PRISM PLUS CHAMPION CEMENT

दूर की सोच

Ref: PCL/ENV/ 2019/150

Date: 14.01.2019

To,
The Regional Director,
Ministry of Environment, Forest & Climate Change
Paryavaran Bhawn,
Ravishankar Nagar, Bhopal.

Sub: Six Monthly EC Compliance Report of Prism Cement Unit – II & Int. Limestone mines.
Ref: Environmental Clearance letter No. F. No. – J- 11011/949/2007/IA-II(I) dated 22.09.2008

Dear Sir,

With reference to above mentioned subject, we are herewith submitting the half yearly report (July 2018 to December 2018) related to the compliance of accorded environmental clearance of Prism Cement- Unit II & Integrated Limestone Mines (772.067 Ha, 512.317 Ha, 117.594 Ha and 99.416 Ha).

Thanking you,

Yours faithfully,
For Prism Johnson Ltd.
(Formerly Prism Cement Limited)

15/1/19

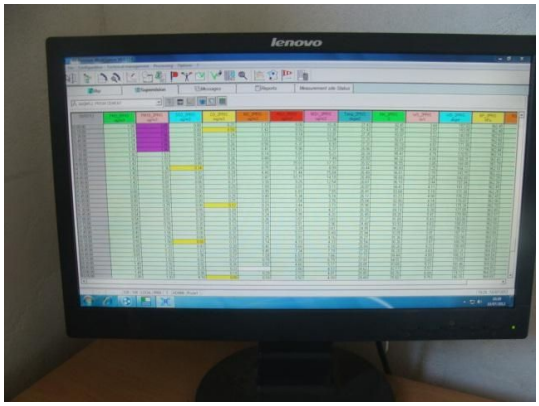
Manoj Kumar Kashyap
Sr. General Manager

Encl: as above.

PRISM JOHNSON LIMITED
(FORMERLY PRISM CEMENT LIMITED)
(Cement Division - Unit II)
Works: Village Mankahari, P.O.-Bathia, Dist. Satna - 485 111 (M.P.) India T: +91-07672-275301 / 302600
Corres. Add.: 'Rajdeep', Rewa Road, Satna - 485 001 (M.P.) India. T: +91-07672-402726
Registered Office: Prism Johnson Limited, 305, Laxmi Niwas Apartments, Ameerpet. Hyderabad - 500 016, India.
w: www.prismjohnson.in, www.cement.prismjohnson.in, E: info@prismjohnson.in
CIN: L26942TG1992PLC014033

Compliance report with Regard to Environment Clearance accorded by MoEF & CC vide letter no. J-11011/949/2007-IA-II(I) dated 22.09.2008			
A. Specific Conditions:			
Sl.No.	**Conditions**		Compliance Status
1	*The gaseous and particulate matter emissions from various units shall conform to the standards prescribed by the Madhya Pradesh Pollution Control Board.*		The gaseous and particulate matter emissions from various units conform to the standards prescribed by the Madhya Pradesh Pollution Control Board. Comparison with standards is given in-**Annexure 1**
	At no time, particulate emissions from the cement plant including kiln, coal mill, and cement mill, cooler and captive power plant (CPP) shall not exceed 50 mg/Nm3.		There is no CPP at our Cement Plant. The emissions from cement plant including kiln, coal mill, cement mill and cooler are well within prescribed limits. The analysis is done by M/s Ecomen Laboratories Pvt. Ltd. having NABL certificate no T-7587 Dtd 25/07/2018 valid upto 24/07/2020 and MOEF certificate vide GSR Notification S.O. 21(E) Dtd. 03/01/2014 valid upto 02/01/2019. The copy of the certificates are enclosed as **Annexure No.2.** The details are given in the following table:

	TEST REPORTS OF STACK EMISSION						
	Date of Monitoring	03.12.2018	03.12.2018	03.12.2018	03.12.2018	03.12.2018	Emission Standards for Cement Plant as per the Notification From Ministry Of Environment, Forest And Climate Change dtd. 10th May, 2016
	Source of Emission	Raw Mill Emission	Coal Mill Emission	Cooler Stack Emission	Cement Mill (I) Emission	Cement Mill (II) Emission	
	Material of Construction	M.S.1	M.S.	M.S.	M.S.	M.S.	
	Stack Attached to	Kiln/Raw Mill Unit-2	Coal Mill Unit-2	Cooler Unit-2	Cement Mill-1(Unit-2)	Cement Mill-2(Unit-2)	
	Stack Height (m)	100	65	50	49	49	
	Stack Top	Circular	Circular	Circular	Circular	Circular	
	Inside Diameter of Stack (m) (at sampling point)	4.75	2.24	4.5	1	1	
	Cross Sectional Area of Stack (m^2)	17.71	3.94	15.89	0.785	0.785	
	Ambient Air (^{0}C)	28.0	26	33	25	24	
	Flue Gas Temperature (^{0}C)	159	82	273	86	88	
	Exit Velocity of Gas (m/sec.)	16.32	8.96	14.41	7.44	6.99	
	Flow Rate (Nm^3/ sec.)	194.26	28.87	120.08	4.72	4.41	
	APCD if any	Bag House	Bag House	ESP	Bag House	Bag House	
	Particulate Matter (PM)in mg/Nm^3	19.6	22.10	22.85	18.52	12.52	**30.0**
	Sulphur Di Oxide(SO_2) in mg/Nm^3	23.9	-	-	-	-	**100.0**
	Nitrogen Oxides(NO_X) in mg/Nm^3	581.00	-	-	-	-	**800.0**

	Continuous on-line monitors for particulate emissions shall be installed. Interlocking facility shall be provided in the pollution control equipment so that in the event of the pollution control equipment not working, the respective unit (s) is shut down automatically.		Continuous on-line monitors for particulate emissions are installed. Interlocking facility is provided in the pollution control equipment so that in the event of the pollution control equipment not working, the respective unit (s) is shut down automatically- relevant pictures displayed.
			
	AQMS & Weather Monitoring Station		Continuous Emission Monitoring Station
			
	Monitor Showing Online data		Control Panel of AAQMS
			
	Control Panel of Stack Emission Monitoring System		LED Display at Main Gate

<table>
<tr><td rowspan="3">2</td><td>Secondary fugitive emissions shall be controlled within the prescribed limits and regularly monitored.</td><td></td><td>Secondary fugitive emissions are controlled within the prescribed limits and regularly monitored. Atomized sprinklers and water spraying arrangement provided at source of dust generation.</td></tr>
<tr><td>Guidelines/Code of Practice issued by the CPCB in this regard should be followed.</td><td></td><td>CPCB guidelines are followed.</td></tr>
<tr><td>The company shall install adequate dust collection and extraction system to control fugitive dust emissions at material transfer points.</td><td></td><td>Bag house/Bag filters, ESP have been installed in the plant to arrest the dust emissions.
Following are the details of APCE installed with its respective units
<table>
<tr><th>Sl. No</th><th>Location</th><th>Name of APCE</th></tr>
<tr><td>1</td><td>Raw Mill / Kiln</td><td>RABH</td></tr>
<tr><td>2</td><td>Coal Mill</td><td>Bag House</td></tr>
<tr><td>3</td><td>Cement Mill 1</td><td>Bag House</td></tr>
<tr><td>4</td><td>Cement Mill 2</td><td>Bag House</td></tr>
<tr><td>5</td><td>Clinker Cooler</td><td>ESP</td></tr>
</table>
To control the dust emissions 93 numbers of bag filters associated with the transfer points have been provided in the plant.
Pictures of bag house ESP etc. are displayed.</td></tr>
<tr><td colspan="4">   </td></tr>
<tr><td colspan="4">   </td></tr>
<tr><td></td><td>Atomized water spray system with reclaimer shall be installed in silo used for the storage of ash.</td><td></td><td>Dry fly ash is pneumatically unloaded and stored into fly ash silo from closed bulkers containing fly ash. Flyash unloaded from mechanically designed trucks are also done in</td></tr>
</table>

			completely closed manner
	Covered conveyer belts shall be used to reduce fugitive emissions.		Agreed and installed- Location from crusher to stacker; Raw Mill hopper to Raw Mill and from Coal mill stacker to coal mill, the entire conveyor belts are covered . the additive conveyor belts too, are covered
	Concreting of all the roads, water sprinkling system at limestone and coal handling area shall be ensured to reduce fugitive emissions.		Concrete roads are provided within the plant and colony. Water spray through tankers is done on bare lands & WBM roads for limestone area. Dense plantation on the periphery and within the plant and colony has been developed. Extensive plantation is done inside plant & mines. Photographs are displayed herewith:

Plantation at the plant area

Grass plantation at the plant area

Raw materials covered sheds

Covered conveyor belts

Wet drilling in mines area

Photographs of concrete roads

Photographs of Water sprinkling system at limestone handling


Photographs of water sprinkling in mines area

3	*Ambient air quality including ambient noise levels shall not exceed the standards stipulated under EPA or by the State authorities.*		Ambient air quality including ambient noise levels do not exceed the standards stipulated under EPA or by the State authorities. The parameters monitored during the period of July'18 to Dec'18 are found within the given stipulations. The results of analysis for AAQM and Noise are enclosed Annexure-3 and Annexure -4. mentioned below:

Summary of AAQ (July 18 to December'18)

Sl. No.	Tests Conducted	Method	Min Max Avg			Limit as per National Ambient Air Quality Standards
			Min	Max	Avg	
1	PM2.5(µg/m3)	NAAQM guide line volume - I by CPCB	32.85	48.80	41.63	60
2	PM10(µg/m3)	15:5 182 (Part-23)	60.80	88.70	72.47	100
3	SO2(µg/m3)	IS:51 82 (Part-2)	14.60	20.60	17.77	80
4	NOX(µg/m3)	15:5 182 (Part-6)	18.20	31.70	24.47	80
5	CO (mg/m3)	15:5 182 (Part-10)	0.67	0.93	0.80	2

	Monitoring of ambient air quality and shall be carried-out regularly in consultation with MPPCB and data for air emissions shall be submitted to the CPCB and MPPCB regularly.		Regular ambient air quality monitoring and noise level monitoring are done with the calibrated instruments. Ambient air quality and Ambient Noise levels does not exceed the standards stipulated under EPA or by the state authorities. The analysis is done by M/s Ecomen Laboratories Pvt. Ltd. having NABL certificate no TC-7587 Dtd 25/07/2018 valid upto 24/07/2020 and MOEF certificate vide GSR Notification S.O. 21(E) Dtd. 03/01/2014 valid upto 02/01/2019.- The copy of the certificates are enclosed as **Annexure No.02**

AMBIENT NOISE LEVELS MONITORED
PRISM CEMENT LTD

Noise (Ambient Standard)			Test Report of Ambient Level of Cement Plant & integrated L/S mines		
Category Area	Day Time	Night Time	Location	Day Time Leq Vaiue in dB(A)	Night Time Leq Vaiue in dB(A)
Industrial Area	75	70	Near PCL Colony	63.5	53.4
Commercial Area	65	55	Near Guest house	66.0	55.7
Residential Area	55	45	Near Crusher U II	71.2	64.2
Silence Zone	50	40	Near Admin Building	67.3	63.9
			Mines Site office	67.25	60.0
			Western block Garden	62.5	52.8
			Village Hinauti	53.0	43.7
			Village Sijahata	51.4	41.4
Noise (Ambient Standard)			Test Report of Ambient Level of Bagahai & Medhi L/S mines		
Category Area	Day Time	Night Time	Locatiion	Day Time Leq Value in dB(A)	Night Time Leq Value in dB(A)
Industrial Area	75	70	At Adibasi Tola	55.8	43.7
Commercial Area	65	55	At Baisan Tola	54.7	42.0
Residential Area	55	45	Near BagahaiSite Office	62.9	55.3
Silence Zone	50	40	Near BP No 64	56.4	47.2
			Nar Nala Bridge	50.3	40.9
			Near Mendhi Mines	64.7	52.7
			Near Mendhi Mines BP23	62.2	54.5
			Village Malgaon	51.9	42.0

	The instruments used for ambient air quality monitoring shall be calibrated time to time.		Ambient air quality monitoring instruments are calibrated time to time- Calibration certificates are attached at -Annexure no. 5 The analysis is done by M/s Ecomen Laboratories Pvt. Ltd. having NABL certificate no TC-7587 Dtd 25/07/2018 valid upto 24/07/2020 and MOEF certificate vide GSR Notification S.O. 21(E) Dtd. 03/01/2014 valid upto 02/01/2019.-.-
4	*Efforts shall be made to reduce impact of the transport of the raw materials and end products on the surrounding*		M/s Prism Johnson Ltd has developed well defined method to reduce the Impact of transport of raw material and product on the surrounding environment and over agricultural

	environment including agricultural land.		land. Rail transport system has also been used which also help to reduce impact on the environment. Some of them are as follows: All the Roads inside the plant premises are concreted. This includes road from dispatch gate to main public road. Covered belt conveyors have been used from crusher to stacker. Dry fly ash is transported in to closed bulkers and mechanically designed trucks. *R*egular water spraying arrangement at mining lease on haul road. 93 Nos Bag-filters have been installed at all transfer points Dense Canopy plantation all over plant and mines area.
	 Concrete road in plant premises		
	 Concrete road in plant premises		
5	*Fly ash shall be utilized as per the provisions of Fly AshNotification-1999,*		Fly ash has been utilized for manufacturing of PPC and procured from nearby thermal power

	subsequently amended in 2003. Fly ash shall be stored in ashsiloand100% used in the cement manufacturing		plants. It is pneumatically pumped in closed silos and transported to cement mill. There are 02 numbers of silos having capacity of 4000MT & 5000MT.

Yearly Fly Ash Consumption	
Year	**Qty (MT)**
2013-2014	688628
2014-2015	907848
2015-2016	848939
2016-2017	810908
2017-2018	701922

6	*The company shall make the efforts to utilize the high calorific hazardous waste in the cement kiln and necessary provisions shall be made accordingly. The company shall keep the record of the waste utilized and shall submit the details to Ministry's Regional Office at Bhopal, CPCB and SPCB.*		Permission has been taken to utilized high calorific waste material. Copy of CTO is attached as **Annexure no 6**

Year	Name of waste utilized	Source of waste	Quantity used in Particular year	Utilization points	Pollution Control arrangement
13-14	Plastic waste	Sarthak Samudiyik & Vikash Sansthan	15MT	Kiln	RABH
14-15	Plastic waste	JK Traders, Satna	13MT	Kiln	RABH
15-16	Plastic waste	JK Traders, Satna	16.5MT	Kiln	RABH
16-17	Plastic waste	JK Traders, Satna	4.2 MT	Kiln	RABH
17-18	Plastic waste	JK Traders, Satna	10.1MT	Kiln	RABH

7	*Total water requirement shall not exceed 2500 m3/day.*		Total per day water consumption for industrial purpose (in cement plant Unit 2) 1271 m^3/day, water usage for domestic purpose in new colony is 303 m^3/day and usage for horticulture is 168 m^3/day (this water is treated waste water generated from STP).
	The treated wastewater from STP and utilities shall be reutilized for green belt development and other plant related activities i.e. cooling and dust suppression in raw material handling area etc., after necessary treatment.		STP is established within the plant premises and treated water is used for horticulture purpose. STP photographs displayed. The ground water analysis report and treated waste water quality of STP are enclosed as **Annexure 7 & 8**

Ground water summary of reports:

Sl no.	Location	Standard	pH value
1.	Hinnauti	6.5 to 8.5	7.30
2.	Chullhi	6.5 to 8.5	7.36
3.	Malgaon	6.5 to 8.5	7.16
4.	Mankahri	6.5 to 8.5	7.21
5.	Mendhi	6.5 to 8.5	7.38
6.	PCL colony	6.5 to 8.5	7.48
7.	Plant site	6.5 to 8.5	7.24
8.	Mines site office	6.5 to 8.5	7.20
9.	Baghai	6.5 to 8.5	7.30
10.	Sijhata	6.5 to 8.5	7.45

STP at Prism Cement Plant

One Waste water test report is given below:

ECOMEN LABORATORIES PVT. LTD.
Flat No. 8, 2nd Floor, Arif Chamber-V, Sector H, Aliganj, Lucknow - 226 024
Phone No. : (91-522) 2746282, 2745726 Telefax No.: (91 - 522) 2745726
E-mail: ravi.bhargava@gmail.com, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI
An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/07 TEST REPORT NO:ECO LAB/WW/767/11/18
TEST REPORT ISSUE DATE: 05.12.2018

TEST REPORT OF WASTE WATER*

Name of the Company	: M/s. Prism Cement Limited
Address of the Company	: Village Mankahari, Tehsil Rampur Baghelan Distt.Satna (M.P.)
Sampling Method	: APHA / IS: 3025
Sample Collected by	: Mr.Maan Singh
Sample Quantity	: As per requirement.
Date of Sampling	: 24.11.2018
Date of Receiving	: 26.11.2018
Date of Analysis	: 26.11.2018 to 05.12.2018
Source of Sample	: STP Outlet
Sample ID Code	: ELW - 8746

Sl. No.	TESTS	PROTOCOL	RESULT	Range of Testing / Limits of Detection	G.S.R 1265(E)
1	pH	APHA, 23rd Ed. 2017, 4500H+ A+B	7.16	2-12	6.5-9.0
2	Total Suspended Solids(mg/l)	APHA, 23rd Ed. 2017, 2540-D	15.8	5.0-1000	<100.0
3	Oil & Grease as O & G (mg/l)	APHA, 23rd Ed. 2017, 5520 A+B+D	BDL	5.0-600	-
4	Biochemical Oxygen Demand as BOD (mg/l) 3days at 27°C	APHA, 23rd Ed. 2017, 5210 A+B	6.0	5-10000	30.0
5	Chemical Oxygen Demand as COD (mg/l)	APHA, 23rd Ed. 2017, 5220 A+C	38.0	5-50000	-
6.	Fecal Coliform (MPN/100 ml)	APHA, 23rd Ed. 2017, A + E	120.0	-	<1000

*The result are related only to item tested.
BDL = Below Detection Limit

Analyst

Authorized signatory
ECOMEN Laboratories Pvt. Ltd.
Flat No. 8, 2nd Floor, Arif Chamber-V
Sector-H, Aliganj, Lucknow-226024
Ph.-2746282, Fax:2745726

Quality Manager

	`Zero' discharge shall be strictly adopted and no effluent from the process shall be discharged outside the premises.		Since the process of cement manufacturing is dry, no process effluents are generated. Water is only used for cooling, domestic purposes. The water is not discharged outside the premises. Waste water from colony is treated in STP and used for horticulture. Sludge from drying beds is utilized as manure for horticulture purpose.

The ground water analysis report and treated waste water quality of STP are enclosed as **Annexure 7 & 8**

Source of water is identified as mines pits & bore wells.

The copy of permission from CGWA vide 21-4(25) /NCR/CGWA/2008-1612 Dt 12.09.2017 is enclosed as **Annexure 9.**

Zero discharge from the plant and mine has been ensured.

The details of water and waste water consumption in summarized below:

Water balance for Cement Plant

Process	Water Consumption KLD	Waste Water generation KLD	Treatment Point	Utilization /recycling points
Domestic	303	168	STP	Horticulture
Industrial	---	----	----	---
Boiler	----	----	----	---
Cooling Tower	1271	----	----	---
Horticulture	168			

Water balance for Hinauti & Sijahata (772 .067ha)

Process	Water Consumption KLD	Waste Water generation KLD
Dust suppression	22	NIL
Mining	06	NIL
Drinking	02	NIL
Plantation and green belt	10	NIL
Total	40	NIL

Water balance for Baghai (512.317 ha)

Process	Water Consumption KLD	Waste Water generation KLD
Dust suppression	35	NIL
Mining	09	NIL
Drinking	02	NIL
Plantation and green belt	16	NIL
Total	62	NIL

Water balance for Mendhi (117.594 ha)

Process	Water Consumption KLD	Waste Water generation KLD
Dust suppression	01	NIL
Mining	00	NIL
Drinking	0.5	NIL
Plantation and green belt	1.5	NIL
Total	2.5	NIL

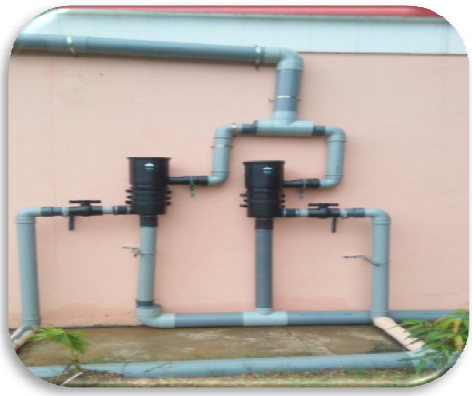
Water balance for Hinauti Sijhata (99.416 ha)

Process	Water Consumption KLD	Waste Water generation KLD
Dust suppression	2	NIL
Mining	1	NIL
Drinking	0.5	NIL
Plantation and green belt	1	NIL
Total	4.5	NIL

Sewage Treatment Plant has been provided to treat the domestic waste water. Treated effluent from sewage treatment plant is utilized for horticulture purpose inside plant premises. Sludge from drying beds is utilized as manure for horticulture purpose. The ground water analysis report and treated waste water quality of STP are enclosed as **Annexure 7 & 8**

8	*Rainwater harvesting measures shall be adopted for the augmentation of ground water at cement plant, colony and mine site.*		A water reservoir of capacity 13 Lac M^3 has been made in mines area. Rain water collected into other abandoned mines pit and working mines is pumped into main water reservoir. This reservoir serves as main recharge source for the area. Rainwater harvesting measures adopted are given below:
			

	Besides, company must also harvest the rainwater from the rooftops and storm water drains to recharge the ground water.		There are 07 nos. rooftop rain water harvesting structures at plant site viz. MRSS Building, Project Office Building & School

			building, Cement Mill Unit II Load Centre, Cooler Load Centers of Unit I & II and stores. Especially designed rainy filters have also been installed and rooftop drain is connected to it which repeals entry of dust, grits solid contents into bore-wells.   The rainwater harvesting structures have also been constructed and being maintained outside the lease area. Consistent pond deep is carried out at village Mankahari. Photograph attached. Recharge structures are constructed at 04 locations in Baghai, Sijhata, Hinauti and Mankahari villages. - Photographs displayed.

Recharge Structure

Water Harvesting Structure on Well at Baghai

	The company must also collect rain water in the mined out pits of captive lime stone mine and use the same water for the various activities of the project to avoid fresh water requirement.		The company collects rain water in the mined out pits of captive lime stone mine and use the same water for the various activities. This water is used for mining activities viz. spraying on haul roads, crusher hopper, green belt development etc. Capacity of 13 Lac M^3 has been generated in said reservoir, this activity has reduced fresh water requirement. Rain water collected into other abandoned mines pit and working mines is pumped into main water reservoir. This reservoir serves as main recharge source for the area.
	An action plan shall be submitted to Ministry's Regional Office at Bhopal within 3months from date of issue of this letter.		The Action plan is submitted –**Annexure- 10**

Artificial ground water recharge structures

9	*The project proponent shall modify the mine plan of the project at the time of seeking approval for the next mining scheme from the Indian Bureau of Mines so as to reduce the area for external over burden dump by suitably increasing the height of the dumps with proper terracing. It shall be ensured that the overall slope of the dump does not exceed 28^0.*		We have obtained approval of further Schemes of mining for the leases of PCL as follows: 1. 772.067 ha (Hinauti &Sijahata) vide IBM letter no P/Satna/Limestone/M.Sch-86/14-15/2443 Dt.06.04.15, 2. 99.416 ha (Hinauti & Sijahata) vide IBM letter no MP/Satna/Limestone/RMP-44/17-18Dt. 27.04.2017, 3.512.317ha (Baghai) vide IBM letter no MP/Satna/Limestone/MPLN/MOD30/2018-2019/ Dt. 14.12.2018 . 4. 117.594 ha (Mendhi) vide IBM letter no MP/Satna/Limestone/M.Sch-6/16-1 Dt. 04.11.2016by the Indian Bureau of Mines. Copy of the approval letters are enclosed as **Annexure-11** Dump height and slope has been maintained as per guidelines. The details are as below: The soil dumps are prefixed “S” and waste dumps are prefixed “WS & D”.

Table no. 1. ML area 772.067 Ha. (Hinauti & Sijahata)

Present Dumps status

Dump No.	Location of Dump	Present Height of Dump (m)
S1	300E to 400E and 80N to 220N	2.0
S2	410E to 880E and 210N to 350N	6.0
S3	920E to 1010E and 320N to 360N	4.0
S4	1060E to 1220E and -60N to 320N	6.0

Table no. 2. ML area 99.416 Ha. (Hinauti &Sijahata)

Present Dumps status

Dump No.	Location of Dump	Present Height of Dump (m)
D1	1720E to1810E and -1130N to-1155N	6.0
D2	1670E to1720E and -1240N to-1120N	6.7

Table no. 3. ML area 512.317 Ha. (Baghai)

Present Dumps status

Dump No.	Location of Dump	Present Height of Dump (m)
S1	644E to 685E and 2092N to 2317N	3.5
S2	848E to 915E and 1432N to 1500N	15.0
S3	927E to 959E and 1242N to 1356N	4.0
S4	1060E to 1220E and -60N to 320N	3.5
S5	1112 E to 1162 E and 997 N to 1187 N	4.0
S6	1478 E to 1540 E and 1307 N to 1438 N	4.0
WS1	635E to 692E and 2338N to 2397N	3.0
WS2	879E to 904E and 2292N to 2323N	3.0
WS4	790E to 868E and 1477N to 1753N	13.0
WS5	1400E to 1538E and 1354N to1531N	13.0
WS6	731E to 1845E and 1074N to N1237	7
WR7	900E to 1029E and 1074N to N1237	7

Table no. 4. ML area 117.594 Ha. (Mendhi)

Present Dumps status:-Nil

The overall slope of all the dumps as above does not exceed 28^0.

10	*Top soil if any, shall be stacked with proper slope at earmarked site(s) only with adequate measures and should be used for reclamation and rehabilitation of mined out areas.*		Top soil generated during mining is stacked separately & used for reclamation of mined out area by spreading it over the waste rock after backfilling. Details are given from table no. 1 to 4. Photograph Attached as **Annexure no 12**

Table no. 1. ML area 772.067 Ha. (Hinauti & Sijahata)

Present Dumps status

Dump No.	Location of Dump	Present Height of Dump (m)
S1	300E to 400E and 80N to 220N	2.0
S2	410E to 880E and 210N to 350N	6.0
S3	920E to 1010E and 320N to 360N	4.0
S4	1060E to 1220E and -60N to 320N	6.0

Table no. 2. ML area 99.416 Ha. (Hinauti &Sijahata)

Present Dumps status

Dump No.	Location of Dump	Present Height of Dump (m)
D1	1720E to1810E and -1130N to-1155N	6.0

Table no. 3. ML area 512.317 Ha. (Baghai)

Present Dumps status

Dump No.	Location of Dump	Present Height of Dump (m)
S1	644E to 685E and 2092N to 2317N	3.5
S3	927E to 959E and 1242N to 1356N	4.0
S4	1060E to 1220E and -60N to 320N	3.5
S5	1112E to 1162E and 997N to 1187N	4.0
S6	1478 E to 1540 E and 1307N to 1438N	4.0

Table no. 4. ML area 117.594 Ha. (Mendhi)

Present Dumps status:-Nil

11	*The project proponent shall ensure that no natural water course shall be obstructed due to any mining and plant operations.*		The Surface water bodies in area are observed as Tamas River, which is adjacent to the Hinauti & Sijhata Limestone Mine in North direction. The Magardaha nalla is located outside the lease area in the western side. Magardaha nalla ultimately joins the Tamas River. Nar Nala falls outside the lease area and flanks the Baghai mining lease from the western side. No natural water course is obstructed due to mining and plant operations. The company is taking following measures for Protection of the Tamas River, Magardaha Nala and Nar Nala (natural water course) which is adjacent to the Hinouti, Sijhata and Baghai Limestone Mine in North. East and west direction respectively. • Solid barrier of minimum 60 m width has been made from the river bank to avoid the flow of surface run off to the River. • Garland drains made along the slope of dumps. • Rain water is channelized to a Settling Tank to eliminate silting of river and then

			discharged in natural drainage course. • Plantation has been done all along inside safety barrier of Tamas River. • Proper landscape has been developed near the River bank to avoid erosion. • There is no proposal for diversion/obstruction/modification of any natural water course during mining activity.
	The company shall make the plan for protection of the natural water course passing nearby mine area and submit to the Ministry's Regional Office at Bhopal.		The proposal for natural water course protection passing nearby mines area is submitted simultaneously. **Annexure no. 13.**
12	*The inter burden and other waste generated shall be stacked at earmarked dump site(s) only and should not be kept active for long period.*		The interburden and waste generated during mining has been stacked at earmarked dump site only as mentioned in SOM. Dumps have been stabilized simultaneously by planting local species and bushes. Regular inspection of MPPCB and IBM officials are being carried out. .Annexure no. 14
	The total height of the dumps shall not exceed 30 m in three terraces of 10 m each and the overall slope of the dump shall be maintained to 28^0. The inter burden dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off.		Agreed. All dumps are as per specified designs and capacities as mentioned in SOM . The height of dumps are not exceeding 30 m and overall slope has maintained to 28^0The present status of dumps is as hereunder:

1. ML area 772.067 Ha. (Hinauti& Sijahata)

Present Dump status

Dump No.	Location of Dump	Present Height of Dump (m)
S1	300E to400E and 80N to220N	2.0
S2	410E to880E and 210N to350N	6.0
S3	920E to1010E and320N to360N	4.0
S4	1060E to1220E and -60N to320N	6.0

2. ML area 99.416 Ha. (Hinauti&Sijahata)

Present Dump status

Dump No.	Location of Dump	Present Height of Dump (m)
D1	1720E to1810E and -1130N to-1155N	6.0
D2	1670E to1720E and -1240N to-1120N	6.7

3. ML area 512.317 Ha. (Baghai)

Present Dumps status

Dump No.	Location of Dump	Present Height of Dump (m)
S1	644E to 685E and 2092N to 2317N	3.5
S3	927E to 959E and 1242N to 1356N	4.0
S4	1060E to 1220E and -60N to 320N	3.5
S5	1112 E to 1162 E and 997 N to 1187N	4.0
S6	1478 E to 1540 E and 1307N to 1438 N	4.0
WS1	635E to 692E and 2338N to 2397N	3.0
WS2	879E to 904E and 2292N to 2323N	3.0
WS4	790E to 868E and 1477N to 1753N	13.0
WS5	1400E to 1538E and 1354 N to 1531 N	13.0
WS6	731E to 1845E and 1074N to N1237	7
WS7	900E to 1029E and 1074N to N1237	7

4. ML area 117.594 Ha. (Mendhi)

Present Dumps status:-Nil

	Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining.		Monitoring and management of rehabilitated areas is continued until the vegetation becomes self-sustaining.
			
	Compliance status should be submitted to the Ministry of Environment & Forests and its Regional Office, Bhopal on six monthly bases.		Compliance status is submitted on regular interval to Ministry of Environment & Forests and its Regional Office, Bhopal.

Year	Leases integrated with U-II	
	Dispatch no.	**Date**
2010	PCL/ENV/2012/119	29.12.2011
2011	PCL/ENV/2012/87	16.07.2012
	PCL/ENV/2013/12	08.01.2013
2012	PCL/ENV/2013/66	16.05.2013
	PCL/ENV/2013/01	04.01.2014
2013	PCL/ENV/2014/82	14.07.2014
	PCL/ENV/2015/19	17.03.2015
2015	PCL/ENV/2018/81	02.09.2015
	PCL/ENV/2016/18	04.03.2016
2016	PCL/ENV/2016/92	28.09.2016
	PCL/ENV/2017/26	07.03.2017
2017	PCL/ENV/2017/67	14.08.2017
	PCL/ENV/2017/67	10.03.2018
2018	PCL/ENV/2018/52	27.08.2018

13	*The void left unfilled shall be converted into water body.*		Agreed. One reservoir has been already created having capacity of 13lakh Cubic meter capacity. The accumulated water is used for industrial use at mine and cement plant. Proper landscaping is done around the water body.
	The higher benches of excavated void/mining pit shall be terraced and plantation to be done to stabilize the slopes. The slope of higher benches shall be made gentler for easy accessibility by local people to use the water body.		Mined out pit has been terraced and the gentle slope is stable and planted with adequate vegetation.
	Peripheral fencing shall be carried out along the excavated area.		Fencing has been carried out along mined out areas. –Photograph attached.
			

14	*Catch drains and siltation ponds of appropriate size should be constructed for the working pit, inter-burden and mineral dumps to arrest flow of silt and sediment.*		Approximately 720 m. of Catch drains along dumps and 02 siltation ponds of appropriate size have been constructed. The catch drains are for inter-burden and mineral dumps to arrest flow of silt and sediment. Garland drain along lease boundaries of 3.0 Km (cumulative in two locations) have been constructed. Check dams have been made at regular intervals in garland drains to hinder the flow of rain water and to arrest the silt.
	 		
	The water so collected should be utilized for watering the mine area, roads, green belt development etc.		Agreed. Accumulated water is utilized for watering the mine area, roads and green belt development.
	The drains should be regularly de-silted, particularly after monsoon, and maintained properly.		The drains are regularly de- silted, particularly after monsoon, and maintained properly.
15	*Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and inter-burden dumps and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals.*		Garland drain having dimension of cumulative length of 3.0 Km, a width of 2.0 to 3 meters and depth of 0.75 to 1.2 meter. It is having appropriate gradient following natural contour. Sump size of length 25m x width 15m and depth 4m. has been constructed along the garland drain. One additional siltation ponds has been constructed. It is having a capacity of 50% safety margin to accommodate over and

			above peak sudden rainfall and maximum discharge in the area. Garland drains and de-siltation ponds are de-silted at regular intervals, especially after monsoon. Photographs are displayed below.
			
16	*Dimension of the retaining wall at the toe of inter-burden dumps and inter-burden benches within the mine to check run-off and siltation should be based on the rain fall data.*		Retaining walls and toe drains are maintained to check runoff and siltation.
17	*Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers at suitable locations by the project proponent in and around project area in consultation with Regional Director, Central Ground Water Board. The frequency of monitoring should be four times a year- pre-monsoon (April / May), monsoon (August), post monsoon (November), and winter (January). Data thus collected shall be sent at regular intervals to Ministry of Environment and Forests and its Regional Office at Bangalore, Central Ground Water Authority and Central Ground Water Board.*		Regular monitoring of ground water level and quality has been carried out in and around project area. Piezometers are already constructed at the site. The monitoring results for Ground water Quality & water level for winter season is being submitted to the MoEF, New Delhi, Regional Office of MoEF, Bhopal, Central Ground Water Authority, New Delhi, Central Ground Water Board, Bhopal. Monitoring results are enclosed as **Annexure-6**

Sr. No.	Location	July	Aug	Sep	Oct	Nov	Dec
1	Behind C block (Peizometer)	9.35	6.43	1.62	2.88	3.9	4.85
2	Infront Den (Peizometer)	9.42	6.62	2.05	4.6	5.15	5.72
3	Behind B block (Peizometer)	20.83	17.48	5.17	15.3	17.3	17.53
4	Near colony gate (Peizometer)	18.5	15.73	1.78	14.7	15.25	16.32
5	Near Crusher (Peizometer)	23.15	18.56	13.9	20.18	16.24	16.86

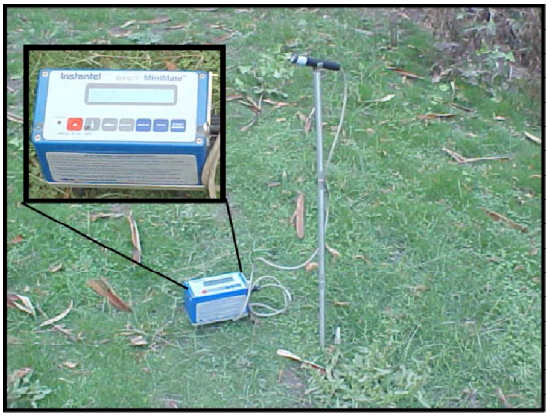
The Summarized Quality of GW is tabulated as below for BZ and CZ area:

Sl no.	Location	Standard	pH value
1.	Hinnauti	6.5 to 8.5	7.30
2.	Chullhi	6.5 to 8.5	7.36
3.	Malgaon	6.5 to 8.5	7.16
4.	Mankahri	6.5 to 8.5	7.21
5.	Mendhi	6.5 to 8.5	7.38
6.	PCL colony	6.5 to 8.5	7.48
7.	Plant site	6.5 to 8.5	7.24
8.	Mines site office	6.5 to 8.5	7.20
9.	Baghai	6.5 to 8.5	7.30
10.	Sijhata	6.5 to 8.5	7.45

The frequency of monitoring should be four times a year- pre-monsoon (April / May), monsoon (August), post monsoon (November), and winter (January).	Regular monitoring of ground water level and quality has been carried out in and around project area as per the condition. Reports attached as **Annexure. 15**
Data thus collected shall be sent at regular intervals to Ministry of Environment and Forests and its Regional Office at Bangalore, Central Ground Water Authority and Central Ground Water Board.	Piezometers are already constructed at the site. The monitoring results for Ground water Quality & water level for winter season is submitted to the MoEF, New Delhi, Regional Office of MoEF, Bhopal, Central Ground Water Authority, New Delhi, Central Ground Water Board, Bhopal. Monitoring results are enclosed as **Annexure.15**
	
Photographs of the Piezometer	**Photographs of the Piezometer**

Ground Water level and quality are enclosed as **Annex-14 &15**

18	*Blasting operation should be carried out only during the daytime.*		Blasting has been done during day time only.
	Controlled blasting shall be practiced. *The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders shall be implemented*		Controlled blasting is carried out according to the recommendation of Central Institute Of Mining And Fuel Research. The salient recommendations are given below: ❖ Maximum vibration recorded from the production blast was 31.0 mm/s with associated dominant peak frequency of 32.0 Hz at 50 m from blasting site. The explosives weight per delay was 50.8 kg. The PPV recorded at 100 m from the same blast was 6.66 mm/s with dominant peak frequency of 15.0 Hz. Fast attenuation of vibration were encountered. ❖ The AOP has been recorded within prescribed limits ❖ All the recorded data (blast vibrations, air overpressures and fly rocks) were well within the safe limit at the houses/structures concerned. The dominant peak frequencies of ground vibrations were in the range of 11.4 to 129 Hz. FFT analysis of blast vibration frequencies confirmed that concentration of frequencies is in band of 13.3-40.3 Hz. So, the safe level of vibration has been taken as 10 mm/s for the safety of houses/structures of the surrounding villages as per DGMS standard. ❖ Propagation equation for the prediction of blast vibration has been established and is given as Equation 1. The permissible explosive weight per delay may be computed from the Equation to contain vibration within safe limits for distances of houses/structures concerned. For convenience, the recommended explosives weight per delay has been computed and is given in Table A3. ❖ The delay interval between the holes in a row should be 17 ms whereas between the rows, it should be 65 ms or more depending upon the number of rows and effective burden. If the numbers of rows are more than two, the delay interval between rows should be increased by 15% in successive rows. ❖ It is recommended that the existing Nonel initiation system should be continued in the Blasting operations and Electronic initiation systems should be practiced on the benches near to the structures for more precise and accurate delay design. The sub-grade drilling should be 0.3 to 0.5 m for a blast hole depth of

			6 to 7 m and should be initiated from the Bottom of the hole. ❖ It is advisable to use blasting mate with sand bags in sensitive area to ensure any non-ejection of fly rocks. For this Nonel as well as electronic system may be used as an Initiation system. ❖ The recommended blast designs should be followed for day-to-day blasting operations for safe and efficient blasting operations. The blast designs given in Annexure as Figures A1-A2, will ensure the safety of the houses/structures, life of human beings and other property in the periphery of the mine. Each blast is monitored for vibrations with Minimate and Nomiss seismographs.  The monitored data on ground vibration is enclosed as **Annexure- 16**

	Instantel **Event Report** **Instantel** **Date/Time** Long at 10:44:47 October 4, 2018 **Trigger Source** Geo: 0.730 mm/s **Range** Geo: 31.75 mm/s **Record Time** 3.75 sec (Auto=3Sec) at 4096 sps **Serial Number** BE15438 V 10.72-1.1 Minimate Blaster **Battery Level** 6.2 Volts **Unit Calibration** February 26, 2018 by UES, New Delhi **File Name** Q438HM8B.6N0 **Scaled Distance** 0.3 (0.1 m, 0.1 kg) **Post Event Notes** H-8, 1st Bench, No of holes - 20 nos, Depth - 6.50 Mtrs Charge/delay - 33.34 Kg/delay, Obsevation Distance - 100 Mtrs **Notes** Location: Client: PRISM CEMENT LIMITED User Name: General: **Extended Notes** PRISM CEMENT LIME STONE MINES **Microphone** Linear Weighting **PSPL** 114.8 dB(L) 11.00 pa.(L) at 0.623 sec **ZC Freq** 7.8 Hz **Channel Test** Passed (Freq = 19.7 Hz Amp = 419 mv) **Peak Vector Sum** 4.383 mm/s at 0.470 sec DGMS India (B) Permissible Ground Vibration Standard Velocity (mm/s) Frequency (Hz) Tran: + Vert: x Long: ø a) Industrial buildings b)Domestic houses/structures MicL Long Vert Tran Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 pa.(L)/div Sensor Check Printed: December 27, 2018 (V 10.72 - 10.72) Format © 1995-2014 Xmark Corporation		

		Tran	Vert	Long	
	PPV	2.318	3.842	4.000	mm/s
	PPV (Ponderated)	2.094	2.683	3.820	mm/s
	ZC Freq	28.8	37.9	26.6	Hz
	Time (Rel. to Trig)	0.519	0.672	0.471	sec
	Peak Acceleration	0.066	0.113	0.106	g
	Peak Displacement	0.018	0.018	0.025	mm
	Sensor Check	Passed	Passed	Passed	
	Frequency	7.5	7.6	7.6	Hz
	Overswing Ratio	3.8	3.4	3.8	

19	*The project proponent shall adopt wet drilling*.		Regular wet drilling is practiced. We have 03 nos. IBH 10 Atlas Copco make machines having inbuilt wet drilling arrangements. Photographs attached.

			 
20	*As proposed ,green belt should be developed in33%in and around the plant as per the CPCB guidelines.*		The total area covered under plantation in and around our cement plant is more than 33%. Vis a vis 55 ha. in mines and more than 17 ha. in plant having dense 3 tier plantation. During 2017-18 around 22000 & 10000 saplings are planted in the aforesaid Mines and out of mines area respectively. Plants of local species such as Neem, Shisham, Karanj & Gulmohar etc. are planted. 
21	*All the recommendations of the Corporate Responsibility for*		CREP guidelines are strictly followed. The last

	Environmental Protection (CREP) shall be strictly followed.		compliance report is enclosed as **Annexure no.-17**
22	*Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.*		Vehicular emission is kept under control. A centralized diesel workshop has been established. Regular maintenance of all vehicles is done as per manufacturer's maintenance schedule i.e. changing of timely diesel filters, calibration of Fuel pump, overhauling of engines etc. No vehicle without valid PUC is allowed inside the plant and mines area. The vehicles engaged in transportation of minerals outside the core zone are provided with tarpaulin and no overloading is allowed.
23	*Digital processing of the entire lease area using remote sensing technique should be done regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment and Forests and its Regional Office, Bhopal*		Digital Processing of the lease area has been done for land use study, using Remote Sensing Technique during 2017 and report is attached as **Annexure-18**
24	*A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure, for approval.*		The documents will be submitted well before the 5 years of mine closure.
25	*The company shall comply with all the commitments made during public hearing on22ndMay, 2008*		Adhering to the given condition we will strictly comply with all the commitments made during public hearing on 22ndMay, 2008.The public hearing comments are enclosed as **Annexure-19**
	B. General Condition:		
i.	*The project authority shall adhere to the stipulations made by State Pollution Control Board (SPCB) and State Government.*		Cement plant and all the mining operation are carried out with valid consent under air and water act issued by SPCB. The copy of renewed consents and compliance reports sent to MPPCB are enclosed as **Annexure-20**
ii.	*No further expansion or modification of the plant shall be carried out without prior approval of this Ministry*		Agreed.
iii.	*At least four ambient air quality monitoring stations shall be established in the down wind direction as well as where maximum ground level concentration of SPM, SO2 and NOx are anticipated in consultation with the SPCB.*		We have established 04 nos. of AAQ monitoring stations in and around the plant and mines as mentioned in condition number 03 under specific condition for monitoring of ambient air quality of the

			area. Ambient air quality and stack emission is regularly monitored and reports are submitted to the MoEF / SPCB and CPCB. Ambient air Quality reports are enclosed as **Annexure-3** Stack emission reports are enclosed as **Annexure-1.**

AAQ Report of different location of Plant

Sl. No.	Tests Conducted	Method	RESULTS				Limit as per National Ambient Air Quality Standards
			L1	L2	L3	L4	
			19.11.2018	19.11.2018	19.11.2018	19.11.2018	
1	$PM_{2.5}(\mu g/m^3)$	NAAQM guide line volume - I by CPCB	41.47	42.87	52.32	48.12	60
2	$PM_{10}(\mu g/m^3)$	IS:5 182 (Part-23)	78.96	71.85	89.57	84.96	100
3	$SO_2(\mu g/m^3)$	IS:51 82 (Part-2)	14.78	15.21	16.36	18.78	80
4	$NO_X(\mu g/m^3)$	IS:5 182 (Part-6)	22.70	20.54	25.28	27.68	80
5	CO (mg/m^3)	IS:5 182 (Part-10)	0.82	0.81	0.85	0.91	2

LI= Near PCL Colony L2=Near Guest House,
L3= Near Crusher Unit-II L4= Near Admin. Building

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AAQ Report of different location of Village –Hinauti -Siahata

Sl. No.	Tests Conducted	Method	RESULTS				Limit as per National Ambient Air Quality Standards
			L1	L2	L3	L4	
			24.11.2018	24.11.2018	24.11.2018	24.11.2018	
1	$PM_{2.5}(\mu g/m^3)$	NAAQM guide line volume - I by CPCB	51.41	42.25	38.69	37.74	60
2	$PM_{10}(\mu g/m^3)$	IS:5 182 (Part-23)	81.25	77.85	68.14	63.45	100
3	$SO_2(\mu g/m^3)$	IS:51 82 (Part-2)	16.75	18.71	15.21	19.20	80
4	$NO_X(\mu g/m^3)$	IS:5 182 (Part-6)	24.23	26.36	23.52	24.85	80
5	CO (mg/m^3)	IS:5 182 (Part-10)	0.89	0.77	0.70	0.63	2

LI= Near Mines Site Office L2= Near Western Block Garden
L3=Village Hinauti L4= Village Sijahata

AAQ Report of different location of Village –Baghai

Sl. No.	Tests Conducted	Method	RESULTS				Limit as per National Ambient Air Quality Standards
			LI	L2	L3	L4	
			20.11.2018	20.11.2018	20.11.2018	20.11.2018	
1	$PM_{2.5}(\mu g/m^3)$	NAAQM guide line volume - I by CPCB	41.23	46.91	52.21	50.65	60
2	$PM_{10}(\mu g/m^3)$	IS:5 182 (Part-23)	79.96	82.25	85.74	78.91	100
3	$SO_2(\mu g/m^3)$	IS:51 82 (Part-2)	13.14	18.36	14.01	17.20	80
4	$NO_X(\mu g/m^3)$	IS:5 182 (Part-6)	20.45	22.98	21.72	22.87	80
5	CO (mg/m^3)	IS:5 182 (Part-10)	0.78	0.71	0.72	0.69	2

LI =AdiwasiTola (Near Bagahai ML Area) L2 = At BaisanTola (Near Bagahai ML Area).
L3 = South Side of Working Pit (Bagahai Mines) L4 =Near Boundary Pillar No.64 Bagahai

x **AAQ Report of different location**

Min Max						
Sl. No.	**Tests Conducted**	**Method**	**Min Max Avg**			**Limit as per National Ambient Air Quality Standards**
			Min	**Max**	**Avg**	
1	PM2.5(µg/m3)	NAAQM guide line volume - I by CPCB	37.74	52.32	45.49	60
2	PM10(µg/m3)	IS:5 182 (Part-23)	63.45	89.57	78.57	100
3	SO2(µg/m3)	IS:51 82 (Part-2)	13.14	19.2	16.48	80
4	NOX(µg/m3)	IS:5 182 (Part-6)	20.45	27.68	23.60	80
5	CO (mg/m3)	IS:5 182 (Part-10)	0.63	0.91	0.77	2

	Data on ambient air quality and stack emissions shall be regularly submitted to this Ministry including its Regional Office and SPCB /CPCB once in six months.		The AAQ and stack emissions are submitted to the authorities regularly.

Year	**Leases integrated with U-II**	
	Dispatch no.	**Date**
2010	PCL/ENV/2012/119	29.12.2011
2011	PCL/ENV/2012/87	16.07.2012
	PCL/ENV/2013/12	08.01.2013
2012	PCL/ENV/2013/66	16.05.2013
	PCL/ENV/2013/01	04.01.2014
2013	PCL/ENV/2014/82	14.07.2014
	PCL/ENV/2015/19	17.03.2015
2015	PCL/ENV/2018/81	02.09.2015
	PCL/ENV/2016/18	04.03.2016

2016	PCL/ENV/2016/92	28.09.2016
	PCL/ENV/2017/26	07.03.2017
2017	PCL/ENV/2017/67	14.08.2017
	PCL/ENV/2018/10	10.03.2018
2018	PCL/ENV/2018/52	27.08.2018

iv.	*Industrial waste water shall be properly collected and treated so as to conform to the standards prescribed under GSR 422(E) dated19thMay, 1993 and 31stDecember, 1993 or as amended from time to time. The treated waste water shall be utilized for plantation purpose.*		No industrial wastewater is generated as the cement plant is operated on dry process. For domestic wastewater, there is a sewage treatment plant of the state-of -art technology. It has the capacity to treat domestic wastewater of 600 KLPD. Contaminated water generated due to washing of equipment is passed though grease and oil trap tank having separation chambers and pumping arrangement. For separation of oil and grease particles from water, prime mover has been provided. The oil and grease is skimmed and kept in sealed barrels for further disposal to authorized vendors. The strained out water left in the tank is stored in tanks, and is re-used for washing of HEMM. Detailed Report of treated effluent attached as **Annexure- 8**

v.	*The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.*		The overall noise level is within threshold limit of 85dBA. To arrest the noise levels all equipment equipped with acoustic hoods, silencer, enclosures etc. besides that operators have been provided with PPE. Green belt is developed along the plant and mining area to minimize the noise pollution.
	The ambient noise levels shall conform to the standards prescribed under Environmental (Protection) Act, 1986 Rules,1989 viz. 75 dBA (day time) and 70 dBA (night time).		Detailed report is given in **Annexure- 04** :

vi.	*Proper housekeeping and adequate occupational health programs shall be taken up. Occupational Health Surveillance programme shall be done on a regular basis and records for at least 30-40 years. The programme shall include lung function and sputum analysis maintained properly tests once in six months. Sufficient preventive measures shall be adopted to avoid direct exposure to dust etc.*		We have already conducted various health surveillance programs whose records are maintained properly. This programme includes lung function and sputum analysis tests. Also sufficient preventive measures are adopted during the plant and mining operation to avoid direct exposure to dust etc. Occupational Health Survey (OHS) 32 nos staff and 41 nos workers have been medically examined in 2017-18. a) Periodical Medical Examinations are conducted of each employee by outside specialists once in every 5 years. Under this scheme each employee undergoes Pathological tests, blood group test, chest X-Rays, Audiometry tests, eye test etc. once every 5 years. Proper records of such tests are maintained. Not a single case of any occupational disease has so far been detected in our mines/plant. - Sample medical examination note is displayed. **b) Welfare Amenities:** A well-equipped Dispensary has been provided with Provision of Ambulance, Pathological Laboratory& X-Ray, and Audiometry etc. Drinking water facility with Molded water pots and two drinking water, water coolers for Summer season have been provided. Aqua guards - online purifiers have been fitted in drinking water supply system. The facility is totally free to all employees and their family members.

Xray Noted

PCL 503256

67253 original

503256

FORM "O"

[See Rule 29 - F (2) and 29 - L]
Report of medical examination under rule 29-B.
(To be issued in triplicate)**

Certificate No.

Certified that Shri/Shrimati* employed as......HEO..............................in...P.C.L... ....mine, Form A No. 5 has been examined for an initial/periodical* medical examination. He/she appears to be.....40..........................years of age.The findings of the examining authority are given in the attached sheet. It is considered that Shri /Shrimati...Raj Lallan Singh

*(a) is medically fit for any employment in mines.

*(b) is suffering from....................................and is medically unfit for
- (i) any employment in mines
- (ii) any employment below ground; or
- (iii) any employment or work...

(c) is suffering from ....and should get this disability cured/controlled and should be again examined within a period of..........................months. *He/she will appear for re-examination with the result of test of.............................*and the opinion of .... specialist from..........................He/She* may be permitted/not permitted* to carry on his duties during this period.

डॉ० डी० डी० मिश्रा
एम०एस० (ऑर्थो)
...
प्रिज्म सीमेन्ट लिमिटेड
(सीमेन्ट डिवीजन)
मनकहरी, सतना (म०प्र०)

Signature of examining authority

Dr. D. D. MISHRA
C.M.O. PCL
MEDICAL-CENTRE
Form NO. 10/01

Name and Designation Block Letters

Place Mankahari
Date 09/10/18

* Delete whatever not applicable.

** One copy of the certificate shall be handed over to the person concerned and another copy shall be sent to the manager of the mine concerned by registered post; and third copy shall be retained by the examining authority.

19

REPORT OF THE EXAMINING AUTHORITY

(To be filled in for every medical examination whether initial or periodical or re-examination or after cure/control of disability).

Annexure to certificate No. ....as a result of medical examination on ....

Identification mark....................................

Left thumb impression of the candidate

1. General development. Good/Fair/Poor
2. Height ....163.....Cms.
3. Weight ....65........Kg.
4. Eyes :
   (i) Visual acuity -Distant vision (with or without glasses)
   Right eye......6/6.... Left eye 6/6
   (ii) any organic disease of eyes no
   *(iii) night blindness no
   *(iv) Colour blindness no
   *(v) Squint no
   (*to be tested in special cases)
5. Ears :
   (i) Hearing right ear normal..................Left ear normal......................
   (ii) any organic disease no
6. Respiratory system :
   Chest measurement
   (i) after full inspiration ....95......Cms.
   (ii) after full expiration ....90.......Cms.
7. Circulatory system :
   Blood pressure 120/80 mm
   Pulse 74 m
8. Abdomen :
   Tenderness no
   Liver nm
   Spleen nm no
   Tumour
9. Nervous system
   History of fits or epilepsy no
   Paralysis – no normal
   Mental Health – normal
10. Locomotor system normal
11. Skin nm no
12. Hernia no
13. Hydrocele no
14. Any other abnormality no
15. Urine : Reaction Albumin – Nil Sugar – Nil
16. Skiagram of chest no
17. Any other "c" test considered necessary by the examining authority no
18. Any opinion of specialist considered necessary. no

डॉ० डी० डी० मिश्रा

Signature of examining authority

Place

(stamp: मेडिकल ऑफिसर / लिमिटेड / (सीमेन्ट डीवीजन) / मनकहरी, सतना (म०प्र०))

1/12/22

List of number of persons for periodic medical examination			
SL.No.	***Name of Year***	***Total No of Employees***	***No's of Person Medical done***
1	***2012***	120	**32**
2	***2013***	121	**27**
3	***2014***	117	**31**
4	***2015***	112	**59**
5	***2016***	118	**39**
6	***2017***	180	**34**
7	***2018***	280	**69**

vii.	*The company shall undertake eco-development measures including community welfare measures in the project area*.		The CSR programme is common for PCL. Various programs per training to eco-development and community welfare has been taken up by the company. Various social, educational, healthcare and environment initiative shave been taken by the company. Details of CSR Activities of year 2017-18 is enclosed as **Annexure-21**

CSR ACTIVITIES ROADMAP FY 2018-19			
S.N.	**Particulars/Activity**	**Estimated Exp. In Lacs**	**Expected Target Date**
A.	**INFRASTRUCTURE DEVELOPMENT**	69.52	31.03.2019
B.	**HEALTH & HYGIENE**	54.00	31.03.2019
C.	**EDUCATION**	28.00	31.03.2019
D.	**ENVIRONMENT CONSERVATION**	**81.46**	31.03.2019
E.	**WATER CONSERVATION & DRINKING WATER**	**7.70**	31.03.2019
F.	**EMPOWERMENT & SKILL DEVELOPMENT**	**8.5**	31.03.2019
G.	**PROMOTION OF SPORT ACTIVITIES**	**12**	31.03.2019
H.	**SOCIAL WELFARE**	**15**	31.03.2019
I.	**Grand Total**	**276.18**	

	Renovation Work of School and Anganvati		
			
	Renovation of Anganvadi at Bagahai Village		Renovation of Hr. Sec. School at Sijahata
	Organization of Medical Camp		
			
	Cataract Operation		Mega Medical Camp
			
	Pickle & Papad Making Training		
			

	Sanitation Awareness Meet		Farmers Meet
			
	Vasantosav Celebration at Ramvan		Uniform Distribution at School
			
	Road side Plantation with Tree Guard		Road side Plantation with Tree Guard

MAJOR AWARDS WONBY PRISM CEMENT PLANT

- Achieved First Award for Energy Conservation for Two Successive Years 2006 &2007 and Second for year 2008 at National Level, awarded by Govt. Of India, Ministry of Power &presided by President of India
- Achieved National Safety Award for outstanding performance inindustrial safety as runner-up during the performance year 2006. Subsequently achieved two numbers of runner up award for the year 2007
- Achieved Third Place at National Level Green Rating Ranking conducted by CSE, New Delhi for the Year 2005. First Place in M.P. &Chhattisgarh.
- Achieved State Level Environmental Award for the Year 2004-05 given by Govt. of Madhya Pradesh, Ministry of Environment &Housing, on 23.02.2008
- Achieved State Level Environmental Award for the Year 2008-09 given by Govt. of Madhya Pradesh, Ministry of Environment &Housing, on 10.01.2011.
- Achieved Second Prize in National Energy Conservation Award 2015
- Achieved Five Star Rating Mines(Baghai Limestone Mines) for year 2016-17 given by Ministry of Mines ,Govt of India on 20.03.2018.

Prizes won by PCL Mines in MEMCW for FY 2017-18

2nd Prize for Waste Dump Management (Baghai Mines)

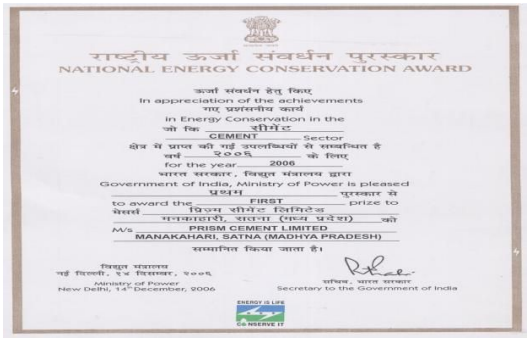
3rd Prize for Mineral beneficiation

3rd Prize for Mineral Conservation

Year wise Prize List attached as Annexure- 22

First Award for Energy Conservation at National level for the year 2007
Given by Hon'ble President Of India

Third Green Level Ranking award at national level for the year 2005
Given by CSE, New Delhi

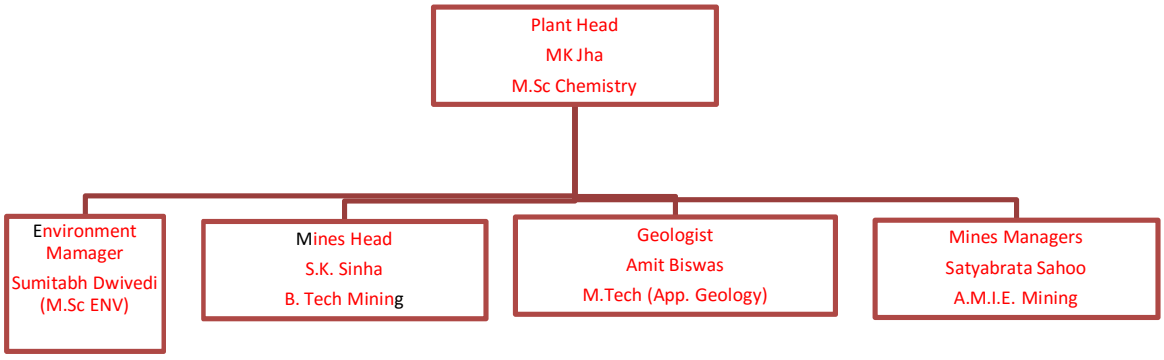


viii.	*The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/ EMP.*		We are strictly adhering with the environment protection measures as stipulated in approved EMP of mines e.g. Summarized measures of EMP of mining lease having area 772.067ha are mentioned below:-

Check List of EMP compliance of 772.067 ha		
Sr.No.	Condition	Status
1	AIR QUALITY MANAGEMENT	Fully implemented and complied.
a	Prevention and Control of Air Pollution	Fully implemented and complied.
b	Pollution due to Fugitive Emissions	Fully implemented and complied.
C	During drilling operations	
D	During blasting operation	
E	During loading/unloading operation	
F	During Transport operation	
G	During crushing operation	

H	Plantation	
I	Monitoring of air pollution	
J	Prevention and Control of Gaseous Pollution	Fully implemented and complied
2	NOISE & GROUND VIBRATION MANAGEMENT	Fully implemented and complied.
a	Noise Abatement and Control	
b	Vibration Abatement	
3	WATER MANAGEMENT	Fully implemented and complied
a	Surface Water Management	
b	Ground Water Management	
c	Waste Water Management	
d	Water Conservation Measures	
e	Optimum Utilization of Ground Water	
f	Rain water harvesting	
4	SOLID WASTE MANAGEMENT	Fully implemented and complied.
5	LAND RECLAMATION	Fully implemented and complied.
6	GREEN BELT DEVELOPMENT	Fully implemented and complied
a	Plantation Programme	
b	General Guidelines for Green Belt Development	Fully implemented and complied
7	CORPORATE SOCIAL RESPONSIBILITY	Fully implemented and complied
8	INDUSTRIAL HYGIENE, OCCUPATIONAL HAZARDS AND SAFETY	Fully implemented and complied

ix.	*Environmental Management Cell has to be established to carry out functions relating to environmental management action plans. The head of the cell should directly report to the Chief Executive*		Environmental Management Cell is functioning effectively, Structure of which is as follows:



Assisted by : B.S.Shekhawat, B.Sc. Agriculture (Hons.) PGDM in Environment Management

x.	*The capital cost and recurring cost annum earmarked for environmental protection equipments shall be Rs. 115 Crores and Rs.3.20 Crores to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. Time bound implementation schedule for implementing all the conditions stipulated herein shall be submitted. The funds so provided shall not be diverted for any other purpose.*		Complying with the given condition, we have earmarked a fund for environmental protection equipment the fund will not diverted for any other purpose. The capital cost and recurring cost annum earmarked for environmental protection is common for PCL. Year Wise Recurring Expenditure for Environmental Management is as follows

CAPEX and OPEX of Environment Monitoring Equipments

Heads	Year				
	2013-14(Rs Lacs)	2014-15(Rs Lacs)	2015-16(Rs Lacs)	2016-17(Rs Lacs)	2017-18(Rs Lacs)
Maintenance of APCEs & CEMS	15.49	48.94	65.48	38.64	16.80
Env Monitoring, STP Operation & Maintenance, Plantation Etc.	109.48	69.38	53.78	37.71	51.70
APCE Power Consumption	1403.67	1374.67	1157.06	996.72	1014.84
Construction of Road & walkway	-	-	-	-	22.44
Total (Rs in Lacs)	**1528.64**	**1492.99**	**1276.32**	**1073.07**	**1106.00**

Year Wise Recurring Expenditure for Environmental Management is enclosed as **Annexure-23**

xi.	*The Regional Office of this Ministry / CPCB / SPCB shall monitor the stipulated conditions. The project authorities shall extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.*		Agreed.
	A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.		Six monthly compliance and monitored data are submitted regularly. Details are given below:

Year	Leases integrated with U-II	
	Dispatch no.	**Date**
2010	PCL/ENV/2012/119	29.12.2011
2011	PCL/ENV/2012/87	16.07.2012
	PCL/ENV/2013/12	08.01.2013
2012	PCL/ENV/2013/66	16.05.2013
	PCL/ENV/2013/01	04.01.2014
2013	PCL/ENV/2014/82	14.07.2014
	PCL/ENV/2015/19	17.03.2015
2015	PCL/ENV/2018/81	02.09.2015
	PCL/ENV/2016/18	04.03.2016
2016	PCL/ENV/2016/92	28.09.2016
	PCL/ENV/2017/26	07.03.2017
2017	PCL/ENV/2017/67	14.08.2017
	PCL/ENV/2018/10	10.03.2018

xii.	*The Project Authorities shall inform the Regional Office as well as the Ministry, the*		The copy of the intimation of the financial closure of the project is enclosed as **Annexure-24**

	date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.		
xiii.	*No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment & Forests.*		Agreed
	No change in the calendar plan including excavation, quantum of limestone and waste shall be made.		Also there will not be any change in the calendar plan including excavation, quantum of limestone and waste shall be made. All mining activities are being carried out as per approved schemes of mining for all mines Production and development is summarized below for last five years for 772.067 ha ML:-

Sl no.	FY	Production as per SoM	Production as per EC limit	Actual production	
1.	2012-13	3001700	825000	739983	Production within EC limits.
2.	2013-14	3001000	825000	824810	
3.	2014-15	3004500	825000	824341	
4.	2015-16	3000000	825000	824875	
5.	2016-17	3000000	825000	823177	
6.	2017-18	3000000	825000	824850	

Development Plan for last five years for 772.067 ha.

Sl no.	FY	Waste rock as per SoM	Soil as per SoM	Actual W/R	Actual Soil
1.	2012-13	668000	366080	664673	364128
2.	2013-14	1888000	747520	1409120	420682
3.	2014-15	1312000	532480	809369	427231
4.	2015-16	862450	1249615	205897	750193
5.	2016-17	689272	239699	108337	239699
6.	2017-18			178143	182255

xiv.	*Measures should be taken for control of noise levels below 85dB (A) in the work environment. Workers engaged in operations of HEMM etc. should be provided with ear plugs/muffs.*		Quarterly measurements of noise levels at different sources are carried out. The noise levels is controlled below threshold limit. The operating staff at these locations has been provided with earmuffs. Noise Level Survey Jan 2018 is enclosed Annexure no- 04
xv.	*Industrial waste water (workshop and waste*		No industrial wastewater is generated as the

	water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.		cement plant is operated on dry process. For domestic wastewater, there is a sewage treatment plant of the state-of -art technology. It has the capacity to treat domestic wastewater of 600 KLPD. Contaminated water generated due to washing of equipment is passed though grease and oil trap tank having separation chambers and pumping arrangement. For separation of oil and grease particles from water, prime mover has been provided. The oil and grease is skimmed and kept in sealed barrels for further disposal to authorized vendors .
xvi.	*Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.*		Personal Protective Equipment; PPE has been provided to each employee. Respiratory devices has been used by the persons working in dusty areas. The list of PPEs issued from Janr-18 to June18 is given below

Total PPE's July-18 to Dec-18

Material	Qty.	Amount in Rs.
Dust Mask	139	2055
Goggle Safety Glass PVC,	39	6116
Hand Gloves	89	2232
Helmet Industrial Safety	162	12517
Jacket fluorescent High Visibility Wear	100	3000
Plug Ear muff	200	1700
TOTAL	729	27620

			Adequate training on safety and health awareness has been given by experts at VT center. Details of Vocational Training ; VT are given below:

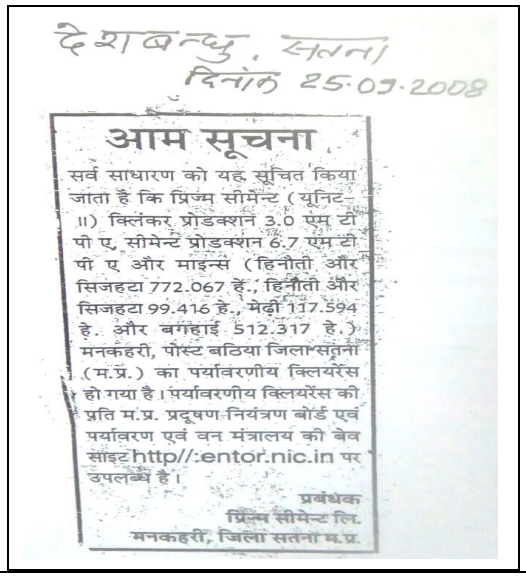
Training programme executed during July 2018 to Dec 2018

PARTICULARS	Nos of Participants	Grade
General Safety	28	Worker
Material Handling	26	Worker
Road Safety	102	Worker
Safe working at height	22	Worker
Bio medical waste management	22	Staff
Safe dressing & Injection practices	0	Staff
Total Participent	**200**	

Additionally vocational trainings imparted during July 2018 to Dec 2018 in which total **110** workmen of mines attended the training.

			General Safety Consciousness of workers: Continuous efforts are made to educate the workers about the safety of men and machines through regular departmental talks & instructions, vocational training etc. A safety gate meeting is also organized on every first day of month. **Occupational Health Examination:** Periodical Medical Examinations are conducted of each employee by outside specialists once in every 5 years. Under this scheme each employee undergoes Pathological tests, blood group test, chest X-Rays, Audiometry tests, eye test etc. once every 5 years. Proper records of such tests are maintained. Not a single case of any occupational disease has so far been detected in our mines/plant. Details are given in point no. vi.
xvii.	*The project authorities shall inform to the Regional Office located regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.*		The Regional Office was informed regarding financial closure of the project. Copy of the intimation of the financial closure of the project is enclosed as **Annexure-24**
xviii.	*A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation, if any, was received while processing the proposal.*		Agreed
xix.	*State pollution control board should display a copy of the clearance letter at the Regional Office, District Industry Centre &Collector's office/ Tehsildar's office for 30 days.*		Agreed
xx.	*The project authorities shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and*		We had already published the accordance of Environmental Clearance in two newspapers on dated 25.09.2008.

a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at "http://envfor.nic.in" and a copy of the same shall be forwarded to the Regional Office of this Ministry.

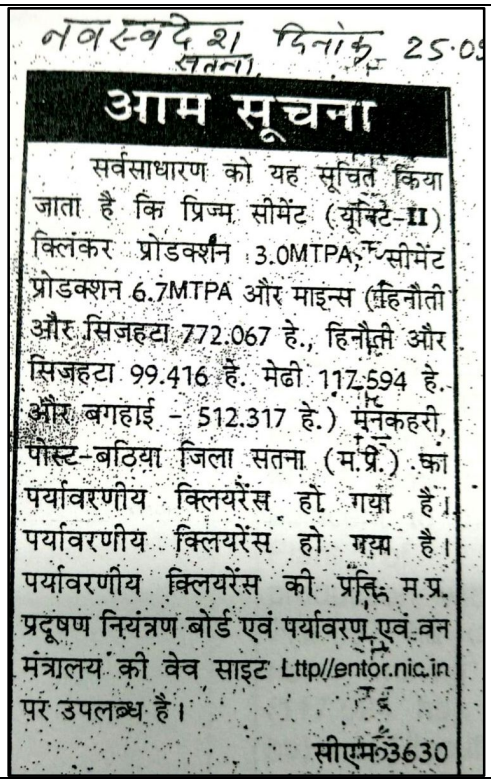


देशबन्धु, सतना
दिनांक 25.07.2008

आम सूचना

सर्व साधारण को यह सूचित किया जाता है कि प्रिज्म सीमेंट (यूनिट-II) क्लिंकर प्रोडक्शन 3.0 एम.टी.पी.ए. सीमेन्ट प्रोडक्शन 6.7 एम.टी.पी.ए और माइन्स (हिनौती और सिजहटा 772.067 हे., हिनौती और सिजहटा 99.416 हे., मेढ़ी 117.594 हे. और बगहाई 512.317 हे.) मनकहरी, पोस्ट बठिया जिला सतना (म.प्रे.) का पर्यावरणीय क्लियरेंस हो गया है। पर्यावरणीय क्लियरेंस की प्रति म.प्र. प्रदूषण नियंत्रण बोर्ड एवं पर्यावरण एवं वन मंत्रालय की वेव साइट http//:entor.nic.in पर उपलब्ध है।

प्रबंधक
प्रिज्म सीमेन्ट लि.
मनकहरी, जिला सतना म.प्र.



नवदेश, सतना दिनांक 25.0

आम सूचना

सर्वसाधारण को यह सूचित किया जाता है कि प्रिज्म सीमेंट (यूनिट-II) क्लिंकर प्रोडक्शन 3.0MTPA, सीमेंट प्रोडक्शन 6.7MTPA और माइन्स (हिनौती और सिजहटा 772.067 हे., हिनौती और सिजहटा 99.416 हे. मेढी 117.594 हे. और बगहाई - 512.317 हे.) मनकहरी, पोस्ट-बठिया जिला सतना (म.प्रे.) का पर्यावरणीय क्लियरेंस हो गया है। पर्यावरणीय क्लियरेंस हो गया है। पर्यावरणीय क्लियरेंस की प्रति म.प्र. प्रदूषण नियंत्रण बोर्ड एवं पर्यावरण एवं वन मंत्रालय की वेव साइट Lttp//entor.nic.in पर उपलब्ध है।

सीएम-3630

Annexure-1

ECOMEN LABORATORIES PVT. LTD.

Flat No. 8, 2nd Floor, Arif Chamber-V, Sector H, Aliganj, Lucknow - 226 024
Phone No. : (91-522) 2746282, 2745726 Telefax No.: (91 - 522) 2745726
E-mail: ravi.bhargava@gmail.com, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI

An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECO LAB/Stack8/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF STACK EMISSIONS*

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Date of Monitoring	:	22.11.2018
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Source of Emission	:	Cement Mill Emission
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit

Details of Stack

Material of Construction	:	M.S.
Stack Attached to	:	Cement Mill 2 (Unit – I)
Stack Height (m)	:	36.0
Stack Top	:	Circular
Inside Diameter of Stack (m) (at sampling point)	:	0.96
Cross Sectional Area of Duct/Stack (m^2)	:	0.72
Ambient Air (°C)	:	25.0
Flue Gas Temperature (°C)	:	91.0
Exit Velocity of Gas (m/sec.)	:	7.53
Flow Rate (Nm^3/ sec.)	:	4.32
APCD if any	:	Bag House

Sl. No.	*Tests Conducted*	Method	Pollutant Concentration
1.	Particulate Matter (PM) (mg/Nm^3)	IS:11255 (Part-1)	10.25

*The result are related only to item tested.

Analyst

Authorized Signatory
Ecomen Laboratories Pvt. Ltd.
Flat No.-8 2nd Floor, Arif Chamber-V
Sector-H, Aliganj, Lucknow-226024
Ph.-2746282, Fax:2745726

Quality Manager

ECOMEN LABORATORIES PVT. LTD.

Flat No. 8, 2nd Floor, Arif Chamber-V, Sector H, Aliganj, Lucknow - 226 024
Phone No. : (91-522) 2746282, 2745726 Telefax No.: (91 - 522) 2745726
E-mail: ravi.bhargava@gmail.com, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI

An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECO LAB/Stack9/11/18
TEST REPORT ISSUE DATE:03.12.2018

TEST REPORT OF STACK EMISSIONS*

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Date of Monitoring	:	22.11.2018
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Source of Emission	:	Cement Mill Emission
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit

Details of Stack

Material of Construction	:	M.S.
Stack Attached to	:	Cement Mill 1 (Unit II)
Stack Height (m)	:	49.0
Stack Top	:	Circular
Inside Diameter of Stack (m) (at sampling point)	:	1.0
Cross Sectional Area of Duct/Stack (m^2)	:	0.785
Ambient Air (°C)	:	25.0
Flue Gas Temperature (°C)	:	86.0
Exit Velocity of Gas (m/sec.)	:	7.44
Flow Rate (Nm^3/ sec.)	:	4.72
APCD if any	:	Bag House

Sl. No.	*Tests Conducted*	Method	Pollutant Concentration
1.	Particulate Matter (PM) (mg/Nm^3)	IS:11255 (Part-1)	12.52

*The result are related only to item tested.

Analyst

Authorized Signatory
Ecomen Laboratories Pvt. Ltd.
Flat No.-8 2nd Floor, Arif Chamber-V
Sector-H, Aliganj, Lucknow-226024
Ph.-2746282, Fax:2745726

Quality Manager

ECOMEN LABORATORIES PVT. LTD.

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Phone No. : (91-522) 2746282, 2745726 Telefax No.: (91 - 522) 2745726
E-mail: ravi.bhargava@gmail.com, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI

An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECO LAB/Stack6/11/18
TEST REPORT ISSUE DATE:03.12.2018

TEST REPORT OF STACK EMISSIONS*

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Date of Monitoring	:	22.11.2018
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Source of Emission	:	Cooler Stack Emission
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit

Details of Stack

Material of Construction	:	M.S.
Stack Attached to	:	Cooler Unit-2
Stack Height (m)	:	50.0
Stack Top	:	Circular
Inside Diameter of Stack (m) (at sampling point)	:	4.5
Cross Sectional Area of Duct/Stack (m^2)	:	15.89
Ambient Air (°C)	:	33.0
Flue Gas Temperature (°C)	:	273.0
Exit Velocity of Gas (m/sec.)	:	14.21
Flow Rate (Nm^3/ sec.)	:	120.08
APCD if any	:	ESP

Sl. No.	*Tests Conducted*	Method	Pollutant Concentration
1.	Particulate Matter (PM) (mg/Nm^3)	IS:11255 (Part-1)	22.85

*The result are related only to item tested.

Analyst

Authorized Signatory
Ecomen Laboratories Pvt. Ltd.
Flat No.-8 2nd Floor, Arif Chamber-V
Sector-H, Aliganj, Lucknow-226024
Ph.-2746282, Fax:2745726

Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/12 TEST REPORT NO: ECO LAB/Stack3/11/18
TEST REPORT ISSUE DATE:03.12.2018

TEST REPORT OF STACK EMISSIONS*

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Date of Monitoring	:	21.11.2018
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Source of Emission	:	Coal Mill Emission
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit

Details of Stack

Material of Construction	:	M.S.
Stack Attached to	:	Coal Mill Unit-I
Stack Height (m)	:	50.0
Stack Top	:	Circular
Inside Diameter of Stack (m) (at sampling point)	:	2.24
Cross Sectional Area of Duct/Stack (m^2)	:	3.94
Ambient Air (°C)	:	25.0
Flue Gas Temperature (°C)	:	73.0
Exit Velocity of Gas (m/sec.)	:	9.02
Flow Rate (Nm^3/ sec.)	:	29.82
APCD if any	:	Bag House

Sl. No.	*Tests Conducted*	Method	*Pollutant Concentration*
1.	Particulate Matter (PM) (mg/Nm^3)	IS:11255 (Part-1)	18.52

*The result are related only to item tested.

Analyst

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FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECO LAB/Stack1/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF STACK EMISSIONS*

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Date of Monitoring	:	21.11.2018
Sample Collected by	:	Mr. Maan Singh& Virendra Singh
Source of Emission	:	Raw Mill Emission
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit
Details of Stack		
Material of Construction	:	M.S.
Stack Attached to	:	Kiln/Raw Mill Unit-I
Stack Height (m)	:	125
Stack Top	:	Circular
Inside Diameter of Stack (m) (at sampling point)	:	4.6
Cross Sectional Area of Duct/Stack (m^2)	:	16.61
Ambient Air (°C)	:	25.0
Flue Gas Temperature (°C)	:	168.0
Exit Velocity of Gas (m/sec.)	:	15.28
Flow Rate (Nm^3/ sec.)	:	167.11
APCD if any	:	Bag House

Sl. No.	*Tests Conducted*	Method	*Pollutant Concentration in (At 10% O_2)*
1.	Particulate Matter (PM) (mg/Nm^3)	IS:11255 (Part-1)	20.45
2.	Sulphur Dioxide (SO_2) (mg/Nm^3)	IS:11255 (Part-2)	24.14
3.	Nitrogen Oxides (NOx) (mg/Nm^3)	IS:11255 (Part-7)	532.54

*The result are related only to item tested.

Analyst

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FORMAT NO. ECO/QS/FORMAT/12 TEST REPORT NO: ECO LAB/Stack2/11/18
TEST REPORT ISSUE DATE:03.12.2018

TEST REPORT OF STACK EMISSIONS*

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Date of Monitoring	:	21.11.2018
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Source of Emission	:	Raw Mill Emission
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit

Details of Stack

Material of Construction	:	M.S.
Stack Attached to	:	Kiln/Raw Mill Unit-2
Stack Height (m)	:	100
Stack Top	:	Circular
Inside Diameter of Stack (m) (at sampling point)	:	4.75
Cross Sectional Area of Duct/Stack (m^2)	:	17.71
Ambient Air (°C)	:	28.0
Flue Gas Temperature (°C)	:	159.0
Exit Velocity of Gas (m/sec.)	:	16.32
Flow Rate (Nm^3/ sec.)	:	194.26
APCD if any	:	Bag House

Sl. No.	*Tests Conducted*	Method	*Pollutant Concentration in (At 10% O_2)*
1.	Particulate Matter (PM) (mg/Nm^3)	IS:11255 (Part-1)	20.24
2.	Sulphur Dioxide (SO_2) (mg/Nm^3)	IS:11255 (Part-2)	23.08
3.	Nitrogen Oxides (NOx) (mg/Nm^3)	IS:11255 (Part-7)	563.47

*The result are related only to item tested.

Analyst

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FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECO LAB/Stack4/11/18
TEST REPORT ISSUE DATE:03.12.2018

TEST REPORT OF STACK EMISSIONS*

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Date of Monitoring	:	21.11.2018
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Source of Emission	:	Coal Mill Emission
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit

Details of Stack

Material of Construction	:	M.S.
Stack Attached to	:	Coal Mill Unit-2
Stack Height (m)	:	65.0
Stack Top	:	Circular
Inside Diameter of Stack (m) (at sampling point)	:	2.24
Cross Sectional Area of Duct/Stack (m^2)	:	3.94
Ambient Air (°C)	:	26.0
Flue Gas Temperature (°C)	:	82.0
Exit Velocity of Gas (m/sec.)	:	8.96
Flow Rate (Nm^3/ sec.)	:	28.87
APCD if any	:	Bag House

Sl. No.	*Tests Conducted*	Method	Pollutant Concentration
1.	Particulate Matter (PM) (mg/Nm^3)	IS:11255 (Part-1)	21.45

*The result are related only to item tested.

Analyst

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FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECO LAB/Stack5/11/18
TEST REPORT ISSUE DATE:03.12.2018

TEST REPORT OF STACK EMISSIONS*

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Date of Monitoring	:	22.11.2018
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Source of Emission	:	Cooler Stack Emission
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit

Details of Stack

Material of Construction	:	M.S.
Stack Attached to	:	Cooler Unit-1
Stack Height (m)	:	50.0
Stack Top	:	Circular
Inside Diameter of Stack (m) (at sampling point)	:	4.6
Cross Sectional Area of Duct/Stack (m^2)	:	16.61
Ambient Air (°C)	:	32.0
Flue Gas Temperature (°C)	:	282.0
Exit Velocity of Gas (m/sec.)	:	15.28
Flow Rate (Nm^3/ sec.)	:	132.78
APCD if any	:	ESP

Sl. No.	*Tests Conducted*	Method	Pollutant Concentration
1.	Particulate Matter (PM) (mg/Nm^3)	IS:11255 (Part-1)	20.36

*The result are related only to item tested.

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FORMAT NO. ECO/QS/FORMAT/12

TEST REPORT NO: ECO LAB/Stack10/11/18
TEST REPORT ISSUE DATE:03.12.2018

TEST REPORT OF STACK EMISSIONS*

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Date of Monitoring	:	22.11.2018
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Source of Emission	:	Cement Mill Emission
Sampling Method	:	IS: 11255
Instrument Used	:	Stack Monitoring Kit

Details of Stack

Material of Construction	:	M.S.
Stack Attached to	:	Cement Mill 2 (Unit II)
Stack Height (m)	:	49.0
Stack Top	:	Circular
Inside Diameter of Stack (m) (at sampling point)	:	1.0
Cross Sectional Area of Duct/Stack (m^2)	:	0.785
Ambient Air (°C)	:	24.0
Flue Gas Temperature (°C)	:	88.0
Exit Velocity of Gas (m/sec.)	:	6.99
Flow Rate (Nm^3/ sec.)	:	4.41
APCD if any	:	Bag House

Sl. No.	*Tests Conducted*	Method	Pollutant Concentration
1.	Particulate Matter (PM) (mg/Nm^3)	IS:11255 (Part-1)	14.28

*The result are related only to item tested.

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for Ecomen

Quality Manager

ANNEXURE - 2

रजिस्ट्री सं० डी० एल०-33004/99

REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण

EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)

PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित

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पर्यावरण और वन मंत्रालय

अधिसूचना

नई दिल्ली, 3 जनवरी, 2014

का.आ. 21 (अ).—केन्द्रीय सरकार, पर्यावरण (संरक्षण) नियम, 1986 के नियम 10 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 12 और धारा 13 की उपधारा (1) के खंड (ख) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, पर्यावरण और वन मंत्रालय, भारत सरकार की अधिसूचना संख्यांक का. आ. 1174(अ) तारीख 18 जुलाई, 2007 का और संशोधन करती है, अर्थात :—

उक्त अधिसूचना से संलग्न सूची में, —

(क) क्रम संख्यांक 3, संख्यांक 46, संख्यांक 55, संख्यांक 57, संख्यांक 58, संख्यांक 61, संख्यांक 65, संख्यांक 68 और संख्यांक 69 और उससे संबंधित प्रविष्टियों के स्थान पर निम्नलिखित संख्यांक और प्रविष्टियां रखी जाएंगी, अर्थात् :—

(ख) क्रम संख्यांक 113 और उससे संबंधित प्रविष्टियों के पश्चात्, निम्नलिखित क्रम संख्यांक और प्रविष्टियां अंत:स्थापित की जाएगी, अर्थात् :--

(1)	(2)	(3)	(4)
"114	मैसर्स इकोमेन लैबोरेट्रीज़ प्रा.लि., फ्लेट नं0 8, 2nd फ्लोर, आरिफ चैंबर-V, सैक्टर- H, अलिगंज, लखनऊ-226024 (उत्तर प्रदेश)	(1) सुश्री रीना त्रिपाठी (2) डा0 ओम प्रकाश शुक्ला (3) श्री प्रवीण कुमार दुबे	3.01.2014 से 2.01.2019

[फा.सं. क्यू-15018/23/2013-सीपीडब्ल्यू]

डा. राशिद हसन, सलाहकार

National Accreditation Board for Testing and Calibration Laboratories

(A Constituent Board of Quality Council of India)

CERTIFICATE OF ACCREDITATION

ECOMEN LABORATORIES PVT. LTD.

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

Flat 5-8, IInd Floor, Arif Chamber V, Sector-H, Aliganj, Lucknow, Uttar Pradesh

in the field of

TESTING

Certificate Number TC-7587 *(in lieu of T-2202)*

Issue Date 25/07/2018 **Valid Until** 24/07/2020

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Signed for and on behalf of NABL

89076970100030001777

Anil Relia
Chief Executive Officer

Annexure-3

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FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ1/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF AMBIENT AIR*

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Sampling Method	:	IS: 5182
Instrument Used	:	FDS & RDS

Sl. No.	*Tests Conducted*	Method	Result				*Limit as per National Ambient Air Quality Standards*
			L1	L2	L3	L4	
			19.11.2018	19.11.2018	19.11.2018	19.11.2018	
1	$PM_{2.5}$(µg/m^3)	NAAQM guide line volume – I by CPCB	41.47	42.87	52.32	48.12	60
2	PM_{10}(µg/m^3)	IS:5182 (Part-23)	78.96	71.85	89.57	84.96	100
3	SO_2(µg/m^3)	IS:5182 (Part-2)	14.78	15.21	16.36	18.78	80
4	NO_x(µg/m^3)	IS:5182 (Part-6)	22.70	20.54	25.28	27.68	80
5	CO (mg/m^3)	IS:5182 (Part-10)	0.82	0.81	0.85	0.91	02

*The result are related only to item tested.

Note:

L1= Near PCL Colony L2=Near Guest House,
L3= Near Crusher Unit-II L4= Near Admin. Building

Standards:

S1 = Ambient Air Quality Standard for Residential, Industrial & Rural Other Area

Analyst

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FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ2/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF AMBIENT AIR

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Sampling Method	:	IS: 5182
Instrument Used	:	FDS & RDS

Sl. No.	*Tests Conducted*	Method	Result				*Limit as per National Ambient Air Quality Standards*
			L1	L2	L3	L4	
			24.11.2018	24.11.2018	24.11.2018	24.11.2018	
1	$PM_{2.5}(\mu g/m^3)$	NAAQM guide line volume – I by CPCB	51.41	42.25	38.69	37.74	60
2	$PM_{10}(\mu g/m^3)$	IS:5182 (Part-23)	81.25	77.85	68.14	63.45	100
3	$SO_2(\mu g/m^3)$	IS:5182 (Part-2)	16.75	18.71	15.21	19.20	80
4	$NO_x(\mu g/m^3)$	IS:5182 (Part-6)	24.23	26.36	23.52	24.85	80
5	$CO\ (mg/m^3)$	IS:5182 (Part-10)	0.89	0.77	0.70	0.63	02

*The result are related only to item tested.

Note:

L1= Nr Mines Site Office
L2= Near Western Block Garden,
L3=Village Hinauti
L4= Village Sijahata

Standards:
S1 = Ambient Air Quality Standard for Residential, Industrial & Rural Other Area

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FORMAT NO. ECO/QS/FORMAT/10 TEST REPORT NO: ECO LAB/AAQ3/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF AMBIENT AIR

Name of the Company : M/s Prism Cement Limited
Address of the Company : Village Mankahari
Tehsil Rampur Baghelan
District Satna (M.P.)
Sample Collected by : Mr. Maan Singh & Virendra Singh
Sampling Method : IS: 5182
Instrument Used : FDS & RDS

Sl. No.	*Tests Conducted*	Method	Result				*Limit as per National Ambient Air Quality Standards*
			L1	L2	L3	L4	
			20.11.2018	20.11.2018	20.11.2018	20.11.2018	
1	$PM_{2.5}(\mu g/m^3)$	NAAQM guide line volume – I by CPCB	41.23	46.91	52.21	50.65	60
2	$PM_{10}(\mu g/m^3)$	IS:5182 (Part-23)	79.96	82.25	85.74	78.91	100
3	$SO_2(\mu g/m^3)$	IS:5182 (Part-2)	13.14	18.36	14.01	17.20	80
4	$NO_x(\mu g/m^3)$	IS:5182 (Part-6)	20.45	22.98	21.72	22.87	80
5	CO (mg/m^3)	IS:5182 (Part-10)	0.78	0.71	0.72	0.69	02

*The result are related only to item tested.

Note:
L1= AdiwasiTola (Nr Bagahai ML Area) L2= At BaisanTola (Nr. Bagahai ML Area),
L3=South Side of Working Pit (Bagahai Mines) L4= Near Boundary Pillar No.64 Bagahai

Standards:
S1 = Ambient Air Quality Standard for Residential, Industrial & Rural Other Area

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FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ4/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF WORK PLACE AIR MONITORING

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Sampling Method	:	IS: 5182
Instrument Used	:	FDS & RDS

Sl. No.	*Tests Conducted*	Method	Result			
			L1	L2	L3	L4
			21.11.2018	21.11.2018	21.11.2018	21.11.2018
1	$PM_{2.5}$($\mu g/m^3$)	NAAQM guide line volume – I by CPCB	59.36	55.96	55.78	52.85
2	PM_{10} ($\mu g/m^3$)	IS:5182 (Part-23)	119.56	112.30	108.54	99.63
3	SO_2($\mu g/m^3$)	IS:5182 (Part-2)	19.32	23.78	15.20	14.85
4	NO_x($\mu g/m^3$)	IS:5182 (Part-6)	24.30	32.36	24.65	20.87
5	CO (mg/m^3)	IS:5182 (Part-10)	0.91	0.89	0.96	0.80

*The result are related only to item tested.

Note:

L1= Near Cement Mill Unit –II
L2= Near Railway Yard,
L3= Near Packing Plant
L4= Kiln Unit-II

Analyst

Authorized Signatory
Ecomen Laboratories Pvt. Ltd.
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for-
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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/10

TEST REPORT NO: ECO LAB/AAQ5/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF AMBIENT AIR

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District Satna (M.P.)
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Sampling Method	:	IS: 5182
Instrument Used	:	FDS & RDS

Sl. No.	*Tests Conducted*	Method	Result				*Limit as per National Ambient Air Quality Standards*
			L1	L2	L3	L4	
			22.11.2018	22.11.2018	22.11.2018	22.11.2018	
1	$PM_{2.5}(\mu g/m^3)$	NAAQM guide line volume – I by CPCB	38.69	47.21	42.10	35.74	60
2	$PM_{10}(\mu g/m^3)$	IS:5182 (Part-23)	77.21	80.56	76.60	62.96	100
3	$SO_2(\mu g/m^3)$	IS:5182 (Part-2)	13.47	17.63	19.22	15.52	80
4	$NO_x(\mu g/m^3)$	IS:5182 (Part-6)	18.63	25.87	27.63	19.69	80
5	CO (mg/m^3)	IS:5182 (Part-10)	0.92	0.86	0.79	0.65	02

*The result are related only to item tested.

Note:
L1=Nr. Nar Nala Bridge, L2= Nr. Medhi Mines Boundary Pillar No 28
L3= Nr. Medhi Mines Boundary Pillar No.23 L4= Village Malgaon

Standards:
S1 = Ambient Air Quality Standard for Residential, Industrial & Rural Other Area

Analyst

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Annexure-4

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FORMAT NO. ECO/QS/FORMAT/13

TEST REPORT NO: ECO LAB/AN1/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF AMBIENT NOISE LEVEL

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District- Satna (M.P.)
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Date of Monitoring	:	19.11.2018 to 20.11.2018
Instrument Description	:	Noise Meter (Make:HTC)
Test Method	:	IS: 4412, Part-1 & 2, 1991

Sl. No.	Locations	Day Time Leq Value in dB(A)	Night Time Leq Value in dB(A)
1.	Near PCL Colony	63.5	53.4
2.	Near Guest House	66.0	55.7
3.	Near Crusher Unit-II	71.2	64.2
4.	Near Admin. Building	67.3	63.9

Noise (Ambient Standard)

Area Code	Category of area	Limit in dB (A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Note:

1. Day time is reckoned in between 6:00 AM and 10:00 PM.
2. Night time is reckoned in between 10:00 PM and 6:00 AM
3. Silence zone is defined as area up to 100m around such premises as hospitals, educational institutions & courts. The silence zones are to be declared by a competent authority.
4. Mixed categories of areas should be declared as one of the four above-mentioned categories by the competent authority and the corresponding standard shall apply.

Analyst

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FORMAT NO. ECO/QS/FORMAT/13

TEST REPORT NO: ECO LAB/AN2/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF AMBIENT NOISE LEVEL

Name of the Company	:	M/s Prism Cement Hinauti- Sijahata& Mankahari Limestone mines
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District- Satna (M.P.)
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Date of Monitoring	:	21.11.2018 to 22.11.2018
Instrument Description	:	Noise Meter (Make:HTC)
Test Method	:	IS: 4412, Part-1 & 2, 1991

Sl. No.	Locations	Day Time Leq Value in dB(A)	Night Time Leq Value in dB(A)
1.	At Mines site Office	67.25	60.0
2.	Near Western Block Garden	62.5	52.8
3.	Village Hinauti	53.0	43.7
4.	Village Sijahata	51.4	41.4

Noise (Ambient Standard)

Area Code	Category of area	Limit in dB (A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Note:

1. Day time is reckoned in between 6:00 AM and 10:00 PM.
2. Night time is reckoned in between 10:00 PM and 6:00 AM
3. Silence zone is defined as area up to 100m around such premises as hospitals, educational institutions & courts. The silence zones are to be declared by a competent authority.
4. Mixed categories of areas should be declared as one of the four above-mentioned categories by the competent authority and the corresponding standard shall apply.

Analyst

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for Ravindra
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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/13

TEST REPORT NO: ECO LAB/AN3/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF AMBIENT NOISE LEVEL

Name of the Company	:	**M/s Prism Cement Medhi Limestone mines**
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District- Satna(M.P.)
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Date of Monitoring	:	23.11.2018 to 24.11.2018
Instrument Description	:	Noise Meter (Make:HTC)
Test Method	:	IS: 4412, Part-1 & 2, 1991

Sl. No.	Locations	Day Time Leq Value in dB(A)	Night Time Leq Value in dB(A)
1.	Near Nar Nala Bridge	50.3	40.9
2.	Near Medhi Mines Boundary Pillar No28	64.7	52.7
3.	Near Medhi Mines Boundary Pillar No23	62.2	54.5
4.	Village Malgaon	51.9	42.0

Noise (Ambient Standard)

Area Code	Category of area	Limit in dB (A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Note:

1. Day time is reckoned in between 6:00 AM and 10:00 PM.
2. Night time is reckoned in between 10:00 PM and 6:00 AM
3. Silence zone is defined as area up to 100m around such premises as hospitals, educational institutions & courts. The silence zones are to be declared by a competent authority.
4. Mixed categories of areas should be declared as one of the four above-mentioned categories by the competent authority and the corresponding standard shall apply.

Analyst

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FORMAT NO. ECO/QS/FORMAT/13

TEST REPORT NO: ECO LAB/AN4/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF AMBIENT NOISE LEVEL

Name of the Company	:	**M/s Prism Cement Bagahai Limestone mines**
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District- Satna(M.P.)
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Date of Monitoring	;	25.11.2018 to 26.11.2018
Instrument Description	:	Noise Meter (Make:HTC)
Test Method	:	IS: 4412, Part-1 & 2, 1991

Sl. No.	Locations	Day Time Leq Value in dB(A)	Night Time Leq Value in dB(A)
1.	At AdiwasiTola	55.8	43.7
2.	At BaisanTola	54.7	42.0
3.	South Site of Working Pit	69.25	60.9
4.	Near Boundary Pillar No.64	65.5	59.5

Noise (Ambient Standard)

Area Code	Category of area	Limit in dB (A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Note:

1. Day time is reckoned in between 6:00 AM and 10:00 PM.
2. Night time is reckoned in between 10:00 PM and 6:00 AM
3. Silence zone is defined as area up to 100m around such premises as hospitals, educational institutions & courts. The silence zones are to be declared by a competent authority.
4. Mixed categories of areas should be declared as one of the four above-mentioned categories by the competent authority and the corresponding standard shall apply.

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FORMAT NO. ECO/QS/FORMAT/13

TEST REPORT NO: ECO LAB/AN5/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF AMBIENT NOISE LEVEL

Name of the Company	:	**M/s Prism Cement Bagahai Limestone mines**
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District- Satna(M.P.)
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Date of Monitoring	;	27.11.2018 to 28.11.2018
Instrument Description	:	Noise Meter (Make:IITC)
Test Method	:	IS: 4412, Part-1 & 2, 1991

Sl. No.	Locations	Day Time Leq Value in dB(A)	Night Time Leq Value in dB(A)
1.	Village Badarkha	53.6	42.9
2.	Village Hinauta	51.1	43.8
3.	Village Chulhi	50.7	40.0
4.	Village Kulhari	51.4	42.2

Noise (Ambient Standard)

Area Code	Category of area	Limit in dB (A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Note:

1. Day time is reckoned in between 6:00 AM and 10:00 PM.
2. Night time is reckoned in between 10:00 PM and 6:00 AM
3. Silence zone is defined as area up to 100m around such premises as hospitals, educational institutions & courts. The silence zones are to be declared by a competent authority.
4. Mixed categories of areas should be declared as one of the four above-mentioned categories by the competent authority and the corresponding standard shall apply.

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FORMAT NO. ECO/QS/FORMAT/13

TEST REPORT NO: ECO LAB/AN6/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF WORK PLACE NOISE LEVEL

Name of the Company	:	M/s Prism Cement Limited
Address of the Company	:	Village Mankahari Tehsil Rampur Baghelan District- Satna(M.P.)
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Date of Monitoring	;	29.11.2018 to 30.11.2018
Instrument Description	:	Noise Meter (Make:HTC)
Test Method	:	IS: 4412, Part-I & 2, 1991

Sl. No.	Locations	Noise Level dB(A)
1.	Kiln Unit-II	81.0
2.	Cement Mill Unit -II	82.4
3.	Near Railway Yard,	78.1
4.	Near Packing Plant	83.7

Analyst

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FORMAT NO. ECO/QS/FORMAT/13

TEST REPORT NO: ECO LAB/AN1/11/18
TEST REPORT ISSUE DATE: 03.12.2018

TEST REPORT OF NOISE LEVEL SURVEY

Name of the Customer	:	M/s Prism Cement Limited
Address of the Customer	:	Village Mankahari Tehsil Rampur Baghelan District- Satna (M.P.)
Sample Collected by	:	Mr. Maan Singh & Virendra Singh
Date of Monitoring	:	19.11.2018 to 20.11.2018
Instrument Description	:	Noise Meter (Make: HTC)

Sl. No.	Locations	Leq Value in dB(A)	Protective Measures Adopted
Dozer-155 A			
1	Operator's cabin idle running	68.5	Ear muff provided
2	Operator's Cabin running on load	83.5	Ear muff provided
Poclain 300 CK			
3	Operator's cabin idle running	76.8	Ear muff provided
4	Operator's Cabin while loading	79.6	Ear muff provided
HAULPAK-PH 40			
5	Operator's Cabin while being loaded	74.8	Ear muff provided
6	Operator's Cabin while hauling	76.5	Ear muff provided
7	Operator's Cabin unloading in the hopper of crusher	96.5 (For 20 Second)	Ear muff provided
8	Alarm (while Reversing of dumper)	105.0	Short Duration
ATLASCOPCODRILL			
9	Operator's point while drilling	83.8	Ear muff provided
ROCKBREAKER			
10	Operator's Cabin	81.3	Ear muff provided
HEAVY BLASTING (INSTANTANEOUS)			
11	Blasting shelter	112.0	Momentary
12	At safe zone	84.5	
AMBIENT NOISE LEVEL DURING WORKING HOURS			
13	Office Campus, Mines workshop, Outfield (Haul Road)	75.5	-
14	Office Campus, Mines Workshop, Outfield (Haul Road) (at Night)	58.3	-

Analyst

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for Ecomen Laboratories Pvt. Ltd.
Quality Manager

Annexure-5

LES-CENTRE FOR CALIBRATION LABORATORY

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CC-2253

CALIBRATION CERTIFICATE

Calibration Certificate No.:-	LES-CCL/FF/MF/SC-254	**Calibration Date :-** 31.07.2018	**Page** 1 of 3
Suggested Date of Next Calibration :- 30.07.2019			
Customer Name :-	**M/s Prism Johnson Limited**		
Address :-	**(Cement Division: Unit - II) Village - Mankahari, P.O. Bathia, Tehsil - Rampur Baghelan, Distt. Satna - 485111 (Madhya Pradesh)**		
Reference :- S.R.F. No.	2018/278	**Date :-** 09.07.2018	

01. DUC Fitted in instrument

Name	Make	Model	Sl.No.
Respirable Dust Sampler	Envirotech Instruments	APM - 460 BL	900 - Date - G - 2000

02. Details of (DUC)

Name	Orifice Manometer Flow	**Environmental Conditions During Calibration**	
Make/Trade Mark	Envirotech Instruments	**Temperature(°C)**	25 ± 10
Sl.No.	900 - Date - G - 2000	**Relative Humidity (%)**	45-75
Cal. Range	0.6 -1.4 m^3/min	**Baromatric Pressure (mmHg)**	742.00

03. Standard Equipment used for calibration

S.No	Standard Equipment Name	Range	Sl.No./ID No.	Traceability
1	Top Loading Orifice Calibrator	0.6 to 1.4 m^3/min	57/LES-CCL/R/15304	LES-CCL Gr. Noida
	Certificate No.	**Cali. Date**	**Valid Up to**	
2	LES-CCL/FF/TLC/52	06.07.2018	05.07.2019	

04. Calibration Procedure :- LES-CCL/WI/31/FF/SC/08

Remark : 1. Refer page 2 of 3 for Calibration Results and page 3 of 3 for Calibration Curve

2.The Flowrate has been Referenced to standard Temperature (20 °C) and Pressure (760 mmHg Absolute) Condition.

Notes :-

1. Reference used are directly traceable to national standard through unbroken chain of calibration .
2. Results reported are valid at the time of and under the stated conditions of measurement
3. This Certificate refers only to the particular item calibrated.
4. This certificate shall not be reproduced, except in full without the written permisson of LES-CCL.Kasna, Greater Noida (U.P.)

Checked By	Authorized By
DEVENDRA SINGH (Technical Manager)	SHIVSHANKER SINGH (Chief Executive Officer)

LES-Centre For Calibration Laboratory Gr. Noida Kasna

LES-CCL

LES-CENTRE FOR CALIBRATION LABORATORY

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CC-2253

CALIBRATION CERTIFICATE

Calibration Certificate No.: LES-CCL/ET/TT/544	**Calibration Date :-** 02.08.2018	**Page** 1 of 1
Suggested date of Next Calibration :- 01.08.2019		
Customer Name :- **M/s Prism Johnson Limited**		
Address :- **(Cement Division: Unit - II) Village - Mankahari, P.O. Bathia, Tehsil - Rampur Baghelan, Distt. Satna - 485111 (Madhya Pradesh)**		
Reference :- **S.R.F No.: -** 2018/278	**Date: -** 09.07.2018	

01. DUC Fitted in instrument

Name	Make	Model	Sl. No.
Respirable Dust Sampler	Envirotech Instruments	APM - 460	900 - Date - G - 2000

02. Details of (DUC)

Name	Time Totalizer	**Environmental Conditions During Calibration**	
Make/Trade Mark	CE Germany	**Temperature (°C)**	25 ± 3
Model	-	**Relative Humidity (%)**	45 - 75
Sl.No.	T - 900	**B. Pressure (mmHg)**	734.75

03. Standard Equipment used for calibration

Standard Equipment Name	Range	Sl.No./ID.No.	Traceability
Digital Automatic Timer	10 Sec. - 4 hrs	LES-CCL/R/2507	BELZ, Faridabad
Calibration Certificate No.		**Calibration Date**	**Valid Up to**
6191217		05.10.2017	NM

04. Calibration Procedure LES-CCL/WI/31/ET/01

05. Calibration Results :

DUC has been calibrated for following Parameter (S) ranges (S)

S.No.	Displayed Value on DUC Hrs(Min)	Reference Time (Min)	Error (%)	Expanded Uncertainty at 95 % of Confidence level (k =2) (%)
1	0.25 (15.00 Min) (Final Readings of TTR at the end of Calibration : 184.47 hrs.)	15.0110	-0.07	± 2.308 %

Uncertainty Contributing Factor :-

1. Repeatability (based on five measurement)
2. Uncertainty of master instruments
3. Uncertainty due to resolution of DUC

The evaluated Expanded Uncertainty in calibration at a coverage factor k = 2 , for degrees of freedom =∞ and confidence level is 95 % for Normal distribution.

Notes :-

1. Reference used are directly traceable to national standard through unbroken chain of calibration .
2. Results reported are valid at the time of and under the stated conditions of measurement.
3. This Certificate refers only to the particular item calibrated.
4. This certificate shall not be reproduced, except in full without the written permisson of LES-CCL.Kasna, Greater Noida (U.P.)

Checked By	Authorized By
DEVENDRA SINGH (Technical Manager)	SHIVSHANKER SINGH (Chief Executive Officer)

LES-Centre For Calibration Laboratory Gr. Noida Kasna

LES-CCL

LES-CENTRE FOR CALIBRATION LABORATORY

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CALIBRATION CERTIFICATE

Calibration Certificate No.:- LES-CCL/FF/RF/SC-798	**Calibration Date :-** 31.07.2018	**Page** 1 of 3
Suggested Date of Next Calibration :- 30.07.2019		
Customer Name :-	**M/s Prism Johnson Limited**	
Address :-	**(Cement Division: Unit - II)** **Village - Mankahari, P.O. Bathia,** **Tehsil - Rampur Baghelan, Distt. Satna - 485111** **(Madhya Pradesh)**	
Reference :- S.R.F. No.:- 2018/278	**Date :-** 09.07.2018	

01. DUC Fitted in instrument

Name	Make	Model	Sl.No.
Gaseous Sampling Attachment	Envirotech Instruments	APM - 411	4301 - DTC - 2011

02. Details of DUC

Name	Rotameter	**Environmental Conditions During Calibration**	
Make/Trade Mark	S. S . Flow	**Temperature(°C)**	25±10
Model	-	**Relative Humidity (%)**	45-75
Sl.No.	09/0208	**B. Presure (mmHg)**	735.10
Cal. Range	0 -3 lpm		

03. Standard Equipment used for calibration

Sl.No.	Standard Equipment Name	Range	Sl.No.	Traceability
1	Gas Flow Calibrator	0.5 - 50 lpm	416	Spectro Analytical Labs, Gr. Noida
Sl.No.	**Certificate No.**	**Calibration Date**		**Valid Up to**
1	171016013-1	16.10.2017		15.10.2018

04. Calibration Procedure :- LES-CCL/WI/31/FF/SC-07

Remark 1. Refer page 2 of 3 for Calibration Results and 3 of 3 for Calibration Curve

2.The Flow Rate has been Referenced to Standard Temperature (20 °C) and Pressure (760 mmHg Absolute) Condition.

Notes :-	**Checked By**	**Authorized By**
1. Reference used are directly traceable to national standard through unbroken chain of calibration .	DEVENDRA SINGH	SHIVSHANKER SINGH
2. Results reported are valid at the time of and under the stated conditions of measurement	(Technical Manager)	(Chief Executive Officer)
3. This Certificate refers only to the particular item calibrated.		
4 .This certificate shall not be reproduced, except in full without the written permisson of LES-CCL. Kasna, Greater Noida (U.P.)		

LES-Centre For Calibration Laboratory Gr. Noida Kasna

LES-CCL

LES-CENTRE FOR CALIBRATION LABORATORY

(A Division of Lata Envirotech Services)

K-307, UPSIDC Industria' rea, Site-5, Kasna, Greater Noida, Gautam Bhudh Nagar-201310 (U.P)
Cell No. 9821735177, 9821735178
Er l: lesccl307@gmail.com, lesccllab@gmail.com

CC-2253

CALIBRATION CERTIFICATE

Calibration Certificate No.:- LES-CCL/FF/RF/SC-794	**Calibration Date :-** 31.07.2018	**Page** 1 of 3
Suggested Date of Next Calibration :- 30.07.2019		
Customer Name :- **M/s Prism Johnson Limited**		
Address :- **(Cement Division: Unit - II)** **Village - Mankahari, P.O. Bathia,** **Tehsil - Rampur Baghelan, Distt. Satna - 485111** **(Madhya Pradesh)**		
Reference :- S.R.F. No.:- 2018/278	**Date :-** 09.07.2018	

01. DUC Fitted in instrument

Name	Make	Model	Sl.No.
Gaseous Sampling Attachment	Envirotech Instruments	APM - 411	1367 - DATE - G - 2000

02. Details of DUC

Name	Rotameter	**Environmental Conditions During Calibration**	
Make/Trade Mark	S. S . Flow	**Temperature(°C)**	25±10
Model	-	**Relative Humidity (%)**	45-75
Sl.No.	2004/1046	**B. Presure (mmHg)**	735.10
Cal. Range	0 -3 lpm		

03. Standard Equipment used for calibration

Sl.No.	Standard Equipment Name	Range	Sl.No.	Traceability
1	Gas Flow Calibrator	0.5 - 50 lpm	416	Spectro Analytical Labs, Gr. Noida
Sl.No.	**Certificate No.**	**Calibration Date**		**Valid Up to**
1	171016013-1	16.10.2017		15.10.2018

04. Calibration Procedure :- LES-CCL/WI/31/FF/SC-07

Remark 1. Refer page 2 of 3 for Calibration Results and 3 of 3 for Calibration Curve

2.The Flow Rate has been Referenced to Standard Temperature (20 °C) and Pressure (760 mmHg Absolute) Condition.

Notes :-

1. Reference used are directly traceable to national standard through unbroken chain of calibration .
2. Results reported are valid at the time of and under the stated conditions of measurement
3. This Certificate refers only to the particular item calibrated.
4. This certificate shall not be reproduced, except in full without the written permisson of LES-CCL. Kasna, Greater Noida (U.P.)

Checked By	Authorized By
DEVENDRA SINGH (Technical Manager)	SHIVSHANKER SINGH (Chief Executive Officer)

LES- Centre For Calibration Laboratory Gr. Noida Kasna

LES-CCL

LES-CENTRE FOR CALIBRATION LABORATORY

(A Division of Lata Envirotech Services)

K-307, UPSIDC Industrial Area, Site-5, Kasna, Greater Noida, Gautam Bhudh Nagar-201310 (U.P)

Cell No. 9821735177, 9821735178

Email: lesccl307@gmail.com, lesccllab@gmail.com

CC-2253

CALIBRATION CERTIFICATE

Calibration Certificate No.:-	LES-CCL/FF/MF/SC-256	**Calibration Date** :- 31.07.2018	**Page** 1 of 3
Suggested Date of Next Calibration :- 30.07.2019			
Customer Name :-	**M/s Prism Johnson Limited**		
Address :-	**(Cement Division: Unit - II)** **Village - Mankahari, P.O. Bathia,** **Tehsil - Rampur Baghelan, Distt. Satna - 485111** **(Madhya Pradesh)**		
Reference :- S.R.F. No.	2018/278	**Date :-** 09.07.2018	

01. DUC Fitted in instrument

Name	Make	Model	Sl.No.
Respirable Dust Sampler	Envirotech Instruments	APM - 460 BL	1977 - DTC - 2011

02. Details of (DUC)

Name	Orifice Manometer Flow	**Environmental Conditions During Calibration**	
Make/Trade Mark	Envirotech Instruments	**Temperature(°C)**	25 ± 10
Sl.No.	1977 - DTC - 2011	**Relative Humidity (%)**	45-75
Cal. Range	0.6 -1.4 m^3/min	**Baromatric Pressure (mmHg)**	748.30

03. Standard Equipment used for calibration

S.No	Standard Equipment Name	Range	Sl.No./ID No.	Traceability
1	Top Loading Orifice Calibrator	0.6 to 1.4 m^3/min	57/LES-CCL/R/15304	LES-CCL Gr. Noida
	Certificate No.	**Cali. Date**	**Valid Up to**	
2	LES-CCL/FF/TLC/52	06.07.2018	05.07.2019	

04. Calibration Procedure :- LES-CCL/WI/31/FF/SC/08

Remark : 1. Refer page 2 of 3 for Calibration Results and page 3 of 3 for Calibration Curve

2.The Flowrate has been Referenced to standard Temperature (20 °C) and Pressure (760 mmHg Absolute) Condition.

Notes :-	Checked By	Authorized By
1. Reference used are directly traceable to national standard through unbroken chain of calibration . 2. Results reported are valid at the time of and under the stated conditions of measurement 3. This Certificate refers only to the particular item calibrated. 4 .This certificate shall not be reproduced, except in full without the written permisson of LES-CCL.Kasna, Greater Noida (U.P.)	DEVENDRA SINGH (Technical Manager)	SHIVSHANKER SINGH (Chief Executive Officer)

LES-Centre For Calibration Laboratory Gr. Noida Kasna

LES-CCL

LES-CENTRE FOR CALIBRATION LABORATORY

(A Division of Lata Envirotech Services)

K-307, UPSIDC Industrial Area, Site-5, Kasna, Greater Noida, Gautam Bhudh Nagar-201310 (U.P)

Cell No. 9821735177, 9821735178

Email: lesccl307@gmail.com, lesccllab@gmail.com

CC-2253

CALIBRATION CERTIFICATE

Calibration Certificate No.: LES-CCL/ET/TT/549	**Calibration Date :-** 02.08.2018	**Page** 1 of 1
Suggested date of Next Calibration :- 01.08.2019		
Customer Name :- **M/s Prism Johnson Limited**		
Address :- **(Cement Division: Unit - II) Village - Mankahari, P.O. Bathia, Tehsil - Rampur Baghelan, Distt. Satna - 485111 (Madhya Pradesh)**		
Reference :- **S.R.F No.: -** 2018/278	**Date: -** 09.07.2018	

01. DUC Fitted in instrument

Name	Make	Model	Sl. No.
Respirable Dust Sampler	Envirotech Instruments	APM - 460 BL	1977 - DTC - 2011

02. Details of (DUC)

Name	Time Totalizer	**Environmental Conditions During Calibration**	
Make/Trade Mark	CE Germany	**Temperature (°C)**	25 ± 3
Model	-	**Relative Humidity (%)**	45 - 75
Sl.No.	T - 1977	**B. Pressure (mmHg)**	734.75

03. Standard Equipment used for calibration

Standard Equipment Name	Range	Sl.No./ID.No.	Traceability
Digital Automatic Timer	10 Sec. - 4 hrs	LES-CCL/R/2507	BELZ, Faridabad
Calibration Certificate No.		**Calibration Date**	**Valid Up to**
6191217		05.10.2017	NM

04. Calibration Procedure LES-CCL/WI/31/ET/01

05. Calibration Results :

DUC has been calibrated for following Parameter (S) ranges (S)

S.No.	Displayed Value on DUC Hrs(Min)	Reference Time (Min)	Error (%)	Expanded Uncertainty at 95 % of Confidence level (k =2) (%)
1	0.25 (15.00 Min) (Final Readings of TTR at the end of Calibration : 1288.79 hrs.)	15.0124	-0.08	± 2.308 %

Uncertainty Contributing Factor :-

1. Repeatability (based on five measurement)
2. Uncertainty of master instruments
3. Uncertainty due to resolution of DUC

The evaluated Expanded Uncertainty in calibration at a coverage factor k = 2 , for degrees of freedom =∞ and confidence level is 95 % for Normal distribution.

Notes :-

1. Reference used are directly traceable to national standard through unbroken chain of calibration .
2. Results reported are valid at the time of and under the stated conditions of measurement
3. This Certificate refers only to the particular item calibrated.
4. This certificate shall not be reproduced, except in full without the written permisson of LES-CCL.Kasna, Greater Noida (U.P.)

LES-Centre For Calibration Laboratory Gr. Noida Kasna

Checked By	Authorized By
DEVENDRA SINGH (Technical Manager)	SHIVSHANKER SINGH (Chief Executive Officer)

LES-CCL

LES-CENTRE FOR CALIBRATION LABORATORY

(A Division of Lata Envirotech Services)

K-307, UPSIDC Industrial Area, Site-5, Kasna, Greater Noida, Gautam Bhudh Nagar-201310 (U.P)

Cell No. 9821735177, 9821735178

Email: lesccl307@gmail.com, lesccllab@gmail.com

CC-2253

CALIBRATION CERTIFICATE

Calibration Certificate No.: LES-CCL/ET/TT/545	**Calibration Date:** 02.08.2018	**Page** 1 of 1
Suggested date of Next Calibration :- 01.08.2019		

Customer Name :- **M/s Prism Johnson Limited**

Address :- **(Cement Division: Unit - II)**
Village - Mankahari, P.O. Bathia,
Tehsil - Rampur Baghelan, Distt. Satna - 485111
(Madhya Pradesh)

Reference :- **S.R.F No.: -** 2018/278 **Date: -** 09.07.2018

01. DUC Fitted in instrument

Name	Make	Model	Sl. No.
Respirable Dust Sampler	Envirotech Instruments	APM - 460	883 - Date - G - 2000

02. Details of (DUC)

Name	Time Totalizer	**Environmental Conditions During Calibration**	
Make/Trade Mark	CE Germany	**Temperature (°C)**	25 ± 3
Model	-	**Relative Humidity (%)**	45 - 75
Sl.No.	T - 883	**B. Pressure (mmHg)**	734.75

03. Standard Equipment used for calibration

Standard Equipment Name	Range	Sl.No./ID.No.	Traceability
Digital Automatic Timer	10 Sec. - 4 hrs	LES-CCL/R/2507	BELZ, Faridabad
Calibration Certificate No.		**Calibration Date**	**Valid Up to**
6191217		05.10.2017	NM

04. Calibration Procedure LES-CCL/WI/31/ET/01

05. Calibration Results :

DUC has been calibrated for following Parameter (S) ranges (S)

S.No.	Displayed Value on DUC Hrs(Min)	Reference Time (Min)	Error (%)	Expanded Uncertainty at 95 % of Confidence level (k =2) (%)
1	0.25 (15.00 Min) (Final Readings of TTR at the end of Calibration : 2009.04 hrs.)	15.0110	-0.07	± 2.308 %

Uncertainty Contributing Factor :-

1. Repeatability (based on five measurement)
2. Uncertainty of master instruments
3. Uncertainty due to resolution of DUC

The evaluated Expanded Uncertainty in calibration at a coverage factor k = 2 , for degrees of freedom =∞ and confidence level is 95 % for Normal distribution.

Notes :-

1. Reference used are directly traceable to national standard through unbroken chain of calibration .
2. Results reported are valid at the time of and under the stated conditions of measurement
3. This Certificate refers only to the particular item calibrated.
4. This certificate shall not be reproduced, except in full without the written permisson of LES-CCL.Kasna, Greater Noida (U.P.)

LES - Centre For Calibration Laboratory Gr. Noida Kasna

Checked By	Authorized By
DEVENDRA SINGH (Technical Manager)	SHIVSHANKER SINGH (Chief Executive Officer)

LES-CENTRE FOR CALIBRATION LABORATORY
(A Division of Lata Envirotech Services)
K-307, UPSIDC Industrial Area, Site-5, Kasna, Greater Noida, Gautam Bhudh Nagar-201310 (U.P)
Cell No. 9821735177, 9821735178
Email: lesccl307@gmail.com, lescllab@gmail.com
CC-2253

CALIBRATION CERTIFICATE

Calibration Certificate No.:-	LES-CCL/FF/MF/SC-253	**Calibration Date :-** 31.07.2018	**Page** 1 of 3
Suggested Date of Next Calibration :- 30.07.2019			
Customer Name :-	**M/s Prism Johnson Limited**		
Address :-	**(Cement Division: Unit - II) Village - Mankahari, P.O. Bathia, Tehsil - Rampur Baghelan, Distt. Satna - 485111 (Madhya Pradesh)**		
Reference :- S.R.F. No.	2018/278	**Date :-** 09.07.2018	

01. DUC Fitted in instrument

Name	Make	Model	Sl.No.
Respirable Dust Sampler	Envirotech Instruments	APM - 460 BL	883 - Date - G - 2000

02. Details of (DUC)

Name	Orifice Manometer Flow	**Environmental Conditions During Calibration**	
Make/Trade Mark	Envirotech Instruments	**Temperature(°C)**	25 ± 10
Sl.No.	883 - Date - G - 2000	**Relative Humidity (%)**	45-75
Cal. Range	0.6 -1.4 m^3/min	**Baromatric Pressure (mmHg)**	742.10

03. Standard Equipment used for calibration

S.No	Standard Equipment Name	Range	Sl.No./ID No.	Traceability
1	Top Loading Orifice Calibrator	0.6 to 1.4 m^3/min	57/LES-CCL/R/15304	LES-CCL Gr. Noida
	Certificate No.	**Cali. Date**	**Valid Up to**	
2	LES-CCL/FF/TLC/52	06.07.2018	05.07.2019	

04. Calibration Procedure :- LES-CCL/WI/31/FF/SC/08

Remark : 1. Refer page 2 of 3 for Calibration Results and page 3 of 3 for Calibration Curve

2.The Flowrate has been Referenced to standard Temperature (20 °C) and Pressure (760 mmHg Absolute) Condition.

Notes :-	Checked By	Authorized By
1. Reference used are directly traceable to national standard through unbroken chain of calibration . 2. Results reported are valid at the time of and under the stated conditions of measurement 3. This Certificate refers only to the particular item calibrated. 4 .This certificate shall not be reproduced, except in full without the written permisson of LES-CCL.Kasna, Greater Noida (U.P.)	DEVENDRA SINGH (Technical Manager)	SHIVSHANKER SINGH (Chief Executive Officer)

LES-Centre For Calibration Laboratory Gr. Noida Kasna

Consent Order

Annexure-6

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

RED-LARGE	CCA-Amendment	VALIDITY (A/W): 30/06/2019	CONSENT NO: ***	PCB ID: 13880

NO: /MPPCB/SAT

To,

The Occupier,
M/s. M/s. Prism Johnson Ltd. (Cement Division Unit- II),
Village-Mankahari, P.O. Bathia, Tehsil-Rampur Baghelan,
Distt Satna- 485111 (M.P.)

Subject: Grant of Amendment in the consent to change the name of the industry from M/s. Prism Cement Ltd. (Unit No.2) to M/s. Prism Johnson Ltd. (Cement Division Unit-II), without any change in the production capacity, raw material, process or the ownership.

Ref: Your Application Receipt No. 731270 Dt. 01/10/2018 and last communication received on Dt.05/10/2018

With reference to your above application for consent to operate has been considered under the aforesaid Acts and existing rules therein. The M. P. Pollution Control Board has agreed to grant of Amendment in consent to change the name of the industry from M/s. Prism Cement Ltd. (Unit No.2) to M/s. Prism Johnson Ltd. (Cement Division Unit-II), without any change in the production capacity, raw material, process or the ownership keeping the validity of consent unchanged subject to the fulfillment of the terms & conditions incorporated in the consent order outward no. 55415 dt. 24.07.2017, its subsequent renewal orders & as enclosed with this letter.

SUBJECT TO THE FOLLOWING CONDITIONS :

a. Location: Village-Mankahari, P.O. Bathia, Tehsil-Rampur Baghelan, Distt Satna- 485111 (M.P.)

b. The capital investment in lakhs: Rs. 107900

c. Product & Production Capacity:

Product	CTE Qty./Year	CCA Qty./Year	Applied Qty./Year
Cement	6700000.000 M.T.	6700000.000 M.T.	6700000.000 M.T.
Clinker	3000000.000 M.T.	3000000.000 M.T.	3000000.000 M.T.

Note:- For any change in above industry shall obtain fresh consent from the Board.

The Validity of the consent is up to 30/06/2019 and has to be renewed before expiry of consent validity. Online application through XGN with annual license fees in this regard shall be submitted to this office 6 months before expiry of the consent/Authorization. Board reserves the right to amend/cancel / revoke the above condition in part or whole as and when required.

Enclosures:-

* General conditions

e-Sign Issuing from UIDAI

e-Signed On 22/10/2018 12:47:28
(Organic Authentication on AADHAR from UIDAI Server)
TPAV # 38Q5XHVEY2

Achyut Mishra

ACHYUT ANAND MISHRA
Member Secretary

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

GENERAL CONDITIONS:

1. The non hazardous solid waste arresting in the industry/unit/unit premises sweeping, etc. be disposed off scientifically so as not to cause any nuisance/pollution. The applicant shall take necessary permission from civic authorities for disposal to dumping site. If required.

Non Hazardous Solid wastes:-

Type of waste	Disposal
Scrap/ Plastic packing material wood, card board, gunny begs etc	Sale to authorized party/As Per CPCB. MoEF Guide lines / Others.

2. The applicant shall allow the staff of Madhya Pradesh Pollution Control Board and/or their authorized representative, upon the representation of credentials:

a. To inspect raw material stock, manufacturing processes, reactors, premises etc to perform the functions of the Board.

b. To enter upon the applicant's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this Consent.

c. To have access at reasonable times to any records required to be kept under the terms and conditions of this Consent.

d. To inspect at reasonable times any monitoring equipment or monitoring method required in this Consent: or,

e. To sample at reasonable times any discharge or pollutants.

3. This consent/authorisation is transferable, in case of change of ownership/management and addresses of new Owner/partner/Directors/proprietor should immediately apply for the same.

4. The issuance of this Consent does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorise any invasion of personal rights, nor any infringement of Central, State or local laws or regulations.

5. Industry shall install separate electric metering arrangement for running of pollution control devices and this arrangement shall be made in such fashion that any non functioning of pollution control devices shall immediately stop electric supply to the production and shall remain tripped till such time unless the pollution control device/devices are made functional. The record of electricity consumption for running of pollution control equipment shall be maintained and submitted to the Board every month

6. This consent is granted in respect of Water pollution control Act 1974 or Air Pollution Control act, 1981 or Authorization under the provisions of Hazardous and other Waste (Management & Transboundary movement) Rules 2016 only and does not relate to any other Department/Agencies. License required from other Department/Agencies have to be obtained by the unit separately and have to comply separately as per there Act / Rules.

7. Balance consent/authorisation fee, if any shall be recoverable by the Board even at a later date.

8. The applicant shall submit such information, forms and fees as required by the board not letter than 180 day prior to the date of expiration of this consent/authorisation

9. The industry/unit shall establish a separate environmental cell, headed by senior officer of the unit for reporting the environmental compliances. The industry/ Unit shall submit environmental statement for the previous year ending 31st March on or before 30th September every year to the Board.

10. Industry shall obtain membership of Emergency Response Center of the Board if needed.

11. Knowingly making any false statement for obtaining consent or compliance of consent conditions shall result in the imposition of criminal penalties as provided under the Water Act or the Air Act.

12. After notice and opportunity for the hearing, this consent may be modified, suspended or revoked by the Board in whole or in part during its term for cause including, but not limited to, the following :

(a) Violation of any terms and conditions of this Consent.
(b) Obtaining this Consent by misrepresentation of failure to disclose fully all relevant facts.
(c) A change in any condition that requires temporary or permanent reduction or elimination of the authorized discharge.

13. On violation of any of the above-mentioned conditions the consent granted will automatically be taken as canceled and necessary action will be initiated against the industry.

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

Amendment condition:

1. The name of the industry is being changed from M/s. Prism Cement Ltd. (Unit No.2) to M/s. Prism Johnson Ltd. (Cement Division Unit-II), without any change in the production capacity, raw material, process or the ownership.
2. All other terms & conditions will remain same & unaffected.
3. This amendment shall be kept attached with the original consent of the industry.

Consent/authorization as required under the Water (Prevention & Control of Pollution) Act, 1974 & the Air (Prevention & Control of Pollution) Act,1981 is granted to your industry subject to fulfillment of all the conditions mentioned above. For renewal purpose you shall have to make an application to this Board through XGN at least Six months before the date of expiry of this consent/authorisation. The applicant without valid consent (for operation) of the Board shall not bring in to use any outlet for the discharge of effluent and gaseous emission.

For and on behalf of
M.P. Pollution Control Board

Achyut mishra

(Member Secretary)

eSign Signing from UIDAI
Digitally Sign with Aadhaar

e-Signed On 22/10/2018 12:47:28
(Organic Authentication on AADHAR from UIDAI Server)
TPAV # 38Q5XHVEY2

Achyut mishra

ACHYUT ANAND MISHRA
Member Secretary

Annexure-7

ECOMEN LABORATORIES PVT. LTD.

Flat No. 8, 2nd Floor, Arif Chamber-V, Sector H, Aliganj, Lucknow - 226 024
Phone No. : (91-522) 2746282, 2745726 Telefax No.: (91 - 522) 2745726
E-mail: ravi.bhargava@gmail.com, Website: www.ecomen.in, CIN - U74210UP1989PTC010601, GSTIN : 09AAACE6076H1ZI

An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/09

TEST REPORT NO: ECO LAB/DW/767/11/18
TEST REPORT ISSUE DATE: 05.12.2018

TEST REPORT OF DRINKING WATER*

Name of the Company : M/s. Prism Cement Limited
Address of the Company : Village Mankahari,
Tehsil Rampur Baghelan
Distt.Satna (M.P.)
Sampling Method : APHA/ IS: 3025
Sample Collected by : Mr.Maan Singh
Sample Quantity : As per requirement.
Date of Sampling : 24.11.2018
Date of Receiving : 26.11.2018
Date of Analysis : 26.11.2018 to 05.12.2018
Source of Sample : Plant Site - Bore Well
Sample ID Code : ELW – 8754

SL No.	TESTS	PROTOCOL	RESULT	Detection Range	INDIAN STANDARDS as per IS 10500:1991(Reaff:2012)	
					Desirable	Permissible
1.	Colour (Hazen unit)	APHA, 23rd Ed. 2017, 2120 B	<5.0	5-100	5.00	15.0
2.	Odour	APHA, 23rd Ed. 2017, 2150 B	Agreeable	Qualitative	Agreeable	Agreeable
3.	Taste	APHA, 23rd Ed. 2017, A+B	Agreeable	Qualitative	Agreeable	Agreeable
4.	Turbidity as (NTU)	APHA, 23rd Ed. 2017, 2130-A+B	BDL	1 - 100	1.0	5.0
5.	pH	APHA, 23rd Ed. 2017, 4500H+ A+B	7.24	2.0 -12	6.5-8.5	No Relax.
6.	Total Dissolved Solids as TDS (mg/l)	APHA, 23rd Ed. 2017, 2540-C	547.0	5 - 5000	500	2000
7.	Alkalinity (mg/l)	APHA, 23rd Ed. 2017, 2320 A+ B	116.0	5-1500	200	600
8.	Total Hardness as $CaCO_3$ (mg/l)	APHA, 23rd Ed. 2017, 2340 A+C	228.0	5-1500	200.0	600.0
9.	Calcium as Ca (mg/l)	APHA, 23rd Ed. 2017, 3500 Ca A+B	54.4	5 – 1000	75.0	200.0
10.	Magnesium as Mg (mg/l)	APHA, 23rd Ed. 2017, 3500 Mg A+B	22.35	5-1000	30.0	100.0
11.	Chloride as Cl (mg/l)	APHA, 23rd Ed. 2017, 4500 Cl A+B	46.0	5-1000	250.0	1000.0
12.	Fluorides as F (mg/l)	APHA, 23rd Ed. 2017, 4500-C	0.28	0.05-10	1.0	1.5
13.	Sulfate as SO_4 (mg/l)	APHA, 23rd Ed. 2017, 4500-SO_4^{2-} E	136.0	1.0 -250	200.0	400.0
14.	Nitrate Nitrogen as NO_3 (mg/l)	APHA, 23rd Ed. 2017, 4500-NO_3^- B	16.0	5.0 - 100	45.0	No Relax.
15.	Manganese as Mn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.1-5	0.10	0.30
16.	Zinc as Zn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	0.20	0.02-50	5.0	15
17.	Lead as Pb (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.01-2	0.01	No Relax.
18.	Cadmium as Cd (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.002-2	0.003	No Relax
19.	Nickel as Ni (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.02-5	0.02	No Relax
20.	Arsenic as As (mg/l)	APHA, 23rd Ed. 2017, 3114 C	BDL	0.01-2	0.01	0.05
21.	Total Chromium as Cr (mg/l)	APHA, 23rd Ed. 2017, 3111 – A +B	BDL	0.04-10	0.05	No Relax
22.	Mercury as Hg (mg/l)	APHA, 23rd Ed. 2017, 3112 A+B	BDL	0.001-1	0.001	No Relax.
23	Copper as Cu (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.05-5	0.05	1.5
24.	Boron as B (mg/l)	APHA, 23rd Ed. 2017, 4500 B A+C	0.23	0.2 – 10	0.5	1.0
25.	Aluminium as Al (mg/l)	APHA, 23rd Ed. 2017 (3111-A+B)	BDL	1.0-100	0.03	0.2
26.	Free Residual Chlorine (mg/l)	APHA, 23rd Ed. 2017, 4500-Cl B	BDL	0.5-10	0.20	1.0
27.	Sulphide as H_2S (mg/l)	APHA, 23rd Ed. 2017, Reprint 2007	BDL	0.04-10	0.05	No Relax
28.	Iodide as I (mg/l)	APHA, 23rd Ed. 2017, 4500 – IB	BDL	0.1-10	-	-
29.	Iron as Fe (mg/l)	APHA, 23rd Ed. 2017, 3500 Fe B	0.19	0.02-50	0.3	No Relax.
30.	Total coliform (MPN/100 ml)	APHA, 23rd Ed. 2017, B+C	Absent	1.8	0.05	Absent
31.	*E.coli (Nos/100)*	APHA, 23rd Ed. 2017, B+E	Absent	1.8	Absent	Absent

*The result are related only to item tested.
BDL = Below Detection Limit

Analyst

Authorized signatory

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/09 TEST REPORT NO: ECO LAB/DW/767/11/18
TEST REPORT ISSUE DATE: 05.12.2018

TEST REPORT OF DRINKING WATER*

Name of the Company : M/s. Prism Cement Limited
Address of the Company : Village Mankahari,
Tehsil Rampur Baghelan
Distt.Satna (M.P.)
Sampling Method : APHA/ IS: 3025
Sample Collected by : Mr.Maan Singh
Sample Quantity : As per requirement.
Date of Sampling : 24.11.2018
Date of Receiving : 26.11.2018
Date of Analysis : 26.11.2018 to 05.12.2018
Source of Sample : BagahaiVillage – Hand Pump
Sample ID Code : ELW – 8755

Sl. No.	TESTS	PROTOCOL	RESULT	Detection Range	INDIAN STANDARDS as per IS 10500:1991(Reaff:2012)	
					Desirable	Permissible
1.	Colour (Hazen unit)	APHA, 23rd Ed. 2017, 2120 B	<5.0	5-100	5.00	15.0
2.	Odour	APHA, 23rd Ed. 2017, 2150 B	Agreeable	Qualitative	Agreeable	Agreeable
3.	Taste	APHA, 23rd Ed. 2017, A+B	Agreeable	Qualitative	Agreeable	Agreeable
4.	Turbidity as (NTU)	APHA, 23rd Ed. 2017, 2130-A+B	1.80	1 - 100	1.0	5.0
5.	pH	APHA, 23rd Ed. 2017, 4500H+ A+B	7.30	2.0 -12	6.5-8.5	No Relax.
6.	Total Dissolved Solids as TDS (mg/l)	APHA, 23rd Ed. 2017, 2540-C	532.0	5 - 5000	500	2000
7.	Alkalinity (mg/l)	APHA, 23rd Ed. 2017, 2320 A+ B	156.0	5-1500	200	600
8.	Total Hardness as $CaCO_3$(mg/l)	APHA, 23rd Ed. 2017, 2340 A+C	172.0	5-1500	200.0	600.0
9.	Calcium as Ca (mg/l)	APHA, 23rd Ed. 2017, 3500 Ca A+B	48.0	5 – 1000	75.0	200.0
10.	Magnesium as Mg (mg/l)	APHA, 23rd Ed. 2017, 3500 Mg A+B	12.63	5-1000	30.0	100.0
11.	Chloride as Cl (mg/l)	APHA, 23rd Ed. 2017, 4500 Cl A+B	30.0	5-1000	250.0	1000.0
12.	Fluorides as F (mg/l)	APHA, 23rd Ed. 2017, 4500-C	0.29	0.05-10	1.0	1.5
13.	Sulfate as SO_4 (mg/l)	APHA, 23rd Ed. 2017, 4500-SO_4^{2-} E	108.0	1.0 -250	200.0	400.0
14.	Nitrate Nitrogen as NO_3 (mg/l)	APHA, 23rd Ed. 2017, 4500-NO_3^- B	12.0	5.0 - 100	45.0	No Relax.
15.	Manganese as Mn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.1-5	0.10	0.30
16.	Zinc as Zn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	0.12	0.02-50	5.0	15
17.	Lead as Pb (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.01-2	0.01	No Relax.
18.	Cadmium as Cd (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.002-2	0.003	No Relax
19.	Nickel as Ni (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.02-5	0.02	No Relax
20.	Arsenic as As (mg/l)	APHA, 23rd Ed. 2017, 3114 C	BDL	0.01-2	0.01	0.05
21.	Total Chromium as Cr (mg/l)	APHA, 23rd Ed. 2017, 3111 – A +B	BDL	0.04-10	0.05	No Relax
22.	Mercury as Hg (mg/l)	APHA, 23rd Ed. 2017, 3112 A+B	BDL	0.001-1	0.001	No Relax.
23	Copper as Cu (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.05-5	0.05	1.5
24.	Boron as B (mg/l)	APHA, 23rd Ed. 2017, 4500 B A+C	BDL	0.2 – 10	0.5	1.0
25.	Aluminium as Al (mg/l)	APHA, 23rd Ed. 2017 (3111-A+B)	BDL	1.0-100	0.03	0.2
26.	Free Residual Chlorine (mg/l)	APHA, 23rd Ed. 2017, 4500-Cl B	BDL	0.5-10	0.20	1.0
27.	Sulphide as H_2S (mg/l)	APHA, 23rd Ed. 2017, Reprint 2007	BDL	0.04-10	0.05	No Relax
28.	Iodide as I (mg/l)	APHA, 23rd Ed. 2017, 4500 – IB	BDL	0.1-10	-	-
29.	Iron as Fe (mg/l)	APHA, 23rd Ed. 2017, 3500 Fe B	0.21	0.02-50	0.3	No Relax.
30.	Total coliform (MPN/100 ml)	APHA, 23rd Ed. 2017, B+C	BDL	1.8	0.05	Absent
31.	*E.coli (Nos/100)*	APHA, 23rd Ed. 2017, B+E	BDL	1.8	Absent	Absent

*The result are related only to item tested.
BDL = Below Detection Limit

Analyst

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/09

TEST REPORT NO:ECO LAB/DW/767/11/18
TEST REPORT ISSUE DATE: 05.12.2018

TEST REPORT OF DRINKING WATER*

Name of the Company : M/s. Prism Cement Limited
Address of the Company : Village Mankahari,
Tehsil Rampur Baghelan
Distt.Satna (M.P.)
Sampling Method : APHA/ IS: 3025
Sample Collected by : Mr.Maan Singh
Sample Quantity : As per requirement.
Date of Sampling : 24.11.2018
Date of Receiving : 26.11.2018
Date of Analysis : 26.11.2018 to 05.12.2018
Source of Sample : MedhiVillage –Hand Pump
Sample ID Code : ELW - 8756

Sl. No.	TESTS	PROTOCOL	RESULT	Detection Range	INDIAN STANDARDS as per IS 10500:1991(Reaff:2012)	
					Desirable	Permissible
1.	Colour (Hazen unit)	APHA, 23rd Ed. 2017, 2120 B	<5.0	5-100	5.00	15.0
2.	Odour	APHA, 23rd Ed. 2017, 2150 B	Agreeable	Qualitative	Agreeable	Agreeable
3.	Taste	APHA, 23rd Ed. 2017, A+B	Agreeable	Qualitative	Agreeable	Agreeable
4.	Turbidity as (NTU)	APHA, 23rd Ed. 2017, 2130-A+B	1.0	1 - 100	1.0	5.0
5.	pH	APHA, 23rd Ed. 2017, 4500H+ A+B	7.38	2.0 -12	6.5-8.5	No Relax.
6.	Total Dissolved Solids as TDS (mg/l)	APHA, 23rd Ed. 2017, 2540-C	356.0	5 - 5000	500	2000
7.	Alkalinity (mg/l)	APHA, 23rd Ed. 2017, 2320 A+ B	140.0	5-1500	200	600
8.	Total Hardness as $CaCO_3$ (mg/l)	APHA, 23rd Ed. 2017, 2340 A+C	168.0	5-1500	200.0	600.0
9.	Calcium as Ca (mg/l)	APHA, 23rd Ed. 2017, 3500 Ca A+B	44.8	5 – 1000	75.0	200.0
10.	Magnesium as Mg (mg/l)	APHA, 23rd Ed. 2017, 3500 Mg A+B	13.60	5-1000	30.0	100.0
11.	Chloride as Cl (mg/l)	APHA, 23rd Ed. 2017, 4500 Cl A+B	38.0	5-1000	250.0	1000.0
12.	Fluorides as F (mg/l)	APHA, 23rd Ed. 2017, 4500-C	0.32	0.05-10	1.0	1.5
13.	Sulfate as SO_4 (mg/l)	APHA, 23rd Ed. 2017, 4500-SO_4^{2-} E	110.0	1.0 -250	200.0	400.0
14.	Nitrate Nitrogen as NO_3 (mg/l)	APHA, 23rd Ed. 2017, 4500-NO_3^- B	12.0	5.0 - 100	45.0	No Relax.
15.	Manganese as Mn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.1-5	0.10	0.30
16.	Zinc as Zn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.02-50	5.0	15
17.	Lead as Pb (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.01-2	0.01	No Relax.
18.	Cadmium as Cd (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.002-2	0.003	No Relax
19.	Nickel as Ni (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.02-5	0.02	No Relax
20.	Arsenic as As (mg/l)	APHA, 23rd Ed. 2017, 3114 C	BDL	0.01-2	0.01	0.05
21.	Total Chromium as Cr (mg/l)	APHA, 23rd Ed. 2017, 3111 – A +B	BDL	0.04-10	0.05	No Relax
22.	Mercury as Hg (mg/l)	APHA, 23rd Ed. 2017, 3112 A+B	BDL	0.001-1	0.001	No Relax.
23	Copper as Cu (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.05-5	0.05	1.5
24.	Boron as B (mg/l)	APHA, 23rd Ed. 2017, 4500 B A+C	0.23	0.2 – 10	0.5	1.0
25.	Aluminium as Al (mg/l)	APHA, 23rd Ed. 2017 (3111-A+B)	BDL	1.0-100	0.03	0.2
26.	Free Residual Chlorine (mg/l)	APHA, 23rd Ed. 2017, 4500-Cl B	BDL	0.5-10	0.20	1.0
27.	Sulphide as H_2S (mg/l)	APHA, 23rd Ed. 2017, Reprint 2007	BDL	0.04-10	0.05	No Relax
28.	Iodide as I (mg/l)	APHA, 23rd Ed. 2017, 4500 – IB	BDL	0.1-10	-	-
29.	Iron as Fe (mg/l)	APHA, 23rd Ed. 2017, 3500 Fe B	0.20	0.02-50	0.3	No Relax.
30.	Total coliform (MPN/100 ml)	APHA, 23rd Ed. 2017, B+C	BDL	1.8	0.05	Absent
31.	*E.coli (Nos/100)*	APHA, 23rd Ed. 2017, B+E	BDL	1.8	Absent	Absent

*The result are related only to item tested.
BDL = Below Detection Limit

Analyst

Authorized signatory

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/09

TEST REPORT NO:ECO LAB/DW/767/11/18
TEST REPORT ISSUE DATE: 05.12.2018

TEST REPORT OF DRINKING WATER*

Name of the Company : M/s. Prism Cement Limited
Address of the Company : Village Mankahari,
Tehsil Rampur Baghelan
Distt.Satna (M.P.)
Sampling Method : APHA/ IS: 3025
Sample Collected by : Mr.Maan Singh
Sample Quantity : As per requirement.
Date of Sampling : 24.11.2018
Date of Receiving : 26.11.2018
Date of Analysis : 26.11.2018 to 05.12.2018
Source of Sample : PCL Colony Supply Water – Bore Well
Sample ID Code : ELW -8758

Sl. No.	TESTS	PROTOCOL	RESULT	Detection Range	INDIAN STANDARDS as per IS 10500:1991(Reaff:2012)	
					Desirable	Permissible
1.	Colour (Hazen unit)	APHA, 23rd Ed. 2017, 2120 B	<5.0	5-100	5.00	15.0
2.	Odour	APHA, 23rd Ed. 2017, 2150 B	Agreeable	Qualitative	Agreeable	Agreeable
3.	Taste	APHA, 23rd Ed. 2017, A+B	Agreeable	Qualitative	Agreeable	Agreeable
4.	Turbidity as (NTU)	APHA, 23rd Ed. 2017, 2130-A+B	BDL	1 - 100	1.0	5.0
5.	pH	APHA, 23rd Ed. 2017, 4500H+ A+B	7.48	2.0 -12	6.5-8.5	No Relax.
6.	Total Dissolved Solids as TDS (mg/l)	APHA, 23rd Ed. 2017, 2540-C	656.0	5 - 5000	500	2000
7.	Alkalinity (mg/l)	APHA, 23rd Ed. 2017, 2320 A+ B	176.0	5-1500	200	600
8.	Total Hardness as $CaCO_3$ (mg/l)	APHA, 23rd Ed. 2017, 2340 A+C	332.0	5-1500	200.0	600.0
9.	Calcium as Ca (mg/l)	APHA, 23rd Ed. 2017, 3500 Ca A+B	91.2	5 – 1000	75.0	200.0
10.	Magnesium as Mg (mg/l)	APHA, 23rd Ed. 2017, 3500 Mg A+B	25.27	5-1000	30.0	100.0
11.	Chloride as Cl (mg/l)	APHA, 23rd Ed. 2017, 4500 Cl A+B	74.0	5-1000	250.0	1000.0
12.	Fluorides as F (mg/l)	APHA, 23rd Ed. 2017, 4500-C	0.33	0.05-10	1.0	1.5
13.	Sulfate as SO_4 (mg/l)	APHA, 23rd Ed. 2017, 4500-SO_4^{2-} E	134.0	1.0 -250	200.0	400.0
14.	Nitrate Nitrogen as NO_3 (mg/l)	APHA, 23rd Ed. 2017, 4500-NO_3^- B	13.80	5.0 - 100	45.0	No Relax.
15.	Manganese as Mn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.1-5	0.10	0.30
16.	Zinc as Zn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	0.26	0.02-50	5.0	15
17.	Lead as Pb (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.01-2	0.01	No Relax.
18.	Cadmium as Cd (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.002-2	0.003	No Relax
19.	Nickel as Ni (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.02-5	0.02	No Relax
20.	Arsenic as As (mg/l)	APHA, 23rd Ed. 2017, 3114 C	BDL	0.01-2	0.01	0.05
21.	Total Chromium as Cr (mg/l)	APHA, 23rd Ed. 2017, 3111 – A +B	BDL	0.04-10	0.05	No Relax
22.	Mercury as Hg (mg/l)	APHA, 23rd Ed. 2017, 3112 A+B	BDL	0.001-1	0.001	No Relax.
23	Copper as Cu (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.05-5	0.05	1.5
24.	Boron as B (mg/l)	APHA, 23rd Ed. 2017, 4500 B A+C	BDL	0.2 – 10	0.5	1.0
25.	Aluminium as Al (mg/l)	APHA, 23rd Ed. 2017 (3111-A+B)	BDL	1.0-100	0.03	0.2
26.	Free Residual Chlorine (mg/l)	APHA, 23rd Ed. 2017, 4500-Cl B	BDL	0.5-10	0.20	1.0
27.	Sulphide as H_2S (mg/l)	APHA, 23rd Ed. 2017, Reprint 2007	BDL	0.04-10	0.05	No Relax
28.	Iodide as I (mg/l)	APHA, 23rd Ed. 2017, 4500 – IB	BDL	0.1-10	-	-
29.	Iron as Fe (mg/l)	APHA, 23rd Ed. 2017, 3500 Fe B	0.21	0.02-50	0.3	No Relax.
30.	Total coliform (MPN/100 ml)	APHA, 23rd Ed. 2017, B+C	BDL	1.8	0.05	Absent
31.	*E.coli (Nos/100)*	APHA, 23rd Ed. 2017, B+E	BDL	1.8	Absent	Absent

*The result are related only to item tested.
BDL = Below Detection Limit

Analyst

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FORMAT NO. ECO/QS/FORMAT/09

TEST REPORT NO:ECO LAB/DW/767/11/18
TEST REPORT ISSUE DATE: 05.12.2018

TEST REPORT OF DRINKING WATER*

Name of the Company : M/s. Prism Cement Limited
Address of the Company : Village Mankahari,
Tehsil Rampur Baghelan
Distt.Satna (M.P.)
Sampling Method : APHA/ IS: 3025
Sample Collected by : Mr.Maan Singh
Sample Quantity : As per requirement.
Date of Sampling : 24.11.2018
Date of Receiving : 26.11.2018
Date of Analysis : 26.11.2018 to 05.12.2018
Source of Sample : Mines Site Office
Sample ID Code : ELW –8759

Sl. No.	TESTS	PROTOCOL	RESULT	Detection Range	INDIAN STANDARDS as per IS 10500:1991(Reaff:2012)	
					Desirable	Permissible
1.	Colour (Hazen unit)	APHA, 23rd Ed. 2017, 2120 B	<5.0	5-100	5.00	15.0
2.	Odour	APHA, 23rd Ed. 2017, 2150 B	Agreeable	Qualitative	Agreeable	Agreeable
3.	Taste	APHA, 23rd Ed. 2017, A+B	Agreeable	Qualitative	Agreeable	Agreeable
4.	Turbidity as (NTU)	APHA, 23rd Ed. 2017, 2130-A+B	BDL	1 - 100	1.0	5.0
5.	pH	APHA, 23rd Ed. 2017, 4500H+ A+B	7.20	2.0 -12	6.5-8.5	No Relax.
6.	Total Dissolved Solids as TDS (mg/l)	APHA, 23rd Ed. 2017, 2540-C	450.0	5 - 5000	500	2000
7.	Alkalinity (mg/l)	APHA, 23rd Ed. 2017, 2320 A+ B	128.0	5-1500	200	600
8.	Total Hardness as $CaCO_3$ (mg/l)	APHA, 23rd Ed. 2017, 2340 A+C	228.0	5-1500	200.0	600.0
9.	Calcium as Ca (mg/l)	APHA, 23rd Ed. 2017, 3500 Ca A+B	65.6	5 – 1000	75.0	200.0
10.	Magnesium as Mg (mg/l)	APHA, 23rd Ed. 2017, 3500 Mg A+B	17.49	5-1000	30.0	100.0
11.	Chloride as Cl (mg/l)	APHA, 23rd Ed. 2017, 4500 Cl A+B	36.0	5-1000	250.0	1000.0
12.	Fluorides as F (mg/l)	APHA, 23rd Ed. 2017, 4500-C	0.40	0.05-10	1.0	1.5
13.	Sulfate as SO_4 (mg/l)	APHA, 23rd Ed. 2017, 4500-SO_4^{2-} E	45.0	1.0 -250	200.0	400.0
14.	Nitrate Nitrogen as NO_3 (mg/l)	APHA, 23rd Ed. 2017, 4500-NO_3^- B	15.0	5.0 - 100	45.0	No Relax.
15.	Manganese as Mn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.1-5	0.10	0.30
16.	Zinc as Zn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.02-50	5.0	15
17.	Lead as Pb (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.01-2	0.01	No Relax.
18.	Cadmium as Cd (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.002-2	0.003	No Relax
19.	Nickel as Ni (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.02-5	0.02	No Relax
20.	Arsenic as As (mg/l)	APHA, 23rd Ed. 2017, 3114 C	BDL	0.01-2	0.01	0.05
21.	Total Chromium as Cr (mg/l)	APHA, 23rd Ed. 2017, 3111 – A +B	BDL	0.04-10	0.05	No Relax
22.	Mercury as Hg (mg/l)	APHA, 23rd Ed. 2017, 3112 A+B	BDL	0.001-1	0.001	No Relax.
23	Copper as Cu (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.05-5	0.05	1.5
24.	Boron as B (mg/l)	APHA, 23rd Ed. 2017, 4500 B A+C	0.23	0.2 – 10	0.5	1.0
25.	Aluminium as Al (mg/l)	APHA, 23rd Ed. 2017 (3111-A+B)	BDL	1.0-100	0.03	0.2
26.	Free Residual Chlorine (mg/l)	APHA, 23rd Ed. 2017, 4500-Cl B	BDL	0.5-10	0.20	1.0
27.	Sulphide as H_2S (mg/l)	APHA, 23rd Ed. 2017, Reprint 2007	BDL	0.04-10	0.05	No Relax
28.	Iodide as I (mg/l)	APHA, 23rd Ed. 2017, 4500 – IB	BDL	0.1-10	-	-
29.	Iron as Fe (mg/l)	APHA, 23rd Ed. 2017, 3500 Fe B	0.20	0.02-50	0.3	No Relax.
30.	Total coliform (MPN/100 ml)	APHA, 23rd Ed. 2017, B+C	BDL	1.8	0.05	Absent
31.	*E.coli (Nos/100)*	APHA, 23rd Ed. 2017, B+E	BDL	1.8	Absent	Absent

*The result are related only to item tested.
BDL = Below Detection Limit

Analyst

Authorized signatory
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Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/09 TEST REPORT NO:ECO LAB/DW/767/11/18
TEST REPORT ISSUE DATE: 05.12.2018

TEST REPORT OF DRINKING WATER*

Name of the Company : M/s. Prism Cement Limited
Address of the Company : Village Mankahari,
Tehsil Rampur Baghelan
Distt.Satna (M.P.)
Sampling Method : APHA/ IS: 3025
Sample Collected by : Mr.Maan Singh
Sample Quantity : As per requirement.
Date of Sampling : 24.11.2018
Date of Receiving : 26.11.2018
Date of Analysis : 26.11.2018 to 05.12.2018
Source of Sample : Sijhata Village – Bore Well
Sample ID Code : ELW - 8761

SL No.	TESTS	PROTOCOL	RESULT	Detection Range	INDIAN STANDARDS as per IS 10500:1991(Reaff:2012)	
					Desirable	Permissible
1.	Colour (Hazen unit)	APHA, 23rd Ed. 2017, 2120 B	<5.0	5-100	5.00	15.0
2.	Odour	APHA, 23rd Ed. 2017, 2150 B	Agreeable	Qualitative	Agreeable	Agreeable
3.	Taste	APHA, 23rd Ed. 2017, A+B	Agreeable	Qualitative	Agreeable	Agreeable
4.	Turbidity as (NTU)	APHA, 23rd Ed. 2017, 2130-A+B	1.0	1 - 100	1.0	5.0
5.	pH	APHA, 23rd Ed. 2017, 4500H+ A+B	7.45	2.0 -12	6.5-8.5	No Relax.
6.	Total Dissolved Solids as TDS (mg/l)	APHA, 23rd Ed. 2017, 2540-C	337.0	5 - 5000	500	2000
7.	Alkalinity (mg/l)	APHA, 23rd Ed. 2017, 2320 A+ B	132.0	5-1500	200	600
8.	Total Hardness as $CaCO_3$ (mg/l)	APHA, 23rd Ed. 2017, 2340 A+C	244.0	5-1500	200.0	600.0
9.	Calcium as Ca (mg/l)	APHA, 23rd Ed. 2017, 3500 Ca A+B	60.8	5 – 1000	75.0	200.0
10.	Magnesium as Mg (mg/l)	APHA, 23rd Ed. 2017, 3500 Mg A+B	22.35	5-1000	30.0	100.0
11.	Chloride as Cl (mg/l)	APHA, 23rd Ed. 2017, 4500 Cl A+B	54.0	5-1000	250.0	1000.0
12.	Fluorides as F (mg/l)	APHA, 23rd Ed. 2017, 4500-C	0.39	0.05-10	1.0	1.5
13.	Sulfate as SO_4 (mg/l)	APHA, 23rd Ed. 2017, 4500-SO_4^{2-} E	110.0	1.0 -250	200.0	400.0
14.	Nitrate Nitrogen as NO_3 (mg/l)	APHA, 23rd Ed. 2017, 4500-NO_3^- B	18.0	5.0 - 100	45.0	No Relax.
15.	Manganese as Mn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.1-5	0.10	0.30
16.	Zinc as Zn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	0.18	0.02-50	5.0	15
17.	Lead as Pb (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.01-2	0.01	No Relax.
18.	Cadmium as Cd (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.002-2	0.003	No Relax
19.	Nickel as Ni (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.02-5	0.02	No Relax
20.	Arsenic as As (mg/l)	APHA, 23rd Ed. 2017, 3114 C	BDL	0.01-2	0.01	0.05
21.	Total Chromium as Cr (mg/l)	APHA, 23rd Ed. 2017, 3111 – A +B	BDL	0.04-10	0.05	No Relax
22.	Mercury as Hg (mg/l)	APHA, 23rd Ed. 2017, 3112 A+B	BDL	0.001-1	0.001	No Relax.
23	Copper as Cu (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.05-5	0.05	1.5
24.	Boron as B (mg/l)	APHA, 23rd Ed. 2017, 4500 B A+C	0.21	0.2 – 10	0.5	1.0
25.	Aluminium as Al (mg/l)	APHA, 23rd Ed. 2017 (3111-A+B)	BDL	1.0-100	0.03	0.2
26.	Free Residual Chlorine (mg/l)	APHA, 23rd Ed. 2017, 4500-Cl B	BDL	0.5-10	0.20	1.0
27.	Sulphide as H_2S (mg/l)	APHA, 23rd Ed. 2017, Reprint 2007	BDL	0.04-10	0.05	No Relax
28.	Iodide as I (mg/l)	APHA, 23rd Ed. 2017, 4500 – IB	BDL	0.1-10	-	-
29.	Iron as Fe (mg/l)	APHA, 23rd Ed. 2017, 3500 Fe B	0.16	0.02-50	0.3	No Relax.
30.	Total coliform (MPN/100 ml)	APHA, 23rd Ed. 2017, B+C	BDL	1.8	0.05	Absent
31.	*E.coli (Nos/100)*	APHA, 23rd Ed. 2017, B+E	BDL	1.8	Absent	Absent

*The result are related only to item tested.
BDL = Below Detection Limit

Analyst

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Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/09 TEST REPORT NO: ECO LAB/DW/767/11/18
TEST REPORT ISSUE DATE: 05.12.2018

TEST REPORT OF DRINKING WATER*

Name of the Company : M/s. Prism Cement Limited
Address of the Company : Village Mankahari,
Tehsil Rampur Baghelan
Distt.Satna (M.P.)
Sampling Method : APHA/ IS: 3025
Sample Collected by : Mr.Maan Singh
Sample Quantity : As per requirement.
Date of Sampling : 24.11.2018
Date of Receiving : 26.11.2018
Date of Analysis : 26.11.2018 to 05.12.2018
Source of Sample : Hinauta Village – Bore Well
Sample ID Code : ELW –8763

Sl. No.	TESTS	PROTOCOL	RESULT	Detection Range	INDIAN STANDARDS as per IS 10500:1991(Reaff:2012)	
					Desirable	Permissible
1.	Colour (Hazen unit)	APHA, 23rd Ed. 2017, 2120 B	<5.0	5-100	5.00	15.0
2.	Odour	APHA, 23rd Ed. 2017, 2150 B	Agreeable	Qualitative	Agreeable	Agreeable
3.	Taste	APHA, 23rd Ed. 2017, A+B	Agreeable	Qualitative	Agreeable	Agreeable
4.	Turbidity as (NTU)	APHA, 23rd Ed. 2017, 2130-A+B	<1.0	1 - 100	1.0	5.0
5.	pH	APHA, 23rd Ed. 2017, 4500H+ A+B	7.30	2.0 -12	6.5-8.5	No Relax.
6.	Total Dissolved Solids as TDS (mg/l)	APHA, 23rd Ed. 2017, 2540-C	364.0	5 - 5000	500	2000
7.	Alkalinity (mg/l)	APHA, 23rd Ed. 2017, 2320 A+ B	140.0	5-1500	200	600
8.	Total Hardness as $CaCO_3$ (mg/l)	APHA, 23rd Ed. 2017, 2340 A+C	248.0	5-1500	200.0	600.0
9.	Calcium as Ca (mg/l)	APHA, 23rd Ed. 2017, 3500 Ca A+B	62.4	5 – 1000	75.0	200.0
10.	Magnesium as Mg (mg/l)	APHA, 23rd Ed. 2017, 3500 Mg A+B	22.35	5-1000	30.0	100.0
11.	Chloride as Cl (mg/l)	APHA, 23rd Ed. 2017, 4500 Cl A+B	56.0	5-1000	250.0	1000.0
12.	Fluorides as F (mg/l)	APHA, 23rd Ed. 2017, 4500-C	0.33	0.05-10	1.0	1.5
13.	Sulfate as SO_4 (mg/l)	APHA, 23rd Ed. 2017, 4500-SO_4^{2-} E	88.0	1.0 -250	200.0	400.0
14.	Nitrate Nitrogen as NO_3 (mg/l)	APHA, 23rd Ed. 2017, 4500-NO_3^- B	17.5	5.0 - 100	45.0	No Relax.
15.	Manganese as Mn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.1-5	0.10	0.30
16.	Zinc as Zn (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	0.21	0.02-50	5.0	15
17.	Lead as Pb (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.01-2	0.01	No Relax.
18.	Cadmium as Cd (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.002-2	0.003	No Relax
19.	Nickel as Ni (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.02-5	0.02	No Relax
20.	Arsenic as As (mg/l)	APHA, 23rd Ed. 2017, 3114 C	BDL	0.01-2	0.01	0.05
21.	Total Chromium as Cr (mg/l)	APHA, 23rd Ed. 2017, 3111 – A +B	BDL	0.04-10	0.05	No Relax
22.	Mercury as Hg (mg/l)	APHA, 23rd Ed. 2017, 3112 A+B	BDL	0.001-1	0.001	No Relax.
23	Copper as Cu (mg/l)	APHA, 23rd Ed. 2017, 3111 A+B	BDL	0.05-5	0.05	1.5
24.	Boron as B (mg/l)	APHA, 23rd Ed. 2017, 4500 B A+C	0.24	0.2 – 10	0.5	1.0
25.	Aluminium as Al (mg/l)	APHA, 23rd Ed. 2017 (3111-A+B)	BDL	1.0-100	0.03	0.2
26.	Free Residual Chlorine (mg/l)	APHA, 23rd Ed. 2017, 4500-Cl B	BDL	0.5-10	0.20	1.0
27.	Sulphide as H_2S (mg/l)	APHA, 23rd Ed. 2017, Reprint 2007	BDL	0.04-10	0.05	No Relax
28.	Iodide as I (mg/l)	APHA, 23rd Ed. 2017, 4500 – IB	BDL	0.1-10	-	-
29.	Iron as Fe (mg/l)	APHA, 23rd Ed. 2017, 3500 Fe B	0.15	0.02-50	0.3	No Relax.
30.	Total coliform (MPN/100 ml)	APHA, 23rd Ed. 2017, B+C	BDL	1.8	0.05	Absent
31.	*E.coli (Nos/100)*	APHA, 23rd Ed. 2017, B+E	BDL	1.8	Absent	Absent

*The result are related only to item tested.
BDL = Below Detection Limit

Analyst

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For Ecomen
Quality Manager

Annexure-8

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/07 TEST REPORT NO:ECO LAB/WW/767/11/18
TEST REPORT ISSUE DATE: 05.12.2018

TEST REPORT OF WASTE WATER*

Name of the Company	: M/s. Prism Cement Limited
Address of the Company	: Village Mankahari, Tehsil Rampur Baghelan Distt.Satna (M.P.)
Sampling Method	: APHA/ IS: 3025
Sample Collected by	: Mr.Maan Singh
Sample Quantity	: As per requirement.
Date of Sampling	: 24.11.2018
Date of Receiving	: 26.11.2018
Date of Analysis	: 26.11.2018 to 05.12.2018
Source of Sample	: STP Inlet
Sample ID Code	: ELW -8745

Sl. No.	TESTS	PROTOCOL	RESULT	Range of Testing / Limits of Detection
1	pH	APHA, 23rd Ed. 2017, 4500H+ A+B	7.22	2-12
2	Total Suspended Solids(mg/l)	APHA, 23rd Ed. 2017, 2540-D	158.0	5.0-1000
3	Oil & Grease as O & G (mg/l)	APHA, 23rd Ed. 2017, 5520 A+B+D	BDL	5.0-600
4	Biochemical Oxygen Demand as BOD (mg/l) 3days at 27°C	APHA, 23rd Ed. 2017, 5210 A+B	36.0	5-10000
5	Chemical Oxygen Demand as COD (mg/l)	APHA, 23rd Ed. 2017, 5220 A+C	140.0	5-50000

*The result are related only to item tested.
BDL = Below Detection Limit

Analyst

Authorized signatory

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FORMAT NO. ECO/QS/FORMAT/07 TEST REPORT NO:ECO LAB/WW/767/11/18
TEST REPORT ISSUE DATE: 05.12.2018

TEST REPORT OF WASTE WATER*

Name of the Company	: M/s. Prism Cement Limited
Address of the Company	: Village Mankahari, Tehsil Rampur Baghelan Distt.Satna (M.P.)
Sampling Method	: APHA/ IS: 3025
Sample Collected by	: Mr.Maan Singh
Sample Quantity	: As per requirement.
Date of Sampling	: 24.11.2018
Date of Receiving	: 26.11.2018
Date of Analysis	: 26.11.2018 to 05.12.2018
Source of Sample	: STP Outlet
Sample ID Code	: ELW - 8746

Sl. No.	TESTS	PROTOCOL	RESULT	Range of Testing / Limits of Detection	G.S.R 1265(E)
1	pH	APHA, 23rd Ed. 2017, 4500H+ A+B	7.16	2-12	6.5-9.0
2	Total Suspended Solids(mg/l)	APHA, 23rd Ed. 2017, 2540-D	15.8	5.0-1000	<100.0
3	Oil & Grease as O & G (mg/l)	APHA, 23rd Ed. 2017, 5520 A+B+D	BDL	5.0-600	-
4	Biochemical Oxygen Demand as BOD (mg/l) 3days at 27°C	APHA, 23rd Ed. 2017, 5210 A+B	6.0	5-10000	30.0
5	Chemical Oxygen Demand as COD (mg/l)	APHA, 23rd Ed. 2017, 5220 A+C	38.0	5-50000	-
6.	Fecal Coliform (MPN/100 ml)	APHA, 23rd Ed. 2017, A + E	120.0	-	<1000

*The result are related only to item tested.
BDL = Below Detection Limit

Analyst

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Quality Manager

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An approved Laboratory from Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi (Valid Upto 02.01.19)

FORMAT NO. ECO/QS/FORMAT/07 TEST REPORT NO:ECO LAB/WW/767/11/18
TEST REPORT ISSUE DATE: 05.12.2018

TEST REPORT OF WASTE WATER*

Name of the Company	: M/s. Prism Cement Limited
Address of the Company	: Village Mankahari, Tehsil Rampur Baghelan Distt.Satna (M.P.)
Sampling Method	: API IA/ IS: 3025
Sample Collected by	: Mr.Maan Singh
Sample Quantity	: As per requirement.
Date of Sampling	: 24.11.2018
Date of Receiving	: 26.11.2018
Date of Analysis	: 26.11.2018 to 05.12.2018
Source of Sample	: Mine Workshop after separate Treated Water
Sample ID Code	: ELW - 8747

Sl. No.	TESTS	PROTOCOL	RESULT	Range of Testing / Limits of Detection	G.S.R 1265(E)
1	pH	APHA, 23rd Ed. 2017, 4500H+ A+B	7.37	2-12	6.5-9.0
2	Total Suspended Solid as TSS (mg/l)	APHA, 23rd Ed. 2017, 2540-D	15.6	5.0-1000	<100.0
3	Oil & Grease as O & G (mg/l)	APHA, 23rd Ed. 2017, 5520 A+B+D	BDL	5.0-600	-
4	Biochemical Oxygen Demand as BOD (mg/l) 3days at 27°C	APHA, 23rd Ed. 2017, 5210 A+B	5.3	5-10000	30.0
5	Chemical Oxygen Demand as COD (mg/l)	APHA, 23rd Ed. 2017, 5220 A+C	28.0	5-50000	-
6.	Fecal Coliform (MPN/100 ml)	APHA, 23rd Ed. 2017, A + E	Absent	-	<1000

*The result are related only to item tested.
BDL = Below Detection Limit

Analyst

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for Ecomen Laboratories Pvt. Ltd.
Quality Manager

ANNEXURE - 9

Member Secretary

भारत सरकार
केन्द्रीय भूमि जल प्राधिकरण
जल संसाधन, नदी विकास
और गंगा संरक्षण मंत्रालय

Government of India
Central Ground Water Authority
Ministry of Water Resources,
River Development & Ganga Rejuvenation

CGWA/IND/Proj/2017-218-R

No.21-4(25)/ NCR /CGWA /2008- 1612

Dated:- 12 SEP 2017

To

M/s Prism Cement Ltd.,
Rajdeep, Rewa Road
Satna, Madhya Pradesh- 485001

Sub:- Renewal of NOC for ground water withdrawal to M/s Prism Cement Ltd., in respect of their existing Cement Plant and Limestone Mining at Village Mankahari, Hinauti, Sijhatta, Mendhi & Baghai, Block Rampur Baghelan, District Satna, Madhya Pradesh -reg.

Refer to your application dated 27.05.2017 on the above cited subject. Based on recommendations of Regional Director, CGWB, North Central Region, Bhopal vide their office letter No. 1-8/NCR/TS(CGWA)/460 dated 04.07.2017, and further deliberations on the subject, the renewal of NOC issued vide this office letter of even no. dated 28.08.2008 is hereby accorded to **M/s Prism Cement Ltd., in respect of their existing Cement Plant and Limestone Mining at Village Mankahari, Hinauti, Sijhatta, Mendhi & Baghai, Block Rampur Baghelan, District Satna, Madhya Pradesh.** The renewal is however subject to the following conditions:-

1. The firm may abstract **1,500 m3/day** of ground water **(not exceeding 5,47,500 m3/year)** through existing twelve (12) borewells only and the remaining 4 borewells maybe converted to piezometers for monthly water level monitoring. No additional ground water abstraction structures to be constructed for this purpose without prior approval of the CGWA.
2. All the wells to remain fitted with water meter and monitoring of ground water abstraction to be continued on regular basis at least once in a month. The firm will continue to provide data of ground water extraction on regular basis to the Regional Director, Central Ground Water Board, North Central Region, Bhopal. The ground water quality to be monitored twice in a year during pre monsoon and post monsoon periods.
3. **M/s Prism Cement Ltd.,** shall, continue to implement ground water recharge measures to the tune of **1,20,000 m^3/year** for augmenting the ground water resources in consultation with the Regional Director, Central Ground Water Board, North Central Region, Bhopal. In addition the firm shall adopt two (2) nos. villages for Water Security Plan in District **Satna, Madhya Pradesh.**The necessary template for the Water Security Plan for Jal Gram is available on website of Ministry of Water Resources, RD & GR (www.wrmin.nic.in). Both, the

Demand Side Management /Supply Side Management with maintenance of structures in the said villages to be ensured and a comprehensive plan to be submitted to Regional Director, CGWB. Firm shall also undertake periodic maintenance of recharge structures at its own cost.

4. The firm shall continue to execute ground water regime monitoring programme in and around the project area through five (5) nos. of piezometers fitted with automatic water level recorders having telemetry systems on regular basis in consultation with the Central Ground Water Board, North Central Region, Bhopal..
5. The ground water monitoring data in respect of S. No. 2 & 4 to be submitted to Central Ground Water Board, North Central Region, Bhopal on regular basis at least once in a year.
6. The firm shall ensure proper recycling and reuse of waste water after adequate treatment.
7. Action taken report in respect of S.N o. 1 to 6 may be submitted to CGWA within one year period.
8. The renewal is liable to be cancelled in case of non-compliance of any of the conditions as mentioned in S. No. 1 to 7.
9. This NOC is subject to prevailing Central/State Government rules/laws or Court orders related to construction of tubewell/ground water withdrawal/construction of recharge or conservation structures/discharge of effluents or any such matter as applicable.
10. This NOC does not absolve the applicant / proponent of his obligation / requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
11. The NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and be taking decisions independently of the NOC.
12. This renewal is valid for two years from date of issuance of this letter.

Member Secretary

Copy to:

1. The Member Secretary, Madhya Pradesh Pollution Control Board, Paryavaran Parisar, E-5 Sector, Arera Colony, Bhopal, Madhya Pradesh **with a request to ensure that the conditions mentioned in the NOC are complied by the firm in consultation with the District Collector, District Satna, Madhya Pradesh.**
2. The District Collector, District Satna, Madhya Pradesh for necessary action.
3. The Regional Director, Central Ground Water Board North Central Region, Bhopal. This has reference to your recommendation dated 04.07.2017.
4. TS to the Chairman, Central Ground Water Authority, Shram Shakti Bhawan, Rafi Marg, New Delhi.
5. Guard File 2017-18.

Member Secretary

ANNEXURE - 10

Rainwater harvesting measures Action Plan for the augmentation of ground water at cement plant, colony and mine site of Prism Cement Limited.

1. INTROCUCTION:

The Limestone Mine of M/s. Prism Cement Ltd. is near villages Hinauti&Sijhatta in district of Satna, Madhya Pradesh. The area is in Vindhyan Limestone/shale formations, where Limestone is bearing mined from mining lease areas of 772.067 Ha. 117.594 Ha. 512.317 Ha. 99.416 Ha., amongst other mining leases. As per the conditions of the Environment Clearance, a plan was protection of natural water courses passing nearby Prism Cement Ltd. Leases was to be prepared and submitted.

The natural water courses under the present plan comprise Tamas River, Nar Nala and MagardhaNala.

2. LAND USE IN THE BUFFER AREA OF THE LEASES:

Buffer zone:

The land use of buffer zone is given in **Table** 1 based on satellite imaginary and census data.

TABLE NO.1

Land Use / Land Cover Details of Buffer Zone Area

LAND USE	AREA (in Hectares)	AREA (in %)
River/Canal	634.71	1.32
Ponds/Reservoir	561.73	1.17
Stonsy area	144.16	0.30
Open land	441.36	0.92
Open scrub land	3737.14	7.76
Forest Land	1685.11	3.50
Plantation	2445.89	5.08
Fallow land	29729.69	61.77
Crop land	7542.87	15.67
Human Settlement	706.28	1.47
Industrial Area	75.80	0.16
Mine Quarry	425.75	0.88
Total	48310.49	100

(Source – EIA/EMP)

3. DRAINAGE:

The Tamas (Tons) River mainly controls the drainage pattern. The none seasonal nalla viz. Magardaha and Nar nala flowing on west and east of the lease area respectively flow towards north and ultimately join the Tamas River. The area is almost flat with gentle slope towards East and Northeast. A substantial part of rainfall in the area drains away as surface run-off,

along streamlets towards the Northeast to the Tamsa River. The drainage map of Tamas (Tons) sub basin of Ganga basin is depicted in **Figure 2**. The drainage pattern of buffer zone (part of Tamas sub basin) is also given in **Figure 3**.

FIGURE 2

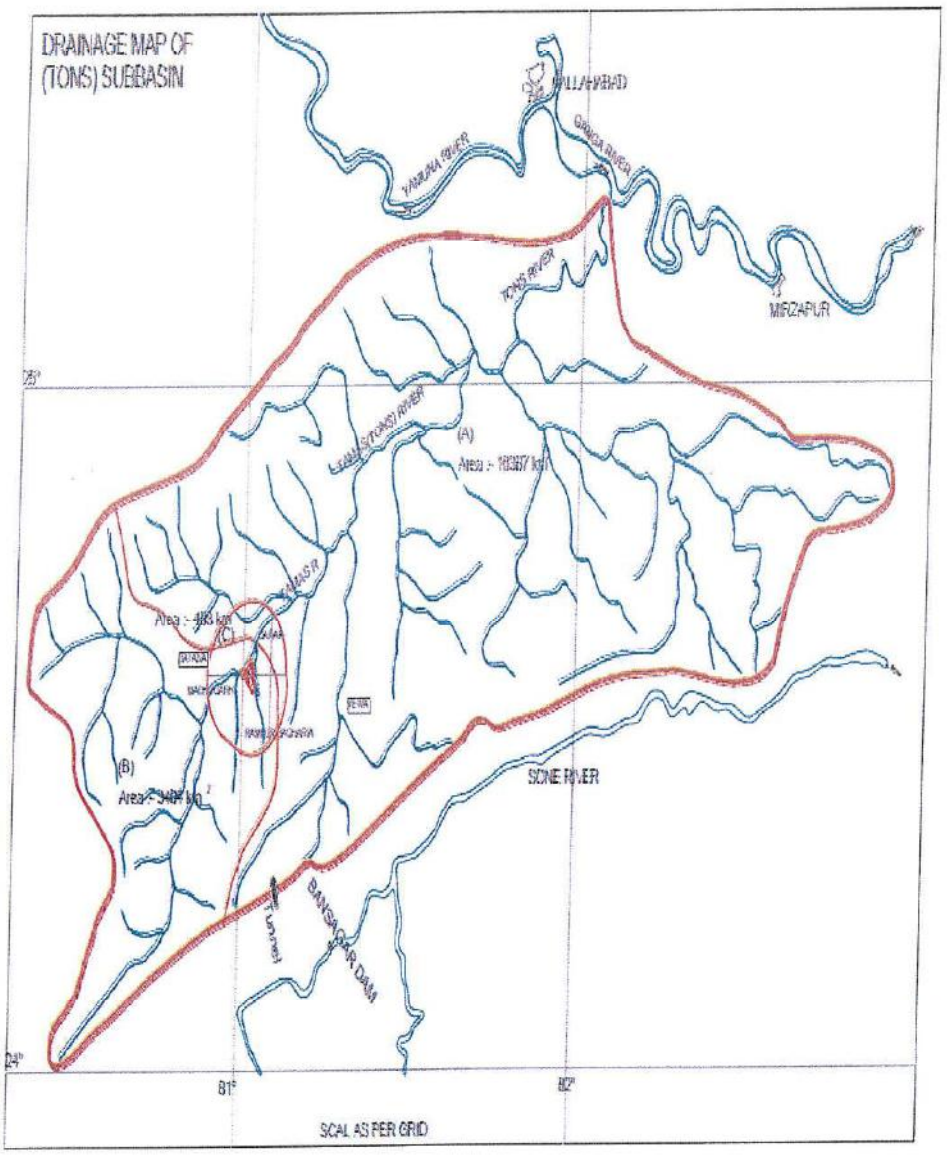


FIGURE 3

DRAINAGE MAP OF BUFFER ZONE

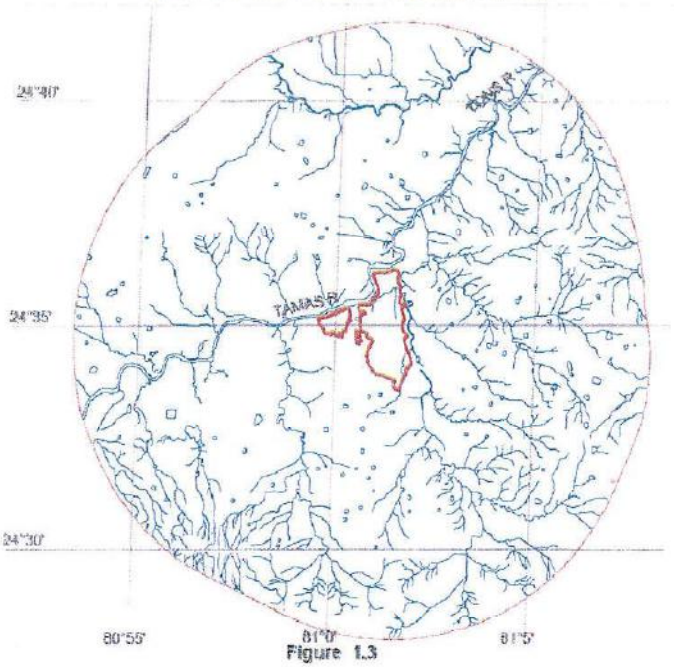


Figure 1.3

4. HYDROMETEROLOGY:

Madhya Pradesh state is situated within 180 N to 250 N and 740 E to 820 E experiences tropical climate. Frontispieces gives the orographic feature of the state. Geographical location and orographic features have profound influence on the climate of area. As per IMD the year may be divided into four seasons. The winter season from January to February is followed by the summer season from March to May. The period from June to September constitutes the southwest monsoon season and the period from October to December form the post monsoon season.

4.1 **Rainfall :**Rainfall data of Mine site and Satna IMD station are collected for the project of 2008 to 2014 and given in **(Table NO. -2).**

TABLE NO.2

Year wise rainfall data (2008 to 2014) : Satna and Mine Site

Month/ Year	2008	2009		2010		2011		2012		2013		2014
	Mine Site	Mine Site	Satna	Mine Site	Satna	Mine Site	Satna	Mine Site	Satna	Mine Site	Satna	Mine Site
Jan	2.0	35.3	12.9	8.8	1.7	0.0	0.0	36.0	32.3	0.0	0.0	38.9
Feb	35.1	0.0	0.0	13.3	5.5	1.0	0.9	0.0	0.0	67.9	45.9	104.3
Mar	1.3	3.6	1.4	0.0	0.0	3.2	0.2	3.6	3.9	34.6	11.5	29.3
Apr	12.0	0.7	3.8	0.0	0.1	0.0	1.1	0.0	0.2	1.8	4.2	8.7
May	12.5	10.5	14.5	18.6	1.6	36.2	7.3	0.0	0.0	0.0	0.0	1.3
Jun	215.6	12.5	25.8	16.9	16.4	313.9	328.6	17.9	15.6	270.4	384.2	90.2
Jul	216.8	173.2	207.6	283.3	228.1	140.2	252.1	380.7	279.7	576.5	338.6	305.2
Aug	220.2	214.9	192.5	198.3	209.7	206.7	289.8	435.0	455.1	414.5	451.6	127.2
Sep	71.5	109.7	152.0	213.5	176.4	205.3	143.9	132.1	169.3	134.9	71.5	193.9
Oct	0.0	72.9	220.4	29.6	13.7	0.0	3.1	15.1	2.5	131.4	143.7	200.7
Nov	20.1	80.9	58.9	11.8	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dec	0.0	2.6	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.9
Total	807.1	716.7	892.7	794.0	662.9	906.5	1027.0	1020.3	958.6	1631.9	1451.2	1121.7

(Source - Mine & Satana Dist.)

5. GEOLOGY:

The relevant portion of Geological report of the area have been adapted for present study. Part of compilation done from other references.

5.1 **Regional Geology**

Geologically, this area forms part of the Rewa Plateau belonging to the Upper VindhyanSupergroup of rock formations in Indian stratigraphy. The Vindhyan formations are roadly classified into lower calcareous and an upper arenaceousfacies.

The limestone deposit in the area of investigation belongs to the Bhander series. The general trend of Bhander Limestone is East - Northeast to West - Southwest having low southerly dips of less than 50. The litho stratigraphy of Vindhyan formation is given in **Table No.3**

TABLE NO.3

Litho stratigraphy of Satna District

Supergroup	Group	Formation
Vindhyan Supergroup	Bhander Group	Maihar Sandstone Sirbu Shale Bhander Limestone
	Rewa Group	Sandstone and shale
	Kaimur Group	Sandstone and shale
	UNCONFORMITY	
	Semri Group	Rohtas Formation Khemjua Formation Porcellance Formation Basal Formation
UNCONFORMITY Bundekhand granites/Bijawar phyllites		

5.2 **Local Geology:**

The detailed geological prospecting was carried out by GEM Division of ACC to identify the geological structure in the area and association of different rock types. The lithological succession of various formations encountered in the area of investigations based on the sub-surface data generated is as follows:

Overburden Soil
Buff to pale grey magnesian limestone
Upper shaly limestone
Grey limestone
Lower shaly limestone
Grey to grayish grey shale

6.0 HYDROLOGY

Hydrology of the area deals with evaporation, infiltration and surface runoff. In the present studyinfiltration and surface runoff as peak flow will be dealt herein

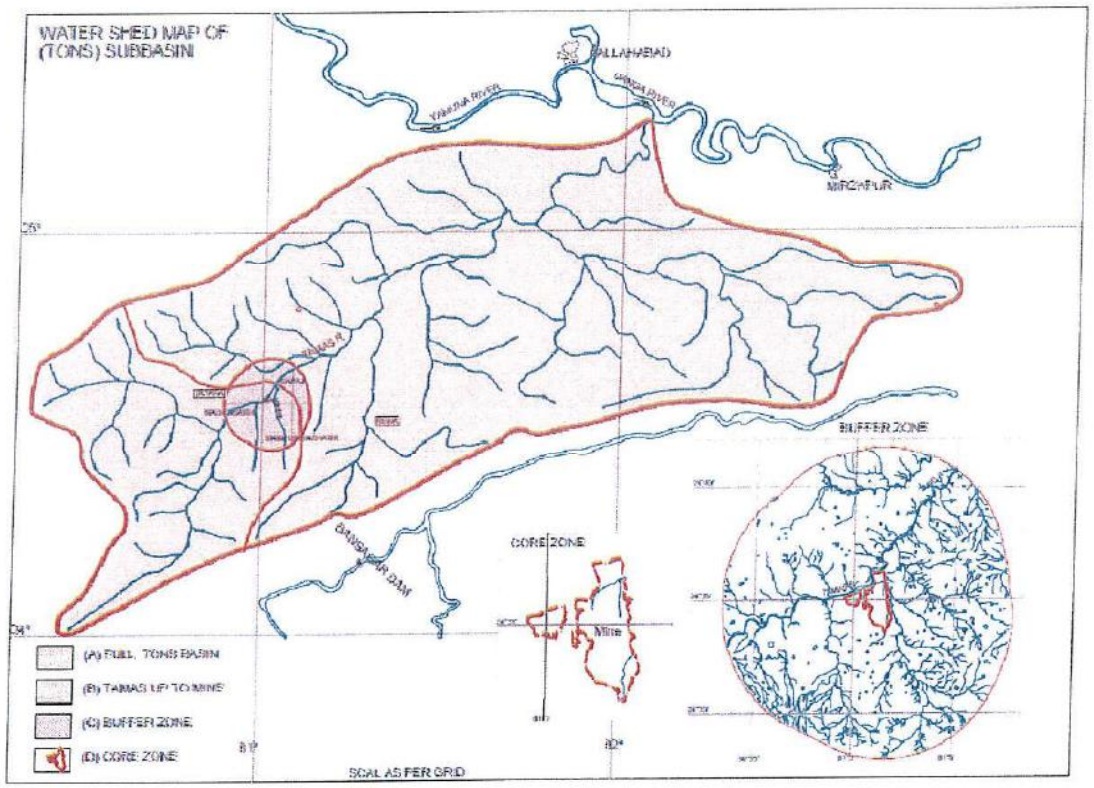
6.1 Infiltration: Infiltration is the flow of water intothe ground through the soil surface. Sinceinfiltrated water may contribute to the groundwater discharge in addition to soil moisture, theprocess can be schematically modeled.Where two situation, viz. low intensity rainfalland high intensity rainfall are considered. It isrecorded that in case of low intensity rainfall,there will be no contribution to groundwaterflow. Whereas in the case of high intensityrainfall, there will be contribution to groundwater flow.

6.2 **Surface Runoff :**

Surface water is the component of rainfall, which is generated on-land surface and drain into Nala and pond as surface runoff.

6.2.1 **Watershed**:

The Watershed of the different magnitude have been drawn for theassessment of water resource of respective area. The Watershed have beendepicted in Figure below:



6.3 Discussion:

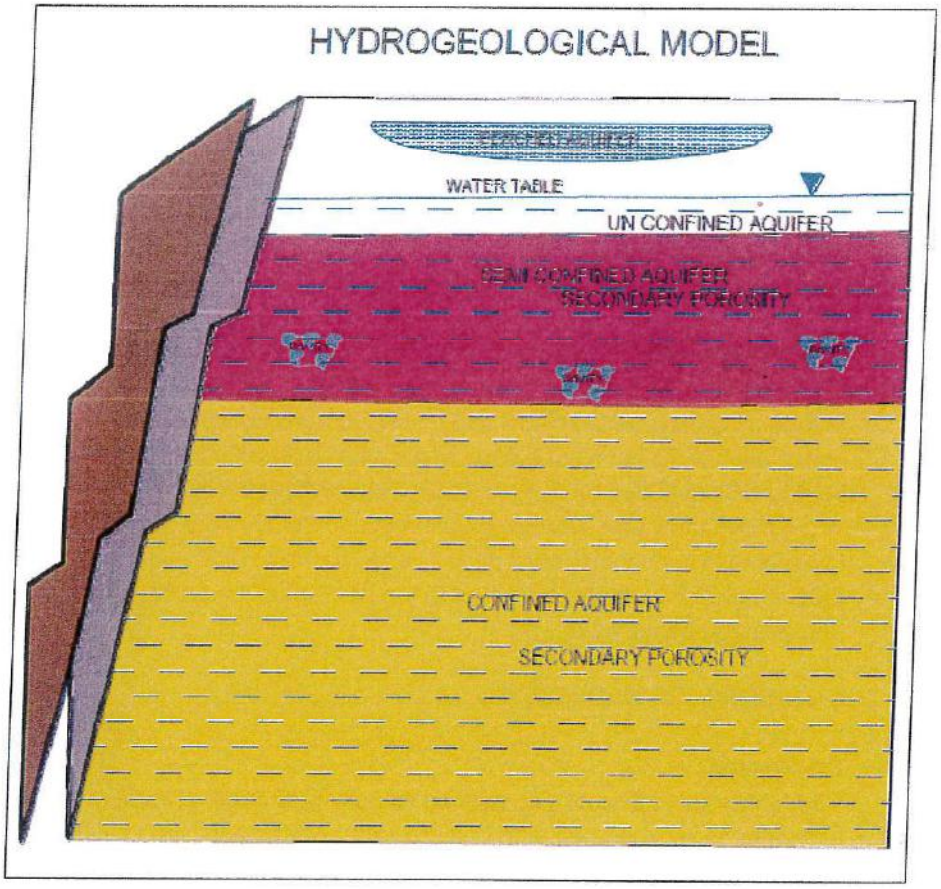
There is no nala within mine lease are hence the diversion of local nala does notarise. Accordingly there will not be negative hydrological impact for the surfacerunoff in respect of competing users as long as mining operation continue. Mine pitwill conserve the entire water resource for optimum utilization. The remaining water inthe pit will work as recharge pit for ground

water recharge. The ground water levelof nearby area will rise. The competing users will be benefited from this. Thus,the hydrological impact of Mining and construction of mine pit reservoir will be apositive step in respect of conservation of natural resource and their proper utilizations during the non-monsoon period.

7.0 HYDROGEOLOGY

7.1 Hydrogeological Model:

A hydrogeological conceptual model have been assignedfor mainly Vindhyan Limestone and shale surround the mining lease area (core zone)and, 10 km radius buffer zone. The aquifers can be categories in three segment.The conceptual model is depicted in **Figure below:**



7.1.1 Unconfined Aquifer :

An upper non-indurated unconfined aquifer extend down tomaximum depth of 25 m. is recharged annually by monsoon rains and supports themajority of shallow wells serving local populations. At places formation of perchedaquifer is noticed with in depth range of 15m. If the underlying strata of small extentbut impervious, it will force water contained in overlying porous material to thesurface. In many places such water lies for above the ordinary water table andconstitutes what is called perched water table of perched aquifer. This aquifer driedbefore summer every year. Perched water table mislead the general confirmation ofdeeper water table in the area.

7.1.2 **Semi Confined Aquifer:**

An upper weathered bed rock aquifer that irregularlyextends beyond 25 m where jointing and minor fracture in limestone and Shale havebeen exploited within the depth range of 50 m. This support a more consistentsupply through the year. The yield of tube wells may range between 1 and 3 liter perseconds. This aquifer may be termed as semi confined aquifer. The occurrence ofcavity aquifer in kast topography is not un-common.

7.1.3 **Confined Aquifer:**

A typical fracture rock aquifer extend down to depth of 100mwhere secondary porosity in form of fault, bedding and lesser fractures controlgroundwater occurrence and yield 1 to 5 liter per second subject to encounter ofcavity aquifer in limestone formation. In general the confined aquifer occurring in thiszone where hydraulic conductivity can be variable. In general the maximum yieldmay be between 1 and 2 liters per second.

7.1.4 **Water Level:**

In order to understand regional and local Hydrogeological regime, thewell inventory and setting of observation wells have been done at the locationsmarked in Key Plan (**Fig-6.4**). The water level data for 10 km buffer zone, are givenin **Table 6.3** respectively. The depth to water level in the area in pre monsoon variesbetween 8.00 m bgl and 25.00 m bgl average being 12.00 m bgl. The depth to waterlevel in post monsoon period varies between 5.00 m bgl and 20.00 m bgl averagebeing 8.00 m bgl. Annual water level fluctuation pre & post monsoon varies between3.00 and 5.90 m. The average being 4.5 m.

8.0 RAINWATER HARVESTING

8.1 General :

Rain water harvesting can be defined as activity of direct collection of Rainwater and storage of rainwater as well as other activity aimed at harvesting andconserving surface and ground water preventing loss through evaporation and seepageand other hydrological studies and engineering inventions aiming at most efficientutilization of rainwater towards best use for the humanity.The detail project report for rainwater harvesting is given below incorporating; source,area, design of individual structure within mine lease area and outside.

8.2 Source of Water:

The source or water available for rainwater harvesting is only surfacewater. The resource estimation for lease area has been done considering total leasearea of 10.25 km2 (7.72 km2 + 2.53 km2). Monsoon normal rainfall 0.973 m and surfacerunoff coefficient of 0.40. The estimated surface water resource will be 3.99 MCM out ofthis 0.58 MCM will be used in plant &mine . The mine water discharge will be zero. It isexpected that remaining estimated resource 3.41 MCM will be available for recharge tothe system and future use. CGWA while granting ground water had laid condition forimplementation of ground water recharge measure to the tune of 1.206 MCM/ year foraugmenting the ground water resource of the area.

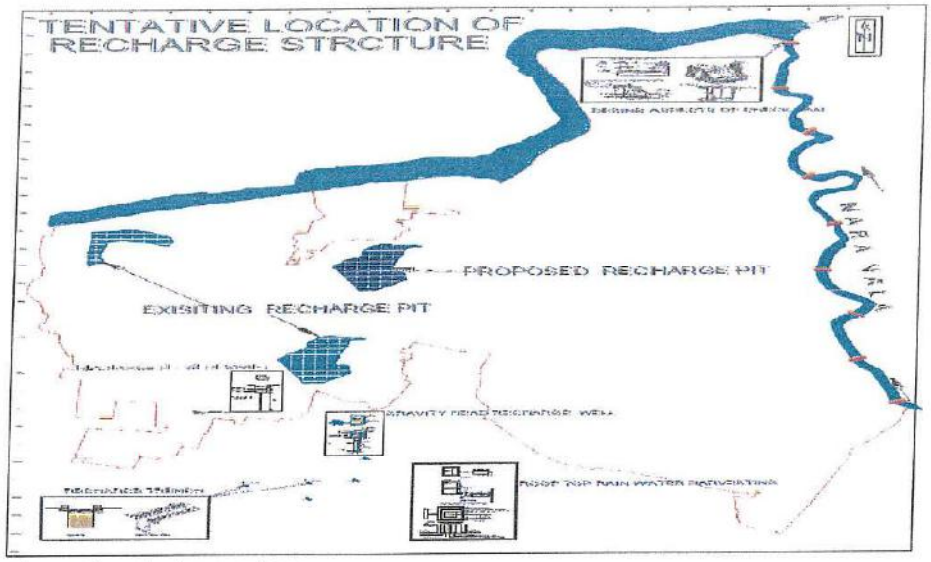
8.2.1 **Identification of area:**

The areas identified within lease area are given in Table below:

Sr. No.	Identification of area	Unit
1	Surface water reservoir in the Mined out area as recharge pond.	3 Nos
2	Check dam on Nar nadi.	8 Nos
3	Office and residential building area for Rooftop rainwater harvesting	10 Nos
4	Lease area (side of retention wall) of dump for recharge pit with shaft structure	4 Nos
5	Recharge trench in colony area.	500 m
6	In the colony area away from mine for Gravity head recharge tubewell.	10 Nos

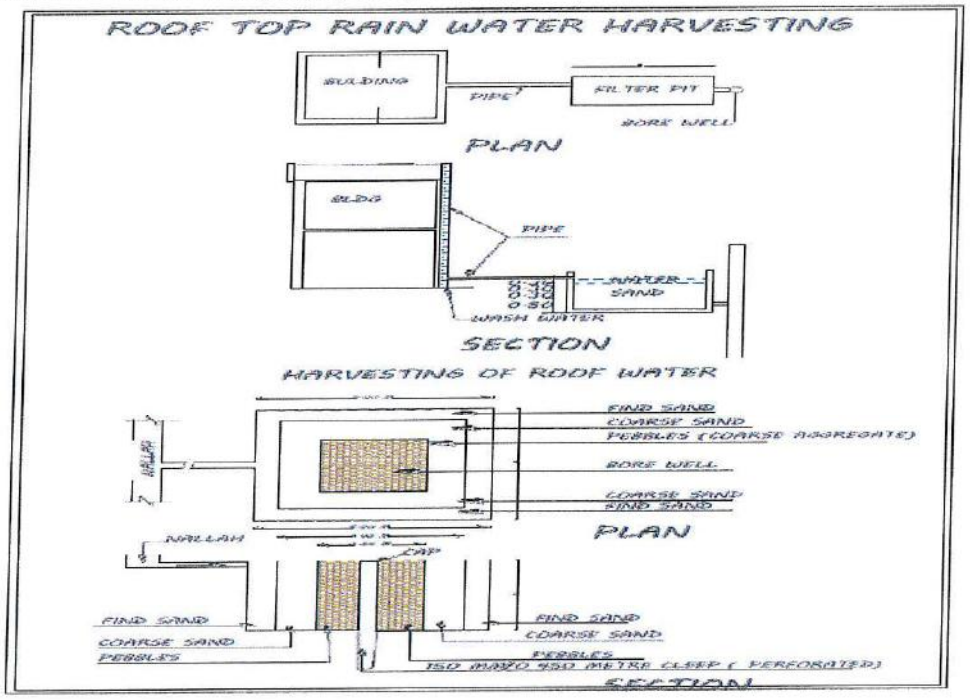
8.2.2 **Surface water reservoir:**

There will be three surface water reservoir as suggested inmine plan. Two mine out Pit reservoir is already working and hold rainwater to the tuneof 1.62 MCM to meet the water requirement of plant and will also recharge the groundwater in the area.



8.3.3 **Rooftop rainwater harvesting:**

Domestic Rain Water Harvesting or roof top Rain Water Harvesting isthe technique through which Rain Water is captured from roof catchments and storedin tanks/reservoirs/Ground Water aquifers . It consist of conservation of roof top RainWater to augment Ground water storage by artificial recharge. It requires connectingthe outlet pipe from roof top to divert collected water to existing well/tube well/borewell of a specially designed well.



9.0 CONCLUSION AND RECOMMENDATION:

All details are taken from Report on hydlological studies for the lease area of 772.067 ha. The measures as above will help augmentation of ground water recharge in the area.
The plan can be suitably amended to accommodate government run schemes and new techniques available from time to time.

Annexure-11

रजिस्टर्ड पार्सल द्वारा

भारत सरकार
खान मंत्रालय
भारतीय खान ब्यूरो
क्षेत्रीय खान नियंत्रक का कार्यालय

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
O/O THE REGIONAL CONTROLLER OF MINES

File No.- MP/Satna/Limestone /RMP-44/17-18

Jabalpur,dt.: 27 / 04 / 2017

To,

M/s Prism Cement Limited,
Rajdeep, Rewa Road, Satna (M.P.) 485001

विषयः– म0प्र0 राज्य के **सतना** जिले में स्थित आपकी **प्रिज्म सीमेंट लाइमस्टोन खान (क्षेत्र 99.416 हे0)** के एमसीआर– 2016 के नियम 17 (1) के अंतर्गत जमा किए गए खनन् योजना के पुनर्विलोकन का अनुमोदन।

संदर्भ :–1) आपके द्वारा जमा किये गये प्रक्रिया शुल्क की रसीद संख्या **J/427, दि0 22 / 03 / 2017,** आपका / क्यू पी0 का पत्र क्रमांक – कुछ नहीं, दि0 **20 / 03 / 2017 एवं 19 / 04 / 2017**।
2) इस कार्यालय का समसंख्यक पत्र दि0– **13 / 04 / 2017**।

महोदय,

In exercise of the powers conferred by the Clause (b) of Sub-section (2) of Section 5 of Mines and Minerals (Development and Regulation) Act, 1957 read with Government of India Order no. S.O.1857(E),dated 18/05/2016, I hereby **approve** the above said Review of Mining Plan including Progressive Mine Closure Plan submitted under Rule 17(1) of Minerals (Other than Atomic and Hydrocarbons Energy Minerals) Concession Rules, 2016.This approval is subject to the following conditions:

1 The Review of Mining Plan is approved without prejudice to any other law applicable to the mine area from time to time whether made by the Central Government, State Government or any other authority and without prejudice to any order or direction from any court of competent jurisdiction.

2 The proposals shown on the plates and /or given in the document is based on the lease map /sketch submitted by the applicant/ lessee and is applicable from the date of approval.

3 It is clarified that the approval of aforesaid Review of Mining Plan does not in any way imply the approval of the Government in terms of any other provision of Mines & Minerals (Development & Regulation) Amendment Act, 2015, or the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 and any other laws including Forest (Conservation) Act, 1980, Environment (Protection) Act, 1986 or the rules made there under, Mines Act, 1952 and Rule & Regulations made there under.

4 Indian Bureau of mines has not undertaken verification of the mining lease boundary on the ground and does not undertake any responsibility regarding correctness of the boundaries of the leasehold shown on the ground with reference to lease map & other plans furnished by the applicant / lessee.

5 At any stage, if it is observed that the information furnished, data incorporated in the document are incorrect or misrepresent facts, the approval of the document shall be revoked with immediate effect.

6 The Financial Assurance submitted by you for Rs. **54,37,800/-** (**Rs. Fifty Four Lakh Thirty Seven Thousand Eight Hundred only**) is valid up to **31/03/2022 (Your kind attention for enhancement of financial assurance as per rule 27 of MCDR, 2017)** and next Financial Assurance shall be submitted on or before **31/03/2022**.

7 This approval is restricted in respect of proposals given in the document for the period from **2017-18** to **2021-22** with validity up to **31/03/2022**, **from the date of approval**, subject to all other statutory clearances.

8 If the approval conflicts with any other law or court order/direction under any statute, it shall be revoked immediately.

9 In the approved document, wherever Rule 12(3) of MCDR, 1988 is mentioned, it should be read as Rule 17(1) of Minerals (Other than Atomic and Hydrocarbon Energy Minerals) Concession Rules, 2016.

10 The next Review of Mining Plan will be due for submission on **01/10/2021.**

11 This approval is restricted to Major Mineral only and any reflection of minor mineral in the document is under purview of State Government.

12 As per Madhya Pradesh State Government's order dated 10/08/2011 if there is enhancement of production proposed from that in the approved scheme of mining under such circumstances additional stamp duty has to be paid by the lessee for the enhances quantum of production and also a supplementary agreement has to be made by the lessee.

13. **As per Undertaking dated 14/04/2017 appended with Review of Mining Plan, wherein it is stated that the boundary pillars of the remaining blocks will be erected during next six month, in this regard a Surface Plan showing all boundary pillars as well as their co-ordinates may be submitted to this office within 6(six) month of period from the date of issue of this letter.**

संलग्नः–अनुमोदित पुनर्विलोकन खनन् योजना की एक प्रति के साथ।

भवदीय,

27th April, 2017

(रजनीश पुरोहित)
क्षेत्रीय खान नियंत्रक
भारतीय खान ब्यूरो, जबलपुर

रजिस्टर्ड /साधारण डाक

भारतसरकार
खानमंत्रालय
भारतीय खानब्यूरो
क्षेत्रीय खाननियंत्रक काकार्यालय

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
O/O THE REGIONAL CONTROLLER OF MINES

No. : MP/Satna/Limestone /M.Sch-6/16-17

Jabalpur,dt. : 4/11/2016

To,

M/s Prism Cement Ltd.,
Rajdeep,Rewa Road,Satna,
District Satna (MP) 485001

विषयः– म0प्र0 राज्य के **सतना** जिले में स्थित आपकी **मेंढी (Mendhi) लाइमस्टोन खान (क्षेत्र 117.594हे0)** के एमसीडीआर–1988 के नियम 12 के अंतर्गत जमा किए गए माइनिंग स्कीम का अनुमोदन।

संदर्भः– 1) आपके द्वारा जमा किया गया प्रक्रिया शुल्क के रसीद संख्या **J/170 दि0– 30/05/2016,** आपका पत्र क्रमांक कुछ नहीं दि0 **23/05/2016 एवं 19/09/2016**।
2) इस कार्यालय का समसंख्यक पत्र दि0–**12/09/2016**।

महोदय,

खनिज संरक्षण एवं विकास नियमावली, 1988 के नियम 12 के उपनियम (4) के द्वारा प्रदत्त शक्तियों के अधीन एतद् द्वारा म0प्र0 राज्य के **सतना** जिले में स्थित आपकी **मेंढी (Mendhi) लाइमस्टोन खान (क्षेत्र 117.594हे0)** की माइनिंग स्कीम का अनुमोदन प्रदान करता हूँ। यह अनुमोदन निम्नलिखित शर्तो के अधीन हैः–

1. The Scheme of mining is approved without prejudice to any other law applicable to the mine area from time to time whether made by the Central Government, State Government or any other authority and without prejudice to any order or direction from any court of competent jurisdiction.
2. The proposals shown on the plates and/or given in the document is based on the lease map /sketch submitted by the applicant/ lessee and is applicable from the date of approval.
3. It is clarified that the approval of aforesaid Scheme of Mining does not in any way imply the approval of the Government in terms of any other provision of Mines & Minerals (Development & Regulation) Act, 1957, or the Mineral Concession Rules, 1960 and any other laws including Forest (Conservation) Act, 1980, Environment (Protection) Act, 1986 or the rules made there under, Mines Act, 1952 and Rule & Regulations made there under.
4. Indian Bureau of mines has not undertaken verification of the mining lease boundary on the ground and does not undertake any responsibility regarding correctness of the boundaries of the leasehold shown on the ground with reference to lease map & other plans furnished by the applicant / lessee.
5. At any stage, if it is observed that the information furnished, data incorporated in the document are incorrect or misrepresent facts, the approval of the document shall be revoked with immediate effect.
6. The Financial Assurance submitted by you for **Rs 16,25,000** (Rs. **Sixteen Lakh Twenty Five Thousand only**) valid up to **31/03/2021** and next Financial Assurance shall be submitted on or before **31/03/2021.**
7. This approval is restricted in respect of proposals given in the document for the period from **2016-17 to 2020-21** validity up to **31/03/2021 from the date of approval** , subject to all other statutory clearances.
8. The next scheme of mining will be due for submission on **01/12/2020.**
9. As per Madhya Pradesh State Government's order dated 10/08/2011 if there is enhancement of production proposed from that in the approved scheme of mining under such circumstances additional stamp duty has to be paid by the lessee for the enhances quantum of production and also a supplementary agreement has to be made by the lessee.
10. If the approval conflict with any other law or court order/direction under any statute, it shall be revoked immediately.

संलग्नः–अनुमोदित माइनिंग स्कीम की एक प्रति के साथ।

भवदीय,

4TH NOV, 2016

(रजनीश पुरोहित)
क्षेत्रीय खान नियंत्रक
भारतीय खान ब्यूरो, जबलपुर

रजिस्टर्ड / साधारण / हाथोंहाथ

भारतसरकार
खानमंत्रालय
भारतीय खानब्यूरो
क्षेत्रीय खाननियंत्रक काकार्यालय

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
O/O THE REGIONAL CONTROLLER OF MINES

सं. MP/Satna/Limestone /M.Sch.-86/14-15 /2443 जबलपुर, दिनांक :06/04/2015

सेवामें M/s Prism Cement Ltd. ,
Rajdeep, RewaRoad Satna,
District Satna(MP)Pin 485001

विषयः– म0प्र0 राज्य के सतना जिले में स्थित आपकी हिनौती एवं सिजेहटा (Hinauti&Sijhatta) लाइमस्टोन खान (क्षेत्र 772.067 हे0)के एमसीडीआर–1988 के नियम 12 के अंतर्गत जमा किए गए माइनिंग स्कीम का अनुमोदन।

संदर्भ :– 1) आपके/आरक्यूपीके द्वारा जमा किया गया प्रक्रिया शुल्क के रसीद संख्या 42112 दि0 01/12/2014,आपके/आरक्यूपी के पत्र क्रमांक MINE/2015-15062 दि0 18/02/2015 एवं MINE/2015-15091 दि0 10/03/2015 ।.
2) इस कार्यालय का समसंख्यक पत्र दि 29/01/2015

महोदय,

खनिज संरक्षण एवं विकास नियमावली, 1988 के नियम 12 के उपनियम (4) के द्वारा प्रदत्त शक्तियों के अधीन एतद् व्दारा म0प्र0 राज्य के सतना जिले में स्थित आपकी हिनौती एवं सिजेहटा (Hinauti&Sijhatta) लाइमस्टोन खान (क्षेत्र 772.067 हे0)की माइनिंग स्कीम का अनुमोदन प्रदान करता हूँ। यह अनुमोदन निम्नलिखित शर्तो के अधीन है:–

1 The Scheme of mining is approved without prejudice to any other law applicable to the mine area from time to time whether made by the Central Government, State Government or any other authority and without prejudice to any order or direction from any court of competent jurisdiction.
2 The proposals shown on the plates and/or given in the document is based on the lease map /sketch submitted by the applicant/ lessee and is applicable from the date of approval.
3 It is clarified that the approval of aforesaid Scheme of Mining does not in any way imply the approval of the Government in terms of any other provision of Mines & Minerals (Development & Regulation) Act, 1957, or the Mineral Concession Rules, 1960 and any other laws including Forest (Conservation) Act, 1980, Environment (Protection) Act, 1986 or the rules made there under, Mines Act, 1952 and Rule & Regulations made there under.
4 Indian Bureau of mines has not undertaken verification of the mining lease boundary on the ground and does not undertake any responsibility regarding correctness of the boundaries of the leasehold shown on the ground with reference to lease map & other plans furnished by the applicant / lessee.
5 At any stage, if it is observed that the information furnished, data incorporated in the document are incorrect or misrepresent facts, the approval of the document shall be revoked with immediate effect.
6 The Financial Assurance submitted by you for **Rs 44,25,000** (Rs. **Forty Four Lac Twenty Five Thousand only**) valid upto 31/03/2020 and next Financial Assurance shall be submitted on or before **31/03/2020**
7 This approval is restricted in respect of proposals given in the document for the period from **2015-16 to 2019-20** validity upto **31/03/2020** from the date of approval , subject to all other statutory clearances
8 The next scheme of mining will be due for submission on **01/12/2019.**
9 The Environmental Monitoring Cell shall be established by the company. This Environmental Monitoring Cell of the company, shall continue monitoring ambient air quality, dust-fall rate, water quality, soil sample analysis and noise level measurements at various stations established for the purpose both in the core zone and buffer zone as per requirement of Environment Guidelines and keeping in view IBM's circular No. 3/92 & 2/93 season-wise every year or by engaging the services of an Environmental Laboratory approved by MOEF/CPCB. The data so generated shall be maintained in a bound paged register kept for the purpose and the same shall be made available to the inspecting officer, on demand
10 As per Madhya Pradesh State Government's order dated 10/08/2011 if there is enhancement of production proposed from that in the approved scheme ofmining under such circumstances additional stamp duty has to be paid by the lessee for the enhances quantum of production and also a supplementary agreement has to be made by the lessee

संलग्नः–अनुमोदित माइनिंग स्कीम की एक प्रति के साथ।

भवदीय
(एस0 आर0 रॉय)
क्षेत्रीय खाननियंत्रक
भारतीय खानब्यूरो

पता/ Address योजनाकभांक 11 कमलानेहरू नगर, जबलपुर 482002 (म0प्र0) Scheme No.11,Kamla Nehru Nagar, Jabalpur,

प्रतिलिपि :–

1. मान्यता प्राप्त व्यक्ति श्री रवि शंकर शुक्ला,आर0क्यू0पी0 एवं उप प्रबंधक जियोलाजी मैं0 प्रिज्म सीमेंट लि0 राजदीप रीवा रोड सतना , जिला सतना (म0प्र0) 485001 को सूचनार्थ प्रेषित ।
2. मान्यता प्राप्त व्यक्ति श्री पियूष गुप्ता ,आर0क्यू0पी0 एवं उप प्रबंधक खान मैं0 प्रिज्म सीमेंट लि0 राजदीप रीवा रोड सतना , जिला सतना (म0प्र0) 485001 को सूचनार्थ प्रेषित ।
3.. संचालक, संचालनालय भौमिकी तथा खनिकर्म, 'खनिजभवन' 29–ए, अरेरा हिल्स, भोपाल (म0प्र0) को अनुमोदित माइनिंग स्कीम की एक प्रति के साथ रजिस्टर्ड डाक द्वारा प्रेषित ।

(एस0 आर0 रॉय)
क्षेत्रीय खाननियंत्रक
भारतीय खानब्यूरो

रजिस्टर्ड पार्सल द्वारा

भारत सरकार
खान मंत्रालय
भारतीय खान ब्यूरो
क्षेत्रीय खान नियंत्रक का कार्यालय

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
O/O THE REGIONAL CONTROLLER OF MINES

फा0 सं0 - MP/Satna/ Limestone /MPLN /MOD-30/2018-19

जबलपुर, दिनांक : 14/12/2018

प्रति,

मे0 प्रिज्म जॉनसन लिमिटेड,
राजदीप, रीवा रोड, सतना
जिला– सतना (म0प्र0) 485001

विषयः– मCप्र0 राज्य के **सतना** जिले में स्थित आपकी **बगहाई (BAGAHAI) लाइमस्टोन खान (क्षेत्र 512.317 हे0)** के एमसीआर–2016 के नियम 17(3) के अंतर्गत जमा किए गए अनुमोदित माइनिंग प्लान के लिए प्रस्तुत संशोधन का अनुमोदन।

संदर्भ :–1) आपका/क्यू0पी0 का पत्र क्रमांक– PJL/MINE/BG/2018/538, दि0 **14/10/2018,** प्रक्रिया शुल्क की रसीद संख्या **J/838, दि0 30/10/2018**।
2) इस कार्यालय का समसंख्यक पत्र दि0– **20/11/2018**।

महोदय,

In exercise of the powers conferred by the Clause (b) of Sub-section (2) of Section 5 of Mines and Minerals (Development and Regulation) Amendment Act, 2015 read with Government of India Order no. S.O.1857(E),dated 18/05/2016, I hereby **approve** the above said Modification in approved Mining Plan including Progressive Mine Closure Plan submitted under Rule 17(3) of Minerals (Other than Atomic and Hydrocarbons Energy Minerals) Concession Rules, 2016. This approval is subject to the following conditions:

1 The Modification in approved Mining Plan is approved without prejudice to any other law applicable to the mine area from time to time whether made by the Central Government, State Government or any other authority and without prejudice to any order or direction from any court of competent jurisdiction.

2 The proposals shown on the plates and /or given in the document is based on the lease map /sketch submitted by the applicant/ lessee and is applicable from the date of approval.

3 It is clarified that the approval of aforesaid Modified Mining Plan does not in any way imply the approval of the Government in terms of any other provision of Mines & Minerals (Development & Regulation) Amendment Act, 2015, or the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 and any other laws including Forest (Conservation) Act, 1980, Environment (Protection) Act, 1986 or the rules made there under, Mines Act, 1952 and Rule & Regulations made there under.

4 Indian Bureau of mines has not undertaken verification of the mining lease boundary on the ground and does not undertake any responsibility regarding correctness of the boundaries of the leasehold shown on the ground with reference to lease map & other plans furnished by the applicant / lessee.

5 At any stage, if it is observed that the information furnished, data incorporated in the document are incorrect or misrepresent facts, the approval of the document shall be revoked with immediate effect.

6 The Financial Assurance submitted by you for Rs**. 3,98,88,000**/- (Rs. Three Crore Ninety Eight Lakh Eighty Eight Thousand only) is valid up to **31/03/2021** and next Financial Assurance shall be submitted on or before **31/03/2021.**

7 This approval is restricted in respect of proposals given in the document for the period **2018-19** to **2020-21** with validity up to **31/03/2021**, **from the date of approval**, subject to all other statutory clearances.

8 If the approval conflicts with any other law or court order/direction under any statute, it shall be revoked immediately.

9 The modification in approved mining plan is approved subject to extension of period of mining lease as per Mines and Minerals (Development and Regulation) Amendment Act 2015.

10 As per Madhya Pradesh State Government's order dated 10/08/2011 if there is enhancement of production proposed from that in the approved scheme of mining under such circumstances additional stamp duty has to be paid by the lessee for the enhances quantum of production and also a supplementary agreement has to be made by the lessee.

संलग्नः–अनुमोदित संशोधित माइनिंग प्लान की एक प्रति के साथ।

भवदीय

14th Dec, 2018

(रजनीश पुरोहित)
क्षेत्रीय खान नियंत्रक
भारतीय खान ब्यूरो, जबलपुर

ANNEXURE - 12

Top soil Storage within pit

ANNEXURE - 13

PLAN FOR PROTECTION OF THE NATURAL WATER COURSE PASSING NEARBY PRISM CEMENT LIMITED LEASE AREAS

1. INTROCUCTION:

The Limestone Mine of M/s. Prism Cement Ltd. is near villages Hinauti &Sijhatta in districtof Satna, Madhya Pradesh. The area is in Vindhyan Limestone/shale formations, whereLimestone is bearing mined from mining lease areas of 772.067 Ha. 117.594 Ha. 512.317 Ha. 99.416 Ha., amongst other mining leases. As per the conditions of the Environment Clearance, a plan was protection of natural water courses passing nearby Prism Cement Ltd. Leases was to be prepared and submitted.

The natural water courses under the present plan compriseTamas River, Nar Nala and Magardha Nala.

2. LAND USE IN THE BUFFER AREA OF THE LEASES:

Buffer zone:

The land use of buffer zone is given in **Table 1** based on satellite imaginary and census data.

TABLE NO.1

Land Use / Land Cover Details of Buffer Zone Area

LAND USE	AREA (in Hectares)	AREA (in %)
River/Canal	634.71	1.32
Ponds/Reservoir	561.73	1.17
Stonsy area	144.16	0.30
Open land	441.36	0.92
Open scrub land	3737.14	7.76
Forest Land	1685.11	3.50
Plantation	2445.89	5.08
Fallow land	29729.69	61.77
Crop land	7542.87	15.67
Human Settlement	706.28	1.47
Industrial Area	75.80	0.16
Mine Quarry	425.75	0.88
Total	48310.49	100

(Source – EIA/EMP)

3. **DRAINAGE:**

The Tamas (Tons) River mainly controls the drainage pattern. The none seasonal nalla viz. Magardaha and Nar nala flowing on west and east of the lease area respectively flow towards north and ultimately join the Tamas River. The area is almost flat with gentle slope towards East and Northeast. A substantial part of rainfall in the area drains away as surface run-off, along streamlets towards the Northeast to the Tamsa River. The drainage map of Tamas (Tons) sub basin of Ganga basin is depicted in **Figure 2**. The drainage pattern of buffer zone (part of Tamas sub basin) is also given in **Figure 3**.

FIGURE 2

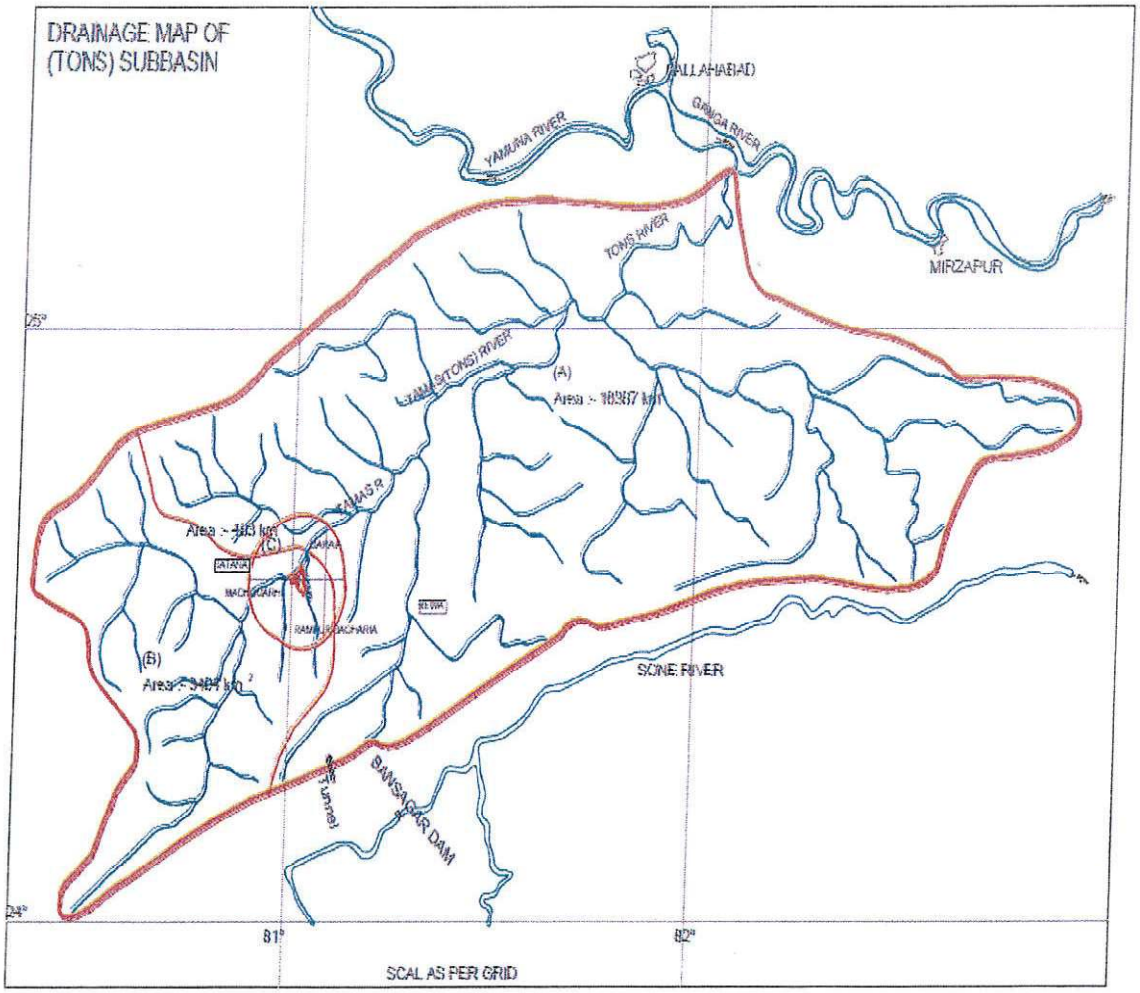


FIGURE-3

DRAINAGE MAP OF BUFFER ZONE

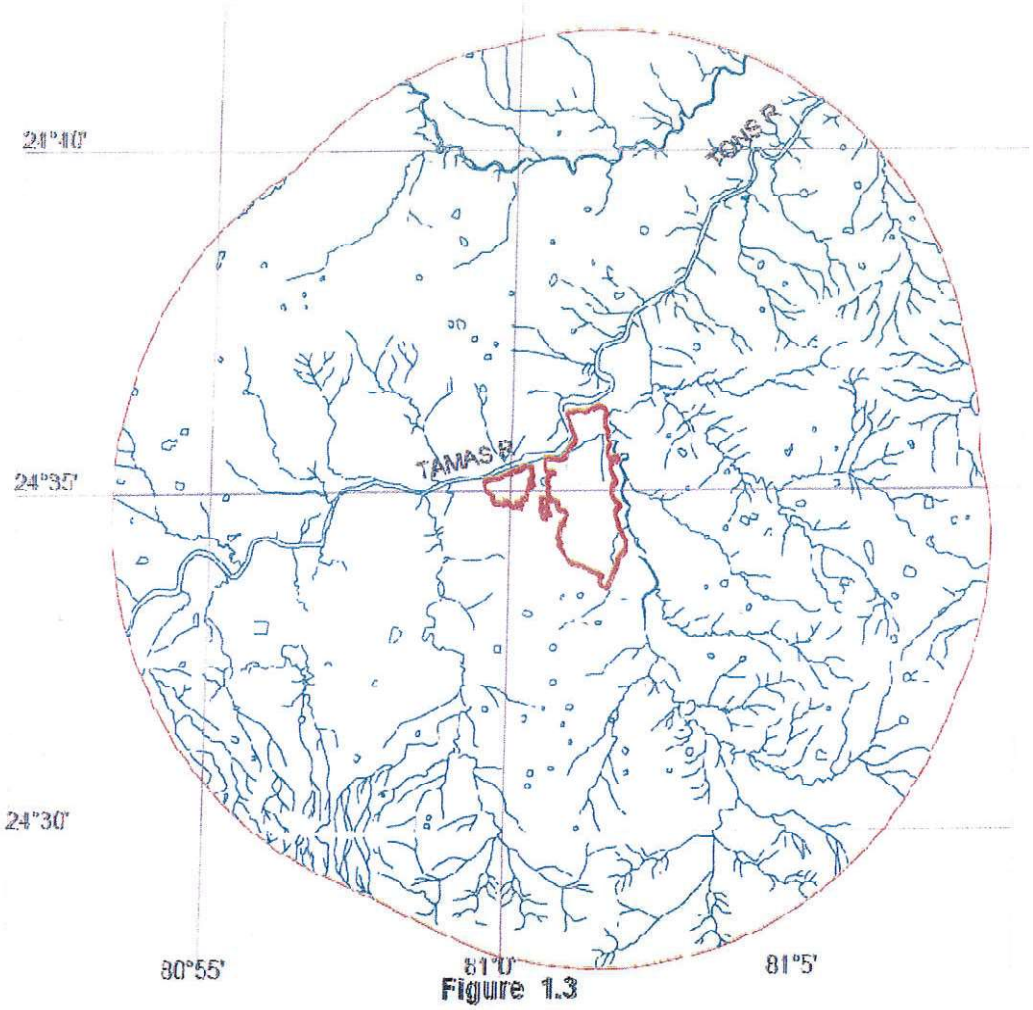


Figure 1.3

4. **HYDROMETEROLOGY**:

Madhya Pradesh state is situated within 180 N to 250 N and 740 E to 820 E experiences tropical climate. Frontispieces gives the orographic feature of the state.Geographical location and orographic features have profound influence on the climate of area. As per IMD the year may be divided into four seasons. The winter season from January to February is followed by the summer season from March to May. The period from June to September constitutes the southwest monsoon season and the period from October to December form the post monsoon season.

4.1 **Rainfall** :Rainfall data of Mine site and Satna IMD station are collected for the project of 2008 to 2014 and given in (**Table NO. -2**).

TABLE NO.2

Year wise rainfall data (2008 to 2014) : Satna and Mine Site

Month/ Year	2008	2009		2010		2011		2012		2013		2014
	Mine Site	Mine Site	Satna	Mine Site	Satna	Mine Site	Satna	Mine Site	Satna	Mine Site	Satna	Mine Site
Jan	2.0	35.3	12.9	8.8	1.7	0.0	0.0	36.0	32.3	0.0	0.0	38.9
Feb	35.1	0.0	0.0	13.3	5.5	1.0	0.9	0.0	0.0	67.9	45.9	104.3
Mar	1.3	3.6	1.4	0.0	0.0	3.2	0.2	3.6	3.9	34.6	11.5	29.3
Apr	12.0	0.7	3.8	0.0	0.1	0.0	1.1	0.0	0.2	1.8	4.2	8.7
May	12.5	10.5	14.5	18.6	1.6	36.2	7.3	0.0	0.0	0.0	0.0	1.3
Jun	215.6	12.5	25.8	16.9	16.4	313.9	328.6	17.9	15.6	270.4	384.2	90.2
Jul	216.8	173.2	207.6	283.3	228.1	140.2	252.1	380.7	279.7	576.5	338.6	305.2
Aug	220.2	214.9	192.5	198.3	209.7	206.7	289.8	435.0	455.1	414.5	451.6	127.2
Sep	71.5	109.7	152.0	213.5	176.4	205.3	143.9	132.1	169.3	134.9	71.5	193.9
Oct	0.0	72.9	220.4	29.6	13.7	0.0	3.1	15.1	2.5	131.4	143.7	200.7
Nov	20.1	80.9	58.9	11.8	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dec	0.0	2.6	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.9
Total	807.1	716.7	892.7	794.0	662.9	906.5	1027.0	1020.3	958.6	1631.9	1451.2	1121.7

(Source - Mine & Satana Dist.)

5. GEOLOGY:

The relevant portion of Geological report of the area have been adapted for present study. Part of compilation done from other references.

5.1 Regional Geology

Geologically, this area forms part of the Rewa Plateau belonging to the Upper VindhyanSupergroup of rock formations in Indian stratigraphy. The Vindhyan formations are roadly classified into lower calcareous and an upper arenaceous facies.

The limestone deposit in the area of investigation belongs to the Bhander series. The general trend of Bhander Limestone is East - Northeast to West - Southwest having low southerly dips of less than 5^0. The litho stratigraphy of Vindhyan formation is given in **Table NO.3**

TABLE NO.3

Litho stratigraphy of Satna District

Supergroup	Group	Formation
Vindhyan Supergroup	Bhander Group	Maihar Sandstone Sirbu Shale Bhander Limestone
	Rewa Group	Sandstone and shale
	Kaimur Group	Sandstone and shale
	UNCONFORMITY	
	Semri Group	Rohtas Formation Khemjua Formation Porcellance Formation Basal Formation
UNCONFORMITY Bundekhand granites/Bijawar phyllites		

5.2 **Local Geology:**

The detailed geological prospecting was carried out by GEM Division of ACC to identify the geological structure in the area and association of different rock types. The lithological succession of various formations encountered in the area of investigations based on the sub-surface data generated is as follows:

Overburden Soil
Buff to pale grey magnesian limestone
Upper shaly limestone
Grey limestone
Lower shaly limestone
Grey to grayish grey shale

6.0 SUGGESTED STRUCTURES FOR PROTECTION AND DEVELOPMENT OF NATURAL WATER COURSES:

6.1 RAINWATER HARVESTING

6.1.1General: Rain water harvesting can be defined as activity of direct collection of Rain

water and storage of rainwater as well as other activity aimed at harvesting andconserving surface and ground water preventing loss through evaporation and seepageand other hydrological studies and engineering inventions aiming at most efficientutilization of rainwater towards best use for the humanity.

The detail project report for rainwater harvesting is given below incorporating; source, area, design of individual structure within mine lease area and outside.

6.1.2Source of Water:

The source or water available for rainwater harvesting is only surfacewater. The resource estimation for lease area has been done considering total leasearea of 10.25 km2 (7.72 km2 + 2.53 km2). Monsoon normal rainfall 0.973 m and surfacerunoff coefficient of 0.40. The estimated surface water resource will be 3.99 MCM out ofthis 0.58 MCM will be used in plant &mine. The mine water discharge will be zero. It isexpected that remaining estimated resource 3.41 MCM will be available for recharge tothe system and future use. CGWA while granting ground water had laid condition forimplementation of ground water recharge measure to the tune of 1.206 MCM/ year foraugmenting the ground water resource of the area.- Source of data, Hydrological Studies Report.

6.1.3 Identification of area:

The areas identified within lease area are given in **Table No.4**

Table no. 4: Identification of area

Sr. No.	Identification of area	Unit
1	Surface water reservoir in the Mined out area as recharge pond.	3 Nos
2	Check dam on Nar nadi.	8 Nos
3	Office and residential building area for Rooftop rainwater harvesting	10 Nos
4	Lease area (side of retention wall) of dump for recharge pit with shaft structure	4 Nos
5	Recharge trench in colony area.	500 m
6	In the colony area away from mine for Gravity head recharge tubewell.	10 Nos

These structures in respective areas will augment the ground water table and shall reduce load on the natural water courses for rural utility of irrigation amongst others.

In addition to the measures taken above, the area in proximity to Tamas River, MagardhaNala and Nar Nala will be provided with bunds above and beyond HFL. Safety barrier of 50 meters will be left our permanently. This barrier will be densely planted thus making the water courses totally immune from mining activities. No mine water will be discharged in the natural water courses without de-siltation in the settling ponds.

The garland drains with check dams are constructed all along the peripheries of the lease area.De-siltation of natural water ways up-stream and down-stream, will be undertaken after consultation with the authorities to keep the natural water courses healthy.

Periodical deepening of village ponds and de-siltation of the same will be carried out to augment water bodies in surrounding areas.

6. CONCLUSION AND REOCMMENDATION:

The natural water ways protection plan will be updated to accommodate new ideas and government water development programs. The present plan with all implementation will keep the natural water courses safe and healthy.

ANNEXURE - 14

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
OFFICE OF THE REGIONAL CONTROLLER OF MINES

File NO. MP/Satna/Lst-338/ 740 Mine Code: 38MPR35313 Date: 23.02.2017

To

Shri Vivek K Agnihotri (Nominated Owner)
Prism Cement Limited
"Rahejas" 2nd Flor,
Main Avenue, V.P. Road
Santacruz(W), Mumbai-400054

Sub: Violation of provisions of MCDR 1988 in respect of your Baghai LimestoneMine (512.317 hect) in district Satna of Madhya Pradesh.

The following provisions of Mineral Conservation and Development Rules, 1988 were found violated in your above mine during the inspection by the undersigned on 18.01.2017 in presence of Shri G.P Pandey, R.K Sinha (Surveyor).

Rule No.	Nature of violation observed
13(1)	Every holder of a mining lease shall carry out mining operations in accordance with the approved mining plan with such conditions as may have been prescribed under sub rule (2) of rule 9 or with such modifications, if any, as permitted under rule 10 or the mining plan or scheme approved under rule 11 or 12 as the case may be. *The Scheme of mining of Baghai Limestone mine over an area of 512.317 hect was approved vide letter number MP/Satna/Limestone/M.Sch-35/2015-16 on 16.02.2016 for the period 2016-17 to 2020-21. As per approved proposals for the year 2016-17 it was proposed to carry our total 07 (seven) number of exploratory boreholes at the grid interval of 200*200. However during the inspection it was observed that no exploratory drilling has been carried out as per approved proposals.* *It was proposed to develop the overburden benches of the Pit number 2(Situated in the south of the lease) up to North 1750 grid in north, E 975 in the west direction & E 1400 in the east direction. However, during the inspection it was observed that the development of overburden benches is lagging in the north west portion and western portion has reached only up to North 1625 and E 1050 respectively.* *There was proposal to open a new pit number 3 in the north part of the lease in between grid coordinates E 1000 & E 1300 and N 2450 & N 2650. However, during the inspection it was observed that the mining operations as approved for the location of pit number 3 have not started till date of inspection.*
23E(2)	The owner, agent, manager or mining engineer shall submit to the Regional Controller of Mines or the Officer authorized by the State Government in this behalf, as the case may be, a yearly report before 1st July of every year setting forth the extent of protective and rehabilitative works carried out as envisaged in the approved mine closure plan, and if there is any deviation, reasons thereof. *The yearly report for the year 2015-16 in respect of rule 23E (2) of MCDR 1988 has not been submitted at this office.*

02. It is brought to your notice that the above said violations constitute an offence punishable under Rule-58 of MCDR, 1988.

03. The mining operations can be suspended under rule 13(2) if the compliance of rule 13 (1) is not found satisfactory.

04. You are advised to rectify the above violations immediately and intimate the position to this office within 45 (Forty Five) days from the date of issue of this letter.

05. Please note that no further notice will be given to you in this regard.

Yours faithfully,

(Mithelesh Purohit)
Assistant Controller of Mines

Copy for kind information to: -

1. The Controller of Mines (CZ), IBM, Indira Bhawan, Civil Lines Nagpur for kind information.
2. The Director, Directorate of Geology & Mining, Khanij Bhavan, Arera Hills, Bhopal. (M.P).
3. Shri S.K Sinha (Vice President), M/s Prism Cement, Satna, Rajdeep, Rewa Road, Satna (M P) 485001

23/2/12

(Mithelesh Purohit)
Assistant Controller of Mines

ANNEXURE- 15

PRISM JOHNSON LIMITED

(FORMERLY PRISM CEMENT LIMITED)

WATER LEVEL (in Meter)

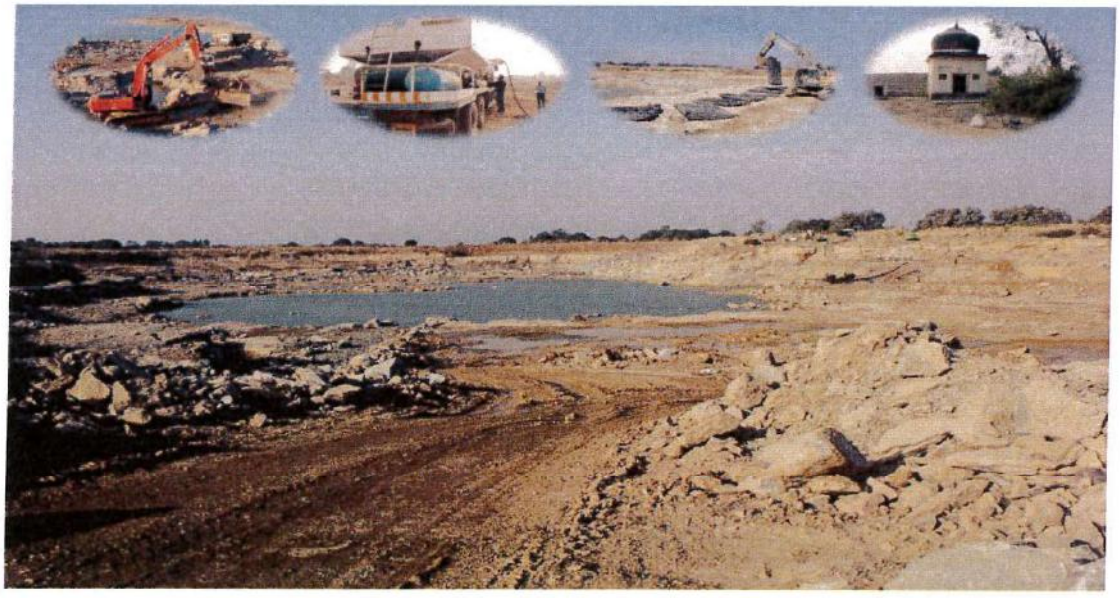
Sr. No.	Location	July	Aug	Sep	Oct	Nov	Dec
1	**Behind C block (Peizometer)**	9.35	6.43	1.62	2.88	3.9	4.85
2	**Infront Den (Peizometer)**	9.42	6.62	2.05	4.6	5.15	5.72
3	**Behind B block (Peizometer)**	20.83	17.48	5.17	15.3	17.3	17.53
4	**Near colony gate (Peizometer)**	18.5	15.73	1.78	14.7	15.25	16.32
5	**Near Crusher (Peizometer)**	23.15	18.56	13.9	20.18	16.24	16.86

Confidential

CSIR - CENTRAL INSTITUTE OF MINING & FUEL RESEARCH
(Council of Scientific & Industrial Research)
Barwa Road, Dhanbad – 826 015

Report on

Study and advice for optimization of blast design parameters at Prism Cement Limestone Mine of M/s Prism Cement Limited to control ground vibration, air overpressure/noise and flyrocks within safe limits for the safety of houses/structures in the periphery of the mine when blasting is to be performed at 50 m and beyond



PROJECT NO.: CNP/4491/2016-17 **FEBRUARY 2017**

CSIR - CENTRAL INSTITUTE OF MINING & FUEL RESEARCH
(Council of Scientific & Industrial Research)
Barwa Road, Dhanbad – 826 015

REPORT ON

Study and advice for optimization of blast design parameters at Prism Cement Limestone Mine of M/s Prism Cement Limited to control ground vibration, air overpressure/noise and flyrocks within safe limits for the safety of houses/structures in the periphery of the mine when blasting is to be performed at 50 m and beyond

BY

Dr. M. P. Roy,	**Principal Scientist & Project Leader**
Dr. C. Sawmliana,	**Principal Scientist**
Shri Vivek K Himanshu,	**Scientist**
Shri R. S. Yadav,	**Sr.Technical Officer**
Shri P. Hembram,	**Technical Assistant**
Dr. P. Pal Roy,	**Outstanding Scientist & HORG**
Dr. P. K. Singh,	**Director**

PROJECT NO.: CNP/4491/2016-17 **FEBRUARY 2017**

NOTE

This report is meant for internal use of the sponsor of the study and it should not be published in full or part by the sponsor. It should not be communicated or circulated to outside parties except concern departments. However, CSIR-CIMFR reserves the right to publish the results of investigation for the benefit of the mining industry.

The recommendations are based on the results of investigation carried out at Prism Cement Limestone Mine of M/s Prism cement Limited. It is hoped that the recommendations will be implemented to get optimum results without hampering production, productivity and safety of the mine. The recommendations are guidelines, which should be implemented in letter and spirit.

Since, the day-to-day blasting operations are not in the control of CSIR-CIMFR, the research team will not be held responsible for any untoward incident caused due to blasting.

SIGNATURE OF THE PROJECT PROPONENTS

Mura R Roy 09/02/17

(Dr. M. P. Roy)
Principal Scientist
Project Leader

9/2/2017

(Dr. P. Pal Roy)
Outstanding Scientist & HORG
Project Co-ordinator

CSIR-CIMFR AUTHORISED SIGNATORIES

9/2/17

(Dr. V. K. Kalyani)
Sr. Principal Scientist & HOS
Project Monitoring & Evaluation Cell

09/02/2017

(Dr. R. V. K. Singh)
Chief Scientist & HORG
Business Development & industrial Liaison

Contents

EXECUTIVE SUMMARY

This report relates to the study conducted by CSIR-Central Institute of Mining & Fuel Research (CIMFR), Dhanbad to study and advice for optimization of blast design parameters at Prism Cement Limestone Mine of M/s Prism Cement Limited, Satna to control ground vibration within safe limits for the safety of structures in the periphery of the mine with improved production and productivity. The study involved trials with varying blast designs and charging patterns, monitoring of ground vibration, air over-pressure/noise at various locations in the periphery of the mines. The ejections of flyrock from blasting operations were also monitored. The results of investigation, analyses of data and recommendations, made thereof, are summarised below:

- Fifteen blasts were conducted at different benches of the Prism Cement Limestone Mine of M/s Prism Cement Limited, Satna and 60 blast induced ground vibration data were recorded in the periphery of the mine.

- Maximum vibration recorded from production hole blast was 31.0 mm/s at 50 m. The blast was conducted at 15 no. Goyal face of Prism Cement Limestone Mine. The total explosive weight and explosive weight per delay were 710 kg and 50 kg respectively.

- The maximum air over-pressure was recorded from the blast conducted at 15 no. Goyal face on 26.12.16. The recorded air over-pressure was 137.8 dB(L) at 100 m distance from face. In this blast, explosives detonated in a blasting round and explosives weights per delay were 1125 and 75 kg respectively.

- There was no ejection of flyrock in any of the blast. The blasts were initiated with Nonel initiating system and electronic initiation system from the bottom of the hole and experimented blast designs ensured non-ejection of flyrocks.

- All the recorded vibration data were well within the safe limit at the houses/structures concerned. The dominant peak frequencies of ground vibrations were in the range of 11.4 to 129 Hz. FFT analysis of blast vibration frequencies confirmed that concentration of frequencies is in band of 13.3 - 40.3 Hz. So, the safe level of vibration has been taken as 10 mm/s for the safety of houses/structures of the surrounding villages as per DGMS standard.

- Propagation equation for the prediction of blast vibration has been established and is given as Equation 1. The permissible explosive weight per delay may be computed from the Equation to maintain vibration within safe limit for distances of houses/structures concerned. For convenience, the recommended explosive weight per delay has been computed and is given in Table A3.

- Attempts were made to record the vibration from 50 to 250 m in most of the blasts and accordingly the explosives to be detonated in the delay and total amount of explosives to be fired has been computed and is given in the text in view of future blasting operations at 50 m and beyond.

- The delay interval between the holes in a row should be 17 ms whereas between the rows, it should be 65 ms or more depending upon the number of rows and effective burden. If the numbers of rows are more than two, the delay interval between rows should be increased by 15% in successive rows.

- It is recommended that the existing Nonel initiation system should be continued in the blasting operations. The sub-grade drilling should be 0.3 to 0.5 m for a blasthole depth of 6 to 7 m and should be initiated from the bottom of the hole.

- The recommended blast designs should be followed for day-to-day blasting operations for safe and efficient blasting operations. The blast designs Annexure as Figures A1-A2, will also ensure the safety of the houses/structures, life of human beings and other property in the periphery of the mine.

1. Introduction

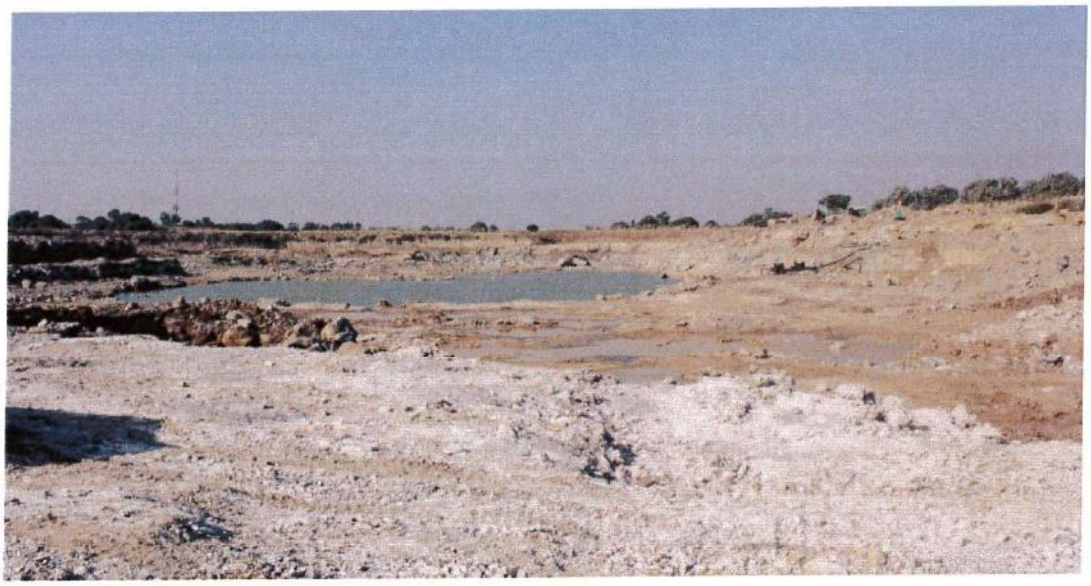
The Joint President- Commercial of M/s Prism Cement Limited entrusted CSIR-Central Institute of Mining & Fuel Research (CIMFR), Dhanbad, vide letter no. PCL/LOI/16-17/CIMFR/365 dated 06.12.2016 for a scientific study and advice for optimization of blast design parameters for deep hole blasting at Prism Cement Limestone Mine of M/s Prism Cement Limited, Satna to control ground vibration within safe limits for the safety of structures in the periphery of the mine with improved production and productivity.

The Rock Excavation Engineering (erstwhile Blasting Department) Research team of CSIR-Central Institute of Mining & Fuel Research, Dhanbad carried out field investigations during December 21-26, 2016. Altogether, fifteen blasts were conducted and blast induced ground vibration & air over-pressure/noise were monitored at various locations in the periphery of the Prism Cement Limestone Mine of M/s prism Cement Limited. The monitoring locations were back-side of the blast free face and in the left flank of the blast free face.

2. Location and geology

The Prism Cement Limestone Mine is situated at about 15 km North-East of Satna railway station. The mining lease area lies between longitude 80°57'31" to 80°58'28" East and Latitude 24°36'47" to 24°37'16" North. The limestone deposit of the mine falls in the Bhander series of Upper Vindhyan System and is Upper Vindhyan in age. The general topography of the area is without any remarkable relief and forms a more or less flat terrain with a general dip of approximately 2°- 6° towards South between S10°W and S5°E. The area is completely devoid of any forest and the topographic elevation varies from 312 m (north direction) to 300 m (south direction) above MSL.

The limestone deposit in the mine occurs in two horizontal bands separated by a shaley limestone. The Vindhyan formations are broadly classified into lower calcareous and an upper arenaceous facies. The Bhander limestone varying in thickness from about 5 to 15 m lies as a calcareous horizon in the upper arenaceous rocks. The Bhander Limestone deposit of the area is the dominant rock type and overlain by Sirbu shale (0 – 2 m thick). It is widely jointed with two sets of joints along and across strike. The overview of the Prism Cement Limestone Mine is presented in Photograph 1.



Photograph 1. The overview of Prism Cement Limestone Mine of M/s Prism Cement Limited.

3. Instrumentations

Blast induced vibrations were monitored by seismographs namely MiniMate Plus, MiniMate Blaster and MiniMate DS-077 (Made in Canada by M/s Instantel Inc.). MiniMate plus are eight as well as four channel seismographs provided with two/one tri-axial transducer(s) for monitoring vibration (in mm/s) and two/one channel(s) for monitoring air over-pressure/noise in dB(L). MiniMate Blaster and MiniMate DS-077 are four channel seismographs provided with one tri-axial transducer for monitoring vibration (in mm/s) and one channel for monitoring of air over-pressure/noise in dB(L). All the seismographs record vibration in three directions i.e. Longitudinal (L), Vertical (V) and Transverse (T). They also record principal frequency of vibration and compute the peak vector sum of the vibration.

Explosives and delay detonators must provide the energy and timing for the blasts used under specific blasting conditions. The DataTrapII data/VOD recorder of M/s MREL, Canada is used to document the VOD performance of the explosives and delay time of delay detonators during blasts to compare the actual VOD and delay time results to the published specification.

4. Blasting details

Fifteen blasts including fourteen production blasts and one signature hole blast were conducted on different benches of Prism Cement Limestone Mine. The number of blast holes detonated in production blasting varied from 14 to 84. The diameters of deep blast holes were 115 mm. The depth of blast holes varied from 2.5 to 6 m and the explosives loaded in a hole varied from 2.8 to 35 kg. The explosives weight per delay ranged between 2.8 to 96 kg. Total

explosive weight detonated in a round of production blast varied between 58.4 and 2678 kg. Out of fifteen trial blasts five were conducted using Nonel initiation system and rest 10 were blasted with the help of electronic initiation system. The vibration measuring distances varied from 50 to 250 m. Details of blast design parameters experimented during the period of investigation are given in Annexure as Table A1.

Vibrations were monitored in terms of peak particle velocity (PPV) that varied from 0.73 mm/s to 31.0 mm/s in case of production blast depending upon the distance of measuring transducers of seismographs from the blasting face and the amount of explosives detonated in particular delay of the blast. The recorded levels of air over-pressure ranged from 110.2 – 137.8 dB(L). Recorded blast induced ground vibrations and air over-pressure are presented in Annexure as Table A2.

The blast movement and ejection of rock, if any, were monitored for each blast. There was no ejection of flying fragments. Precaution was taken by using blasting mate on the blastholes. Photograph 2 depicts the charging of the 15 no. RPL bench and use of blasting mate at 7050 RIL blast face to prevent flyrock.

Photograph 2. The charging of the 15 no. RPL bench and use of blasting mate at 7050 RIL blast face to prevent flyrock.

5. Analyses of recorded vibration data

Ground vibrations data recorded were grouped together for statistical analysis. An empirical relationship has been established correlating the maximum explosive weight per delay (Q_{max} in kg), distance of vibration measuring transducers from the blasting face (R in m) and recorded peak particle velocity (v in mm/s). The established equation for the mine is:

$$v = 200.34 * \left(\frac{R}{\sqrt{Q_{max}}} \right)^{-1.126} \qquad (1)$$

Correlation co-efficient = 87.8 %

Where,

v = Peak particle velocity (mm/s)
R = Distance between vibration monitoring point and blasting face (m)
Q_{max} = Maximum explosive weight per delay (kg)

The above equation is site specific and applicable only for Prism Cement Limestone Mine. It may be used to compute the maximum explosive weight to be detonated in a delay for distances of concern from the blasting site. The regression plot of vibration data recorded at their respective scaled distances is presented in Figure 1.

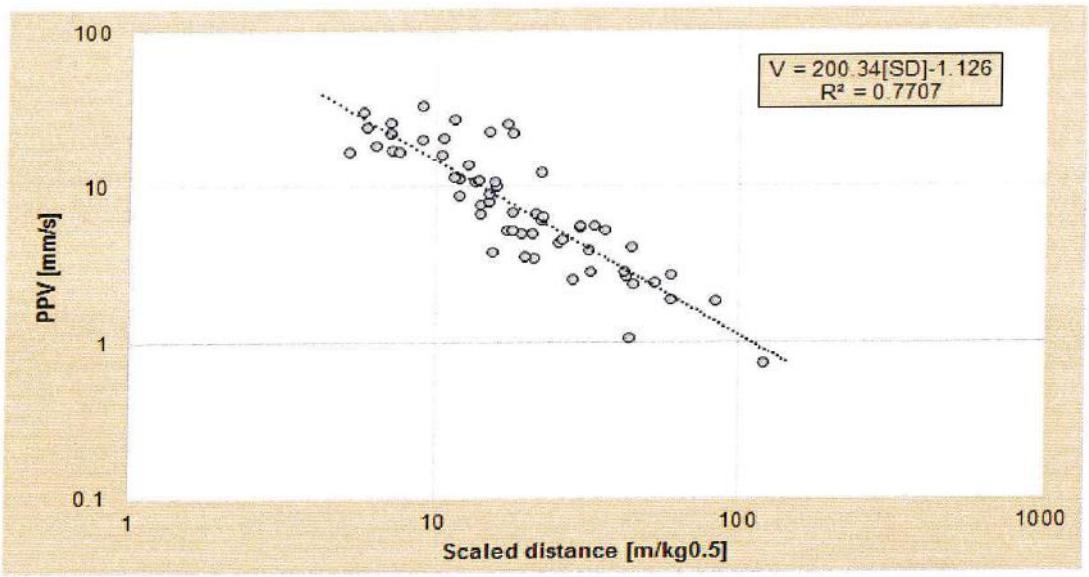


Figure 1. Regression plot of recorded PPV with their respective scaled distances.

5.1 *Frequency of blast vibration*

The dominant peak frequencies of ground vibrations recorded were in the range of 11.4 - 129 Hz whereas the most common range lies between 13.3 to 40.3 Hz. Most of the vibration measuring stations were on compact ground surfaces. The dominant peak frequency recorded at corresponding monitoring locations is presented in Figure 2. The blast wave signature recorded at Shankkar Ji temple of Hinauti village (Distance - 200 m; PPV – 5.29 mm/s) from the blast conducted at New Pit 01 bench of Prism Cement Limestone Mine is depicted in Figure 3 and its Fast Fourier Transform (FFT) analysis of frequency is shown in Figure 4. The blast wave signature recorded at the house of Shri Umesh Prasad from the blast conducted at 15 No. Goyal face bench is shown in Figure 4. Fast Fourier Transform (FFT) analysis of frequency of the vibration signature is presented in Figure 5. The Fast Fourier Transform (FFT) analysis of frequencies indicate high frequency vibrations recorded in blasting. The view of blast vibration monitoring in the periphery of the mine are shown in Photographs 3.

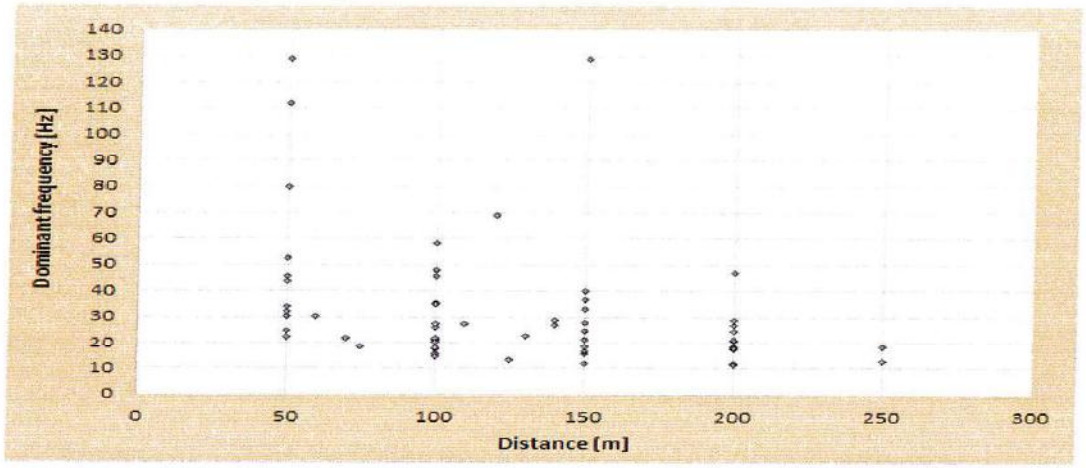


Figure 2. Plot of dominant frequency with respect to respective distances.

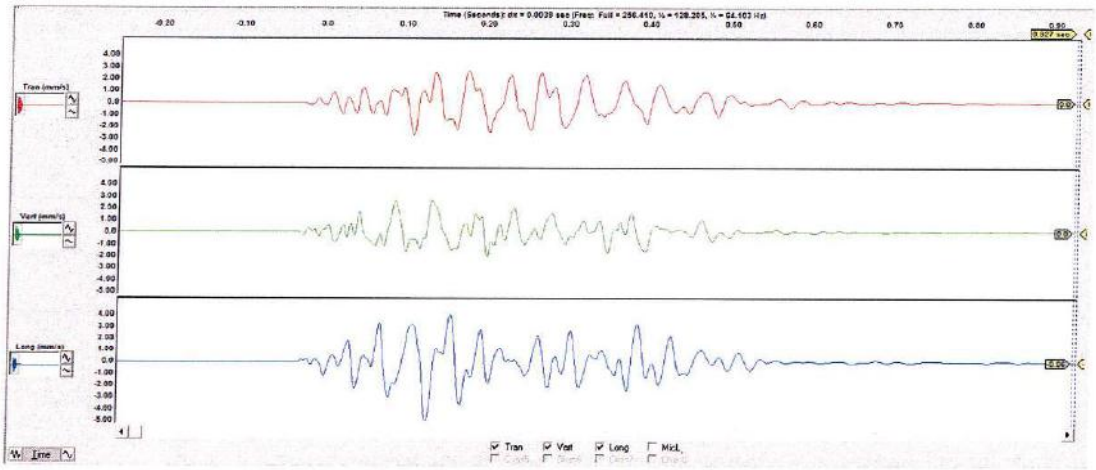


Figure 3. Blast wave signature recorded at Shankarji temple of Hinauti village from the blast conducted at New Pit 01 blastface of Prism Cement Limestone Mine.

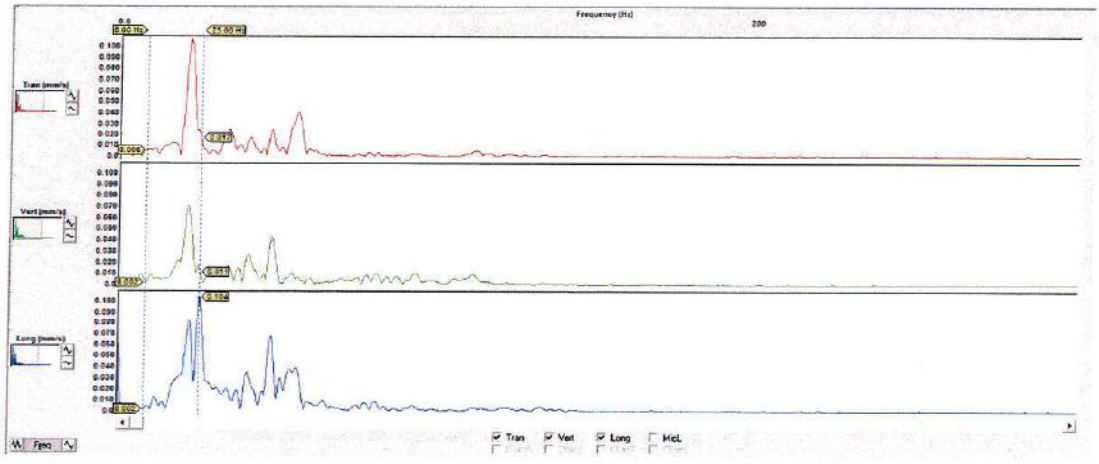


Figure 4. FFT analyses of frequencies of vibration presented in Figure 3.

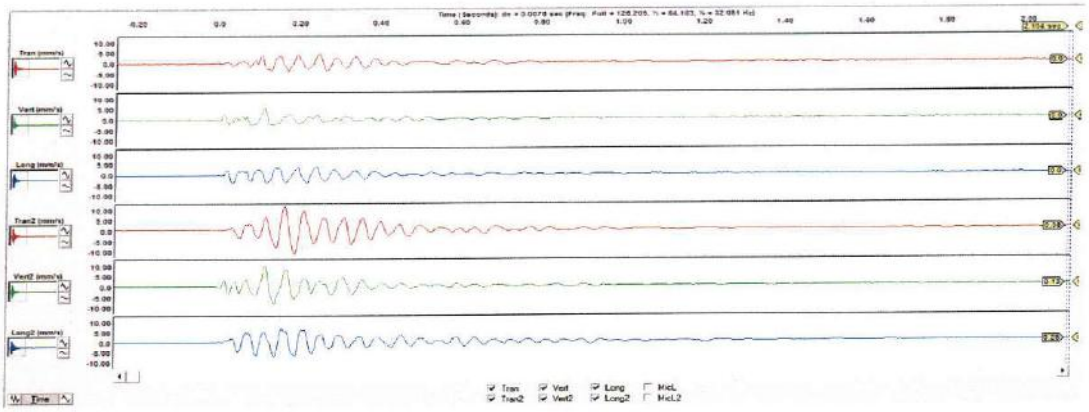


Figure 4. Blast wave signature recorded on the ground surface and roof of the house of Shri Umesh Prasad from the blast conducted at 15 No. Goyal face bench of Prism Cement Limestone Mine.

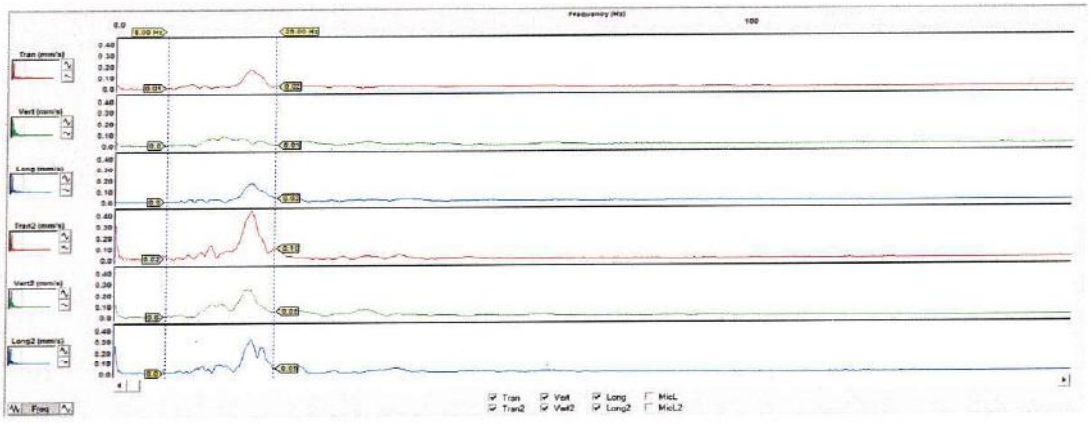
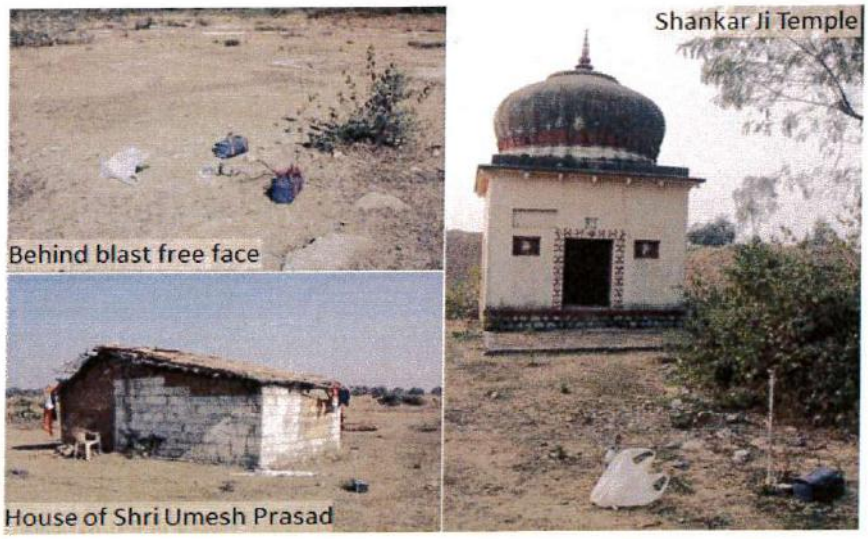


Figure 5. FFT analyses of frequencies of vibration presented in Figure 4.



Photograph 3. Monitoring of blast vibration at different locations in the periphery of the Prism Cement Limestone Mine.

5.2 *Structural responses to ground vibration and their natural frequencies*

The real cause of why people complain about blasting is structural response. All blast vibration complains is due to how much the house shakes, not how much the ground shakes. The ground motion resulting from blast induced waves is transmitted to the structure upside through the foundation, which causes the structure to vibrate. There are three factors of ground vibrations that determine how much structure vibrates. They are ground vibration amplitude, ground vibration duration and ground vibration frequency.

The responses of a few structures in the periphery of the mine was monitored. The recorded natural frequencies of the house of Shri Umesh Prasad was 21.3 Hz. The incoming blast vibration has frequency in the range of natural frequency of the houses and resonance occurred, the resultant amplitude of the vibration in the houses got amplified. The maximum amplification were recorded when incoming blast wave has dominant frequency very close to the natural frequency of the house. The process involved in determination of natural frequency is shown in Figure 6.

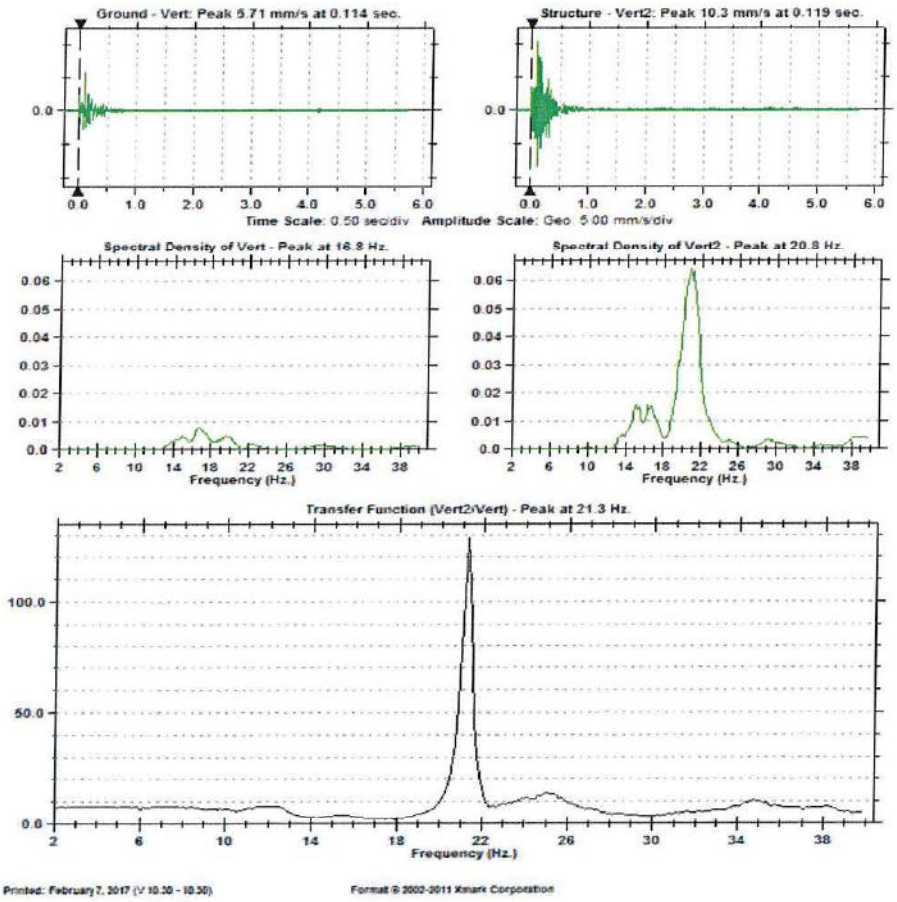


Figure 6. Processing of blast wave signature for determination of natural frequency of the house of Shri Umesh Yadav.

6. Existing vibration standard and criteria to prevent damage

Peak particle velocity (PPV) has been globally used in practice for assessment of blast induced damage to the structures. Different countries adopt different standards depending on their type of industrial/residential buildings. In India, presently DGMS technical circular 7 of 1997 is considered as vibration standard for the safety of surface structures in mining areas. The DGMS standard is given in Table 1.

Table 1. DGMS technical circular 7 of 1997 concerning to blast vibration standard in mm/s.

Type of structure	Dominant excitation frequency, Hz		
	< 8 Hz	8-25 Hz	> 25 Hz
(A) Buildings/structures not belong to the owner			
1. Domestic houses/structures (Kuchcha, brick & cement)	5	10	15
2. Industrial buildings	10	20	25
3. Objects of historical importance and sensitive structures	2	5	10
(B) Buildings belonging to owner with limited span of life			
1. Domestic houses/structures	10	15	25
2. Industrial buildings	15	25	50

7. Air over-pressure/noise

Air overpressure in the mining or quarrying context is the superposition of a number of impulsive air pressures as a result of the detonation of explosive in the ground. Air over-pressure can be measured in pressure unit as well as sound pressure level (SPL).

$$SPL\ (dB) = 20 \log (p/p_o)$$

Where, p = measured over-pressure in Pascal (pa)

p_o = reference pressure level of the lowest sound that can be heard, i.e., zero dB = 2×10^{-5} pa.

United State Bureau of Mines (USBM) has correlated the damage due to air over-pressure. The recommended values are given below:

Over-pressure (dB)	Over-pressure (KPa)	Air Blast Effects
177	14	All windows break
170	6	Most windows break
150	0.63	Some windows break
140	0.20	Some large plate glass windows may break, desk and windows rattle
136	0.13	USBM interim limit for allowable air blast
126	0.05	Complaints likely

The maximum level of air over-pressure recorded was 137.8 dB(L) at 100 m due to blasting at 15 no. Goyal Face bench of Prism Cement Limestone Mine. In this blast 45 blastholes were loaded with 1125 kg of explosives and were fired with the explosives weight per delay of 50 kg. The threshold level of air over pressure/noise is 136 dB(L) as per USBM standard.

8. Flyrocks

Flyrocks are the undesirable ejection of rock particles projected beyond the normal blast area. It is generated when there is insufficient stemming, too much explosive energy for a fixed amount of burden, or poor delay timing pattern, or explosives loaded in voids, mud seams.

The primary means of controlling flyrocks is through proper blast design and optimum delay timing between two detonations. Any pattern which over-confines the explosives or one with insufficient stemming tends to cause material to be thrown up in the air rather than allowing any horizontal movement. None of the blasts ejected flying fragments. The detonation of blast was very ideal and achieved blasting face was without back breaks in most of the time. It is recommended to use blasting mate in sensitive areas for control of flyrock. It was demonstrated and experiment that stemming to burden ratio of 0.7 or more did not cause ejection of flying fragments. Hence, to reduce the generation of boulders from the top portion of the face, stemming length should be 0.7 times of burden.

9. Recording of in-the-hole Velocity of Detonation (VOD) of explosives

The performance of explosives depends upon a number of parameters and VOD is one of the important parameters. The detonation pressure associated with the reaction zone of detonating explosives is directly proportional to the square of its VOD. It is measured in the C-J plane, behind the detonation front, during propagation through the explosives column. The detonation pressure (P_d) can be estimated by the following formula.

$$P_d = \frac{1}{2}\rho_e (VOD)^2 10^{-6}$$

Where, P_d = Detonation pressure (MPa)
ρ_e = Density of explosive (kg/m^3)
VOD = Velocity of detonation (m/s)

Uniform VOD is essentially required throughout the blast holes in the rock formations in order to produce sufficient detonation pressure to the borehole walls. Required booster is provided in the explosives column to maintain the VOD for the uniform breakage of rock. In-the-hole continuous velocity of detonation of explosives was recorded with the help of DataTrap II. The recorded in-the-hole VOD of site mixed emulsion (SME) explosives of M/s Indian Explosives Limited (Orica) was in the range of 5286.8 – 5399.7 m/s (Figure 7 & 8).

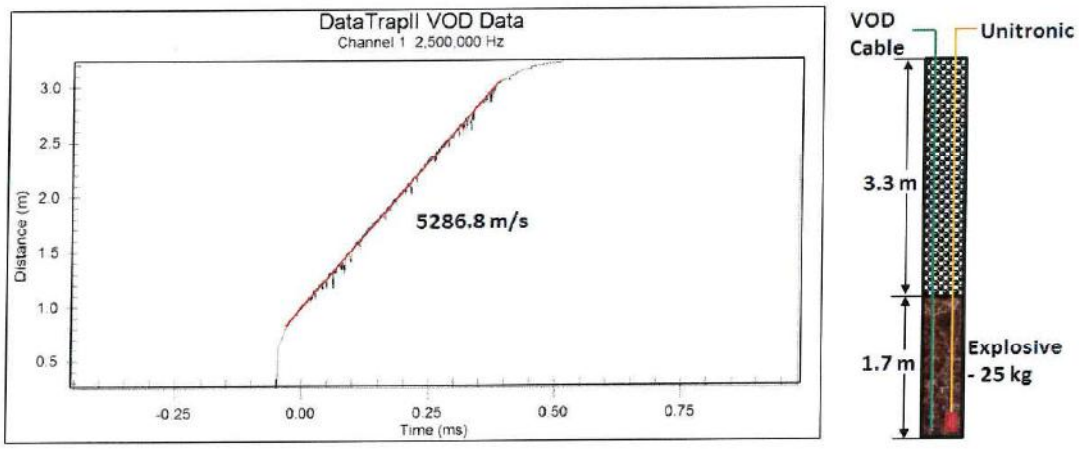


Figure 7. Trace of in-the-hole VOD of SME explosives of M/s Indian Explosives Limited.

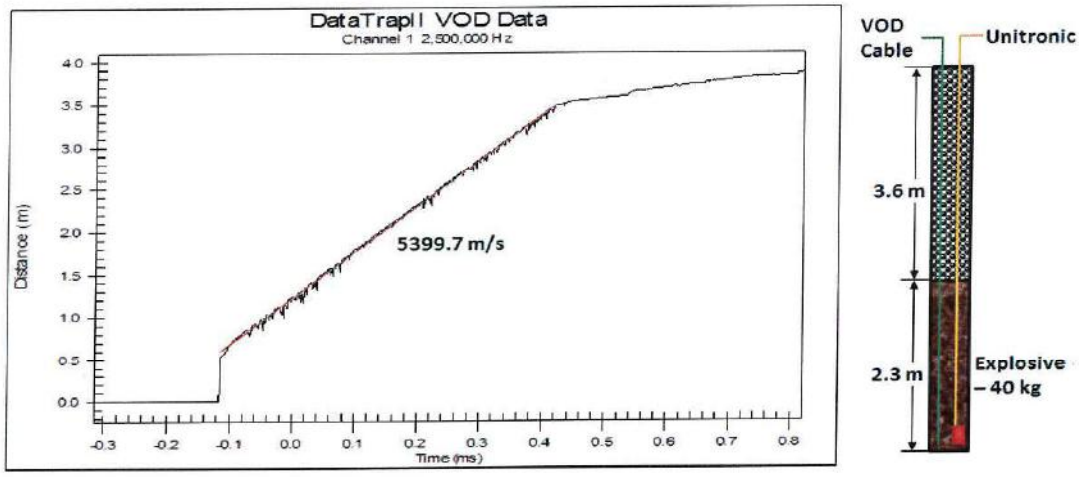


Figure 8. Trace of in-the-hole VOD of SME explosives of M/s Indian Explosives Limited.

10. Blast delay optimisation with the help of signature blast

The optimum blasts have the following objectives.

- Adequate rock fragmentation, swelling and displacement
- Control over the flyrocks and over breaks
- Minimum level of vibration and air blasts

The delay timing between the holes in a row and between rows plays fundamental role in fulfilment of these objectives. To address this issue a blast hole was drilled at 15 No. RPL bench. The blasthole was loaded with 30 kg of explosives and fired instantaneously without in-hole delay. The blast wave signatures were recorded at interval of 50 m at 2 locations. The attenuation characteristics of blast wave were documented. The typical time history of blast wave signature recorded at 50 m from the blast hole is presented in Figure 9. The frequency spectra of the signature blast was analysed. Linear superposition of the waves were done to simulate the waveform characteristics for multi-hole blasting. The analyses revealed that very

short delay times between the holes and very long delay intervals between the rows should be avoided. The analyses further concluded that the mean time needed to start the movement of rock face is 6.4-7.5 ms/m of effective burden. The delay interval between the successive rows should be 13.5-28.5 ms/m of effective burden. The blast designs were optimised considering the out put of linear superimposition techniques. The signature hole analyses table of blast is depicted in Figure 10. The recommended blast designs on the basis of the analyses are given in Annexure.

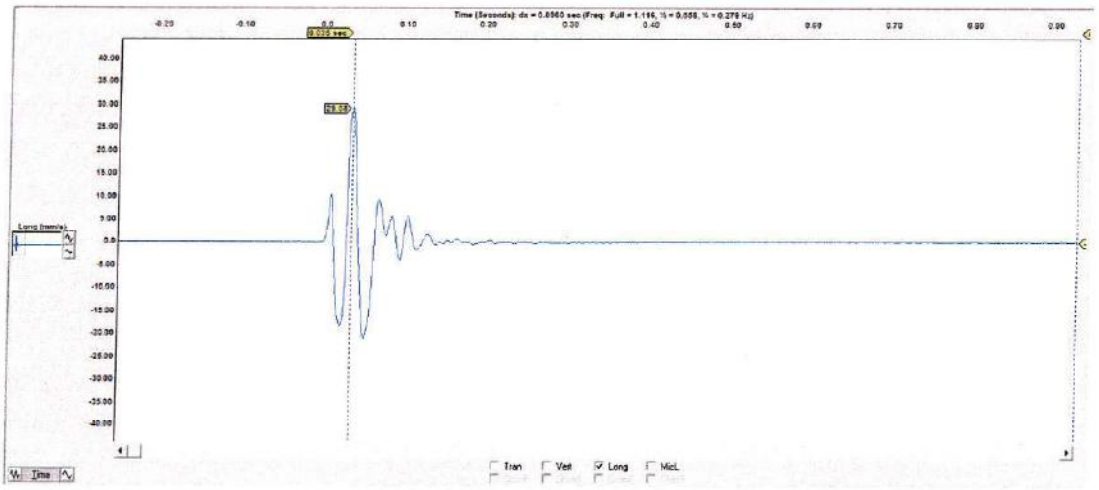


Figure 9. Time history of the signature blast in Longitudinal direction.

Signature Hole Analysis Table

File

Filename (Double Click to view)	Blast Timing			Peak Particle Velocity				PVS	Dominant FFT Frequency				Upper/Lower Frequency Ratio			
	Deck Delay (msec	Hole Delay (msec	Row Delay (msec	Trans (mm/s)	Vert (mm/s)	Long (mm/s)	Peak (mm/s)	Peak Vector Sum	Trans (Hz)	Vert (Hz)	Long (Hz)	Peak (Hz)	Trans	Vert	Long	Peak
2D1H16R100.BWP	1	16	100	19.70	18.40	22.70	22.70	26.50	61.4	61.5	59.3	61.5	0.202	12.000	0.194	12.000
2D1H16R125.BWP	1	16	125	20.50	18.40	23.40	23.40	26.90	63.6	64.1	24.9	64.1	0.251	11.400	0.239	11.400
2D1H16R130.BWP	1	16	130	21.00	19.10	23.30	23.30	27.50	61.4	62.3	61.3	62.3	0.065	3.660	0.068	3.660
R2D1H16R95.BWP	1	16	95	19.80	20.60	24.30	24.30	28.00	63.0	63.3	62.6	63.3	0.061	3.020	0.053	3.020
2D1H12R125.BWP	1	12	125	14.90	22.50	20.50	22.50	28.60	32.6	80.1	32.4	80.1	1.110	47.100	0.979	47.100
R2D1H12R70.BWP	1	12	70	13.00	24.10	20.50	24.10	28.60	2.0	84.8	31.5	84.8	0.247	10.500	0.218	10.500
2D1H12R120.BWP	1	12	120	13.30	23.10	25.00	25.00	28.80	33.8	83.1	33.3	83.1	0.823	30.600	0.703	30.600
R2D1H12R75.BWP	1	12	75	12.90	25.70	20.50	25.70	28.80	2.0	80.4	24.1	80.4	1.060	44.900	0.960	44.900
2D1H12R115.BWP	1	12	115	14.40	23.30	23.80	23.80	30.50	35.0	78.5	34.4	78.5	3.550	98.100	3.370	98.100
6R2D1H8R45.BWP	1	8	45	12.80	14.70	30.30	30.30	30.50	2.0	2.9	27.4	27.4	0.020	1.030	0.014	1.030
R2D1H16R55.BWP	1	16	55	19.50	18.60	26.10	26.10	30.70	58.9	68.5	57.3	68.5	0.129	4.870	0.130	4.870
R2D1H16R60.BWP	1	16	60	26.60	26.20	22.00	26.60	31.10	64.5	65.1	35.3	65.1	0.198	9.600	0.186	9.600
2D1H12R105.BWP	1	12	105	13.00	23.40	25.70	25.70	31.50	37.0	85.4	20.1	85.4	0.261	11.500	0.239	11.500
2D1H12R110.BWP	1	12	110	14.10	23.00	26.20	26.20	31.90	36.1	81.6	35.5	81.6	1.050	43.200	0.948	43.200
2D1H12R130.BWP	1	12	130	13.30	23.40	26.10	26.10	32.80	37.6	84.3	22.8	84.3	0.247	11.100	0.224	11.100
R2D1H12R65.BWP	1	12	65	20.70	22.50	26.40	26.40	32.90	32.9	78.5	32.3	78.5	0.614	26.900	0.551	26.900
R2D1H16R70.BWP	1	16	70	20.20	18.40	29.10	29.10	33.10	59.4	60.0	27.1	60.0	0.063	4.020	0.056	4.020
R2D1H8R100.BWP	1	8	100	13.90	14.50	31.80	31.80	33.10	30.3	129.0	30.0	129.0	0.024	1.390	0.023	1.390
R2D1H8R105.BWP	1	8	105	15.00	13.90	31.80	31.80	33.10	29.1	124.0	29.1	124.0	0.008	0.602	0.010	0.602
R2D1H8R110.BWP	1	8	110	14.60	14.30	31.80	31.80	33.10	28.0	129.0	28.0	128.0	0.035	2.090	0.031	2.090
R2D1H8R115.BWP	1	8	115	15.30	13.40	31.90	31.90	33.10	34.4	130.0	26.9	130.0	0.133	13.700	0.136	13.700
R2D1H8R120.BWP	1	8	120	14.40	13.50	31.80	31.80	33.10	32.9	125.0	32.5	125.0	0.029	1.140	0.021	1.140
R2D1H8R130.BWP	1	8	130	14.20	13.80	31.80	31.80	33.10	30.8	130.0	30.6	130.0	0.007	0.507	0.009	0.507
6R2D1H8R80.BWP	1	8	80	13.90	16.10	31.70	31.70	33.10	35.8	126.0	26.9	126.0	0.022	2.020	0.027	2.020
6R2D1H8R85.BWP	1	8	85	13.90	16.30	31.80	31.80	33.10	34.4	129.0	33.5	129.0	0.140	5.050	0.122	5.050

Figure 10. Signature hole analysis for the blasthole on 15 no. RPL Site of Prism Cement Limestone Mine.

11. Human response to blasting

The tolerance and reactions of human beings to vibrations are important when standards are based on annoyance, interference, work proficiency and health. Human beings notice and react to blast induced vibrations at levels that are lower than the damage thresholds.

It is impossible to establish a vibration level where nobody will complain. There are always some persons in a population who will complain no matter how small the disturbance is. Several researchers recognized that the duration of the vibration was critical. Most evident was that a higher level could be tolerated if the event was of short duration. Consequently, steady state vibration data could not be realistically applied to blasting except for events that exceed several seconds duration.

12. Results and discussions

The maximum vibration recorded from the production blasts in terms of peak particle velocity (PPV) was 31.0 mm/s at 50 m on the ground surface behind the blasting face. The associated dominant peak frequency was 32.0 Hz. This magnitude of vibration was due to detonation of 710 kg of explosives in 28 holes drilled in three rows and fired with maximum charge weight per delay of 50 kg. The PPV recorded at 100 m from the same blast was 6.66 mm/s with dominant peak frequency of 15.0 Hz. Fast attenuation of ground vibration is recorded.

The vibrations recorded in the periphery of the mine were of low amplitude and short duration. The persistence of vibration was in most of the cases less than 1 second. A few recorded blast waveforms at different locations are given in the Annexure which indicates low amplitude and short duration blast events. The existing practice of blasting will not cause any damage to the houses and structures in the periphery of the mine.

The signature hole blast was conducted and ground vibration was recorded at a distance of 50 and 100 m. The ground vibration recorded at 50 m was 33.9 mm/s with dominant peak frequency of 30.3 Hz. The signature hole was of 5 m and charged with the 30 kg of explosive. Ground vibration recorded at 100 m was 22.1 mm/s with dominant frequency of 45.5 Hz. The analyses revealed that very short delay times between the holes and very long delay intervals between the rows should be avoided. The analyses further concluded that the mean time needed to start the movement of rock face is 6.4-7.5 ms/m of effective burden. The delay interval between the successive rows should be 13.5-28.5 ms/m of effective burden.

The dominant peak frequencies of vibrations recorded were in the range of 11.4 to 129 Hz. The FFT analyses of frequency of vibration revealed that the concentration of vibration energy is in the range of 13.3-40.3 Hz. Based on DGMS circular; the safe limit of vibration (PPV) for the houses of surrounding villages is thus, 10 mm/s. The maximum explosives to be fired in a delay for safety of residential houses at various distances from the blasting site

may be computed from the Equation 1. For ready references, the maximum permissible explosive weight per delay to be detonated in blast round has been computed and is Annexured as Table A3. The predicated PPV levels at various distances by detonation of explosives weight per delay of 10, 20, 30 and 50 kg are presented in Table A4.

The maximum air over-pressure recorded was 137.8 dB(L) at 100 m due to the blast conducted at 15 No. Goyal Face on 26.12.2016 by detonation of 1125 kg of explosives in 45 holes. The blasts initiated with Nonel initiation system and Unitronic electronic initiation system generate significantly lower level of air over-pressure compared to detonating fuse initiation system. There was no ejection of flyrock in any of the blasts.

The recorded vibration and air over-pressure data and subsequent analyses revealed that blasting might be performed at 50 m from the nearest house of the village with explosives weight per delay of 12.2 kg. The blast designs have been recommended for blasting operations to be conducted at 50 m and beyond from the nearest house of the concern villages or other structures. The recommended blast designs are given as Figures A1-A2. The recommended explosive weights per delay for various distances of the concern up to 300 m are computed and are presented in Table A3. The predicted peak particle velocities levels for detonation of various charge weight per delay are given in Table A4.

There were no ejections of flyrocks in any of the blast. The experimented blast designs ensured that there were no any ejections of flyrocks, although for more safety, blasting mates with sand bags were used for controlling the flyrocks.

13. Conclusions and recommendations

- Maximum vibration recorded from the production blast was 31.0 mm/s with associated dominant peak frequency of 32.0 Hz at 50 m from blasting site. The explosives weight per delay was 50.8 kg. The PPV recorded at 100 m from the same blast was 6.66 mm/s with dominant peak frequency of 15.0 Hz. Fast attenuation of vibration were encountered.

- The maximum air over-pressure recorded was 137.8 dB(L) at 100 m due to the blast conducted at 15 No. Goyal Face on 26.12.2016. In this blast, explosives detonated in a blasting round and explosives weight per delay were 1125 kg and 75 kg respectively. The Electronic initiation system and Nonel initiation system reduces the air over-pressure to a greater extent and improves the blasting performance too. There was no ejection of flyrocks in any of the blast.

- All the recorded data (blast vibrations, air overpressures and flyrocks) were well within the safe limit at the houses/structures concerned. The dominant peak frequencies of ground vibrations were in the range of 11.4 to 129 Hz. FFT analysis of blast vibration frequencies confirmed that concentration of frequencies is in band of 13.3-40.3 Hz. So, the safe level of vibration has been taken as 10 mm/s for the safety of houses/structures of the surrounding villages as per DGMS standard.

- Propagation equation for the prediction of blast vibration has been established and is given as Equation 1. The permissible explosive weight per delay may be computed from the Equation to contain vibration within safe limits for distances of houses/structures concerned. For convenience, the recommended explosives weight per delay has been computed and is given in Table A3.

- The delay interval between the holes in a row should be 17 ms whereas between the rows, it should be 65 ms or more depending upon the number of rows and effective burden. If the numbers of rows are more than two, the delay interval between rows should be increased by 15% in successive rows.

- It is recommended that the existing Nonel initiation system should be continued in the blasting operations and Electronic initiation systems should be practiced on the benches near to the structures for more precise and accurate delay design. The sub-grade drilling should be 0.3 to 0.5 m for a blasthole depth of 6 to 7 m and should be initiated from the bottom of the hole.

- It is advisable to use blasting mate with sand bags in sensitive area to ensure any non-ejection of flyrocks. For this Nonel as well as electronic system may be used as an initiation system.

- The recommended blast designs should be followed for day-to-day blasting operations for safe and efficient blasting operations. The blast designs given in Annexure as Figures A1-A2, will ensure the safety of the houses/structures, life of human beings and other property in the periphery of the mine.

Acknowledgements

The research team is thankful to M/s Prism Cement Limited for sponsoring the study. The sincere co-operation and help extended to the team by the following officials in completing the study successfully are thankfully acknowledged.

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Shri Sanjay Singh Baghel,	Manager (Mines)
Shri Chandrakand pandey,	Asst. Manager
Shri Binod Giri,	Asst. Manager
Shri A. K. Baghel,	Blasting Foreman
Shri S. Singh,	Field Surveyor

The research team also expresses their gratitude to the inhabitants of Hinauti and Sijhata villages for their co-operation in blast vibration and air overpressure monitoring.

Table A1. Summary of blast performed during the period of study at Prism Cement Limestone mine, Prism Cement Limited, Satna (M.P.).

S. No.	Date of Blast	Location of Blast	No. of holes	Hole. dia. [mm]	Hole depth [m]	Burden × Spacing [m]	Top Stemm-ing [m]	Avg. explosive Per hole [kg]	Total explosive Weight [kg]	Remarks
1.	21.12.16	15 No. Goyal Face	30	115	3	3×3.5	2	5.6	165 (Solargel Cartridge & Solar Prime Booster)	❖ Precaution was taken with blasting mate placement to prevent fly rock ejection. ❖ Boulder formation was there. ❖ No ejection of flyrock.
2.	21.12.16	7050 RIL Face	34	115	6	3×3.5	1.6	30.5	1037 (Solargel Cartridge & Solar Prime Booster)	❖ No ejection of flyrock ❖ Nonel (TLD – 17 ms, 42 ms, DTH – 450 ms) ❖ Good fragmentation
3.	22.12.16	15 No. Goyal Fcae	20	115	4.5	3×3.5	3	22	440 (Booster Primex and SME explosives of M/s IEPL Orica)	❖ No ejection of flyrock ❖ Good fragmentation ❖ Unitronic (Orica)
4.	23.12.16	15 No. RPL Site	01	115	5	Burden - 3 m	2.7	30	30 (Booster Primex and SME explosives of M/s IEPL Orica)	❖ Very good movement towards free face. ❖ No fly rock ejection. ❖ Unitronic (Orica). ❖ VOD was measured.
5.	23.12.16	15 No. RPL Site	31	115	4-5	3×3.5	2.8 - 3	20-25	830 (Booster Primex and SME explosives of M/s IEPL Orica)	❖ Very good movement towards free face. ❖ Excellent Fragmentation. ❖ No ejection of flyrock. ❖ Unitronic (Orica)
6.	23.12.16	20 No. Pit	66	115	5-6	3×4	3 - 3.5	25	1670 (Booster Primex and SME explosives of M/s IEPL Orica)	❖ Chocked face. ❖ No ejection of flyrock. ❖ Unitronic
7.	23.12.16	New Pit 01 Hinauti	14	115	5.5-6	3×3.5	3.3 - 3.5	25-30	420 (Booster Primex and SME	❖ Chocked face. ❖ Free face was not available.

									explosives of M/s IEPL Orica)	❖ No ejection of flyrock.
8.	24.12.16	15 No. RPL Site	40	115	6	3×3.5	3.5	35	1405 (Booster Primex and SME explosives of M/s IEPL Orica)	❖ VOD Measurement. ❖ No ejection of flyrock. ❖ Unitronic
9.	24.12.16	15 No. Goyal Face	20	115	5.5	3×3.5	3.6	22	440 (Booster Primex and SME explosives of M/s IEPL Orica)	❖ No ejection of flyrock. ❖ Good fragmentation ❖ Unitronic
10.	24.12.16	15 No. Goyal Face	21	115	2.5	3×3.5	1.7	5.4	113 (Solargel Cartridge & Solar Prime Booster)	❖ No ejection of flyrock ❖ Good fragmentation ❖ Unitronic
11.	24.12.16	15 No. Goyal Face	30	115	3.5-4.5	3×3.5	2.5 - 3	14.7 - 20	603 (Booster Primex and SME explosives of M/s IEPL Orica)	❖ Chocked face ❖ No ejection of flyrock ❖ Good fragmentation ❖ Nonel (TLD – 17 ms, 42 ms, DTH – 450 ms)
12.	25.12.16	15 No. RPL	84	115	6	3×3.5	3.5	32	2678 (Booster Primex and SME explosives of M/s IEPL Orica)	❖ No ejection of flyrock ❖ Good fragmentation ❖ Unitronic
13.	26.12.16	15 No. Goyal Face	28	115	5	3×4	3	25	710 (Booster Primex and SME explosives of M/s IEPL Orica)	❖ No ejection of flyrock ❖ Good fragmentation ❖ Unitronic
14.	26.12.16	15 No. Goyal Face	21	115	3	3×4	2.6	2.78	58.4 (Solar Prime Booster)	❖ No ejection of flyrock ❖ Nonel (TLD – 17 ms, 42 ms, DTH – 450 ms)
15.	26.12.16	15 No. Goyal Face	45	115	6	2.5×3	2.4	25	1125 (Solargel Cartridge & Solar Prime Booster)	❖ No ejection of flyrock ❖ Excellent fragmentation ❖ Nonel (TLD – 17 ms, 42 ms, DTH – 450 ms)

Table A2. Blast induced vibration monitored at different location in and around Prism Cement Limestone mine, Prism Cement Limited, (M.P.)

Blast No.	Location of Blast	Total Explosives detonated in round [Kg]	Maximum Explosives weight per delay [Kg]	Location of measuring instruments	Distance of measuring point from blasting face [m]	Peck particle velocity (PPV) [mm/s]	Dominant peck frequency [Hz]	Air over-pressure/noise [dB (L)]
1.	15 No. Goyal Face	165	11 (2×5.5)	➢ Back Side From Blast Face	50	22.7	79.6	130
				➢ Back Side From Blast Face	100	5.54	26.1	122.5
				➢ Back Side From Blast Face	150	2.35	32.9	122.3
				➢ Back Side From Blast Face	200	1.88	26.9	121.5
2.	7050 RIL Face	1037	61 (2×30.5)	➢ Back Side From Blast Face	50	18.7	33.8	129.8
				➢ Back Side From Blast Face	100	13.9	21.3	123.3
				➢ Back Side From Blast Face	125	10.0	13.3	121.2
				➢ Back Side From Blast Face	150	4.95	12.1	122.9
				➢ Back Side From Blast Face	200	4.33	12.3	121.3
3.	15 No. Goyal Fcae	440	22	➢ Back Side From Blast Face	50	21.0	44	136.1
				➢ Back Side From Blast Face	100	6.75	47.9	119.8
				➢ Back Side From Blast Face	150	3.88	40.3	118.8
				➢ Back Side From Blast Face	200	2.63	47.3	112.6
				➢ Back Side From Blast Face	250	2.40	12.8	116.9
4.	15 No. RPL Site	30	30	➢ Back Side From Blast Face	50	33.9	30.3	127.8
				➢ Back Side From Blast Face	100	22.1	45.5	125.8
5.	15 No. RPL Site	830	50 (2×25)	➢ Back Side From Blast Face	50	22.1	45.5	125.8
				➢ Back Side From Blast Face	100	7.78	21.5	122.9
				➢ Back Side From Blast Face	150	3.49	28	115.7
				➢ Back Side From Blast Face	200	2.55	21	115.9
6.	20 No. Pit	1670	75 (3×25)	➢ Back Side From Blast Face	50	30.4	112	131.5
				➢ Back Side From Blast Face	100	27.1	21.6	122.2
				➢ Back Side From Blast Face	150	25.6	18.5	122.6
				➢ Back Side From Blast Face	200	5.24	24.9	119.1

7.	New Pit 01. Hinauti	420	30	➢ Left Side From Blast Face ➢ Back Side From Blast Face ➢ Left Side From Blast Face ➢ Left Side From Blast Face (village Shankarji temple)	50 75 100 200	20.4 10.7 5.24 5.29	22.5 18.5 22 18.5	135.1 132.5 134.8 122.6
8.	15 No. RPL Site	1405	70 (2×35)	➢ Left Side From Blast Face ➢ Back Side From Blast Face ➢ Back Side From Blast Face ➢ Left Side From Blast Face ➢ Back Side From Blast Face	50 60 100 100 150	24.4 17.5 11.3 8.77 6.89	52.9 30.4 15.9 17.8 15.9	127.8 128.8 127.8 123.9 128
9.	15 No. Goyal Face	440	20	➢ Back Side From Blast Face ➢ Right Side From Blast Face ➢ Back Side From Blast Face ➢ Back Side From Blast Face	100 100 150 200	12.5 6.14 5.62 4.07	27.4 35.6 36.8 11.4	122.3 133.4 120 116.3
10.	15 No. Goyal Face	113	21	➢ Right Side From Blast Face ➢ Back Side From Blast Face	150 200	2.83 1.08	24.6 28.8	125 110.2
11.	15 No. Goyal Face	603	44 (2×22)	➢ Left Side From Blast Face ➢ Back Side From Blast Face ➢ House of Sri Umesh Prasad ➢ Structure height (roof-3m) ➢ Back Side From Blast Face	50 100 150 150 200	17.1 8.10 6.35 15.1 5.65	24.5 18 16.8 21.3 17.5	131.4 130.6 128.9 - 126.5
12.	15 No. RPL	2678	95 (3×31.6)	➢ Back Side From Blast Face ➢ Back Side From Blast Face ➢ Back Side From Blast Face ➢ Back Side From Blast Face ➢ Back Side From Blast Face	50 100 150 200 250	17.0 16.3 10.7 5.03 4.56	129 58.5 129 18.0 18.6	131 121.9 121.8 123.1 123.5
13.	15 No. Goyal Face	710	50 (2×25)	➢ Left Side From Blast Face ➢ Left Side From Blast Face ➢ Right Side From Blast Face ➢ Right Side From Blast Face	50 100 110 140	31.0 6.66 3.84 3.59	32 15 27.5 27.1	130.1 123.9 126.8 123.6

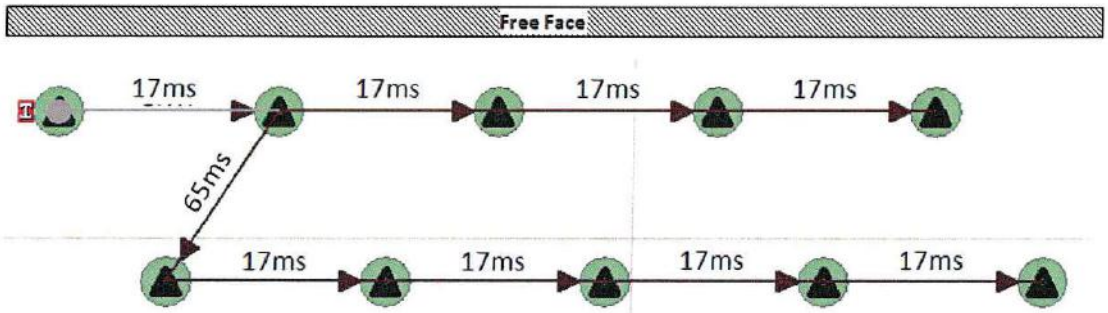
14.	15 No. Goyal Face	58.38	2.78	➢ Back Side From Blast Face	70	2.83	21.8	121.6
				➢ Back Side From Blast Face	100	2.71	20.6	116.1
				➢ Front Side From Blast Face	140	1.84	28.8	119.3
				➢ Front Side From Blast Face	200	0.73	21.3	116.4
15.	15 No. Goyal Face	1125	75 (3×25)	➢ Right Side From Blast Face	100	11.6	34.8	137.8
				➢ Right Side From Blast Face	120	11.0	69.1	132.7
				➢ Right Side From Blast Face	130	9.0	22.8	132.2

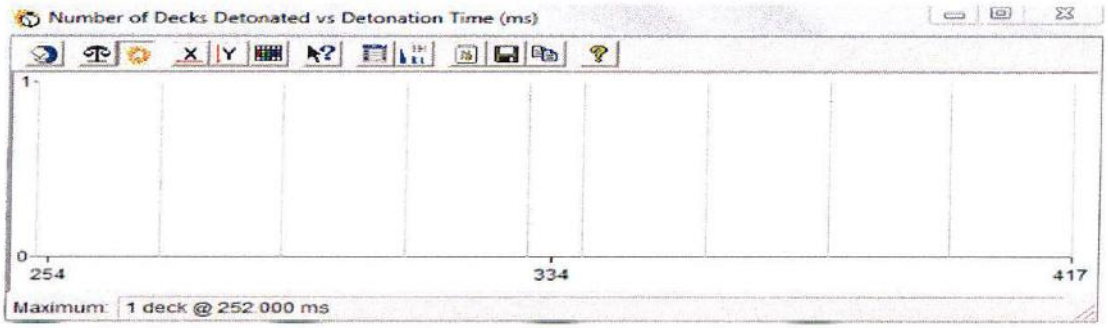
Table A3. Recommended explosives weight per delay to be detonated in a blasting round for the safety of houses/structures taking 10 mm/s (for the houses/structures not belonging to the Owner) and 15 mm/s (for the houses/structures belonging to the Owner) as safe limit of peak particle velocity for Prism Cement Limestone mine, Prism Cement Limited, Satna, (M. P).

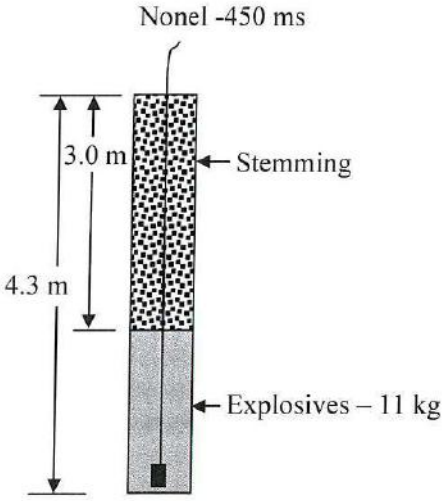
Distance of structures from the blast face [m]	Maximum explosive weight to be detonated in a delay [kg]	
	10 mm/s	15 mm/s
50	12	19
75	27	42
100	49	75
125	76	118
150	110	170
175	149	231
200	195	302
225	247	382
250	305	471
275	369	570
300	439	678

Table A4. Predicted peak particle velocity level at various distance due to detonation of explosive weight per delay of 10, 20, 30 & 50 kg at Prism Cement Limestone mine, Prism Cement Limited, Satna, (M.P).

Distance of structures from the blast face [m]	Predicted peak particle velocity levels [mm/s]			
	10 kg	***20 kg***	***30 kg***	***50 kg***
50	9.9	13.2	16.6	22.1
75	6.3	8.4	10.5	14.0
100	4.6	6.1	7.6	10.1
125	3.5	4.7	5.9	7.9
150	2.9	3.8	4.8	6.4
175	2.4	3.2	4.1	5.4
200	2.1	2.8	3.5	4.6
225	1.8	2.4	3.1	4.1
250	1.6	2.2	2.7	3.6
275	1.5	1.9	2.4	3.2
300	1.3	1.8	2.2	2.9



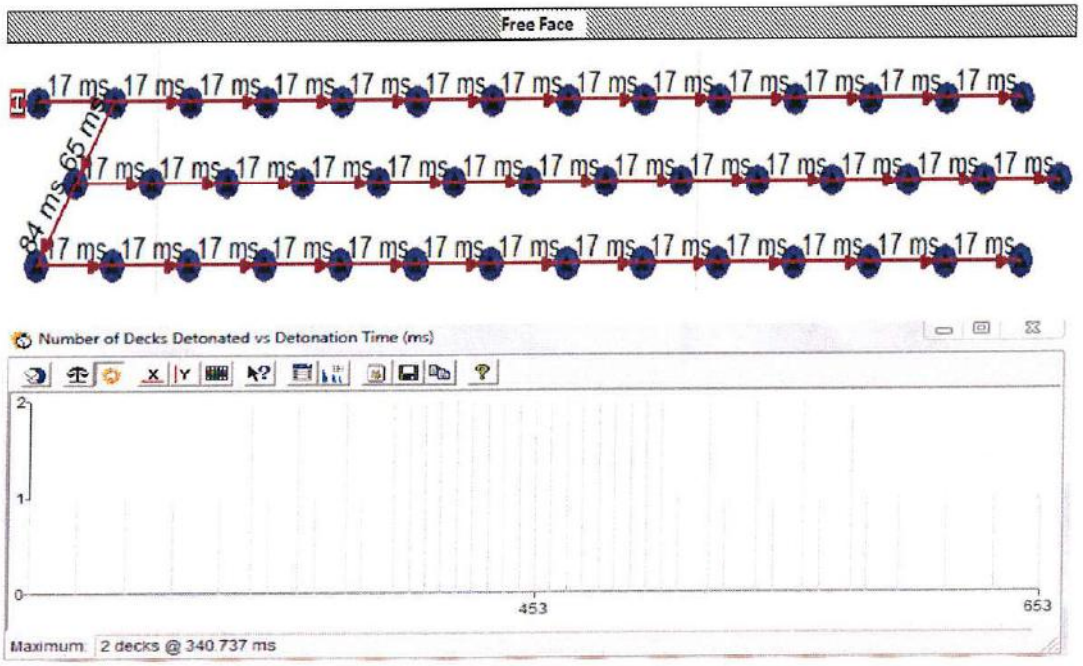


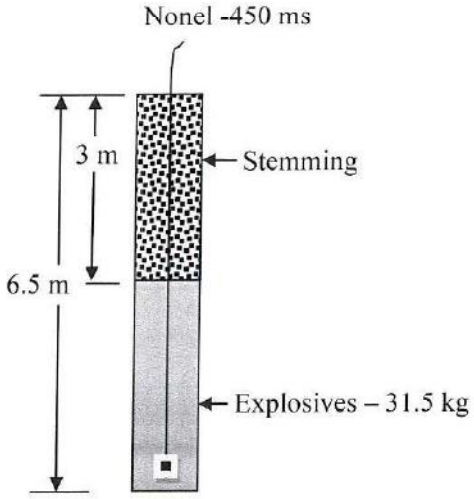


BLAST GEOMETRY

Hole diameter	: 115 mm
Hole depth	: 4.3 m
No. of holes	: 10
Bench height	: 4 m
Burden	: 2 m
Spacing	: 2.5 m
Explosive per hole	: 11 kg (4×2.78kg)
Initiation system	: DTH-450 ms TLD – 17 ms & 65 ms
Explosives	: Cartridge/SME Bulk
Charge factor	: 0.55 kg/m^3

Figure A1. Recommended blast design and charging pattern of holes for 4 m benches of Prism Cement Limestone mine when blasting is to be conducted at or beyond 50m.





BLAST GEOMETRY

Hole diameter	: 115 mm
Hole depth	: 6.5 m
No. of holes	: 42
Bench height	: 6.0 m
Burden	: 3.0 m
Spacing	: 3.5 m
Explosive per hole	: 31.5 kg
Initiation system	: DTH-450 ms TLD – 17 ms, 42ms & 65 ms
Explosives	: Cartridge/Bulk-SME
Charge factor	: 0.5 kg/m^3

Figure A2. Recommended blast design and charging pattern of holes for 6.0 m benches of Prism Cement Limestone mine when blasting is to be conducted at or beyond 100 m.

Instantel Event Report

Date/Time	Tran at 11:28:03 December 21, 2016
Trigger Source	Geo: 0.510 mm/s
Range	Geo: 254 mm/s
Record Time	6.0 sec at 1024 sps

Notes
Location: On Ground Surface
Client: PRISM CEMENT LTD. STANA
User Name: REE Division, CSIR- CIMFR, Dhanbad
General:

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd.

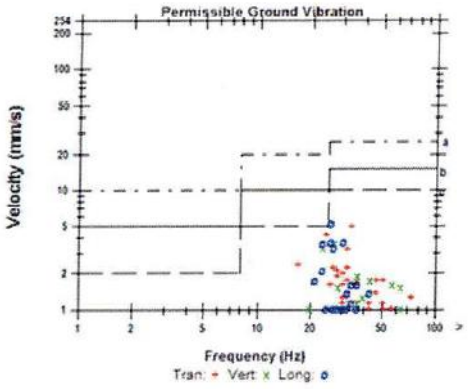
Microphone	Linear Weighting
PSPL	122.5 dB(L) at 0.859 sec
ZC Freq	7.5 Hz
Channel Test	Passed (Freq = 20.1 Hz Amp = 504 mv)

	Tran	Vert	Long	
PPV	4.95	3.56	5.21	mm/s
ZC Freq	34	27	26	Hz
Time (Rel. to Trig)	0.692	0.637	0.653	sec
Peak Acceleration	0.166	0.0796	0.119	g
Peak Displacement	0.0223	0.0187	0.0307	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.5	7.2	Hz
Overswing Ratio	3.6	3.6	3.9	

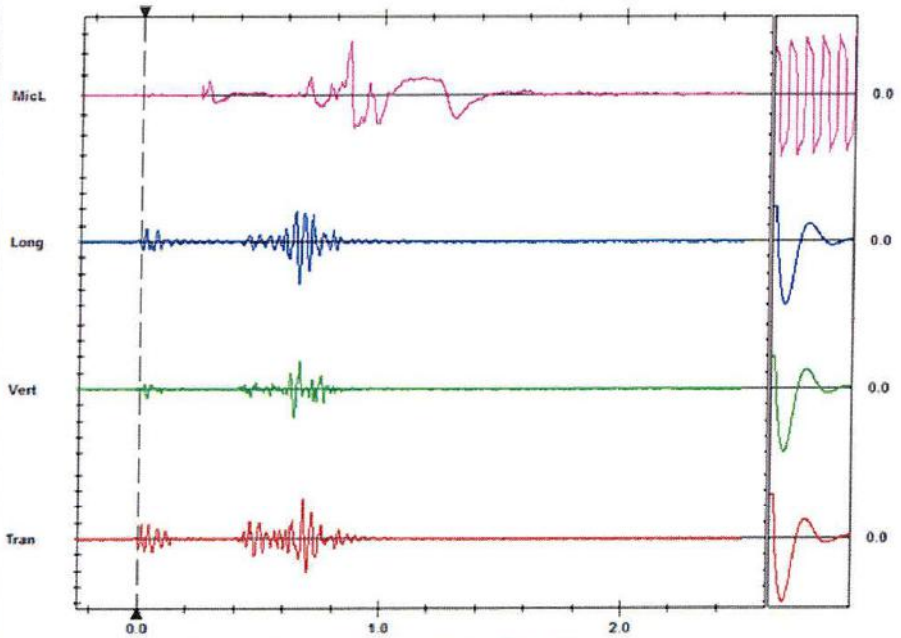
Peak Vector Sum 5.54 mm/s at 0.653 sec

Serial Number	BE20375 V 10.60-8.17 MiniMate Plus
Battery Level	6.3 Volts
Unit Calibration	April 29, 2015 by CIMFR, Dhanbad
File Name	V375GOOY.IR0

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record
Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.00 mm/s/div Mic: 10.00 pa (L)/div Sensor Check

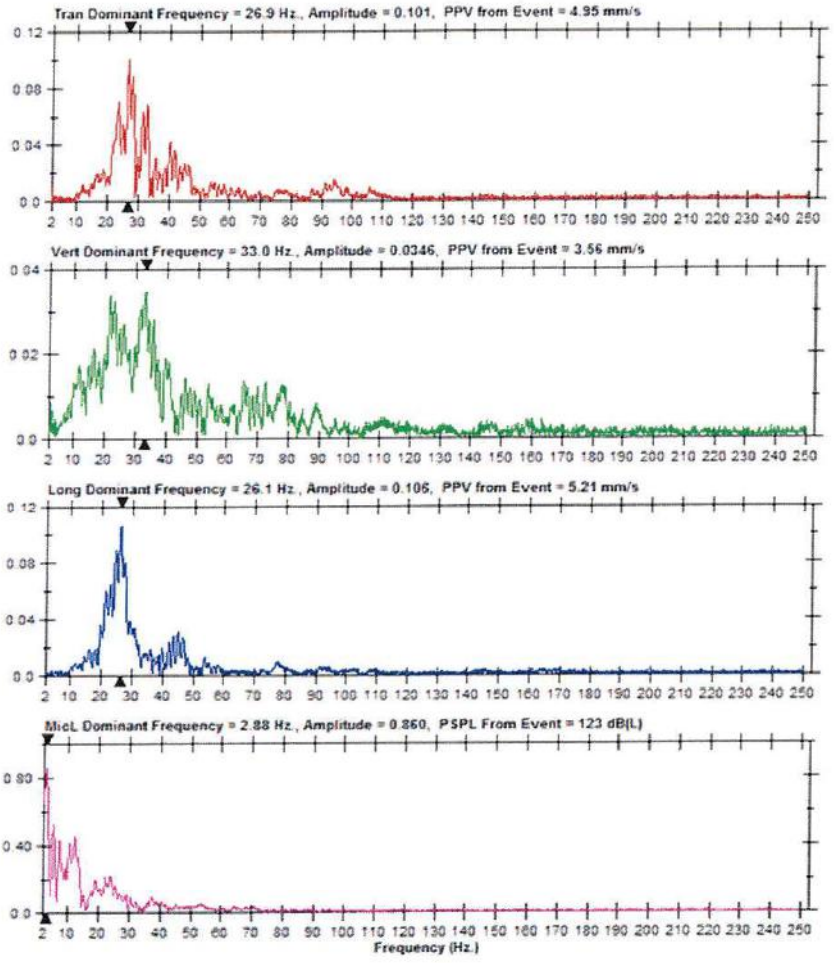
Instantel

FFT Report

Date/Time	Tran at 11:28:03 December 21, 2016	**Serial Number**	BE20375 V 10.60-8.17 MiniMate Plus
Trigger Source	Geo: 0.510 mm/s	**Battery Level**	6.3 Volts
Range	Geo: 254 mm/s	**Unit Calibration**	April 29, 2015 by CIMFR, Dhanbad
Record Time	8.0 sec at 1024 sps	**File Name**	V375GOOY.IR0

Notes
Location: On Ground Surface
Client: PRISM CEMENT LTD. STANA
User Name: REE Division, CSIR- CIMFR, Dhanbad
General:

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd



Printed: March 19, 2017 (V 10.30 - 10.30)

Instantel

Event Report

Date/Time	Vert at 16:31:38 December 21, 2016
Trigger Source	Geo: 0.510 mm/s
Range	Geo: 254 mm/s
Record Time	4.0 sec at 2048 sps
Job Number:	1
Notes	
Location:	On the ground surface
Client:	PRISM CEMENT LTD. SATNA
User Name:	REE Division, CSIR-CIMFR,Dhanbad
General:	

Serial Number	BA13814 V.8.12-8.0 BlastMate III
Battery Level	6.1 Volts
Unit Calibration	July 14, 2016 by CIMFR, Dhanbad
File Name	0814GOPC.KQ0

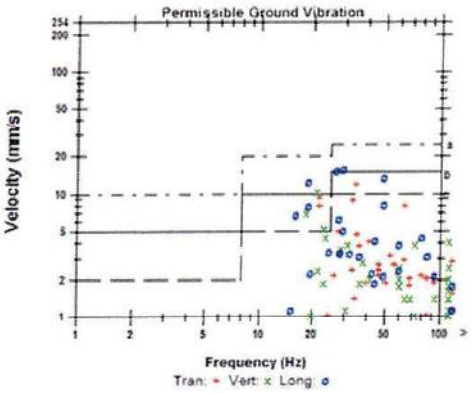
Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd.

Microphone	Linear Weighting
PSPL	129.8 dB(L) at 0.266 sec
ZC Freq	7.3 Hz
Channel Test	Passed (Freq = 19.3 Hz Amp = 692 mv)

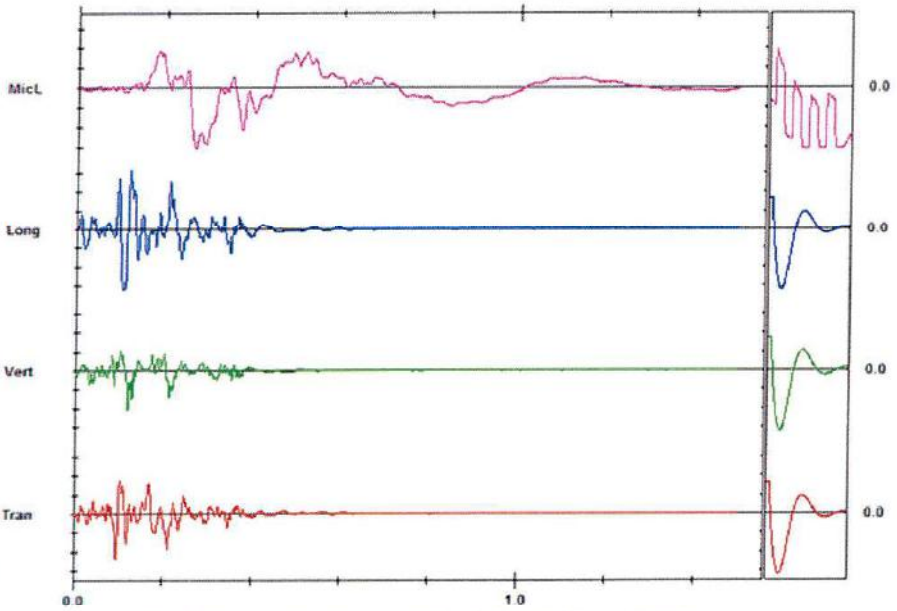
	Tran	Vert	Long	
PPV	11.8	10.3	16.0	mm/s
ZC Freq	34	21	29	Hz
Time (Rel. to Trig)	0.097	0.119	0.105	sec
Peak Acceleration	0.451	0.398	0.530	g
Peak Displacement	0.0497	0.0464	0.101	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.6	7.5	Hz
Overswing Ratio	3.7	3.3	3.7	

Peak Vector Sum 18.7 mm/s at 0.120 sec

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record
Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 20.0 pa (L)/div Sensor Check

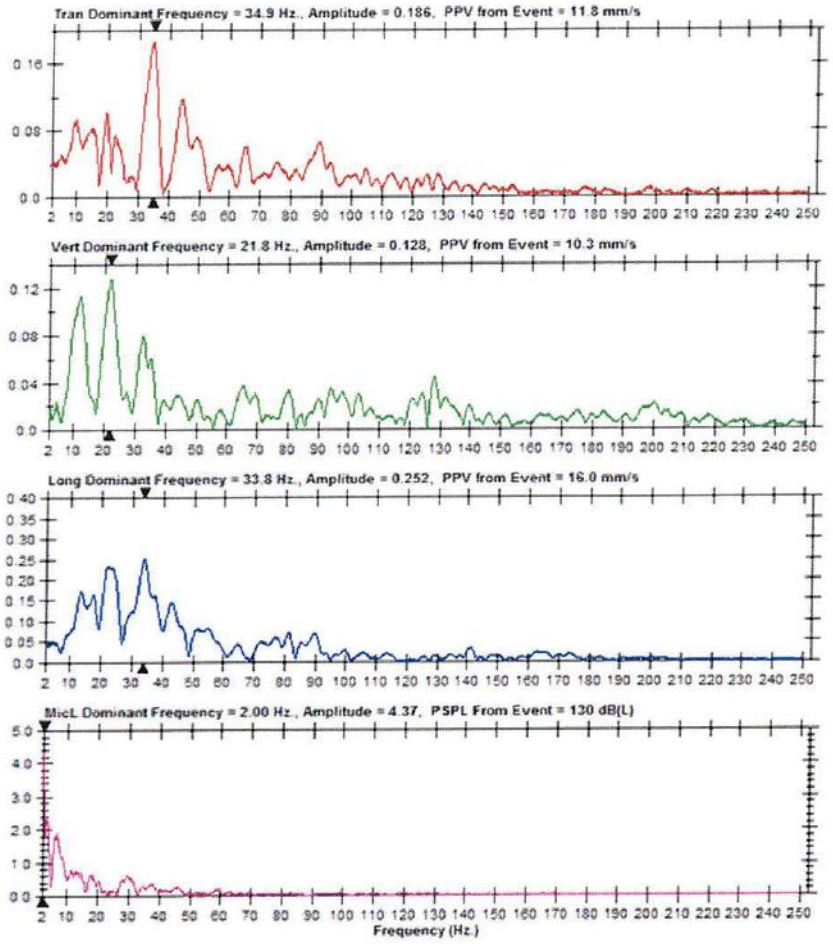
Instantel

FFT Report

Date/Time	Vert at 16:31:38 December 21, 2016	**Serial Number**	BA13814 V.8.12-8.0 BlastMate III
Trigger Source	Geo: 0.510 mm/s	**Battery Level**	6.1 Volts
Range	Geo: 254 mm/s	**Unit Calibration**	July 14, 2016 by CIMFR, Dhanbad
Record Time	4.0 sec at 2048 sps	**File Name**	OB14GOPC.KQ0
Job Number	1		

Notes
Location: On the ground surface
Client: PRISM CEMENT LTD. SATNA
User Name: REE Division, CSIR-CIMFR,Dhanbad
General:

Extended Notes
Blast vibration study at Menchi and Hinauti Limestone Mines of Prism Cement Ltd



Instantel

Event Report

Date/Time	Vert at 16:31:40 December 21, 2016
Trigger Source	Geo: 0.510 mm/s
Range	Geo: 254 mm/s
Record Time	6.0 sec at 1024 sps
Notes	
Location	On Ground Surface
Client	PRISM CEMENT LTD. STANA
User Name	REE Division, CSIR- CIMFR, Dhanbad
General	

Serial Number	BE20375 V 10.60-8.17 MiniMate Plus
Battery Level	6.3 Volts
Unit Calibration	April 29, 2015 by CIMFR, Dhanbad
File Name	V375GCPC.KS0

Extended Notes

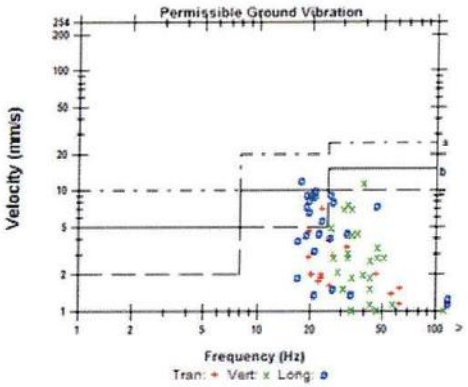
Blast vibration study at Mandhi and Hinauti Limestone Mines of Prism Cement Ltd

Microphone	Linear Weighting
PSPL	123.3 dB(L) at 0.365 sec
ZC Freq	6.7 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 526 mv)

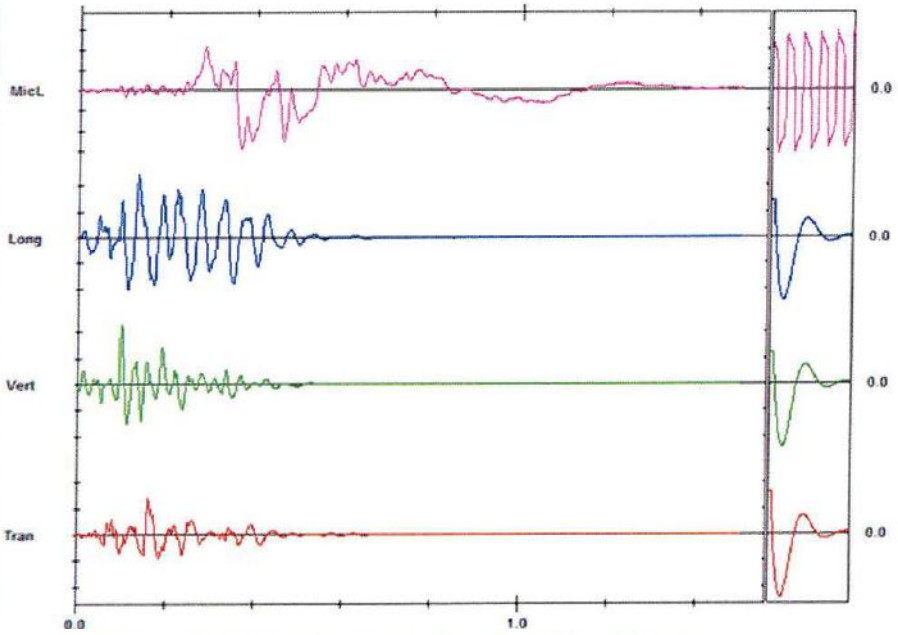
	Tran	Vert	Long	
PPV	7.11	11.4	12.2	mm/s
ZC Freq	23	39	18	Hz
Time (Rel. to Trig)	0.162	0.100	0.133	sec
Peak Acceleration	0.159	0.265	0.265	g
Peak Displacement	0.0432	0.0409	0.0841	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.6	7.3	Hz
Overswing Ratio	3.5	3.6	3.7	

Peak Vector Sum 13.9 mm/s at 0.099 sec

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record

Time Scale: 0.20 sec/div **Amplitude Scale**: Geo: 5.00 mm/s/div Mic: 10.00 pa (L)/div Sensor Check

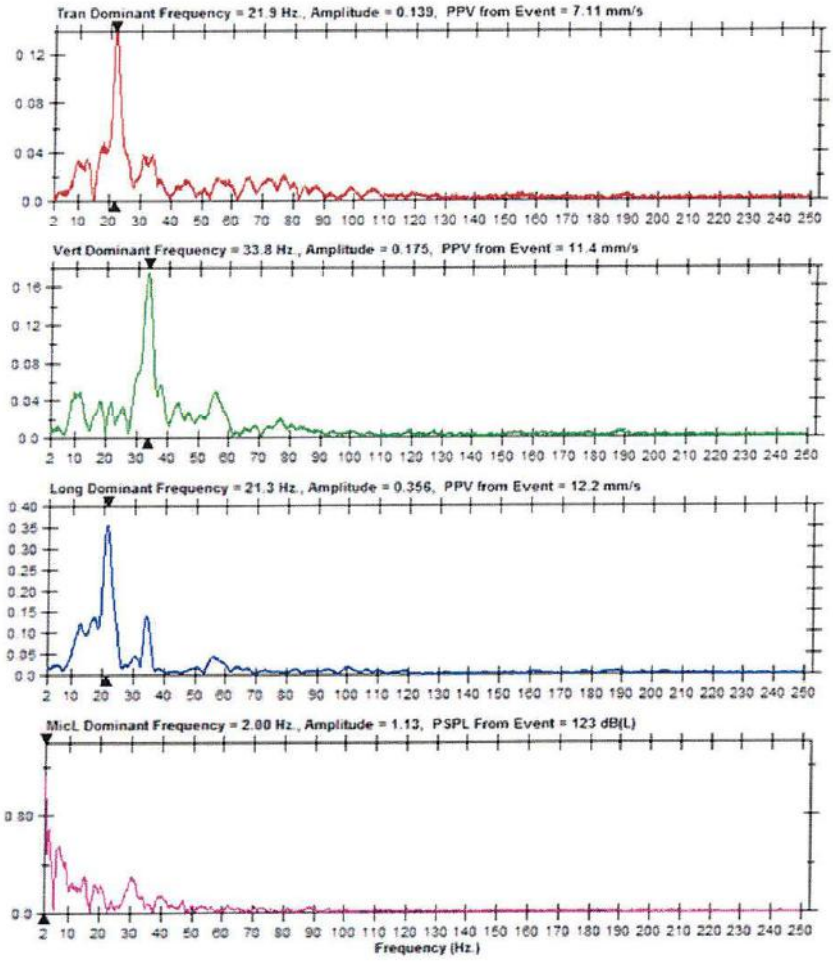
Instantel

FFT Report

Date/Time	Vert at 16:31:40 December 21, 2016	**Serial Number**	BE20375 V 10.60-8.17 MiniMate Plus
Trigger Source	Geo: 0.510 mm/s	**Battery Level**	6.3 Volts
Range	Geo: 254 mm/s	**Unit Calibration**	April 29, 2015 by CIMFR, Dhanbad
Record Time	8.0 sec at 1024 sps	**File Name**	V375GOPC.KS0

Notes
Location: On Ground Surface
Client: PRISM CEMENT LTD. SIANA
User Name: REE Division, CSIR- CIMFR, Dhanbad
General:

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd



Printed: March 19, 2017 (V 10.30 - 10.30)

Instantel

Event Report

Date/Time	Vert at 12:30:58 December 22, 2016
Trigger Source	Geo: 0.510 mm/s
Range	Geo: 254 mm/s
Record Time	4.0 sec at 2048 sps
Job Number:	1
Notes	
Location	On the ground surface
Client:	PRISM CEMENT LTD. SATNA
User Name:	REE Division, CSIR-CIMFR,Dhanbad
General:	

Extended Notes

Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd

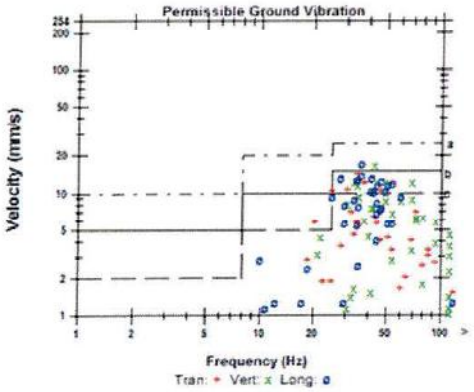
Microphone	Linear Weighting
PSPL	136.1 dB(L) at 0.290 sec
ZC Freq	3.7 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 700 mv)

	Tran	Vert	Long	
PPV	14.2	16.6	17.4	mm/s
ZC Freq	34	43	37	Hz
Time (Rel. to Trig)	0.212	0.293	0.206	sec
Peak Acceleration	0.530	0.583	0.583	g
Peak Displacement	0.0616	0.0554	0.0677	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.6	7.4	Hz
Overswing Ratio	3.6	3.3	3.7	

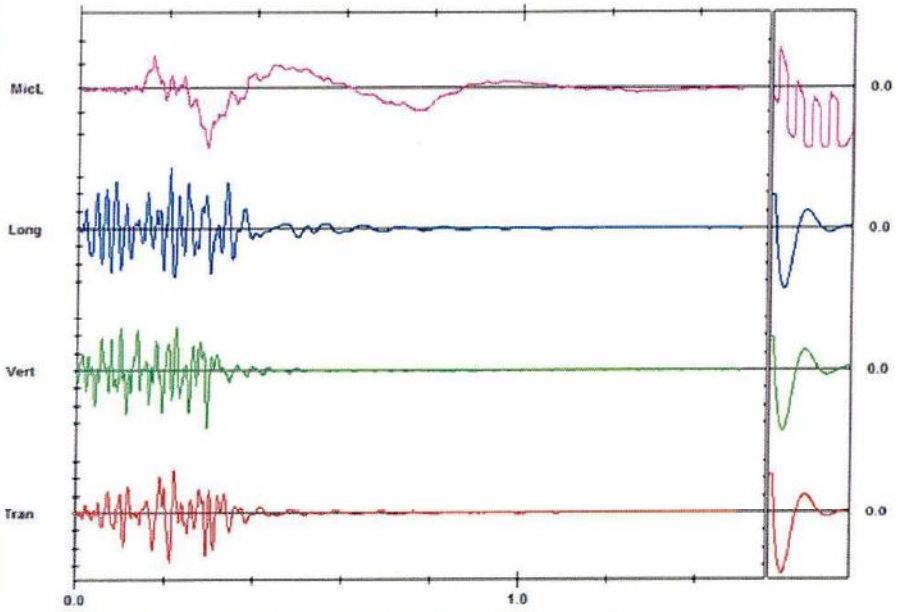
Peak Vector Sum 21.0 mm/s at 0.293 sec

Serial Number	BA13814 V 8.12-8.0 BlastMate III
Battery Level	6.1 Volts
Unit Calibration	July 14, 2016 by CIMFR, Dhanbad
File Name	0814GCQW.3M0

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record

Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 50.0 pa (L)/div Sensor Check

Instantel

FFT Report

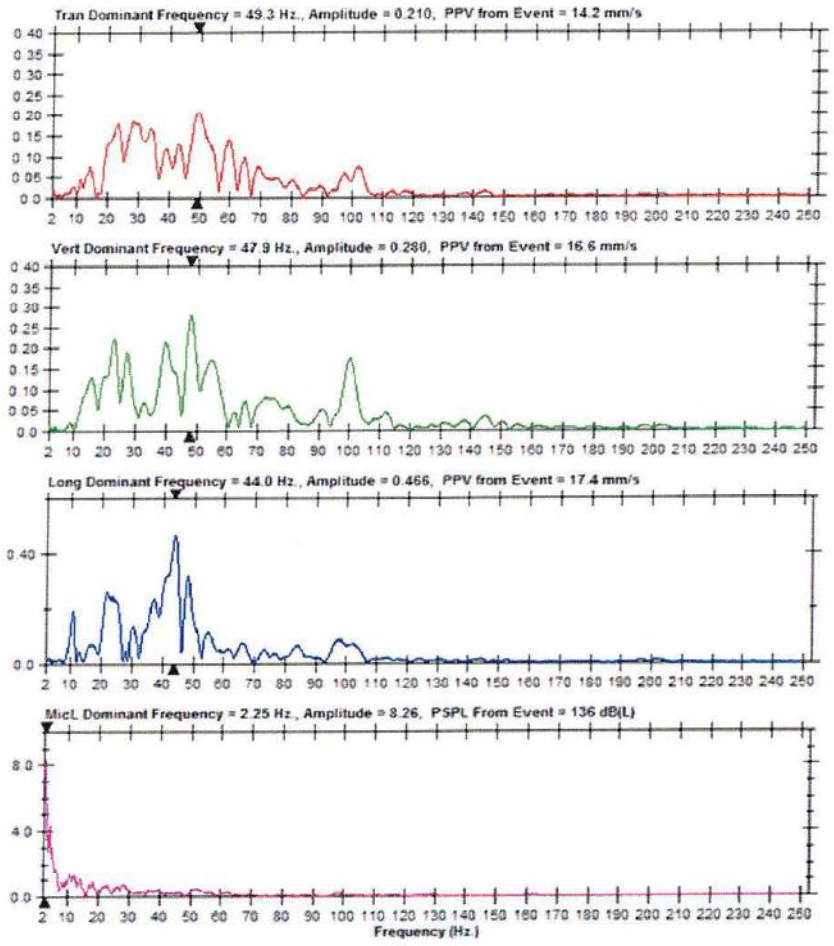
Date/Time	Vert at 12:30:58 December 22, 2016	**Serial Number**	BA13814 V 8.12-8.0 BlastMate III
Trigger Source	Geo: 0.510 mm/s	**Battery Level**	6.1 Volts
Range	Geo: 254 mm/s	**Unit Calibration**	July 14, 2016 by CIMFR, Dhanbad
Record Time	4.0 sec at 2048 sps	**File Name**	O814GOQW.3M0
Job Number:	1		

Notes

Location: On the ground surface
Client: PRISM CEMENT LTD. SATNA
User Name: REE Division, CSIR-CIMFR,Dhanbad
General:

Extended Notes

Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd.



Printed: March 19, 2017 (V 10.30 - 10.30)

Instantel

Event Report

Date/Time	Vert at 12:30:59 December 22, 2016
Trigger Source	Geo: 0.510 mm/s
Range	Geo: 254 mm/s
Record Time	6.0 sec at 1024 sps
Notes	
Location:	On Ground Surface
Client:	PRISM CEMENT LTD. STANA
User Name:	REE Division, CSIR- CIMFR, Dhanbad
General:	

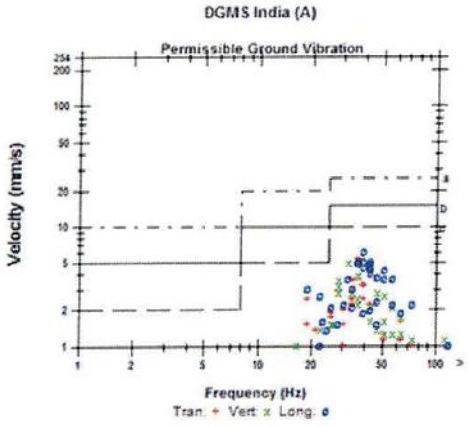
Serial Number	BE20375 V 10.60-8.17 MiniMate Plus
Battery Level	6.3 Volts
Unit Calibration	April 29, 2015 by CIMFR, Dhanbad
File Name	V375GOQW.3N0

Extended Notes
Blast vibration study at Mandhi and Hinauti Limestone Mines of Prism Cement Ltd.

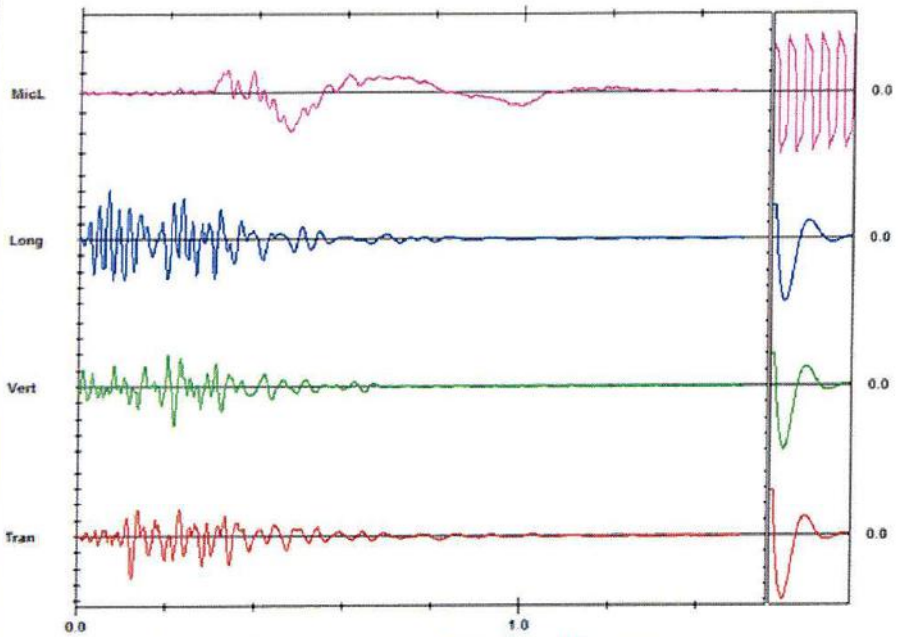
Microphone	Linear Weighting
PSPL	119.8 dB(L) at 0.473 sec
ZC Freq	3.8 Hz
Channel Test	Passed (Freq = 20.1 Hz Amp = 477 mv)

	Tran	Vert	Long	
PPV	5.33	4.95	6.10	mm/s
ZC Freq	37	32	39	Hz
Time (Rel. to Trig)	0.124	0.217	0.065	sec
Peak Acceleration	0.119	0.106	0.199	g
Peak Displacement	0.0224	0.0205	0.0236	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.5	7.2	Hz
Overswing Ratio	3.6	3.6	3.8	

Peak Vector Sum 6.75 mm/s at 0.232 sec



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record
Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.00 mm/s/div Mic: 10.00 pa (L)/div Sensor Check

Printed: March 18, 2017 (V 10.30 - 10.30)

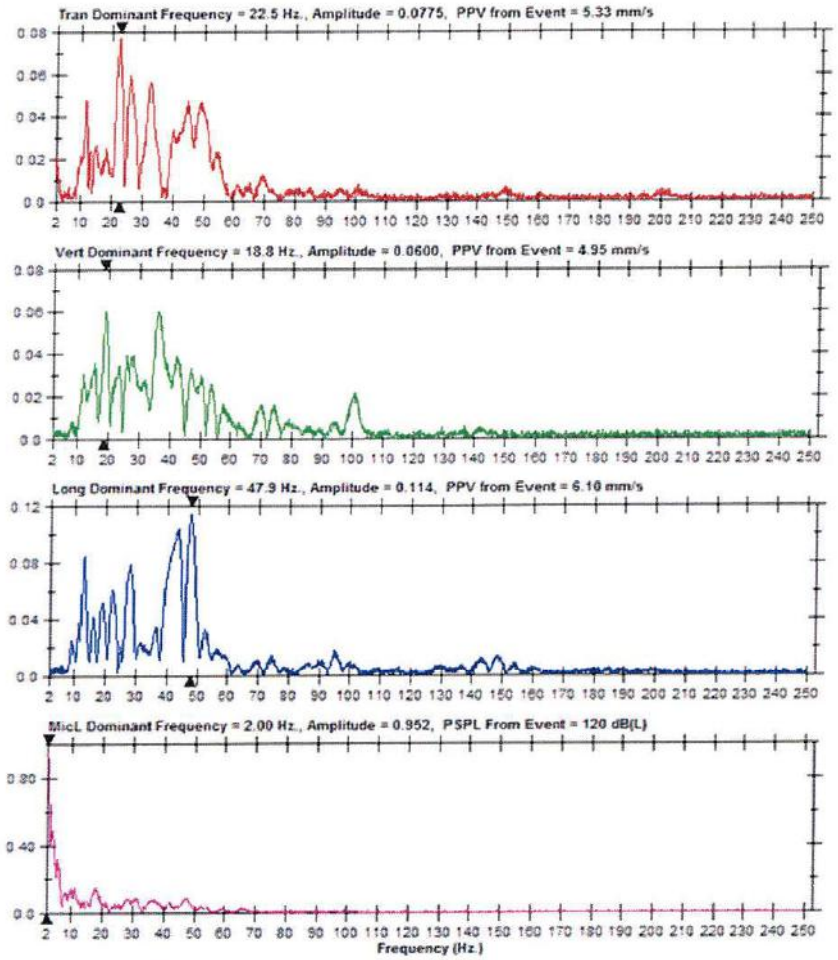
Instantel

FFT Report

Date/Time	Vert at 12:30:59 December 22, 2016	**Serial Number**	BE20376 V 10.60-8.17 MiniMate Plus
Trigger Source	Geo: 0.510 mm/s	**Battery Level**	6.3 Volts
Range	Geo: 254 mm/s	**Unit Calibration**	April 29, 2015 by CIMFR, Dhanbad
Record Time	6.0 sec at 1024 sps	**File Name**	V375GOQW.3N0

Notes
Location: On Ground Surface
Client: PRISM CEMENT LTD. STANA
User Name: REE Division, CSIR- CIMFR, Dhanbad
General:

Extended Notes
Blast vibration study at Mendhi and Himauti Limestone Mines of Prism Cement Ltd



Instantel

Event Report

Date/Time	Vert at 10:14:09 December 23, 2016
Trigger Source	Geo: 0.508 mm/s
Range	Geo: 127 mm/s
Record Time	6.0 sec at 1024 sps
Notes	
Location:	On ground surface
Client:	PRISM CEMENT LTD. SATNA.
User Name:	REE, CSIR-CIMFR, Dhanbad
Converted:	December 23, 2016 20:27:06 (V10.30)

Extended Notes
Blast vibration study at Mandhi and Hinauti Limestone Mines of Prism Cement Ltd

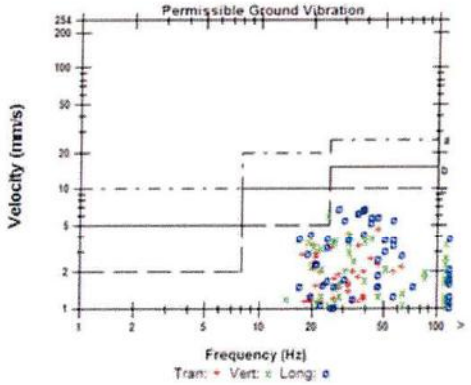
Microphone	Linear Weighting
PSPL	122.9 dB(L) at 4.534 sec
ZC Freq	3.0 Hz
Channel Test	Passed (Freq = 20.0 Hz Amp = 477 mv)

	Tran	Vert	Long	
PPV	4.57	6.97	6.92	mm/s
ZC Freq	47	24	39	Hz
Time (Rel. to Trig)	4.178	4.189	4.130	sec
Peak Acceleration	0.225	0.239	0.278	g
Peak Displacement	0.0266	0.0335	0.0322	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.8	7.8	7.7	Hz
Overswing Ratio	3.5	3.4	3.6	

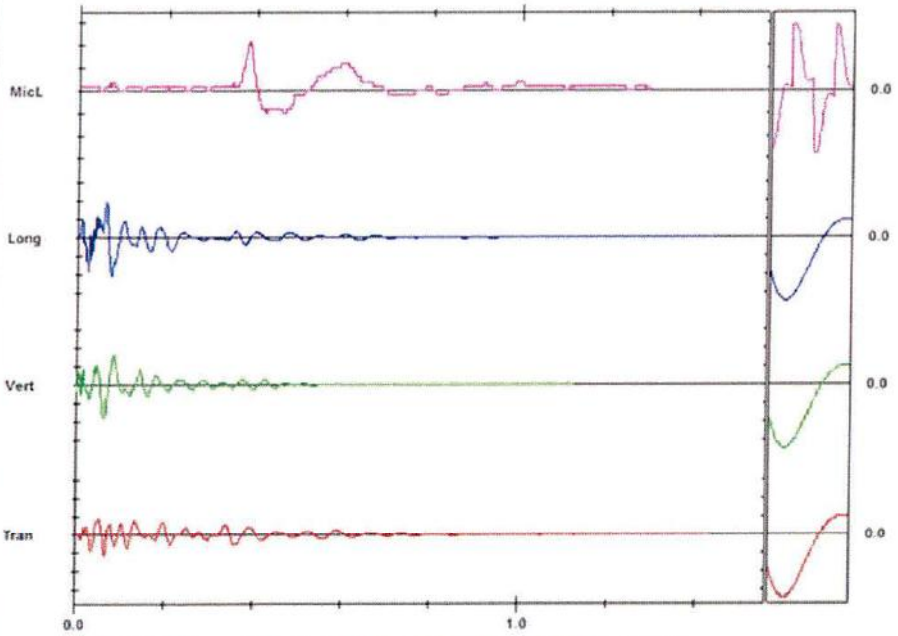
Peak Vector Sum 7.78 mm/s at 4.130 sec

Serial Number	4710 V 2.61 MiniMate
Battery Level	6.3 Volts
Unit Calibration	July 14, 2016 by CIMFR, Dhanbad
File Name	F710GOUF.3L0

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record
Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.00 mm/s/div Mic: 10.00 pa.(L)/div Sensor Check

Printed: March 15, 2017 (V 10.50 - 10.50)

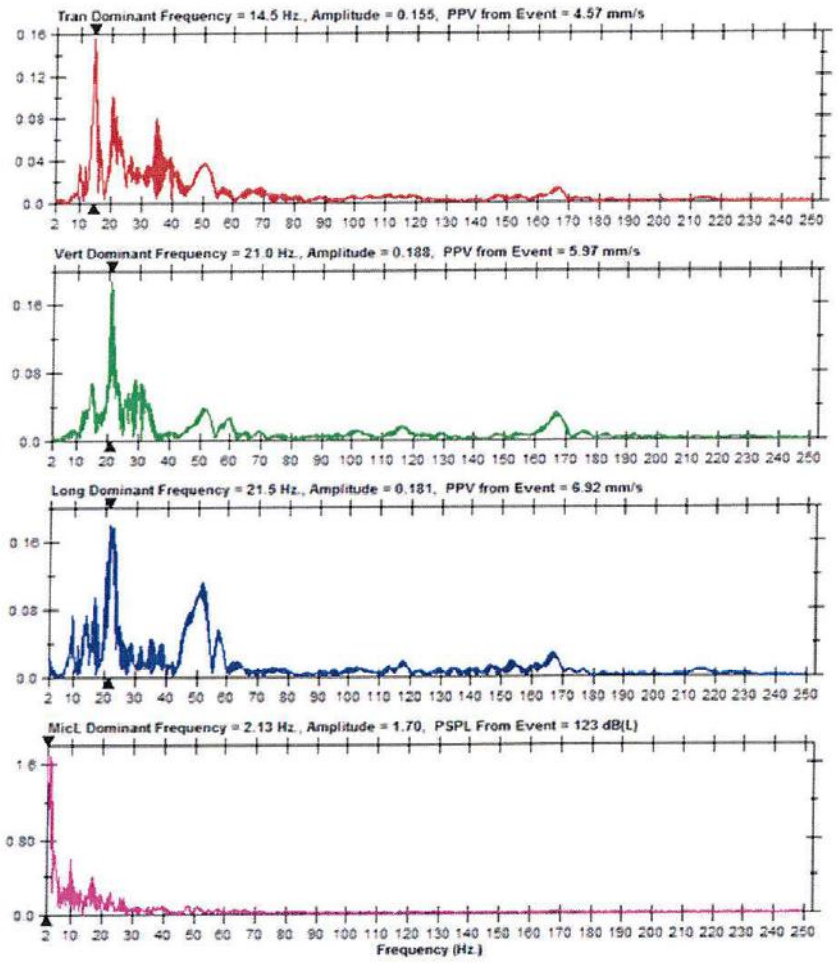
Instantel

FFT Report

Date/Time	Vert at 10:14:09 December 23, 2016	**Serial Number**	4710 V 2.61 MiniMate
Trigger Source	Geo: 0.508 mm/s	**Battery Level**	6.3 Volts
Range	Geo: 127 mm/s	**Unit Calibration**	July 14, 2016 by CIMFR, Dhanbad
Record Time	6.0 sec at 1024 sps	**File Name**	F710GOUF.3L0

Notes
Location: On ground surface
Client: PRISM CEMENT LTD. SATNA
User Name: REE. CSIR-CIMFR, Dhanbad
Converted: December 23, 2016 20:27:06 (V10.30)

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd



Instantel

Event Report

Date/Time	Vert at 16:41:31 December 23, 2016
Trigger Source	Geo: 0.510 mm/s
Range	Geo: 254 mm/s
Record Time	4.0 sec at 1024 sps
Job Number:	1
Notes	
Location	On ground surface
Client:	PRISM CEMENT LTD. SATNA
User Name:	REE-Division, CSIR-CIMFR, Dhanbad
General:	

Serial Number	BE8183 V 10.30-8.17 MiniMate Plus-8
Battery Level	6.2 Volts
Unit Calibration	January 14, 2016 by CIMFR, Dhanbad
File Name	J183GOT2.D70

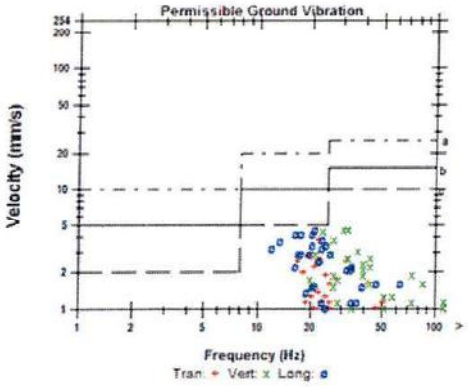
Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd.

Microphone	Linear Weighting
PSPL	122.6 dB(L) at 0.577 sec
ZC Freq	9.7 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 507 mv)

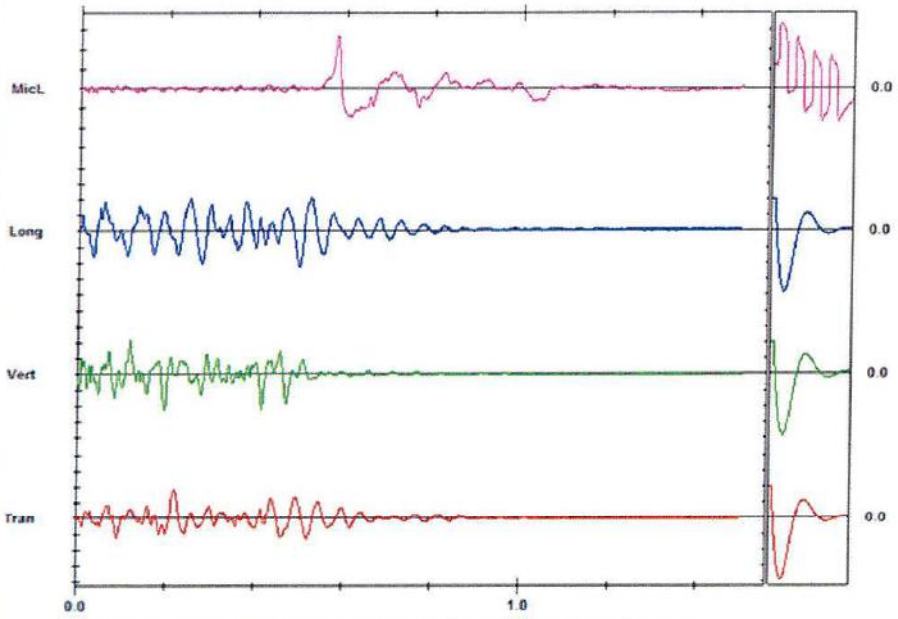
	Tran	Vert	Long	
PPV	3.81	4.57	4.57	mm/s
ZC Freq	22	32	21	Hz
Time (Rel. to Trig)	0.218	0.195	0.497	sec
Peak Acceleration	0.663	0.133	0.106	g
Peak Displacement	0.0282	0.0233	0.0393	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.5	7.5	Hz
Overswing Ratio	3.7	3.5	3.8	

Peak Vector Sum 5.24 mm/s at 0.497 sec

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record
Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.00 mm/s/div Mic: 10.00 pa (L)/div Sensor Check

Printed: March 19, 2017 (V 10.30 - 10.30)

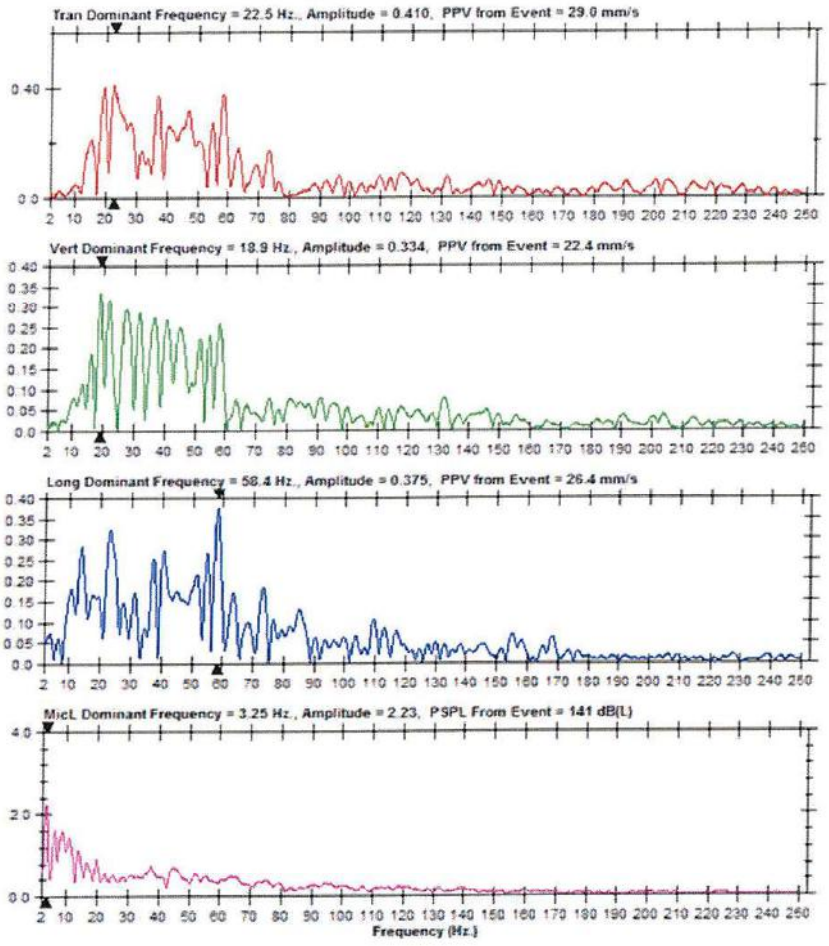
Instantel

FFT Report

Date/Time	Vert at 16:41:33 December 23, 2016	**Serial Number**	BA13814 V 8.12-8.0 BlastMate III
Trigger Source	Geo: 0.510 mm/s	**Battery Level**	6.2 Volts
Range	Geo: 254 mm/s	**Unit Calibration**	July 14, 2016 by CIMFR, Dhanbad
Record Time	4.0 sec at 4096 sps	**File Name**	0814GOT2.D90
Job Number:	1		

Notes
Location: On the ground surface
Client: PRISM CEMENT LTD. SATNA
User Name: REE Division, CSIR-CIMFR,Dhanbad
General:

Extended Notes
Blast vibration study at Mandhi and Hinauti Limestone Mines of Prism Cement Ltd



Instantel

Event Report

Date/Time	Vert at 16:41:31 December 23, 2016
Trigger Source	Geo: 0.510 mm/s
Range	Geo: 254 mm/s
Record Time	4.0 sec at 1024 sps
Job Number:	1
Notes	
Location:	On ground surface
Client:	PRISM CEMENT LTD. SATNA
User Name:	REE-Division, CSIR-CIMFR, Dhanbad
General:	

Serial Number	BE8183 V 10.30-8.17 MiniMate Plus/8
Battery Level	6.2 Volts
Unit Calibration	January 14, 2016 by CIMFR, Dhanbad
File Name	J183GOT2.D70

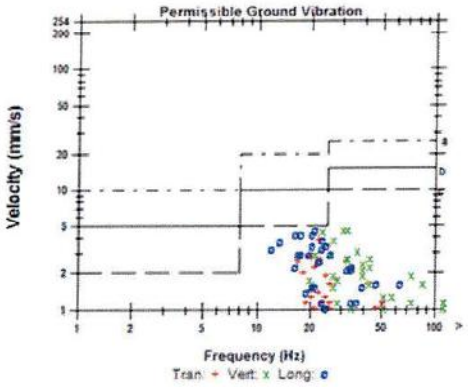
Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd.

Microphone	Linear Weighting
PSPL	122.6 dB(L) at 0.577 sec
ZC Freq	9.7 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 507 mv)

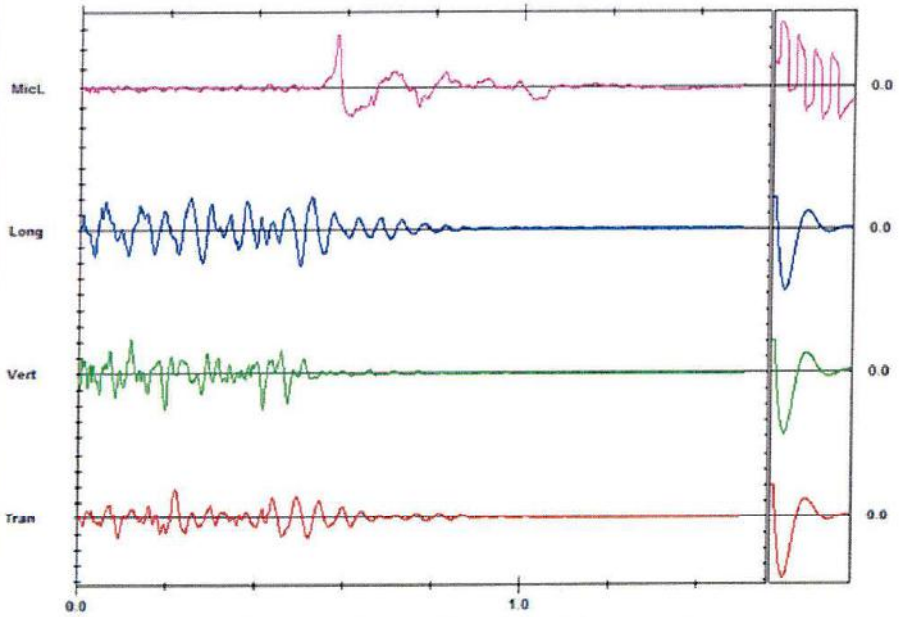
	Tran	Vert	Long	
PPV	3.81	4.57	4.57	mm/s
ZC Freq	22	32	21	Hz
Time (Rel. to Trig)	0.218	0.195	0.497	sec
Peak Acceleration	0.0663	0.133	0.106	g
Peak Displacement	0.0282	0.0233	0.0393	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.5	7.5	Hz
Overswing Ratio	3.7	3.5	3.8	

Peak Vector Sum 5.24 mm/s at 0.497 sec

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record
Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.00 mm/s/div Mic: 10.00 pa (L)/div Sensor Check

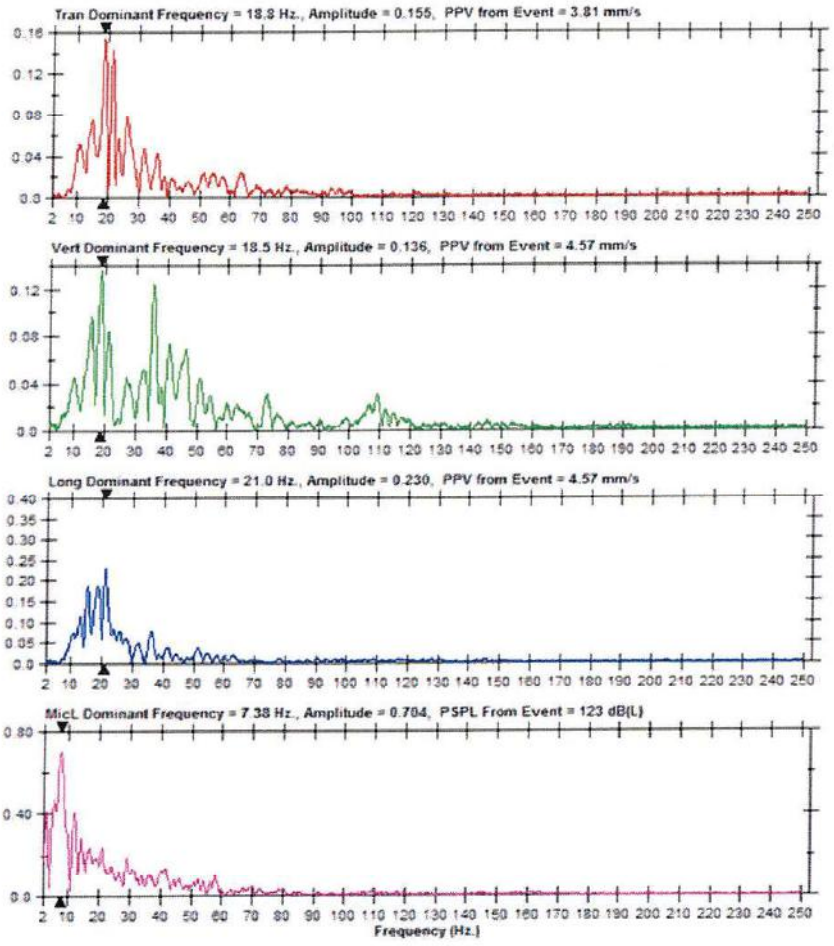
Instantel

FFT Report

Date/Time	Vert at 16:41:31 December 23, 2016	**Serial Number**	BE8183 V 10.30-8.17 MiniMate Plus/8
Trigger Source	Geo: 0.510 mm/s	**Battery Level**	6.2 Volts
Range	Geo: 254 mm/s	**Unit Calibration**	January 14, 2016 by CIMFR, Dhanbad
Record Time	4.0 sec at 1024 sps	**File Name**	J183GOT2.D70
Job Number:	1		

Notes
Location: On ground surface
Client: PRISM CEMENT LTD, SATNA
User Name: REE-Division, CSIR-CIMFR, Dhanbad
General:

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd



Printed: March 19, 2017 (V 10.30 - 10.30)

Instantel

Event Report

Date/Time	Vert at 14:33:20 December 23, 2016
Trigger Source	Geo: 0.510 mm/s
Range	Geo: 254 mm/s
Record Time	4.0 sec at 4096 sps
Job Number:	1
Notes	
Location:	On the ground surface
Client:	PRISM CEMENT LTD. SATNA
User Name:	REE Division, CSIR-CIMFR,Dhanbad
General:	

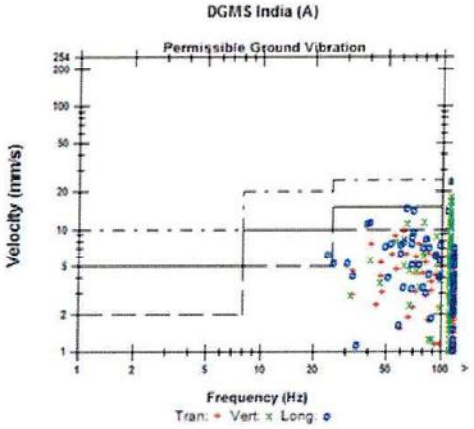
Serial Number	BA13814 V 8.12-8.0 BlastMate III
Battery Level	6.2 Volts
Unit Calibration	July 14, 2016 by CIMFR, Dhanbad
File Name	0814GOSW.FK0

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd

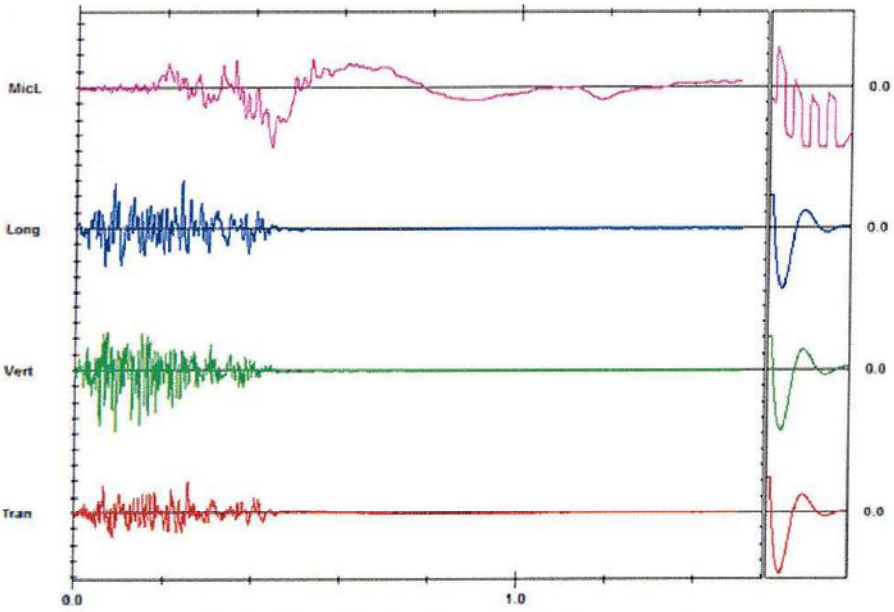
Microphone	Linear Weighting
PSPL	131.5 dB(L) at 0.438 sec
ZC Freq	5.9 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 728 mv)

	Tran	Vert	Long	
PPV	9.52	18.9	15.0	mm/s
ZC Freq	62	114	64	Hz
Time (Rel. to Trig)	0.255	0.092	0.237	sec
Peak Acceleration	0.689	1.43	0.795	g
Peak Displacement	0.0213	0.0244	0.0422	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.4	7.6	7.5	Hz
Overswing Ratio	3.6	3.3	3.7	

Peak Vector Sum 20.4 mm/s at 0.093 sec



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record
Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 20.0 pa (L)/div Sensor Check

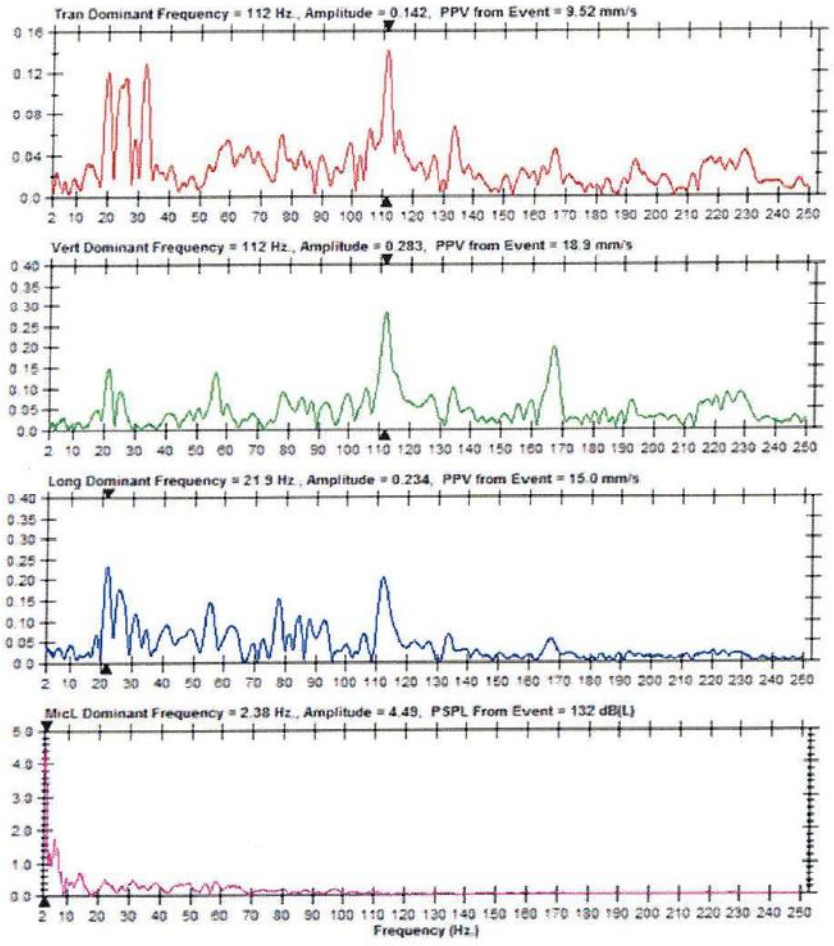
Instantel

FFT Report

Date/Time	Vert at 14:33:20 December 23, 2016	**Serial Number**	BA13814 V 8.12-8.0 BlastMate III
Trigger Source	Geo: 0.510 mm/s	**Battery Level**	6.2 Volts
Range	Geo: 254 mm/s	**Unit Calibration**	July 14, 2016 by CIMFR, Dhanbad
Record Time	4.0 sec at 4096 sps	**File Name**	C814GOSW.FK0
Job Number:	1		

Notes
Location: On the ground surface
Client: PRISM CEMENT LTD. SATNA
User Name: REE Division, CSIR-CIMFR,Dhanbad
General:

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd



Event Report

Date/Time	Long at 14:33:26 December 23, 2016
Trigger Source	Geo: 0.508 mm/s
Range	Geo: 127 mm/s
Record Time	6.0 sec at 1024 sps
Notes	
Location:	On ground surface
Client:	PRISM CEMENT LTD. SATNA.
User Name:	REE, CSIR-CIMFR, Dhanbad
Converted:	December 23, 2016 20:27:06 (V10.30)

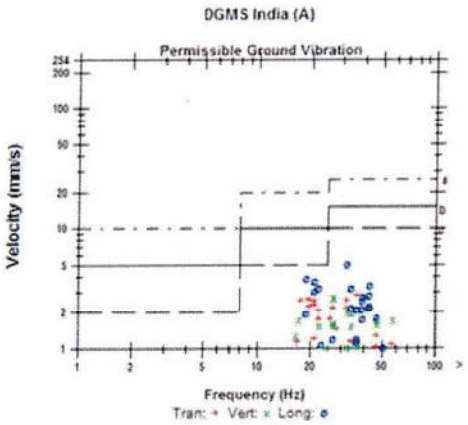
Extended Notes
Blast vibration study at Mandhi and Hinauti Limestone Mines of Prism Cement Ltd.

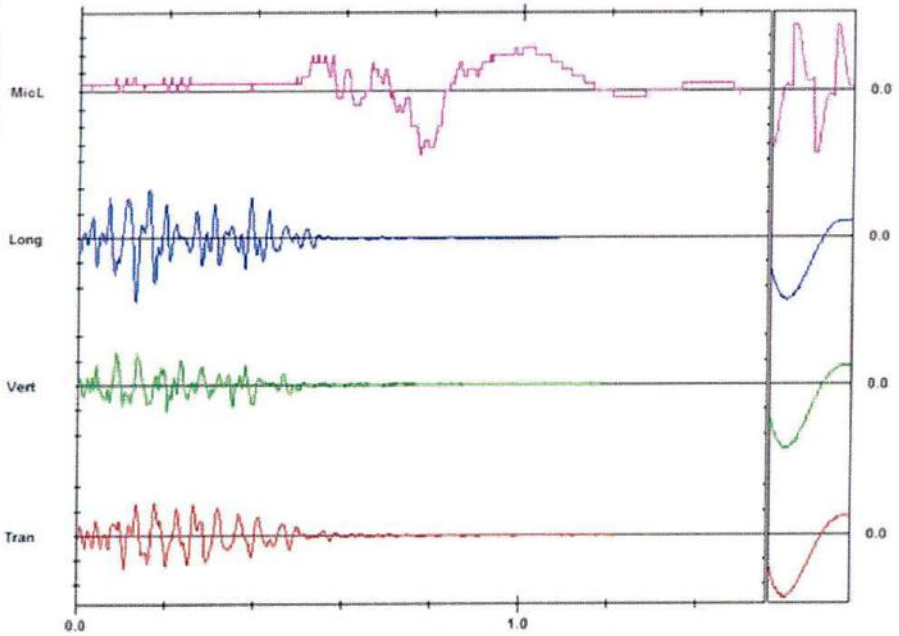
Microphone	Linear Weighting
PSPL	119.1 dB(L) at 0.768 sec
ZC Freq	4.0 Hz
Channel Test	Passed (Freq = 20.0 Hz Amp = 476 mv)

	Tran	Vert	Long	
PPV	2.79	2.67	5.14	mm/s
ZC Freq	37	27	32	Hz
Time (Rel. to Trig)	0.110	0.089	0.130	sec
Peak Acceleration	0.0663	0.0795	0.106	g
Peak Displacement	0.0182	0.0157	0.0245	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.7	7.8	7.8	Hz
Overswing Ratio	3.4	3.4	3.7	

Peak Vector Sum 5.29 mm/s at 0.132 sec

Serial Number	4710 V 2.61 MiniMate
Battery Level	6.3 Volts
Unit Calibration	July 14, 2016 by CIMFR, Dhanbad
File Name	F710GOUR.3Q0





Time scale has been modified and may not represent the actual length of the event record
Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.00 mm/s/div Mic: 6.00 pa (L)/div Sensor Check

Printed: March 13, 2017 (V 10.30 - 10.30)

Instantel

FFT Report

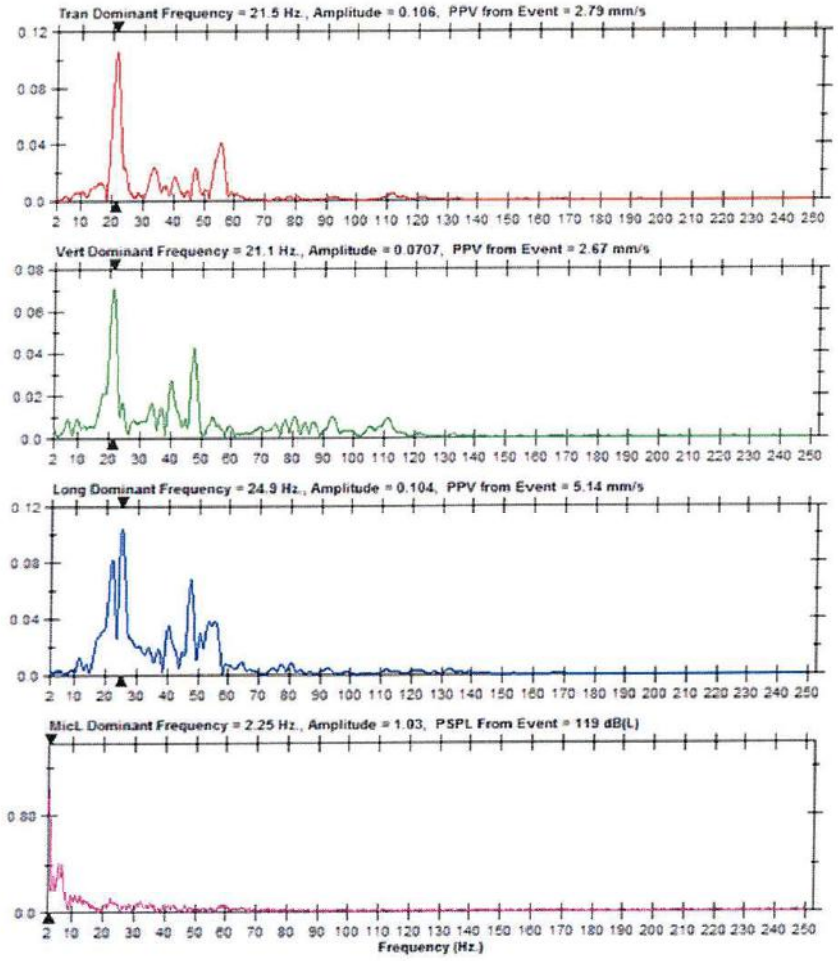
Date/Time	Long at 14:33:26 December 23, 2016	**Serial Number**	4710 V 2.61 MiniMate
Trigger Source	Geo: 0.508 mm/s	**Battery Level**	6.3 Volts
Range	Geo: 127 mm/s	**Unit Calibration**	July 14, 2016 by CIMFR, Dhanbad
Record Time	6.0 sec at 1024 sps	**File Name**	F710GOUR.3Q0

Notes

Location	On ground surface
Client	PRISM CEMENT LTD. SATNA
User Name	REE_CSIR-CIMFR, Dhanbad
Converted	December 23, 2016 20:27:06 (V10.30)

Extended Notes

Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd.



Instantel

Event Report

Date/Time	Vert at 12:42:56 December 25, 2016
Trigger Source	Geo: 0.510 mm/s
Range	Geo: 254 mm/s
Record Time	6.0 sec at 1024 sps

Notes

Location:	On Ground Surface
Client:	PRISM CEMENT LTD. SATNA
User Name:	REE Division, CSIR-CIMFR, Dhnabad
General:	

Extended Notes

Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd

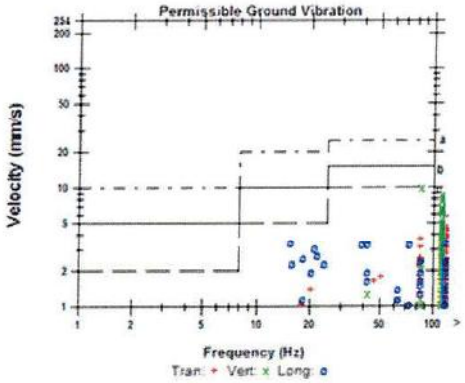
Microphone	Linear Weighting
PSPL	121.8 dB(L) at 0.742 sec
ZC Freq	3.2 Hz
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	5.71	9.91	3.43	mm/s
ZC Freq	>100	85	>100	Hz
Time (Rel. to Trig)	0.292	0.280	0.290	sec
Peak Acceleration	0.371	0.703	0.172	g
Peak Displacement	0.00893	0.0162	0.0326	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.4	7.6	7.6	Hz
Overswing Ratio	3.8	3.6	4.0	

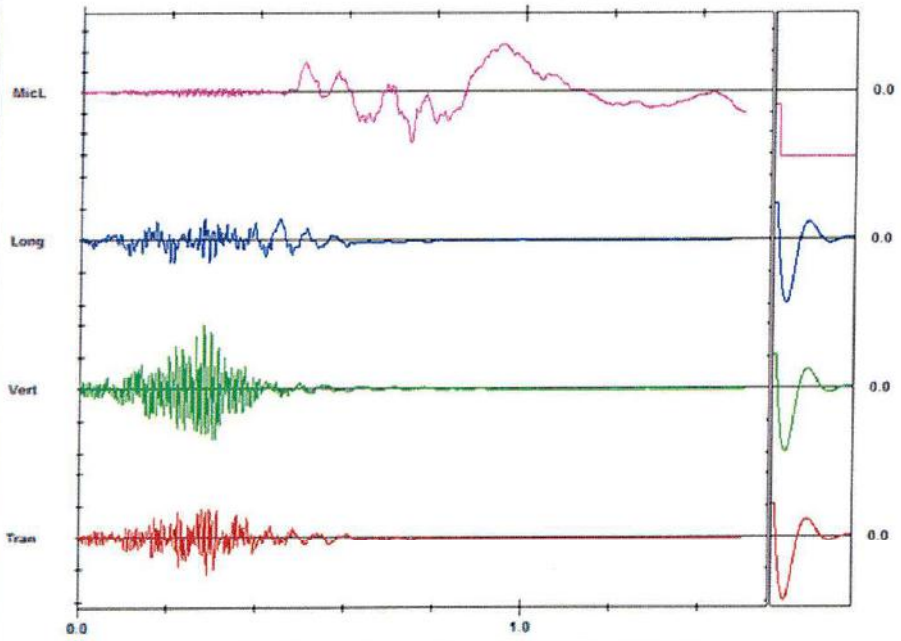
Peak Vector Sum 10.7 mm/s at 0.279 sec

Serial Number	BE10010 V 10.30-1.1 Minimate Blaster
Battery Level	6.2 Volts
Unit Calibration	January 14, 2016 by CIMFR, Dhanbad
File Name	L010GOWG.NK0

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record

Time Scale: 0.20 sec/div **Amplitude Scale**: Geo: 5.00 mm/s/div Mic: 10.00 pa (L)/div Sensor Check

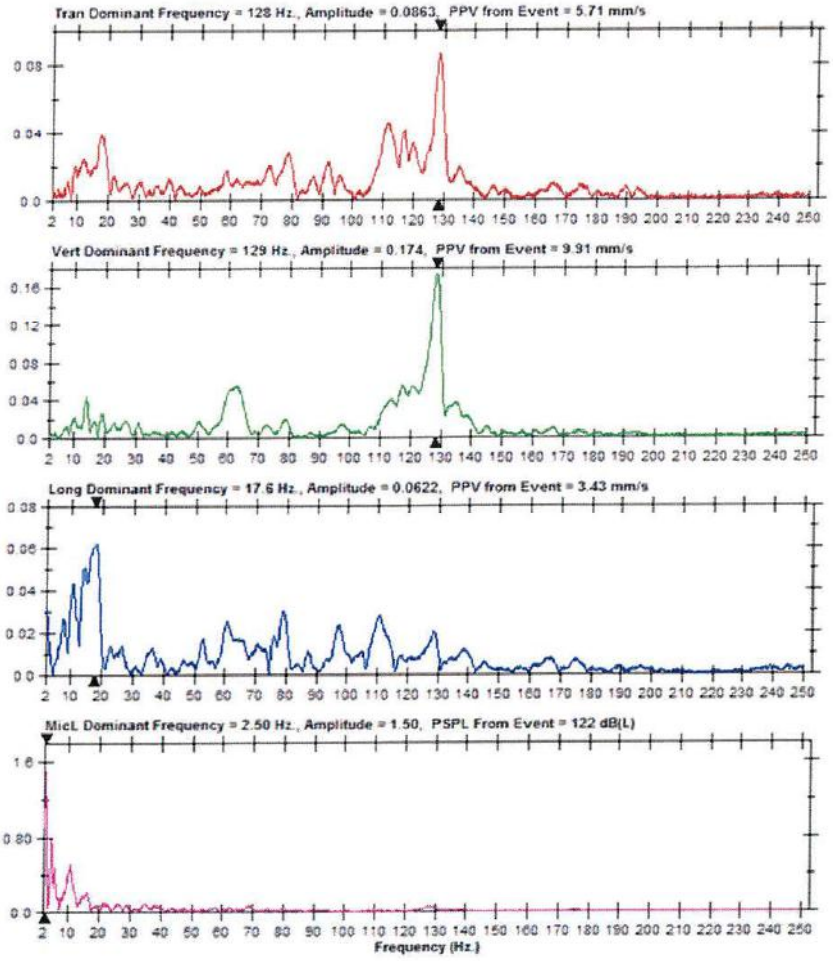
Instantel

FFT Report

Date/Time	Vert at 12:42:56 December 25, 2016	**Serial Number**	BE10010 V 10.30-1.1 Minimate Blaster
Trigger Source	Geo: 0.510 mm/s	**Battery Level**	6.2 Volts
Range	Geo: 254 mm/s	**Unit Calibration**	January 14, 2016 by CIMFR, Dhanbad
Record Time	6.0 sec at 1024 sps	**File Name**	L010GOWG.NK0

Notes
Location: On Ground Surface
Client: PRISM CEMENT LTD. SATNA
User Name: REE Division, CSIR-CIMFR, Dhanbad
General:

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd



Instantel

Event Report

Date/Time Vert at 16:22:41 December 26, 2016
Trigger Source Geo: 0.510 mm/s
Range Geo: 254 mm/s
Record Time 3.0 sec at 1024 sps
Notes
Location: On Ground Surface
Client: PRISM CEMENT LTD. SATNA
User Name: REE Division, CSIR-CIMFR, Dhanbad
General:

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd

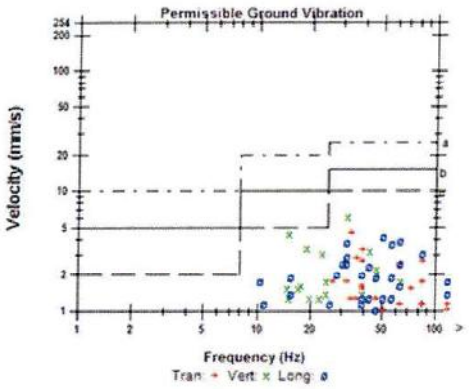
Microphone Linear Weighting
PSPL 123.9 dB(L) at 0.271 sec
ZC Freq 9.0 Hz
Channel Test Check (Freq = 8.0 Hz Amp = 8 mv)

	Tran	Vert	Long	
PPV	4.57	6.10	4.19	mm/s
ZC Freq	34	32	51	Hz
Time (Rel. to Trig)	0.108	0.051	0.064	sec
Peak Acceleration	0.172	0.159	0.199	g
Peak Displacement	0.0203	0.0318	0.0198	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.7	7.6	Hz
Overswing Ratio	3.8	3.6	4.0	

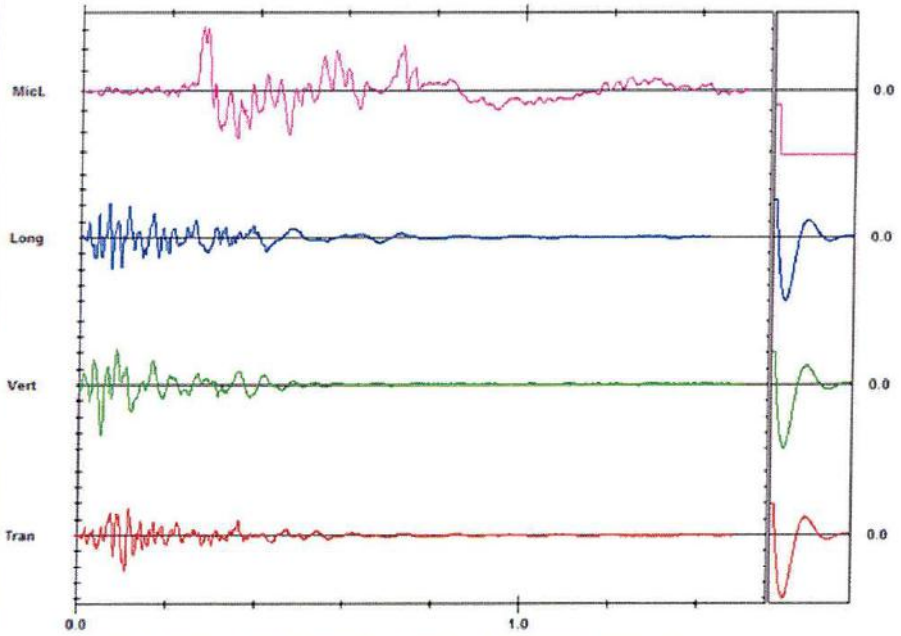
Peak Vector Sum 6.66 mm/s at 0.051 sec

Serial Number BE10010 V 10.30-1.1 Minimate Blaster
Battery Level 6.2 Volts
Unit Calibration January 14, 2016 by CIMFR, Dhanbad
File Name L010GOYL.HTO

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record
Time Scale: 0.20 sec/div **Amplitude Scale**: Geo: 2.00 mm/s/div Mic: 10.00 pa (L)/div Sensor Check

Printed: March 19, 2017 (V 10.30 - 10.30)

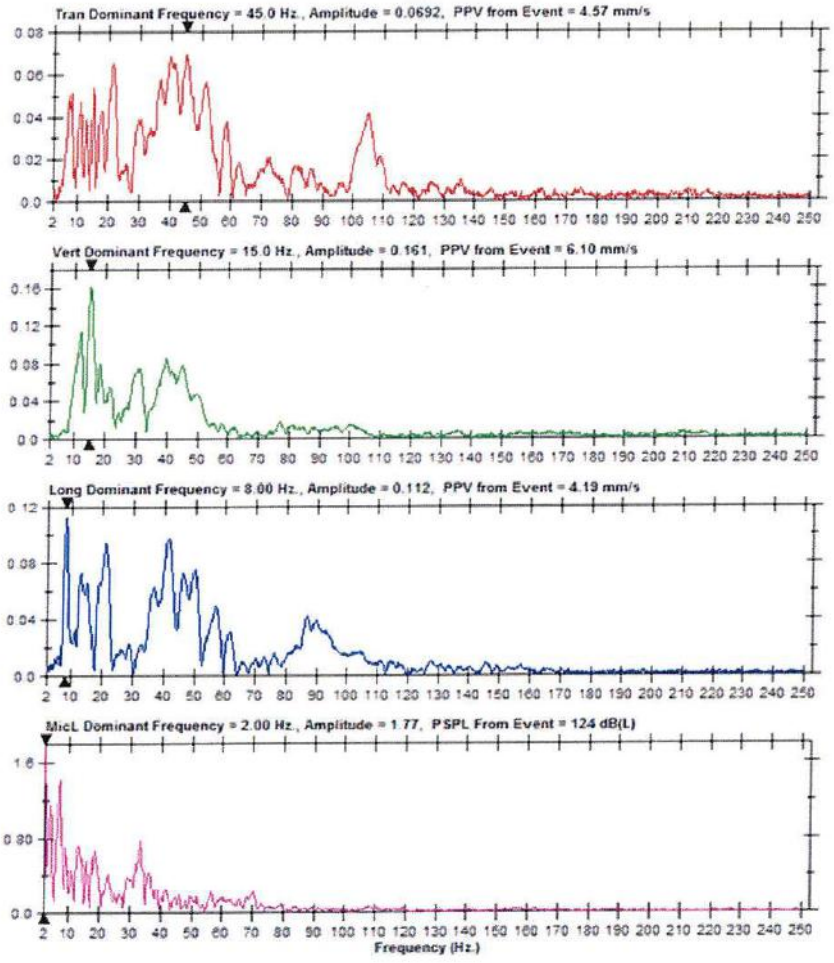
Instantel

FFT Report

Date/Time	Vert at 16:22:41 December 26, 2016	**Serial Number**	BE10010 V 10.30-1.1 Minimate Blaster
Trigger Source	Geo: 0.510 mm/s	**Battery Level**	6.2 Volts
Range	Geo: 254 mm/s	**Unit Calibration**	January 14, 2016 by CIMFR, Dhanbad
Record Time	3.0 sec at 1024 sps	**File Name**	L010GQYL.HT0

Notes
Location: On Ground Surface
Client: PRISM CEMENT LTD. SATNA
User Name: REE Division, CSIR-CIMFR, Dhnabad
General:

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd.



Instantel

Event Report

Date/Time	Long at 16:38:31 December 26, 2016
Trigger Source	Geo: 0.508 mm/s
Range	Geo: 127 mm/s
Record Time	4.0 sec at 1024 sps

Notes

Location:	On ground surface
Client:	PRISM CEMENT LTD. SATNA
User Name:	REE, CSIR-CIMFR, Dhanbad
Converted:	December 26, 2016 22:51:18 (V10.30)

Extended Notes

Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd

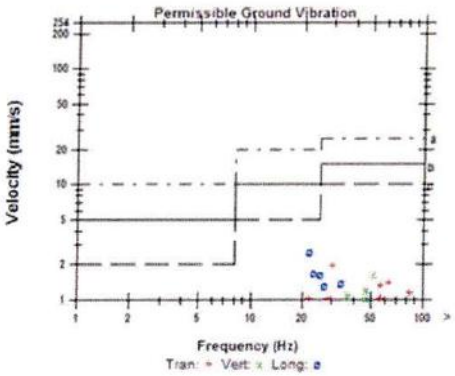
Microphone	Linear Weighting
PSPL	121.6 dB(L) at 0.321 sec
ZC Freq	14 Hz
Channel Test	Passed (Freq = 20.0 Hz Amp = 476 mv)

	Tran	Vert	Long	
PPV	1.97	1.66	2.60	mm/s
ZC Freq	30	51	22	Hz
Time (Rel. to Trig)	0.135	0.128	0.121	sec
Peak Acceleration	0.0862	0.0862	0.113	g
Peak Displacement	0.00738	0.00592	0.0132	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.7	7.8	7.7	Hz
Overswing Ratio	3.5	3.4	3.6	

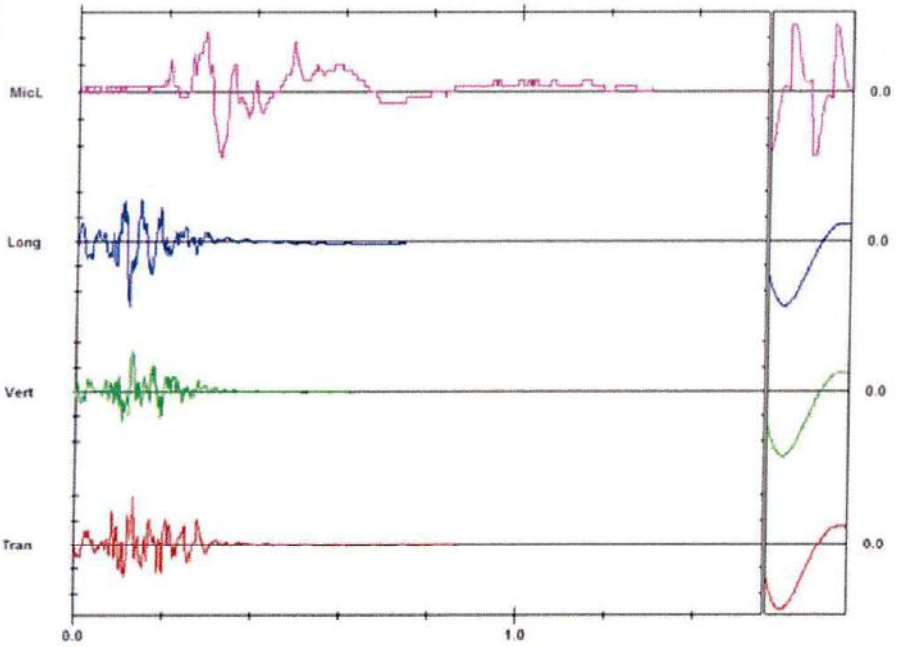
Peak Vector Sum 2.83 mm/s at 0.121 sec

Serial Number	4710 V 2.61 MiniMate
Battery Level	6.3 Volts
Unit Calibration	July 14, 2016 by CIMFR, Dhanbad
File Name	F710GP0G.W70

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record

Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 1.000 mm/s/div Mic: 10.00 pa (L)/div Sensor Check

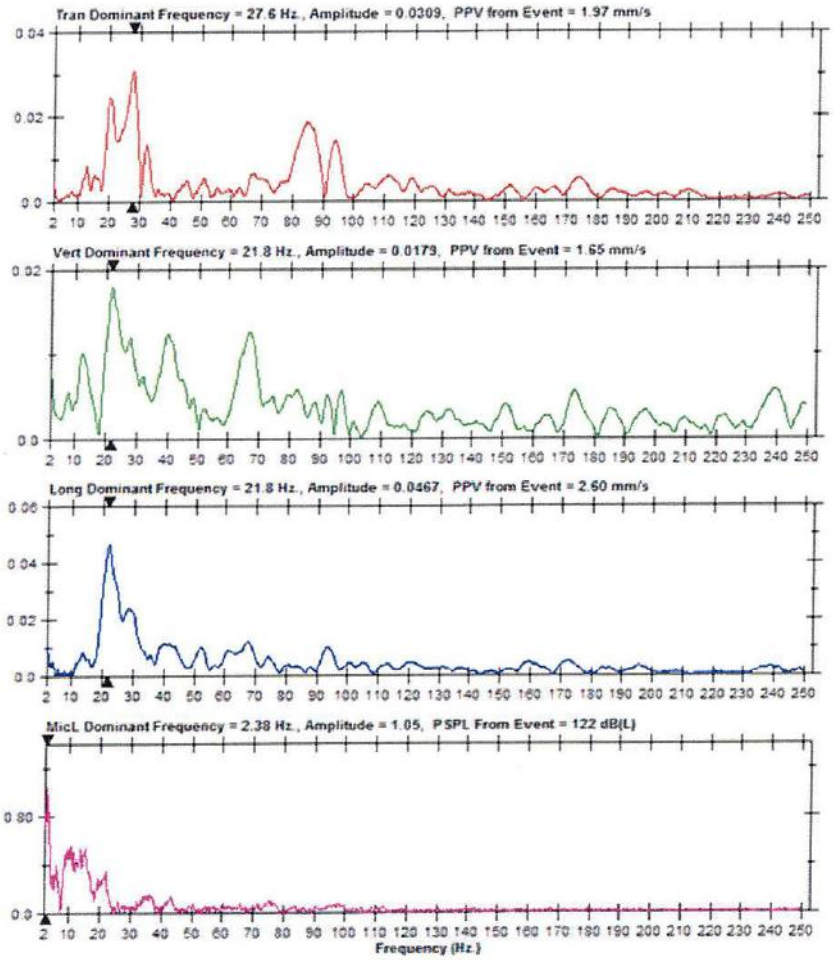
Instantel

FFT Report

Date/Time	Long at 16:38:31 December 26, 2016	**Serial Number**	4710 V 2.61 MiniMate
Trigger Source	Geo: 0.508 mm/s	**Battery Level**	6.3 Volts
Range	Geo: 127 mm/s	**Unit Calibration**	July 14, 2016 by CIMFR, Dhanbad
Record Time	4.0 sec at 1024 sps	**File Name**	F710GP0G.W70

Notes
Location: On ground surface
Client: PRISM CEMENT LTD. SATNA
User Name: REE, CSIR-CIMFR, Dhanbad
Converted: December 26, 2016 22:51:18 (V10.30)

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd



Instantel

Event Report

Date/Time	Vert at 16:53:08 December 26, 2016
Trigger Source	Geo: 0.510 mm/s
Range	Geo: 254 mm/s
Record Time	3.0 sec at 4096 sps
Job Number:	1
Notes	
Location:	On the ground surface
Client:	PRISM CEMENT LTD. SATNA
User Name:	REE Division, CSIR-CIMFR,Dhanbad
General	

Serial Number	BA13814 V.8.12-8.0 BlastMate III
Battery Level	6.2 Volts
Unit Calibration	July 14, 2016 by CIMFR, Dhanbad
File Name	0814GOYM.WK0

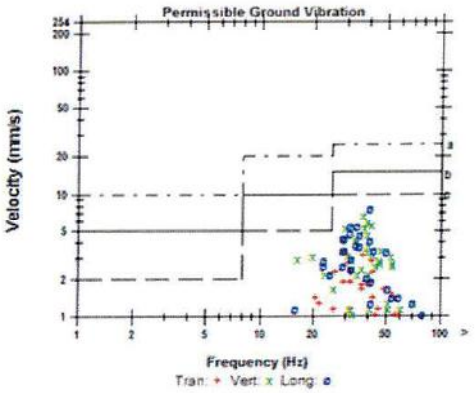
Extended Notes
Blast vibration study at Mandhi and Hinauti Limestone Mines of Prism Cement Ltd.

Microphone	Linear Weighting
PSPL	138.0 dB(L) at 0.566 sec
ZC Freq	41 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 751 mv)

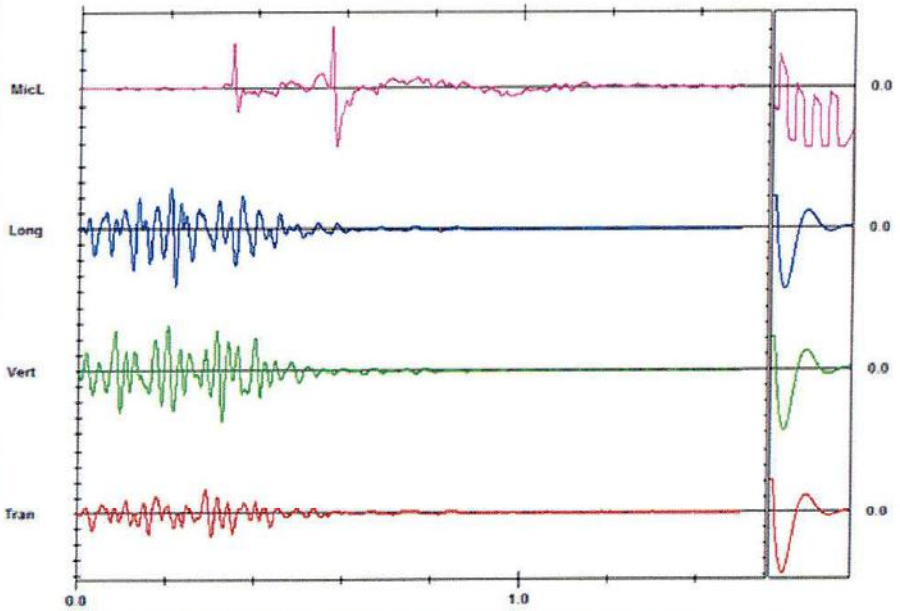
	Tran	Vert	Long	
PPV	3.17	6.60	7.62	mm/s
ZC Freq	31.0	37.2	40	Hz
Time (Rel. to Trig)	0.291	0.325	0.216	sec
Peak Acceleration	0.106	0.212	0.212	g
Peak Displacement	0.0156	0.0296	0.0292	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.2	7.5	7.3	Hz
Overswing Ratio	3.7	3.4	3.8	

Peak Vector Sum 9.00 mm/s at 0.216 sec

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time scale has been modified and may not represent the actual length of the event record
Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.00 mm/s/div Mic: 50.0 pa (L)/div Sensor Check

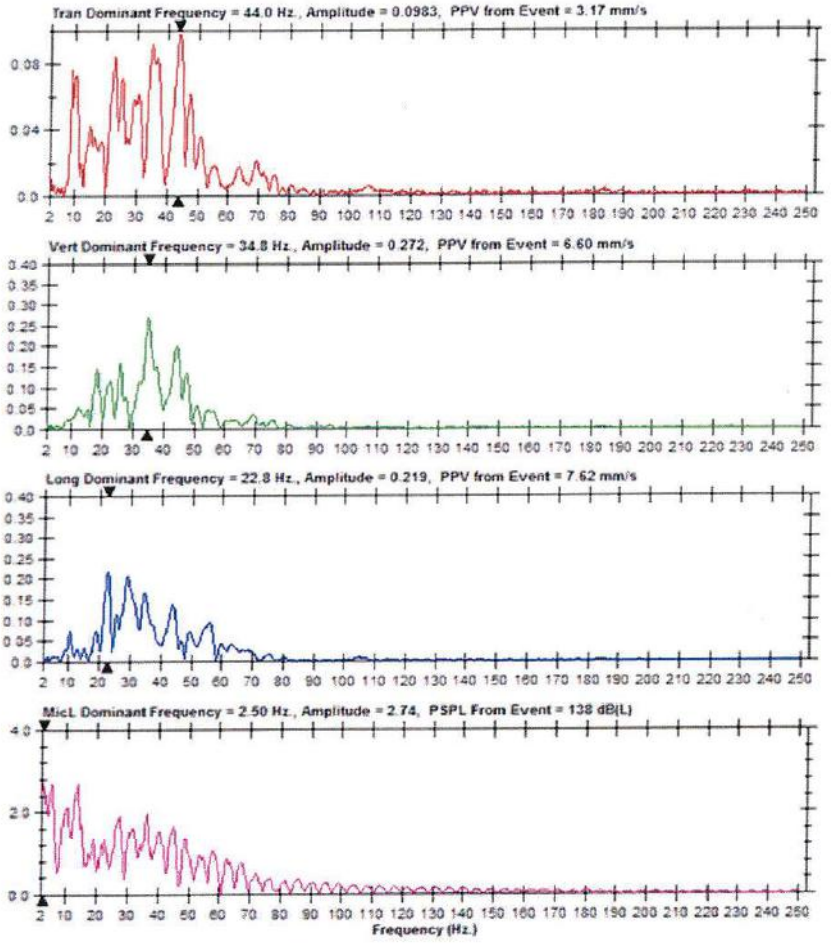
Instantel

FFT Report

Date/Time	Vert at 16:53:08 December 26, 2016	**Serial Number**	BA13814 V 8.12-8.0 BlastMate III
Trigger Source	Geo: 0.510 mm/s	**Battery Level**	6.2 Volts
Range	Geo: 254 mm/s	**Unit Calibration**	July 14, 2016 by CIMFR, Dhanbad
Record Time	3.0 sec at 4096 sps	**File Name**	C814GOYM.WK0
Job Number:	1		

Notes
Location: On the ground surface
Client: PRISM CEMENT LTD. SATNA
User Name: REE Division, CSIR-CIMFR,Dhanbad
General:

Extended Notes
Blast vibration study at Mendhi and Hinauti Limestone Mines of Prism Cement Ltd.



ANNEXURE - 17

COMPLIANCE OF CREP CHARTER BY M/s PRISM CEMENT LMIMTED, MANKAHARI SATNA

S.N.	Guidelines of charter on corporate responsibility for environmental protection.	Latest compliance by Prism Cement Ltd.
1.	Cement Plant's, which are not complying with notified standards, shall do the following to meet the standards: ➢ Augmentation of existing Air Pollution Control Devices-by July 2003. ➢ Replacement of existing Air Pollution Control Devices - By july-2004.	Industry is complying with notified standards.
2.	Cement Plants located in critically polluted or urban areas (Including five 5 km distance outside urban boundary) will meet 100 mg/NM^3 limit of particulate matter by December, 2004 & continue working to reduce the emission of particulate matter to 50 mg/NM^3	Industry is not located in urban or critically polluted area. However we are maintaining the emission limits specified by MoEF and MPPCB
3.	The new Cement Kilns to be accorded NOC/Environmental Clearance w.e.f. 01.04.2003 will meet the limit of 50 mg/ NM^3 for particulate matter emissions	All the stacks of our Unit-II, whose clearance was given in 2008, are now maintaining norms of stack emission of 30 mg/NM^3 for particulate matter.
4.	CPCB will evolve load-based standards by December 2003.	NA
5.	CPCB & NCBM will evolve SO_2 & NO_x emission standards by June 2004.	Industry is maintaining the emission standards laid down by MoEF for SO2 & NOx
6.	The Cement industries will control fugitive emissions from all the raw material & products storage & transfer points by December 2003. However feasibility for the control of fugitive emissions from limestone & coal storage areas will be decided by the National Task force (NTF). The NTF shall submit its recommendations within three months.	All due care is being taken to control fugitive dust generation. All the transfer points are connected to bag filters. Water sprinkling is done on crusher hopper and subsequent belt conveyor. Covered shed has been constructed for storage of Coal and other raw materials. Fly ash, Clinker and Cement is stored in silos
7.	CPCB, NCBM, BIS & oil refineries will jointly prepare the policy on use of petroleum coke as fuel in cement kiln by July 2003.	We are having facility to burn pet coke as fuel in Kiln.
8.	After performance evaluation of various	Industry has installed Continuous

	types of continuous monitoring equipment & feedback from the industries & equipment manufactures, NTF will decide feasible unit operations/sections for installation of continuous monitoring equipment. The industry will install continuous monitoring systems (CMS) by December 2003.	monitoring equipment for stack emissions as well as ambient air quality. These equipments have been connected with CPCB & MPPCB.
9.	Trippings in Kiln ESP to be minimized by July 2003 as per recommendation of NTF.	Industry is having Bag House in his Kiln/Raw mills Section, therefore there is no such problem of tripping
10.	Utilization of waste material like fly ash & blast furnace slag.	We are not having thermal power plant hence there is no generation of fly ash. However we are procuring the fly ash from the neighboring thermal power plants & utilizing it for making PPC. Around 22% to 30% of fly ash is used in making PPC.
11.	Inventorization of hazardous waste & efforts to decrease the generation of it & utilization of high calorific waste in cement Kiln.	Generation of hazardous waste has been substantially decreased. We have started taking electricity from MPSEB. By doing this generation of approx. 25 KL /month of waste oil has been decreased. Report of Hazardous waste generation is maintained and Details of disposal are being sent to MPPCB in prescribed format of Form 4 & 13.
12.	Cement industries will carry out feasibility study & submit target dates to CPCB for Co-generation of power by July 2003.	Feasibility of WHRS is being studied.

ANNEXURE - 18

Monitoring land use/land cover change using remote sensing and GIS techniques

Final Report

" Digital Processing Lease Area-(772 Ha, 512 Ha. ,117 Ha, & 99 Ha) using remote sensing is required for Monitoring land use pattern" *for Prism Johnson Ltd (Formerly Prism cement Ltd) in Satna, Madhya Pradesh.*

Purchase Order .
PO No : 3100123562 - P200
PO Date : 02.06.2017

Submitted by:
SPA GEO TECHNOLOGIES PVT LIMITED
8A, 3rd Floor, Mahaluxmi Metro Tower, C2, Sector -4
Vaishali, NCR, Ghaziabad - 201012
URL: www.spageo.co.in, Email: info@spageo.co.in ; alok@spageo.co.in
Tel: 91-120-4567200, Fax: 91-120-4567100

Contents

1. Introduction

Prism Johnson Limited is professionally managed Company promoted by the Rajan Raheja Group. Prism Johnson Limited is India's largest integrated Building Materials Company with a wide range from cement, ready-mixed concrete, tiles, bath products to kitchens. The Company has three Divisions, viz. Prism Cement, H & R Johnson (India), and RMC Readymix (India). Prism Cement primarily caters to the demand in the Northern Region, mainly in the States of Uttar Pradesh, Bihar and Madhya Pradesh. The capacity expansion has established the Division's brand in new markets and to a larger consumer base. A team of experienced engineers and a dedicated workforce combined with a high level of automation and sophisticated control systems have placed the Division's products in the premium segment.

Prism Johnson Ltd (Formerly Prism cement Ltd) commenced its production in August 1997 and manufactures Portland Pozzollana Cement (PPC) with the brand name 'Champion' and Ordinary Portland Cement (OPC). It has the highest quality standards due to efficient plant operations with automated controls. It caters mainly to markets of UP, MP and Bihar, with an average lead of 340–370 km of its plant at Satna, MP. It has a wide marketing network with about 2,000 dealers serviced from 46 stocking points.

Cement and mining is seventh of the core industries that contribute significantly to the economic development of India . As for environment point of view, Line stone mining and installation of cement plant is a major habitat transforming activity is lead to change in land Use/Land cover. The change have been described as the most significant regional anthropogenic disturbance to the environment and are consistently with mining of natural resources.

Remote sensing and geographic information system (GIS) are important tool for studying the land use pattern and their dynamic . The change detection in Land use /land cover due to natural and human activities can be monitored by using multi date image to evaluate difference in land cover . The mapping of land use of classes and monitoring their changes with time has been widely recognized. The change detection in Land use/ Land cover due to natural and human activities can be monitored by using multi date images to evaluated differences in land cover where lime stone mines 772.067 HA, 512.317 HA, 117.594 HA & 99.416 HA) and cement unit II are under operation by using multi temporal remote sensing data.

The concept, method and application of land use/land cover studies are introduced to mining area in order to find the land use change and give support to land management and ecological reconstruction. its prerequisite for planning, policy making and developmental program that land use /land cover information its spatial distribution and change in land use pattern is commonly used.

1.1 **Scope of work**

1. Collection of Primary data - Raw satellite data to be obtained from NRSC.

2. Base map to be prepared with help of survey of India Toposheet 63D/14, 63H/2 and other details.

3. Data processing including following steps with the help of application software

a. Geometric correction, rectification and geo referencing .

b. Image enhancement.

c. Training set selection.

d. Signature generation and classification.

e. Validation of classification image.

f. Final thematic map preparation.

4.The map to be prepared on scale of 1:50000.

6. Comparative study with respect to land use change in the last three years.

1.2. **Objectives**

The main objective of present study is to understand land use /land cover change in the time and space , with special reference to the cement & mining activities being carried by M/s Prism Johnson Ltd (Formerly Prism cement Ltd) , which is also one of the special condition of the environment clearance issued.

1.3. **Study Area**

The study area lies in Tehsil-Rampur baghelan, Satna district (MP) where cement Plant-II . The area is well connected to broad gauge line of central railway Linking ,satna with Rewa. The nearest major railhead is Satna on the jabalpur- Allahabad board guge section of central railway and is well connected to the major cities of the country. There is a good network of roads, there is an all weather motor able road up to project site. it is 22 km. from Satna city and 3 Km. from Satna - Rewa highway.

The details of the Mine lease areas are listed in the Table 1:

Table - 1

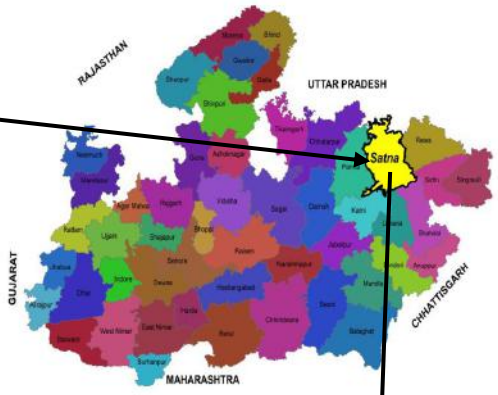
Details	**Cement Plant**	**Hinouti & Sijhatta Lime stone (772.067 & 99.416)**	**Mendhi Lime stone Mine (117.594)**	**Baghai Limestone Mine (512.317)**
Village	Mankhari	Hinouti & Sijhatta	Mendhi	Baghai
Tehsil	Rampur,Baghelan	Rampur,Baghelan	Rampur,Baghelan	Rampur,Baghelan
District	Satna	Satna	Satna	Satna
State	Madhya Pradesh	Madhya Pradesh	Madhya Pradesh	Madhya Pradesh

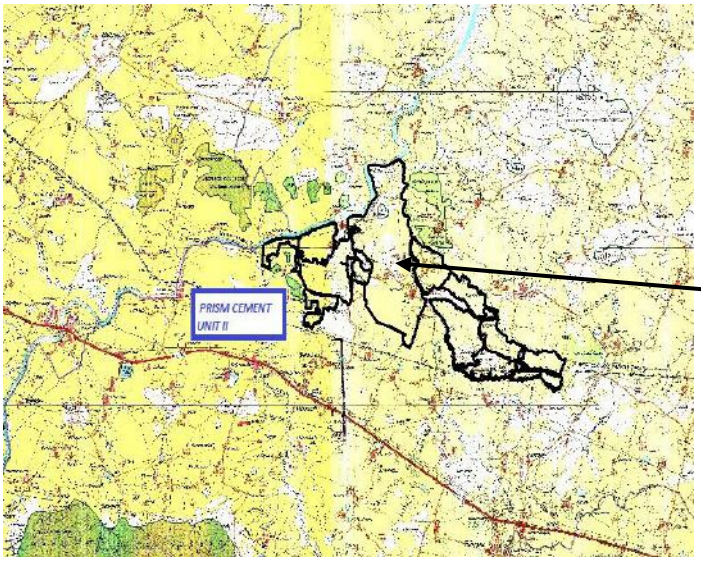
Toposheet No.	63D/14&63H/2	63D/14&63H/2	63H/2	63H/2
National Highway	N.H. - 39 Gwalior to Rewa			
Nearest River	Tamas River 2.15 Km.	Adjecnt to the boundary (In NW direction)	Tamas River 3.5 Km. (NW of Baghai)	Tamas River: 4 Km. (NW of Baghai)
Latitude	24°33'32.3"N	24°33'20.71"N	24°34'15.3."N	24°33'20.71"N
Longitude	80°59'34.12"E	80°59'20"E	81°02'26.1"E	81°04'47.8"E
Nearest Town	Satna (21 km)	Satna (18 Km) Towards west	Satna (24 Km) Towards west	Satna (23 Km) Towards west
Nearest Railway station	Satna railway station (20Km.)	Satna on the jabalpur-Allahabad board gauge section of west central Railway (18 KM.)	Satna on the jabalpur-Allahabad board gauge section of west central Railway (22 KM.)	Satna on the jabalpur-Allahabad board gauge section of west central Railway (20 KM.)
Nearest Airport	Khajuraho (120 Km.)	Khajuraho (120 Km.)		

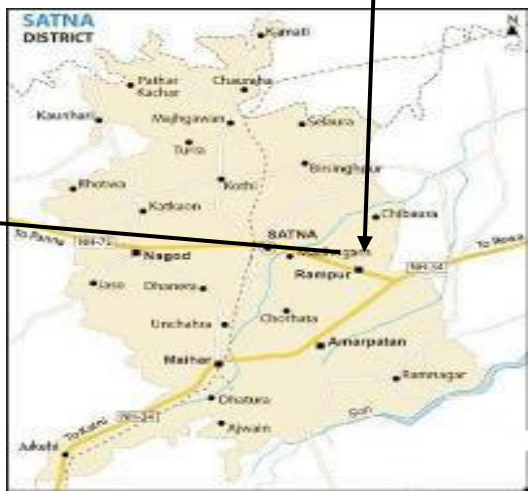
Location Map

INDIA

MADHYA PRADESH







Integrated Industrial Project

Cement Plant and Limestone Mines

(M/S. PRISM JOHNSON LIMITED)

SATNA

2 APPROACH & METHODOLOGY

Indian remote sensing satellite LISS-IV MSS & PAN geocoded data were used to analyze the land use/land cover pattern. The present study utilizes multi-spectral/multi-temporal data of the Indian remote sensing satellite LISS-IV MSS & PAN for thematic mapping. Survey of India toposheet 63D/14, 63H/2 on scale 1:50,000 were used for preparation of base map which was overlay on the LISS-IV for land use /land cover mapping through visual interpretation. Visual interpretation of satellite imagery lead to the identification of fifteen land use/land cover categories. The ground troth verification was carried out in the key areas to rectify the errors in generated maps and then land use/land cover maps were finalized.

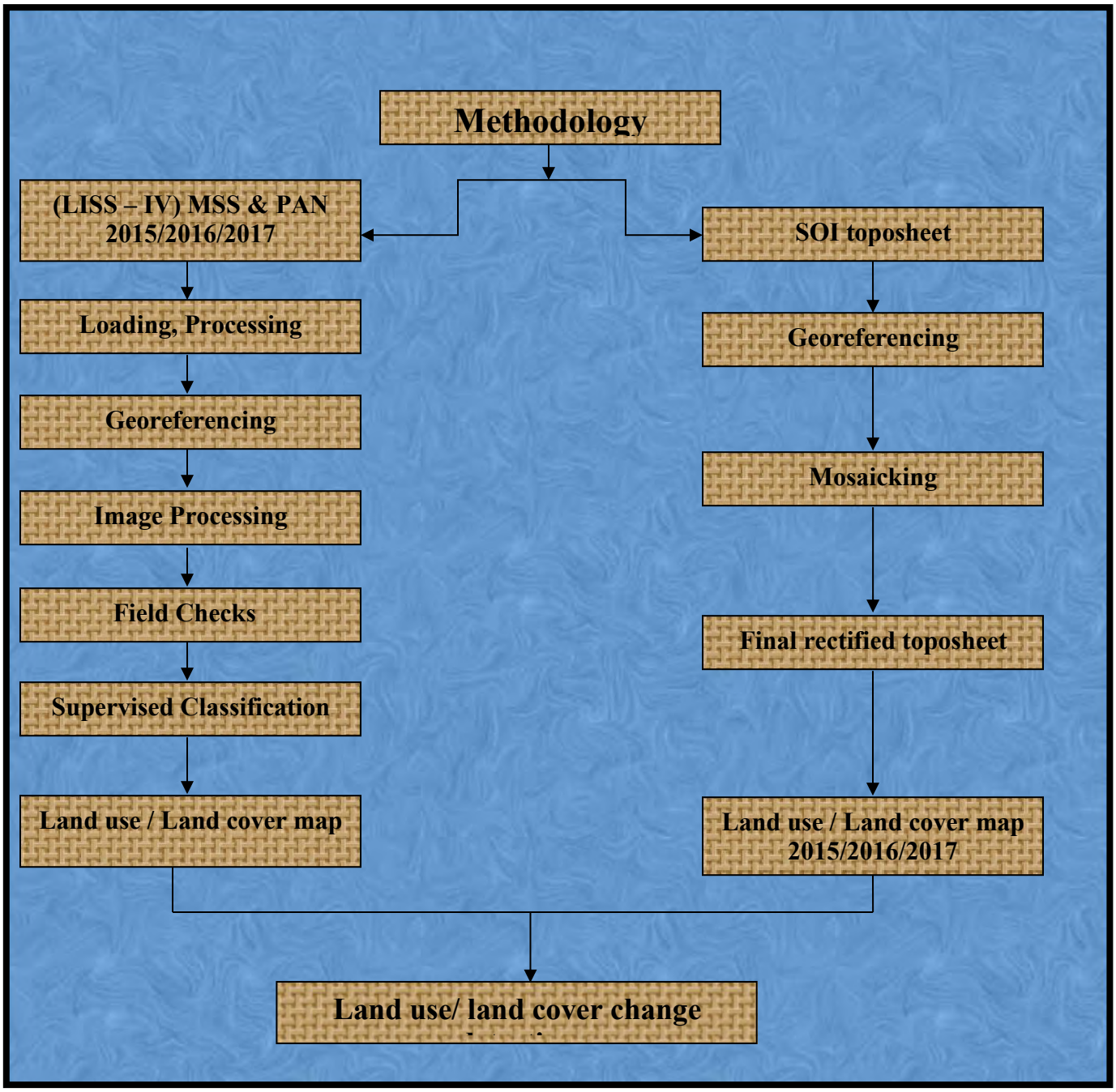
Data available gives uniform spectral and radiometric characteristics and minimize the seasonal variation. The survey of India topographic sheets No 63D/14, 63H/2 on scale 1:50,000 were used for preparation of base map. Secondary data obtained from published material. Visual interpretation is the effective method for classifying land use/land cover especially when the analyst is familiar with the area being classified from satellite data.

These categories were identify on the basis of visual interpretation of satellite data and ground truth verification were done in the key areas for editing and authentication . On screen digitization technique has been carried out to digitize the maps using Arc Map 10.2 software for land use analysis.

There are number of steps involved between RAW satellite data procurement and preparation of final maps. National Remote sensing Centre (NRSC). Hyderabad, being the nodal agency for satellite data supply in India , Provides only RAW digital satellite data , which needs further digital image processing for extracting the information and map preparation before uploading the same in the website. Methodology for land reclamation is given table no.2

With the invent of remote sensing and Geographical Information System (GIS) techniques, land use/cover mapping has given a useful and detailed way to improve the selection of areas designed to agricultural, urban and/or industrial areas of a region. Application of remotely sensed data made possible to study the changes in land cover in less time, at low cost and with better accuracy in association with GIS that provides suitable platform for data analysis, update and retrieval. The advent of high spatial resolution satellite imagery and more advanced image processing and GIS technologies, has resulted in a switch to more routine and consistent monitoring and modeling of land use/land cover patterns. Remote-sensing has been widely used in updating land use/cover maps and land use/cover mapping has become one of the most important applications of remote sensing.

Table - 2


Methodology
(LISS – IV) MSS & PAN 2015/2016/2017
SOI toposheet
Loading, Processing
Georeferencing
Georeferencing
Mosaicking
Image Processing
Field Checks
Final rectified toposheet
Supervised Classification
Land use / Land cover map
Land use / Land cover map 2015/2016/2017
Land use/ land cover change

Data procurement:

After browsing the data quality and date of pass on internet, supply order for data is placed to NRSC. Secondary data like leasehold boundary, topo-sheet are procured for creation of vector database .

Satellite data processing:

Satellite data are processed using *DIGITAL IMAGE PROCESSING SOFTWARE*. Mythology involves the following major steps.

Rectification & Geo-referencing:

Inaccuracies in digital imagery may occur to *systematic errors* attributes to earth curvature and ration as well as *non systematic errors* attributes to satellite receiving station itself. RAW digital contain geometric distortions, which make them unusable as maps. Therefore, Geo-referencing is required for correction of image data using ground control points (GCP) to make it compatible to SOI topo-sheet.

Image enhancement:

To improve the interpretability of the raw data, image enhancement is necessary. Local operations modify the value of each pixel based on brightness pixels using *DIGITAL IMAGE PROCESSING SOFTWARE*and enhance the image quality for interpretation.

Training set selection & Collection and compilation of the existing data from PCL:

Training set have been selected, so that software can classify the image data accurately. The image data are analyzed based on the interpretation keys. These keys are evolved from certain fundamental image-elements such as tone/colour ,size ,shape ,texture pattern, location, association and shadow. Based on the image-elements and other geo-technical elements like land form, drainage pattern and physiographic, training sets were selected/identified for each land use/land cover class. Field survey was carried out by taking selective traverses in order to ***collect the ground information*** (or reference data)

Fig:-Field verification of Agriculture Land in Prism Johnson Ltd. Area

Fig:- Field verification of forest Land in Prism Johnson Ltd. Area

Fig:- Field verification of Mines Land in Prism Cement Area

Fig:- Field verification of water body in Prism Johnson Ltd. Area

So that training sets are selected accurately in the image. This was intended to serve as an aid for classification.

Classification and Accuracy assessment:

Image classification is carried out using the maximum likelihood algorithm. The classification proceeds through the following steps :

(A) calculation of statistics for the identified training area, and correlation matrix. After evaluating the statistical parameters of the training sets is conducted by measuring the statistical separation between the classes that resulted from computing divergence matrix. The overall accuracy of the classification was finally reference to ground truth data.

Area Calculation:

The area of each land use class in the leasehold is determined using *DIGITAL IMAGE PROCESSING SOFTWARE*.

Overlay of Vector data base:

Vector data base created based on secondary data. Vector layer like drainage, railway line, Lease boundary, mines area, forest boundary water body etc.

Pre-field map preparation:

Pre-field map preparation for validation of the classification

2.1. Finding of Study:

Land use /land cover information derived from IRS LISS- IV 2017 (Figure 1). Area statistic of each land use /land cover category were generated in GIS software and has been determined to analyze change in their spatial distribution (Table 3). By comparing the land use/land cover maps, a change detection map has been generated in smart GIS software to assess the major changes in the Mines area.

2.2 Baghai Lime stone Mine Land use Details 2017 (512.317)

Table - 3 Baghai Lime stone Mine Land use Details 2017 (512.317)	
Description	**Area In Ha**
CropLand	*458.8092*
Agriculture-Fallow	*9.2298*
Built up Land	*11.8575*
Soil Dump	*12.3770*
Limestone Quarry	*15.1784*
Drainage / water Body	*1.1873*
Plantation	*3.3147*
Road	*0.3631*
Total	**512.317**

2.3 Mendhi Lime stone Mine 2017 (117 Ha.)

Land use /land cover information derived from ***IRS LISS- IV 2017*** (Figure 2). Area statistic of each land use /land cover category were generated in GIS software and has been determined to analyze change in their spatial distribution (Table 4). By comparing the land use/land cover maps, a change detection map has been generated in smart GIS software to assess the major changes in the Mines area of ***Mendhi Lime stone Mine 2017*** (117 Ha).

Table - 4 Mendhi Lime stone Mine 2017 (117 Ha.)	
Description	**Area In Ha**
Plantation	*1.2808*
Crop Land	*95.5976*
Built up Land	*6.1461*
Agriculture-Fallow	*4.3925*
Road	*1.1885*
Soil Dump	*0.3761*
Limestone Quarry	*8.0184*
Total	***117.00***

2.4. Hinouti & Sijhatta Lime stone Mine 2017 (772.067 & 99.416 ha)

Land use /land cover information derived from ***IRS LISS- IV 2017*** (Figure 3). Area statistic of each land use /land cover category were generated in GIS software and has been determined to analyze change in their spatial distribution (Table 5). By comparing the land use/land cover maps, a change detection map has been generated in smart GIS software to assess the major changes in the Mines area of ***Hinouti & Sijhatta Lime stone Mine 2017*** (772.067 & 99.416 HA).

Table -5 Hinouti & Sijhatta Lime stone Mine 2017 *(772.067 & 99.416 ha)*

Description	**Area In Ha**
Crop Land	*595.4182*
Plantation	*22.4750*
Limestone Quarry	*126.7440*
Soil Dump	*12.2434*
Built up Land	*65.5346*
Waste Land	*14.9238*
Road	*3.6411*
Water Body	*16.2891*
Mines Out Land	*8.4304*
AgricultureFallowLand	*5.4858*
Total	***871.5830***

3.1 Land use/Land Cover Map Of Buffer Zone with 10 Sq.km. -2017 (Figure 4):

Table - 6

Land use Details of Buffer Zone - 2017	
Description LIS S - IV MS S & PAN-2017	**Area in Ha**
Cement plant unit II Boundary	136.0071
Settlements	*3267.3492*
Agriculture Fallow	*21.2843*
Dense Forest	*2470.3527*
Dumping Land	*30.7898*
Lime Stone Quarry	*374.3870*
Open Scrub	*1663.7952*
Mines Out Land	*42.1503*
Plantation	*357.7716*
River	*684.9461*
Road	*84.2638*
Waste Land	*14.9238*
Crop Land	*52969.9118*
Water Body	*374.7978*
Open Mix Jungle	*105.5879*
Total	**62598.3184**

4. Conclusion:

The Present study reveals that mining and industrial activities around Prism Johnson Ltd. are the main forces responsible for land use land cover change during years from commencement of their operation. The mining has increased manifold that has resulted in change land use in terms of forest land, cultivated land and water bodies in the area.

Exploitation on natural resource in the area is going on due to the expansion of limestone mining activities, and other industrial activities. This report focuses on LU/LC changes in the Mine lease areas and buffer areas in and around to Prism Johnson Limited, Satna India, using remote sensing data and GIS technology. Our results clearly show that LU/LC changes were summarized during the period of 2017 in the table no-6. There is expansion to the tune of 126 ha of Mining Lease boundary area noticed. On the other hand there is minor change in agricultural area, water spread area, and forest areas. This study clearly indicates the significant impact of environmental and its development activities on LU/LC change. This study proves that integration of GIS and remote sensing technologies is effective tool for change detection. The quantification of LU/LC changes of Prism Johnson Ltd. area is very useful for environmental management groups, policy makers and for public to better understand the surrounding.

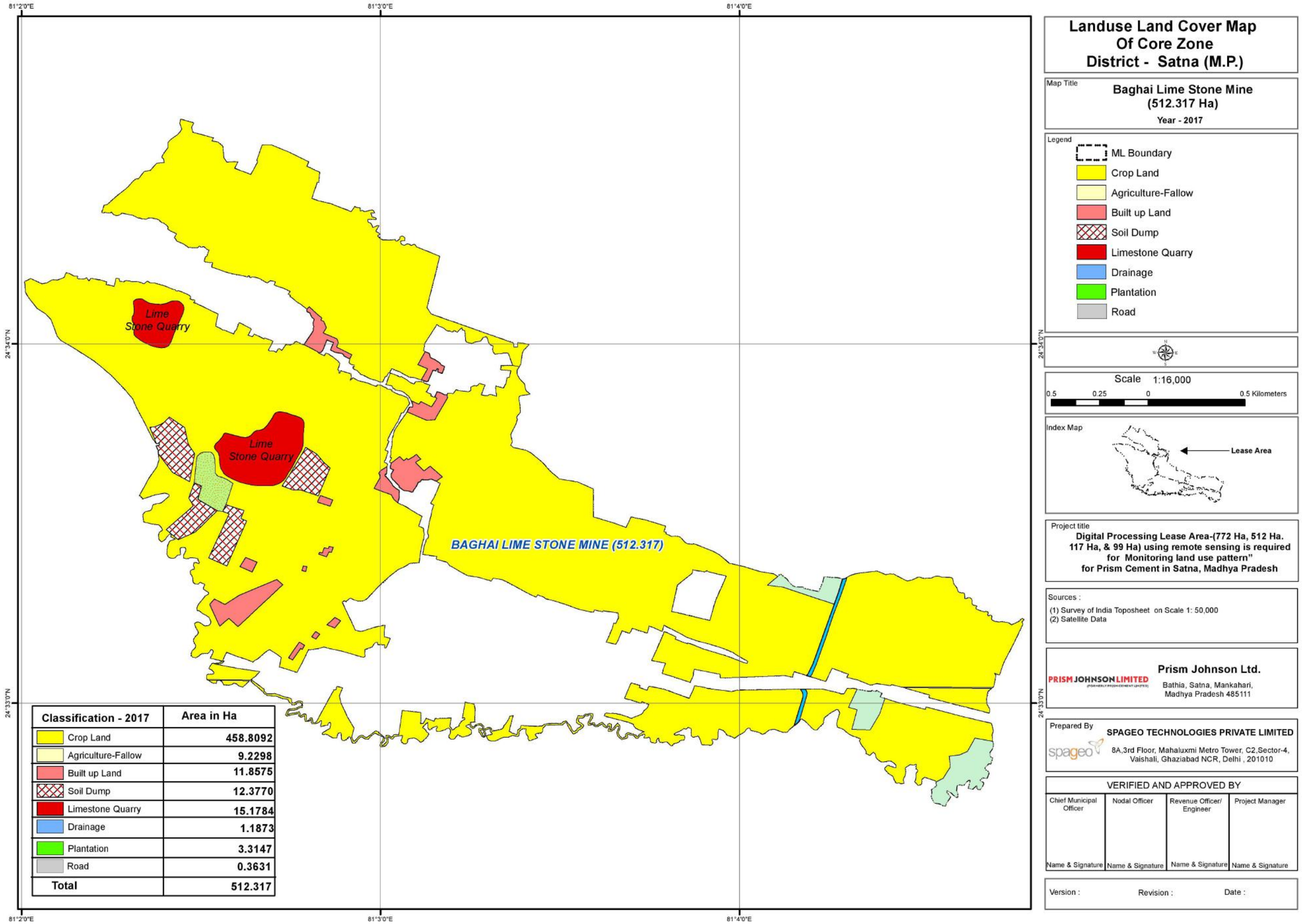


Fig:- 1 Baghai Lime stone Mine Land use Details 2017 (512.317)

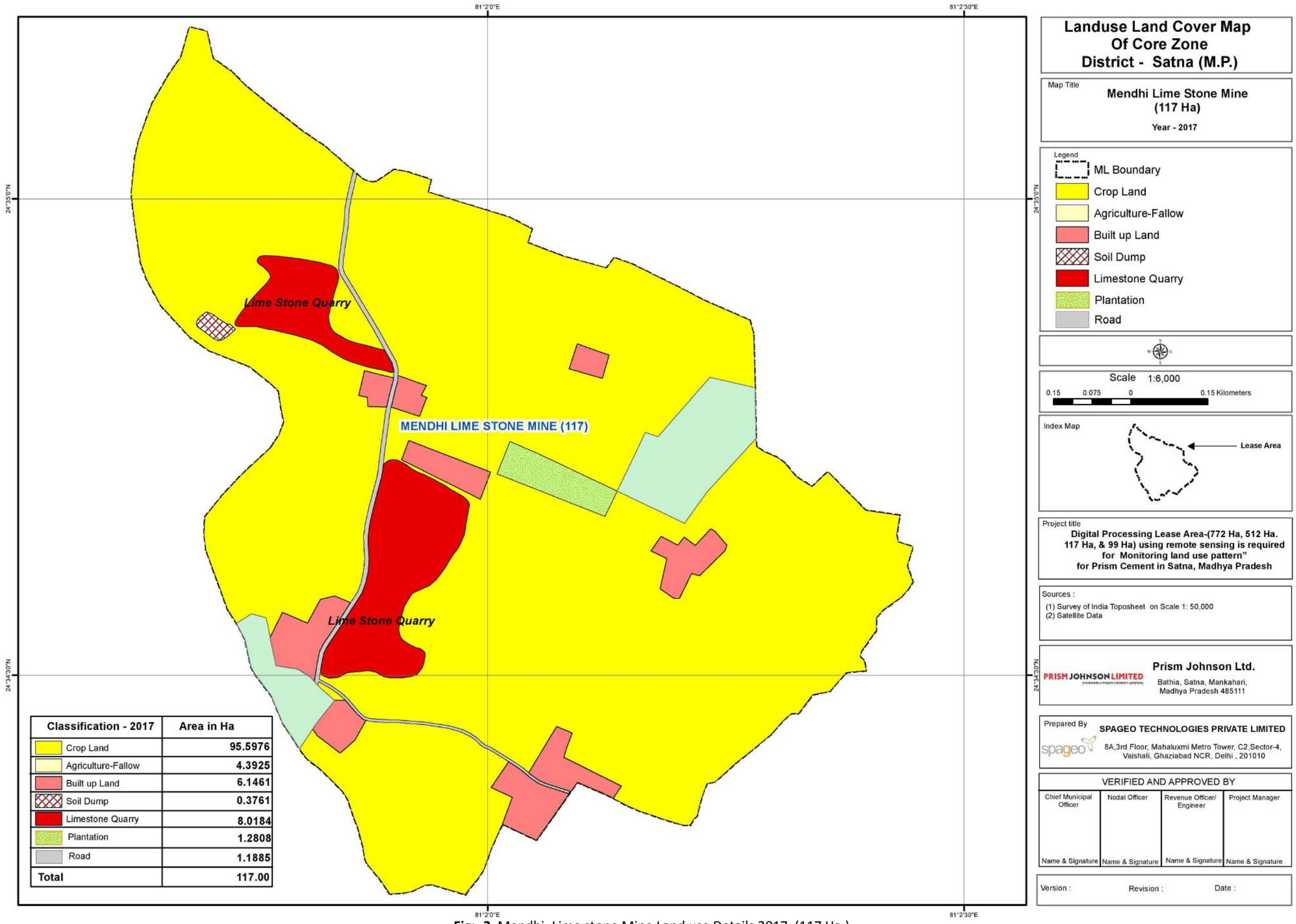


Fig:- 2 Mendhi Lime stone Mine Land use Details 2017 (117 Ha.)

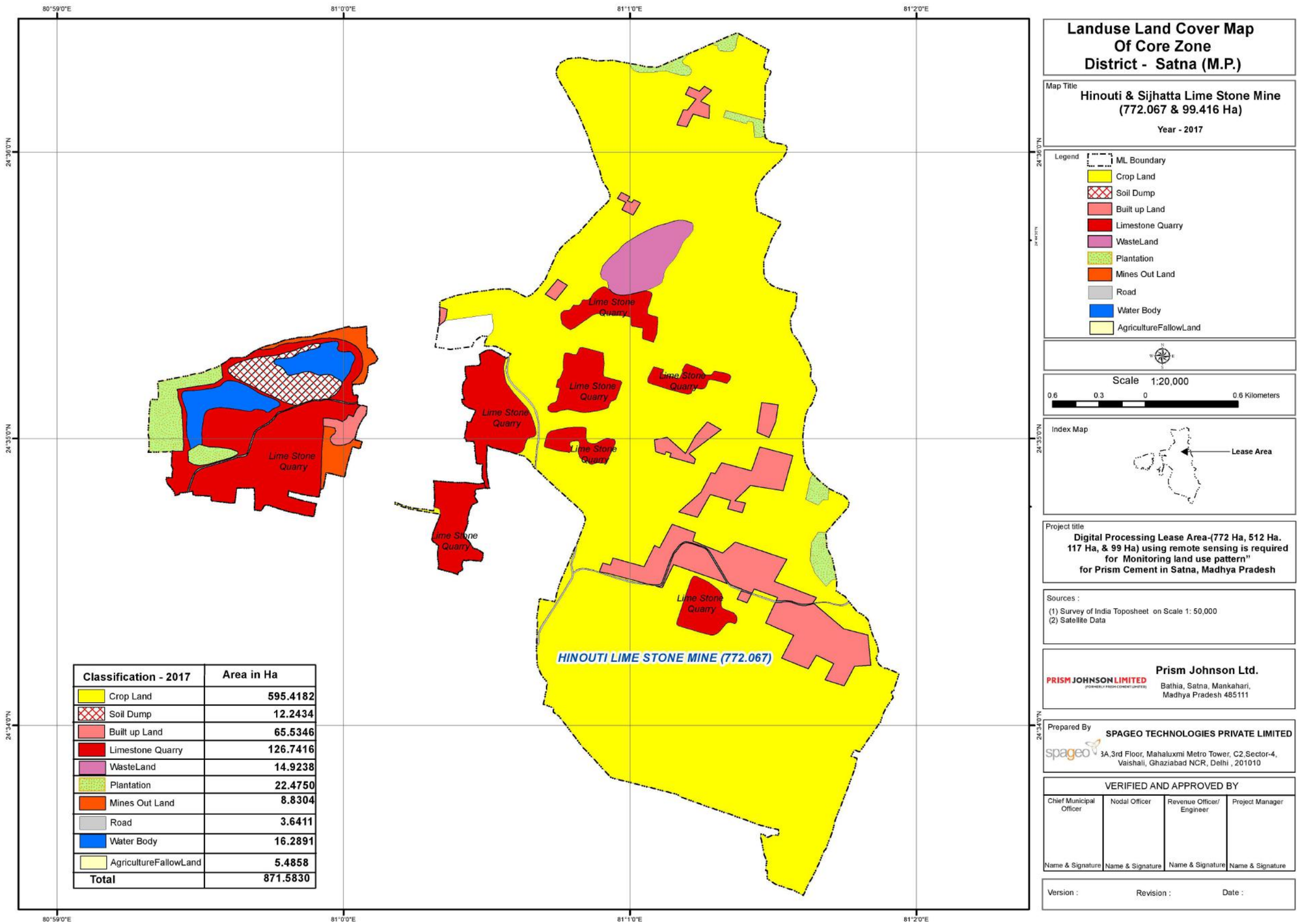


Fig:- 3 Hinouti & Sijhatta Lime stone Mine Land use Details 2017 (772.067 & 99.416)

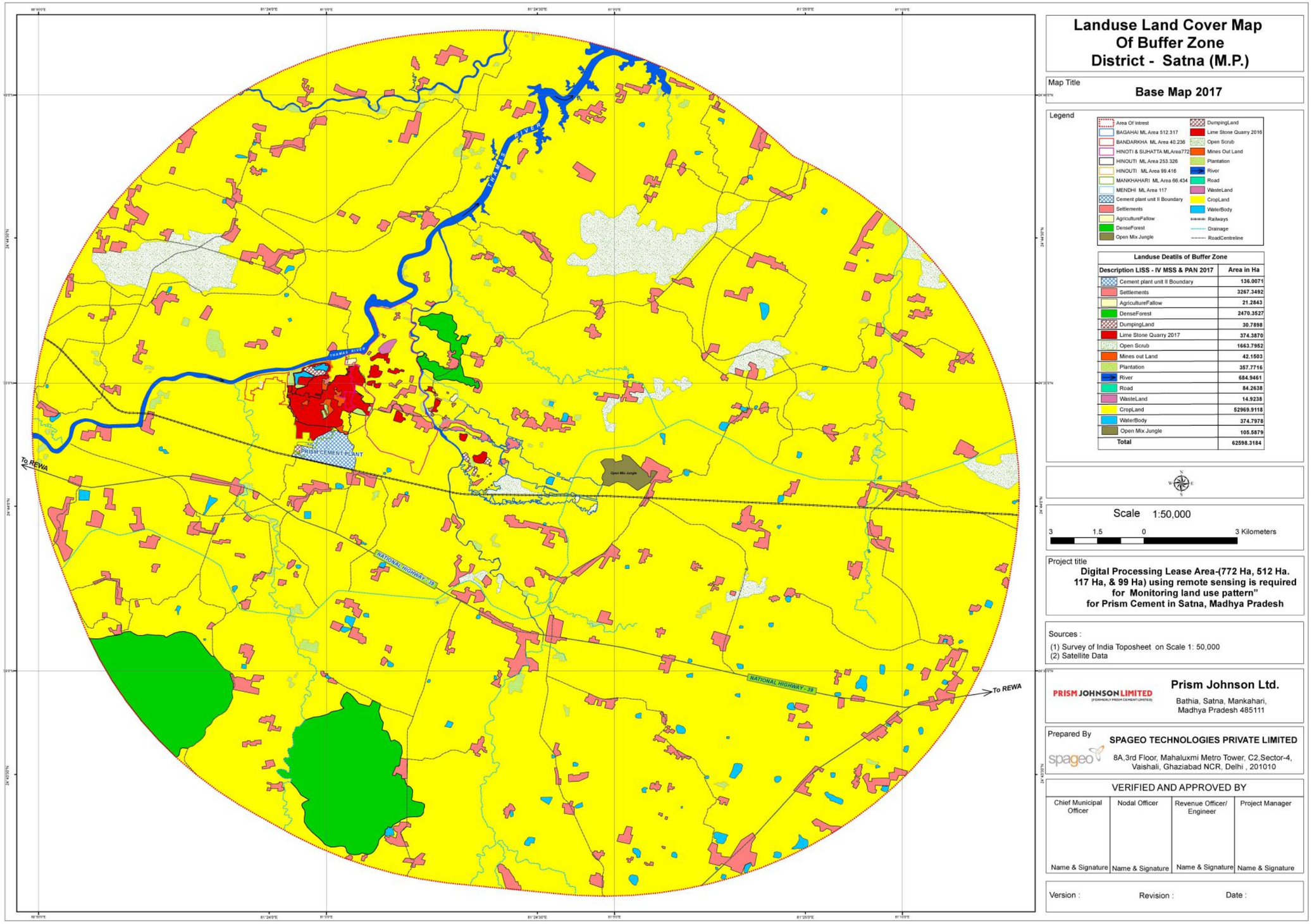


Fig: 5 Land use/Land Cover Map Of Buffer Zone-2017

ANNEXURE-9 19

STATUS OF COMMITMENTS MADE DURING PUBLIC HEARING HELD ON 22.05.2008

S.No.	Name of Candidate	Suggestions & Points raised	Reply of Project Proponent	Present Status
1	Mrs. Guddi devi, Chairperson "Garib Sangh Samiti" Bamhauri, Satna	a) Admission on merit and free of fee for admission	Provision for proper facilities will be considered	Admission is given to the students of surrounding villages as per availability of seats and guidelines of the company
		b) Plantation to be done from plant gate to Mahuracch Junction	Agreed, plantation will be done during rainy season	Plantation is being done on road side and around the Mankahari Pond
		c) Street light facility from Plant gate to Mahuracch Junction	Work will be taken up by the management as per financial position of the company	Few lamp posts have been established and will be extended in phase wise
		d) Permanent employment to effected person	Employment will be granted as per rules and regulations of company	Employment and other facilities are being provided to affected persons
2	'Sarpanch' Village Panchayat – Bathia, Satna	Employment to local villagers of Bamhauri	Employment will be granted as per rules and regulations of company	More than 50% employment has been given to local persons
3	Mithilesh – (student) Bamhauri, Satna	Appeal of Pollution Control in industry	All pollution control acts will be complied with	All due provisions have been made to combat pollution likely to be caused. • Details of APCEs are as under 1- Raw mill/ Kiln – Bag House (1) 2- Cooler – ESP (1) 3- Coal Mill – Bag House (1) 4- Cement mills – Bag House (2) 5- 92 Bag filters installed to cover all the transfer points • Arrangement of water sprinkling at crusher hopper and limestone conveyor bet • Water sprinkling on haul roads

				through tankers
4	Mr. Triloki Singh Baghel, Village – Bamhauri, Satna	a) Priority to employment for eligible persons	Employment will be granted as per rules and regulations of company	Employment is being given to eligible persons as per rules framed by the company
		b) Construction of Stadium in the ground of Higher Secondary School	Action will be taken	Play ground has been rehabilitated. Maintenance is done as per requirement.
		c) Permanent water & electricity supply in school	Adequate action will be taken	Water & Electricity supply are available at school
		d) Admission for village children to Prism Bhawan School	Admission will be granted as per rules and regulation of company	Admissions is being given to village students as per availability of seats
		e) To & fro School Bus facility to Satna for the students of villages	Provision for proper facilities will be considered	School bus service has been provided to students of villages for commuting to Satna
		f) Distribution of sports material to Panchayat	Adequate action will be taken	Study and sports materials are being distributed to village students
5	Mrs. Kalawati Singh, Bamhauri, Satna	Provision of facilities from Prism Cement for the land sellers to company	Adequate action will be taken as per rules & regulation of company	All the possible services are being provided to land losers
6	Mr. Ajit Khureshi, National Civil Human Right Association, Country Head Qtr Delhi, Camp Satna	19 point comments raised on pollution	All pollution control acts will be complied with	All due provisions have been made to combat pollution likely to be caused. • Details of APCEs are as under 1- Raw mill/ Kiln – Bag House (1) 2- Cooler – ESP (1) 3- Coal Mill – Bag House (1) 4- Cement mills – Bag House (2) 5- 90 Bag filters installed to cover

				all the transfer points • Arrangement of water sprinkling at crusher hopper and limestone conveyor bet • Water sprinkling on haul roads through tankers
7	Mr. Shankar Singh, Rtd. Commissioner, (Milk & Dairy Dept), 31 Rachna Nagar, Bhopal	Employment should be provided to effected villagers	Employment will be granted as per rules and regulations of company	Employment is being provided to affected villagers. More than 50% employment has been given to local persons
8	Mr. Ramadhar Prasad, Sarpanch, Village-Hinauti, Satna	Necessary assistance & help will be extended by him for the establishment of industry with the protection of environment from Pollution	Thanks & All pollution control acts will be complied with	All the efforts are being done to control the pollution
9	Sarpanch, Village Panchayat- Mankahari, Satna	Expressed his consent to establish the industry	Thanks & Agreed	----
10	Sarpanch, Village Panchayat- Sijahata, Satna	Expressed his consent to establish the industry	Thanks & Agreed	----
11	Sarpanch, Village Panchayat- Sijahata, Satna	Suggested to plant 10000 saplings, seek help to improve health, sanitation facilities in villages and employment for educated persons	Agreed, Plantation will be done during rainy season, health, sanitation and employment will be considered as per rules and regulation of company	Improving green cover in and around plant premises is always company's utmost priority. Saplings are also distributed to village students to promote plantation & to make awareness. Villagers seeking medical attention have also easy access to medical centre of prism cement plant. Apart from this, free medical camps are also being regularly organised in nearby villages. Employment is also being given as

				per rules of the company
12	Mr. Diwakar Pd. Mishra Mr. Shankhadhar Mishra Panch – Village Bamhauri, Satna	Expressed his consent to establish the industry	Thanks & Agreed	---
13	Mr. Sobha Nath Tiwari, Village- Bamhauri, Satna	Plantation to be done on road side & water spraying on roads	Agreed	Plantation is in continuous practice. Saplings are also distributed to villagers.
14	Mr. Tejpal Singh Parihar, & Mr. Shankhadhar Mishra, Village – Hinauti, Satna	Eradication of diseases & pollution from village Hinauti	Best efforts and assistance will be extended	Medicals camps and other awareness programmes are being organised by the company
15	Mr. Ramesh Kumar Tiwari & Sarpanch Village Mankahari, Satna	Expressed their consent to established the industry	Thanks & agreed	----
16	Mr. Girija Prasad Tiwari & Others, Village Panchayat Bagahai	Improvement in tree plantation, health, education, drinking water, employment & setting up of worship places	All demands will be considered as per rules and regulations of company	Plantation is in continuous practice. Saplings are also distributed to villagers. Villagers seeking medical attention have also easy access to medical centre of prism cement plant. Apart from this, free medical camps are also being regularly organised in nearby villages. Study materials, bags, uniforms etc are being distributed to the students of nearby villages. Free drinking water is being supplied through tankers during summer season as per requirement Renovation of Jabala Baba temple, construction of Ghat and Yagya Shala has been done by the company.

Consent Order

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

RED-MEDIUM	CCA-Renewal	VALIDITY (A/W): 31/12/2018	CONSENT NO: ***	PCB ID: 19635

To,

The Occupier,
M/s. Prism Cement Ltd.,Bagahai Lime Stone Mines, Area 512.317 Hect.,
512.317 HECT., RAJDEEP REWA ROAD,
BAGAHAI,City : BAGAHAI,
Tal : Rampur Baghelan, SIDC : I/A Bamori Mankahari,
Dist : Satna, (M.P.)

Subject: **Grant of renewal of Consent under section 25 of the Water (Prevention & Control of Pollution) Act,1974 under section 21 of the Air (Prevention & Control of Pollution) Act,1981.**

Ref: Your renewal of Consent Application Receipt No. 374387 Dt. 26/08/2017 and last communication received on Dt.30/11/2017

With reference to your above application for renewal of consent has been considered under the aforesaid Acts and existing rules therein. The M. P. Pollution Control Board has agreed to grant consent up to **31/12/2018**, subject to the fulfillment of the terms & conditions, enclosed with this letter and-

SUBJECT TO THE FOLLOWING CONDITIONS :-

a. Location: 512.317 HECT., Vill. BAGAHAI, Tehsil Rampur Baghelan, Dist. Satna, (M.P.)

b. Mining lease area : 512.317 Ha

c. Product & Production Capacity:

Product	CCA Qty
Mining of Lime Stone	**1.30 Million Tones per Year**

Note:- For any change in above industry shall obtain fresh consent from the board.

The Validity of the consent is up to **31/12/2018** and has to be renewed before expiry of consent validity. Online application through XGN with annual license fees in this regard shall be submitted to this office 6 months before expiry of the consent/Authorization. Board reserves the right to amend/cancel / revoke the above condition in part or whole as and when required.

Enclosures:-

* Conditions under Water Act
* Conditions under Air Act
* General conditions

CC to :-

1. District Mining Officer, (Mining Section), Collector office, Satna Dist. Satna (M.P.) for information.
2. M.P. State Mining Corporation, Arera Hills, Jail Road, Bhopal (M.P.) for necessary action please.
3. Regional officer, Regional office, MPPCB, Satna (M.P.)

eSign Signing from UIDAI
Digitally Sign with Aadhaar

e-Signed On 06/01/2018 16:56:17
(Organic Authentication on AADHAR from UIDAI Server)
TPAV # 1X9BB36D71

Achyut mishra

ACHYUT ANAND MISHRA
Member Secretary

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

CONDITIONS PERTAINING TO WATER (PREVENTION & CONTROL OF POLLUTION) ACT 1974 :-

1. The daily quantity of trade effluent at out fall of the unit shall not exceed 0.01 KL/day, and the daily quantity of sewage at out fall of the unit shall not exceed 0.50 KL/day

2. Trade Effluent Treatment:-
The applicant shall provide comprehensive effluent treatment system and maintain the same properly to achieve following standards-

pH	Between	5.5 – 9.0
Suspended Solids	Not exceed	100 mg/l.
BOD 3 Days 27^0C	Not exceed	30 mg/l.
COD	Not exceed	250 mg/l.
Oil and grease	Not exceed	10 mg/l.

TDS	Not exceed	2100 mg/l.
Chlorides	Not exceed	1000 mg/l.

For other parameters general standards of discharge as notified under EP Act 1986 shall be applicable.

3. Sewage Treatment :- The applicant shall provide comprehensive sewage treatment system as per the proposal submitted to the Board and maintain the same properly to achieve following standards as notified vide GSR No. **1265(E) Dt. 13.10.2017**:
-

pH	Between	6.5 – 9.0
Suspended Solids	Not exceed	100 mg/l.
BOD 3 Days 27^0C	Not exceed	10 mg/l.
COD	Not exceed	50 mg/l.
NH_4-N	Not exceed	5 mg/l
N-Total	Not exceed	10mg/L
Fecal Coliform	Not exceed	< 1000 (MPN/100 ml)
PO_4-P	Not exceed	2 mg/L

4. The effluent shall be treated up to prescribed Standards and reuse in the process, for cooling and for green belt devolvement/gardening within premises. Hence zero discharge condition shall be practiced. In no case treated effluent shall be discharged outside of industry/unit premises.

5. Any change in production capacity, process, raw material used etc. and for any enhancement of the above prior permission of the Board shall be obtained. All authorized discharges shall be consistent with terms and conditions of this consent. Facility expansions, production increases or process modifications which result new or increased discharges of pollutants must be reported by submission of a fresh consent application for prior permission of the Board

6. The specific effluent limitations and pollution control systems applicable to the discharge permitted herein are set forth as above conditions.

7. Compilation of Monitoring-
i. Samples and measurements taken to meet the monitoring requirements specified above shall be representative of the volume and nature of monitored discharge.
ii. Following promulgation of guidelines establishing test procedures for the analysis of pollutants, all sampling and analytical methods used to meet the monitoring requirements specified above shall conform to such guidelines unless otherwise specified sampling and analytical methods shall conform to the latest edition of the Indian Standard specifications and where it is not specified the guidelines as per standard methods for the examination of Water and Waste latest edition of the American Public Health Association, New York U.S.A. shall be used.
iii. The applicant shall take samples and measurement to meet the monthly requirements specified above and report online through XGN the same to the Board.

8. Recording of Monitoring-
i. The applicant shall make and maintain online records of all information resulting from monitoring activities by this Consent.
ii. The applicant shall record for each measurement of samples taken pursuant to the requirements of this Consent as follows:
(i) The date, exact place and time of sampling

(ii) The dates on which analysis were performed
(iii)Who performed the analysis?
(iv)The analytical techniques or methods used and
(v)The result of all required analysis

iii. If the applicant monitors any Pollutant more frequently as is by this Consent he shell include the results of such monitoring in the calculation and reporting of values required in the discharge monitoring reports which may be prescribed by the Board. Such increased frequency shall be indicated on the Discharge Monitoring Report Form.
iv. The applicant shall retain for a minimum of 3 years all records of monitoring activities including all records of Calibration and maintenance of instrumentation and original strip chart regarding continuous monitoring instrumentation. The period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the applicant or when requested by Central or State Board or the court.

9. Reporting of Monitoring Results:-
Monitoring Information required by this Consent shall be summarized and reported by submitting a Discharge Monitoring report on line to the Board.

10. Limitation of discharge of oil Hazardous Substance in harmful quantities:-
The applicant shall not discharge oil or other hazardous substances in quantities defined as harmful in relevant regulations into natural water course. Nothing in this Consent shall be deemed to preclude the institution of any legal action nor relive the applicant from any responsibilities, liabilities, or penalties to which the applicant is or may be subject to clauses.

11. Limitation of visible floating solids and foam:
During the period beginning date of issuance the applicant shall not discharge floating solids or visible foam.

12. Disposal of Collected Solid-
All hazardous waste/sludge shall be disposed of as per the Authorization issued under Hazardous & other waste (M&TM) Rules 2016. And/other Solids Sludges, dirt, silt or other pollutant separated from or resulting from treatment shall be disposed of in such a manner as to prevent any pollutant from such materials from entering any such water Any live fish, Shall fish or other animal collected or trapped as a result of intake water screening or treatment may be returned to eaters body habitat.

13. Provision for Electric Power Failure-
The applicant shall assure to the consent issuing authority that the applicant has installed or provided for an alternative electric power source sufficient to operate all facilities utilized by the applicant to maintain compliance with the terms and conditions of the Consent.

14. Prohibition of By pass system-
The diversion or by-pass of any discharge from facilities utilized by the applicant to maintain compliance with the terms and conditions of this Consent in prohibited except :
i. where unavoidable to prevent loss of life or severe property damage, or
ii. Where excessive storm drainage or run off would damage any facilities necessary for compliance with the terms and conditions of this Consent. The applicant shall immediately notify the consent issuing authorities in writing of each such diversion or by-pass in accordance with the procedure specified above for reporting non-compliance.

15. Industry/Institute/mine management shall submit the information online through XGN in reference to compliance of consent conditions.

Additional Water condition:- (if any) :-

1) Mine shall treat and utilize all industrial effluent with in mine premises and Zero effluent discharge shall be implemented.
2) Mine shall treat mine water to the extent that it should meet the quality of drinking water source quality standards. The treated mine water should be used for beneficiation purposes such as plantation, irrigation etc.

M.P. Pollution Control Board
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Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

CONDITIONS PERTAINING TO AIR (PREVENTION & CONTROL OF POLLUTION) ACT 1981 :-

1. Ambient air quality at the boundary of the industry/unit premises shall be monitored and reported to the Board regularly on quarterly basis: The Ambient air quality norms are prescribed in MoEF gazette notification no. GSR/826(E), dated: 16/11/09. Some of the parameters are as follows:

a. Particulate Matter (less than 10 micron) - 100 $\mu g/m^3$ (PM_{10} $\mu g/m^3$ 24 hrs. basis)
b. Particulate Matter (less than 2.5 micron) - 60 $\mu g/m^3$ ($PM_{2.5}$ $\mu g/m^3$ 24 hrs. basis)
c. Sulphur Dioxide [SO_2] (24 hrs. Basis) - 80 $\mu g/m^3$
d. Nitrogen Oxides [NO_x] (24 hrs. Basis) - 80 $\mu g/m^3$
e. Carbon Monoxide [CO] (8 hrs. Basis) - 2000 $\mu g/m^3$

2. The industry shall take adequate measures for control of noise level generated from industrial activities within the premises less than 75 dB(A) during day time and 70 dB(A) during night time.

3. The industry/unit shall make the necessary arrangements for control of the fugitive emission from any source of emission/section/activities.

4. All other fugitive emission sources such as leakages, seepages, spillages etc shall be ensured to be plugged or sealed or made airtight to avoid the public nuisance.

5. Approach roads shall be made pucca to control the fugitive emissions of particulate matter generated due to transportation and internal movements. Good housekeeping practices shall be adopted to avoid leakages, seepages, spillages etc.

6. Industry shall take effective steps for extensive tree plantation atleast in 03 rows of the local tree species with minimum spacing of 4X4 meter within or around the industry/unit premises for general improvement of environmental conditions and as stated in additional condition

Additional Air condition:- (if any) :-

1. Pacca road shall be use for material transportation.
2. Water sprinkler shall be provided to avoid dust generation during material unloading.
3. Dense plantation shall be carried out all around the quarry lease area .
4. Regular wetting/sprinkling of haul road & transportation road shall be carried out by tankers.
5. Proper & regular maintenance of the vehicles shall be under taken to suppress the frictional noise.

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Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

GENERAL CONDITIONS:

1. The non hazardous solid waste arresting in the industry/unit/unit premises sweeping, etc. be disposed off scientifically so as not to cause any nuisance/pollution. The applicant shall take necessary permission from civic authorities for disposal to dumping site. If required.

Non Hazardous Solid wastes:-

Type of waste	Quantity	Disposal
Scrap/ Plastic packing material wood, card board, gunny begs etc		Sale to authorized party/As Per CPCB. MoEF Guide lines / Others.

2. The applicant shall allow the staff of Madhya Pradesh Pollution Control Board and/or their authorized representative, upon the representation of credentials:

a. To inspect raw material stock, manufacturing processes, reactors, premises etc to perform the functions of the Board.

b. To enter upon the applicant's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this Consent.

c. To have access at reasonable times to any records required to be kept under the terms and conditions of this Consent.

d. To inspect at reasonable times any monitoring equipment or monitoring method required in this Consent: or,

e. To sample at reasonable times any discharge or pollutants.

3. This consent/authorisation is transferable, in case of change of ownership/management and addresses of new Owner/partner/Directors/proprietor should immediately apply for the same.

4. The issuance of this Consent does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorise any invasion of personal rights, nor any infringement of Central, State or local laws or regulations.

5. This consent is granted in respect of Water pollution control Act 1974 or Air Pollution Control act, 1981 or Authorization under the provisions of Hazardous and other Waste (Management & Transboundary Movement) Rules 2016 only and does not relate to any other Department/Agencies. License required from other Department/Agencies have to be obtained by the unit separately and have to comply separately as per there Act / Rules.

6. Balance consent/authorisation fee, if any shall be recoverable by the Board even at a later date.

7. The applicant shall submit such information, forms and fees as required by the board not letter than 180 day prior to the date of expiration of this consent/authorisation

8. Knowingly making any false statement for obtaining consent or compliance of consent conditions shall result in the imposition of criminal penalties as provided under the section 42(g) of the Water Act or section 38 (g) of the Air Act.

9. After notice and opportunity for the hearing, this consent may be modified, suspended or revoked by the Board in whole or in part during its term for cause including, but not limited to, the following :

(a) Violation of any terms and conditions of this Consent.
(b) Obtaining this Consent by misrepresentation of failure to disclose fully all relevant facts.
(c) A change in any condition that requires temporary or permanent reduction or elimination of the authorized discharge.

10. On violation of any of the above-mentioned conditions the consent granted will automatically be taken as canceled and necessary action will be initiated against the industry.

Additional condition:- (if any) :-

1. The Mine shall optimize the water abstraction from the surface water source by utilizing the mine discharge for spraying on haul roads, mine area and loading - unloading area after proper treatment.
2. Extensive tree plantation shall be carried out in open areas available within and around the mine premises in consultation with expert agency. Good house keeping practice shall be adopted.
3. Mine management shall demarcate a barrier zone as no mining zone in the periphery of mining lease area and developed a green belt.
4. Overburden dumps shall be stored at the earmarked location along with proper stabilization arrangements and retaining wall. Maximum height of the OB dumps shall not exceed 20 meters and each stage shall be of 10 meter height with slope of shall not exceed 35^0. Mine shall have to take effective steps to check the soil erosion from over burden/waste material dumping area, causing silting problem into near by nallah/ river/ pond during the rainy season

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Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

5. Mine Management shall construct Garland drain of appropriate length with size with stone pitching all around , and sump capacity of appropriate size with sttling tanks. Sedimentation pits shall be constructed at the corners of the garland drains and de-silted at regular intervals.
6. Top soil shall be scraped & separately stacked with proper slope and adequate safeguards; it shall be utilized for carpeting over the backfilled area and rehabilitation of mined out area.
7. Mine management shall provide artificial recharger measures, rain water harvesting system.
8. Mine management shall provide fencing all around the lease area to prevent the accident hazard.
9. The Mine shall improve their existing pollution control facilities and maintain the same properly so that the emission could be maintained within the prescribed standards.
10. Controlled blasting should be practiced with the use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders should be implemented.
11. Mine management shall submit environmental statement for the previous year ending 31st March on or before 30th September every year to the Board.
12. Mine management shall ensure the compliance of conditions of Environmental clearance.
13. Mine shall comply the provisions of all the relevant Acts/Rules/Directions/Guidelines issued by MoEF/ CPCB/ MPPCB time to time as required and if applicable.
14. Mine shall comply the Directions/ Orders issued by Hon'ble Supreme Court/ High Court/ NGT time to time in the relevant Writ Petitions.
15. Mine management shall install industrial grade HD IP (Internet Protocol) Pan-Tilt-Zoom (PTZ) Camera with minimum 5X zoom and night vision facility for remote surveillance and constant vigil of emission source.
16. Mine management shall establish suitable connectivity of IP-Camera with Environment Surveillance Centre at the HQ of M.P. Pollution Control Board for monitoring and data transmission purpose.

Consent/authorization as required under the Water (Prevention & Control of Pollution) Act,1974. The Air (Prevention & Control of Pollution) Act,1981is granted to your industry subject to fulfillment of all the conditions mentioned above. For renewal purpose you shall have to make an application to this Board through XGN at least Six months before the date of expiry of this consent/authorisation. The applicant without valid consent (for operation) of the Board shall not bring in to use any outlet for the discharge of effluent and gaseous emission.

For and on behalf of
M.P. Pollution Control Board

Achyut mishra

(Member Secretary)

eSign Signing from UIDAI

e-Signed On 06/01/2018 16:56:17
(Organic Authentication on AADHAR from UIDAI Server)
TPAV # 1X9BB36D71

Achyut mishra

ACHYUT ANAND MISHRA
Member Secretary

Consent Order

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

RED-MEDIUM	CCA-Renewal	VALIDITY (A/W): 31/05/2019	CONSENT NO: ***	PCB ID: 19429

To,

The Occupier,
M/s. Prism Cement Ltd. Lime Stone Mines,772.067 HECT,
772.067 HECT., RAJDEEP REWA ROAD SATNA,
MANKAHARI SATNA,City : MANKAHARI,
Tal : Rampur Baghelan, SIDC : I/A Bamori Mankahari
Dist : Satna, (M.P.)

Subject: Grant of Renewal of Consent under section 25 of the Water (Prevention & Control of Pollution) Act,1974 under section 21 of the Air (Prevention & Control of Pollution) Act,1981

Ref: Your Renewal of Consent Application Receipt No. 499491 Dt. 24/04/2018 and last communication received on Dt.25/04/2018

With reference to your above application for Renewal of consent has been considered under the aforesaid Acts and existing rules therein. The M. P. Pollution Control Board has agreed to grant consent up to **31/05/2019**, subject to the fulfillment of the terms & conditions, enclosed with this letter and-

SUBJECT TO THE FOLLOWING CONDITIONS :-

a. Location: 772.067 HECT., Vill- Hinauti – Sijahata, Teh- Rampur Baghelan, Distt- Satna (M.P.)

b. Mining lease area : 772.067 Ha

c. Product & Production Capacity:

Product	CCA Qty
MINING OF LIMESTONE	**0.825 Million Tons per year**

Note:- For any change in above industry shall obtain fresh consent from the board.

The Validity of the consent is up to 31/05/2019 and has to be renewed before expiry of consent validity. Online application through XGN with annual license fees in this regard shall be submitted to this office 6 months before expiry of the consent/Authorization. Board reserves the right to amend/cancel / revoke the above condition in part or whole as and when required.

Enclosures:-

* Conditions under Water Act
* Conditions under Air Act
* General conditions

CC to :-

1. District Mining Officer, (Mining Section), Collector office, Satna Dist. Satna (M.P.) for information.
2. M.P. State Mining Corporation, Arera Hills, Jail Road, Bhopal (M.P.) for necessary action please.
3. Regional officer, Regional office, MPPCB, Satna (M.P.)

e-Signed On 31/05/2018 19:16:22
(Organic Authentication on AADHAR from UIDAI Server)
TPAV # RW765AY9F4

ACHYUT ANAND MISHRA
Member Secretary

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

CONDITIONS PERTAINING TO WATER (PREVENTION & CONTROL OF POLLUTION) ACT 1974 :-

1. The daily quantity of trade effluent at out fall of the unit shall not exceed 0.10 KL/day, and the daily quantity of sewage at out fall of the unit shall not exceed 0.00 KL/day

2. Trade Effluent Treatment:- (If any)
The applicant shall provide comprehensive effluent treatment system and maintain the same properly to achieve following standards-

pH	Between	5.5 – 9.0
Suspended Solids	Not exceed	100 mg/l.
BOD $_3$ Days 27^{0}C	Not exceed	30 mg/l.
COD	Not exceed	250 mg/l.
Oil and grease	Not exceed	10 mg/l.

TDS	Not exceed	2100 mg/l.
Chlorides	Not exceed	1000 mg/l.

For other parameters general standards of discharge as notified under EP Act 1986 shall be applicable.

3. Sewage Treatment :- The applicant shall provide comprehensive sewage treatment system and maintain the same properly to achieve following standards-

pH	Between	5.5 – 9.0
Suspended Solids	Not exceed	10 mg/l.
BOD $_3$ Days 27^{0}C	Not exceed	30 mg/l.
COD	Not exceed	250 mg/l.
Oil and grease	Not exceed	10 mg/l.

4. The effluent shall be treated up to prescribed Standards and reuse in the process, for cooling and for green belt devolvement/gardening within premises. Hence zero discharge condition shall be practiced. In no case treated effluent shall be discharged outside of industry/unit premises.

5. Any change in production capacity, process, raw material used etc. and for any enhancement of the above prior permission of the Board shall be obtained. All authorized discharges shall be consistent with terms and conditions of this consent. Facility expansions, production increases or process modifications which result new or increased discharges of pollutants must be reported by submission of a fresh consent application for prior permission of the Board

6. The specific effluent limitations and pollution control systems applicable to the discharge permitted herein are set forth as above conditions.

7. Compilation of Monitoring-
i. Samples and measurements taken to meet the monitoring requirements specified above shall be representative of the volume and nature of monitored discharge.
ii. Following promulgation of guidelines establishing test procedures for the analysis of pollutants, all sampling and analytical methods used to meet the monitoring requirements specified above shall conform to such guidelines unless otherwise specified sampling and analytical methods shall conform to the latest edition of the Indian Standard specifications and where it is not specified the guidelines as per standard methods for the examination of Water and Waste latest edition of the American Public Health Association, New York U.S.A. shall be used.
iii. The applicant shall take samples and measurement to meet the monthly requirements specified above and report online through XGN the same to the Board.

8. Recording of Monitoring-
i. The applicant shall make and maintain online records of all information resulting from monitoring activities by this Consent.
ii. The applicant shall record for each measurement of samples taken pursuant to the requirements of this Consent as follows:

(i) The date, exact place and time of sampling

(ii) The dates on which analysis were performed
(iii)Who performed the analysis?
(iv)The analytical techniques or methods used and
(v)The result of all required analysis

M.P. Pollution Control Board
E-5, Arera Colony
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iii. If the applicant monitors any Pollutant more frequently as is by this Consent he shell include the results of such monitoring in the calculation and reporting of values required in the discharge monitoring reports which may be prescribed by the Board. Such increased frequency shall be indicated on the Discharge Monitoring Report Form.
iv. The applicant shall retain for a minimum of 3 years all records of monitoring activities including all records of Calibration and maintenance of instrumentation and original strip chart regarding continuous monitoring instrumentation. The period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the applicant or when requested by Central or State Board or the court.

9. Reporting of Monitoring Results:-
Monitoring Information required by this Consent shall be summarized and reported by submitting a Discharge Monitoring report on line to the Board.

10. Limitation of discharge of oil Hazardous Substance in harmful quantities:-
The applicant shall not discharge oil or other hazardous substances in quantities defined as harmful in relevant regulations into natural water course. Nothing in this Consent shall be deemed to preclude the institution of any legal action nor relive the applicant from any responsibilities, liabilities, or penalties to which the applicant is or may be subject to clauses.

11. Limitation of visible floating solids and foam:
During the period beginning date of issuance the applicant shall not discharge floating solids or visible foam.

12. Disposal of Collected Solid-
All hazardous waste/sludge shall be disposed of as per the Authorization issued under Hazardous & other waste (M&TM) Rules 2016. And/other Solids Sludges, dirt, silt or other pollutant separated from or resulting from treatment shall be disposed of in such a manner as to prevent any pollutant from such materials from entering any such water Any live fish, Shall fish or other animal collected or trapped as a result of intake water screening or treatment may be returned to eaters body habitat.

13. Provision for Electric Power Failure-
The applicant shall assure to the consent issuing authority that the applicant has installed or provided for an alternative electric power source sufficient to operate all facilities utilized by the applicant to maintain compliance with the terms and conditions of the Consent.

14. Prohibition of By pass system-
The diversion or by-pass of any discharge from facilities utilized by the applicant to maintain compliance with the terms and conditions of this Consent in prohibited except :
i. where unavoidable to prevent loss of life or severe property damage, or
ii. Where excessive storm drainage or run off would damage any facilities necessary for compliance with the terms and conditions of this Consent. The applicant shall immediately notify the consent issuing authorities in writing of each such diversion or by-pass in accordance with the procedure specified above for reporting non-compliance.

15. Industry/Institute/mine management shall submit the information online through XGN in reference to compliance of consent conditions.

Additional Water condition:- (if any) :-

1) Mine shall treat and utilize all industrial effluent with in mine premises and Zero effluent discharge shall be implemented.
2) Mine shall treat mine water to the extent that it should meet the quality of drinking water source quality standards. The treated mine water should be used for beneficiation purposes such as plantation, irrigation etc

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CONDITIONS PERTAINING TO AIR (PREVENTION & CONTROL OF POLLUTION) ACT 1981 :-

1. Ambient air quality at the boundary of the industry/unit premises shall be monitored and reported to the Board regularly on quarterly basis: The Ambient air quality norms are prescribed in MoEF gazette notification no. GSR/826(E), dated: 16/11/09. Some of the parameters are as follows:
   a. Particulate Matter (less than 10 micron) - 100 µg/m^3 (PM_{10} µg/m^3 24 hrs. basis)
   b. Particulate Matter (less than 2.5 micron) - 60 µg/m^3 ($PM_{2.5}$ µg/m^3 24 hrs. basis)
   c. Sulphur Dioxide [SO_2] (24 hrs. Basis) - 80 µg/m^3
   d. Nitrogen Oxides [NO_x] (24 hrs. Basis) - 80 µg/m^3
   e. Carbon Monoxide [CO] (8 hrs. Basis) - 2000 µg/m^3

2. The industry shall take adequate measures for control of noise level generated from industrial activities within the premises less than 75 dB(A) during day time and 70 dB(A) during night time.

3. All other fugitive emission sources such as leakages, seepages, spillages etc shall be ensured to be plugged or sealed or made airtight to avoid the public nuisance.

4. Approach roads shall be made pucca to control the fugitive emissions of particulate matter generated due to transportation and internal movements.

5. Mine management shall take effective steps for extensive tree plantation of the local tree species with minimum spacing of 4X4 meter within or around the industry/unit premises for general improvement of environmental conditions and as stated in additional condition

Additional Air condition:- (if any) :-

1) Mine management shall install CAAQMS stations at suitable locations to monitor ambient air quality in the leased area and in the vicinity. The mine management shall online connectivity to CAAQMS station to MPPCB.

2) Approach roads shall be metal topped.

3) Drills shall be wet operated to reduce the fugitive emission.

4) Mining area should be surrounded by green belt having thick canopy of the tree cover.

5) Crushers / screening system shall be operated with effective bag filters, water sprinkling system shall be provided to check fugitive emission from crushing operations, conveyor system, haulage road, transfer points etc.

6) Sufficient number of water tanker for water sprinkling shall be provided for the control of fugitive emission from haul road

M.P. Pollution Control Board
E-5, Arera Colony
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Tele : 0755-2466191, Fax-0755-2463742

GENERAL CONDITIONS:

1. The non hazardous solid waste arresting in the industry/unit/unit premises sweeping, etc. be disposed off scientifically so as not to cause any nuisance/pollution. The applicant shall take necessary permission from civic authorities for disposal to dumping site. If required.

Non Hazardous Solid wastes:-

Type of waste	Quantity	Disposal
Scrap/ Plastic packing material wood, card board, gunny begs etc		Sale to authorized party/As Per CPCB. MoEF Guide lines / Others.

2. The applicant shall allow the staff of Madhya Pradesh Pollution Control Board and/or their authorized representative, upon the representation of credentials:

a. To inspect raw material stock, manufacturing processes, reactors, premises etc to perform the functions of the Board.

b. To enter upon the applicant's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this Consent.

c. To have access at reasonable times to any records required to be kept under the terms and conditions of this Consent.

d. To inspect at reasonable times any monitoring equipment or monitoring method required in this Consent: or,

e. To sample at reasonable times any discharge or pollutants.

3. This consent/authorisation is transferable, in case of change of ownership/management and addresses of new Owner/partner/Directors/proprietor should immediately apply for the same.

4. The issuance of this Consent does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorise any invasion of personal rights, nor any infringement of Central, State or local laws or regulations.

5. This consent is granted in respect of Water pollution control Act 1974 or Air Pollution Control act, 1981 or Authorization under the provisions of Hazardous and other Waste (Management & Transboundary movement) Rules 2016 only and does not relate to any other Department/Agencies. License required from other Department/Agencies have to be obtained by the unit separately and have to comply separately as per there Act / Rules.

6. Balance consent/authorisation fee, if any shall be recoverable by the Board even at a later date.

7. The applicant shall submit such information, forms and fees as required by the board not letter than 180 day prior to the date of expiration of this consent/authorisation

8. Knowingly making any false statement for obtaining consent or compliance of consent conditions shall result in the imposition of criminal penalties as provided under the section 42(g) of the Water Act or section 38 (g) of the Air Act.

9. After notice and opportunity for the hearing, this consent may be modified, suspended or revoked by the Board in whole or in part during its term for cause including, but not limited to, the following :

(a) Violation of any terms and conditions of this Consent.
(b) Obtaining this Consent by misrepresentation of failure to disclose fully all relevant facts.
(c) A change in any condition that requires temporary or permanent reduction or elimination of the authorized discharge.

10. On violation of any of the above-mentioned conditions the consent granted will automatically be taken as canceled and necessary action will be initiated against the industry.

Additional condition:- (if any) :-

1. Mine water shall be utilized for dust suppression and for plantation in order to ensure zero discharge status.

2. The mine management shall prepare & implement the mine closure plan as detailed in the mining plan/ Environment management plan.

3. Mine management shall provide adequate facility for proper treatment of waste water from mines and domestic effluent and shall ensure that the treated effluent quality meets the standards prescribed by the Board.

4. The mines management shall comply all conditions of Environmental Clearance issued by MoEF GOI New Delhi.

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5. Rain water harvesting shall be undertaken to recharge ground water source and status of implementation shall be submitted to the Board. Hydro-geological study of the area shall be reviewed annually. In case any adverse effect on ground water quality and quantity is observed, mining shall be stopped and resumed only after applying mitigating steps to restore the same.

6. The mine management shall stack the over burden at earmarked dump site(s) only. The maximum height of the dump shall not exceed 8m and width 20 m and the overall slope shall be maintained as 45^0. The Over Burden dumps shall be backfilled and scientifically vegetated with suitable native species to prevent erosion and surface runoff.

7. Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt, sediment flow from soil, OB dumps.

8. Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and for waste dump & sump capacity shall be designed keeping 50% safely margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. The garland drain shall be stone pitched /lined to prevent the erosion. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and de-silted at regular intervals. Mine Management shall construct proper Garland drains & sump of appropriate size before commencement of mining activity.

9. Mine management shall provide retaining wall at the toe of the dumps and OB benches within the mine to check runoff and siltation shall be based on rainfall data.

10. Top soil shall be scraped & separately stacked with proper slope and adequate safeguards; it shall be utilized for carpeting over the backfilled area and rehabilitation of mined out area.

11. Appropriate embankment shall be provided along the side of the river / nallah flowing near or adjacent to the mine.

12. Mine management shall provide fencing all around the mining leased area to prevent accident.

13. Vehicular emissions should be kept under control and regularly monitored for compliance of emission norms. Vehicles used for transporting the mineral should be covered with tarpaulins and optimally loaded.

14. The mine shall take effective steps for safe and scientific reclamation of over Burdon steps shall be taken to keep the geological structure in the natural form by biological reclamation of mines.

15. Mine management shall take appropriate steps to maintain the eco-system of the area through environmental conservation program and the report shall be submitted to the Regional office of the Board annually.

16. The Mine shall take proper action to control the noise pollution. The ambient noise level shall not exceed the limit 75dB [A] during the daytime and 70dB [A] during the night time.

17. Extensive tree plantation shall be done on both side of Mineral transportation roads and around mining lease area. The tree plantation shall be carried out in phase manner preferably with local species. Good house keeping practice shall be adopted by the Mine. More plantations with species like Neem, Pipal, Mango, Jamun, Kathal etc shall be planted.

18. Mine management shall submit environmental statement for the previous year ending 31st March on or before 30th September every year to the Board.

19. Mine management shall have to maintain automatic water spraying system for Crushers / screening and roads.

20. Mine Management shall make proper arrangement for the disposal of Solid waste; also valid authorization under Hazardous and otherWaste [Management & Transboundary movement] Rule 2016 shall be maintained.

21. Mine Management shall submit environmental statement for the previous year ending 31st March on or before 30th September every year to the Board.

22. Mine Management shall comply with all the relevant Acts/Rules, directions, guide lines issued by MoEF/CPCB/MPPCB from time to time as required and, if applicable.

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
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23. Mine Management shall comply with the directions of Honble Supreme Court / Honble High Court/ NGT issued in the relevant writ petitions.

24. Mine management shall ensure the compliance of MOFECC Office Memorandum dt 26/08/2015 issued in reference to ash content in the coal.

25. Mine management shall provide artificial recharger measures, rain water harvesting system and meeting water requirement of nearby villages by paramagnet water supply system.

26. Mine management shall provide proper fencing all around the leased area for safety purposes.

27. Mine management shall install industrial grade HD IP (Internet Protocol) Pan-Tilt-Zoom (PTZ) Camera with minimum 5X zoom and night vision facility for remote surveillance and constant vigil of emission source

28. Mine management shall establish suitable connectivity of IP-Camera with Environment Surveillance Centre at the HQ of M.P. Pollution Control Board for monitoring and data transmission purpose.

Consent/authorization as required under the Water (Prevention & Control of Pollution) Act,1974 & The Air (Prevention & Control of Pollution) Act,1981is granted to your industry subject to fulfillment of all the conditions mentioned above. For renewal purpose you shall have to make an application to this Board through XGN at least Six months before the date of expiry of this consent/authorisation. The applicant without valid consent (for operation) of the Board shall not bring in to use any outlet for the discharge of effluent and gaseous emission.

For and on behalf of
M.P. Pollution Control Board

Achyut mishra

(Member Secretary)

e-Signed On 31/05/2018 19:16:22
(Organic Authentication on AADHAR from UIDAI Server)
TPAV # RW765AY9F4

Achyut mishra

ACHYUT ANAND MISHRA
Member Secretary

Consent Order

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

RED-MEDIUM	CCA-Renewal	VALIDITY (A/W): 31/01/2019	CONSENT NO: ***	PCB ID: 19633

To,

The Occupier,

M/s. Prism Cement Ltd. Lime Stone Mines,
(Hinauti,Saijahat Area 99.416 Hect.),

99.416, RAJDEEP REWA ROAD SATNA,
HINAUTI,SAIJAHATA II,City : HINAUTI & SIJAHATA,
Tal : Rampur Baghelan, Dist : Satna, (M.P.)

Subject: **Grant of renewal of Consent under section 25 of the Water (Prevention & Control of Pollution) Act,1974 under section 21 of the Air (Prevention & Control of Pollution) Act,1981**

Ref: Your renewal of Consent Application Receipt No. 385213 Dt. 01/10/2017 .

With reference to your above application for renewal of consent has been considered under the aforesaid Acts and existing rules therein. The M. P. Pollution Control Board has agreed to grant consent up to **31/01/2019**, subject to the fulfillment of the terms & conditions, enclosed with this letter and-

SUBJECT TO THE FOLLOWING CONDITIONS :-

a. Location: Latitude of 24^0 33' 22" to 24^0 36' 22"N & Longitude 80^0 59' 24" to 81^0 1' 47"E,
Village- HINAUTI,SAIJAHATA II, Tehsil Rampur Baghelan, Dist. Satna, (M.P.)

b. Mining lease area : 99.416 Ha

c. Product & Production Capacity:

Product	CCA Qty
MINING OF LIMESTONE	**75, 000 Metric Ton Per Year**

Note:- For any change in above industry shall obtain fresh consent from the board.

The Validity of the consent is up to 31/01/2019 and has to be renewed before expiry of consent validity. Online application through XGN with annual license fees in this regard shall be submitted to this office 6 months before expiry of the consent/Authorization. Board reserves the right to amend/cancel / revoke the above condition in part or whole as and when required.

Enclosures:-

* Conditions under Water Act
* Conditions under Air Act
* General conditions

CC to :-

1. District Mining Officer, (Mining Section), Collector office, Satna Dist. Satna (M.P.) for information.
2. M.P. State Mining Corporation, Arera Hills, Jail Road, Bhopal (M.P.) for necessary action please.
3. Regional officer, Regional office, MPPCB, Satna (M.P.)

e-Signed On 16/01/2018 17:26:42
(Organic Authentication on AADHAR from UIDAI Server)
TPAV # W61U5VVVSD

ACHYUT ANAND MISHRA
Member Secretary

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

CONDITIONS PERTAINING TO WATER (PREVENTION & CONTROL OF POLLUTION) ACT 1974 :-

1. The daily quantity of trade effluent at out fall of the unit shall not exceed 0.00 KL/day, and the daily quantity of sewage at out fall of the unit shall not exceed 0.50 KL/day

2. Trade Effluent Treatment:- (If any)
The applicant shall provide comprehensive effluent treatment system and maintain the same properly to achieve following standards-

pH	Between	5.5 – 9.0
Suspended Solids	Not exceed	100 mg/l.
BOD 3 Days 27^{0}C	Not exceed	30 mg/l.
COD	Not exceed	250 mg/l.
Oil and grease	Not exceed	10 mg/l.

TDS	Not exceed	2100 mg/l.
Chlorides	Not exceed	1000 mg/l.

For other parameters general standards of discharge as notified under EP Act 1986 shall be applicable.

3. Sewage Treatment :- The applicant shall provide comprehensive sewage treatment system and maintain the same properly to achieve following standards as notified vide GSR No. **1265(E) Dt. 13.10.2017**:
-

pH	Between	6.5 – 9.0
Suspended Solids	Not exceed	100 mg/l.
BOD 3 Days 27^{0}C	Not exceed	30 mg/l.
COD	Not exceed	50 mg/l.

4. The effluent shall be treated up to prescribed Standards and reuse in the process, for cooling and for green belt devolvement/gardening within premises. Hence zero discharge condition shall be practiced. In no case treated effluent shall be discharged outside of industry/unit premises.

5. Any change in production capacity, process, raw material used etc. and for any enhancement of the above prior permission of the Board shall be obtained. All authorized discharges shall be consistent with terms and conditions of this consent. Facility expansions, production increases or process modifications which result new or increased discharges of pollutants must be reported by submission of a fresh consent application for prior permission of the Board

6. The specific effluent limitations and pollution control systems applicable to the discharge permitted herein are set forth as above conditions.

7. Compilation of Monitoring-
i. Samples and measurements taken to meet the monitoring requirements specified above shall be representative of the volume and nature of monitored discharge.
ii. Following promulgation of guidelines establishing test procedures for the analysis of pollutants, all sampling and analytical methods used to meet the monitoring requirements specified above shall conform to such guidelines unless otherwise specified sampling and analytical methods shall conform to the latest edition of the Indian Standard specifications and where it is not specified the guidelines as per standard methods for the examination of Water and Waste latest edition of the American Public Health Association, New York U.S.A. shall be used.
iii. The applicant shall take samples and measurement to meet the monthly requirements specified above and report online through XGN the same to the Board.

8. Recording of Monitoring-
i. The applicant shall make and maintain online records of all information resulting from monitoring activities by this Consent.
ii. The applicant shall record for each measurement of samples taken pursuant to the requirements of this Consent as follows:

(i) The date, exact place and time of sampling
(ii) The dates on which analysis were performed
(iii)Who performed the analysis?
(iv)The analytical techniques or methods used and

(v)The result of all required analysis

iii. If the applicant monitors any Pollutant more frequently as is by this Consent he shell include the results of such monitoring in the calculation and reporting of values required in the discharge monitoring reports which may be prescribed by the Board. Such increased frequency shall be indicated on the Discharge Monitoring Report Form.

iv. The applicant shall retain for a minimum of 3 years all records of monitoring activities including all records of Calibration and maintenance of instrumentation and original strip chart regarding continuous monitoring instrumentation. The period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the applicant or when requested by Central or State Board or the court.

9. Reporting of Monitoring Results:-

Monitoring Information required by this Consent shall be summarized and reported by submitting a Discharge Monitoring report on line to the Board.

10. Limitation of discharge of oil Hazardous Substance in harmful quantities:-

The applicant shall not discharge oil or other hazardous substances in quantities defined as harmful in relevant regulations into natural water course. Nothing in this Consent shall be deemed to preclude the institution of any legal action nor relive the applicant from any responsibilities, liabilities, or penalties to which the applicant is or may be subject to clauses.

11. Limitation of visible floating solids and foam:

During the period beginning date of issuance the applicant shall not discharge floating solids or visible foam.

12. Disposal of Collected Solid-

All hazardous waste/sludge shall be disposed of as per the Authorization issued under Hazardous & other waste (M&TM) Rules 2016. And/other Solids Sludges, dirt, silt or other pollutant separated from or resulting from treatment shall be disposed of in such a manner as to prevent any pollutant from such materials from entering any such water Any live fish, Shall fish or other animal collected or trapped as a result of intake water screening or treatment may be returned to eaters body habitat.

13. Provision for Electric Power Failure-

The applicant shall assure to the consent issuing authority that the applicant has installed or provided for an alternative electric power source sufficient to operate all facilities utilized by the applicant to maintain compliance with the terms and conditions of the Consent.

14. Prohibition of By pass system-

The diversion or by-pass of any discharge from facilities utilized by the applicant to maintain compliance with the terms and conditions of this Consent in prohibited except :

i. where unavoidable to prevent loss of life or severe property damage, or

ii. Where excessive storm drainage or run off would damage any facilities necessary for compliance with the terms and conditions of this Consent. The applicant shall immediately notify the consent issuing authorities in writing of each such diversion or by-pass in accordance with the procedure specified above for reporting non-compliance.

15. Industry/Institute/mine management shall submit the information online through XGN in reference to compliance of consent conditions.

Additional Water condition:- (if any) :-

1) The mine management shall maintain zero discharge condition.
2) Mine management shall made arrangements for ground water recharge.
3) Mine management shall ensure that the silt shall not flow to the nearby water body.

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

CONDITIONS PERTAINING TO AIR (PREVENTION & CONTROL OF POLLUTION) ACT 1981 :-

1. Ambient air quality at the boundary of the industry/unit premises shall be monitored and reported to the Board regularly on quarterly basis: The Ambient air quality norms are prescribed in MoEF gazette notification no. GSR/826(E), dated: 16/11/09. Some of the parameters are as follows:
   a. Particulate Matter (less than 10 micron) - 100 µg/m^3 (PM_{10} µg/m^3 24 hrs. basis)
   b. Particulate Matter (less than 2.5 micron) - 60 µg/m^3 ($PM_{2.5}$ µg/m^3 24 hrs. basis)
   c. Sulphur Dioxide [SO_2] (24 hrs. Basis) - 80 µg/m^3
   d. Nitrogen Oxides [NO_x] (24 hrs. Basis) - 80 µg/m^3
   e. Carbon Monoxide [CO] (8 hrs. Basis) - 2000 µg/m^3

2. The industry shall take adequate measures for control of noise level generated from industrial activities within the premises less than 75 dB(A) during day time and 70 dB(A) during night time.

3. The industry/unit shall make the necessary arrangements for control of the fugitive emission from any source of emission/section/activities.

4. All other fugitive emission sources such as leakages, seepages, spillages etc shall be ensured to be plugged or sealed or made airtight to avoid the public nuisance.

5. Approach roads shall be made pucca to control the fugitive emissions of particulate matter generated due to transportation and internal movements.

6. Industry shall take effective steps for extensive tree plantation of the local tree species with minimum spacing of 4X4 meter within or around the industry/unit premises for general improvement of environmental conditions and as stated in additional condition

Additional Air condition:- (if any) :-

1) Approach roads shall be made pacca..
2) Drills shall be wet operated to reduce the fugitive emission.
3) Mining area should be surrounded by green belt having thick canopy of the tree cover.
4) Crushers / screening system shall be operated with effective bag filters, water sprinkling system shall be provided to check fugitive emission from crushing operations, conveyor system, haulage road, transfer points etc.
5) Sufficient number of water tanker for water sprinkling shall be provided for the control of fugitive emission from haul road.

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

GENERAL CONDITIONS:

1. The non hazardous solid waste arresting in the industry/unit/unit premises sweeping, etc. be disposed off scientifically so as not to cause any nuisance/pollution. The applicant shall take necessary permission from civic authorities for disposal to dumping site. If required.

Non Hazardous Solid wastes:-

Type of waste	Quantity	Disposal
Scrap/ Plastic packing material wood, card board, gunny begs etc		Sale to authorized party/As Per CPCB. MoEF Guide lines / Others.

2. The applicant shall allow the staff of Madhya Pradesh Pollution Control Board and/or their authorized representative, upon the representation of credentials:

a. To inspect raw material stock, manufacturing processes, reactors, premises etc to perform the functions of the Board.

b. To enter upon the applicant's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this Consent.

c. To have access at reasonable times to any records required to be kept under the terms and conditions of this Consent.

d. To inspect at reasonable times any monitoring equipment or monitoring method required in this Consent: or,

e. To sample at reasonable times any discharge or pollutants.

3. This consent/authorisation is transferable, in case of change of ownership/management and addresses of new Owner/partner/Directors/proprietor should immediately apply for the same.

4. The issuance of this Consent does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorise any invasion of personal rights, nor any infringement of Central, State or local laws or regulations.

5. This consent is granted in respect of Water pollution control Act 1974 or Air Pollution Control act, 1981 or Authorization under the provisions of Hazardous and other Waste (Management & Transboundary movement) Rules 2016 only and does not relate to any other Department/Agencies. License required from other Department/Agencies have to be obtained by the unit separately and have to comply separately as per there Act / Rules.

6. Balance consent/authorisation fee, if any shall be recoverable by the Board even at a later date.

7. The applicant shall submit such information, forms and fees as required by the board not letter than 180 day prior to the date of expiration of this consent/authorisation

8. Knowingly making any false statement for obtaining consent or compliance of consent conditions shall result in the imposition of criminal penalties as provided under the section 42(g) of the Water Act or section 38 (g) of the Air Act.

9. After notice and opportunity for the hearing, this consent may be modified, suspended or revoked by the Board in whole or in part during its term for cause including, but not limited to, the following :

(a) Violation of any terms and conditions of this Consent.
(b) Obtaining this Consent by misrepresentation of failure to disclose fully all relevant facts.
(c) A change in any condition that requires temporary or permanent reduction or elimination of the authorized discharge.

10. On violation of any of the above-mentioned conditions the consent granted will automatically be taken as canceled and necessary action will be initiated against the industry.

Additional condition:- (if any) :-

1. The Mine shall optimize the water abstraction from the surface water source by utilizing the mine discharge for spraying on haul roads, mine area and loading - unloading area after proper treatment.
2. Extensive tree plantation shall be carried out in open areas available within and around the mine premises in consultation with expert agency. Good house keeping practice shall be adopted.
3. Mine management shall demarcate a barrier zone as no mining zone in the periphery of mining lease area and developed a green belt.
4. Overburden dumps shall be stored at the earmarked location along with proper stabilization arrangements and retaining wall. Maximum height of the OB dumps shall not exceed 20 meters and each stage shall be of 10 meter height with slope of shall not exceed 35^0. Mine shall have to take effective steps to check the soil erosion from over burden/waste material dumping area, causing silting problem into near by nallah/ river/ pond during the rainy season

M.P. Pollution Control Board
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5. Mine Management shall construct Garland drain of appropriate length with size with stone pitching all around , and sump capacity of appropriate size with sttling tanks. Sedimentation pits shall be constructed at the corners of the garland drains and de-silted at regular intervals.
6. Top soil shall be scraped & separately stacked with proper slope and adequate safeguards; it shall be utilized for carpeting over the backfilled area and rehabilitation of mined out area. The mine shall take effective steps for safe and scientific reclamation of over Burdon steps shall be taken to keep the geological structure in the natural form by biological reclamation of mines.
7. Mine management shall provide artificial recharger measures, rain water harvesting system.
8. Mine management shall provide fencing all around the lease area to prevent the accident hazard.
9. The Mine shall improve their existing pollution control facilities and maintain the same properly so that the emission could be maintained within the prescribed standards.
10. Controlled blasting should be practiced with the use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders should be implemented.
11. Mine management shall submit environmental statement for the previous year ending 31st March on or before 30th September every year to the Board.
12. Mine management shall ensure the compliance of conditions of Environmental clearance.
13. Mine shall comply the provisions of all the relevant Acts/Rules/Directions/Guidelines issued by MoEF/ CPCB/ MPPCB time to time as required and if applicable.
14. Mine shall comply the Directions/ Orders issued by Hon'ble Supreme Court/ High Court/ NGT time to time in the relevant Writ Petitions.
15. Mine management shall install industrial grade HD IP (Internet Protocol) Pan-Tilt-Zoom (PTZ) Camera with minimum 5X zoom and night vision facility for remote surveillance and constant vigil of emission source.
16. Mine management shall establish suitable connectivity of IP-Camera with Environment Surveillance Centre at the HQ of M.P. Pollution Control Board for monitoring and data transmission purpose.

Consent/authorization as required under the Water (Prevention & Control of Pollution) Act,1974. The Air (Prevention & Control of Pollution) Act,1981is granted to your industry subject to fulfillment of all the conditions mentioned above. For renewal purpose you shall have to make an application to this Board through XGN at least Six months before the date of expiry of this consent/authorisation. The applicant without valid consent (for operation) of the Board shall not bring in to use any outlet for the discharge of effluent and gaseous emission.

For and on behalf of
M.P. Pollution Control Board

Achyut mishra

(Member Secretary)

eSign Signing from UIDAI
Digitally Sign with Aadhaar

e-Signed On 16/01/2018 17:26:42
(Organic Authentication on AADHAR from UIDAI Server)
TPAV # W61U5VVVSD

Achyut mishra

ACHYUT ANAND MISHRA
Member Secretary

Consent Order

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

RED-MEDIUM	CCA-Renewal	VALIDITY (A/W): 31/12/2018	CONSENT NO: ***	PCB ID: 19634

To,

The Occupier,
M/s. Prism Cement Ltd. Medhi Lime Stone Mines, Area 117.594 Hect,
117.594 HECT., RAJDEEP REWA ROAD MAIHAR,
MEDHI,City : MEDHI,
Tal : Rampur Baghelan, Dist : Satna,(M.P.)

Subject: Grant of Renewal of Consent under section 25 of the Water (Prevention & Control of Pollution) Act,1974 under section 21 of the Air (Prevention & Control of Pollution) Act,1981

Ref: Your Renewal of Consent Application Receipt No. 374384 Dt. 26/08/2017 and last communication received on dt 09/01/2018.

With reference to your above application for Renewal of Consent has been considered under the aforesaid Acts and existing rules therein. The M. P. Pollution Control Board has agreed to grant Renewal of Consent up to 31/12/2018, subject to the fulfillment of the terms & conditions, enclosed with this letter and-

SUBJECT TO THE FOLLOWING CONDITIONS :-

a. Location: 117.594 HECT., VILL.: MEDHI,, Teh, Rampur Baghelan, distt :Satna (M.P.)

b. Mining lease area: 117.594 ha.

c. Product & Production Capacity:

Product	CCA Qty
MINING OF LIME STONE	**1900000 Metric Ton per year**

Note:- For any change in above industry shall obtain fresh consent from the board.

The Validity of the Renewal of Consent is up to 31/12/2018 and has to be renewed before expiry of consent validity. Online application through XGN with annual license fees in this regard shall be submitted to this office 6 months before expiry of the consent/Authorization. Board reserves the right to amend/cancel / revoke the above condition in part or whole as and when required.

Enclosures:-

* Conditions under Water Act
* Conditions under Air Act
* General conditions

CC to :-

1. District Mining Officer, (Mining Section), Collector office, Satna Dist. Satna (M.P.) for information.
2. M.P. State Mining Corporation, Arera Hills, Jail Road, Bhopal (M.P.) for necessary action please.
3. Regional officer, Regional office, MPPCB, Satna (M.P.)

e-Signed On 26/02/2018 14:52:25
(Organic Authentication on AADHAR from UIDAI Server)
TPAV # 944BUF11HA

ACHYUT ANAND MISHRA
Member Secretary

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

CONDITIONS PERTAINING TO WATER (PREVENTION & CONTROL OF POLLUTION) ACT 1974 :-

1. The daily quantity of trade effluent at out fall of the unit shall not exceed 0.10 KL/day, and the daily quantity of sewage at out fall of the unit shall not exceed 0.00 KL/day

2. Trade Effluent Treatment:- (If any)
The applicant shall provide comprehensive effluent treatment system and maintain the same properly to achieve following standards-

pH	Between	5.5 – 9.0
Suspended Solids	Not exceed	100 mg/l.
BOD 3 Days 27^{0}C	Not exceed	30 mg/l.
COD	Not exceed	250 mg/l.
Oil and grease	Not exceed	10 mg/l.

TDS	Not exceed	2100 mg/l.
Chlorides	Not exceed	1000 mg/l.

For other parameters general standards of discharge as notified under EP Act 1986 shall be applicable.

3. Sewage Treatment :- The applicant shall provide comprehensive sewage treatment system and maintain the same properly to achieve following standards as notified vide GSR No. **1265(E) Dt. 13.10.2017**:
-

pH	Between	6.5 – 9.0
Suspended Solids	Not exceed	100 mg/l.
BOD 3 Days 27^{0}C	Not exceed	30 mg/l.
COD	Not exceed	50 mg/l.

4. The effluent shall be treated up to prescribed Standards and reuse in the process, for cooling and for green belt devolvement/gardening within premises. Hence zero discharge condition shall be practiced. In no case treated effluent shall be discharged outside of industry/unit premises.

5. Water meter preferably electromagnetic/ultrasonic type with digital flow recording facilities shall be installed separately for category wise consumption of water as per Water (Prevention and Control of Pollution) Cess Act 1977 for Industrial cooling/boiler feed, mine spray, process & domestic purposes and data shall be submitted online through XGN monthly patrak/statements. The industry/unit shall also monitor the treated wastewater flow and report the same online through monthly patrak/statements.

6. Any change in production capacity, process, raw material used etc. and for any enhancement of the above prior permission of the Board shall be obtained. All authorized discharges shall be consistent with terms and conditions of this consent. Facility expansions, production increases or process modifications which result new or increased discharges of pollutants must be reported by submission of a fresh consent application for prior permission of the Board

7. All treatment/control facilities/systems installed or used by the applicant shall be regularly maintained in good working order and operate effectively/efficiently to achieve compliance of the terms and conditions of this consent

8. The specific effluent limitations and pollution control systems applicable to the discharge permitted herein are set forth as above conditions.

9. Compilation of Monitoring-
i. Samples and measurements taken to meet the monitoring requirements specified above shall be representative of the volume and nature of monitored discharge.
ii. Following promulgation of guidelines establishing test procedures for the analysis of pollutants, all sampling and analytical methods used to meet the monitoring requirements specified above shall conform to such guidelines unless otherwise specified sampling and analytical methods shall conform to the latest edition of the Indian Standard specifications and where it is not specified the guidelines as per standard methods for the examination of Water and Waste latest edition of the American Public Health Association, New York U.S.A. shall be used.
iii. The applicant shall take samples and measurement to meet the monthly requirements specified above and report online through XGN the same to the Board.

10. Recording of Monitoring-

i. The applicant shall make and maintain online records of all information resulting from monitoring activities by this Consent.
ii. The applicant shall record for each measurement of samples taken pursuant to the requirements of this Consent as follows:

(i) The date, exact place and time of sampling
(ii) The dates on which analysis were performed
(iii)Who performed the analysis?
(iv)The analytical techniques or methods used and
(v)The result of all required analysis

iii. If the applicant monitors any Pollutant more frequently as is by this Consent he shell include the results of such monitoring in the calculation and reporting of values required in the discharge monitoring reports which may be prescribed by the Board. Such increased frequency shall be indicated on the Discharge Monitoring Report Form.
iv. The applicant shall retain for a minimum of 3 years all records of monitoring activities including all records of Calibration and maintenance of instrumentation and original strip chart regarding continuous monitoring instrumentation. The period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the applicant or when requested by Central or State Board or the court.

11. Reporting of Monitoring Results:-
Monitoring Information required by this Consent shall be summarized and reported by submitting a Discharge Monitoring report on line to the Board.

12. Limitation of discharge of oil Hazardous Substance in harmful quantities:-
The applicant shall not discharge oil or other hazardous substances in quantities defined as harmful in relevant regulations into natural water course. Nothing in this Consent shall be deemed to preclude the institution of any legal action nor relive the applicant from any responsibilities, liabilities, or penalties to which the applicant is or may be subject to clauses.

13. Limitation of visible floating solids and foam:
During the period beginning date of issuance the applicant shall not discharge floating solids or visible foam.

14. Disposal of Collected Solid-
All hazardous waste/sludge shall be disposed of as per the Authorization issued under Hazardous & other waste (M&TM) Rules 2016. And/other Solids Sludges, dirt, silt or other pollutant separated from or resulting from treatment shall be disposed of in such a manner as to prevent any pollutant from such materials from entering any such water Any live fish, Shall fish or other animal collected or trapped as a result of intake water screening or treatment may be returned to eaters body habitat.

15. Provision for Electric Power Failure-
The applicant shall assure to the consent issuing authority that the applicant has installed or provided for an alternative electric power source sufficient to operate all facilities utilized by the applicant to maintain compliance with the terms and conditions of the Consent.

16. Prohibition of By pass system-
The diversion or by-pass of any discharge from facilities utilized by the applicant to maintain compliance with the terms and conditions of this Consent in prohibited except :
i. where unavoidable to prevent loss of life or severe property damage, or
ii. Where excessive storm drainage or run off would damage any facilities necessary for compliance with the terms and conditions of this Consent. The applicant shall immediately notify the consent issuing authorities in writing of each such diversion or by-pass in accordance with the procedure specified above for reporting non-compliance.

17. Industry/Institute/mine management shall submit the information online through XGN in reference to compliance of consent conditions.

Additional Water condition:- (if any) :-

1) The mine management shall maintain zero discharge condition.
2) Mine management shall made arrangements for ground water recharge.
3) Mine management shall ensure that the silt shall not flow to the nearby water body

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CONDITIONS PERTAINING TO AIR (PREVENTION & CONTROL OF POLLUTION) ACT 1981 :-

1. Ambient air quality at the boundary of the industry/unit premises shall be monitored and reported to the Board regularly on quarterly basis: The Ambient air quality norms are prescribed in MoEF gazette notification no. GSR/826(E), dated: 16/11/09. Some of the parameters are as follows:
   a. Particulate Matter (less than 10 micron) - 100 µg/m^3 (PM_{10} µg/m^3 24 hrs. basis)
   b. Particulate Matter (less than 2.5 micron) - 60 µg/m^3 ($PM_{2.5}$ µg/m^3 24 hrs. basis)
   c. Sulphur Dioxide [SO_2] (24 hrs. Basis) - 80 µg/m^3
   d. Nitrogen Oxides [NO_x] (24 hrs. Basis) - 80 µg/m^3
   e. Carbon Monoxide [CO] (8 hrs. Basis) - 2000 µg/m^3

2. The industry shall take adequate measures for control of noise level generated from industrial activities within the premises less than 75 dB(A) during day time and 70 dB(A) during night time.

3. The industry/unit shall make the necessary arrangements for control of the fugitive emission from any source of emission/section/activities.

4. Approach roads shall be made pucca to control the fugitive emissions of particulate matter generated due to transportation and internal movements.

Additional Air condition:- (if any) :-

1) Approach roads shall be made pacca..
2) Drills shall be wet operated to reduce the fugitive emission.
3) Mining area should be surrounded by green belt having thick canopy of the tree cover.
4) Crushers / screening system shall be operated with effective bag filters, water sprinkling system shall be provided to check fugitive emission from crushing operations, conveyor system, haulage road, transfer points etc.
5) Sufficient number of water tanker for water sprinkling shall be provided for the control of fugitive emission from haul road

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Paryavaran Parisar, Bhopal - 16 MP
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GENERAL CONDITIONS:

1. The non hazardous solid waste arresting in the industry/unit/unit premises sweeping, etc. be disposed off scientifically so as not to cause any nuisance/pollution. The applicant shall take necessary permission from civic authorities for disposal to dumping site. If required.

Non Hazardous Solid wastes:-

Type of waste	Quantity	Disposal
Scrap/ Plastic packing material wood, card board, gunny begs etc		Sale to authorized party/As Per CPCB. MoEF Guide lines / Others.

2. The applicant shall allow the staff of Madhya Pradesh Pollution Control Board and/or their authorized representative, upon the representation of credentials:

a. To inspect raw material stock, manufacturing processes, reactors, premises etc to perform the functions of the Board.

b. To enter upon the applicant's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this Consent.

c. To have access at reasonable times to any records required to be kept under the terms and conditions of this Consent.

d. To inspect at reasonable times any monitoring equipment or monitoring method required in this Consent: or,

e. To sample at reasonable times any discharge or pollutants.

3. This consent/authorisation is transferable, in case of change of ownership/management and addresses of new Owner/partner/Directors/proprietor should immediately apply for the same.

4. The issuance of this Consent does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorise any invasion of personal rights, nor any infringement of Central, State or local laws or regulations.

5. This consent is granted in respect of Water pollution control Act 1974 or Air Pollution Control act, 1981 or Authorization under the provisions of Hazardous and other Waste (Management & Transboundary movement) Rules 2016 only and does not relate to any other Department/Agencies. License required from other Department/Agencies have to be obtained by the unit separately and have to comply separately as per there Act / Rules.

6. Balance consent/authorisation fee, if any shall be recoverable by the Board even at a later date.

7. The applicant shall submit such information, forms and fees as required by the board not letter than 180 day prior to the date of expiration of this consent/authorisation

8. Knowingly making any false statement for obtaining consent or compliance of consent conditions shall result in the imposition of criminal penalties as provided under the section 42(g) of the Water Act or section 38 (g) of the Air Act.

9. After notice and opportunity for the hearing, this consent may be modified, suspended or revoked by the Board in whole or in part during its term for cause including, but not limited to, the following :

(a) Violation of any terms and conditions of this Consent.
(b) Obtaining this Consent by misrepresentation of failure to disclose fully all relevant facts.
(c) A change in any condition that requires temporary or permanent reduction or elimination of the authorized discharge.

10. On violation of any of the above-mentioned conditions the consent granted will automatically be taken as canceled and necessary action will be initiated against the industry.

Additional condition:- (if any) :-

1. The Mine shall optimize the water abstraction from the surface water source by utilizing the mine discharge for spraying on haul roads, mine area and loading - unloading area after proper treatment.
2. Extensive tree plantation shall be carried out in open areas available within and around the mine premises in consultation with expert agency. Good house keeping practice shall be adopted.
3. Mine management shall demarcate a barrier zone as no mining zone in the periphery of mining lease area and developed a green belt.
4. Overburden dumps shall be stored at the earmarked location along with proper stabilization arrangements and retaining wall. Maximum height of the OB dumps shall not exceed 20 meters and each stage shall be of 10 meter height with slope of shall not exceed 35^0. Mine shall have to take effective steps to check the soil erosion from over burden/waste material dumping area, causing silting problem into near by nallah/ river/ pond during the rainy season

M.P. Pollution Control Board
E-5, Arera Colony
Paryavaran Parisar, Bhopal - 16 MP
Tele : 0755-2466191, Fax-0755-2463742

5. Mine Management shall construct Garland drain of appropriate length with size with stone pitching all around , and sump capacity of appropriate size with sttling tanks. Sedimentation pits shall be constructed at the corners of the garland drains and de-silted at regular intervals.
6. Top soil shall be scraped & separately stacked with proper slope and adequate safeguards; it shall be utilized for carpeting over the backfilled area and rehabilitation of mined out area. The mine shall take effective steps for safe and scientific reclamation of over Burdon steps shall be taken to keep the geological structure in the natural form by biological reclamation of mines.
7. Mine management shall provide artificial recharger measures, rain water harvesting system.
8. Mine management shall provide fencing all around the lease area to prevent the accident hazard.
9. The Mine shall improve their existing pollution control facilities and maintain the same properly so that the emission could be maintained within the prescribed standards.
10. Controlled blasting should be practiced with the use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders should be implemented.
11. Mine management shall submit environmental statement for the previous year ending 31st March on or before 30th September every year to the Board.
12. Mine management shall ensure the compliance of conditions of Environmental clearance.
13. Mine shall comply the provisions of all the relevant Acts/Rules/Directions/Guidelines issued by MoEF/ CPCB/ MPPCB time to time as required and if applicable.
14. Mine shall comply the Directions/ Orders issued by Hon'ble Supreme Court/ High Court/ NGT time to time in the relevant Writ Petitions.
15. Mine management shall install industrial grade HD IP (Internet Protocol) Pan-Tilt-Zoom (PTZ) Camera with minimum 5X zoom and night vision facility for remote surveillance and constant vigil of emission source.
16. Mine management shall establish suitable connectivity of IP-Camera with Environment Surveillance Centre at the HQ of M.P. Pollution Control Board for monitoring and data transmission purpose.

Consent/authorization as required under the Water (Prevention & Control of Pollution) Act,1974, The Air (Prevention & Control of Pollution) Act,1981is granted to your industry subject to fulfillment of all the conditions mentioned above. For renewal purpose you shall have to make an application to this Board through XGN at least Six months before the date of expiry of this consent/authorisation. The applicant without valid consent (for operation) of the Board shall not bring in to use any outlet for the discharge of effluent and gaseous emission.

For and on behalf of
M.P. Pollution Control Board

Achyut Mishra

(Member Secretary)

e-Signed On 26/02/2018 14:52:25
(Organic Authentication on AADHAR from UIDAI Server)
TPAV # 944BUF11HA

Achyut Mishra

ACHYUT ANAND MISHRA
Member Secretary

PRISM JOHNSON LTD. **ANNEXURE-21**

CSR ACTIVITIES EXPENSE SUMMARY FY 2017-18

PANCHAYAT COVERED :07		**Mankahari, Hinauti, Sijahata, Baghai, Bathiya, Mahurachh & Narsinghpur**					
VILLAGE COVERED : 14		**Mankahari, Hinauta, Hinauti, Pithaipur, Bandarakha, Sijahata, Medhi, Jhanjhar, Mugwari, Baghai, Bathiya, Bamhauri, Mahurachh & Narsinghpur**					
S.N.	**Particulars/Activity**	**Objectives**	**Key Initiatives/strategy**	**Estimated Exp. In Lacs**	**Expected Target Date**	**Current Status**	**Exp Rs in Lacs**
A.	**INFRASTRUCTURE DEVELOPMENT (CSR ACT SCHEDULE VII - X)**						
1	WBM Road at Sijahata	To provide basic infrastructure for smooth transportation, easy access to remote area and road safety	From main road to Barha Tola approx. 2 km At village Sijahata	10.00	Nov-17	Work Completed in March-18	4.58
		To provide basic infrastructure for smooth transportation, easy access to remote area and road safety	From Main road Baghai to Tapa approx. 1.5 km at village Baghai	8.00	Nov-17	Work Completed in March-18	3.81
2	Development of Jabla Baba as picnic Spot	Conservation of Cultural monument	Construction of cloth changing room for women and development at Jabla Baba Temple, Hinauti	8.00	Mar-18	Proposal submitted for management approval on 14.07.2017	0.00
3	Construction of Market shade	To provide place for rural market	Construction of shade and platform for rural market at village Baghai	8.00	Mar-18	Work is in progress	3.34
4	Construction of Cremation Shed	Providing best funeral facility to villagers in any season.	At gram Panchayat Mahurachh	4.75	Mar-18	Completed in Aug-17	3.63
			At gram panchayat Narsinghpur	4.75	Mar-18	Completed in Nov - 17	3.70
5	Bus Shelter	To provide a place for passengers waiting in rural areas	At village Hinauti	4.00	Mar-18	Completed in Sep - 17	1.48
6	Construction of Trench/Drainage System	To develop infrastructure for water drainage at rural areas	At village Baghai	6.00	Mar-18	Completed in March -18 (270 Meter)	3.71
			In front of New Bulker Yard Bamhauri	10.00	Mar-18	Completed in Nov -17	8.39
7	Open defaecation free (ODF) Toilet	To create awareness for best hygiene practices among the villagers & students.	Construction of 138 ODF Toilets at Village Baghai under Swachh Bharat Mission and Sanitation & Hygiene awareness programs	40.00	Mar-18	PO released for 45 nos toilets. 30 nos completed. Rest work is in progress	7.89
8	Repairing/Construction of village gate	To help visitors for identification of villages	Construction/repairing of village gate at village Bathiya	4.00	Mar-18	Completed in Nov - 17	3.02
9	Electrification	To develop rural infrastructure for lighting	Installation of electric pole with lights from Railway gate to Durga Mandir Bamhauri	5.00	Mar-18	Completed in Nov - 17 (26.11.2017)	2.78
10	C. C. Road (New Project)**	To provide basic infrastructure for smooth transportation, easy access to remote area and road safety	Construction of new PWD road from Bamhauri turning to Hinauti turning app. 1.5 KM (Partly) (To be paid in 02 yrs)	113.50	Mar-18	Work proposal submitted to Government. Work is pending government approval.	0.00

11	Check Dam with water reservoir (New Project)**	To promote water conservation & water harvesting awareness	Construction of check dam at Baghai village (Partly)	25.00	Mar-18	Work order Released. Hold due to crop, will start after harvesting and physical possession	0.00
12	Construction of drain at dispatch gate	Development of Rural Infrastructure	Development of basic rural infrastructure near old dispatch gate, Bamhauri Hinauti Road (120 meters Hume pipe crossing)		Dec'17	Completed in March	8.47
13	White Wash work at District Hospital Satna	Development Infrastructure	Support to Government		June'17	Completed in Sep - 17	7.86
14	Whitewash Cremation shed Sijahata & Mankahari - 17-18	Rural Infrastructure Development	Whitewash and other miscelleneous work at cremation shed Sijahata and Mankahari		18-Feb	Completed in Feb-18	0.33
15	Display and Grouting of Board	To display of work done by PJL in nearby villages	At village Baghai, Sijahata, Hinauti, Bamhauri, Mankahari, Mahurachh and Bathiya		Mar'17	Completed in Feb-17	0.63
16	Road Repairing at Baghai (PCC & Bitumin Road)	Rural Infrastructure Development	Bitumin work, cleaning and grouting of display board		Mar'18	Completed in March	2.37
17	WBM road construction behind Govt. Middle School Baghai	Rural Infrastructure Development	WBM road construction		Mar'18	Completed in March	1.30
						Sub Total	**67.29**
B.	**HEALTH & HYGIENE (CSR ACT SCHEDULE VII - i)**						
1	Mega Medical Camp	To provide good & healthy environment at nearby villages through providing free specialized consultation, free Blood Diagnostic, Free optical and free medicine distribution	At village Mankahari	1.00	Oct-17	Completed on 09.09.2017 benefitted 312 pts	0.68
			At village Sijahata	1.00	Nov-17	Completed on 03.02.2018 benefitted 372 pts	0.66
			At village Hinauti	1.00	Dec-17	Completed on 28.10.2017 benefitted 293 patients	0.62
			At village Tapa	1.00	Jan-18	Completed on 25.11.2017 benefitted 592 patients	0.67
			At village Baghai	1.00	Feb-18	Completed on 23.12.2017 benefitted 390 patients	0.65
2	Mobile Health van visit to nearby villages	To provide medical facilities at door step for good health	Visit by Mobile health van to nearby villages on weekly basis with providing free medical services like doctor & medicines distribution.	3.00	Continuous Activity	Attended 961 patients till Mar-18	0.00
3	Free Consultation & Medicine Distribution from PJL Medical Centre Out Door Patient	To provide round O'clock medical facility to villagers of nearby villages	Free consultation & medicines distribution from PJL Medical centre Out door patient to nearby villagers	18.00	Continuous Activity	Attended 20905 patients till Mar-18	11.59
4	EYE Camp	To support Govt.. sponsored schemes under different health programs.	Collection of patients data through Mega Medical Camps	1.00	Feb-18	Completed. 20 patients sends to Sadguru Netra Chikitsalaya for Surgery on 07.02.2018	1.20
			One Eye camp will be organized				0.00

5	Ambulance Service	To provide transportation support in ill health at nearby villagers	24 hrs ambulance facility will be provided to nearby villagers for free of cost.	5.00	Continuous Activity	Attended 2332 patients till Mar-18	6.22
6	School Child Health Check-up	To provide medical facility at door step for good health	Government Middle School Mankahari	0.50	Oct-17	Completed in Nov - 17. Health Checkup of 31 students carried out.	0.00
			Government Primary School Narsinghpur		Nov-17	Completed in Nov - 17. Health Checkup of 16 students carried out.	0.00
			Government Middle School Hinauti		Dec-17	Completed in Oct - 17. Health Checkup of 34 students carried out.	0.00
			Government Primary School Barha Tola Sijahata		Jan-18	Completed in Sep -17. Health Checkup of 31 students carried out.	0.00
			Government Primary School Bandarkha		Feb-18	Completed in Nov -17. Health Checkup of 72 students carried out.	
			Government Middle School Tapa			Completed in Nov -17. Health Checkup of 182 students carried out.	0.00
7	Support to Govt. sponsored health Schemes	To support Govt. sponsored schemes under different health programs.	Construction of ODF toilet under "Swachha Bharat Mission" at Village Bandarkha. (10 Nos.)	1.00	As and when required	Completed in Dec -17	2.41
8	Operation of Sulabh Complex	To provide a hygienic place	Sharing of Operation & Maintenance expense of Sulabh Complex at Mahurachh Turning	1.36	Continuous Activity	Completed in March-18	0.30
10	Medical Health Check up Camp	To bring awareness about health and Hygiene	Medical Health Check up Camp for Drivers		Aug'17	Drivers health check up camp organized on 04.08.2017 & 05.08.2017 benefitted 228 drivers	0.00
						Sub Total	**25.01**

C.	**EDUCATION (CSR ACT SCHEDULE VII - ii)**						
1	Repairing , Maintenance and white wash of School buildings in nearby villages	To Provide comfortable environment for study	Repairing , Maintenance and white wash of government primary School buildings at Medhi	1.00	Jan-18	Completed in Feb-18	0.89
			School building repairing & white wash at government higher secondary school Sijahata	3.00	Jan-18	Completed	5.58
2	Sweet Distribution to schools of nearby villages	To celebrate National Days	Distribution of Sweets to near by 24 Government & Private Schools of nearby villages	1.50	On 15 the August 17 & 26 Jan -18	Completed. Sweet Distributed on 15.08.17 & 26.01.2018	2.13
3	Sitting Arrangement at government schools	To encourage students for education	Providing of Dari, Desk table Fan and electrification work to government primary school Medhi	1.00	Jan-18	Completed. Distributed on 20.02.2018	0.06
4	Uniform Distribution at government schools		Uniform distribution to student of government primary school Medhi	1.00	Oct-17	Completed. Distributed on 20.02.2018	0.25
5	Repairing & Maintenance of School Premises	To Provide comfortable environment for study	Construction of boundary wall at Govt.. girls middle school Sijahata	4.00	Mar-18	Completed in Sep - 17	2.52
6	Renovation of Anganvadi	To Provide comfortable environment for study	Renovation and development of Anganvadi at village Mahurachh, Sijahata & Baghai	3.00	Mar-18	Completed in March-18	2.25
7	Electrification at Govt Middle School Baghai	To provide better and convienient environment for study	Electrical fitting with electricity connection at Govt. Middle School Baghai			Completed in March	0.90
8	Boundrywall Construction at Govt School Baghai (16 M)	To provide better and convienient environment for study	Remaining boundarywall construction at Govt. Middle School Baghai		Mar'18	Completed in Jan-18	1.18
						Sub Total	**15.77**
D.	**ENVIRONMENT CONSERVATION (CSR ACT SCHEDULE VII - iv)**						
1	Plantation in buffer zone	Environment Conservation through plantation	Installation of 100 tree guards with plants in nearby villages	3.00	Between July -17 to Feb - 18	50 nos installed. For rest vendor denied for supply. Deplying new vendor for supply is in progress	0.54
2	Plantation in core zone		Survival & Maintenance of AFR plantation at Sijahata & Baghai	15.00	Continuous Activity	Completed. Survival and Maintenance work is in progress, 5000 sapling replaced as make up plantation, supervised by Environment department	16.03
3	Plantation at nearby villages		Development of new clusters for plantation in nearby villages	5.00	Mar-18	Proposal & presentation submitted to management for Vantulsi, Chandan, Safed Musli and Teakwood cultivation on contract farming on 20.09.2017at village Satari on 14.58 acre	0.00
4	Distribution of fruit bearing plants		Distribution of 3000 fruit plants and plantation at nearby villages	1.00	Between July -17 to Feb - 18	Completed 1000 fruit plants distributed to villagers from 15.09. to 23.09.2017	0.66

E.	**WATER CONSERVATION & DRINKING WATER (CSR ACT SCHEDULE VII - i)**					**Sub Total**	**17.23**
1	Drinking water supply through Water Tanker	To provide safe & pure drinking water	Providing water Tankers for drinking purpose as required	4.00	As and When Required	Completed. Supplied 121 Tanker water	1.84
2	Nishulk pyau' in summer season		Water Hut in summer Season at Mahurachh turning ,Water Hut in summer Season at Mahurachh turning ,	0.20	From Apr to June 17	Completed. Started from 10.04.2017 and ends on 30.06.017	0.23
				0.20	From Apr to June 17	Completed. Started from 10.04.2017 and ends on 30.06.017	0.23
3	Installation of new hand pumps		Installation of new Hand pumps at Narsinghpur	0.75	Oct-17	Completed in Dec-17	0.55
			Installation of new Hand pumps at Mankahari	0.75	Oct-17	Completed in Dec-17	0.55
			Installation of new Hand pumps at Mugvari	0.75	Oct-17	Completed in Dec-17	0.55
			Installation of new Hand pumps at Bamhauri	0.75	Oct-17	Completed in Dec-17	0.55
4	Water Harvesting Structure at Wells	To promote water conservation & water harvesting awareness	08 structure to be made at nearby villages (Mankahari, Bamhauri, Narsinghpur, Hinauti Sijahata, Baghai and Bathiya)	2.00	Mar-18	Completed in Dec-17	2.89
5	Deepening of Pond	To enhance water reserving capacity	Deepening of Ponds at nearby villages	4.00	Mar-18	Proposal submitted for management approval on 31.08.2017 and hold by management	0.00
8	Extension of Water Supply line at Bandarkha (400 mtrs)	Providing safe drinking water	To provide support to Government Sponsored "Swachchhata Abhiyan"		Dec'17	Work order release with PO No. 3100127877 and work is in progress	3.34
						Sub Total	**10.70**
F.	**EMPOWERMENT & SKILL DEVELOPMENT (CSR ACT SCHEDULE VII - ii)**						
1	Vocational training programs	To develop vocational skills through training to unemployed persons	Training programmes/sessions for driver for at least 25 male incumbents	2.00	Mar-18	Completed in Dec-17	1.40
		To develop vocational skills through training to unemployed persons	Training program for Electrician/plumber Skill development for 25 incumbents	2.00	Mar-18	Completed. Started from 22.01.18 to 20.02.2018	0.00
		To develop vocational skills through training to unemployed persons	Training program for Stitching/Beautician for 25 females incumbents from nearby villages.	2.00	Mar-18	Completed. Training Duration from 26.06.2017 to 25.07.2017, No. of Trainees =25	1.14
2	Farmers Training	To develop skills for agriculture development	Training program for farmers from nearby villages	1.00	Mar-18	Completed. Provided Training at Mahurachh Village on 23.05.2017	0.00
3	Computer Training	To enhance Skill Development	Providing computer training to 30 nos. villagers youth from nearby villages		July'17	Completed in June 17	1.50
						Sub Total	**4.04**
G.	**PROMOTION OF SPORT ACTIVITIES (CSR ACT SCHEDULE VII - vii)**						

1	Development of Playground	To develop sports skills among villagers	Development of playground at village Mankahari & Higher Secondary school Sijahata	10.00	Mar-18	1. Completed at Govt. Hr. Sec. School Sijahata Aug-17 2. Completed in Dec-17 Playground boundrywall at Mankahari (130 M)	8.91
2	Sponsorship & Contribution to various tournaments at surrounding area	To encourage & support to sports skills among villagers of nearby villages	Financial support to various tournaments / sports activities among villagers of nearby villages (Block & District Level)	3.00	Mar-18	Completed. 13 activities covered 1. Organized Solar Car Race from 07.04.2017 to 09.04.2017 at Hinauti 2. Cricket Tournament at Mankahari 3. Football Tournament at Amarpatan 4. Amateur Kabaddi Tournament 5. Satna Jila Olympic Sangh 6. Independence Club Football Tournament Nagod 7. Cricket Tournament at Baghai 8. Cricket Tournament at Hinauti 9. Cricket Tournament at Sijahata 10. Cricket Tournament at Rampur Baghelan 11. Volleybal Tournament at satna 12. Kit to Sijahata Premier League 13. APS Memorial Cricket Tournament Rampur Baghelan	6.65
						Sub Total	**15.56**
H.	**SOCIAL WELFARE (CSR ACT SCHEDULE VII - viii)**						
1	Slogan writing/Wall Painting	To create awareness amongst the villagers on different social causes & issues.	To create awareness and motivation amongst the local villagers pertaining to health (AIDS & TB) & hygiene, education, self reliance, empowerment and other themes through wall paintings and slogans writing. (250 nos.)	2.50	Mar-18	Completed in March-18	2.13
2	Support to social, cultural and recreational activities	To support & encourage cultural activities among villagers of nearby villages	Contribution & sponsorships for various cultural-religious programs in nearby Gram Panchayat, Charitable, Financial aid to poor villagers, Charitable Trusts, Samuh Bhoj-Bhandara, trusts etc	5.00	Mar-18	Completed in March-18. 14 activity covered	7.89
3	Miscellaneous activities	To support different government sponsored social welfare activities	Providing contribution, machinery and other assistance required as per development activity	5.00	As and when required	01 Activity Completed (Participated in Narmada Sewa Yatra)	0.28
						TOTAL	**10.31**
			SUB TOTAL	**370.26**			**165.91**
J.	**EXTENDED WORK FROM LAST YEAR i.e. FY 2016-17**						
	INFRASTRUCTURE DEVELOPMENT (CSR ACT SCHEDULE VII - X)						
1	Development of Old Shiva Temple Jabla baba (Hinauti) as Picnic Spot	Conservation of Cultural monument	Fixing of paving tiles at Pakka Ghat Near Jabla Baba Shiva temple area etc.	20.00	Mar'17	Completed in May -17	1.41
2	Construction of Cremation Shed	Providing best funeral facility to villagers in any season.	At Village Baghai	4.50	Mar'17	Completed in Nov-17	2.90
3	Soil Filling Work at Mahurachh Turning	Rural Infrastructure Development	Mahurachh Turning	0.00	June'17	Completed on May -17	3.73
	HEALTH & HYGIENE (CSR ACT SCHEDULE VII - i)						
3	Toilets	To create awareness for best hygiene practices among the villagers & students.	Construction of Toilets at Govt. Girls Middle School Sijahata (02 No.)	5.00	Mar'17	Completed in March	3.69
				29.50			**11.72**
			GRAND TOTAL				**177.64**

List of Prizes

Sl. No.	Year	MSW		MEMCW	
		PCL	Ramsthan	PCL	Ramsthan
1	1997	0		3	
2	1998	5		5	
3	1999	7		7	
4	2000	5		6	
5	2001	0		0	
6	2002	7		6	
7	2003	5		4	
8	2004	6		2	
9	2005	3		3	
10	2006	4		3	
11	2007	2		4	
12	2008	2		7	
13	2009	2		2	
14	2010	5		3	3
15	2011	7	1	4	
Total		**60**	**1**	**59**	**3**
		61		**62**	
G. Total		**123**			

Annexure- 23

PRISM JOHNSON LIMITED (Formerly Prism Cement Limited)

Recurring Expenditure during financilal Year April 17 to March 18 For Environmental Management (Unit - II)

S.No.	Expenditure under Different Heads	Rs.
1	Annual Maint. Cost for Pollution Control Equipment	1130783
2	CEMS Maintenance	549089
3	Monitoring, Plantation & Operation and Maint. Of Sewage Treatment Plant etc	5169520
4	Construction of Road & walkway	2244000
	Total Cost	**9093392**
5	Annual Power Consumption Cost For Operation of Air Pollution	**101483637**
	Total Cost Crore Rupees (Including APCE Power Consumption)	**11.06**