


# MAHARASHTRA POLLUTION CONTROL BOARD

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Red/L.S.I

Consent No.BO/JD(APC)/EIC No.MU-2855-11 - ~~CA~~-233

Date:03/02/2012

Consent to operate under Section 26 of the Water (prevention & control of pollution) Act, 1974 & under Section 21 of the Air (prevention & control of pollution) Act, 1981 and Authorization/ Renewal of Authorization under Rule 5 of the Hazardous Wastes (Management, Handling & Transboundary Movement) Rules 2008 [To be referred as Water Act, Air Act and HW (MH&T) Rules respectively].

CONSENT is hereby granted to

**M/s. Tata Power Co.Ltd.  
Trombay Generating Station  
[Trombay Thermal Power Station  
including Coal Handling Jetty (160m x 30m)]  
Mahul road, Chembur,  
Mumbai-400473**

Located in the area declared under the provisions of the Water Act, Air act and Authorization under the provisions of HW(MH&T) Rules and amendments there to subject to the provisions of the Act and the Rules and the Orders that may be made further and subject to the following and conditions:

1. The Consent to Operate is granted for a period up to: 31/07/2016
2. The Consent is valid for the manufacture & operation of –

Sr.No	Product name	Maximum Quantity
(1)	Electricity Generation	Unit 4=150 MW (Oil+Gas) Unit 5=500 MW (Coal+Oil+Gas) Unit 6=500 MW (Oil+Gas) Unit 7=180 MW (Gas) [ 120 Gas Turbine +80 Steam Turbine] Unit 8= 250 MW (Coal) [Total Generation 34.32 million units per day excluding generation from unit 4]
(2)	Operation of captive berthing jetty for handling of thermal coal (required for power generation)	24,00,000 MT/Year

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**Note:** Unit 4 shall be operated only with prior permission from Environment Department Government of Maharashtra. In such case maximum power allowed to generate from unit 4 is 3.6 Million units per day without increase in existing pollution load from the entire power station.

### 3. CONDITIONS UNDER WATER ACT:

(i) The daily quantity of trade effluent from the power station shall not exceed following

Sr No	Source	Condition	Value	UoM
(1)	DM plant	Not to exceed	2760	CMD
(2)	Bottom Ash Water+ FGD Water	Not to exceed	1,84,800	CMD
(3)	Condenser cooling water	Not to exceed	48,69,600	CMD
(4)	Boiler Blow Down	Not to exceed	1000	CMD

(ii) Daily quantity of trade effluent from **coal handling jetty shall be nil.**

(iii) The daily quantity of sewage effluent from the power station shall not exceed 275 Cum/day

(iv) Trade Effluent :

**(A)Trade Effluent Treatment:** The industry shall provide comprehensive treatment system consisting primary/secondary and/or tertiary treatment as is warranted with reference to influent quality and operate and maintain the same continuously. Treatment can be given either collective or individually as the site condition permits so that the quality of final effluent shall achieve following standards.

#### I. DM Plant effluent

Sr No	Parameter	Condition	Value	UoM
(1)	pH	Between	5.5-9.0	
(2)	BOD 3 days 27° C	Not to exceed	100	mg/l
(3)	COD	Not to exceed	250	mg/l
(4)	Suspended Solid	Not to exceed	100	mg/l
(5)	Oil & Grease	Not to exceed	10	mg/l

#### II. Condenser Cooling Water

Sr No	Parameter	Condition	Value	UoM
(1)	pH	Between	6.5-8.5	
(2)	Temperature (higher than intake sea water temperature for unit 8.)	Not to exceed	7	Deg C

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(3)	Temperature (higher than intake sea water temperature for unit 4,5,6 and 7)	Not to exceed	10	Deg C
(4)	Total residual chlorine	Not to exceed	1.0	mg/l

Note:

- 1) Industry shall install and operate continuous monitoring system for measurement of temperature of condenser cooling water at exit of the property (Bund Outlet). In case failure of this continuous monitoring system industry shall measure temperature manually once during low tide and once in a high tide.

**III. Boiler Blow Down Effluent:**

Sr No	Parameter	Condition	Value	UoM
(1)	Copper (Total)	Not to Exceed	1	mg/l
(2)	Iron (Total)	Not to Exceed	1	mg/l
(3)	Suspended Solids	Not to Exceed	100	mg/l
(4)	Oil & Grease	Not to Exceed	10	mg/l

**IV. Ash Pond Effluent:**

Sr No	Parameter	Condition	Value	UoM
(1)	pH	Between	6.5-8.5	
(2)	Suspended Solids	Not to Exceed	100	mg/l
(3)	Oil & Grease	Not to Exceed	10	mg/l

**V. Flue Gas Desulphurization Effluent**

Sr No	Parameter	Condition	Value	UoM
(1)	pH	Between	6.5-8.5	
(2)	DO		5	mg/l
(3)	Temperature (higher than intake water temperature)	Not to exceed	7	Deg C
(4)	Suspended Solids (SS) (above intake sea water SS concentration)	Not to Exceed	10	%

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**(B) Trade Effluent Disposal:** Industry shall provide arrangement to recycle treated effluent to maximum extent possible and remaining quantity shall be disposed off into sea (Thane Creek) through well designed outfall. Industry can make use of existing CW outfall channel for disposal of trade effluent so as to keep single discharge/outlet point for all the trade effluents, provided all types of trade effluents meet the quality parameters mentioned above (3(iv)A-I,II,III,IV,V). Provision for sample collection shall be made at individual source as well as at final discharge point.

Industry shall explore the possibility of implementing zero discharge as an attempt for conservation of fresh water.

**(C)** Industry shall monitor the quality of trade effluent regularly. Monitoring data of at least 1 day per week shall be submitted to MPC Board on monthly basis on or before 15<sup>th</sup> day of next month.

(v) Sewage Effluent:

**(A) Sewage Effluent Treatment:** The industry shall provide comprehensive sewage treatment plant (STP) as is warranted with reference to influent quality and operate and maintain the same continuously. If the industry premise is very large and if it is not possible to collect and treat sewage at single location, industry shall provide additional STPs of adequate capacity to achieve the quality of treated effluent to the following standards.

Sr No	Parameter	Condition	Value	UoM
(1)	BOD 3 days 27° C	Not to Exceed	100	mg/l
(2)	Suspended Solids (SS)	Not to Exceed	100	mg/l

**(B) Sewage Effluent Disposal:** The treated effluent shall be disposed on land for irrigation to the maximum extent possible and remaining quantity shall be disposed of into sea (Thane Creek) through well designed outfall. Industry can make use of existing CW outfall channel for disposal of treated sewage provided it meets the quality parameters mentioned above. Provision for sample collection shall be made at outlet of STP.

**(C)** Industry shall monitor the quality of treated sewage regularly. Monitoring data of at least 1 day per week shall be submitted to MPC Board on monthly basis on or before 15<sup>th</sup> day of next month.

**4. CONDITIONS UNDER CESS ACT:**

- (i) The industry shall comply with the provisions of the water (prevention & control Pollution) Cess Act, 1977 (to be referred as Cess Act) and amendment Rules, 2003 there under

The daily water consumption for the following categories is as under:

Sr.No	Usage	Quantity	UoM
(1)	Domestic	300	CMD
(2)	Industrial Cooling	48,69,600	CMD
(3)	Boiler Makeup	3,650	CMD
(4)	Industrial Processing ( Bottom Ash + FGD)	1,84,800	CMD

The industry shall regularly submit to the board the returns of water consumption in the prescribe form and pay the cess as specified under section 3 of the said Act.

Note: Consumption of water for condenser cooling, FGD & Bottom Ash disposal shall be calculated on the basis of pump capacity and pump running hours.

**5. CONDITIONS UNDER AIR ACT:**

- (i) The industry shall install a comprehensive control system, consisting of control equipments' as is warranted with reference to generation of emission and operate and maintain the same continuously to as to achieve the level of pollutants to the following standards:

**A) Control equipment :**

- 1) Electrostatic Precipitator of sufficient capacity shall be provided to boiler using coal as fuel so as to meet the standards of SPM emission prescribed in the consent. ESP efficiency test shall be carried out once in a quarter and results of the efficiency test shall be submitted to MPC board before 15<sup>th</sup> day of July, October, January and April.
- 2) Flue gas desulphurization (FGD) system shall be installed on coal based units and operated and maintained to ensure that total SO<sub>2</sub> emission from the station remains within the limit of 24 TPD. The industry shall also keep necessary provisions in the design to augment FGD to handle 100% of total flue gases, as a matter of precautionary principle.
- 3) Low NO<sub>x</sub> burners shall be installed on unit 7 and operated & maintained to meet prescribed emission norms for NO<sub>x</sub>.

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- 4) Continuous stack emission monitoring system shall be installed on unit no 4, 5, 6 & 8 for measurement of sulphur dioxide (SO<sub>2</sub>), suspended particulate matter (SPM) & oxides of nitrogen (NO<sub>x</sub>). Continuous stack emission monitoring system shall be installed on unit no 7 for measurement of Oxides of Nitrogen (NO<sub>x</sub>). In case non availability of online measurement device, monitoring shall be carried out as per CPCB guidelines for that day.

Daily monitoring results of entire month shall be submitted to MPC board on or before 15<sup>th</sup> day of next month.

- 5) The coal handling system shall be covered with proper hooding and ventilation arrangement to suppress dust and automatic water sprinkler system shall be provided so as not to allow fugitive emissions during handling/transportation of coal. Water meters shall be installed on water lines used for coal dust suppression. Monthly records of the water used for coal dust suppression shall be maintained by coal handling plant.
- 6) Trucks if used for internal movement of coal shall be mechanically closed type. Open trucks shall not be used for internal coal movement.(other condition)

**(B) Standards for emissions of air pollutants:**

(i)

Sr No	Parameter	Condition	Value	UoM
(1)	SPM/TPM ( from each stack of unit 4, 5 and 6)	Not to Exceed	150	mg/Nm <sup>3</sup>
(2)	SPM/TPM ( from unit 8)	Not to Exceed	100	mg/Nm <sup>3</sup>
(3)	SO <sub>2</sub> ( From the station including units 4,5,6,7 & 8)	Not to Exceed	24	MT/D
(4)	NO <sub>x</sub> ( From unit 7)	Not to Exceed	150	PPM (v/v) at 15% excess oxygen

- (ii) The industry shall erect the chimney(s) of the following specifications:-

Sr.No	Chimney Attached to	Height in Metres
1	Unit no 4	76.2
2	Unit no 5	152.4
3	Unit no 6	275
4	Unit no 7 GT	60
5	Unit no 7 HRSG	60
6	Unit 8	220

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- (iii) The industry shall provide ports in the chimney(s) and facility such as ladder, platform etc for monitoring of air emissions and the same shall be open for inspection to/and for use of the board's staff. The chimney(s) Vents attached to various sources of emission shall be designed by numbers such as S-1, S-2 etc. and these shall be painted/displayed to facilities identification.

**(C) Fuel Consumption Pattern :**

- (i) The industry shall generally observe the following fuel pattern;

Sr No	Type of fuel	Quantity	UoM
1	Coal	8400 (30,66,000)	MT/D (MT/A)
2	LSHS/LSWR	3300 (12,04,500)	MT/D (MT/A)
3	Gas	2400 (8,76,000)	MT/D (MT/A)

Coal used on unit 5 & unit 8 shall be low ash and low sulphur imported coal. In case of non-availability of coal or natural gas, LSHS/ LSWR can be used subject to condition that the total generation of electricity does not exceed 34.32 million unit per day and fuel mix shall be used in such a way that station SO<sub>2</sub> emission does not exceed 24 TPD.

**6. CONDITIONS UNDER HW (M, H & T) RULES, 2008**

- (i) The industry shall handle hazardous wastes as specified below.

Sr.No	Item no as per schedule I	Type of Waste	Quantity	UoM	Disposal
1	5.1	Used oil/Spent oil	55	MT/A	Sale to SPCB/CPCB authorized re-refiner/ re-processor
2	5.2	Waste residue containing oil	10	MT/A	Disposal to authorised common hazardous waste facility.
3	34.2	Spent ion exchange resin containing toxic metals.	25	MT/A	Disposal to authorised common hazardous waste facility.
4	3.3	Sludge and filters contaminated with oil.	100	MT/A	Disposal to authorised common hazardous waste facility
5	33.3	Discarded containers/barrels/liners/ contaminated with hazardous waste/chemicals	10	MT/A	Disposal to authorised common hazardous waste facility

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- (ii) Treatment-
- (iii) The authorization is hereby granted to operate a facility for collection, storage, transport and disposal of hazardous waste.
- (iv) Industry shall provide adequate facility for storage of hazardous waste.
- (v) Industry shall have to comply with hazardous waste rules and its amendment time to time.
- (vi) Industry shall comply with the provisions of Environment (Protection) Act-1986 and rules made there under.

## 7. NON HAZARDOUS SOLID WASTE

Sr.No	Type of Waste	Quantity	UoM	Treatment	Disposal
1	Coal rejects	20	MT/D	--	To be recycled internally or sold to external agency for reuse.
2	Fly Ash	666	MT/D		As per fly ash notification, Gol.
3	Bottom Ash	100	MT/D		Use for brick manufacturing/land filling.
4	E-waste	10	MT/A	-	Sale to authorised E-waste recycler.
5	Metallic waste	As and when generated	MT	-	Recycle/Sale
6	Rubber/Wood	As and when generated	MT	-	Recycle/Sale
7	Maintenance & Construction/Repair debris	As and when generated	MT	-	MCGM authorised site.

Note:

- 1) Fly ash shall be collected and evacuated in dry form. Fly ash collected below ESP Hooper shall not be dumped in ash pond. Storage/dumping of fly ash in ash pond is allowed only in case of emergencies when disposal of fly ash in dry form is not possible.



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- 2) ESP hooper area shall be enclosed from three sides to avoid fugitive emission during evacuation/dumping of fly ash from ESP hoopers and only one sides shall be kept open for access.
- 3) Bottom ash shall be collected/stored in wet form in ash pond. Ash pond shall be evacuated once in six month. Only MPCB authorised contractor is be allow to evacuate bottom ash with condition of renewal of authorisation of contractor every year. Half yearly report about quantity and quality of bottom ash and location of land filling site shall be submitted to MPC board. Report shall be submitted before 30<sup>th</sup> October and 30<sup>th</sup> April.
- 4) Industry shall comply with the provisions of Fly Ash Notification of MoEF, Government of India.
- 5) Industry shall submit annual report of fly ash disposal as per fly ash notification to MoEF/MPCB/CPCB on or before 30<sup>th</sup> April for every financial year.

**8. OTHER CONDITIONS:**

- (i) The industry shall provide an alternate electric power source sufficient to operate all pollution control facilities installed by the industry and operate the same in case of power failure to maintain compliance with the terms and conditions of the consent. In the absences of same, the industry shall stop, reduce or otherwise, control production to abide by terms & conditions of this consent regarding pollution levels.
- (ii) Industry shall install separate energy meters showing the consumptions of energy for operation of STP, ETP, ESP and FGD. The quarterly report of the energy consumptions shall be submitted to MPC board on or before 15<sup>th</sup> day of July, October, January, April.
- (iii) The industry shall be take adequate measures for control of noise levels from its own sources so as to maintain ambient air quality standard in respect of noise to less than 75 dB (A) during day Time and 70dB (A) during night time. Day time is reckoned in between 6 am and 10 pm. and night time is reckoned between 10 pm and 6 am. Measurement of noise level shall be done at minimum four locations along the periphery of the industry premise. Monitoring data of at least 2 days per week for different days of subsequent week shall be submitted to MPC Board on monthly basis on or before 15<sup>th</sup> day of next month.
- (iv) Ambient Air Quality Monitoring shall be carried out within the premises at minimum four locations as per revised national ambient air quality standards. Monitoring shall be done twice in a week through MoEF approved laboratory. Locations of ambient air quality monitoring shall be approved from MPC Board annually. Monthly monitoring results shall be submitted to MPC board on or before 15<sup>th</sup> day of every month.
- (v) Marine survey shall be carried out once in a month near coal berth for the environment parameters such as physical, chemical, physico-chemical ,biological/bio-monitoring including heavy metals. Monthly monitoring results shall be submitted to MPC board on or before 15<sup>th</sup> day of next month.

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- (vi) Sea water quality analysis shall be carried out once in a month at following three locations.
- a) At 1000 m from coal jetty towards sea (South).
  - b) At 500 m on east of point a) above.
  - c) At 500 m on west of point a) above.

Monthly monitoring results shall be submitted to MPC board on or before 15<sup>th</sup> day of next month.

- (vii) Industry shall monitor sea water temperature once in a week at three locations identified by MPC board. Monitoring shall be done for non monsoon period i.e. from October to May every year. Monthly reports of monitoring shall be submitted to MPC Board on or before 15<sup>th</sup> day of next month.
- (viii) Industry shall install continuous ambient air quality monitoring stations (CAAQMS) minimum at two location (one in upwind and other in downwind direction based on meteorological condition) along with meteorological station. Location of the CAAQMS shall be approved from MPC Board. Electronic display board shall be maintained at the gate which shall give information about consent no, stack emission, ambient air quality and meteorological data. Quarterly monitoring results shall be submitted to MPC board on or before 15<sup>th</sup> day of July, October, January and April.
- (ix) All possible care shall be taken so that the natural environment including flora and fauna in the vicinity is not adversely affected due to transportation of coal.
- (x) All the barges used for transportations of coal shall be as per the approved criteria laid down by the MMD or IRS as the case may be.
- (xi) The coal jetty shall be provided with adequate capacity mechanized equipments like screw unloaders for unloading of coal and closed pipe conveying system for transportation of coal to avoid fugitive emissions and operate and maintain them properly.
- (xii) Onshore facility for transit storage of coal near coal jetty shall be provided with adequate water sprinkling facility to avoid fugitive emission of particulate matter.
- (xiii) Adequate water sprinkling facility shall be provided at coal jetty as well as at coal yard to control fugitive emission from the coal stock.
- (xiv) Industry shall submit to board %Ash & %S in imported coal on monthly basis. Monthly reports shall be submitted to MPC board on or before 15<sup>th</sup> day of next month.
- (xv) Proper area shall be identified and demarcated by the industry for storage of the waste (hazardous, non hazardous, metal, non metal, rubber, wood, batteries, e-Waste etc) before disposal. Proper Sign boards shall made at demarcated area. No other area in the plant other than demarcated area shall be used for storage of waste.

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- (xvi) Waste generated during outages of the unit shall be segregated immediately and stored at demarcated area as per clause (xiv) above or disposed off immediately as applicable. No other area shall be used for storage of waste.
- (xvii) All the storm water drain/channels within the premise shall be kept clean all the time. Oil traces or any waste material shall not be found in the drain.
- (xviii) Whenever due to any accident or other unforeseen event or act, such emissions occurs or is apprehended to occur in excess of standards laid down, such information shall be forthwith reported to board, concerned police station, office of Directorate of Health Services, Department of Explosives, Inspectorate of factories and local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped.
- (xix) Industry shall follow the conditions stipulated in environmental clearance granted by Government of Maharashtra vide letter No ENV(NOC) 2005/1416/CR/185/D/1 dated 10.02.2006.
- (xx) Industry shall follow the conditions stipulated in environmental clearance granted by MoEF no J-16011/43/2001-IA-III dated 03.08.2005.
- (xxi) Industry shall follow the conditions stipulated in environmental clearance granted by MoEF no J-13011/4/90-IA-III dated 30.09.1991.
- (xxii) Unit 4 shall be not be operated without taking prior permission from Environment Department, Government of Maharashtra.
- (xxiii) The industry shall maintain compliance of charter on corporate responsibility for environment protection (CREP)

## 9. GENERAL CONDITIONS

- (i) Industry shall not cause any nuisance in surrounding area.
- (ii) The industry shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises.
- (iii) The industry shall maintain good house keeping and take adequate measures for control of pollution from all sources so as not to cause nuisance to surrounding area/inhabitants.
- (iv) The industry shall bring minimum 33% of the available open land under green coverage/plantation. The industry shall submit a yearly statement by 30<sup>th</sup> September every year about number of trees planted and number of trees survived in previous financial year.

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- (v) Separate drainage system shall be provided for collection of trade and sewage effluents. Terminal manholes shall be provided the end of collection system with arrangement for measuring the flow. No effluent shall be admitted in the pipes/sewers of the terminal manholes. No effluent shall find its way other than in designed and provided collection system. Neither storm water nor discharge from other premises shall be allowed to mix with the effluents from the factory.
  - (vi) The industry shall provide facility for collection of environment samples and samples of trade effluent, sewage effluents, air emissions and hazardous wastes samples to the staff of the board at the terminal or designated points and shall pay to the board for the services rendered in this behalf. An inspection book shall be opened and made available to the board's offices during their visit to the industry.
  - (vii) The industry shall make an application for renewal of the consent at least 60 days before the date of the expiry of the consent. The industry shall not change or alter quantity, quality the rate of discharge, temperature or the mode of the effluent/emissions or hazardous wastes or control equipments provided for without previous written permission of the MPC board.
  - (viii) In case of any change in products, its capacity or manufacturing process, the industry shall have to obtain prior permission of this board.
  - (ix) The industry shall submit to MPC board the environment statement for the financial year ending 31<sup>st</sup> March in the prescribed form-V as per the provisions of rule 14 of the environment protection rules, before 30<sup>th</sup> September every year. The industry shall also submit a comparative statement of power consumption of pollution control devices and chemical consumptions along with environment statement.
  - (x) A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.
10. Six monthly compliance report, on all the conditions mentioned above shall be submitted to Regional Office and copy to Member Secretary MPC board. Report shall be submitted on or before 30<sup>th</sup> October and 30<sup>th</sup> April.
11. If the industry fails to comply with the conditions and other directives issued by MPC board as laid down by this order, the industry is liable for the action under section 5 of the Environment protection act and also prosecution under section 43 & 44 and other penal provisions of the Water Act and under section 37,38, 39 and other penal provisions of the Air Act & under section 15 of the Environment Protection Act and shall on conviction, be liable for punishment and imprisonment as provided in the said act.
12. MPC board reserves right to review and/or revoke the Consent/authorisation and /or make variation in the conditions that the board deems fit in accordance with provisions of the Rules/Act.

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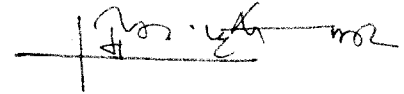
13. The total capital investment of the industry is as follows

Unit 4, 5, 6 &7	= Rs. 1830.26 Crores
Unit 8	= Rs. 1066.00 Crores
Coal Handling Jetty	= Rs. 229.00 Crores

14. This is issued with overriding effect on earlier consents issued by Board vide consents no. BO/MPCB/PCI-II/ROM/EIC NO MU 983-08/O/CC-678 dated 22.10.2008 and BO/APAE/EIC No MU-2607-11/R-400 dated 03.09.2011

15. This consent is issued with approval of consent appraisal committee meeting of the MPC board held on date 23/01/2012.

For and On Behalf of the  
Maharashtra Pollution Control Board



(Milind Mhaiskar, IAS)  
Member Secretary

To  
The Tata Power Company Limited  
Trombay Thermal Power Station  
Mahul Road, Chembur, Mumbai-74

Copy to:

- 1) Regional Officer, Mumbai MPCB, Mumbai.
- 2) Sub-Regional Officer Mumbai III, -MPCB, Mumbai.
- 3) Chief Accounts Officer, MPCB, Mumbai
- 4) Cess Branch, MPCB.

Received Consent fee of – as per revised consent fee GR dated 25.08.2011.

Sr No	Amount	DD	Date	Drawn On
1	53,30,000/-	436042	25.06.08	Standard chartered Bank
2	11,45,350/-	065099	11.03.11	HDFC Bank
3	125/-	003363	15.03.11	ICICI Bank
4	91,51,408/-	085689	25.08.11	HDFC Bank
5	91,51,308/-	067501	19.10.11	HDFC Bank
6	71,58,000/-	120466	27.01.12	HDFC Bank