To,
The Chairman,
Bihar State Pollution Control Board,
Parivesh Bhavan, N.S.B.-2,
Patliputra Industrial Area, Patliputra,
Patna, Bihar – 800010

Dated 25.06.2017

Our Ref :ECO/BIHAR/SEC/25062017/10

Sub : Status of Environmental Compliance of CTO of M/s. Eco Cements Limited, Bhabhua for The period of OCT 2016 TO MARCH 2017

Dear Sir,
This refers to above mentioned subject. In this matter, please find attached Status of Environmental Compliance of M/s. Eco Cements Limited, Bhabhua for the period of OCT 2016 TO MARCH 2017

Kindly acknowledge the receipt and oblige.

Thanking you in anticipation,
For Eco Cements Limited

AUTHO SIGN.

Encl.

1. **Status of Environmental Compliance of CTO of M/s. Eco Cements Limited, Bhabhua for**

the period of OCT 2016 TO MARCH 2017

Copy to.

1. **Ministry of Environment and Forests,**
   BANGLOW NO. A-2, SHYAMLI CALONY,
   RANCHI-834002, JHARKHAND
   PH. 0651-2410007, 2410002

2. **The Chairman, Central Pollution Control Board,**
   Parivesh Bhawan, CBD-cum-Office Complex,
   East Arjun Nagar, Delhi - 110 032

To, Dated 25.06.2017
The Chairman,
Central Pollution Control Board,
Parivesh Bhawan, CBD-cum-Office Complex,
East Arjun Nagar, Delhi - 110 032

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East Arjun Nagar, Delhi - 110 032

ECO CEMENTS LIMITED, BHABHUA, BIHAR

Compliance report of Emission Consent Order for ECO Cements Ltd, Bhabhua

Reference Letter from BSPCB, PATNA - PT2-1048/04 T-15842 DATED - 23/09/2013 VALID TILL MARCH 2016

(For the period from OCT - 2016 to March - 2017)

Compliance of Emission Consent Order conditions of BSPCB

Sl.No.	Particulars	Status of Compliance	PROOF OF EVIDENCE
1	That, he/they shall not make any alteration, addition, deletion or modification in the plant without the prior clearance from the Board and shall also abide by the obligations under sections 22,23 and 31A of the Air (Prevention & Control of Pollution) Act, 1981 and further shall extend co-operation to the Board in performing its functions entrusted under sections 24, 25 and 26 of the Act	We will not do any alteration, addition, deletion or modification in the plant without the prior clearance from the Board and shall also abide by the obligations under sections 22,23 and 31A of the Air (Prevention & Control of Pollution) Act, 1981 and further shall extend co-operation to the Board in performing its functions entrusted under sections 24, 25 and 26 of the Act	**NILL**
2	That, he /they shall comply with the requirements of the rule 14 of the Environmental (Protection) Rules, 1986; rules 4,5,7,9,10 and 11 of the Hazardous Wastes (Management, Handling, Transboundry Movement) , Rules 2008; rules 4,5,7,8,10,11,12,13,15,17 and 18 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989; and the provisions of the Public Liability Insurance Act, 1991, Whichever is applicable	We are complying, Cement manufacturing (Grinding) is based on "Dry Process" No Hazardous waste is generated from the process	**NA**
3	That, he/they shall monitor his/her emission(s) and the ambient air quality from represtative point regularly and shall maintain its quality in conformity with Board's standards and shall produce its proof, as and when asked for	We are monitoring emission(s) and the ambient air quality from represtative point regularly ON hire basis Recognised environmental laboratory and maintaining its quality in conformity with Board's standards. Environmental monitoring reports have been submitted to BSPCB on six monthly basis(SEE attachment for	**REPORTS OF AAQ & SMR ATTACHED. IT CONFIRMS TO THE BOARD STANDARDS (REPORT - 1)**
4	That, he/they shall submit application for consent again 30 days before the expiration of the period of consent i.e.**29.02.2016** or within 30 days from the date of receipt of this order whichever is applicable	We have submitted application for consent again 30 days before the expiration of the period of consent i.e.29.02.2016. APPLICATION NO. 311752	**CPMPLYING**
5	*That, the air pollution control devices at material transfer points, raw material handling, vehicular movements, bagging and packing area shall be operated regularly to keep emission of the particulate matter from stacks within 50mg/Nm ³*	we are regularly operating air pollution control devices at material transfer points, raw material handling, vehicular movements, bagging and packing area to keep emission of the particulate matter from stacks within 50mg/Nm³	**CPMPLYING**
6	*That, the gaseous emission level including secondary fugitive emission from all the sources shall be controlled within the latest permissible limit issued by the MoEF and they shall be monitored regularly*	*The gaseous emission level including secondary fugitive emission from all the sources have been controlled within the latest permissible limit issued by the MoEF and they shall be monitored regularly*	**REPORTS OF AAQ & SMR ATTACHED. IT CONFIRMS TO THE BOARD STANDARDS (REPORT - 1)**
7	*That, regular water spraying/ sprinkling on the roads all around the plant and other critical area prone to air pollution shall be carried out to control fugitive dust emission to conform to the norms of the ambient air quality parameters*	We are Regularly Spraying water on the roads all around the plant and other critical area prone to air pollution. We have deployed tractor mounted tank with spray system for spraying water on roads & pollution prone area.	**SEE THE ATTACHED PHOTOS OF TRACTOR & TANK SPRAY SYSTEM**

8	*That, all raw material including fly ash and end product shall be transported in closed container only to reduce impaction the surrounding environment including agriculture*	We are transporting Flyash in closed container Bulkers	**SEE THE PHOTOS OF BULKERS**
9	*That, dust from bag filters, raw meal, clinker dust and cement dust from pollution control devices shall be recycled in the process of cement manufacturing*	All the dust from bag filters, raw meal, clinker dust and cement dust from pollution control devices is being recycled in the process of cement manufacturing all over the plant	**PHOTOS OF POLLUTION CONTROL DEVICES**
10	*That, spent oil and batteries shall be sold to authorized recyclers only*	It is stored in drums & Shell be disposed off through Authorised Recyclers.	**CPMPLYING**
11	*That, green belt shall be developed and maintained as prescribed in the EC*	Tree plantation is our ongoing process. Every year we do plantation in our plant & nearby areas. Green Belt has been developed & maintained as per prescribed in EC. We have planted more than 1000 different type of Plants around the premises	**SEE ATTACHED PHOTOS OF TREES**
12	*That, data on ambient air quality and stack emission shall be submitted to this Board on six monthly basis as prescribed in the EC*	Data on ambient air quality and stack emission have been submitted to the Bihar State Pollution Control Board on six monthly basis	**REPORTS OF AAQ & SMR ATTACHED. IT CONFIRMS TO THE BOARD STANDARDS (REPORT - 1)**
13	*That, overall noise level in and around the plant shall be kept well within the standards of 85dB(A). The ambient noise level shall conform to the standard i.e. 75dB(A) during day time and 70dB(A) during night time*	*We are maintaining overall noise level in and around the plant well within the standards of 85dB(A). The ambient noise level conforms to the standard i.e.* *75dB(A) during day time and 70dB(A) during night time*	**REPORTS OF AAQ & SMR ATTACHED. IT CONFIRMS TO THE BOARD STANDARDS (REPORT - 1)**
14	*That, they shall comply with conditions mentioned in the EC issued by MoEF, Govt. of India vide its letter F no. J-11011/287/2010-IA-II(I), dated 31st October,2011*	*We are complying with conditions mentioned in the* *EC issued by MoEF, Govt. of India vide its letter F no. J-* *11011/287/2010-IA-II(I), dated 31st October, 2011on sis monthly basis & sent by mail &* *Speed post every time.*	**SEE THE ATTACHED Status of Environmental Compliance of M/s. Eco Cements Limited, Bhabhua for the period of APRIL 2016 to SEP 2016 (Report -** **2)**
15	*That, they shall submit Environmental Statement for each financial year by 30 TH September of the following year*	We are regularly submitting Environmental Statement Report for each financial year. Environmental statement for FY 205-2016 have been uploaded & for current Financial year 2016-2017 shall be submitted before sep 2017.	**ATTACHEMENT - Environmental Statement report (Form-V), 2015-2016 (REPORT - 3, REPORT - 3A, REPORT-3B)**

ECO CEMENTS LIMITED, BHABHUA, BIHAR			
Compliance report of Discharge Consent Order for ECO Cements Ltd, Bhabhua			
Reference Letter from BSPCB, PATNA - P/T 2-26/12 T-15843, DATED - 23/09/2013			
Compliance of Discharge order conditions as per BSPCB			
Sl.No.	**Particulars**	**Status of Compliance**	**REMARKS/ ATTACHEMENT**
1	That, he/they shall not make any alteration, addition, deletion or modification in the plant without the prior clearance from the Board and shall also abide by the obligations under sections 24,31 and 33A of the Water (Prevention & Control of Pollution) Act, 1974 and further shall extend co-operation to the Board in performing its functions entrusted under sections 20, 21, 23, 30 and 32 of the Act	We will not do any alteration, addition, deletion or modification in the plant without the prior clearance from the Board and shall also abide by the obligations under sections 22,23 and 31A of the Air (Prevention & Control of Pollution) Act, 1981 and further shall extend co-operation to the Board in performing its functions entrusted under sections 24, 25 and 26 of the Act	**NILL**
2	That, he /they shall comply with the requirements of the rule 14 of the Environmental (Protection) Rules, 1986; rules 4,5,7,9,10 and 11 of the Hazardous Wastes (Management, Handling, Trans Boundary Movement), Rules 2008; rules 4,5,7,8,10,11,12,13,15,17 and 18 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989; and the provisions of the Public Liability Insurance Act, 1991, Whichever is applicable	We are complying; Cement manufacturing (Grinding) is based on "Dry Process" No Hazardous waste is generated from the process.	**NA**
3	That, he/they shall monitor his/their effluents (s) regularly and maintain its quality in conformity with Board's standards and shall produce its proof, as and when asked for	As the plant is being operated on dry process s technology, no liquid effluent is generated from the plant, Was the water generated from office toilet and mess s is disposed-off in a s oak pit via septic tank	**PHOTOS ATTACHED SEPTIC TANK & SOAK PIT**
4	That, he/they shall submit application for consent again 30 days before the expiration of the period of consent i.e. **29.02.2016** or within 30 days from the date of receipt of this order, whichever is applicable	We have submitted application for consent again 30 days before the expiration of the period of consent i.e.29.02.2016. APPLICATION NO. 311752	**CPMPLYING**
5	*That, the quality of final effluent shall conform to the standards prescribed*	No discharge is generated from the Plant	
6	*That, all treated waste water shall be recycled and reused in the process and/or dust suppression system and green belt development and related activities*	No waste water is generated from plant. Waste water from Kitchen is being used for suppression system and green belt development	**CPMPLYING**
7	*That, rain water harvesting shall be carried out and they shall ensure that the waste water shall not mix with rain water harvesting system*	Rain water harvesting pit is kept far away from kitchen waste water & traps & soak pits are separately installed for Kitchen water.	**SEE ATTACHED PHOTOS OF TRAP & SOAK PITS**
8	*That, the total ground water consumption shall not exceed 200cubic meter per day*	Our per day water consumption is 2.5 to 4.5 KL per day.	
9	*That, they shall do tree plantation all around the campus*	Tree plantation is our ongoing process. Every year we do plantation in our plant & nearby areas. Green Belt has been developed & maintained as per prescribed in EC. We have planted more than 1000 different type of Plants around the premises	**SEE ATTACHED PHOTOS OF TREES**
10	*That, they shall submit Environmental Statement for each financial year by 30 TH September of the following year*	We are regularly submitting Environmental Statement Report for each financial year	**ATTACHEMENT - Environmental Statement report (Form-V), 2015-2016 (REPORT - 3, REPORT - 3A, REPORT-3B)**

ECO CEMENTS LIMITED, BHABHUA, BIHAR

Reference Letter from BSPCB, PT (NOC), 3436/10, T-4198 DATED - 02/04/2012

(For the period from OCT - 2016 to March - 2017)

Compliance of conditions as per Consent-to-Establish (NOC)

Sl.No.	Particulars	Status of Compliance	REMARKS/ ATTACHEMENT
1	The proponent shall obtain 'Consent-to-Operate' under Section 25 & 26 of The Water Act, 1974 and section 21 of The Air Act, 1981 prior to commissioning of the plant from Bihar State Pollution Control Board	We have obtained 'Consent-to-Operate' under Section 25 & 26 of The Water Act, 1974 and section 21 of The Air Act, 1981 prior to commissioning of the plant.	**SEE ATTACHED : DISCHARGE CONSENT 2013 TO 2016, EMISSION CONSENT 2013 TO 2016**
2	They shall comply with the provisions of Water (Prevention and Control of Pollution) Act, 1974, The Air (Prevention and Control of Pollution) Act, 1981, The Environment (Protection) Rules, 1986 and notification isssued thereunder	We have complied with the provisions of Water (Prevention and Control of Pollution)A ct, 1974, The Air (Prevention and Control of Pollution) Act, 1981, The Environment (Protection) Rules, 1986 and notification isssued thereunder	
3	The effluent (Domestic or Trade) and emission shall conform to the standard prescribed under The Rules. No process waste water shall be discharged outside the factory premises and 'zero' discharge shall be adopted	No process waste water is discharged outside the factory premises and 'zero' discharge is adopted. The effluent water is used in the development of GreenBelt.	
4	They shall submit data on ambient air, fugitive emission and stack emission to the Board. The National Ambient Air Quality Standards issued by the MoEF dated 16th-Nov,2009 shall be followed.	The data for all emission points have been submitted and stacks have been erected wherever required.	**SEE ATTACHEMENT - ENVIRONMENTAL MONITORING RESILTS - APRIL- SEP - 2016 (REPORT- 1)**
5	They shall install adequate air pollution control system viz. Bag filters and stacks of adequate height to control the particulate emissions within 50 mg/Nm3 at various transfer points	Air borne dust at all emission points are extracted through dust extraction system to the bag filters and stacks of 30 Meter height high are erected. And particulate emissions is within 50 mg/Nm3 at all transfer points.	**SEE ATTACHED ANNEXURE - 3A & 3B SEE PHOTOS OF POLLUTIONS CONTROL DEVICES**
6	They shall install adequate dust collection and extraction system to control fugitive dust emissions at various transfer points, raw mill handling (unloading, conveying, transporting, stacking etc), bagging and packing areas etc.	Dust collection system and bag filters have been installed at all raw material handling and transfer points along with stacks of 30m height.	**SEE ATTACHED ANNEXURE - 3A & 3B SEE PHOTOS OF POLLUTIONS CONTROL DEVICES**
7	All the raw materials stockepile shall be covered. A closed clinker stockpile system shall be provided. All conveyor shall be covered with GI Sheet. Covered sheds for storage of raw materials shall be provided. Pneumatic system shall be provided for fly ash handling.	All raw materials are stored in closed sheds and silos. Conveyors are covered with sheets. Fly Ash handling is done pneumatically.	**SEE THE PHOTOS OF CEMENT SILO, FLYASH SILO, CLINKER SILO & CONVEYORS**
8	They shall submit status of compliance/progress report of special conditionas and general condition of EC issued by MoEF, after every three months to the Board	Status of compliance/progress report of special conditionas and general condition of EC issued by MoEF, will be submitted after every six months to the Board.	**SEE THE ATTACHED Status of Environmental Compliance of M/s. Eco Cements Limited, Bhabhua for the period of APRIL 2016 to SEP 2016 (REPORT - 2)**
9	They shall submit layout plant/drawing of green belt development (33 % of plant area) area, effluent and ambient air quality monitoring stations and rain water harvesting scheme as directed in condition of EC.	Layout drawing showing green belt development area and rain water harvesting reservoir has been submitted.	**SEE ATTACHED SITE PLAN ECO-BIHAR SHOWING TREES & RAIN WATER RESERVIOR, SEE PHPTOS OF TREES**
10	The Proponent shall procure and install D .G. Set with a valid Type of Approval Certificate and conformity of production Certificate from the manufacturer as specified under the Rules.	The D.G.Set has been procured from Jakson Limited and all conditions have been complied	
11	The proponent shall have to take all possible measure to control water and air pollution, so that surrounding environment/habitation/vegetation should not be affected directly or indirectly and,	Measures have been taken to control water and air pollution, so that surrounding environment/habitation/vegetation is not affected directly or indirectly. Air borne dust at all emission points are extracted through dust extraction system to the bag filters and stacks of 30 Meter height high are erected. The water discharge is used in the development of GreenBelt.	
12	Greenbelt (33% of plant area) shall be developed and maintained	Green Trees are planted around the plant	**SEE PHOTOS OF TREES**

ANNEXURE - 3A

TECHNICAL DATA SHEET OF DUST COLLECTORS

Input process data for each filter	Units	DUST COLLECTOR CLINKER UNLOADING	DUST COLLECTOR FLYASH UNLOADER	DUST COLLECTOR CLINKER & GYPSUM FEEDING
Quantity of filters	no	1	1	1
Firing Type		Not Required	Not Required	Not Required
Type of Fuel		Not Required	Not Required	Not Required
Dust to be handled		Clinker	Flyash	Clinker & Gypsum
Gas flow rate	Am3/hr	20000	30000	10000
Gas temperature (Minimum)	°C	70	70	70
Gas temperature (Maximum)	°C	80	80	80
Gas pressure at BF inlet	mmwc	-150	-150	-150
Inlet dust load	gm/Am3	70	70	50
Oxygen Content in flue gas	% V/V	Not Critical	Not Critical	Not Critical
SO2 Content in flue gas	% V/V	Not Critical	Not Critical	Not Critical
Moisture in gas	% V/V	5	5	5
Type of dust (Main Characteristic)		Dry	Dry	Dry
Dust Min bulk density for RAV sizing	Kg/m3	800	800	800
Dust Max bulk density for power	Kg/m3	1,200	1,200	1,200
Dust size distribution		*100% > 5 µ*	*100% > 5 µ*	*100% > 5 µ*
Area classification for Elect/ Instru		Safe & non hazardous	Safe & non hazardous	Safe & non hazardous
Technical data sheets for each filter				
Type of filter		Pulse jet	Pulse jet	Pulse jet
Filter mounting		Structure	Structure	Structure
Filter cleaning		On line	On line	On line
Gas entry		Hopper	Hopper	Hopper
Design pressure (incl wind load)	mmwc	± 500	± 500	± 500
Δ P across filter	mmwc	150	150	150
Maximum outlet dust	mg/Nm3	*50*	*50*	*50*

emission				
Recommended air/cloth ratio	m3/min/m2	1.50	1.40	1.50
Offered bag height	m	3.6	3.6	2.4
Offered filtration area	m2	230.74	356.59	113.28
Offered air-to-cloth ratio	m3/min/m2	1.45	1.40	1.47
Selected filter		AJ-144-360SH	AJ-216-360SH	TK-108-240SH
Number of bags offered	no	132	204	96
External painting of filter- Primer		Red Oxide	Red Oxide	Red Oxide
External painting filter- Finish		Not in TL scope	Not in TL scope	Not in TL scope
External surface preparation of filter		Manual wire brush	Manual wire brush	Manual wire brush
External paint spec of filter- Primer		2 coats, 20 µ each	2 coats, 20 µ each	2 coats, 20 µ each
External paint spec of filter- Finish		NA	NA	NA
Internal painting of filter		Red Oxide	Red Oxide	Red Oxide
Internal surface preparation of filter		Manual wire brush	Manual wire brush	Manual wire brush
Internal paint spec of filter		2 coats, 20 µ each	2 coats, 20 µ each	2 coats, 20 µ each
Insulation & cladding scope		Not provided by TL	Not provided by TL	Not provided by TL
Insulation & cladding requirement		Required	Required	Required
Mineral wool insulation spec		LRB,100 Kg/m3	LRB,100 Kg/m3	LRB,100 Kg/m3
Mineral wool insulation thk	mm	50	50	50
Aluminium cladding spec		22 SWG plain	22 SWG plain	22 SWG plain
Filter casing				
MOC		IS 1079 Gr O	IS 1079 Gr O	IS 1079 Gr O
Thickness	mm	3	3	3
Condition of supply		Assembled	Assembled	Assembled
Filter Tube sheet				
MOC		IS 2062 Gr A	IS 2062 Gr A	IS 2062 Gr A
Thickness	mm	5	5	5

ECO CEMENTS LTD
Corp. Off.: 72, Jawahar Nagar Extn., Bhelupur, Varansi, U.P.- 221010, PH.- 0542-2277704, 2277074
Factory: Plot No. 1644, Bheriya Road, Kulharia, Durgauti, Bhabhua, Bihar

Cutting		Punch cut	Punch cut	Punch cut
Bag holding method		Snap band	Snap band	Snap band
Filter top covers				
MOC		IS 1079 Gr O	IS 1079 Gr O	IS 1079 Gr O
Thickness	mm	3	3	3
Insulation box		Not required	Not required	Not required
Filter Hopper		Provided by TL	Provided by TL	Provided by TL
Type		Pyramidical	Pyramidical	Pyramidical
MOC		**IS 2062 Gr A**	**IS 2062 Gr A**	**IS 2062 Gr A**
Thickness		**5**	**5**	**5**
Condition of supply		Assembled	Assembled	Assembled
No. of hoppers	no	1	1	1
Hopper plate angle	°	65	65	65
Hopper discharge opening		Round	Round	Round
Hopper Heater		Not provided by TL	Not provided by TL	Not provided by TL
Area covered				
Support structure		**Provided by TL**	**Provided by TL**	**Provided by TL**
Type of Mounting		Mounting on Steel	Mounting on Steel	Mounting on Steel
Ground clearance		1,200	1,200	1,200
Ladder to filter top		**Provided by TL**	**Provided by TL**	**Provided by TL**
Railing on filter top		**Provided by TL**	**Provided by TL**	**Provided by TL**
RAV		Provided by TL	Provided by TL	Provided by TL
Quantity	no	1	1	1
MOC		CI	CI	CI
Type		Adjustable tip	Adjustable tip	Adjustable tip
Drive arrangment		Direct	Direct	**Direct**
Motor Make		TL approved	TL approved	TL approved
RAV rotor speed	RPM	20	20	20
Calculated Size	mm	200	200	200
Recommended Size		200	200	200
Painting		HR Matte black	HR Matte black	HR Matte black
Motor HP	HP	0.5	0.5	0.5
Voltage	V AC±6%	415	415	415
Frequency	HZ±3%	50	50	50
Filter bags		Provided by TL	Provided by TL	Provided by TL
Fabric material		Polyester	Polyester	Polyester
Bag length	mm	3,665	3,665	2,455
Bag fabric weight	gm/m2			

ECO CEMENTS LTD
Corp. Off.: 72, Jawahar Nagar Extn., Bhelupur, Varansi, U.P.- 221010, PH.- 0542-2277704, 2277074
Factory: Plot No. 1644, Bheriya Road, Kulharia, Durgauti, Bhabhua, Bihar

		550	550	550
Fabric design temperature (Max.)	˚C	130	130	130
Antistatic treatment		No treatment	No treatment	No treatment
Fabric treatment for water/oil resistance		No Treatment	No Treatment	No Treatment
Source		Indigenous	Indigenous	Indigenous
Type		Stitched	Stitched	Stitched
Cages		Provided by TL	Provided by TL	Provided by TL
Vertical wire dia	mm	3.0	3.0	3.0
Ring wire dia	mm	3.0	3.0	3.0
No of vertical wires	no	10	10	10
Number of splits		None	None	None
Cage length	m	3,650.0	3,650.0	2,445.0
Cage surface treatment		HR Black	HR Black	HR Black
Material of construction		CS	CS	CS
Cage diameter	mm	143	143	143
ID Fan		Fan not available	Fan not available	Fan not available
Margin to be added for fan sizing	%			
Flow	m3/hr	20,500	31,000	NA
Static Pressure	mmwc	NA	NA	NA
Fan speed	rpm	NA	NA	NA
Estimated power consumption (@ Operating Temperature)	BKW	NA	NA	NA
Drive arrangement		NA	NA	NA
Orientation		NA	NA	NA
Mounting		NA	NA	NA
Motor scope		NA	NA	Manual wire brush
External surface preparation		Manual wire brush	Manual wire brush	
Painting				1
Quantity	no	1	1	NA

ECO CEMENTS LTD
Corp. Off.: 72, Jawahar Nagar Extn., Bhelupur, Varansi, U.P.- 221010, PH.- 0542-2277704, 2277074
Factory: Plot No. 1644, Bheriya Road, Kulharia, Durgauti, Bhabhua, Bihar

Fan Make		NA	NA	NA
Motor size	KW	NA	NA	NA
Motor poles	no	NA	NA	Provided by TL
Pulse solenoid valve		Provided by TL	Provided by TL	Thermax
Make		Thermax	Thermax	1
Size	inch	1.5	1.5	230
Operating voltage	V AC	230	230	8
Quantity of PSV	no	11	17	(–)20°C Dewpt,Oil <20 ppm
Quality of compressed air required		(–)20°C Dewpt,Oil <20 ppm	(–)20°C Dewpt,Oil <20 ppm	Provided by TL
Cables for solenoid valves		Provided by TL	Provided by TL	Unarmoured
Type		Unarmoured	Unarmoured	Copper
Conductor		Copper	Copper	2Cx1sq mm
Size	mm2	2Cx1sq mm	2Cx1sq mm	TL approved
Make		TL approved	TL approved	From PSV to JB
Application		From PSV to JB	From PSV to JB	Provided by TL
JB for PSV		Provided by TL	Provided by TL	Fabricated
Type		Fabricated	Fabricated	IP 55
Protection		IP 55	IP 55	TL approved
Make		TL approved	TL approved	Not provided by TL
JB for Hopper heater		Not provided by TL	Not provided by TL	
Type				Not provided by TL
Hopper Level Switch		Not provided by TL	Not provided by TL	
Type				Provided by TL
Sequential Controller		Provided by TL	Provided by TL	Cleaning seq control
Operation requirement		Cleaning seq control	Cleaning seq control	Solid state
Type		Solid state	Solid state	Kana
Make		Kana	Kana	Relay
Type of output		Relay	Relay	Provided by TL
Housing Box		Provided by TL	Provided by TL	TL Approved
Housing box make		TL Approved	TL Approved	IP 55
Housing box protection		IP 55	IP 55	230
Control voltage	V AC	230	230	Not required

ECO CEMENTS LTD
Corp. Off.: 72, Jawahar Nagar Extn., Bhelupur, Varansi, U.P.- 221010, PH.- 0542-2277704, 2277074
Factory: Plot No. 1644, Bheriya Road, Kulharia, Durgauti, Bhabhua, Bihar

PLC for control		Not required	Not required	Provided by TL
U Tube manometer		Provided by TL	Provided by TL	U tube, water filled
Type		U tube, water filled	U tube, water filled	200
Range	± mm wc	200	200	TL approved
Make		TL approved	TL approved	1
Quantity	no	1	1	Provided by TL
Air filter regulator + Pr Gauge		Provided by TL	Provided by TL	1
Size	inch	3/4	1	TL approved
Make		TL approved	TL approved	1
Quantity	no	1	1	Not Provided by TL
Limit Switch		Not Provided by TL	Not Provided by TL	
Make				Not Provided by TL
LPBS		Not Provided by TL	Not Provided by TL	
Quanty				Not Provided by TL
Control Panel		Not Provided by TL	Not Provided by TL	
Type				415V+/-10 %
Power Supply, Volts		415V+/-10 %	415V+/-10 %	
Control Votage				Provided by TL
DP switch		Provided by TL	Provided by TL	Switzer
Make		Switzer	Switzer	Time mode
Type operation		Time mode	Time mode	1NO+1NC
Contact configuration		1NO+1NC	1NO+1NC	1
Quantity	no	1	1	High DP alarm
Duty		High DP alarm	High DP alarm	Not provided by TL
DP gauge		Not provided by TL	Not provided by TL	NA
Make		NA	NA	Not provided by TL
DP transmitter		Not provided by TL	Not provided by TL	NA
Make		NA	NA	Provided by TL
Pressure switch		Provided by TL	Provided by TL	Switzer
Make		Switzer	Switzer	2NO+2NC
Contact configuration		2NO+2NC	2NO+2NC	1
Quantity		1	1	Low air press alarm
Duty		Low air press alarm	Low air press alarm	Provided by TL
Zero speed switch-		Provided by TL	Provided by TL	Jayashree

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RAV				
Make		Jayashree	Jayashree	1NO+1NC
Contact configuration		1NO+1NC	1NO+1NC	110/220
Supply voltage	V AC	110/220	110/220	1
Quantity		1	1	Not provided by TL
Thermostat		Not provided by TL	Not provided by TL	NA
Make		NA	NA	

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ANNEXURE - 3B

TECHNICAL DATA SHEET OF CEMENT MILL VENTING DUST COLLECTOR

CEMENT MILL VENTING DUST COLLECTOR		
Input process data for each filter	Units	Mill Venting
Input process data for each filter		
Quantity of filters	no	1
Application		Dedusting /Matl.Handling
Firing Type		Not Required
Type of Fuel		Not Required
Dust to be handled		Cement
Gas flow rate	Am3/hr	40000
Gas temperature (Minimum)	°C	80
Gas temperature (Maximum)	°C	90
Gas pressure at BF inlet	mmwc	-150
Inlet dust load	gm/Am3	200
Oxygen Content in flue gas	% V/V	Not Critical
SO2 Content in flue gas	% V/V	Not Critical
Moisture in gas	% V/V	5
Type of dust (Main Characteristic)		Fine
Dust Min bulk density for RAV sizing	Kg/m3	800
Dust Max bulk density for power	Kg/m3	1,200
Dust size distribution		*100% > 5 μ*
Area classification for Elect/ Instru		Safe & non hazardous
Technical data sheets for each filter		
Type of filter		Pulse jet
Filter mounting		Structure
Filter cleaning		On line
Gas entry		Preseparator
Design pressure (incl wind load)	mmwc	**± 500**
Δ P across filter	mmwc	150
Maximum outlet dust emission	mg/Nm3	*50*
Recommended air/cloth ratio	m3/min/m2	1.20
Offered bag height	m	3.6
Required filteration area	m2	556.00
Offered filtration area	m2	566.35
Offered air-to-cloth ratio	m3/min/m2	1.18
Selected filter		**TK-324-360SP**
Number of bags offered	no	

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		324
External painting of filter- Primer		Red Oxide
External painting filter- Finish		Not in TL scope
External surface preparation of filter		Manual wire brush
External paint spec of filter- Primer		2 coats, 20 µ each
External paint spec of filter- Finish		NA
Internal painting of filter		Red Oxide
Internal surface preparation of filter		Manual wire brush
Internal paint spec of filter		2 coats, 20 µ each
Insulation & cladding scope		Not provided by TL
Insulation & cladding requirement		Required
Mineral wool insulation spec		LRB,100 Kg/m3
Mineral wool insulation thk	mm	50
Aluminium cladding spec		0.56mm/24 SWG plain
Filter casing		
MOC		IS 2062 Gr A
Thickness	mm	5
Condition of supply		Assembled
Filter Tube sheet		
MOC		IS 2062 Gr A
Thickness	mm	5
Cutting		Punch cut
Bag holding method		Snap band
Filter top covers		
MOC		IS 1079 Gr O
Thickness	mm	3
Insulation box		Not required
Filter Hopper		Provided by TL
Type		Pyramidical
MOC		**IS 2062 Gr A**
Thickness		**5**
Condition of supply		Assembled
No. of hoppers	no	2
Hopper plate angle	o	65
Hopper discharge opening		Round
Hopper Heater		Provided by TL
Area covered		1/3 of hopper
Support structure		Provided by TL
Type of Mounting		Mounting on Steel
Ground clearance		1,200
Ladder to filter top		Provided by TL

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Railing on filter top		Provided by TL
RAV		Provided by TL
Quantity	no	2
MOC		CI
Type		Adjustable tip
Drive arrangment		**Direct**
Motor Make		TL approved
RAV rotor speed	RPM	20
Calculated Size	mm	350
Recommended Size		350
Painting		HR Matte black
Motor HP	HP	1.0
Voltage	V AC±6%	415
Frequency	HZ±3%	50
Filter bags		Provided by TL
Fabric material		Acrylic Homopolymer
Bag length	mm	3,665
Bag fabric weight	gm/m2	550
Fabric design temperature (Max.)	℃	130
Antistatic treatment		No treatment
Fabric treatment for water/oil resistance		No Treatment
Source		Imported Fabric
Type		Stitched
Cages		Provided by TL
Vertical wire dia	mm	3.0
Ring wire dia	mm	3.0
No of vertical wires	no	10
Number of splits		None
Cage length	m	3,650.0
Cage surface treatment		HR Black
Material of construction		CS
Cage diameter	mm	143
ID Fan		Not provided by TL
Margin to be added for fan sizing	%	
Flow	m3/hr	
Static Pressure	mmwc	NA

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Fan speed	rpm	NA
Estimated power consumption (@ Operating Temperature)	BKW	NA
Drive arrangement		Coupled
Orientation		NA
Mounting		NA
Motor scope		NA
External surface preparation		
Painting		
Quantity	no	0
Fan Make		NA
Motor size	KW	NA
Motor poles	no	NA
Pulse solenoid valve		Provided by TL
Make		Thermax
Size	inch	1.5
Operating voltage	V AC	230
Quantity of PSV	no	27
Quality of compressed air required		(-)20°C Dewpt,Oil <20 ppm
Outlet Butterfly Damper		Not Provided by TL
Damper Size		
Cables for solenoid valves		Provided by TL
Type		Unarmoured
Conductor		Copper
Size	mm2	2Cx1sq mm
Make		TL approved
Application		From PSV to JB
JB for PSV		Provided by TL
Type		Fabricated
Protection		IP 55
Make		TL approved
JB for Hopper heater		Provided by TL
Type		Fabricated
Protection		IP 55
Make		TL approved
Hopper Level Switch		Provided by TL
Type		Capacitance
Make		EIP
Probe length	mm	750
Insulation		PTFE
Quantity	no	2

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Sequential Controller		Provided by TL
Operation requirement		Cleaning seq control
Type		Solid state
Make		Kana
Type of output		Relay
Housing Box		Provided by TL
Housing box make		TL Approved
Housing box protection		IP 55
Control voltage	V AC	230
PLC for control		
Operation requirement		
Make		
Type of communication		
Panel make		
Supply voltage	V AC	
U Tube manometer		Provided by TL
Type		U tube, water filled
Range	± mm wc	200
Make		TL approved
Quantity	no	1
Air filter regulator + Pr Gauge		Provided by TL
Size	inch	1 1/2
Make		TL approved
Quantity	no	1
Limit Switch		Not Provided by TL
Make		
LPBS		Not Provided by TL
Quanty		
Control Panel		Not Provided by TL
Type		
Power Supply, Volts		415V+/-10 %
Control Votage		
DP switch		Provided by TL
Make		Switzer
Type operation		Time mode
Contact configuration		1NO+1NC
Quantity	no	1
Duty		High DP alarm
DP gauge		Not provided by TL
Make		NA
Dial size	mm	
Range	mmwc	NA
Quantity		

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DP transmitter		
Make		
Type of communication		
Sensor MOC		
Range	mmwc	
Local indicator		
Quantity		
Pressure switch		Provided by TL
Make		Switzer
Contact configuration		2NO+2NC
Quantity		1
Duty		Low air press alarm
Zero speed switch-RAV		Provided by TL
Make		Jayashree
Contact configuration		1NO+1NC
Supply voltage	V AC	110/220
Quantity		2
Thermostat		Provided by TL
Make		Switzer
Quantity	no	2
Temperature Indicating Controller (TIC)		Not Provided by TL
Make		
Temperature element		Not Provided by TL
Make		
Probe length		
Process connection		3/4 inch BSP
Thermowell		Not Provided by TL
Type		
No of elements		

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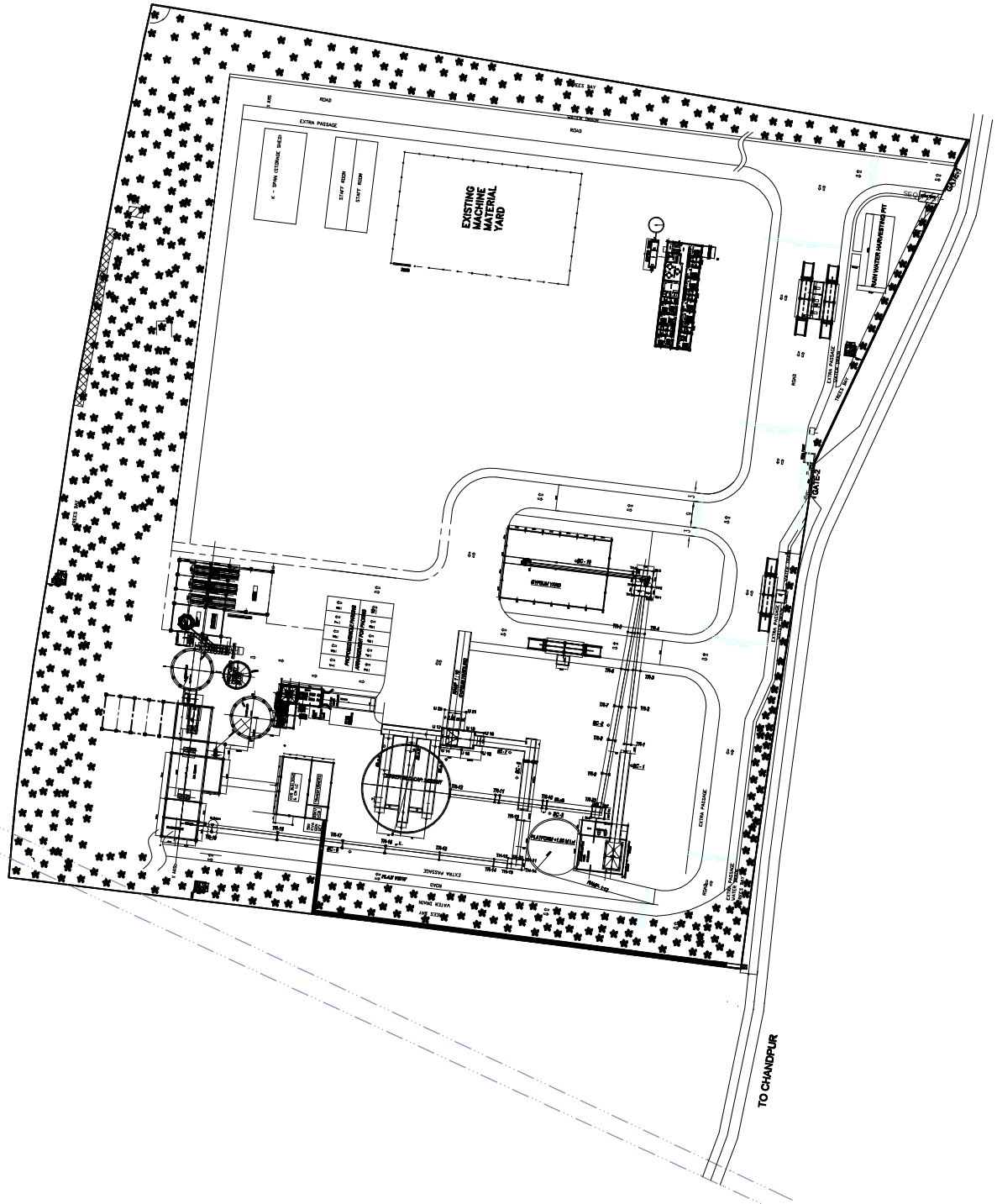
ANNEXURE - 9

List of Equipments in the Laboratory

Sr. No	Instrument / Equipment Nos	qty.
1	Respirable Dust Samplers (RDS)	1
2	Sound Level Meter	1
3	Glass-ware for Microbiological Test of Wa	LOT
4	Gas Chromatograph, Flue Gas Analyzer	1,1
5	Stack monitoring apparatus (manually op	1
6	Chemicals Lot	LOT
7	Electronics Balance	1
8	Spectrophotometer (AAS and Flame Phot	1
9	Analytical Balance	2
10	Muffle Furnace	1



PROJECT :

ECO CEMENTS LTD.
BHABUA, BIHAR

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