Introduction Of Balikpapan
OVERVIEW OF BALIKPAPAN CITY

**GENERAL**

- THE ENTRANCE GATE OF EAST KALIMANTAN PROVINCE
- WIDTH: 83.189 hectare  (land: 50.330 hectare, sea: 32.859 hectare)
- TOPOGRAPHY: 85% HILLY & 15% FLAT
- THE CITY OF MICE (MEETING, INCENTIVE, CONFERENCE, EXHIBITION)
- CENTRE OF OIL REFINERY FOR THE EASTERN PART OF INDONESIA

**DEMOGRAFI**

- POPULATION IN 2012: 637,488 PEOPLE
- POPULATION IN 2013: 660,437 PEOPLE
- POPULATION GROWTH: 4.89%
Waste Stream Balikpapan City

- Transported to TPA: 71%
- Composted: 13%
- Recycled: 10%
- Untreated: 7%

Graph:
- 2011
- 2012
- 2013
SOLID WASTE MANAGEMENT

163,269 tons/year

NEIGHBOURHOOD WASTE/DOMESTIC WASTE

MARKET/SHOP WASTE

WASTE SORTING

ORGANIC WASTE

WASTE RESIDUE

INORGANIC WASTE

WASTE BANK

COMPOST HOUSE

FINAL DISPOSAL AREA

11,008 tons/year

203.03 tons/year

115,266 tons/year

SOURCE OF WASTE

ROAD/STREET WASTE

1163,269 tons/year

203.03 tons/year

11,008 tons/year

115,266 tons/year
Motto: **No Waste Stays in Waste Container**

There are 4 shifts for collection the waste:

1. **Shift 1**, (00:00 - 08:00 am), 60 trucks, all waste container in the city
2. **Shift 2**, (03:00 - 11:00 am), 5 trucks, residu from shift 1
3. **Shift 3**, (07:00 am - 03:00 pm), 5 trucks, residu from shift 2 and new waste
4. **Shift 4**, (07:00 am - 03:00 pm), 8 pick up, sweep the waste on the main street and new waste
1. REVISION OF LOCAL REGULATION ABOUT SOLID WASTE
2. COMPOSE FEASIBILITY STUDY FOR SOLID WASTE MANAGEMENT IN CITY BALIKPAPAN PADA TAHUN 2013
3. RECOMMENDED INTERMEDIATE TREATMENT FACILITY FOR CITY OF BALIKPAPAN (ITF)
   - STAGE 1: MATERIAL RECOVERY FACILITY (MRF)
   - STAGE 2: AN-AEROBIC DIGESTION PLANT (AD)
   - STAGE 3: ELECTRICITY PRODUCTION
4. DEVELOPMENT CWB (CENTRAL WASTE BANK)
5. DEVELOPMENT WASTE WATER TREATMENT PLANT (IPAL) OFF-SITE.
6. 2013-2016: PROJECT FOR CAPACITY DEVELOPMENT OF CENTRAL AND LOCAL GOVERNMENT FOR 3Rs AND DOMESTIC SOLID WASTE MANAGEMENT SYSTEM BY JICA
There are 65 units of WASTE BANK
WASTE MANAGEMENT Innovation

Pengelolaan Persampahan

Rumah Kompos (38 unit)

Compost House (There are 38 units)
## OVERVIEW OF FINAL DISPOSAL AT MANGGAR LANDFILL

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Location : Jl. Proklamasi RT 036 Manggar</td>
</tr>
<tr>
<td>2</td>
<td>Width : 27.1 Ha</td>
</tr>
<tr>
<td>3</td>
<td>Land Status : Property of Balikpapan City Government</td>
</tr>
<tr>
<td>4</td>
<td>System : Sanitary Landfill</td>
</tr>
<tr>
<td>6</td>
<td>Fund Resource : KUDP (Kalimantan Urban Development Programme)</td>
</tr>
<tr>
<td>7</td>
<td>Operated since : 13 Januari 2002</td>
</tr>
</tbody>
</table>
DATA OF INORGANIC WASTE COLLECTED BY COLLECTORS IN 2013

JANUARI: 95,900
FEbruari: 109,700
MARET: 93,500
APRIL: 96,300
MEI: 96,800
JUNI: 91,300
JULI: 111,400
AGUSTUS: 98,300
SEPTEMBER: 97,500
OKTOBER: 89,700
NOVEMBER: 181,800
DESEMBER: 104,200
DATA OF COMPOST MANAGEMENT AND DISTRIBUTION

IN 2009 - 2013

- **SAMPAH ORGANIK**
- **HASIL KOMPOS**
- **PENGAMBILAN KOMPOS**
ROUTE OF WASTE PROCESS INTO FINAL WASTE DISPOSAL AREA

1. Truck entering TPA
2. Unloading
3. Washing
4. Scaling
5. Unloading
6. Washing
Currently, TPA Manggar has 65 personnel consisting of:

- Civil Servants : 10 Person
- Administrative Staffs : 2 Person
- Operational Personnel : 51 Person

The employees above get the average salary of 1,000,000 IDR to 1,500,000 IDR per month
### Facilities and Infrastructure in Final Waste Disposal Area

<table>
<thead>
<tr>
<th>No</th>
<th>Facility</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Heavy Equipment</td>
<td>9 Unit</td>
</tr>
<tr>
<td>2</td>
<td>Transportation Equipment</td>
<td>9 Unit</td>
</tr>
<tr>
<td>3</td>
<td>3R Equipment</td>
<td>6 Unit</td>
</tr>
<tr>
<td>4</td>
<td>Methane Gass Bio Equipments</td>
<td>6 Unit</td>
</tr>
<tr>
<td>5</td>
<td>Other Equipments</td>
<td>39 Unit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Infrastructure</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Landfill</td>
<td>1 Unit</td>
</tr>
<tr>
<td>2</td>
<td>Scaling</td>
<td>1 Unit</td>
</tr>
<tr>
<td>3</td>
<td>Waste Water Treatment Plant</td>
<td>1 Unit</td>
</tr>
<tr>
<td>4</td>
<td>Composting Building</td>
<td>1 Unit</td>
</tr>
<tr>
<td>5</td>
<td>3R Building</td>
<td>1 Unit</td>
</tr>
<tr>
<td>6</td>
<td>Educational Park and Gazebo</td>
<td>1 Unit</td>
</tr>
<tr>
<td>7</td>
<td>Heavy Equipment Garage</td>
<td>1 Unit</td>
</tr>
<tr>
<td>8</td>
<td>Methane Gass Area</td>
<td>1 Unit</td>
</tr>
<tr>
<td>9</td>
<td>Security Post</td>
<td>1 Unit</td>
</tr>
</tbody>
</table>
WASTE STACK LOCATION
The land arrangement uses Cut and Fill system. The waterproof layer (Geomembrane) with an area of 26,000 m² in Zone I and 30,000 m² in Zone II is given a 40 cm-thick layer of red soil. The Leachate and gas pipeline installation has the distance of 20 m (10) lines. The Waste Destroying System is Sanitary Landfill. Final Waste Disposal Area Manggar is located on Jl. Proklamasi RT 036, Manggar subdistrict, East Balikpapan district or ± 23 Km from the city center.
WASTE STACK IMAGE DESCRIPTION IN ZONE II

- **BLOK A**
- **BLOK B**
- **BLOK C**
- **DAILY CELL POSITION**
- **CELL BOUNDARY OF WEEKLY STACK**
- **ACCESS TO THE STACK**
Leachate Treatment System
Compost Production Facilities

DESCRIPTION KETERANGAN:

1. Compost Material
2. Material grinding
3. Fermentation
4. Reversal
5. Drying in the sun
6. Grinding
7. Packing
Plastic Cutting Facilities

The house to cut up the plastic is still under construction

Cutting Machine
Waste Recycle Process
Methane Gass Production Facilities

Description Keterangan:
1. Stacking
2. Methane gass well
3. Separating tool of gass I and II
4. Gauge
5. Pipe transmitting methane gass to the population
6. Methane gass is utilised by the people
FINAL WASTE DISPOSAL AREA AS THE EDUCATION FACILITY
1. Change the people’s point of view regarding the TPA that it is no longer dirty and smelly

2. Nursery house for education

3. Education on inorganic waste / use the waste for handicraft
4. Education on organic waste/use the waste for compost.

Compost resulted from organic waste is ready to be distributed to the community free of charge.

5. Education on the methane gass

Methane gass utilised by the community

6. Education on reading park

Reading park
FINAL WASTE DISPOSAL AREA AS THE RECREATION FACILITY
The recreation facilities are among others:

1. ATP Car Mobil

2. Suspended bridge and other playing facilities
3. Flying fox

4. Cafe Methane
THANK YOU