MUNICIPAL CORPORATION OF GREATER MUMBAI

CHIEF ENGINEER (SOLID WASTE MANAGEMENT) DEPTT.

Dy. Ch. Eng./ 4482 /(SWM) Project 13/1/17

Office of the Chief Engineer (SWM)
Love Grove Complex,
89, Dr. Annie Besant Road,
Worli,
Mumbai – 400 018.
Tel. No.: 022-24945186 /24955436

To,
The Member Secretary,
Maharashtra Pollution Control Board,
Kalpataru Point, 2nd, 3rd, & 4th floor,
Opp. Cine Planet,
Near Sion Circle,
Sion (East),
Mumbai- 400 022.

Sub: Submission of hard copy of half yearly compliance reports in respect of the stipulated prior environment clearance terms & conditions and six monthly reports on the status of compliance of the General Conditions (vii) & (xii) for Construction Phase including results of monitored data as stipulated in the revised Environmental clearance (E.C.) accorded for modernization of MSW processing & disposal facility of capacity 4000 TPD - 7500 TPD at Kanjur, Mumbai.

Ref: 1) Revised Environmental Clearance issued by State Level Environmental Impact Assessment Authority (SEIAA) vide no. SEAC-2014/CR-162/TC2dtd 05.12.2014.
2) Half yearly compliance report submitted by MCGM vide letter U/No. Dy.Ch.E./3955/SWM/Projct dtd. 29.11.2016.

Sir,

This has reference to the conditions of revised Environmental Clearance issued for proposed modernization of MSW processing & disposal facility of capacity 4000 TPD- 7500 TPD at Kanjur, Mumbai.

In this context, the MCGM is hereby submitting the hard copy of half yearly compliance reports in respect of the stipulated prior environment clearance terms & conditions and six monthly reports on the status of compliance of the General Conditions (vii) & (xii) for Construction Phase including results of

monitored data as stipulated in the revised Environmental clearance (E.C.) accorded for modernization of MSW processing & disposal facility of capacity 4000 TPD- 7500 TPD at Kanjur, Mumbai as follows:-

Sr. No	Conditions Under Environmental Clearance	Status of Compliance.
1.	The proposal under consideration has to be restricted within the area 65.96 ha. outside the CRZ area. The PP shall maintain a buffer zone of 500 meters around the project perimeter which shall be incorporated as 'No Development Zone' in the Development Plan of MCGM.	MCGM has maintained a buffer zone of 500 meters around the project perimeter in existing Development Plan. MCGM is taking necessary steps for incorporation of the said buffer zone as 'No Development Zone' in the Development Plan of MCGM & the same will be incorporated after approval of Appropriate Authority.
2.	The road leading to the dumping ground from the Eastern Express Highway shall be fully black topped/concretized so as to avoid generation of dust.	Complied.
3.	Generation of Green House Gases (GHG) like methane needs to be controlled so that it does not contaminate the atmosphere. It should be ensured that methane generated if fully utilized for power generation/flaring and not let into atmosphere.	Complied. The GH gas, Methane generated in BLF Cell is captured and at present burned through flaring station installed at the site. Arrangements for gas collection & its utilization for power generation are installed and are under trial / commissioning.
4.	The leachate generating from the cells will have to be systematically collected and treated to reduce BOD levels to allowable limits. Under no circumstances should the leachate be allowed to contaminate the surrounding areas, particularly the mangrove forest on the south western and eastern side of the cell.	Arrangement for leachate collection in impervious HDPE lined pond from BLF-Cell-1 and BLF-T is already operational. Erection & commissioning of Leachate Treatment Plant is completed and is operational. Leachate treatment comprises of ammonia liberation at higher pH, followed by flocculation with clarification, further subjected to anaerobic &, aerobic treatment with secondary clarification. At present leachate collected is re-circulated in BLF Cells under controlled condition.
5.	The PP shall take all out efforts to control odor nuisance. PP should take steps to measure odor levels using instruments which are currently available. The measurement of odor levels shall be taken at strategic locations depending on the wind direction and situation of habitats. Through regular monitoring it should be ensured that the odor levels are within the acceptable limits and	Complied. On the basis of details of wind direction & wind speed from Wind Rose Diagrams of this project site, Locations for monitoring odor levels in windward and leeward directions in nearby residential colonies are finalized and monitoring has been carried out for odor giving compounds like VOC, Mercaptans, ammonia, hydrogen sulfide etc. As regards, measurement of odor levels in the vicinity by using instrumental method, CSIR environmental research center, NEERI, Mumbai has been appointed.

Sr. No	Conditions Under Environmental Clearance	Status of Compliance.
	remedial measures like applying odor controlling bacterial consortium to the garbage are taken up as and when necessary.	As per the agreement, calibration measurements, reporting of results will be done by NEERI, Mumbai. NEERI has started monitoring work. Wind balloon system for guiding wind directions have been installed at BLF Cells and other noticeable places, so that wind direction can be seen easily by the operating staff and necessary arrangement for remedial measures like applying odor controlling bacterial consortium to the garbage and misting of deodorant are taken up as and when necessary.
6	To save the mangroves on the South-Western side of the property which is starved of supply of sea water, the PP should ensure openings of sufficient cross section in the compound wall which are designed and provided in consultation with the Chief Conservator of Forests, Mangrove Cell.	Enough tidal water flows from the culverts provided and significant growth of healthy mangroves is visible. For protection and conservation of mangroves, proposal is under finalization with Chief Conservator of Forests (Mangrove Cell). The Forest Officers through visits to project site are monitoring the protection & preservation of mangrove forest.
7	Mangrove regeneration efforts should be undertaken at the costs of the PP once regular tidal flushing is assured through measures suggested in point 6	
8	The staff handling the solid waste should be trained to ensure zero spillage of the garbage during transport. The PP should ensure proper cleaning of the transport vehicles after unloading the garbage at the dumpsite.	The closed body vehicles are designed for handling & transportation of MSW to achieve zero spillage and training is given to staff for handling the Solid Waste. It is strictly observed that no tail gates of vehicles will be opened before reaching to the MSW unloading site. Arrangements are in place for Washing/cleaning of incoming waste collection trucks tyres if found with muck and dirt. Regular cleaning of roads is undertaken to collect spilled garbage if observed and cleanliness is maintained at utmost level.
9	No land development / construction work preliminary or otherwise relating to the project shall be taken up without obtaining due clearance from respective authorities.	Noted.
10	No additional land shall be used / acquired for any activity of the project without obtaining proper permission.	Noted.

Sr. No	Conditions Under Environmental Clearance	Status of Compliance.
11	The project proponent should ensure that the transportation of the hazardous waste to the TSDF conforms to the norms laid down in the Hazardous Waste (Management & Handling) Rules 2013.	The said condition is not applicable to this project as the project involves processing of MSW.
12	The proponent should ensure that TSDF fulfills all the provision of Hazardous Waste (Management & Handling) Rules 2003 & the design of landfill is as per guidelines of CPCB with proper leachate collection arrangement.	The site is designed as per the guide lines of MSW (M&H) Rules-2000 and the provision for landfill design & execution of Biogas capturing & flaring arrangement; Leachate collection, treatment, leachate recirculation/disposal is taken into consideration.
13	The TSDF should only handle the waste generated from the member units. A leachate collection system should be provided to collect the leachate at a collection point. Treatment facility for the collected leachate should be provided. The treated water should be reused as far as possible in the project.	Only MSW generated from human habitation area is transported to this site. No industrial hazardous waste is accepted for TSDF hence no member units contributing /generating hazardous waste are covered as member units. Leachate collection and treatment facility is provided and is in operation. However at present the Leachate is re-circulated at BLF Cells for enhancing the Bio-degradation process for generation of Methane gas. The Leachate Treatment Plant with arrangement of primary, Secondary with tertiary treatment is provided.
14	The proponent should obtain necessary clearance from the Ground Water authority before initiating the project.	Necessary clearance from the Ground Water Authority is already obtained before initiating the project. MCGM had also informed the Ground Water Authority about the revised E.C.
15	The depth of the landfill should be decided based on the ground water level at site.	While deciding the depth of landfill in design, ground water level data is taken into consideration. This condition is complied while designing the project & is being complied in execution.
16	Project Proponent should prepare and implement an onsite emergency management plan.	Emergency Management Plan is complied as per the EIA report (Chapter 6). On site "Emergency Plan and Disaster Management Plan" is prepared and is under implementation.
17	Project Proponent shall carryout periodical ground water/soil monitoring in and around the site to check the contamination, including TCLP test for heavy metals	Monthly ground water quality monitoring through Pizo-metric wells water samples locations are provided in drawing. Periodical ground water /soil monitoring in and around the site is carried out at intervals set out in the MSW rules 2000 through the agency approved by MOEF. As regards to TCLP test the parameters which are necessary as per MSW rules are analyzed with the help of MoEF

Sr. No	Conditions Under Environmental Clearance	Status of Compliance.
		approved Lab.
18	Project Proponent shall carryout periodical air quality monitoring in and around the site including VOC, HC.	Monthly air monitoring is being carried out in and around the site as per the parameters stipulated in the Authorization granted and the results are displayed on website of the operator. Special parameters of VOC and HC are also monitored. The reports are submitted to MPCB, by the operator.
19	Project Proponent should develop Green Belt all along the periphery of the TSDF with plant species that are significant and used for the pollution abatement.	It is revealed that said condition is not applicable to the Kanjur Project as the Kanjur Project is only for treatment of Municipal Solid Waste (MSW). Plantation for green belt development is being done on progressive basis and majority of the plantation is already done.
20	The project proponent should not store the hazardous wastes more than the quantity that has been permitted by the CPCB / Maharashtra State Pollution Control Board	Only MSW is received at Kanjur site. Therefore, question of receiving of Hazardous waste does not arise.
21	Adequate firefighting facilities should be installed to handle the fire arising from hazardous chemicals/waste that are stored/processed.	The said condition is not applicable to this project as the project involves processing of MSW Only. No HW /H Chemicals are received to this site. Adequate fire fighting system is in place, comprising of water tankers and fire extinguishers which are placed at strategic locations for prevention of any fire incidence.
22	For controlling fugitive natural dust, regular sprinkling of water & wind shields at appropriate distances in vulnerable areas of the plant shall be ensured	On leeward direction plantation is done as a wind barrier. The arrangement of water sprinkling on roads through tankers is in practice and water sprinkling operation is carried out regularly in summer & winter.
23	Necessary arrangement shall be made to adequate safety and ventilation arrangement in furnace area.	The said condition is not applicable to this project as the project involves processing of MSW only. There is no furnace area in the current project plan.
24	Proper housekeeping programs shall be implemented.	Dedicated team of trained workers is already deployed to ensure the good housekeeping & cleanliness.
25	A stack of adequate height based on DG set capacity shall be provided for control and dispersion of pollutant from DG set. (if applicable)	At present there is continuous power supply from MSEDCL on the project site. Standby DG set of 125 KVA capacities with stack height of 7 meter is provided. The DG is satisfying the new EP guidelines of CPCB. Arrangement of separate leachate collection through HDPE

Sr. No	Conditions Under Environmental Clearance	Status of Compliance.
	Arrangement shall be made that effluent and storm water does not get mixed.	pipeline into HDPE lined pond is provided. It is controlled by re-circulation into the landfill BLF Cell No 1. The excess leachate is treated in the leachate treatment plant and it is not allowed to mix with storm water. Storm water drainage galleries around the Cell have been constructed for the management of rain water.
26	Periodic monitoring of ground water shall be undertaken and results analyzed to ascertain any change in the quality of water. Results shall be regularly submitted to the Maharashtra Pollution Control Board.	Monthly Ground water quality is monitored as prescribed in MSW (M&H) Rules, 2000.The overall trend observed from the analysis report of monthly samples for metals and non metals from Authorization indicate lowering trend. The results are submitted to MPCB by the operator. The sampling & analysis is carried out with the help of Accredited laboratory, approved by MoEF.
27	Leq. of noise level shall be maintained as per standards. For people working in the high noise area, requisite personal protective equipment like earplugs etc. shall be provided.	Due care is taken to avoid noise nuisance.
28	The overall noise levels in and around the plant shall be kept well within the standards by providing noise control measures including acoustic hoods. silencers, enclosures, etc. on all sources	Noise levels are arising from movements of trucks, dozers. These machineries are fitted with silencer for noise control. All efforts as per EIA are made to ensure that noise levels do not exceed the permissible values.
29	PP has to abide by the conditions stipulated by SEAC & SEIAA	Noted.
30	"Consent for Establishment" shall be obtained from Maharashtra Pollution Control Board under Air and Water Act and a copy shall be submitted to the Environment Department before start of any construction work at the site.	MPC Board has granted Authorization under MSW (M&H) Rules-2000 as per the decision in Consent Appraisal Committee meeting & issued letter for non- requirement of separate Consent to Establishment/ operate for this activity.
31	All required sanitary and hygienic measures should be in place before starting construction activities and to be maintained throughout the construction phase.	All required sanitation arrangements such as WC/Urinals/Bathrooms with adequate water are available at site. Also safe, filtered, disinfected drinking water is provided to staff/ workers. Required facilities are maintained throughout the construction period.

Report on compliance of General Conditions stipulated in Environment Clearance.

Sr. No	General Conditions for Construction Phase	Proposed action plan
(i)	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche and First Aid Room etc.	All required arrangements such as housing, sanitation & safe drinking water requirements are in place. Medical checkup has been taken to check the health of workers.
(ii)	Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.	All required provisions are in place.
(iii)	The solid waste generated should be properly collected and segregated. Dry/inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable material.	All required provisions are in place.
(iv)	Disposal of muck during construction phase should not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.	All necessary guidelines shall be followed for disposal of muck (if any) generated during construction.
(v)	Arrangement shall be made that waste water and storm water do not get mixed.	Necessary drainage is made to ensure that no waste water and storm water is mixed. Storm water drainage galleries have been constructed for the management of rain water.
(vi)	All the topsoil excavated during construction activities should be stored for use in horticulture / landscape development within the project site.	In case of landfill site, mostly the construction activity involves filling & compaction of soil and not excavation. However necessary precaution to preserve top soil for reuse will be taken.
(vii)	Additional soil for leveling of the proposed site shall be generated within the site (to the extent possible) so that natural drainage system of the area is protected and improved.	There is no additional soil filling material available on the present site, as the site is situated in low lying area. As per the technical requirement, soil from various locations is transported for the purpose of filling the embankments.

Sr. No	General Conditions for Construction Phase	Proposed action plan
(viii)	Green Belt Development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO/Agriculture Dept.	The plantation program for Green Belt development as per approved layout plan is already undertaken & it is under progressive implementation.
(ix)	Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.	HDPE Liners are spread at landfill base as per design & provisions of MSW (M&H) Rules, 2000 to prohibit percolation of leachate into the ground/soil. Ground water and surface water samples are tested through laboratory, approved by the MOEF and results show that there is no contamination of heavy metals and toxic contaminants.
(x)	Construction spoils, including bituminous material and other hazardous materials must not be allowed to contaminate watercourses and the dumpsites for such material must be secured so that they should not leach into the ground water.	Necessary due care is taken for not accepting such hazardous material at site.
(xi)	Any hazardous waste generated during construction phase should be disposed off as per applicable rules and norms with necessary approvals of the Maharashtra Pollution Control Board.	No hazardous waste is generated during construction phase.
(xii)	The diesel generator sets to be used during construction phase should be low sulphur diesel type and should confirm to Environment (Protection) Rules prescribed for air and noise emission standards.	Diesel generator sets are not used during construction phase, as regular electricity is available at site. DG set at site as standby unit is confirming noise & air emissions standards under EP Rules.
(xiii)	The diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from concern authority shall be taken.	Noted.
(xiv)	Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards and should be operated only during non-peak hours	Necessary and due care is being taken.

Action plan for compliance to General Conditions for Post Construction/Operation Phase of Environment Clearance.

Sr. No	General Condition for Post Construction/Operation Phase	Proposed Action Plan
(i)	Project proponent shall ensure completion of green belt development prior to functioning of MSW processing. Prior certification from appropriate authority shall be obtained.	Plantation in green belt development is being done on progressive basis and majority of the same is already done.
(ii)	A complete set of all the documents submitted to SEAC & SEIAA should be forwarded to the Local authority and MPCB.	Complied.
(iii)	In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Department.	Noted.
(iv)	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	We are having qualified staff for environment monitoring at site as per MSW rules and as per our concession agreement. Environment cell as per EC has been formed.
(v)	Separate funds shall be allocated for implementation of environmental protection measures/EMP along with item-wise breaks-up. These costs shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should reported to the MPCB & this department.	Cost of environmental monitoring and management is included in the tipping fees which are being paid to the operator of the project.
(vi)	The project management shall advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the Marathi language of the local concerned within seven days of issue of this letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the Maharashtra Pollution Control Board and may also be seen at Website at htttp://ec.maharashta.gov.in.	Compiled.
(vii)	Project management should submit half yearly compliance reports in respect of the stipulated prior environment clearance terms and conditions in hard & soft copies to the MPCB & this	Complied.

Sr. No	General Condition for Post Construction/Operation Phase	Proposed Action Plan
	department, on 15th June & 15th December of each calendar year.	
(viii)	A copy of the clearance letter shall be sent by proponent to the concerned Municipal Corporation and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	A copy of Environment Clearance is hosted on the operator's Website as per requirement.
(ix)	In the event of the failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restored until the desired efficiency has been achieve.	Noted.
(x)	Regular monitoring of the air quality including SPM & SO_2 levels both in work zone and ambient air shall be carried out in and around the power plant and record shall be maintained. The location of monitoring stations and frequency of monitoring shall be decided in consultation with Maharashtra Pollution Control Board (MPCB) & submit report accordingly to MPCB.	Currently air monitoring at locations identified in EIA is being carried out at frequency defined in MSW (M&H) Rules, 2000. The reports are submitted to MPCB by the operator.
(xi)	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely SPM, RSPM, SO_2 and NOx (ambient levels as well as stack emissions) or critical sector parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Air monitoring data is displayed on operator's Website as per requirement of the said clause. Monitoring results are sent to the said Departments as required in the said clause. Latest Monitoring results are displayed for the location within the site at the main entrance of the project site.
(xii)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by-	Complied.

Sr. No	General Condition for Post Construction/Operation Phase	Proposed Action Plan
	mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	
(xiii)	The environmental statement for each financial year ending 31st March in Form V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by-mail.	Complied. Environment Statement is submitted and the same report is displayed on operator's website.

Submitted please.

Yours faithfully,

3/11/17

Chief Engineer
(Solid Waste Management)

As per the general conditions number (xi) stipulated in EC dated 5th December 2014 for post construction/operation phase, the details of Air pollution levels monitored at ISWM Project site, Kanjur, are as follows.

Sr. No.	Parameters	Permissible Limits	Values Recorded June-2016	Values Recorded July-2016	Values Recorded August -2016	Values Recorded September-2016	Values Recorded October-2016	Values Recorded November-2016	Values Recorded December-2016	Remarks for Values Recorded
1	Sulphur Dioxide (SO_2)*	80 µg/m^3 (24 hrs)	14 µg/m^3 (24 hrs)	< 10 µg/m^3 (24 hrs)	10 µg/m^3 (24 hrs)	<10 µg/m^3 (24 hrs)	20.0 µg/m^3 (24 hrs)	16.06	13.46	Within limits
2	Suspended Particulate Matter*	500 µg/m^3 (24 hrs)	205 µg/m^3 (24 hrs)	104 µg/m^3 (24 hrs)	91 µg/m^3 (24 hrs)	97 µg/m^3 (24 hrs)	372.2 µg/m^3 (24 hrs)	183.5	284.3	Within limits
3	Methane*	Not to exceed 25% of the lower explosive limit (equivalent to 650 mg/m^3)	2.7 mg/m3	3.9 mg/m3	2.3 mg/m3	2.5 mg/m3	<0.5 mg/m3	<0.5 mg/m3	<0.5 mg/m3	Within limits
4	Ammonia*	0.4 mg/m^3 (400 µg/m^3) 24 hrs	30 µg/m^3 (24 hrs)	99 µg/m^3 (24 hrs)	262 µg/m^3 (24 hrs)	70 µg/m^3 (24 hrs)	5.0 µg/m^3 (24 hrs)	4.82	6.15	Within limits
5	Carbon Monoxide*	1 hour average: 2 mg/m^3	1 hour average: 1.3 mg/m^3	1 hour average: 1.4 mg/m^3	1 hour average: 1.0 mg/m^3	1 hour average: 1.2 mg/m^3	1 hour average: < 0.4 mg/m^3	1 hour average: < 0.4 mg/m^3	1 hour average: < 0.4 mg/m^3	Within limits

* As per Authorization dated 30/03/2012 & EC dated 05/12/2014.