MUNICIPAL CORPORATION OF GREATER MUMBAI

CHIEF ENGINEER (SOLID WASTE MANAGEMENT) DEPARTMENT

Office of the Chief Engineer (SWM)
Love Grove Complex,
89, Dr. Annie Besant Road,
Worli, **Mumbai–400018.**

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 Environmental Statement Form V for the financial year ending with 31st March 2017 in respect of the stipulated prior environment clearance terms and conditions in the revised environment clearance (E.C) accorded for the modernization of MSW processing and disposal facility of capacity 4000 TPD- 7500 TPD at Kanjur, Mumbai.

Ref: Revised Environmental Clearance issued by State Level Environmental Impact Assessment Authority (SEIAA) vide no. SEAC-2014/CR-162/TC2dtd 05.12.2014.

Sir,

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

In this context, the MCGM is hereby submitting the hard copy of Environmental Statement Form V for the financial year ending with 31st March 2017 in respect of the stipulated prior environment clearance terms and conditions in the revised environment clearance (E.C) accorded for the modernization of MSW and disposal facility of capacity 4000 TPD- 7500 TPD at Kanjur, Mumbai.

Submitted please.

Yours Faithfully,

Chief Engineer
(Solid Waste Management)

MUNICIPAL CORPORATION OF GREATER MUMBAI

CHIEF ENGINEER (SOLID WASTE MANAGEMENT) DEPARTMENT

ANNEXURE

ENVIRONMENTAL STATEMENT FORM-V
(See rule 14)

Environmental Statement for the financial year ending with **31st March, 2017**

PART-A

i. Name and address of the owner/ occupier of the industry operation or process.

Municipal Corporation of Greater Mumbai
Integrated Solid Waste Management Site,
Off Eastern Express Highway, Near Kannamwar Nagar,
Kanjur (E), Mumbai 400042.

Operator- M/s. Antony Lara Enviro Solutions Pvt. Ltd.

ii. Industry category Primary-(STC Code) Secondary- (STC Code) - NA

iii. Production category – Processing of Municipal Solid Waste
Total capacity up to 7,500 Tons /Day
up to 6,500Tons/day by Bioreactor landfill technique
& up to 1,000 Tons /day by Windrow Composting

iv. Year of establishment -**2009**

v. Date of the last environmental statement submitted**. - 20.06.2016 for Year 2015-16.**

PART –B

Water and River Material Consumption

i. **Water consumption in m^3/day**

Process : i) 16.0 m^3/day (Spraying of Bio-Wish and Piian to minimize the odor nuisance)
ii) 40.0 m^3/day for Leachate Treatment Plant
iii) 40.0 m^3/day for Dust Suppression
iv) 10.0 m^3/day for Wheel washing of MSW carrying vehicles

Cooling : Nil

Domestic : 165 Nos. of staff and workers ×40 Liters /day= 6.6 m^3 /day

i) Name of Products	Process water consumption per unit of products	
	During the Previous financial year April 2015-March 2016	During the current financial year April 2016- March 2017
1. Composted Material (Soil conditioner)	Not applicable (Process of Bio-degradation is not completed hence bio-mining for finished goods are not done.)	Not applicable (Process of Bio-degradation is not completed hence bio-mining for finished goods are not done.)

ii. **Raw material consumption**

Name of Raw materials*	Name of Products	Consumption of Raw material per unit of outpu	
		During the Previous Financial Year April 2015 -March 2016	During the Current Financial Year April 2016-March 2017
i) Municipal Solid Waste (un-segregated)	Composted Material (Soil conditioner)	989194.599 Tons	1073231.602 Tons
ii) Soil for cover	Will be Reused after Bio-mining	74,955 Tons	95,235 Tons

* Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

PART-C

Pollutants Discharged to environment/unit of output

(Parameter as specified in the consent issued)

Pollutants	Quantity of Pollutants Discharged (mass/day)	Concentration of Pollutants Discharged mass/volume	Percentage of Variation from Prescribed Standards with Reasons.
(a) Water	Nil	Nil	Nil
(b) Air	Nil	Nil	Nil

PART-D

HAZARDOUS WASTES

(as specified under Hazardous Wastes (Management & Handling Rules, 1989).

Hazardous Wastes	Total Quantity (Kg)	
	During the Previous Financial Year April 2015-March 2016	During the Current Financial Year April 2016-March 2017
1. From Process	NIL	NIL
2. From Pollution Control Facilities	NIL	NIL

PART – E

Solid Waste

	Total Quantity (Kg/Tons)	
	During the previous financial year April 2015-March 2016	During the current financial year April 2016-March 2017
a. From process	NIL	NIL
b. From Pollution Control Facility	NIL	NIL
c. (1) Quantity recycled or re-utilized within the unit.	NIL	NIL
(2) Sold Plastics	NIL	NIL
Non- ferrous	NIL	NIL
(3) Disposed Land filled material	NIL	NIL

PART – F

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Hazardous waste is not generated or received at this Integrated Solid Waste Management Site at Kanjur, Mumbai.

The Municipal Solid waste is received for Bio-reactor Landfill having characteristics as below

Characteristics of solid waste:

Sr. No.	Particulars	Percentage
1.	Inert (Debris-sand, silt, stone and bricks) material	14.93%
2.	Recyclables-Plastics, paper, thermocoal, rubber, leath glass, metals	19.94%
3.	Wet Organic material- Vegetables market was canteen hotel waste, suitable for composting	52.12%
4.	Dry organic material	13.01%
5.	C:N ratio	30

PART-G

Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production.

Conservation of natural resources-

Due to the scientific design of bioreactor landfill with the arrangement of impervious lining at the bottom along with leachate collection arrangement has protected the ground water from contamination.

Due to Scientific land filling, the emission of green house gases admeasuring 973 Tons/Year Methane i.e. equivalent CO_2 24323 Tons /year is controlled and due to controlled flaring of land fill gas smell nuisance is minimized, thus adverse impact on air quality is minimized.

The use of BioWish, special culture for spraying on unloaded MSW at landfill site before spreading, compacting and blanketing with soil cover, the generation of smell nuisance is controlled and enhances the Bio-degradation.

The arrangement of Mist spraying, around MSW unloading area, leachate treatment plant by using diluted Piian solution helps in minimizing odor nuisance from VOC/Mercaptans/H_2S etc.

Spreading of soil cover blanket on inactive area of MSW helps in controlling odor and enhances biological activity due to the controlled temperature inside MSW scientific landfill.

Leachate generated in Bio-composting is recycled and sprayed scientifically inside stacked material for effective, speedy bio-composting and increase in methane gas production.

The leachate is collected in 2 Nos. of impervious ponds. There is full-fledged Leachate Treatment Plant installed on ISWM Project Site, Kanjur where Leachate collected in impervious pond is treated elaboriously. At present the Leachate Treatment Plant is fully working. This will help in conservation/ protection of surface water and ground water in surrounding area.

The peripheral plantation about 2000 numbers along the boundary wall of the project in two rows has helped in arresting the smell spreading during the winter season.

Impact of abatement measures on cost is as shown below.

Particular	Total Rs. in Lakh
Gas Flaring	58.11
Biowish	48.47
Misting	54.90
LTP	73.31
Expenditure on environmental monitoring analysis for checking compliance	31.55
EIA	11.50
Dust suppression	8.08
Plantation	9.50
Website Maintenance for information to Public	0.01
Use of Meteorological App for local meteorological data	0.01
Total Rs.	**295.44**

PART – H

Additional measures/investment proposal for environmental protection including abatement of pollution.

Sr. No.	Particulars	Projected Cost in lakhs
1	Power generation Unit proposed 1MW	800.00
2	Plantation	02.00
3	Compost and MRF shed	900.00
4	Rain water harvesting	80.00

PART –I

MISCELLANEOUS:

Any other particulars in respect of environmental protection and abatement of pollution.

Green house gases emissions about 973 tons escaping into the environment is captured which has helped in controlling smell nuisance. Recycle of carbon from stabilized composted solid waste into soil will help in improving quality of soil.

8/6/17

Chief Engineer
(Solid Waste Management)

MUNICIPAL CORPORATION OF GREATER MUMBAI

CHIEF ENGINEER (SOLID WASTE MANAGEMENT) DEPARTMENT

Office of the Chief Engineer (SWM)
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To,
The Member Secretary,
S.E.I.A.A.
Environment Department,
Government of Maharashtra,
15th floor, New Adm. Building,
Mantralaya,
Mumbai – 400 032.

Sub: Submission of Environmental Statement Form V for the financial year ending with 31st March 2017 in respect of the stipulated prior environment clearance terms and conditions in the revised environment clearance (E.C) accorded for the modernization of MSW processing and disposal facility of capacity 4000 TPD- 7500 TPD at Kanjur, Mumbai.

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iv. Year of establishment -**2009**

v. Date of the last environmental statement submitted. - **20.06.2016 for Year 2015-16.**

PART –B

Water and River Material Consumption

i. **Water consumption in m^3/day**

Process : i) 16.0 m^3/day (Spraying of Bio-Wish and Piian to minimize the odor nuisance)
ii) 40.0 m^3/day for Leachate Treatment Plant
iii) 40.0 m^3/day for Dust Suppression
iv) 10.0 m^3/day for Wheel washing of MSW carrying vehicles

Cooling : Nil

Domestic : 165 Nos. of staff and workers ×40 Liters /day= 6.6 m^3 /day

i) Name of Products	Process water consumption per unit of products	
	During the Previous financial year April 2015-March 2016	During the current financial year April 2016- March 2017
1. Composted Material (Soil conditioner)	Not applicable (Process of Bio-degradation is not completed hence bio-mining for finished goods are not done.)	Not applicable (Process of Bio-degradation is not completed hence bio-mining for finished goods are not done.)

ii. **Raw material consumption**

Name of Raw materials*	Name of Products	Consumption of Raw material per unit of outpu	
		During the Previous Financial Year April 2015 -March 2016	During the Current Financial Year April 2016-March 2017
i) Municipal Solid Waste (un-segregated)	Composted Material (Soil conditioner)	989194.599 Tons	1073231.602 Tons
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* Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

PART-C

Pollutants Discharged to environment/unit of output

(Parameter as specified in the consent issued)

Pollutants	Quantity of Pollutants Discharged (mass/day)	Concentration of Pollutants Discharged mass/volume	Percentage of Variation from Prescribed Standards with Reasons.
(a) Water	Nil	Nil	Nil
(b) Air	Nil	Nil	Nil

PART-D

HAZARDOUS WASTES

(as specified under Hazardous Wastes (Management & Handling Rules, 1989).

Hazardous Wastes	Total Quantity (Kg)	
	During the Previous Financial Year April 2015-March 2016	**During the Current Financial Year April 2016-March 2017**
1. From Process	NIL	NIL
2. From Pollution Control Facilities	NIL	NIL

PART – E

Solid Waste

	Total Quantity (Kg/Tons)	
	During the previous financial year April 2015-March 2016	**During the current financial year April 2016-March 2017**
a. From process	NIL	NIL
b. From Pollution Control Facility	NIL	NIL
c. (1) Quantity recycled or re-utilized within the unit.	NIL	NIL
(2) Sold Plastics	NIL	NIL
Non- ferrous	NIL	NIL
(3) Disposed Land filled material	NIL	NIL

PART – F

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Hazardous waste is not generated or received at this Integrated Solid Waste Management Site at Kanjur, Mumbai.

The Municipal Solid waste is received for Bio-reactor Landfill having characteristics as below

Characteristics of solid waste:

Sr. No.	Particulars	Percentage
1.	Inert (Debris-sand, silt, stone and bricks) material	14.93%
2.	Recyclables-Plastics, paper, thermocoal, rubber, leath glass, metals	19.94%
3.	Wet Organic material- Vegetables market was canteen hotel waste, suitable for composting	52.12%
4.	Dry organic material	13.01%
5.	C:N ratio	30

PART-G

Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production.

Conservation of natural resources-

Due to the scientific design of bioreactor landfill with the arrangement of impervious lining at the bottom along with leachate collection arrangement has protected the ground water from contamination.

Due to Scientific land filling, the emission of green house gases admeasuring 973 Tons/Year Methane i.e. equivalent CO_2 24323 Tons /year is controlled and due to controlled flaring of land fill gas smell nuisance is minimized, thus adverse impact on air quality is minimized.

The use of BioWish, special culture for spraying on unloaded MSW at landfill site before spreading, compacting and blanketing with soil cover, the generation of smell nuisance is controlled and enhances the Bio-degradation.

The arrangement of Mist spraying, around MSW unloading area, leachate treatment plant by using diluted Piian solution helps in minimizing odor nuisance from VOC/Mercaptans/H_2S etc.

Spreading of soil cover blanket on inactive area of MSW helps in controlling odor and enhances biological activity due to the controlled temperature inside MSW scientific landfill.

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The leachate is collected in 2 Nos. of impervious ponds. There is full-fledged Leachate Treatment Plant installed on ISWM Project Site, Kanjur where Leachate collected in impervious pond is treated elaboriously. At present the Leachate Treatment Plant is fully working. This will help in conservation/ protection of surface water and ground water in surrounding area.

The peripheral plantation about 2000 numbers along the boundary wall of the project in two rows has helped in arresting the smell spreading during the winter season.

Impact of abatement measures on cost is as shown below.

Particular	Total Rs. in Lakh
Gas Flaring	58.11
Biowish	48.47
Misting	54.90
LTP	73.31
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Dust suppression	8.08
Plantation	9.50
Website Maintenance for information to Public	0.01
Use of Meteorological App for local meteorological data	0.01
Total Rs.	**295.44**

PART – H

Additional measures/investment proposal for environmental protection including abatement of pollution.

Sr. No.	Particulars	Projected Cost in lakhs
1	Power generation Unit proposed 1MW	800.00
2	Plantation	02.00
3	Compost and MRF shed	900.00
4	Rain water harvesting	80.00

PART –I

MISCELLANEOUS:

Any other particulars in respect of environmental protection and abatement of pollution.

Green house gases emissions about 973 tons escaping into the environment is captured which has helped in controlling smell nuisance. Recycle of carbon from stabilized composted solid waste into soil will help in improving quality of soil.

8/6/17

Chief Engineer
(Solid Waste Management)

MUNICIPAL CORPORATION OF GREATER MUMBAI

CHIEF ENGINEER (SOLID WASTE MANAGEMENT) DEPARTMENT

Office of the Chief Engineer (SWM)
Love Grove Complex,
89, Dr. Annie Besant Road,
Worli, **Mumbai–400018.**

To,
Additional Principal Chief Conservator of Forests (C),
Ministry of Environment, Forest and Climate Change,
Regional Office (WZ),
E-5, Kendriya Paryavaran Bhawan,
E-5 Arera Colony, Link Road-3,
Ravishankar Nagar,
Bhopal – 462 016

Sub: Submission of Environmental Statement Form V for the financial year ending with 31st March 2017 in respect of the stipulated prior environment clearance terms and conditions in the revised Environment Clearance (E.C) accorded for the modernization of MSW processing and disposal facility of capacity 4000 TPD- 7500 TPD at Kanjur, Mumbai.

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iv. Year of establishment **-2009**

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PART –B

Water and River Material Consumption

i. **Water consumption in m^3/day**

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iv) 10.0 m^3/day for Wheel washing of MSW carrying vehicles

Cooling : Nil

Domestic : 165 Nos. of staff and workers ×40 Liters /day= 6.6 m^3 /day

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PART – E

Solid Waste

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	During the previous financial year April 2015-March 2016	During the current financial year April 2016-March 2017
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PART – F

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Love Grove Complex,
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Worli, **Mumbai–400018.**

To,
Scientist & Incharge,
Central Pollution Control Board,
Parivesh Bhavan,
Opposite VMC ward office No.10,
Shubanpura,
Vadodra- 390 023.

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1. Composted Material (Soil conditioner)	Not applicable (Process of Bio-degradation is not completed hence bio-mining for finished goods are not done.)	Not applicable (Process of Bio-degradation is not completed hence bio-mining for finished goods are not done.)

ii. **Raw material consumption**

Name of Raw materials*	Name of Products	Consumption of Raw material per unit of outpu	
		During the Previous Financial Year April 2015 -March 2016	During the Current Financial Year April 2016-March 2017
i) Municipal Solid Waste (un-segregated)	Composted Material (Soil conditioner)	989194.599 Tons	1073231.602 Tons
ii) Soil for cover	Will be Reused after Bio-mining	74,955 Tons	95,235 Tons

* Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

PART-C

Pollutants Discharged to environment/unit of output

(Parameter as specified in the consent issued)

Pollutants	Quantity of Pollutants Discharged (mass/day)	Concentration of Pollutants Discharged mass/volume	Percentage of Variation from Prescribed Standards with Reasons.
(a) Water	Nil	Nil	Nil
(b) Air	Nil	Nil	Nil

PART-D

HAZARDOUS WASTES

(as specified under Hazardous Wastes (Management & Handling Rules, 1989).

Hazardous Wastes	Total Quantity (Kg)	
	During the Previous Financial Year April 2015-March 2016	During the Current Financial Year April 2016-March 2017
1. From Process	NIL	NIL
2. From Pollution Control Facilities	NIL	NIL

PART – E

Solid Waste

	Total Quantity (Kg/Tons)	
	During the previous financial year April 2015-March 2016	During the current financial year April 2016-March 2017
a. From process	NIL	NIL
b. From Pollution Control Facility	NIL	NIL
c. (1) Quantity recycled or re-utilized within the unit.	NIL	NIL
(2) Sold Plastics	NIL	NIL
Non- ferrous	NIL	NIL
(3) Disposed Land filled material	NIL	NIL

PART – F

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Hazardous waste is not generated or received at this Integrated Solid Waste Management Site at Kanjur, Mumbai.

The Municipal Solid waste is received for Bio-reactor Landfill having characteristics as below

Characteristics of solid waste:

Sr. No.	Particulars	Percentage
1.	Inert (Debris-sand, silt, stone and bricks) material	14.93%
2.	Recyclables-Plastics, paper, thermocoal, rubber, leath glass, metals	19.94%
3.	Wet Organic material- Vegetables market was canteen hotel waste, suitable for composting	52.12%
4.	Dry organic material	13.01%
5.	C:N ratio	30

PART-G

Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production.

Conservation of natural resources-

Due to the scientific design of bioreactor landfill with the arrangement of impervious lining at the bottom along with leachate collection arrangement has protected the ground water from contamination.

Due to Scientific land filling, the emission of green house gases admeasuring 973 Tons/Year Methane i.e. equivalent CO_2 24323 Tons /year is controlled and due to controlled flaring of land fill gas smell nuisance is minimized, thus adverse impact on air quality is minimized.

The use of BioWish, special culture for spraying on unloaded MSW at landfill site before spreading, compacting and blanketing with soil cover, the generation of smell nuisance is controlled and enhances the Bio-degradation.

The arrangement of Mist spraying, around MSW unloading area, leachate treatment plant by using diluted Piian solution helps in minimizing odor nuisance from VOC/Mercaptans/H_2S etc.

Spreading of soil cover blanket on inactive area of MSW helps in controlling odor and enhances biological activity due to the controlled temperature inside MSW scientific landfill.

Leachate generated in Bio-composting is recycled and sprayed scientifically inside stacked material for effective, speedy bio-composting and increase in methane gas production.

The leachate is collected in 2 Nos. of impervious ponds. There is full-fledged Leachate Treatment Plant installed on ISWM Project Site, Kanjur where Leachate collected in impervious pond is treated elaboriously. At present the Leachate Treatment Plant is fully working. This will help in conservation/ protection of surface water and ground water in surrounding area.

The peripheral plantation about 2000 numbers along the boundary wall of the project in two rows has helped in arresting the smell spreading during the winter season.

Impact of abatement measures on cost is as shown below.

Particular	Total Rs. in Lakh
Gas Flaring	58.11
Biowish	48.47
Misting	54.90
LTP	73.31
Expenditure on environmental monitoring analysis for checking compliance	31.55
EIA	11.50
Dust suppression	8.08
Plantation	9.50
Website Maintenance for information to Public	0.01
Use of Meteorological App for local meteorological data	0.01
Total Rs.	**295.44**

PART – H

Additional measures/investment proposal for environmental protection including abatement of pollution.

Sr. No.	Particulars	Projected Cost in lakhs
1	Power generation Unit proposed 1MW	800.00
2	Plantation	02.00
3	Compost and MRF shed	900.00
4	Rain water harvesting	80.00

PART –I

MISCELLANEOUS:

Any other particulars in respect of environmental protection and abatement of pollution.

Green house gases emissions about 973 tons escaping into the environment is captured which has helped in controlling smell nuisance. Recycle of carbon from stabilized composted solid waste into soil will help in improving quality of soil.

3/8/2017

Chief Engineer
(Solid Waste Management)