

**INVENTORY**  
**OF**  
**HAZARDOUS WASTE GENERATED**  
**IN**  
**MADHYA PRADESH**



**YEAR – 2010 – 2011**

**\*\*\* Submitted to CPCB \*\*\***

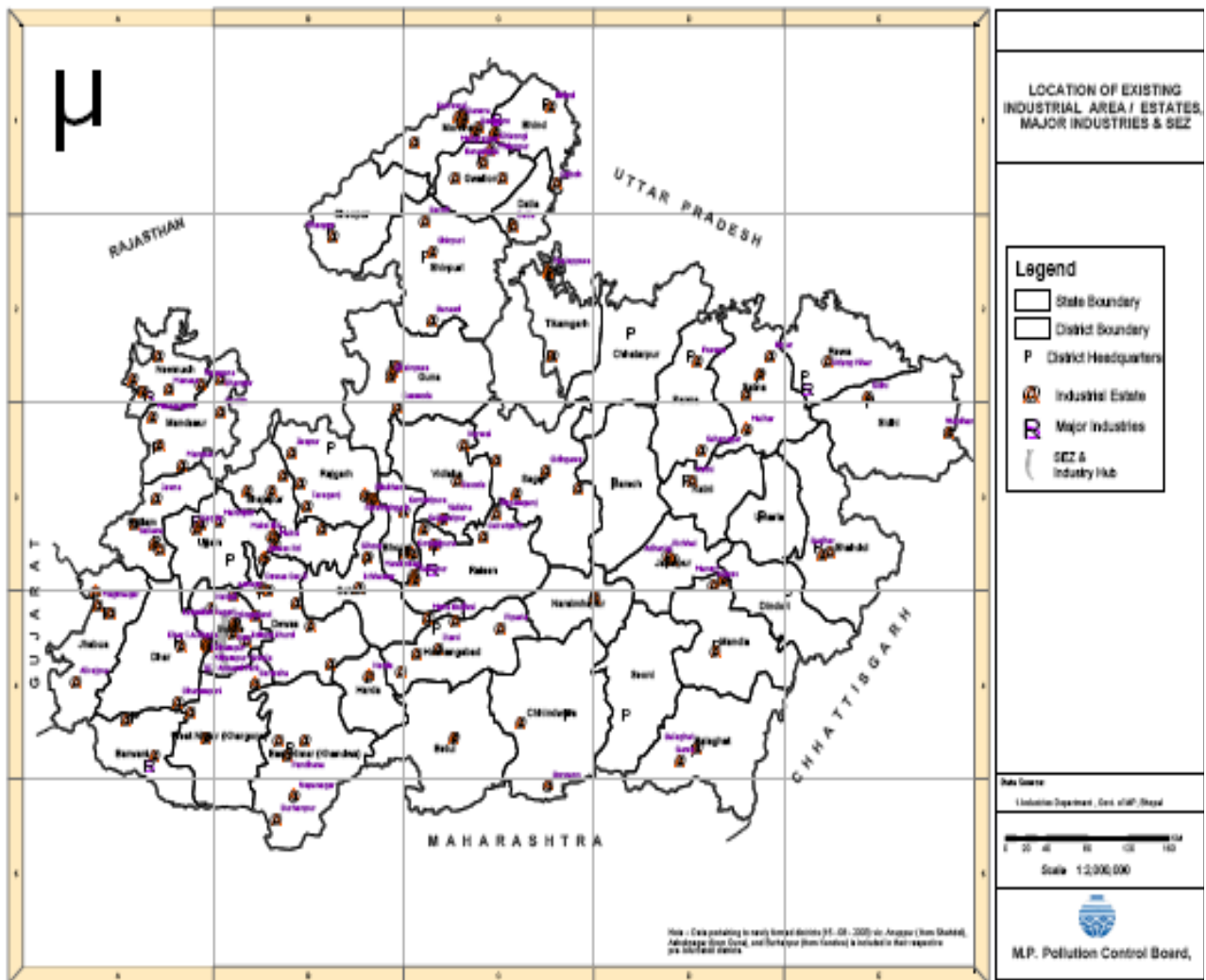
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## General description of Madhya Pradesh

Madhya Pradesh is the second largest Indian State, covering 9.5% of the area of the country. Industries in Madhya Pradesh, are largely natural resources driven. It has abundant natural wealth in the form of Lime Stone, Coal, Soya, Cotton, Bauxite, Iron, Diamond ore, Silica and so on. The State has a strong industrial area in the sectors such as Auto, Textile, Cement, Steel and Soya processing units. The Major Central Public Sectors Undertaking like :- BHEL Bhopal, National Fertilizer Ltd. Vijaypur Dist. Guna, Security Paper Mill Hoshangabad, Currency Printing Press, Bank Note Press, Dewas, Alkaloid Factory Neemuch, Ordnance Factory Itarsi, Gun Carriage Factory Jabalpur and Nepa Mills, Nepa Nagar are also located in the State .

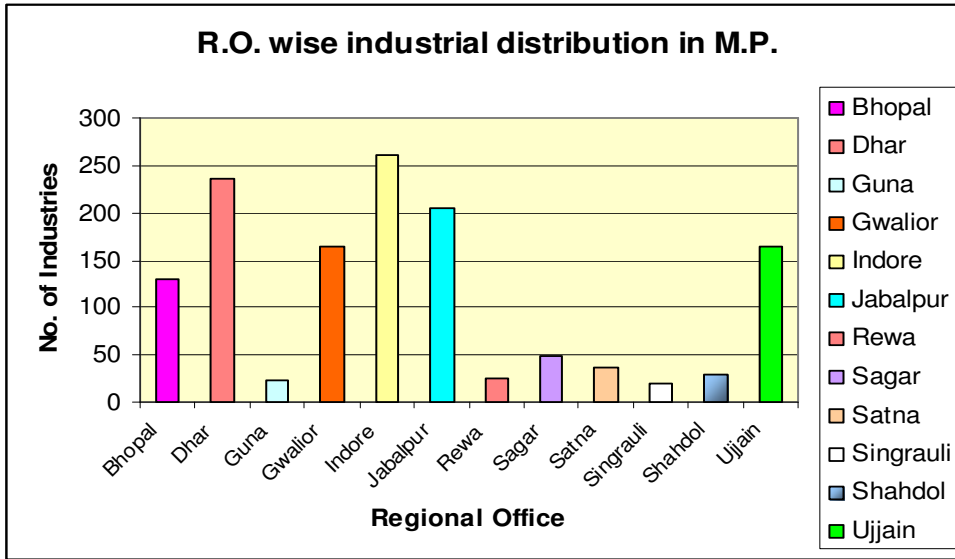


In Madhya Pradesh there are about 14,000 industries/project located in different parts of the State. Out of the above 1,346 industries are registered with. M.P. Pollution Control Board under Hazardous Waste (Management, Handling & Trans-boundary Movement) Rules 2008. Among these 1,346 units 561 are Large/Medium scale industries, where as 785 are Small Scale units. The main source of generation of hazardous waste from most of the industries is waste/spent oil whereas the manufacturing process also contribute to the generation of hazardous waste to a considerable extent. The waste generated from different process is classified & quantified under different categories of Schedule and based on which the authorization are being issued.

Out of the 1,346 hazardous wastes generating industries in M.P. the maximum number of 261 industries are located under the jurisdiction of Regional Office Indore where as the second highest number of 236 industries are under Regional Office Dhar. The area with the least number of industries is newly formed Regional Office Singrauli followed with Regional Office Guna. Region wise distribution of Hazardous Waste generating units of M.P. is presented in the table below :-

### **Region wise distribution of industries in M.P. generating Hazardous Waste**

<b>S.No.</b>	<b>Regional Office</b>	<b>Large/Medium Industries</b>	<b>Small Scale Industries</b>	<b>Total</b>
1.	Bhopal	70	60	130
2.	Dhar	100	136	236
3.	Guna	19	05	24
4.	Gwalior	50	115	165
5.	Indore	58	203	261
6.	Jabalpur	62	143	205
7.	Rewa	18	08	26
8.	Sagar	28	21	49
9.	Satna	20	17	37
10.	Singrauli	13	07	20
11.	Shahdol	28	01	29
12.	Ujjain	95	69	164
<b>Grand Total</b>		<b>561</b>	<b>785</b>	<b>1346</b>

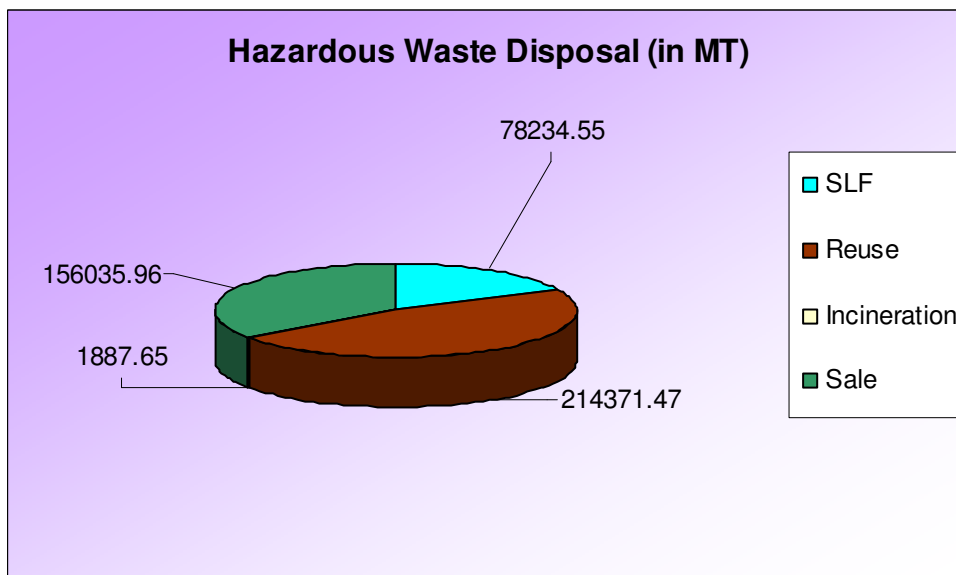


The total generation of hazardous waste from 1346 units located in Madhya Pradesh comes to around 4,50,529.63 MT for the year 2010-11 which can be classified in four categories as mentioned below:-

- Secured Landfillable waste -- 78,234.55 MT
- Reusable waste -- 2,14,371.47 MT
- Incinerable waste -- 1,887.65 MT
- Saleable waste -- 1,56,035.96 MT

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**Total** -- **4,50,529.63 MT**



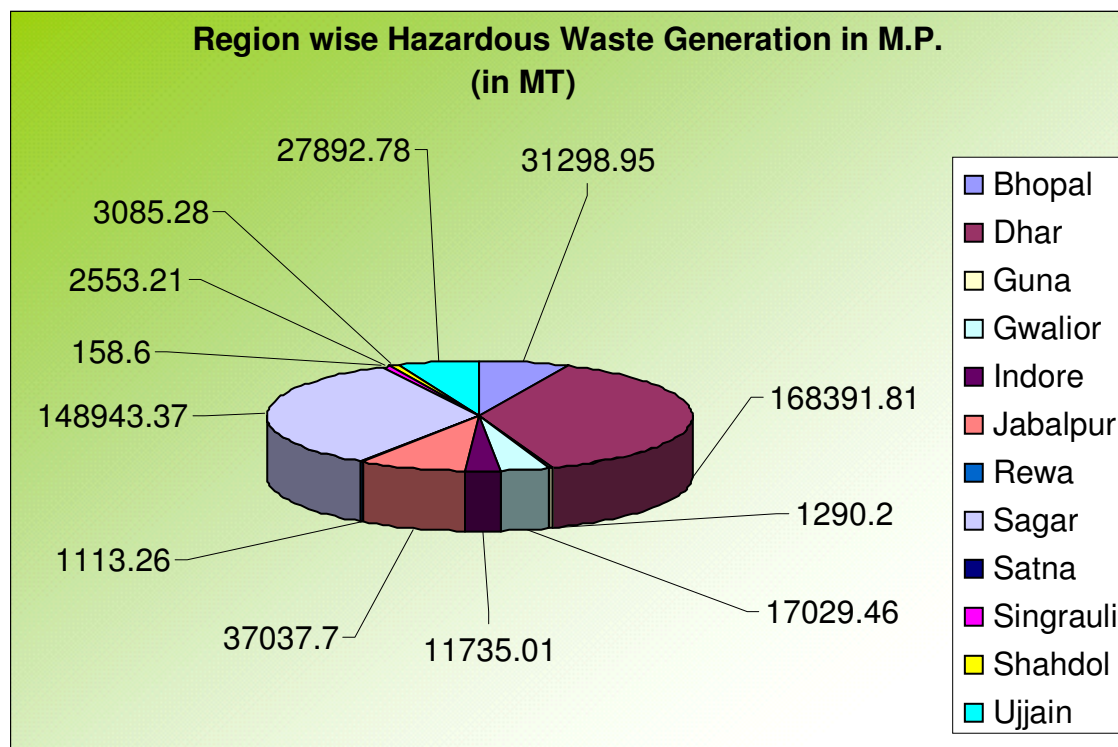
The hazardous waste generation based on authorization granted has been classified as per Regional Offices the data of which is as mentioned in table below :-

### Hazardous Waste Generation as per Authorization (*Quantity in MT/year*)

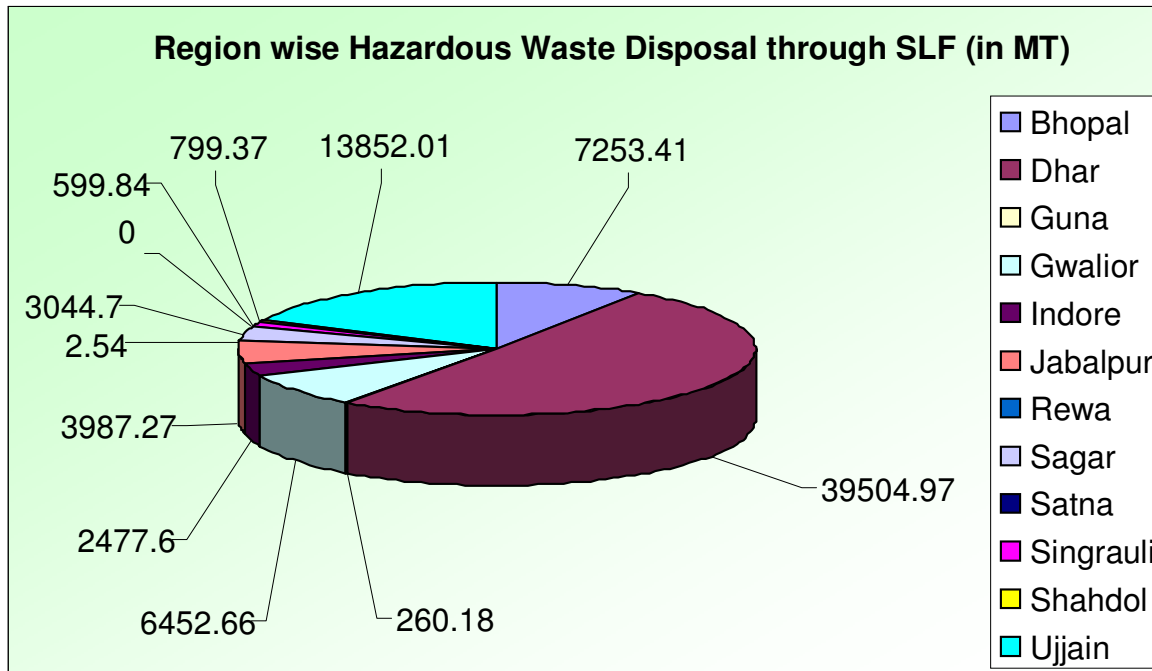
Regional Offices	SLF	Reuse	Incineration	Sale	Total
Bhopal	7253.41	15991.07	346.0	7708.47	31298.95
Dhar	39504.97	17722.66	98.90	111065.28	168391.81
Guna	260.18	0.77	0.18	1029.07	1290.20
Gwalior	6452.66	1495.43	560.50	8520.87	17029.46
Indore	2477.60	4687.71	1.17	4568.53	11735.01
Jabalpur	3987.27	19812.78	0.43	13237.22	37037.70
Rewa	2.54	41.66	0.12	1068.94	1113.26
Sagar	3044.70	145103.67	--	795.00	148943.37
Satna	--	--	--	158.60	158.60
Singrauli	599.84	499.74	120.12	1333.51	2553.21
Shahdol	799.37	0.38	--	2285.53	3085.28
Ujjain	13852.01	9015.60	760.23	4264.94	27892.78
<b>Total</b>	<b>78234.55</b>	<b>214371.47</b>	<b>1887.65</b>	<b>156035.96</b>	<b>450529.63</b>

**Total Generation: 450529.63 MT / Year**

The total Hazardous Waste generation in M.P. as per authorization is 450529.63 MT out of which the maximum generation of hazardous waste is under jurisdiction of Regional Office, Dhar, where as the minimum hazardous waste generation is under Regional Office, Satna. The Regional Office wise hazardous waste generation in M.P. is presented in the pie chart graph below :-

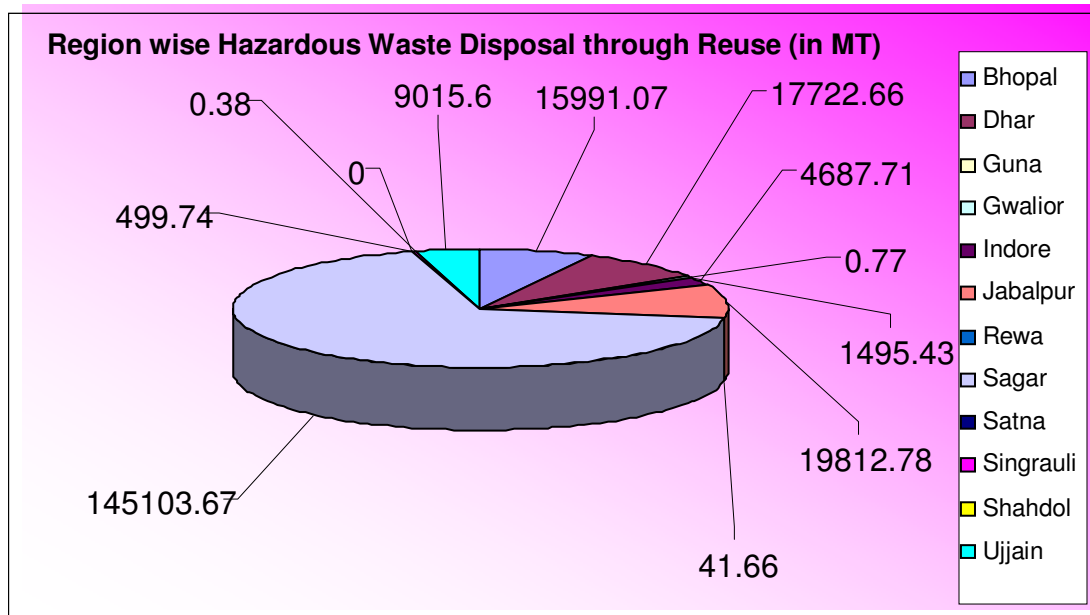


The total hazardous waste disposal through Secured Land Fill as per authorization is 78234.55 MT. The maximum quantity of 39504.97 MT has been disposed through SLF under Regional office, Dhar where as no generation under this category was reported from Satna region. The Region wise hazardous waste generation disposed through SLF is presented in the graph below :-

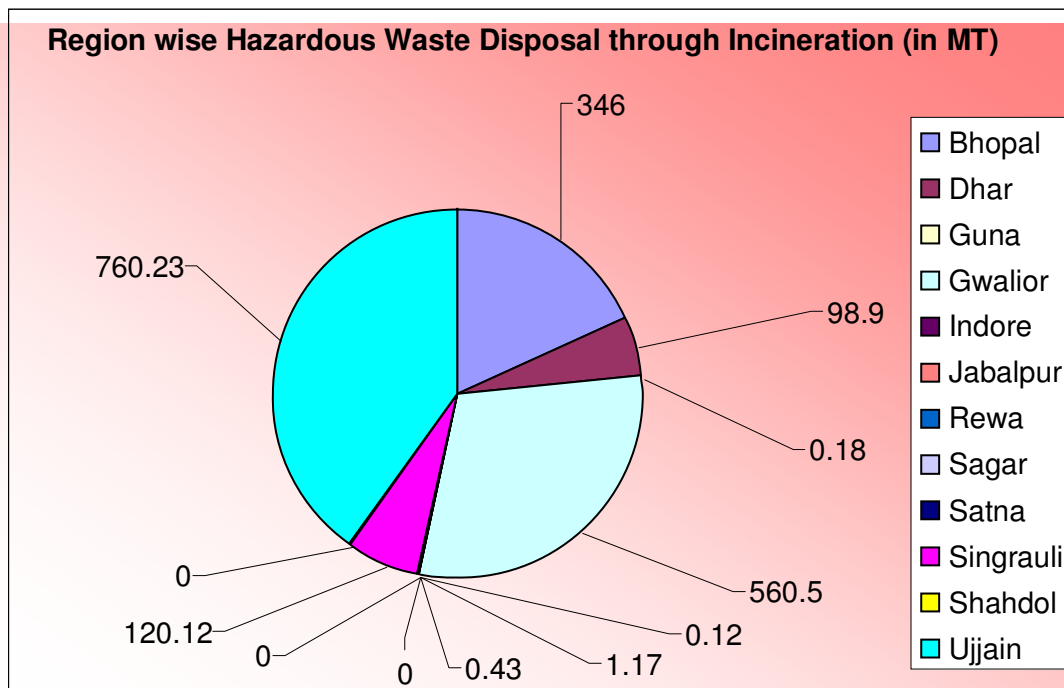


The total 2,14,371.5 MT hazardous waste is being disposed through reuse in M.P. as per authorization, out of which the hazardous waste to the tune of 1,45,103.67 is disposed through reuse under Regional Office, Sagar where as no generation under this category was reported from Satna region. The maximum generation of reusable hazardous waste under Sagar region is due to the upcoming of M/s. Bharat Oman Refinery which generates Reusable hazardous waste to the tune of 1,44,888 MT/year. The Region wise hazardous

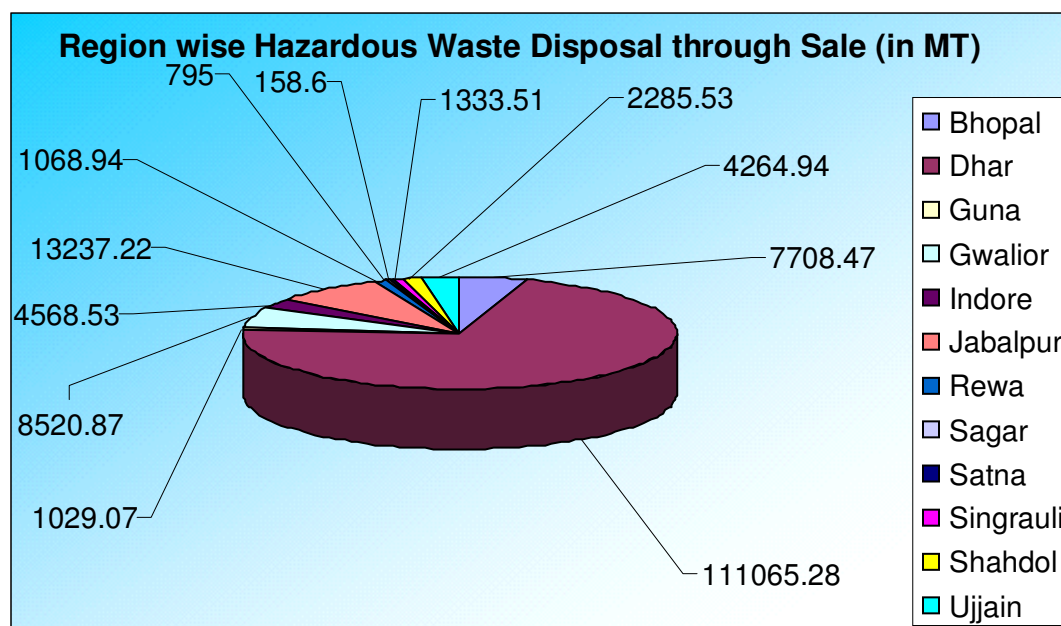
waste disposal through reuse is presented in the graph below :-



The total incinerable hazardous waste in M.P. as per authorization is 1,887.65 MT out of which the maximum quantity of 760.23 MT is being incinerated under Regional office, Ujjain where as no generation under this category was reported from Sagar & Satna region. The Region wise hazardous waste disposal through incineration is presented in the graph below :-



In M.P. the total hazardous waste disposed through sale as per authorization is 1,56,035.96 MT from which the maximum quantity 1,11,065.3 MT hazardous waste disposal through sale under Regional Office, Dhar where as the minimum quantity 158.6 MT has been disposed through sale under Regional office, Satna. The Regional Office wise hazardous waste disposal through sale is presented in the graph below :-



The generation of hazardous waste in M.P. based on annual return is 92,567.92 MT out of which the maximum generation of 44,677.67 MT is under Regional Office, Dhar where as the minimum generation of 108.10 MT is under Regional office, Sagar. As M/s. Bharat Oman Refinery which is established in Bina has not complete its one year operation and hence has not reported any hazardous waste generation during this year. The Regional Office wise annual hazardous waste generation based on annual return in M.P. is presented in the table below :-

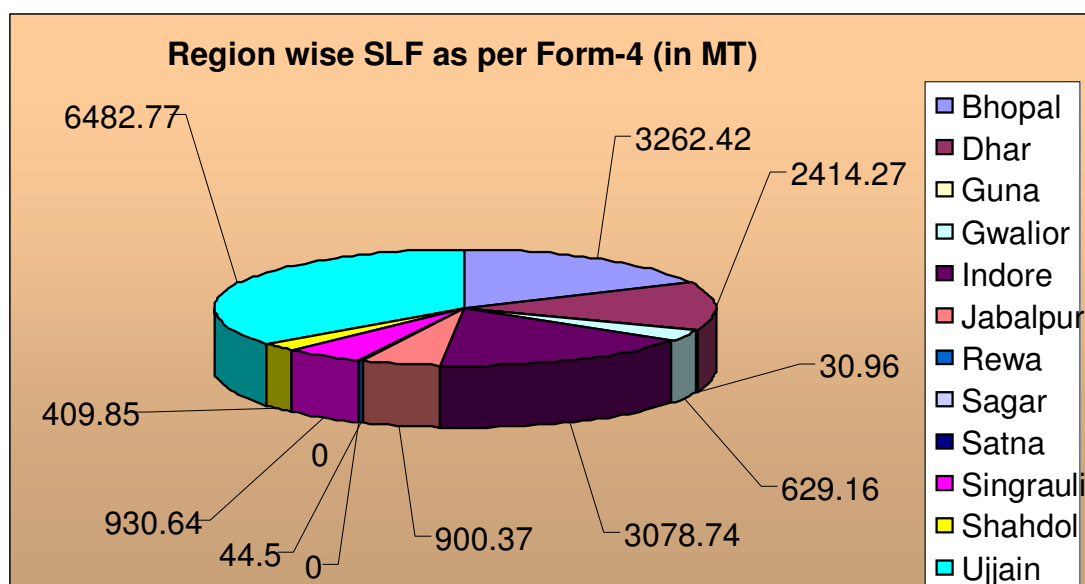


### As per Form-4 Quantity (MT/year)

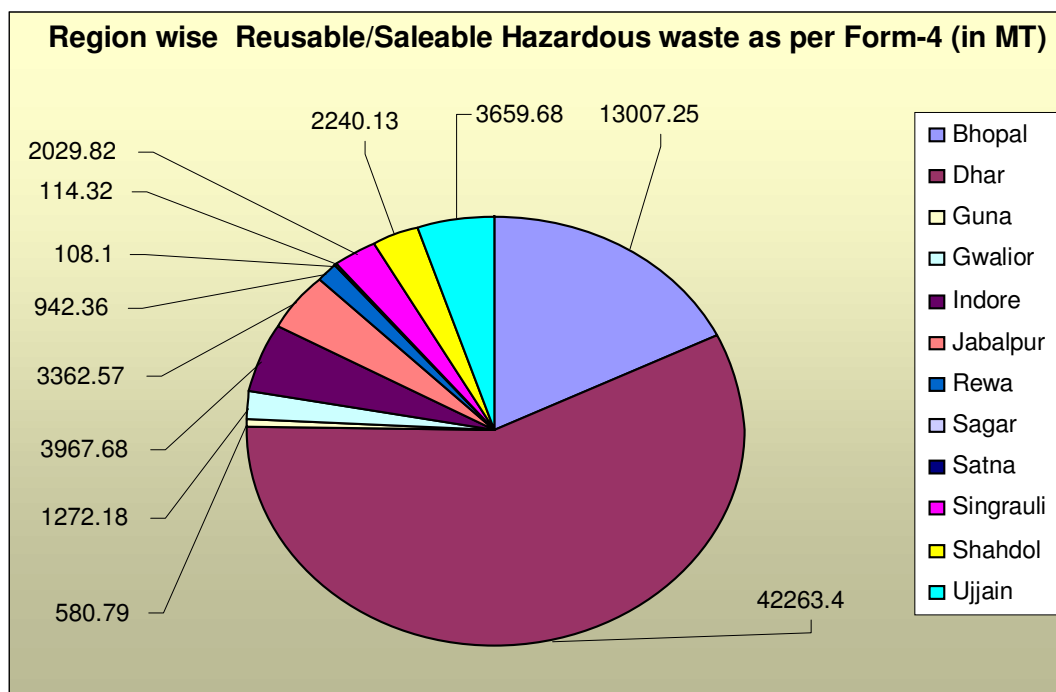
Regional Offices	SLF	Reuse/ Sale	Incineration	Total
Bhopal	3262.42	13007.25	--	16269.87
Dhar	2414.27	42263.40	--	44677.67
Guna	30.96	580.79	0.14	611.89
Gwalior	629.16	1272.18	648.13	2549.47
Indore	3078.74	3967.68	--	7046.42
Jabalpur	900.37	3362.57	--	4262.94
Rewa	44.50	942.36	166.36	1153.22
Sagar	--	108.10	--	108.10
Satna	--	114.32	--	114.32
Singrauli	930.64	2029.82	16.10	2976.57
Shahdol	409.85	2240.13	4.89	2654.87
Ujjain	6482.77	3659.68	0.14	10142.58
<b>Total</b>	<b>18183.68</b>	<b>73548.28</b>	<b>835.76</b>	<b>92567.92</b>

**Total Generation: 92567.92 MT / Year**

In M.P. based on annual return (Form-4) 18,183.68 MT hazardous waste is disposed through SLF out of this the maximum quantity 6,482.77 MT has been disposed through SLF under Regional Office Ujjain where as no generation under this category was reported from Sagar & Satna region The Regional Office wise annual hazardous waste disposal through SLF is presented in the graph below :-

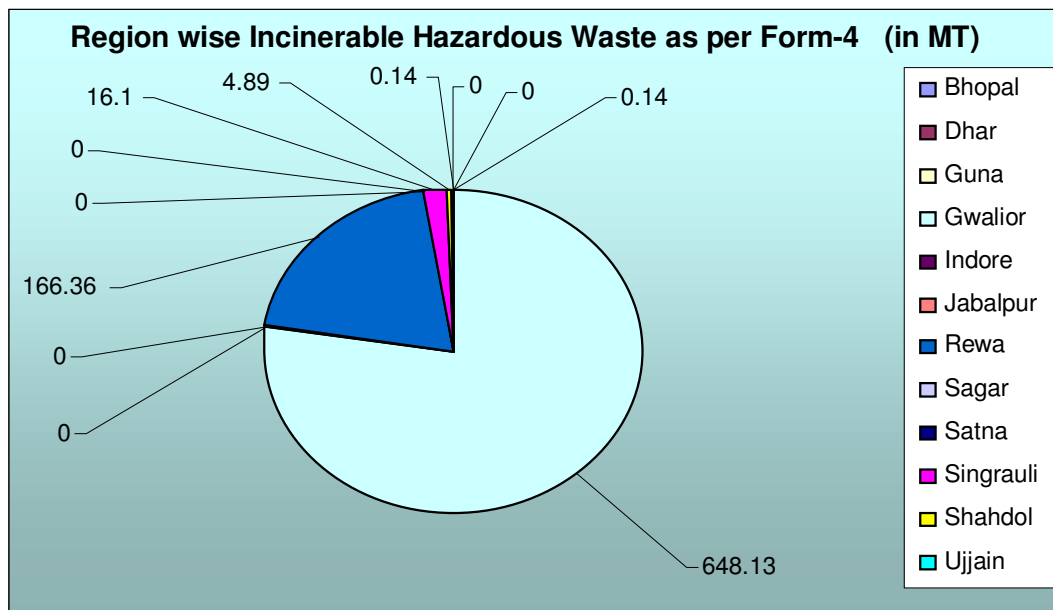


In M.P. the total hazardous waste reused as per annual return is 73,548.28 MT. The maximum quantity of 42,263.40 MT has been disposed through reuse under Regional Office Dhar where as the minimum quantity of 108.10 MT has been disposed off under Regional Office, Sagar. The Regional Office wise annual hazardous waste disposal through Reuse/Sale is presented in the graph below :-



In M.P. the total hazardous waste incinerated as per annual return (Form-4) is 835.76 MT out of which the maximum hazardous waste to the tune of 648.13 MT has been disposed through incineration under Region, Gwalior where as no generation under this category was

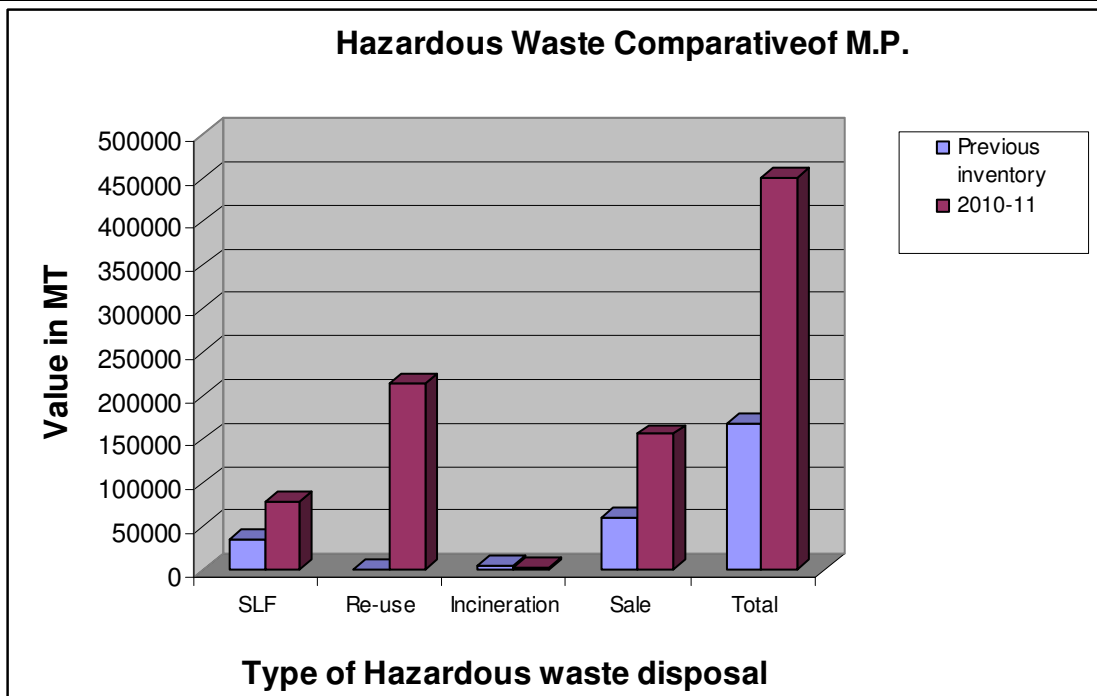
reported from Bhopal, Dhar, Indore, Jabalpur, Sagar and Satna region. The Regional Office wise hazardous waste disposal through Incineration is presented in the graph below :-



The comparative study of hazardous waste generation in the previous inventory & current inventory .

### Comparative Hazardous Waste generation

Year	SLF	Re-use	Incineration	Sale	Total
Previous inventory	34943.71	614.66	5036.94	60694.53	167889.84
2010-11	78234.55	214371.47	2682.65	155349.07	450529.63



As per authorization the total hazardous wastes generated in previous year was to the tune of 167889.84 MT whereas in the year (2010-11) the total hazardous waste generation is 450529.63 MT. The main reason for the increase of the generation quantity of total hazardous waste from previous year is due to Bharat Omen Refinery. Which it has been established in Bina and is generating about 144888 MT of hazardous waste as per authorization.

#### **Details about Captive Disposal Facilities :-**

In Madhya Pradesh other than the common TSDF site at Pithampur Dist. Dhar there are captive Secured Land Fill and Incineration Facilities the details of which is as follows :-

#### **Captive Secured Landfills**

11 units in M.P. have their own Secured land Fill sites, these area,

- ❖ M/s. Grasim Industries Ltd., Nagda.
- ❖ M/s. Hukumchand Jute Industries (Amlai).
- ❖ M/s. Century Denim, Khargone.
- ❖ M/s. RPG Transmission Ltd., Jabalpur.
- ❖ M/s. Lupin, Raisen .(Scrapped )
- ❖ M/s. Telecom Ltd., Richhai, Jabalpur under construction.
- ❖ M/s. Eternti Everest , Kymore.
- ❖ M/s. Ranbaxy , Dewas ( Currently not in use )
- ❖ M/s. Bhansali Engineering Polymer Ltd., Chhindwara.
- ❖ M/s. Hotline (CPT), Malanpur, Bhind.
- ❖ M/s Bharat Zinc Ltd., Mandideep .(Closed)

#### **Captive Incineration facilities :-**

15 units as enlisted below have their own incineration facility.

- ❖ M/s. Kinetic Motors, Pithampur, Dhar
- ❖ M/s. Eicher Motors, Pithampur, Dhar
- ❖ M/s. Universal Cable, Satna.
- ❖ M/s. Birla Ericsson, Rewa

- ❖ M/s. Vindhya Telelinks, Rewa
- ❖ M/s. Lupin Industries, Mandideep, Raisen. ( Closed )
- ❖ M/s. ICPA Lab., Ratlam
- ❖ M/s. Ranbaxy, Dewas
- ❖ M/s. Premier Industries, Chhindwara
- ❖ M/s. Naveen Chemicals, Dewas ( Closed )
- ❖ M/s. Lanxess India Ltd.,(formerly M/s. Gwalior Chemicals,) Nagda
- ❖ M/s. Force Motors, Dhar
- ❖ M/s. AVTEC Ltd., Pithampur, Dhar
- ❖ M/s National Steel CRM Div. Ghatabillod, Dhar
- ❖ M/s Ruchi Strips, Ghatabillod, Dhar.
- ❖ M/s. Diesel Loco Shed, Ratlam.

**Details of Common Treatment, Storage & Disposal Facility (CTSDF) :-** A common treatment storage & disposal facilities for disposal of hazardous waste has been developed in the State under the provision of hazardous waste (Management, Handling & Transboundary Movement) Rules, 2008, the salient features of which are given below :-

- Construction of Secured Land-fill was taken up by the M.P. Waste Management Project (a division of M/s Ramky Enviro Engineers Ltd.) as per the Guidelines published by Central Pollution Control Board after conducting EIA as per the provisions of the then applicable Hazardous Waste (Management & Handling) Rules 1989 as amended.
- Under the provisions of Environmental Legislations, Consent to Establish was issued by the M.P. Pollution Control Board under Section 25/26 of Water (Prevention & Control of Pollution) Act 1974 vide letter no. 16410 dated 05/09/2005 for- Direct Secured Land fill – 50,000 MT/Year, Land fill after treatment – 20,000 MT/Year and Incineration – 20,000 MT/Year. Construction of the facility was initiated from December 2005.
- Disposal of hazardous waste was initiated in first cell from 24/11/2006. The area of this cell is 1.53 Acres and the capacity is 60,000 MT. Presently this cell is capped in which about 60,000 MT of hazardous waste has been disposed off.
- Presently the hazardous waste is being disposed off in the second cell of secured land fill. Disposal of hazardous waste was initiated in this cell from October 2011. The capacity of this cell is about 60,000 MT. Till 31.01.2012 approximately 12,000 MT of hazardous waste has been disposed off in this cell.

- Two sets of trial run of the incinerator at CTSDF Pithampur was conducted from May,2010-Nov,2010 and 15,Nov to 15 Jan,2012 for incineration of waste after obtaining permission and authorization from Central Pollution Control Board and M.P. Pollution Control Board. Monitoring of emission was conducted by Central Pollution Control Board during trials. The continuous operation of common incinerator is still under consideration which will be finalized after approval of CPCB.

### **Unauthorized Hazardous Waste dump sites in Madhya Pradesh**

M.P. Pollution Control Board had identified 04 hazardous waste dump sites in Maksi and Ratlam area which belongs to M/s. Beta-naphthol Ltd., Maksi, M/s. Jayant Vitamins, M/s. Bordia Chemicals & M/s. Sajjan Chemicals, Ratlam. All these industries have been closed due to some or other reasons between 1997 to 2003. M.P. Pollution Control Board has filed prosecution against these defaulting units and the cases are under consideration in the court of law.

The approx. quantity of waste stored at various locations (industrial premises and near by area) is 23,476.4 MT as per the preliminary assessments. Other two sites of M/s. Bordia Chemical, Ratlam & M/s. Beta naphthol Ltd., Maksi earlier were identified as illegal dump sites, but CPCB/SPCB after inspection did not find any waste on the sites. Though based on the analytical report of Board, remediation, if required will be considered.

A meeting was held on 6<sup>th</sup> September 2011 at Paryawaran Bhawan, New Delhi on "a new centrally sponsored scheme for remediation of contaminated hazardous/municipal waste dump site". In the country Central Pollution Control Board in consultation with the State Pollution Control Boards, has identified 12 priority areas, containing 23 contaminated sites based on the quantum of waste dumped, extent of ground/surface water and soil contamination, nature of pollutants, ecological and health impacts. Ratlam four sites of Madhya Pradesh had been considered for remediation. In the said project, the funding pattern suggested by Ministry of Environment of Forests for remediation will be 40% by MoEF from NCEF and 60% by State Government and through PPP or other means. Government of Madhya Pradesh has given its consent for extending 60% funding support for remediation project.