

A detailed illustration of a hummingbird with iridescent green and blue feathers and a bright red throat, hovering near a cluster of pink columbine flowers. The flowers have five petals and prominent stamens. The background is a soft, light pink with faint floral patterns.

*Welcome
Friends*

Bio-Medical Waste & Common Bio-Medical Waste Treatment Facility



Presented By:

Dr. Anoop Hajela

(Managing Director)

Bhopal Incinerators Ltd.

Bio-Medical Waste

■ Definition:

The Bio-Medical Waste is the waste that is generated during the diagnosis, treatment or immunization of

human
research

beings or animals or in
activities pertaining

thereto, or in the
handling of biological

production or
components.



Bio-Medical Waste

- Bio-medical waste (BMW) is defined as the total waste stream from a healthcare facility (HCF)
- Two basic categories
 - General Waste or Municipal Waste
 - Bio-Medical Waste



General / Municipal Waste

■ General Waste

- Paper Packaging
- Plastic packaging
- Food preparation
- And other items that haven't been contaminated

Bio-Medical Waste

- Bio-Medical Waste (BMW)
 - Infectious waste
 - Hazardous waste
 - Harmful to humans and environment



SOURCE OF BIO-MEDICAL WASTE

■ Biomedical Waste is generated in:

Hospitals, Nursing Homes,
Clinics, Medical Laboratories,
Blood Banks, Animal Houses etc.



can also be

th

e to

generated at
care is being
a patient.

(e.g. injection, dressing material etc.)

Components

■ Solids:

- ❖ Catheters and tubes
- ❖ Disposable masks and scrubs
- ❖ Disposable tools
- ❖ Medical gloves
- ❖ Wound dressings
- ❖ Human Body Parts



Contd...

■ Liquids:

- ❖ Blood
- ❖ Body fluids and tissues
- ❖ Cell, organ and tissue cultures



Contd...

■ Sharps:

- ❖ Blades (Razor or Scalpel)
- ❖ Material made up glass such as slides.
- ❖ Needles



Classification and Management

Category	Waste Type	Treatment and Disposal Method
Category 1	Human Wastes (Tissues, organs, body parts)	Incineration / deep burial
Category 2	Animal Waste	Incineration / deep burial
Category 3	Microbiology and Biotechnology waste	Autoclave/microwave/incineration
Category 4	Sharps	Disinfection (chemical treatment)+/ autoclaving/microwaving and mutilation shredding
Category 5	Discarded Medicines and Cytotoxic Drugs	Incineration/ destruction and drugs disposal in secured landfills

Contd...

Category	Waste Type	Treatment and Disposal Method
Category 6	Contaminated solid waste	Incineration/autoclaving / microwaving
Category 7	Solid waste (disposable items other than sharps)	Disinfection by chemical treatment+ microwaving/autoclaving & mutilation shredding
Category 8	Liquid waste (generated from laboratory washing, cleaning, housekeeping and disinfecting activity)	Disinfection by chemical treatment+ and discharge into the drains
Category 9	Incineration ash	Disposal in secured landfill
Category 10	Chemical Wastes	Chemical Treatment + and discharge in to drain for liquids and secured landfill for solids

Segregation of BMW

Schedule - II

Color coding	Type of container	Waste category	treatment option
YELLOW	Plastic Bag	Cat 1,2,3,6	Incineration / deep burial
RED	Disinfected container / plastic bag	Cat 3,6,7	Autoclave/microwave /chemical treatment
Blue	Plastic bag/ Puncture proof	Cat 4,7	Autoclave/microwave /chemical treatment / destruction shredding
BLACK	Plastic bag	Cat 5,9,10	Disposal in secure landfill

Procedure of Bio-Medical Waste Disposal

Generation of Waste



Segregation at source



Collection of Waste



Transportation



Treatment



Autoclaving & shredding

Incineration



Common Bio-Medical Waste Treatment Facility



A set up where biomedical waste, generated from a number of healthcare units, is imparted necessary treatment to reduce adverse effects that this waste may pose.

Need of CBWTF

- Installation of individual treatment facilities by small healthcare units requires comparatively high capital investment.
- Separate manpower and infrastructure development required for proper operation and maintenance of treatment systems.
- Risk of proliferation of treatment equipment in a city.
- Monitoring pressure on regulatory agencies.
- By running the treatment equipment at CBWTF to its full capacity, the cost of treatment of per kilogram gets significantly reduced.

Coverage of CBWTF

- One CBWTF allowed to cater up to 10,000 beds at the approved rate by the Prescribed Authority.
- Not allowed to cater healthcare units situated beyond a radius of 150 km.

Location of CBWTF

- Place reasonably far away from residential and sensitive area.
- Near to its area of operation as possible in order to minimize the travel distance in waste collection, thus enhancing its operational flexibility.
- Decided in consultation with the state pollution control board (spcb)/pollution control Committee (PCC).

BHOPAL BRANCH
ALL INDIA PRIVATE HOSP. AND NURSING HOME ASSO

WELCOMES YOU

इस अवसर पर सभी नागरिकों का स्वागत
पर्यावरण को प्रदूषण से मुक्त रखें

क्षेत्रीय कार्यालय: म. प्र. प्रदूषण नियंत्रण बोर्ड भोपाल

Inauguration



Bhopal Incinerators Limited

- is a cooperative effort
 - of the Doctors
 - for the Doctors
 - by the Doctors
- } for the **PEOPLE of BHOPAL.**
- 93 Doctors are Share Holders
 - **NON PROFIT ORGANISATION**

BOARD OF DIRECTORS

■ Dr. R. K. Bisarya	Chairman
■ Dr. Anoop Hajela	Managing Director
■ Dr. Ajay Goenka	Director - Marketing
■ Dr. Deepak Shah	Director - Finance
■ Dr. B. M. Loya	Director
■ Dr. A.S. Chawla	Director
■ Dr. (Mrs.) Viraj Jaiswal	Director
■ Dr. Sudhir Jain	Director
■ Dr. Arun Gupta	Director
■ Dr. Deepak Zutshi	Director
■ Dr. Yogesh Bhooshan Jain	Director
■ Dr. Randhir Singh	Director

Total No. of Clients : 421

**This includes Nursing
Homes, Blood Banks ,
Pathology Labs , Government
Hospitals and Private
Hospitals & BMHRC except
Peoples group**

Certificate of Registration

This is to Certify that
Environmental Management System of
BHOPAL INCINERATORS LIMITED

6/5, SECTOR H, INDUSTRIAL AREA, GOVINDPURA , BHOPAL

has been assessed and found to confirm to the requirements of

ISO 14001:2004

for the following scope :

COMMON BIO-MEDICAL WASTE TREATMENT FACILITY

Certificate No. 1012/E/001

Initial Registration Date : 24.01.2012

Issuance Date: 24.01.2012

Date of Expiry* : 23.01.2015

1st Surveillance Date on or before : 23.01.2013

2nd Surveillance Date on or before : 23.01.2014



Managing Director



* Absolute Quality Certification Pvt. Ltd.

Accredited By: Joint Accreditation System of Australia & New Zealand (JAS-ANZ)

401, Ashok Bhawan, Bhubaneswar, New Delhi - 110 019, +91 (0) 11 4012 1440 e-mail: info@absolutequalitycertification.com, 1012/E/001@absolutequalitycertification.com

This Registration is not a Product Quality Certificate

* Subject to successful completion of surveillance audits

Visit for verification on www.jas-anz.org/australia

Bhopal Incinerators Ltd.

Gets

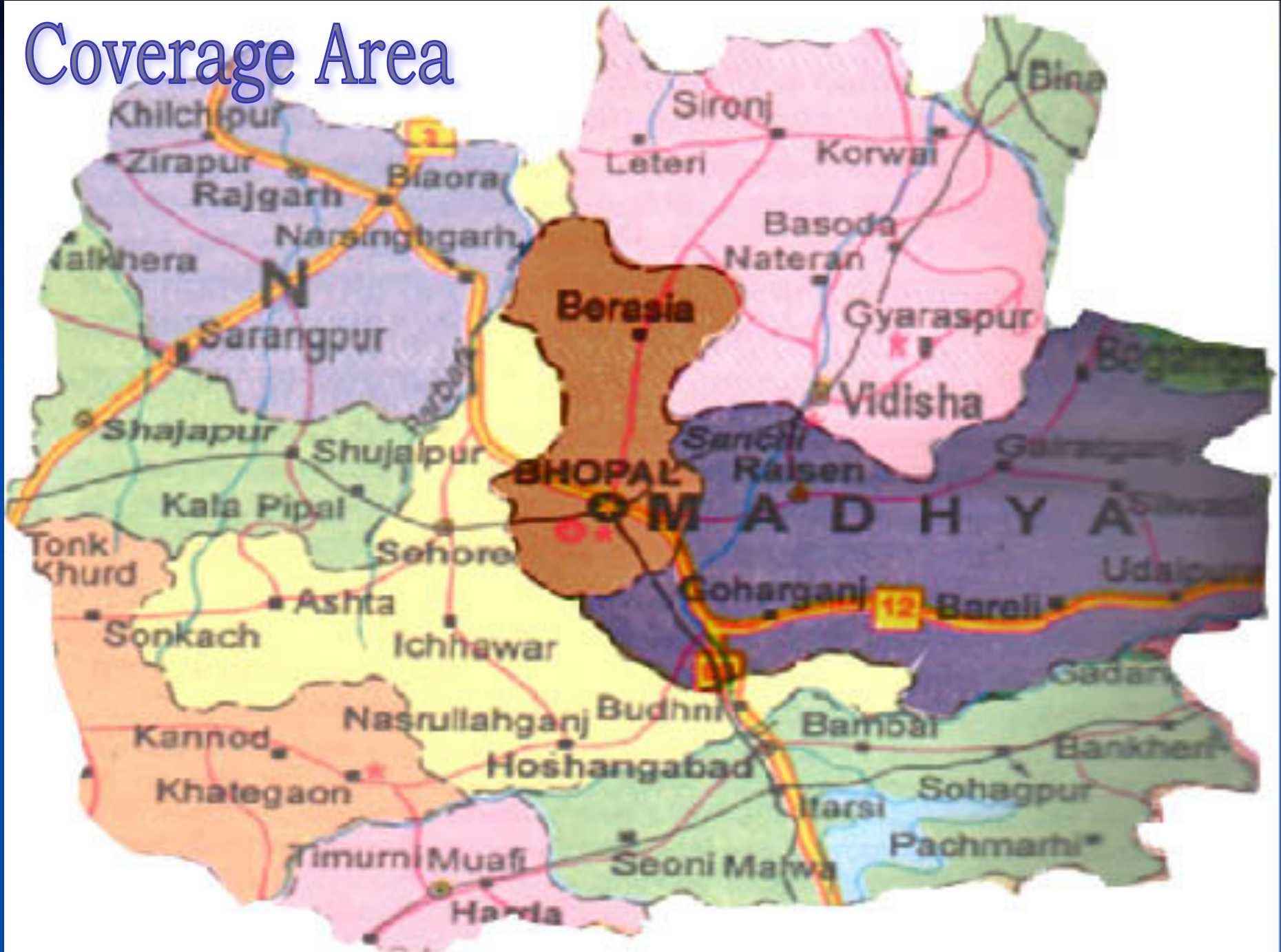
ISO 14001:2004

Certificate

for

Environment Protection

Coverage Area



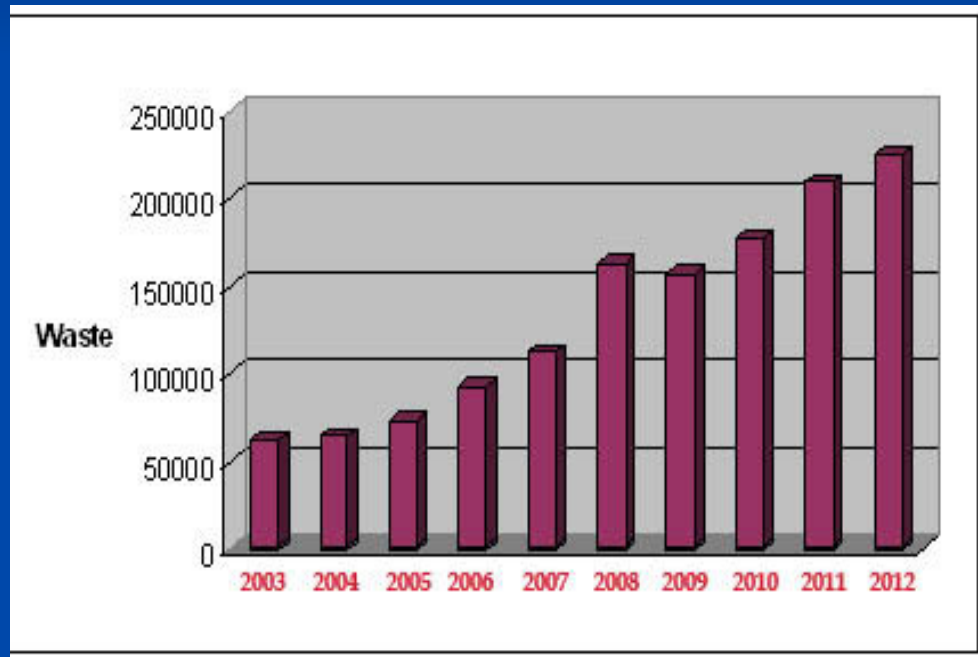
LEGAL LIABILITIES of the Company



- As per the EPA 1998 & our agreement with clients it is our legal responsibility to dispose BMW with in 24 HRS after collection.

BMW Treated in last 10 years

■ 2003	-	60,172 kg
■ 2004	-	62,471 kg
■ 2005	-	71,370 kg
■ 2006	-	91,206 kg
■ 2007	-	1,10,460 kg
■ 2008	-	1,61,182 kg
■ 2009	-	1,54,483 kg
■ 2010	-	1,75,202 kg
■ 2011	-	2,07,289 kg
■ 2012	-	2,23,203 kg



■ **TOTAL** - **13,17,038 KG**

Posters

Clean Bhopal Healthy Bhopal

STOP ! PLEASE DON'T THROW INFECTED HOSPITAL WASTE IN AN OPEN SPACE.

THIS MAY LEAD TO SPREAD OF FATAL COMMUNICABLE DISEASES IN TO THE SOCIETY AND POLLUTE THE ENVIRONMENT

MANAGEMENT OF HOSPITAL WASTE

SEGREGATE ALL THE HOSPITAL WASTE AT SOURCE OF GENERATION AS FOLLOWS

YELLOW DUSTBIN & BAGS

From O.T. : Amputated limbs, Placenta, Intestine, Uterus, Ovary etc.

From Labs : Live or attenuated vaccines, Infected samples and Cultures, Culture Plates, Wastes from production of biologicals, toxins.



YELLOW DUSTBIN & BAGS

RED DUSTBIN & BAGS

Cotton pads, Swabs, Gauze pieces, Dressings, Bandages, Cloths, Bed, Bed Sheets and Plaster castes Soiled with blood, Pus, Vomitus, Sputum and other body fluids.



RED DUSTBIN & BAGS

BLUE DUSTBIN & BAGS

(This disinfecting activity you can do it yourself at your place.)

Needles, Scalpels, Blades, Glass Ampule & Syringes etc. that may cause puncture and cuts. This includes both used and unused sharps.

All disposable items like I.V.sets, S.V.sets, Venflon, Catheter, Urobag, Rylestube, Drainage Tube and Bags, Empty Blood Bags and Dialysis disposables. Separate the barrel and piston of plastic syringes.



BLUE DUSTBIN & BAGS

BLACK DUSTBIN & BAGS

Wastes comprising of outdated, contaminated and discarded medicines, Solid chemicals used for disinfection in Lab & Hospital as Insecticides, Ash from incineration of any bio-medical waste etc. General wastes, fruit peels, vegetables, food, paper and plastic bags.



BLACK DUSTBIN & BAGS

LET US FOLLOW THE ABOVE GUIDELINES AND MAKE IT A PART OF OUR ROUTINE ACTIVITY. THIS IS HOW WE CAN KEEP OUR HOSPITAL, CITY AND NATION, NEAT & CLEAN & HEALTHY AND ENVIRONMENT POLLUTION FREE.

☎ : 5274754

BHOPAL INCINERATORS LTD., BHOPAL

स्वच्छ भोपाल स्वस्थ भोपाल

रुकिये! क्या आप अस्पताल का कचरा खुले में फेंक रहे हैं?

कृपया अस्पताल का खतरनाक कचरा खुले स्थान पर न फेंके। इससे गंभीर बीमारियाँ फैलने का अंदेशा रहता है तथा पर्यावरण प्रदूषित होता है। ऐसा करना जानलेवा भी हो सकता है।

अस्पताल के कचरे का प्रबन्ध

कचरा निकलने वाले स्थान पर ही अलग-अलग कर नीचे लिखे अनुसार सुरक्षित रूप से एकत्रित करें

पीला डस्टबीन एवं थैले में

ओ.टी. से:- कटे मानव अंग-हाथ, पैर, प्लेसेंटा, नाल, आंत, बच्चादानी आदि।

प्रयोगशाला से:- कल्चर प्लेटें, संक्रामक नमूने, जीवित या खराब टीके आदि।



पीला डस्टबीन एवं थैले में

लाल डस्टबीन एवं थैले में

मवाद, खून, उल्टी, दस्त, खकार आदि से सने पेट, रुई, गाज, पट्टी, कटे हुए प्लास्टर, कपड़े, बिस्तर और गद्दे आदि।



लाल डस्टबीन एवं थैले में

नीला डस्टबीन एवं थैले में

(A) नुकीली तेज धार वाले कैंसिल, साइकिल के तैल, लेमेट ब्लेड, टूटे कांच के एम्पूल्स, नाइफब्लेड अलग एबॉन।

(B) सभी डिस्पोजेबल आईन, ग्लोव्स, ग्लेनरोट, वेनप्लान, केथेटर, यूरोबेग, राईसटयुब, ड्रेनेजटयुब एवं बेग, खून की खाली पैलियां, डाइलीसिज के डिस्पोजेबल प्लास्टिक की सीरीज का बैरल-पिप्पन अलग करके डालें।



नीला डस्टबीन एवं थैले में

काला डस्टबीन एवं थैले में

(A) साधारण कचरा जैसे फलों, सब्जियों के छिलके, बचा खाना, पेकिंग की पन्नी, कागज इत्यादि

(B) पुरानी खराब एक्सपायर दवाईयां, इंसीनरेटर से उत्पन्न रख, प्रयोगशाला एवं अस्पताल में उपयोग किया हुआ ठोस कीटनाशक एवं रसायन आदि



काला डस्टबीन एवं थैले में

आईये! हम ऊपर लिखे मार्गदर्शी सिद्धांतों को अपनी कार्य पद्धति के रूप में अपनावें तथा अपने अस्पताल, शहर व पर्यावरण को साफ-सुथरा एवं सुरक्षित रख एक स्वस्थ राष्ट्र का निर्माण करें।

☎ : 5274754

भोपाल इंसीनरेटर्स लि. भोपाल

☎ : 2463392

Material Supplied by BIL

- De-chlorinated Color Coded Poly Bags
- Color Coded Dustbin/Container with lid
- Needle Cutter cum Destroyer
- Poster (Category Wise)
- Daily Record Register
- Sodium Hypo chloride
- Label/Sticker

Acts that we are following

- Bio-Medical Waste (Management & Handling) Rules 1998
- Industrial Health & Safety Rules
- Minimum Wages Act
- Bonus Act
- EPF Act
- ESIS Act
- Gratuity Act

Segregation of BMW

The segregation of biomedical waste into various categories and storage in four different coloured containers. The Biomedical waste shall be segregated into containers/bags at the point of generation in accordance with Schedule II prior to its storage, transportation, treatment and disposal.





The Carriers



The Vehicles to carry Bio Medical Waste from Different Hospitals



Our Plant







Chemical Disinfection Plant



Autoclave



Computerised Autoclave Report

Sr.No#		Set Temp:121.1 °C St.Time:015mn			
DATE	TIME	Ta(°C)	Tb(°C)	Tc(°C)	P(bar)
11/03/11	14:17	45.8	OPEN	OPEN	0.21
11/03/11	14:18	76.4	OPEN	OPEN	0.51
11/03/11	14:19	84.7	OPEN	OPEN	0.57
11/03/11	14:20	93.2	OPEN	OPEN	0.55
11/03/11	14:21	103.4	OPEN	OPEN	0.57
11/03/11	14:22	109.0	OPEN	OPEN	0.66
11/03/11	14:23	112.1	OPEN	OPEN	0.73
11/03/11	14:24	114.1	OPEN	OPEN	0.80
11/03/11	14:25	115.7	OPEN	OPEN	0.85
11/03/11	14:26	117.0	OPEN	OPEN	0.91
11/03/11	14:27	118.2	OPEN	OPEN	0.98
11/03/11	14:28	119.4	OPEN	OPEN	1.04
11/03/11	14:29	120.3	OPEN	OPEN	1.10
-----Sterilizing On-----					
11/03/11	14:30	121.1	OPEN	OPEN	1.14
11/03/11	14:31	121.9	OPEN	OPEN	1.19
11/03/11	14:32	121.5	OPEN	OPEN	1.12
11/03/11	14:33	120.7	OPEN	OPEN	1.08
11/03/11	14:34	121.4	OPEN	OPEN	1.15
11/03/11	14:35	122.2	OPEN	OPEN	1.18
11/03/11	14:36	121.5	OPEN	OPEN	1.11
11/03/11	14:37	120.8	OPEN	OPEN	1.08
11/03/11	14:38	121.6	OPEN	OPEN	1.15
11/03/11	14:39	122.4	OPEN	OPEN	1.17
11/03/11	14:40	121.5	OPEN	OPEN	1.11
11/03/11	14:41	120.9	OPEN	OPEN	1.09
11/03/11	14:42	121.8	OPEN	OPEN	1.16
11/03/11	14:43	122.4	OPEN	OPEN	1.17
11/03/11	14:44	121.5	OPEN	OPEN	1.10
11/03/11	14:45	120.9	OPEN	OPEN	1.09
-----End of Cycle-----					

Bio - Indicator





Needle Destroyer







Shredder



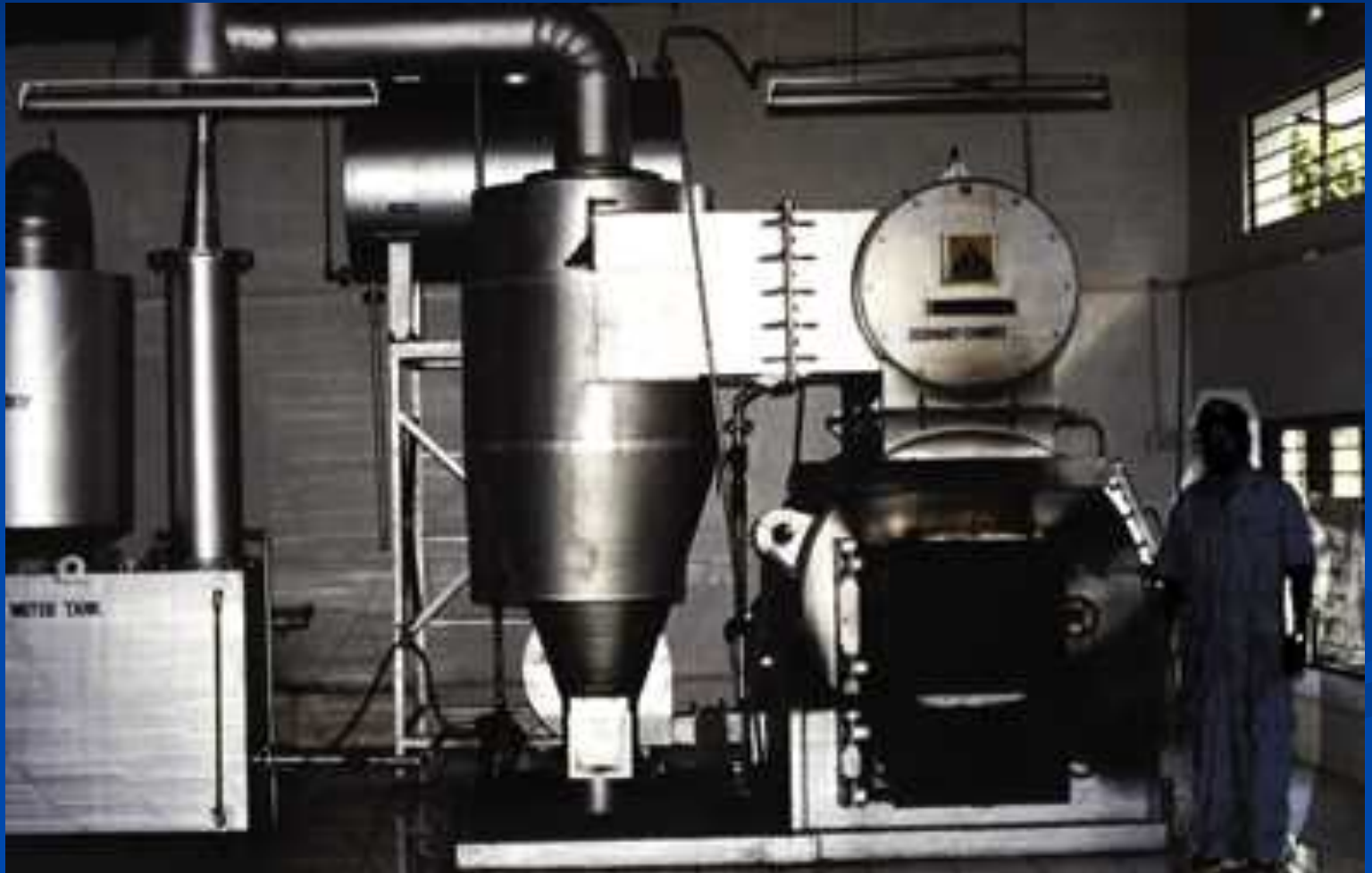
SHREDDER



TREATED SHREDDED PLASTIC



Incinerator





New 100 Kg/hr. Incinerator



CONTROL
PANEL



Computerised Incinerator Report

batch: 6146dtmn	1103-*prim.:	893'cyr	2011-*sec. :	1095'c	hr: mn-*flue :	65'c
batch: 6147dtmn	1103-*prim.:	880'cyr	2011-*sec. :	1074'c	hr: mn-*flue :	64'c
batch: 6148dtmn	1103-*prim.:	867'cyr	2011-*sec. :	1054'c	hr: mn-*flue :	64'c
batch: 6149dtmn	1103-*prim.:	897'cyr	2011-*sec. :	1093'c	hr: mn-*flue :	66'c
batch: 6150dtmn	1103-*prim.:	888'cyr	2011-*sec. :	1085'c	hr: mn-*flue :	66'c
batch: 6150dtmn	1103-*prim.:	876'cyr	2011-*sec. :	1075'c	hr: mn-*flue :	66'c
batch: 6152dtmn	1103-*prim.:	873'cyr	2011-*sec. :	1073'c	hr: mn-*flue :	66'c
batch: 6152dtmn	1103-*prim.:	861'cyr	2011-*sec. :	1063'c	hr: mn-*flue :	66'c
batch: 6154dtmn	1103-*prim.:	852'cyr	2011-*sec. :	1055'c	hr: mn-*flue :	66'c
batch: 6155dtmn	1103-*prim.:	863'cyr	2011-*sec. :	1068'c	hr: mn-*flue :	64'c
batch: 6156dtmn	1103-*prim.:	859'cyr	2011-*sec. :	1075'c	hr: mn-*flue :	63'c
batch: 6157dtmn	1103-*prim.:	853'cyr	2011-*sec. :	1078'c	hr: mn-*flue :	64'c
batch: 6158dtmn	1103-*prim.:	879'cyr	2011-*sec. :	1067'c	hr: mn-*flue :	65'c
batch: 6159dtmn	1103-*prim.:	886'cyr	2011-*sec. :	1068'c	hr: mn-*flue :	65'c
batch: 6160dtmn	1103-*prim.:	888'cyr	2011-*sec. :	1068'c	hr: mn-*flue :	64'c
batch: 6161dtmn	1103-*prim.:	875'cyr	2011-*sec. :	1054'c	hr: mn-*flue :	70'c

The Chimney





Flue Gas Analyser



ASH STORAGE ROOM





EFFULENT TREATMENT PLANT





SLUDGE DRYING BED



PROBLEMS

- Difficulty to getting Manpower.
- Improper Segregation.
- Red Bag & Yellow Bag Category.
- Secured Landfills.
- Autoclaving of Bottles.
- Payment of Bills (Government agencies).
- Running Cost.
- Law.









मध्य प्रदेश शासन


पर्यावरण पुरस्कार

वर्ष 2004-05

प्रमाण-पत्र

मेसर्स भोपाल इंसीनरेटर्स, औद्योगिक क्षेत्र, गोविंदपुरा, भोपाल (म.प्र.) को प्रदूषण नियंत्रण एवं पर्यावरण संरक्षण के क्षेत्र में लघु उद्योग की श्रेणी के अन्तर्गत वर्ष 2004-05 की अवधि के लिये उल्लेखनीय कार्यों हेतु सम्मान प्रतीक चिन्ह, प्रशस्ति पत्र एवं राशि रुपये 25,000/- से पुरस्कृत किया जाता है।

भोपाल
23 फरवरी 2008


शिवराज सिंह चौहान
मुख्यमंत्री



**THANKS FOR
YOUR
TIME & KIND
ATTENTION**

BHOPAL INCINERATORS LTD.

Bhopal