micron) gets airborne and it remains in suspension for a long time (several hours).

Existing Environmental Controls adopted by the Stone Crusher

Most stone crushers have installed partial enclosures for dust containment and water spraying arrangements with nozzles for dust suppression purposes. However, the existing controls are not found to be adequate as discussed below :

1. The type of nozzles deployed for spraying water, the quantity of water sprayed per minute and the locations of the sprays is not found to be adequate and needs to be modified.
2. The existing pumps used for supplying water to the dust suppression system are not dedicated only for these purposes, but the same pump is used for supplying water to other purposes and hence adequate pressure cannot be maintained at the nozzles of all times for effective dust suppression.
3. On line, water filtration arrangement to clean the dust particles from the water is not provided. As a result the dust particles in water can lead to frequent blocking / choking of the holes in the nozzles and hence affect the spray formation.
4. There is no water meter and totalizer to keep a record and check on the water quantity sprayed during the crusher operation. In the absence of such information, it is difficult to either prove or disprove whether the water sprays are operated throughout the stone crusher operation period.

5. The containment enclosures provided are only partial in nature. Though a GI sheet enclosure is provided for equipment like the vibratory screen, there are a number of large openings in the side walls, especially at the places where belt conveyor enters and leaves the enclosure. Such partial enclosures are ineffective and cannot contain the fine dust within the enclosure and the dust would escape through the openings.

6. Discussions regarding "Constraints faced if any in Operating Dust Suppression Systems" :

Discussions were held with the Stone Crusher Association officials on the operability of the water spray type dust suppression system and limitations if any. During dust suppression, the fine dust which gets suppressed, it remains within the crushed stone product and it forms a coating on the stone gravels. It was discussed with crusher owners whether there are limitations to sell such "dust coated gravels" and it was reported that there are no such limitations. However, as regards to availability of water for dust suppression, it was reported by crusher owners that water is not available especially during the 2-3 months during summer times.

1. Most stone crushers have installed bore wells within their premises with submersible pumps as it is the primary source of water. As over 300 such bore wells may be in operation in the cluster, a substantial amount of water is extracted from ground in the cluster. However, the natural rain water recharging of the ground water may not be sufficient enough to replenish the ground water levels. As a result, the water level is going down every year and therefore, water may not be available during summer months as reported. In addition, some of the stone mines are more than 50 Meter deep, and hence the ground water from nearby areas may seep into the deeper mine pits by gravity which may lead to drying of shallow bore wells (less than the depth of adjacent mine pits).

Possible Option for Controlling Primary Emissions :

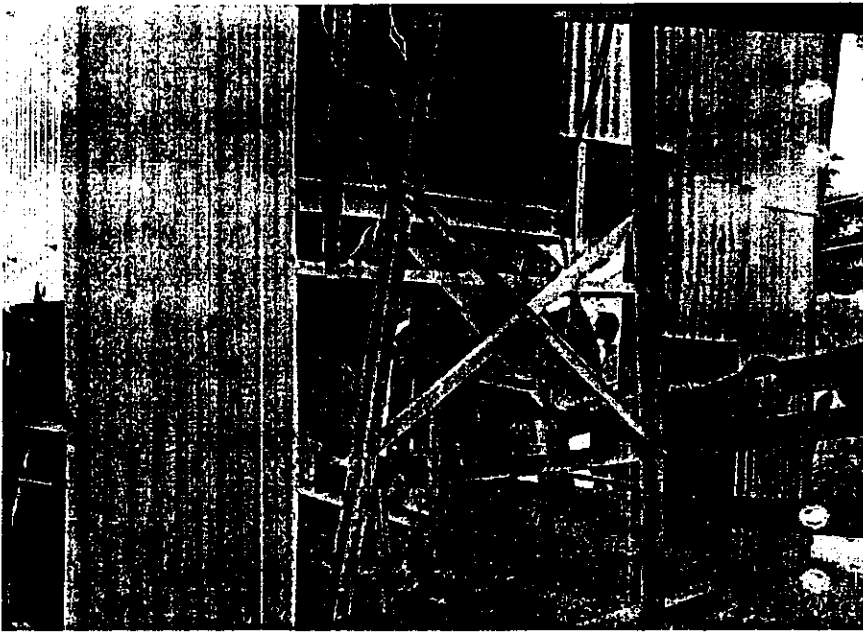
The primary emissions from the stone crushers could be controlled in two ways, either by suppressing dust at the source itself by spraying water or by extracting the dry dust with the help of Induced Draft Fans (ID fans) from various dust generation locations and capturing the dust in bag filter. In both

the cases an effective enclosure of key dust generating locations is anyway required as the pre-requisite.

In terms of techno-economic viability, the dust suppression systems are cheaper and hence easily affordable to the stone crusher, but it requires water for spraying throughout the crusher operation periods including summer time. The rain water stored in the mine pits, could be retained (instead of pumping it out to nullah) and this water could be used for dust suppression. A Centralized water pumping system/ network (from mine pits to crusher units) could be installed, with a separate storage tank in each unit, which could be used dedicatedly for dust suppression. A separate pump and filter and metering system be installed by each unit.

The dry extraction cum bag filter type control system is comparatively expensive and also has higher operating cost in terms of electricity consumption by the motor for operating the ID Fans (about 15- 20 KW extra electricity requirement).

Photographs of Stone Crushers in Sonbhadra district cluster

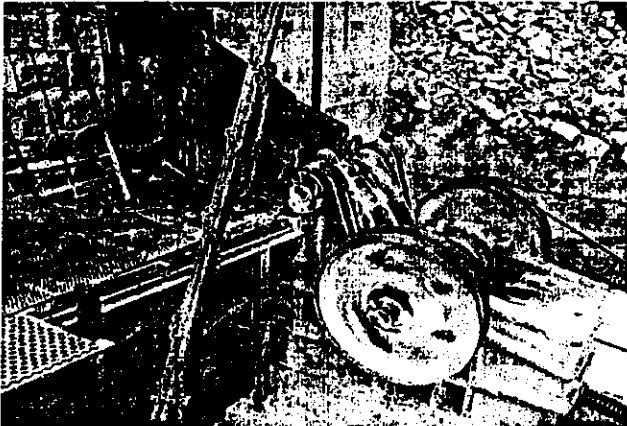


Typical Partial Enclosure of Vibratory screen – Many large openings



Fairly Adequate enclosure of vibratory screen

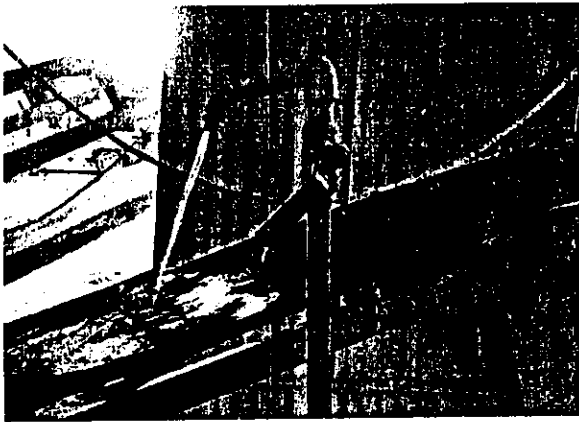
Typical Water Sprays in practice :



Spray at Primary Jaw crusher inlet chute -- improper nozzle, inadequate water pressure/ quantity, hence ineffective

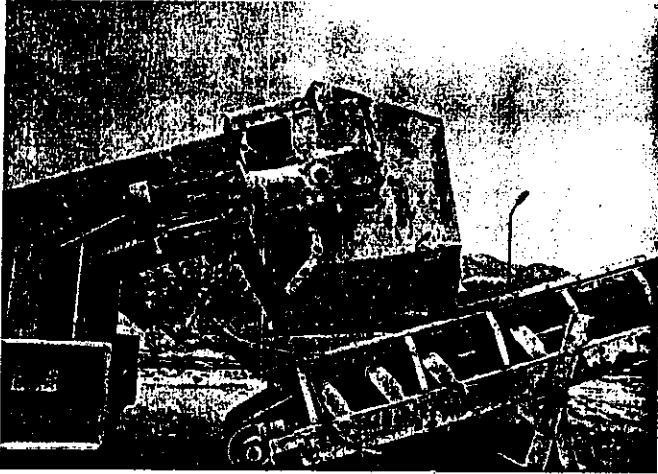


Spray at Secondary Jaw crusher- improper nozzle, inadequate water pressure/ quantity, hence ineffective



Spray (without nozzle) on Belt conveyor from screen- No spray, more water makes the product wet, but dust not effectively suppressed, hence improper

Typical Good Enclosures in Europe make crusher (METSO company) :

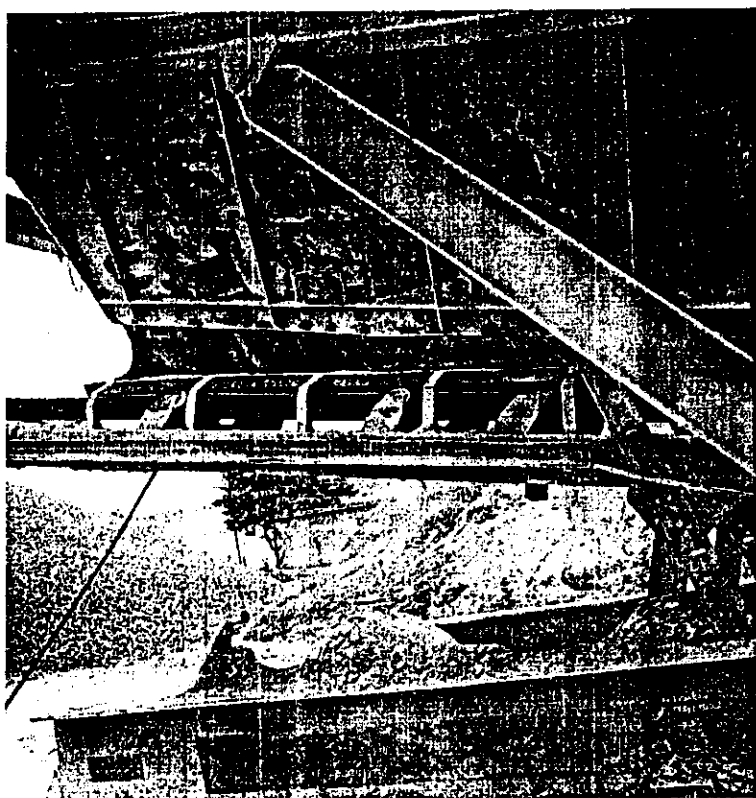
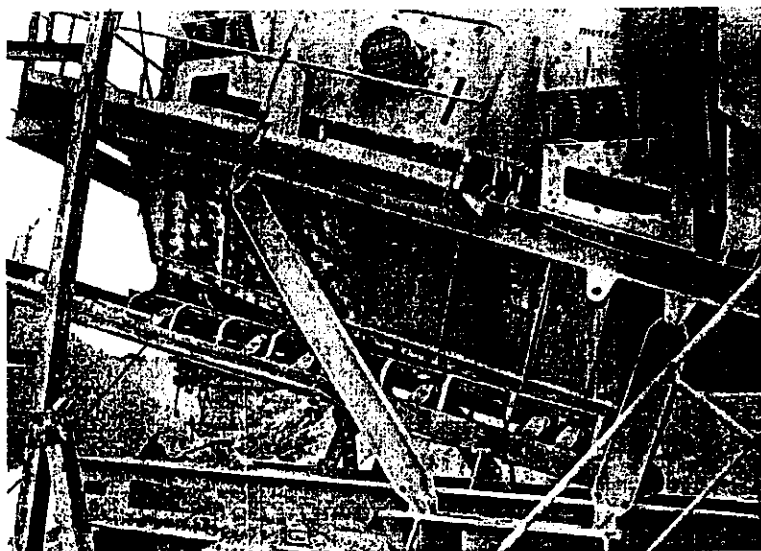


Enclosure at Transfer point (to enable dust extraction) – belt to belt conveyor



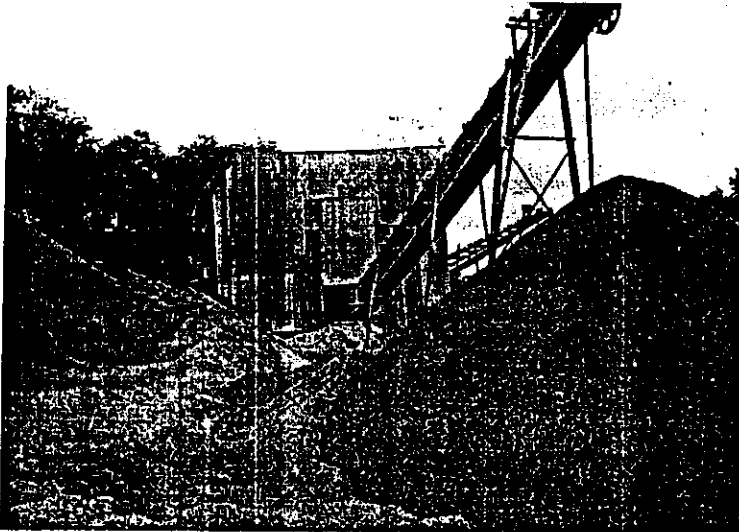
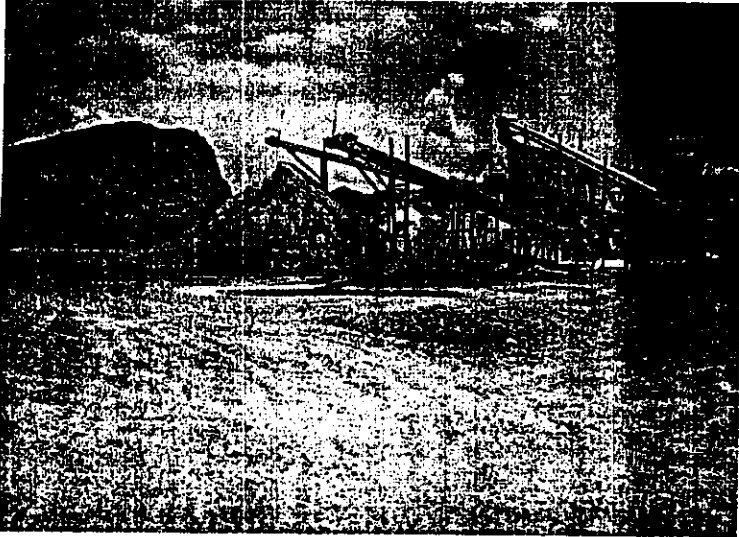
Enclosure at Vibratory screen discharge to belt conveyor (with provision for dust extraction)

Rubber Skirting at Vibratory Screen discharge on belt conveyor :



Air tight rubber skirting arrangement at vibratory screen discharge on belt conveyor

Typical Stock piles in stone crushers and dusty approach roads :



Fines (less than 6 mm) also stored in open heaps – prone to secondary emissions during wind blowing

Typical Rain water storage in the Stone mines :

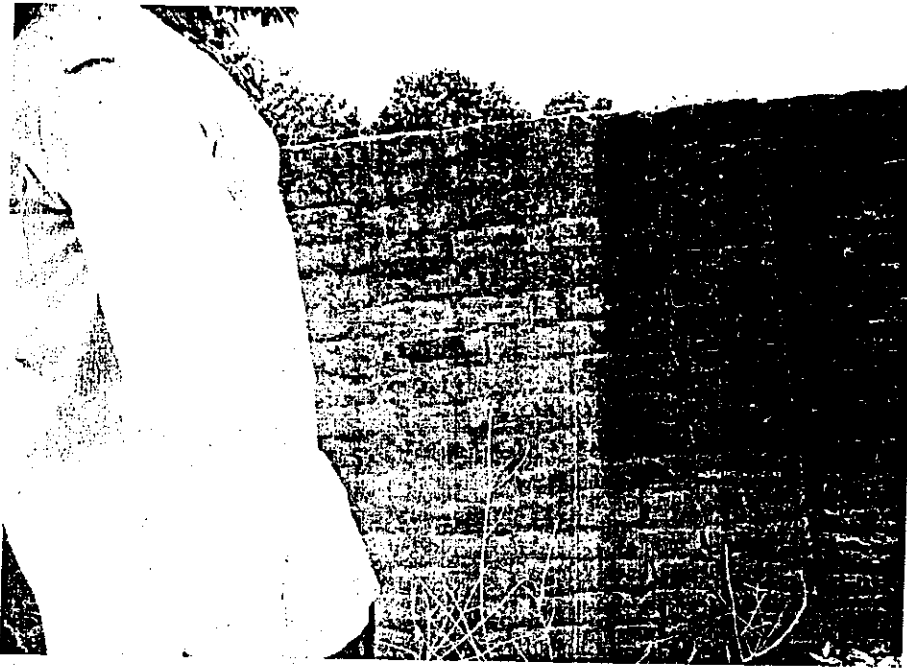


Rainwater filled in mine



Water pumped out of mines and drained to nullah/river

Boundary Wall around a stone Crusher :



A: Short term action points**Issues regarding the Government of U.P. and Central**

Sl. No.	Action Points	Compliance Status	Time Target
1.	To ban the use of recycled plastic bags.	The State Govt. has imposed ban the use of recycled plastic of below 40 microns in the radius of 200 meters from the River bank.	Complied
2.	Safe Drinking Water Supply should be provided in the affected villages Govindpur, Myorepur, Labhari, Kamaridar, Garbandha, Kushmha and Renukoot etc.	U.P. Jal Nigam has been requested to make arrangements for supplying safe drinking water to the Villagers. The work is in progress.	March, 2012

B: Long term action points

Issues regarding the Government of U.P. and Central

Sl.No.	Action Points	Compliance Status	Time Target
1.	Construction of Varanasi-Shaktinagar Highway and Roads in the Stone Crusher area of Dala	Under construction and further tender process for 2 to 4/6 line construction under process.	March, 2014
2.	Development of M.S.W. Municipal solid Wastes sites to be done by local bodies.	Project proposal is under preparation and installation of MSW facilities will be carried out after approval of Govt. of India.	March, 2012
3.	Supply of LPG Gas to resident of Villages to avoid the de-forestation.	Concerned agencies have been requested to submit the proposal.	March, 2012
4.	District Sonbhadra of U.P. is power hub of India and the electric supply is in very poor condition. The steps are required to strengthen the electric supply to the residence of Distt. Sonbhadra.	State Govt. has been requested to allow the Distt. Sonbhadra as 24 hour electric supply zone.	March, 2012
5.	Treatment facility for Bio-Medical Waste	The Govt. Hospitals are the members of CBWTF Varanasi (SNG) and Pvt. Hospitals are member of CBWTF (CPC) Varanasi. The Factory's Hospitals have installed their own facility.	Complied.
6.	Remedial Action Plan for de-siltation of Rihand Reservoir and other water bodies.	The State Irrigation department has been asked to submit the detailed project report for de-siltation of Rihand Reservoir.	March, 2012
7.	In-situ bio-remediation of sewage	All the local bodies of the area have been requested to install the STP in their respective area.	March, 2015
8.	Present status and future plan for green belt development as per the norms fixed in the Master Plan of the area.	More than 50% area of Distt. Sonbhadra is covered under Forest, Gardens and shrubs. It has been decided to strengthen Green belt in Stone Crusher Area by Shaktinagar Special Area Development Authority.	March, 2013
9.	Action plan for promotion of Bio-compost and Bio-Fertilizer alongwith the chemical fertilizer to minimize unutilized chemical fertilizer run-off into the natural water resources through Govt. policy.	19,702 MT Chemical fertilizer have been utilized in the financial year 2007-08. The Agriculture Deptt., Govt. of U.P. has been requested to formulate the policy for promotion of Bio-compost and Bio-Fertilizer alongwith the chemical fertilizer to minimize unutilized chemical fertilizer run-off into the natural water resources.	March, 2013

A; Short term action points

Issues regarding U.P. Pollution Control Board

Sl. No.	Action Points	Compliance Status	Time Target
1.	Regular monitoring of surface water sources and Ground water.	UPPCB is regularly monitoring of surface water sources and Ground water.	Complied
2.	Regular monitoring of Industrial E.T.P. and APCS.	Quarterly inspection and sampling is being carried out by UPPCB.	Complied
3.	Details of Public awareness and training programme.	UPPCB is organizing the Public awareness programmes with the cooperation of Director Environment of U.P. Govt. under ' District Plan '. The officials of UPPCB are participating in the Training Programmes organized by CPCB/Other Environmental Agencies/Abroad through MoEF.	Complied
4.	As per letter dt. 20.12.2010 of CPCB regarding Monthly monitoring Committee of Action Plan in Chairmanship of District Magistrate.	The Committee have been notified vide letter No. 25/Singrauli Action Plan/2011 dt. 07.01.2011 in Chairmanship of The District Magistrate, Sonebhadra for critically polluted area Singrauli and the meeting had already been held on 14.01.2011.	Complied

B: Long term action points**Issues regarding U.P. Pollution Control Board**

Sl.No.	Action Points	Compliance Status	Time Target
1.	To install Automatic Ambient Air Quality monitoring stations at sensitive places in the area.	The Financial assistance from CPCB has not yet been received as the decided in the Review meeting of Singrauli Action Plan held on 18.01.2010.	March, 2012
2.	To shift the Stone Crusher Units situated along Road side in Dala, Distt. Sonbhadra to suitable site with the help of State Govt./Central Govt.	The suitable site is not available so the Distt. Administration has decided to construct 15' High Wall along the road side of Varanasi-Shaktinagar Highway in the Stone Crusher area of Dala.	March, 2013
3.	Action plan for GIS-GPS system for pollution sources monitoring.	GIS-GPS system for pollution sources monitoring will be installed with financial assistance of CPCB.	March, 2013
4.	GIS-GPS based tracking system for transportation of hazardous waste.	GIS-GPS based tracking system for transportation of hazardous waste will be installed with financial assistance of CPCB.	March, 2013
5.	Action point/strategy for health impact assessment.	The work of detailed health impact study will be awarded to the expert agency by the Board.	March, 2013

LIST OF INDUSTRIES WHICH ARE ACHIEVING NORMS (OPRS)

क्षेत्रीय कार्यालय, सोनभद्र में स्थित प्रमुख प्रदूषणकारी उद्योगों, जो कि अपना उत्स्रवाह किसी नदी या झील में निस्तारित करते हैं, के प्रदूषण नियंत्रण की दिनांक 30-07-2011 तक की स्थिति-

STATUS OF GROSSLY POLLUTING INDUSTRIES DISCHARGING EFFLUENTS INTO WATER COURSE INCLUDING RIVERS AND LAKES AND THE EFFLUENTS HAVING A BOD LOAD OF 100 KG/DAY OR MORE

(OPERS-ETP Installed & Achieving Standards, OPRNS-ETP Installed But Not Achieving Standards, UCL-Unit Closed, NES-ETP Not Installed, PU-Private Sector, CU-Central Unit, SU State Unit, CP-Co-operative Unit)

Sl. No.	Name and address of Industry	Sector	Type	Date of Inspection	Date of commencement of Industry	Effluent Recipient Water Body or lakes		Concerned Recipient River Effluent				BOD and other pollution load		ETP Status
						Name	Distance from Industry	Name	Distance from the discharge point of the Recipient Water Body	Quality	Quantity in KLD	Before treatment Kg./D.	After treatment Kg./D.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.	M/s. Hindalco Industries Ltd., Renukoot, Sonebhadra	PU	Metallurgy	18.07.11	1962	Rihand	12 Kms	Rihand	8 Kms	Sample dtd. 25.04.11 pH - 7.12 BOD - 5.0 mg./L COD - 30.7 mg./L S.S. - 36.0 mg./L Fluoride- 2.01 Iron- B.D.L.	5060	5920	153.9	OPRS
2.	M/s. Kanoria Chemicals Renukoot, Sonebhadra	PU	Caustic Soda stable bleaching powder Aluminium Chloride CPW	18.07.11	1964	Rihand	4 Kms	Rihand	3 Kms	Sample dtd. 25.04.11 pH - 8.32 BOD - 5.0mg./L COD - 23.0 mg./L S.S. - 29.0 mg./L Fluoride- 1.21	650	1360	40.8	OPRS

Contd....p/2.

(2)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3.	M/s. NTPC, Shaktinagar Sonebhadra	CU	Thermal Power	20.07.11	1982	Rihand Reservoir	2.5 Kms	Rihand	6 Kms	Sample dtd. 27.04.11 pH - 7.38 BOD - 14.0 mg./L COD - 116.0 mg./L S.S. - 67.0 mg./L Floride- 1.99 Nikil - 0.010 Jink - 0.064 Iron - 1.21	3302000	2000	60	OPRS
4.	M/s. NTPC, Rihand Nagar Sonebhadra	CU	Thermal Power	26.10.10	1988	Rihand Reservoir	5 Kms	Rihand	4.5 Kms	Treated Effluent Recycled	-	-	-	OPRS
5.	M/s. Hindalco Industries, (Power Division), Renusagar, Sonebhadra	PU	Thermal Power	20.07.11	1968	Rihand Reservoir	0.5 Kms	Rihand	Recycling inside premises	Sample dtd. 27.04.11 pH - 7.53 BOD - 4.0 mg./L COD - 20.0 mg./L S.S. - 27.0 mg./L Floride- 6.05 Nikil - 0.021 Jink - 0.064 Iron - 0.08	Recycling and Reuse	900	27	OPRS
6.	M/s Anpara Thermal Power Station, (A & B), Anpara, Sonebhadra	SU	Thermal Power	20.07.11	1987	Rihand Reservoir	1 Km	Rihand	10 Kms	Sample dtd. 27.04.11 pH - 7.60 BOD - 8.0 mg./L COD - 62.0 mg./L S.S. - 60.0 mg./L Floride- 6.45 Nikil - 0.024 Jink - 0.099 Iron - 1.39	3728640	3542.4	232.03	STP, OPRS, ETP Partial

Contd....p/3.

(3)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
7.	M/s Obra Thermal Power Station (A & B), Sonebhadra	SU	Thermal Power	20.07.11	1968	Renu/Sone River	1 Km	1 Km	1 Km	06.10.10 pH - 7.23 BOD - 64.0 mg./L COD - 416.0 mg./L S.S. - 164.0 mg./L	2796480	---	No Treatment	No STP & ETP
8.	M/s. Hitech Carbon Renukoot, Sonebhadra	PU	Carbon Black	18.07.11		Rihand	7 Kms	Rihand	7 Kms	25.04.11 pH - 7.15 BOD - 2.0 mg./L COD - 11.5 mg./L S.S. - 26.0 mg./L Flouride- 1.95mg./L Iron - 0.45				OPRS

ANNEXURE -VI

ANALYSIS REPORT OF BALLIA NALA

Sl. No.	Date	Analysed Parameters										
		Colour	Odour	pH	BOD	COD	TSS	TDS	TS	Cr ⁺⁶	Ni	
1.	09.03.10	Grey	Light Sewage	7.81	49	480	126	402	528	-	-	
2.	08.04.10	Blackish Grey	Not Specific	7.89	120	480	353	828	1181	Nil	0.07	
3.	13.05.10	Blackish Grey	Not Specific	7.67	150	720	372	910	1282	-	-	
4.	13.07.10	Blackish Grey	Not Specific	7.59	110	368	164	408	572	-	-	

ANALYSIS REPORT OF DONGIA NALA

Sl. No.	Date	Analysed Parameters										
		Colour	Odour	pH	BOD	COD	TSS	TDS	TS	Fluoride	Ni	
1.	13.07.10	Light Muddy	Odourless	7.84	10	44	88	320	408	-	-	
2.	26.05.10	Colourless	Odourless	7.77	4.3	20	33	268	301	-	-	
3.	31.03.10	Earthy Muddy	Pungent smell	10.16	6	88	112	406	518	0.72	-	

ANALYSIS REPORT OF MURDHAWA NALA

Sl. No.	Date	Analysed Parameters										
		Colour	Odour	pH	BOD	COD	TSS	TDS	TS	Cr ⁺⁶	Ni	
1.	08.04.10	Light Grey (Turbid)	Not Specific	6.89	46	168	156	387	543	Nil	0.08	
2.	13.07.10	Colourless (Suspended particle present)	Odourless	7.22	18	76	62	321	383	-	-	
3.	26.05.10	Grey (Turbid)	Mild Sewage	9.26	50	384	162	415	577	-	-	

ANALYSIS REPORT OF RIHAND RESERVOIR

Sl. No.	Date	Analysed Parameters										
		Colour	Odour	pH	BOD	DO	MPN	TOTAL MPN	NITRATE	COLOURIMETRY		
1.	8.3.10	Colourless	Odourless	8.16	2.2	8.1	1400	2100	1.8	-		
2.	8.4.10	Colourless	Odourless	6.28	1.2	-	-	-	0.80	-		
3.	7.6.10	Colourless	Odourless	7.98	2.3	7.0	1600	2400	0.93	1.33		
4.	6.7.10	Colourless	Odourless	7.90	2.4	6.8	1700	2400	0.95	1.37		

Analysis results of Rihand Reservoir for the month of April, 2010 under MINARS Project for testing of heavy metals and Pesticides are as follows:-

T. BHC mg/L	Alkalinity mg/L	Total Fixed Solides mg/L	T.S.S. mg/L	Fluoride mg/L	Sulphate mg/L	Sodium mg/L	Potassium mg/L	Zn	Iron
252.69	112	102	38	0.91	6.37	8.0	10.0	0.050	1.60

DONGIYA NALA, RENUKOOT, SONBHADRA

Sl. No.	Month	Analysed Parameters											
		pH	BOD (mg/L)	COD (mg/L)	TSS (mg/L)	TDS (mg/L)	TS (mg/L)	F (mg/L)	Ni (mg/L)	Cl (mg/L)	Zn (mg/L)	Fe (mg/L)	Pb (mg/L)
1.	Jan., 2011	7.94	6.00	30.0	48.0	284.0	332.0	-	-	-	-	-	-
2.	Feb., 2011	7.34	5.2	40.0	46.0	326.0	372.0	-	-	-	-	-	-
3.	Mar., 2011	7.34	7.0	24.0	42.0	322.0	364.0	-	-	-	-	-	-
4.	Apr., 2011	7.99	7.2	48.0	56.0	310.0	366.0	0.326	BDL	BDL	0.14	0.10	0.72
5.	May, 2011	7.86	28.0	104.0	72.0	340.0	412.0	-	-	-	-	-	-
6.	June, 2011	7.43	6.0	28.0	22.0	288.0	310.0	-	-	-	-	-	-
7.	July, 2011	7.48	6.0	32.0	22.0	296.0	318.0	-	-	-	-	-	-

MURDHAWA NALA, RENUKOOT, SONBHADRA

Sl. No.	Month	Analysed Parameters											
		pH	BOD (mg/L)	COD (mg/L)	TSS (mg/L)	TDS (mg/L)	TS (mg/L)	F (mg/L)	Ni (mg/L)	Cl (mg/L)	Zn (mg/L)	Fe (mg/L)	Pb (mg/L)
1.	Jan., 2011	11.8	52.0	256.0	112.0	310.0	422.0	-	-	-	-	-	-
2.	Feb., 2011	7.60	30.0	104.0	52.0	350.0	402.0	-	-	-	-	-	-
3.	Mar., 2011	8.27	56.0	224.0	68.0	338.0	406.0	-	-	-	-	-	-
4.	Apr., 2011	6.88	12.5	64.0	58.0	318.0	376.0	0.538	0.23	0.01	0.59	0.63	0.92
5.	May, 2011	8.24	30.0	80.0	85.0	340.0	425.0	-	-	-	-	-	-
6.	June, 2011	7.71	13.0	72.0	56.0	286.0	342.0	-	-	-	-	-	-
7.	July, 2011	7.20	12.0	64.0	84.0	288.0	372.0	-	-	-	-	-	-

BALIA NALA, SHAKTINAGAR, SONBHADRA

Sl. No.	Month	Analysed Parameters											
		pH	BOD (mg/L)	COD (mg/L)	TSS (mg/L)	TDS (mg/L)	TS (mg/L)	F (mg/L)	Ni (mg/L)	Cl (mg/L)	Zn (mg/L)	Fe (mg/L)	Pb (mg/L)
1.	Jan., 2011	-	-	-	-	-	-	-	-	-	-	-	-
2.	Feb., 2011	7.78	7.5	48.0	46.0	280.0	326.0	-	-	-	-	-	-
3.	Mar., 2011	7.42	21.0	144.0	52.0	283.0	335.0	-	-	-	-	-	-
4.	Apr., 2011	7.26	40.0	256.0	86.0	302.0	388.0	1.26	0.11	-	-	4.16	0.5
5.	May, 2011	7.82	24.0	144.0	68.0	304.0	372.0	-	-	-	-	-	-
6.	June, 2011	8.03	42.0	248.0	86.0	302.0	388.0	-	-	-	-	-	-

ANALYSIS RESULT OF GROUND WATER

Sl. No.	Date	Place	Analysed Parameters							
			pH	Ca	Mg	Hardness	Chloride	Alkalinity	TDS	Floride
1.	29.07.10	Primary School Govindpur.	7.21	54.0	20.0	74.0	17.0	212.0	292.0	Not detectable
2.	29.07.10	Near House of Vill. Kusumaha.	6.85	96.0	126.0	232.0	83.0	244.0	328.0	0.90
3.	29.07.10	Infront of Panchayat Bhavan, Vill. Kusumaha.	7.36	92.0	82.0	174.0	56.0	192.0	342.0	0.460
4.	29.07.10	Near Pokhra of west of pokhra Ramvilas.	7.76	58.0	50.0	108.0	27.0	116.0	256.0	0.84
5.	29.07.10	Infront of House of. Shri Kevel under Pepal Tree.	6.79	72.0	118.0	190.0	38.0	198.0	304.0	0.87

The analysis results of Hand Pump samples collected by the Board is as follows:-

Sl. No.	Sampling points of Hand Pumps underground water	Date	Analysed Parameters				
			pH	Iron (mg/L)	Flouride (mg/L)	Mercury (mg/L)	Lindane (ppb)
1	2	3	4	5	6	7	8
1.	Hand Pump India Marka-II - Kushmaha Vill. Renukoot near Ramshakal Ka Pokhras West of Road.	28.07.08	1.37	0.21	2.3	< 0.001	--
2.	India Marka-II - Kushmaha Vill. Renukoot at the residence Gram Pradhan.	27.07.08	1.04	1.95	1.78	0.007	--
3.	India Marka-II 1. Near the House of Chhedi. Saraju, Ramesh. 2. Near the House of Ram Kawal, Pannalal, Madan. 3. Near the House of Ram Shakal, Angad, Pradumn. 4. West of Ram Shakal Ka Pokhara 5. Infront of Vill. Pradhan House.	20.10.08 " " " "					0.04 0.03 0.04 0.03 0.03
4.	India Marka-II 1. Hand Pump Village Khatal near Dongiya Nala 2. Hand Pump Village Labhari	09.03.10 "	6.37 6.61	-	0.98 0.93	-	-

I.S.I. Standards for drinking water (I.S. 10500 – 1983)

Iron mg/L = 0.3

Pestisides = Absent

Mercury mg/L = 0.001

Flouride mg/L = 06 – 1.2

NOTE:- pH is low in the analysis results of hand pumps at Sl.No.1 & 2 as the samples were preserved.

U.P. Pollution Control Board is also monitoring the River Sone in Distt. Sonebhadra. The analysis report of the river quality is as follows:-

Sl. No.	Month	Sampling Points	Analysed Parameters						
			pH	BOD (mg/L)	COD (mg/L)	TSS (mg/L)	TDS (mg/L)	TS (mg/L)	Floride (mg/L)
1.	Jan., 11	U/S	7.86	2.6	18.0	38.0	280.0	318.0	-
		D/S	7.86	2.3	16.0	32.0	278.0	310.0	-
2.	Feb., 11	U/S	7.50	3.0	11.6	30.0	272.0	302.0	-
		D/S	7.68	2.4	9.6	28.0	262.0	290.0	-
3.	Mar, 11	U/S	7.65	3.3	14.0	24.0	286.0	310.0	-
		D/S	6.83	4.5	17.6	28.0	278.0	306.0	-
4.	Apr, 11	U/S	7.42	2.3	12.4	48.0	240	288	0.201
		D/S	7.13	2.6	14.8	52.0	254.0	306	0.320
5.	May, 11	U/S	7.79	2.6	14.8	46.0	278.0	394.0	
		D/S	7.38	2.9	17.1	54.0	288.0	342.0	
6.	June, 11	U/S	7.80	2.8	16.4	42.0	276.0	318.0	
		D/S	7.53	3.2	19.6	48.0	286.0	334.0	
7.	July, 11	U/S	7.49	3.6	16.0	26.0	282.0	308.0	
		D/S	7.78	4.0	19.2	29.0	290.0	319.0	

Ground Water Quality Report for the month of April 2010 under MINARS project

S No	PARAMETER	SAMPLING POINTS					
		Hand Pump Mirzapur Industrial area Mirzapur	Hand Pump IFFCO phulpur near Fazilapur Allahabad	Hand Pump (KCI) near Railway station Renukoot Sonebhadra	Hand Pump Singraulli Industrial Area Near Bus station Shakti nagar Sonebhadra	Hand Pump At Industrial Area Naini Allahabad	Hand Pump At Industrial Area Fatehpur
	Station Number	1757	1759	1760	1761	2469	2470
	Date of sampling	9-Apr	9-Apr	8-Apr	8-Apr	7-Apr	7-Apr
GENERAL PARAMETERS							
1	Total Alkalinity (mg/L)	420	412	152	200	176	772
2	P-Alkalinity (mg/L)	NT	NT	NT	NT	NT	NT
3	Total Fixed Solids (mg/L)	290	215	284	175	247	490
4	Total Suspended Solids (mg/L)	44	36	40	55	35	48
5	Fluoride (mg/L)	1.2	1.4	2.7	2.2	0.9	1.8
6	Sulphate (mg/L)	8.15	35.0	22.2	13.7	9.38	24.6
7	Sodium (mg/L)	10	8	14	16	8	14
8	Potassium (mg/L)	8	7	12	15	9	12
TRACE METALS							
1	Arsenic (mg/L)	NT	NT	NT	NT	NT	NT
2	Nickel (mg/L)	NT	NT	NT	NT	NT	NT
3	Copper (mg/L)	NT	NT	NT	NT	NT	NT
4	Mercury (mg/L)	---	---	---	---	---	---
5	Chromium (mg/L)	NT	NT	NT	NT	NT	NT
6	Cadmium (mg/L)	NT	NT	NT	NT	NT	NT
7	Zinc (mg/L)	0.025	0.027	0.029	0.044	0.026	0.032
8	Lead (mg/L)	NT	NT	NT	NT	NT	NT
9	Iron (mg/L)	0.285	0.268	0.649	0.783	0.276	0.335
PESTICIDE							
1	Total BHC (ng/L)	NT	NT	NT	NT	NT	NT
2	OP DDT (ng/L)	NT	NT	NT	NT	NT	NT
3	PP DOT (ng/L)	NT	NT	NT	NT	NT	NT
4	Alpha Endosulphan (ng/L)	NT	NT	NT	NT	NT	NT
5	Beta Endosulphan (ng/L)	NT	NT	NT	NT	NT	NT
6	Dieldrin (ng/L)	NT	NT	NT	NT	NT	NT
7	Carbonyl(Carbamate) (ng/L)	---	---	---	---	---	---
8	2,4D (ng/L)	---	---	---	---	---	---
9	Aldrin (ng/L)	NT	NT	NT	NT	NT	NT
10	Malathion (ng/L)	---	---	---	---	---	---
11	Methyl Parathion (ng/L)	---	---	---	---	---	---
12	Anilophos (ng/L)	---	---	---	---	---	---
13	Chloropyriphos (ng/L)	---	---	---	---	---	---

Note: 1- NT - Not Traceable.

2- Trace Metals & Pesticide are analysed in the other laboratories.

3- --Not analysed.

Asst.
08/11/10

Scientific Assistant 08/10/10


Asstt. Scientific Officer


Regional Officer

U.P.POLLUTION CONTROL BOARD, REGIONAL OFFICE – ALLAHABAD

Ground Water Quality Report for the month of April 2011 under MINARS project

S No	PARAMETER	S A M P L I N G S T A T I O N					
		Hand Pump Mirzapur Industrial area Mirzapur	Hand Pump IFFCO phulpur near Fazilapur Allahabad	Hand Pump (KCl) near Railway station Renukool Sonebhadra	Hand Pump Singrauli Industrial Area Near Bus station Shakti nagar Sonebhadra	Hand Pump At Industrial Area Naini Allahabad	Hand Pump At Industrial Area Fatehpur
	Station Number	1757	1759	1760	1761	2469	2470
	Date of sampling	13-Apr	13-Apr	7-Apr	7-Apr	13-Apr	13-Apr
	GENERAL PARAMETERS						
1	Total Alkalinity (mg/L)	440	408	232	288	384	424
2	P-Alkalinity (mg/L)	NT	NT	NT	NT	NT	NT
3	Total Fixed Solids (mg/L)	278	254	296	212	188	312
4	Total Suspended Solids (mg/L)	42	48	44	58	34	40
5	Fluoride (mg/L)	0.66	0.47	0.27	0.30	0.36	0.42
6	Sulphate (mg/L)	24.52	18.21	61.89	61.57	13.36	15.35
7	Sodium (mg/L)	9	10	14	16	8	11
8	Potassium (mg/L)	11	12	15	18	10	13
	TRACE METALS						
1	Arsenic (mg/L)	NT	NT	NT	NT	NT	NT
2	Nickel (mg/L)	NT	NT	NT	NT	NT	NT
3	Copper (mg/L)	NT	NT	NT	NT	NT	NT
4	Mercury (mg/L)	—	—	—	—	—	—
5	Chromium (mg/L)	NT	NT	NT	NT	NT	NT
6	Cadmium (mg/L)	NT	NT	NT	NT	NT	NT
7	Zinc (mg/L)	0.027	0.032	0.038	0.052	0.031	0.044
8	Lead (mg/L)	NT	NT	NT	NT	NT	NT
9	Iron (mg/L)	0.297	0.276	0.812	0.762	0.284	0.374
	PESTICIDE						
1	Total BHC (ng/L)	NT	NT	NT	NT	NT	NT
2	OP DDT (ng/L)	NT	NT	NT	NT	NT	NT
3	PP DOT (ng/L)	NT	NT	NT	NT	NT	NT
4	Alpha Endosulphan (ng/L)	NT	NT	NT	NT	NT	NT
5	Beta Endosulphan (ng/L)	NT	NT	NT	NT	NT	NT
6	Dieldrin (ng/L)	NT	NT	NT	NT	NT	NT
7	Carbonyl(Carbamate) (ng/L)	---	---	---	---	---	---
8	2,4D (ng/L)	---	---	---	---	---	---
9	Aldrin (ng/L)	NT	NT	NT	NT	NT	NT
10	Malathion (ng/L)	---	---	---	---	---	---
11	Methyl Parathian (ng/L)	---	---	---	---	---	---
12	Anilophos (ng/L)	---	---	---	---	---	---
13	Chloropynphos (ng/L)	---	---	---	---	---	---

Note: 1- NT - Not Traceable.

2- Trace Metals & Pesticide are analysed in the other laboratories.

3- ---Not analysed.

Asst. Scientific Assistant
28/4/11
28/04/11

Asstt. Scientific Officer

Regional Officer

REGIONAL OFFICE : U.P. POLLUTION CONTROL BOARD, SONEBHADRA

CURRENT STATUS OF GROSSLY POLLUTING INDUSTRIES COVERED UNDER SINGRAULI ACTION

PLAN IN DISTT. SONEBHADRA

Sl. No.	Name & Address of Industry	Industrial Sector	Name of Product	Status of Water Pollution Control Unit	Status of Air Pollution Control Unit	Performance	
						Water Pollution Control Unit	Air Pollution Control Unit
1	2	3	4	5	6	7	8
1.	NTPC, Shaktinagar, Sonebhadra	CU	T.P.P. 2000 MW, (2x500 MW 5X200 MW)	Ash Slurry discharges into dyke and finally after proper settling discharges into Rihand Dam. For coal handling plant effluent treatment plant is installed and also STP installed for domestic waste water treatment.	With each, units ESP is installed and emissions are as per board norms.	Satisfactory	Satisfactory
2.	NTPC, Rihand Nagar, Sonebhadra	CU	T.P.P. (2x500 MW 2x500 MW) = 2000 MW	Ash Slurry after proper treatment through ashdyke, total effluent is being recycled into plant for different purposes, Industry has septic Tank/Oxidation Pond for domestic wastewater treatment. For coal handling plant effluent passes through settling pond. Only in case of flood effluent may be discharged into Rihand reservoir.	With each units ESP is installed and emission are being emit as per board norms.	Satisfactory	Satisfactory
3.	Anpara Thermal Power Station Unit-A, Anpara, Sonebhadra	SU	T.P.P. (3x210 MW) 630 MW	Ash slurry effluent discharge into ash dyke after proper settling finally goes into Rihand reservoir. Industry has installed sewage treatment plant for domestic wastewater.	With each units ESP is installed and due to less capacity emission are not being as per board norms.	Satisfactory	Unsatisfactory
4.	Anpara Thermal Power Station Unit-B, Anpara, Sonebhadra	SU	TPP (3x500 MW) 1500 MW	Ash slurry discharges into dykes after proper settling finally goes into Rihand reservoir. Effluents are not being treated as per board norms.	With each units ESP is installed and due to less capacity emission are not being as per board norms.	Satisfactory	Unsatisfactory
5.	Obra Thermal Power Station Unit-A, Obra, Sonebhadra	SU	TPP (5x50 MW 3x100 MW) 550 MW	Ash slurry discharges into dykes. Domestic effluent are being treated in septic tank. Effluents are not being treated as per board norms.	In 3x100MW unit mechanical precipitator and ESP are being installed and wit 5x50 MW unit mechanical dust collectors are being installed. Emissions are much more as compare with board norms.	Unsatisfactory	Unsatisfactory

6.	Obra Thermal Power Station Unit-B, Obra, Sonebhadra	SU	TPP (5x200 MW) 1000 MW	Ash slurry discharges into dykes and rest quantity is being passed by Jhariya Nala. Domestic effluent is being treated in septic tank. Effluents are not being treated as per board norms.	In all units less capacity ESP's are being installed which are failed to work as board norms.	Unsatisfactory	Unsatisfactory
7.	M/s. Dalla Cement Factory, (A Unit of Jai Prakash Associates) Dalla, Sonebhadra.	PU	Cement Clinker- 66000MT/M PPC- 30000MT/M	Only domestic Septic Tanks Soak Pit – STP under Construction.	ESP – Kiln ESP – Collet Bag Filters - Coal Mill & Transfer Point	Satisfactory	Satisfactory
8.	M/s. Churk Cement Factory, Churk, Sonebhadra.	PU	Cement	----- Industry Closed -----			
9.	Hindalco Industries Ltd. (Renusagar Power Division) Renusagar.	PU	T.P.P. 741.7MW.	Ash slurry effluent discharged into ash dykes and finally after proper treatment total effluent is being reused in industrial process. Effluent generated from floor washing after neutralizing kept in pit and then finally by pipit into ash dyke. Industry has STP for domestic wastewater treatment.	With each units ESP is installed and emission are being emit as per board norms.	Satisfactory	Satisfactory
10.	Hindalco Industries Ltd. Renukoot, Sonebhadra	PU	Aluminium metal	ETP & STP both has been upgraded and treated effluent is recycled back for process use and etc. Industrial effluent treated by collection pit, neutralization tank, HRSCC, Centrifuge and sludge drying bed. Domestic effluent is being treated by Fludised Aerobic Bio-reactor.	Air pollution control unit consist ESP, DSS, FTP, Computerized Oil Firing system and emission are as per well below PCB	Satisfactory	Satisfactory
11.	Kanoria Chemicals & Industries Ltd. Renukoot, Sonebhadra.	PU	Chemical Industry	Treatment unit for Industrial effluent. Mercury effluent is being totally recycled. Effluent is being treated as per PCB norms. Domestic effluent treated by septic tank/Soak pit.	Proper system for air pollution control unit. Chlorine neutralization plant, hypo plant and fume scrubber are there. MCDC & Bag Filter are installed in Boiler.	Satisfactory	Satisfactory

12.	Kanoria Chemicals (Power Generation Unit) Renukoot, Sonebhadra.	PU	T.P.P. 2x25MW 50 MW	Dry as disposal for brick manufacturing.	ESP & Bag filter.	Satisfactory	Satisfactory
13.	M/s. Hitech Carbon Renukoot, Sonebhadra	PU	Carbon Black 170T/Y	Industrial effluent treated by primary treatment pit oil skimmer, oil separator imhoff clarifier settling tank pH adjustment tank Sludge drying bed. Domestic effluent is being treated by septic tank/soak pit tank.	Plume consist Bag filter purge bag filter. Emission are being emit as per board norms.	Satisfactory	Satisfactory
14.	M/s. NCL, Bina Project, Bina, Sonebhadra.	CU	Coal 4.5MT/Y	ETP is installed for industrial effluent and STP for domestic effluent treatment.	Hall road, CHP water spray, CHP dust suppression system for air pollution control and for effluent STP is there.	Satisfactory	Satisfactory
15.	M/s. NCL, Kakri, Project Kakri, Sonebhadra.	CU	Coal 4.0MT/Y	ETP is installed for industrial effluent Treated effluent are being discharge by nala and Domestic effluent is being treated by septic tank/soak pit tank.	Hall road, CHP water spray, system for air pollution control and dust extraction installed at collection pit.	Satisfactory	Satisfactory
16.	M/s. NCL, Khadia, Project Khadia, Sonebhadra.	CU	Coal 3.0MT/Y	ETP is installed for industrial effluent Treated effluent are being discharge by nala and Domestic effluent is being treated by STP but not working well.	Hall road, CHP water spray, system for air pollution control.	satisfactory	Satisfactory
17.	M/s. NCL, Dhudhichwa, Project Dhudhichuwa, Sonebhadra.	CU	Coal 3.0MT/Y	ETP is installed for industrial effluent Domestic effluent is being treated by septic tank/soak pit tank.	Hall road, CHP water spray, system for air pollution control and dust extraction installed at collection pit.	Satisfactory	Satisfactory
18.	M/s. NCL, Krishnshila Project, PO. Bina, Distt. Sonebhara.	CU	Coal 4.0 Million Ton/ Annum	No ETP	Hall road, CHP water spray, system for air pollution control and dust extraction installed at collection pit.	Unsatisfactory	Unsatisfactory
19.	M/s. Orient Micro-Abrasives Ltd., Renukoot, Distt. Sonebhadra.	PU	CPW	Neutralization Tank, Settling Tank	Wet Scrubber	satisfactory	satisfactory

20.	M/s. Prajapati Chemical Industries Ltd., Renukoot.	PU	CPW	Neutralization Tank, Settling Tank	Wet Scrubber	satisfactory	--
21.	M/s. Vikas Industrial Gases, Renukoot, Sonebhadra.	PU	----- Closed its own				

Air Quality- Anpara / Month - July 2011																									
STN Code	Sampling Date	Monitoring Station	Type of Location	City	Monitoring Agency	General Weather Condition	SO2_6AM_18AM	SO2_18AM_2PM	SO2_2PM_6PM	SO2_6PM_10PM	SO2_18PM_2AM	SO2_2AM_6AM	NO2_6AM_10AM	NO2_10AM_2PM	NO2_2PM_6PM	NO2_6PM_18PM	NO2_18PM_2AM	NO2_2AM_6AM	RSPM_6AM_2PM	RSPM_2PM_10PM	RSPM_10PM_6AM	SPM_6AM_2PM	SPM_2PM_10PM	SPM_10PM_6AM	
6	05.07.11	Anpara colony,	I	REN	UPPCB	CLOUDY	16.87	14.67	15.48	14.59	16.34	15.94	27.31	22.49	24.63	21.42	28.36	26.78	135	121	128	248	238	235	
6	07.07.11	Anpara colony,	I	REN	UPPCB	CLOUDY	16.48	14.59	15.26	14.32	15.67	15.53	28.92	21.42	25.00	28.35	25.78	25.17	133	125	138	245	238	231	
6	12.07.11	Anpara colony,	I	REN	UPPCB	CLOUDY & RAIN	RAIN	12.16	14.85	14.32	16.21	16.07	RAIN	19.81	22.49	20.88	27.85	27.31	78	80	85	185	198	215	
6	14.07.11	Anpara colony,	I	REN	UPPCB	CLOUDY	15.53	14.18	15.88	15.13	15.84	15.40	25.17	20.88	26.24	23.56	26.78	24.63	138	138	128	248	231	241	
6	19.07.11	Anpara colony,	I	REN	UPPCB	CLOUDY	16.87	13.61	16.67	14.86	16.34	15.98	27.31	28.88	25.78	22.48	28.38	26.24	134	127	148	235	238	244	
6	22.07.11	Anpara colony,	I	REN	UPPCB	CLOUDY	16.34	14.59	16.07	14.19	16.63	16.87	28.38	21.42	27.31	19.21	25.17	30.52	128	118	132	231	221	250	
6	26.07.11	Anpara colony,	I	REN	UPPCB	CLEAR	15.67	13.23	15.04	15.59	15.94	15.26	25.78	28.35	24.63	21.42	26.78	25.88	140	133	145	245	241	249	
6	28.07.11	Anpara colony,	I	REN	UPPCB	CLEAR	11.48	15.13	15.94	13.91	15.26	15.48	28.92	23.56	26.79	28.88	25.00	24.63	131	125	135	235	238	238	

Air Quality- Renusagar/ Month - July 2011																									
S7N Code	Sampling Date	Monitoring Station	Type of Location	City	Monitoring Agency	General Weather Condition	SO2_6AM_18AM	SO2_18AM_3PM	SO2_3PM_6PM	SO2_6PM_10PM	SO2_18PM_2AM	SO2_2AM_6AM	NO2_6AM_10AM	NO2_10AM_2PM	NO2_2PM_6PM	NO2_6PM_18PM	NO2_18PM_2AM	NO2_2AM_6AM	RSPM_6AM_2PM	RSPM_2PM_10PM	RSPM_10PM_6AM	SPM_6AM_2PM	SPM_2PM_10PM	SPM_10PM_6AM	
7	06.07.11	REN	I	REN	UPPCB	CLOUDY & RAIN	15.07	15.13	15.46	15.55	15.34	15.8	27.31	23.56	18.74	19.01	24.63	26.24	110	90	115	218	185	220	
7	09.07.11	REN	I	REN	UPPCB	CLEAR	15.03	14.66	15.53	15.13	15.94	16.21	26.92	22.49	25.17	23.56	26.78	27.65	132	118	132	225	218	232	
7	11.07.11	REN	I	REN	UPPCB	CLOUDY & RAIN	12.96	12.42	11.88	12.15	14.05	15.26	20.35	19.81	17.28	16.41	20.88	25	105	130	130	190	208	207	
7	13.07.11	REN	I	REN	UPPCB	CLEAR	15.67	13.23	13.91	14.86	15.59	15.8	25.7	20.35	20.88	22.49	25.17	26.24	135	128	138	235	228	248	
7	19.07.11	REN	I	REN	UPPCB	CLOUDY & RAIN	15.21	14.59	12.42	13.23	15.4	16.07	27.05	21.42	20.35	20.35	24.63	27.31	120	95	120	205	180	175	
7	21.07.11	REN	I	REN	UPPCB	CLOUDY & RAIN	15.53	RAIN	12.42	11.88	13.78	14.86	25.17	RAIN	19.81	19.20	20.88	22.49	85	105	118	168	225	219	
7	25.07.11	REN	I	REN	UPPCB	CLEAR	15.94	15.13	15.67	14.32	16.21	15.4	26.78	23.56	25.7	21.42	27.85	24.63	138	133	138	240	235	230	
7	27.07.11	REN	I	REN	UPPCB	CLEAR	16.24	14.59	16.87	13.51	15.8	15.94	26.38	21.42	27.31	20.88	26.24	26.78	137	128	137	238	228	239	