

GOA STATE POLLUTION CONTROL BOARD

गोंय राज्य प्रदुशन नियंत्रण मंडळ

(An ISO 9001 - 2008 Certified Board)

Jose Manuel Noronha
Chairman



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Chairman's Message

The Goa State Pollution Control Board completed its Silver Jubilee on 1/07/2013 and the staff celebrated this day by rededicating themselves towards actively involving in the prevention, control and abatement of Water and Air Pollution in the State of Goa. On this day the Board also honoured all its previous Chairpersons and Member Secretaries for their contribution to the Board during their tenure.

During the year under review the Goa State Pollution Control Board, besides carrying out its routine activities has also taken onto itself the task of implementing a wide variety of projects in the State of Goa and importantly the following are highlighted:

- a) Ground water remediation by bioremediation of River Sal being implemented by Asahi Geo Survey Co. Ltd., Japan and funded by JICA (Japan International Co-operation Agency).
- b) Study of water contamination of Bethora Nullah, Ponda.
- c) Study of Environmental Status of Cuncolim Industrial Estate.

- d) Study of Manganese level in Selaulim Reservoir at Sanguem, Goa.
- e) Study of St. Inez Creek to check the extent of environmental degradation as a result of anthropogenic activities, civic infrastructure and natural causes.
- f) Study of assessment of Water Quality Index in and around Verna Industrial Estate.
- g) Study of air quality at Amona

The Board is also actively involved in studying the impact of Air and Water pollution in the Cuncolim Industrial Estate and measures to reduce the same have been implemented at fish meal plants, steel units and other related industries at this Estate. Details of these developments form part of this report. The Board is taking preventive and corrective measures to reduce Air and Water pollution throughout the state and recently steps have been taken to reduce air pollution caused by stone crushers in South Goa by issuing directions to non complying units.

We look forward to an active participation from the public at large in helping us achieve our objectives under the Water (Prevention and Control of Pollution) Act 1974 and under the Air (Prevention and Control of Pollution) Act 1981 by bringing non compliances to our attention.


(Jose Manuel Noronha)
Chairman

Panaji
30-04-2014

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CHAPTER 1

INTRODUCTION

1.1 GENERAL INTRODUCTION

The Goa State Pollution Control Board is an autonomous statutory organization constituted on 1st July, 1988 under the Water (Prevention & Control of Pollution) Act, 1974. Prior to that, when Goa formed part of the erstwhile Union Territory of Goa, Daman and Diu, the Central Board for the Prevention and Control of Water Pollution was performing the functions of the State Board in Goa. The Central Pollution Control Board at Ponda-Goa had established a Section Office for the purpose. The same arrangement continued till the constitution of the State Board. In the meanwhile, the Section Office was re-constituted as West Zonal Office and shifted to Baroda on 4th April, 1988. All the relevant records pertaining to Goa were transferred to the Goa State Pollution Control Board on 12th September, 1988.

The Goa State Pollution Control Board, after its constitution, established its office in the Goa Medical College Complex at Bambolim. In June 1991, the Government of Goa allotted independent premises for the Board at Patto- Panaji, where the Board shifted its' office in September 1991.

On 15th August, 2002 the Board acquired new premises on the 1st floor in Dempo Tower at Patto Plaza, Panaji and shifted its full set-up to this new premise. The office as well as the laboratory were operating from here. Subsequently, on 15th August, 2005, additional premises measuring 311.86 Sq. mt. was acquired on the 4th floor of the same building which was dedicated to the Board Laboratory.

Further the Board has plans to construct a new State of the Art building for establishing a full fledged Laboratory at Saligao by the next year.

1.2 THE BOARD OFFICE

The Goa State Pollution Control Board is presently operating from its own premises on the first floor and the fourth floor of Dempo Towers, EDC Patto Plaza, Panaji-Goa. The Offices of the Chairman, Member Secretary, Technical section, Legal section, Account section, Administrative Section and Scientific section are located on the first floor on a built up area of 600 sq.mts and the laboratory is located on the fourth floor. The Board laboratory and entire Board office is assessed under ISO: 9001, ISO: 14001 and OHSAS: 18001. Additionally, the Board laboratory has obtained accreditations under MoEF (Ministry of Environment & forests) and NABL (national Accreditation Board for Testing & Calibration Laboratories).

Presently, there are one hundred and forty three staff employed in the Board under the various sections. The details of the staff are provided in the table below and the Organization Chart is attached as Annexure I.

Table 1.1: Staff employed in the Board with Name and Designation

SR.NO	NAME OF THE EMPLOYEE	DESIGNATION
Scientific Section		
1	Mrs. Jenica Sequeira	Scientist 'C'
2	Ms. Connie Fernandes	Scientist 'C'
3	Dr. Mohan Girap	Scientist 'C'
4	Mrs. Francisca Pereira	Scientist 'B'
5	Mr. Sanjay Kankonkar	Scientist 'B'
6	Mr. Nilesh Parsekar	Scientist 'B'

7	Mrs. Anny Dias	Scientific Assistant
8	Mrs. Livia D'silva	Scientific Assistant
9	Mr. Ganpat Naik	Scientific Assistant
10	Ms. Edma Fernandes	Scientific Assistant
11	Mrs. Joshna Mahale	Scientific Assistant
12	Mrs. Avina Pereira	Scientific Assistant
13	Mr. Chaitanya Salgoankar	Scientific Assistant
14	Mrs. Chetna Naik	Scientific Assistant
15	Mr. Ravi Naik	Scientific Assistant
16	Ms. Reshma Vaz	Scientific Assistant
17	Mr. Krishnanath Pednekar	Scientific Assistant
18	Ms. Denza Cardozo	Scientific Assistant
19	Mr. Sajid Inamdar	Senior Laboratory Assistant
20	Mr. Waman Chari	Senior Laboratory Assistant
21	Mr. Santosh Haldankar	Senior Laboratory Assistant
22	Mr. Sanmesh Borkar	Senior Laboratory Assistant
23	Mr. Nilesh Surlekar	Senior Laboratory Assistant
24	Mr. Samir Borkar	Senior Laboratory Assistant
25	Mrs. Jocelyn Coelho	Junior Laboratory Assistant
26	Mr. Kamlesh Kavlekar	Junior Laboratory Assistant
27	Mr. Sunny Pirankar	Junior Laboratory Assistant
28	Mr. Deepak Naik	Junior Laboratory Assistant
29	Ms. Reema Kaulekar	Junior Laboratory Assistant
30	Mr. Freddy Barbosa	Junior Laboratory Assistant
31	Ms. Felsy Pereira	Junior Laboratory Assistant
32	Ms. Sophia Dias	Junior Laboratory Assistant
33	Mr. Johnny Moniz	Junior Laboratory Assistant
34	Ms. Nishtha Lolayekar	Junior Laboratory Assistant
35	Mrs. Quiteria Fernandes e Pereira	Junior Laboratory Assistant
36	Ms. Sheetal Laad	Junior Laboratory Assistant
37	Ms. Wilma D'costa	Junior Laboratory Assistant
38	Mr. Anthony Miranda	Junior Laboratory Assistant
39	Mr. Anil Parab	Field Assistant
40	Mr. Chandrashekar Parab	Field Assistant
41	Mr. Xawollino Rodrigues	Field Assistant
42	Ms. Luiza D'silva	Field Assistant
43	Mrs. Milagrina Colaco	Field Assistant
44	Mr. Sidney Gracias	Field Assistant
45	Mr. Saby Fernandes	Field Assistant
46	Mrs. Sangita Korgaonkar	Laboratory Attendant
47	Mr. Ishu Vishnu Dhulapkar	Laboratory Attendant
48	Mr. Mario Fernandes	Laboratory Attendant
49	Mr. Bhuvan Borkar	Laboratory Attendant
LEGAL SECTION		
1	Mrs. Natalia Dias	Senior Law Officer
2	Mr. Constance Fernandes	Assistant Law Officer
ACCOUNTS SECTION		
1	Mr. Manohar Borkar	Assistant Accounts Officer
2	Mr. D. M. Naik	Accounts cum Administrative Officer
3	Mr. Devendra Arlekar	Assistant Accounts Officer
4	Mr. Vidyesh Mahmal	Accountant
5	Ms. Mitzi D'silva	Accounts Clerk
6	Ms. Nevies Miranda	Accounts Clerk
7	Ms. Berlyn Fernandes	Accounts Clerk
8	Ms. Stefanie Carvalho	Accounts Clerk
ADMINISTRATION SECTION		
1	Mrs. Tulita da Costa e Fernandes	Office Superintendent
2	Mrs. Elmana M D'Silva	Head Clerk
3	Mrs. Swapna Naik	Senior Stenographer

4	Mrs. Daya Usgaonkar e Godinho	Upper Division Clerk
5	Mr. Cedric De Souza	Upper Division Clerk
6	Ms. Margaret Cardozo	Junior Stenographer
7	Ms. Debra Pereira	Junior Stenographer
8	Ms. Valanie Abranches	Data Entry Operator
9	Mrs. Abygale Vaz	Data Entry Operator
10	Mrs. Dorothy Fernandes	Data Entry Operator
11	Mr. Alleluia D'Mello	Data Entry Operator
12	Mrs. Francisca Auria Lobo	Lower Division Clerk
13	Mrs. Plancy Miranda	Lower Division Clerk
14	Ms. Shane Gracias	Lower Division Clerk
15	Mrs. Ana Maria Lourenco	Lower Division Clerk
16	Mr. Maison Fernandes	Lower Division Clerk
17	Mrs. Supriya Nageshkar	Lower Division Clerk
18	Ms. Joice Coutinho	Lower Division Clerk
19	Mrs. Ria Naik	Lower Division Clerk
20	Ms. Preeti Barreto	Lower Division Clerk
21	Mrs. Suzee Fernandes	Lower Division Clerk
22	Mrs. Alisha Colaco	Lower Division Clerk
23	Mr. Umesh Kankonkar	Record Keeper
24	Mrs. Gaudalupe Dias	Record Keeper
25	Mr. Lourenco Fernandes	Driver
26	Mr. Gopal Girodkar	Driver
27	Mr. Pravin Kavlekar	Driver
28	Mr. Mahesh Veluskar	Driver
29	Mr. Hemant Satarkar	Driver
30	Mr. Narayan Shirodkar	Driver
31	Mr. Shantadurga Pereira	Driver
32	Mr. Daniel Colaco	Driver
33	Mr. Sebastiao Dias	Driver
34	Mr. Conceicao Colaco	Driver
35	Mr. Lourenco D'Souza	Peon
36	Mr. Derrick Dias	Peon
37	Mr. Salvador Rodrigues	Peon
38	Mr. Denister Dias	Peon
39	Mrs. Catarina Pereira	Peon
40	Mr. Roque Fernandes	Peon
41	Mr. Ankush Kankonkar	Peon
42	Mrs. Piedade Crasto	Peon
43	Mr. Issac Lobo	Peon
TECHNICAL SECTION		
1	Mr. Sanjeev Joglekar	Environmental Engineer
2	Mrs. Nandan Prabhudessai	Junior Env. Engineer (Civil)
3	Mr. Keshav Fadke	Junior Env. Engineer (Civil)
4	Mr. Abner Rodrigues	Junior Env. Engineer (Civil)
5	Mr. Eknath Gopal Kerkar	Junior Env. Engineer (Civil)
6	Mr. Rohan Nagvekar	Junior Env. Engineer (Civil)
7	Mr. Shivprasad Murari	Junior Env. Engineer (Civil)
8	Mr. Manoj Kudalkar	Junior Env. Engineer (Mech./Prod)
9	Mr. Amit Shanbhag	Junior Env. Engineer (Mech./Prod)
10	Mr. Pravin Faldessai	Junior Env. Engineer (Mech./Prod)
11	Ms. Indira Faldessai	Network Engg. (Software)
12	Mr. Sebastiao Barreto	Engg. Assistant (Civil)
13	Mr. Ashley Pereira	Engg. Assistant (Civil)
14	Mr. Vinson Quadros	Engg. Assistant (Civil)
15	Mr. Sebastiao Colaco	Engg. Assistant (Civil)
16	Mr. Liston Fernandes	Engg. Assistant (Mechanical)
17	Mr. Pratik Chari	Engg. Assistant (Computers)
18	Mr. Chetan Upadhye	Network Assistant (Hardware)

19.	Mr. Rajendra Naik	Network Assistant (Hardware)
CHAIRMAN'S PERSONAL STAFF		
1.	Mr. Sarvesh Satardekar	PS to the Charman
2.	Mrs. Valencia Fernandes	PA to the Chairman
3.	Mr. Roland Moses	Chairman's Driver
4.	Mr. Narayan Chopdekar	Chairman's Peon
STAFF TAKEN ON CONTRACT BASIS		
1.	Miss. Pranali Dessai	Junior Law Officer
2.	Mr. Antonio Godinho	Legal Assistant
3.	Mr. Shashank K. Dessai	Junior Env. Engineer (Mech.)
4.	Mr. Vijay Kansekar	Junior Env. Engineer (Mech.)
5.	Mr. Nikhil Caeiro	Junior Env. Engineer (Civil)
6.	Shri. Nilay N. Shenvi	Junior Env. Engineer (Civil)
7.	Miss. Lee Ann Antao	Junior Env. Engineer (Civil)
8.	Shri. Bento Thomas	Junior Env. Engineer (Civil)
9.	Shri. Digvijay Dessai	Junior Env. Engin eer (Civil)
10.	Miss. Bhaghyashree Naik	Junior Env. Engineer (Civil)
11.	Shri. Gauresh Naik	Junior Env. Engineer (Civil)
12.	Miss. Deepti Jambhale	Junior Env. Engineer (Civil)
13.	Miss Pratiksha Prabhu	Network Engineer (Software)
14.	Miss Sudiksha N. Dessai	Network Assistant (Hardware)
15.	Mr. Vinayak Talankar	Driver
16.	Mr. Sailesh R. Mahale	Driver
17.	Shri. Immam Sheikh	Driver
18.	Shri. Ravi Kadam	Driver
19.	Shri. Hariesh Vernekar	Driver
20.	Shri. Vijay Halarnkar	Driver

1.3 FUNCTIONS OF THE VARIOUS SECTIONS

1.3.1 SCIENTIFIC SECTION



Fig 1.1 & 1.2 : Laboratory Official at work in the GSPCB Laboratory

The Board has a full fledged laboratory, operating on the 4th floor of Dempo Towers having a built up area of about 311.86 sq.mts. The laboratory is well equipped with instruments and equipments needed for carrying out analysis of water, air and soil samples of industrial effluents, rivers, wells, etc for chemical, physical and bacteriological parameters including trace and toxic metals, pesticides and organic components. The Board laboratory is MoEF and NABL accredited and follows the procedures and guidelines in accordance with the said accreditations. The laboratory conducts periodical Internal Audits and External Audits of the Board Laboratory processes through NABL approved Auditors. Assessment of the Board laboratory is also conducted every two years under ISO: 17025 and every five years under MoEF requirement.

The Board has set up 16 ambient air quality monitoring stations and 52 water quality monitoring stations under the Central Pollution Control Board sponsored projects National Air Monitoring Programme (NAMP) and National Water Monitoring Programme (NWMP). Of the 16 air stations, 13 are outsourced to MoEF approved laboratories and 3 are operated by the GSPCB. The 52 NWMP stations are all managed by GSPCB. These stations are monitored at defined intervals and the samples collected are analysed at the Board laboratory for physical, chemical, metals, pesticides and microbiological parameters. The Board has two

mobile laboratories which are being used during NAMP and NWMP monitoring programmes throughout the year.

During the year under report the Board laboratory collected 1,375 water samples from various sources such as ETP, STP, mine discharge (settling pond, mining pit, etc.), river water, well water, canal water, etc. and analyzed the same for various parameters. Also, a number of complaints regarding dust pollution have been attended to by the laboratory and have conducted ambient air quality monitoring programmes. A number of Stack emission Monitoring programmes have also been conducted during the year.

1.3.2 TECHNICAL SECTION

The Technical Section handles the consent management. The industries, hazardous waste handling facilities, health care facilities, municipal solid waste facilities, etc. are inspected and monitored on regular basis. The inspection reports and analysis reports are put up online through XGN software which are scrutinized by the Technical Committee and subsequently approved by the Chairman upon which consents under the relevant acts and rules are issued. During the year under report, 1431 consents have been granted for operation and establishment of the above facilities under the Water and Air Acts, Hazardous Waste Rules, Bio-Medical Rules, Municipal Solid Waste Rules.

Besides, periodic inspections to monitor red category industries are also conducted to check the compliance by the units. Samples of waste water, ambient air and stack emissions are monitored and analyzed in the Board laboratory.

Additionally, inspections in response to public complaints are also conducted as and when required after initially scrutinizing the complaints through the 'Complaint Committee'. The complaints are monitored by inspection, samples are collected and analysed where required and action deemed fit is initiated if required.

1.3.3 LEGAL SECTION

The Legal section handles all the legal / Court matters related to the functions of the Board. The matters are filed before the Hon'ble Supreme Court, the Hon'ble High Court, the National Green Tribunal, the Administrative Tribunal the Appellate Authority under the Air Act and the Water Act and other lower courts.

The Personal hearings for industries, Public Hearing and matters related to Right to Information Act are also looked after by this Section.

Complaints are scrutinized and examined by the legal section before initiating action in the matter. Notices/directions/clarifications are issued to the defaulting units under the Environment (Protection) Act, 1986 i.e Municipal Solid Waste Rules, Hazardous Wastes Rules, Bio-Medical Rules, E- Waste management Rules, Noise Pollution Rules etc. whenever required to seek compliance for the defaultings.

1.3.4 ADMINISTRATIVE CUM ACCOUNTS SECTION

The Administrative Section deals with all the administrative matters of the Board such as service matters of the staff which includes creation of posts, appointments, promotions, leave, tours, stores, calculation of retirement benefits of the employees, etc. Preparation of agenda and minutes for the Board meetings and subsequent follow up for the implementation of the decisions taken herein for smooth functioning of the Board.

The Accounts section of the Board deals with all the accounting and financial matters of the Board such as monitoring of Revenue and Expenditures, preparation of Annual Budget, processing of all files where in financial implications are involved. Advices the Board on financial matters in accordance with the

Government Rules and Procedures for smooth functioning. Conduct periodical Audit of the Board Accounts through a Registered Chartered Accountant nominated by the Comptroller and Auditor General of India (CAAG).

1.3.5 OTHER FACILITIES

1.3.5.1 LIBRARY FACILITIES

The Board has a spacious library of its own on the 4th Floor. It has varied publications from different departments/institutions, such as MOEF, CPCB, other State Boards' Annual Reports, etc. Legal, accounts and technical books, ISI Specifications, etc. are also available in the Board library.

1.3.5.2 CONFERENCE ROOM

The Board has a spacious Conference Room on the 1st floor with a seating capacity for 60 people. It is fully air conditioned and has facilities like whiteboard, and over head projector. All Board Meetings and other important meetings are held in the Conference Room.

CHAPTER 2

CONSTITUTION OF THE BOARD

2.1 CONSTITUTION OF THE BOARD INCLUDING CHANGES THEREIN

The present Board was constituted under the chairmanship of Shri. Jose Manuel Noronha. This Board was constituted vide Order No. 5/20/87-STE/P-IV/635 dated 3rd September, 2012 and the composition is as given below:-

Chairman

1. Shri. Jose Manuel Noronha, Chief Executive Officer, Agnel Technical Education Complex, Verna and Assagao.

Members

2. Addl. Principal Chief Conservator of Forests.
3. Director, Directorate of Industries, Trade & Commerce, Panaji
4. Chief Engineer, Water Resource Department, Panaji
5. Director, Directorate of Mines & Geology, Panaji
6. Director, Department of Tourism
7. Shri. Narayan Naik, Sarpanch, Village Panchayat of Sancoale, Sancoale.
8. Shri. Tony Rodrigues, Dy. Mayor, Corporation of City of Panaji.
9. Dr. Vasudev Deshprabhu, Chairperson, Pernem Municipal Council
10. Ms. Fatima Pereira, Sarpanch, Village Panchayat of Velsao.
11. Shri. Frank Fernandes, Sarpanch, Village Panchayat of Navelim
12. Shri. Shekhar Sardessai, President, Goa State Industries Association, Panaji
13. Shri. Shirang Jamble, Agriculturist, Savoi – Verem, Ponda
14. Dr. Marconi Correia, Medical Practitioner, Cansaulim, Mormugao
15. Dr. Pramod Sawant, Vice Chairperson, Goa State Infrastructure Development Corporation Ltd, Panaji

Member Secretary

16. Shri. Levinson Martins, Goa Civil Services.

CHAPTER 3

MEETINGS OF THE BOARD

3.1 During the year under report, the Goa State Pollution Control Board held five Board Meetings under the reconstituted Board. The details of the meetings held during the year are presented in the Table below:-

Sr. No.	Sr. No. of Meeting	Date of meeting	Venue	No. of members who attended the meeting
1.	108 th	10/06/2013	Board's Conference Hall	12
2.	109 th (Special)	19/07/2013	Board's Conference Hall	08
3.	110 th	23/10/2013	Board's Conference Hall	12
4.	111 th	24/01/2014	Board's Conference Hall	14
5.	112 th	25/03/2014	Board's Conference Hall	13

3.2 EXTRACTS OF MINUTES OF BOARD MEETINGS HELD DURING THE YEAR UNDER REPORT

108th Meeting of the Board

In the 108th Meeting the Board took the following decisions:

Agenda Item No. 1

Confirmation of the minutes of the 106th meeting and 107th meeting (Special meeting) of the Goa State Pollution Control Board held on 11th February, 2013 and 15th February, 2013 respectively.

The members perused and confirmed the minutes of the 106th meeting and 107th meeting (Special meeting) of the Goa State Pollution Control Board held on 11th February, 2013 and 15th February, 2013 respectively so as to enter the same in the minutes book.

Agenda Item No. 2

Follow up action on the decision taken at the 106th meeting of the Board.

Agenda item no. 9 (b) – Mrs. Fatima Pereira, Sarpanch, Village Panchayat, Velsao desired to know whether the Pollution Control Board has formulated any guidelines for cement godown operating in residential areas, since they are creating dust pollution in the surrounding areas. It was clarified that the Town and Country Planning Department has ban setting up of such activities in residential areas and any violations may be brought to the notice of the Town and Country Planning authorities accordingly.

Agenda item no. 11 – Chairman informed the members that as regards to allotment of Court cases to Legal Counsels of the Board (terms and conditions for the Board Advocates), the following are added/amended:

- The terms and conditions will come into effect from 01/06/2013.
- Decision of the Chairman, GSPCB in these matters shall be final and binding.

The members noted the additions/amendments as proposed and agreed with.

Agenda item no. 14 – Chairman informed the members that a Sub-Committee of the following members was formed for preparation of a report with regard to revised fee structure for Red, Orange and Green Category of Industries. The Committee met on 14/05/2013, 28/05/2013 and 06/06/2013 and have now submitted their Report, which was placed during the meeting.

- Director of Industries, Trade and Commerce – Chairman of the Committee

2. Mr. Shekhar Sardessai, President, GSIA - Member
3. Mr. Shrirang Jamble – Member of the Board – Member
4. Mr. Atul Naik – M/s Creative Engineers – Member
5. Mr. Suharsh Usgaonkar – M/s Electro Services - Member

The recommendations of the Sub-Committee are as follows:

- a. The Committee had earlier discussed and decided to propose a time period of 6 months to submit an application for Consent after the waiver of past fees and late fees is agreed and notified by the Government. However, this recommendation may be reviewed by the Board taking into view the recent development.
- b. The Committee felt that the best solution under the circumstances is to recommend that industries should submit applications for Consent with one fee each for Water Consent and Air Consent as prescribed in the Rules. The Board should process the applications and grant Consents, if the industry is complying with all the norms subject to the condition that the industry will pay the balance fees in case the Government does not accept the recommendations of waiver of the past fees and late fees and the Board should refund the additional amount in case the Government notifies a fee which is less than the present fees prescribed in the Rules.
- c. The Committee recommended that the Board should recommend waiver of the past fees and late fees and accordingly move a proposal to the State Government for appropriate amendment in the Water Rules and the Air Rules on priority.
- d. The Committee recommended that the fees applicable to the Industries should be amended as per the table annexed to the minutes and the Board should consider Gross Fixed Assets, based on investment in Plant and Machinery and not based on land, building, plant and machinery and other fixed assets at least for Micro and Small Scale enterprises.

After detailed deliberations and in view of the order of the National Green Tribunal issued to the Board by the Ministry of Environment and Forests, Govt. of India, directing the Board to ensure that all the industries operating without the Consent of the Board are closed within three weeks with the assistance of the Police Department. The members approved that recommendations as follows be implemented:

‘The industries should submit applications for Consent with one fee each for Water Consent and Air Consent as prescribed in the Rules. The Board should process the applications and grant Consents, if the industry is complying with all the norms subject to the condition that the industry will pay the balance fees in case the Government does not accept the recommendations of waiver of the past fees and late fees and the Board should refund the additional amount in case the Government notifies a fee which is less than the present fees prescribed in the Rules.’

Further, the members approved that the proposal be forwarded to the Director, Department of Science, Technology & Environment for approval of the Government, recommending waiver of past fees and late fees under the Air Rules and Water Rules and on receipt of the approval of the State Government, communicate to the industries accordingly.

Agenda Item No. 3

Follow up action on the decision taken at the 107th meeting (Special meeting) of the Board.

Chairman informed the members that as decided in the 107th meeting (Special meeting), opinion of the Ld. Advocate of the Board was obtained on the Report submitted by the Inquiry Officer appointed by Board. Accordingly, show cause notices were issued to the Scientific Assistants, Senior Laboratory Assistant and Junior Laboratory Assistants appointed by the Board, as referred to in the report. The replies to the show cause notices were received from the officials.

Chairman informed the members that the Member Secretary had put up his comments on the report of the Inquiry Officer, Shri D.M. Borkar, and after studying the replies to the show cause notice submitted by the employees, he arrived at a decision that eleven employees out of the twelve pointed out by Shri D.M. Borkar were allotted marks which were not consistent with the scheme of marking laid down by the Departmental Selection Committee. It was further informed that Chairman recommended that since these eleven staff members were not appointed in accordance with laid down procedure, their appointments be terminated.

Chairman further informed that necessary orders to this effect would be issued shortly.

Agenda Item no. 4

Condemnation of office vehicle, Tempo Traveler (mobile laboratory) bearing registration no. GA-01-T-8332.

Chairman informed the members that the office vehicle Tempo Traveler (mobile laboratory) bearing registration no. GA-01-T-8332 requires to be replaced on account of frequent break downs and repairs.

Members perused and approved that, Tempo Traveler (Mobile Laboratory) bearing registration no. GA-01-T-8332, be auctioned by following all the necessary codial procedures.

Agenda item no. 5

Appointment of Legal Retainer in respect of criminal matters pertaining to the Board.

Chairman informed the members that the Board is required to initiate criminal proceedings against persons who violate the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981. These proceedings include filing of private criminal complaints/criminal cases before Judicial Magistrate First Class / Session Courts, which are located in every Taluka of the State.

In order to ensure effective prosecution of the accused violators in these matters and particularly as the Board has not effectively initiated any criminal action (in this effect) till date, it is proposed that the Board retain an Advocate to represent that the Board in all criminal matters before various Courts in the State.

To a pointed question, it was clarified that Adv. S.B. Faria would be paid a retainer ship fee of Rs. 15,000/- per month and Rs. 3000/- per effective hearing per case before the Civil and Criminal Courts of Goa.

The members also agreed to retain Advocate S.B. Faria, Special Public Prosecutor, Government of Goa and also Special Public Prosecutor for the National Investigation Agency, Government of India, as the Legal Retainer of the Board in respect of all criminal matters concerning the Board.

Adv. S.B. Faria, will be bound by the following terms and conditions :

- The Legal Retainer shall conduct the prosecution of all the criminal cases filed on behalf of the Board.
- The terms of appointment initially shall be for a period of two years which can be renewed for further equal period.
- Fee of Rs.3000/- per effective hearing shall be paid to the Legal Retainer for appearance per case.
- The Legal Retainer shall conduct the Prosecution with due diligence and will be assisted by an Officer nominated by the Board.
- Transport shall be provided by the Board to the Legal Retainer to attend the Court.

- The progress of the each case shall be intimated to the Officer nominated by the Board by the Legal Retainer who in turn shall communicate to the Member Secretary of the Board.
- The Legal Retainer shall keep himself acquainted with the facts of the case and received instruction from the officer nominated by the Board.
- The Legal Retainer shall obtain certified copies of all Judgment and orders from the Courts and forward the same to the Member Secretary with the comments suggesting further course of action.
- The Legal Retainer shall not take cases against the Board.

Agenda Item no. 06

Application of M/s Pentair Water India Pvt. Ltd., Plot no. L-52 – 55, Verna Industrial Estate, Verna, Goa, for Consent to Establish (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Pentair Water India Pvt. Ltd., for expansion in the manufacturing capacities of their products (i) pumps submersible-VMS-Horizontal-Inline-Single Imperial Driven Sewage, pumps for home/domestic RO system, from 2000 nos./annum to 10,02,000 lakhs nos./annum an increase by 10,00,000lakhs nos./annum, (ii) Water Treatment System for filtration-softening-sewage treatment effluent, home/domestic RO systems, Water softeners from 1200 nos./annum to 74400 nos./annum an increase by 73200 nos./annum and (iii) Additional new product i.e. Home/Domestic RO membranes 9,00,000 nos./annum & (iv) Melt Blown cartridges for domestic RO systems 30,00,000 nos./annum. The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Pentair Water India Pvt. Ltd., Plot no. L-52 – 55, Verna Industrial Estate, Verna, Goa, for Consent to Establish (expansion) under the Water Act and the Air Act. as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda Item no. 07

Application of M/s IFB Industries Limited, Plot no. L-1, Verna Industrial Estate, Verna, Goa, for Consent to Establish under the Water Act and the Air Act for expansion in the manufacturing activities.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s IFB Industries Limited for expansion in the manufacturing capacities of front loading washing machines from its existing capacities of 2.50 lakhs/annum to 4.00lakhs/annum., Manufacture of new product i.e. Top loader washing machines with a capacity of 2.00 lakhs/annum and increase in the water requirement from the existing 80m³/day to 200m³/day, at Plot No. L-1, Verna Industrial Estate, Verna, Goa

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s IFB Industries Limited, Plot no. L-1, Verna Industrial Estate, Verna, Goa, for Consent to Establish under the Water Act and the Air Act for expansion in the manufacturing activities, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda Item no. 08

Application of M/s Merck Limited, Survey no. 11/1, Marwasodo, Usgaon, Ponda, Goa, for Consent to Operate under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Merck Limited for expansion in the manufacturing capacities of Vitamin E capsules from the existing 300 MT/annum and an increase by 300 MT/annum to a total of 600 MT/annum at its Oxynex ST plant facility and Increase in the water requirement from the existing 707 cu.m/day by 52 cu.m/day.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Merck Limited, Survey no. 11/1, Marwasodo, Usgaon, Ponda, Goa, for Consent to Operate under the Water Act and the Air Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda Item no. 09

Application of M/s Goa Formulation Limited, Plot no. 01, Phase III, Honda Industrial Estate, Honda, Sattari Goa, for Consent to Operate (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Goa Formulation Limited, for expansion in the manufacturing capacities of Intravenous Fluids (I. V. Fluids) from the existing capacity of 300 lakhs bottles/annum to 900 lakhs bottles/annum an increase by 600 lakh bottles/annum by adding additional machineries in its existing built-up area and increase in the water requirement by 135 KLD from existing 65 KLD totaling it to 200KLD.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of Goa Formulation Limited, Plot no. 01, Phase III, Honda Industrial Estate, Honda, Sattari Goa, for Consent to Operate (expansion) under the Water Act and the Air Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda Item no. 10

Application of M/s Glenmark Generics Limited, Unit – II, Plot no. S-7, Colvale Industrial Estate, Colvale, Bardez Goa, for Consent to Establish (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Glenmark Generics Limited, Unit – II, for expansion in the manufacturing capacities of pharmaceuticals products i.e. tablets from the existing 3702.36lacs/annum to 8711.25 lakhs /annum, capsules from the existing lakhs /annum, capsules from the existing 1515.00 lakhs /annum to 1569.54 lakhs /annum and Ointments from the existing 30.30 lakhs/annum to 1466.52 lakhs /annum and Increase in water requirement from the present 116m³/day to an additional requirement of 30m³/day at its existing location at Plot No. S-7, Colvale Industrial Estate, Colvale, Bardez-Goa.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Glenmark Generics Limited - Unit – II, Plot no. S-7, Colvale Industrial Estate, Colvale, Bardez Goa, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda Item no. 11

Application M/s Watson Pharma Pvt. Ltd., Plot no. A-3 to A-6, Phase I-A, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Operate (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Watson Pharma Pvt. Ltd, for regularization in the manufacturing capacity of tablets & capsules with a capacity of 3000 million nos. per annum and the built-up area of the factory by 7684.51sq/mtrs. along with its investments and increase in the manufacturing capacity of tablets & capsules from the existing capacity of 3000million nos. per annum to 6000 million nos. per annum, i.e. an increase by 3000 million nos. per annum..

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

While discussing the application, it was brought to the notice of the Board by Shri Shekhar Sardessai, President, Goa State Industries Association that there was an issue concerning the transfer of ownership of plot in the name of M/s Watson Pharma Pvt. Ltd. After deliberations, the members agreed to seek clarifications from the Goa Industrial Development Corporation regarding the ownership / transfer of plot, and after the clarifications are sought indicating that the applicant M/s Watson Pharma Pvt. Ltd. was in possession of the said plot, Consent to Operate be granted, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda Item no. 12

Application of M/s Leading Hotels Limited, Tiracol Village, Tal, Pernem, Goa, for Consent to Establish under the Water Act and the Air Act for operation of the Golf course and Eco- Resort.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Leading Hotels Limited, for construction of golf course and Eco resort. The HPCC has cleared the above proposal.

The members approved the proposal of M/s Leading Hotels Limited, Survey no. 2 to 13, Tiracol Village, Tal, Pernem, Goa for Consent to Establish Water Act and the Act, subject to obtaining approval under the Coastal Regulation Zone, 2011. Considering the size of the project, approval has to be obtained from Ministry of Environment & Forests under the CRZ Notification. As provided in the CRZ Notification, Consent to Establish under the Water and Air Act is a prerequisite for submitting application to Goa Coastal Zone Management Authority/Ministry of Environment & Forests.

Agenda item no. 13

Application of M/s Gas Authority of India Limited, Govt. of India Undertaking GAIL) for Consent to Operate under the Water Act and the Air Act.

Chairman informed the members that M/s Gas Authority of India Limited (GAIL) has submitted an application for Consent to Operate under the Water and Air Act for the proposed 24" Gokak-Goa spurline of DBPL for providing a spurline from Gokak to provide natural gas.

After discussing the proposal, it was proposed to issue Consent to Operate under the Water Act and the Air Act, subject to the condition that the GAIL submits a detailed plan of the lay out of the gas pipe line, passing through the State of Goa.

The Consent is also subject to obtaining approvals from the Chief Controller of Explosives, preparation of Disaster Management Plan approved by the District Disaster Management Authority / Collector / District Magistrate.

Agenda Item no. 14

Application of M/s Oriental Containers Limited, Plot no. 327-332, Kundaim Industrial Estate, Kundaim Goa., for Consent to Operate (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Oriental Containers Limited., for expansion in the manufacturing capacities Plastic Closures from its existing capacity of 2700 million nos./annum to a proposed 4800million nos./annum an increase of 1200 million nos./annum and increase in the water requirement.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M /s Oriental Containers Limited, Plot no. 327-332, Kundaim Industrial Estate, Kundaim Goa., for Consent to Operate (expansion) under the Water Act and the Air Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 15

Proposal for establishment of a Pilot plant for treatment of wash water / waste water from the drains of the Mapusa Municipal Council.

Chairman explained to the members that Captain Joseph Lobo had submitted a proposal for installation of a treatment system for the wash water / waste water being drained into the drains of the Mapusa Municipal market. He further informed that the said proposal was discussed along with the Chief Officer and Municipal Engineer of Mapusa Municipal Council on 30/05/2013. The Chief Officer, Mapusa Municipal Council has agreed for implementation of the pilot project provided that the funds for the said project are provided by the Board. The purpose of the pilot project is for:

- a. Nullify the smell from the nullah by dosing with EM (effective micro-organism)
- b. Beautify the drainage channel with plant suckers in filter beds
- c. To place a bird net over this whole section to prevent dumping of waste in the nullah.
- d. To create a possibility of using this water, treat it and use it to water newly planted saplings in the adjacent Mamlatdar Office Compound.

While discussing the project, Shri S.T. Nadkarni, Chief Engineer, Water Resources Department, cautioned the members that any changes made in the nullah may create flooding issues especially during monsoons. After discussing the matter in detail it was decided that Captain Joseph Lobo be called to present this Pilot project before a Sub-Committee to be constituted by the Chairman for the purpose of seeking clarifications prior to final approval.

Agenda item no. 16

Refund of fees of the Mining units

Chairman informed the members that the mining units had applied for Consents to operate which were returned back to the applicants, stating that the Hon. High Court of Bombay at Goa and the Government of Goa had banned mining activities within the State of Goa and thereafter their applications could be considered. Subsequently M/s H.L. Nathurmal, filed a case before the Hon. High Court of Bombay at Goa and the Court was pleased to direct the Board to decide the matter on his application within a period of four weeks and communicate the same to him.

The Chairman further informed that the Board rejected his application and this decision was communicated to M/s H.L. Nathurmal.

Views were sought from the members in such a case when applications were returned or rejected, where the applicant would need to pay the fees once again on submission of application for re-consideration.

After detailed discussion, it was decided that application fees are generally processing fees and thereafter all applicants who re-submit their applications for Consent to Establish / Operate / Renewal would need to pay the prescribed fees once again.

Agenda item no. 17

Representation of M/s Persistent System, Plot no. L-44, Verna Industrial Estate, Verna Salcete Goa.

Chairman informed the members that M/s Persistent System Limited, located at Plot no. L-44, Verna Industrial Estate, Verna, Salcete Goa, has vide their letter requested the Board to charge the fees only from the date of application and to exclude the late fees which are considered from the date of commencement of the unit. The unit was directed to pay the balance fees of Rs. 3,70,000 (late fees) at the scrutiny stage of the application.

Chairman further informed that as per the IT Policy, 2005 of the Government of Goa, all units engaged in IT / IT enable services are exempted from obtaining Consent from the Goa State Pollution Control Board. It was

brought to the attention of the members that M/s Persistent System Limited requires NOC on account of ISO 14001 and OSHAS 18001, although it was not required in terms of IT Policy, 2005.

Shri Shekhar Sardessai, President, GSIA, stated that the request made by M/s Persistent System may be considered, since the IT Policy does not require Consent in the first instance.

The members discussed their request in detailed and it was decided that since the Company requires to obtain Consents to Establish and Operate, they would have to pay the fees as well as the late fees as prescribed under the Water Act and the Air Act.

Agenda item no. 18

Levy of fee for Construction of Residential projects applying for Consent to Establish / Operate under the Water Act and Air Act.

Chairman informed the members that as per the Goa Water (Prevention and Control) Rules, 2011 and the Goa Air (Prevention and Control) Rules, 2011 construction projects are charged fees under the Air Act and the Water Act for Consent to Establish and Operate, based on the cost of Sewage treatment plant/diesel generator set installed at the project.

Chairman further brought to the attention of the members that construction projects should be charged Consent fees for Establishment and Operate, based on the entire cost of the project including the Sewage treatment plant and diesel generator set. The members expressed that such a proposal would unnecessarily burden the individuals, who are local residents who are procuring dwelling units.

It was decided that a detailed study on this proposal be made and put up at the next Board meeting.

Agenda item no. 19

Levy of fees for applications received for Consent to Establish / Consent to Operate for projects of the State / Central Government Departments / Autonomous Bodies / Defence establishments.

Chairman informed the members that the Board is in receipt of applications from Indian Navy (INS Hansa), Goa Medical College Hospital and Kadamba Transport Corporation, for Consent to Establish / Consent to Operate for projects and the inability on the part of these Institutions / Corporation for want of details of the investment made in land, building, plant & machinery. Their applications are also pending since the quantum of late as well as the present fee was large. He further informed that Goa Medical College Hospital and Kadamba Transport Corporation had informed the Board that they have moved a proposal for payment of fees and late fees to the Government and were awaiting a decision.

After detailed discussion, it was decided that a period of six months be granted to Government departments, so as they were able to move a proposal to seek approval from the State Government in order to make the required payments.

Agenda item no. 20

Strengthening of the Goa State Pollution Control Board

Chairman informed the members that a report on strengthening of the Goa State Pollution Control Board was sent to all the members and was now tabled at the meeting. He clarified that the Board has been assigned the following Statutory responsibilities under the following Acts and Rules.

i.	The Water (Prevention and Control of Pollution) Act 1974
ii.	The Air (Prevention and Control of Pollution) Act, 1981
iii.	The Water (Prevention and Control of Pollution) Cess Act, 1977
iv.	The Environment (Protection) Act, 1986 and the Rules made thereunder:
a.	The Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules,

	2008
b.	The Municipal Solid Waste (Management and Handling) Rules, 2000
c.	The Bio-Medical Waste (Management and Handling) Rules, 1988
d.	The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989
e.	The Batteries (Management and Handling) Rules, 2001
f.	The Plastic (Manufacture, Usage and Waste Management) Rules, 2009
g.	E-Waste (Management and Handling) Rules, 2011

He further informed that in order to achieve its mandate, he had proposed that a Regional office be established in South Goa and a proposal to this effect was sent to the State Government for providing adequate office premises at the old Collectorate building at Margao.

He further informed that the present laboratory of the Board on the 4th floor of Dempo Towers was inadequate and the Board has sought land from the Government of Goa. The land belongs to the Government at Department of Science Technology and Environment. He further informed that an advanced chemical laboratory would be set up on this location.

The members discussed the report in detail and after seeking clarifications as required approved the proposal which includes creation of the following posts:

Sr.	Name of the post proposed	No. of posts	Pay scales
1.	Junior Environmental Engineer (Civil)	09	As approved by the Government of Goa.
2.	Junior Environmental Engineer (Mechanical)	02	
3.	System Administrator	01	
4.	Network Engineer (Software)	01	
5.	Network Engineer (Hardware)	02	
6.	Senior Law Officer	01	
7.	Law Officer	01	
8.	Assistant Law Officer	01	
9.	Junior Law Officer	01	
10.	Drivers	07	

It was further decided to forward this proposal for creation of posts, as approved to the Director, Department of Science, Technology & Environment for obtaining approval from the State Government:

Agenda item no. 21

Providing Insurance cover to the staff of the Goa State Pollution Control Board.

Chairman informed the members that the staff of the Board are required to attend to inspections / carrying out water and air sampling in hazardous situations, including stack monitoring. He further informed that it would be in the interest of the employees that a Group Personal Accident Insurance Policy was made so that in the event of an accident adequate compensation to the employee / dependent family is available. He further informed that United India Assurance Company had submitted a proposal for Group Insurance Claim of Rs. 3 lakhs per employee which would include Personal Accident Insurance and Medi-claim.

It was further informed that an approximate expenditure on this account would be Rs. 6 lakhs per annum for 127 staff of the Board.

Chairman further clarified to the members that presently the employees are entitled for reimbursement of expenditure on all medical bills certified by Government doctors and other Government approved hospitals for self and dependent family members.

After a detailed discussion, it was approved that all the Board employees be covered for Personal Accident Insurance of Rs. 5 lakhs each and since all the employees are entitled for reimbursement of medical expenditure certified by Government doctors and Govt. approved hospitals, there was no requirement for a Medi-claim Policy.

Agenda item no. 22

Revision of pay scales of the post of the Member Secretary, Goa State Pollution Control Board.

Chairman informed the members that the Member Secretary of the Goa State Pollution Control Board is appointed by the State Government as per Rule 4(2)(f) of the Water (Prevention and Control of Pollution) Act, 1974, on a full time basis, possessing qualifications, knowledge and experience of scientific, engineering or management aspects of pollution control.

Chairman further informed the members that the Government approved creation of post of Member Secretary vide letter no. 5/20/87/STE-DIR/Part-VII/639 dated 10th August, 2011 in the pay scale of Rs. 15600-39100 + Grade pay of Rs. 7600/-.

Chairman further informed the members that the Member Secretary of the Board reports to the Chairman and all other Board employees to report to member Secretary including the Sr. Environmental Engineer and Scientist 'D'. He further stated that the Sr. Environmental Engineer and Scientist 'D' had the same pay scale as that of the Member Secretary and this issue requires to be redressed. He further stated that the post of Member Secretary being a full time with enormous work load needs to be upgraded to Pay Band – 4 – Rs. 37400- 67000 + Grade pay of Rs. 8700/-

After discussion the members approved to upgrade the pay scale of the post of Member Secretary, Goa State Pollution Control Board to Pay Band – 4 – Rs. 37400- 67000 + Grade pay of Rs. 8700/- and to forward this proposal to the Director, Department of Science, Technology & Environment for obtaining necessary approval from the State Government and notifying the same.

Agenda item no. 23

Enhancement of pay scales of the post of Drivers in the Board

The proposal for enhancement of the pay scales of the post of Drivers was placed before the members. It was informed that the Drivers are involved in extensive field work to carry out inspections after work hours, including Saturday / Sunday and Holidays. The members desired to know whether other Government departments also had such a facility. After clarifications it was informed that all Government Drivers are on the pay scale of Rs. 5200 – 20200 + Grade pay of Rs. 1900/- as of the Board at present.

It was suggested that the Grade pay be maintained at Rs. 1900/- and if required over time or a special allowance could be considered. The members further informed that the staff of Government Printing Press also have a facility where they are paid over time, since they work overtime after office hours.

After discussions, it was decided to study various proposals connected with payment of allowances and over time allowances to Drivers and the same may be put up at the next Board meeting.

Agenda item no. 24

Retirement age to the staff of the Board

Chairman informed the members that as per the Rules of the State Government, the employees retire at the age of 60 years. Since the Goa State Pollution Control Board follows the Rules and regulations as being provided to the employees of the Government of Goa, the retirement age for the employees of the State Government be maintained at 60 years.

The members agreed to maintaining the age of retirement to the staff of Goa State Pollution Control Board at 60 years and accordingly send a proposal to the Director, Department of Science, Technology & Environment for notifying the same in the Recruitment Rules.

Agenda item no. 25

Issue of Consent to Operate/Renewal of Consent under the Water Act and the Air Act.

Chairman informed the members that as per decision taken by the Board in its 74th meeting (Special meeting) held on 06/10/2006 all applications for Consent to Operate - New/ Renewal of Green small scale enterprise were issued with the approval of the Chairman.

Accordingly Consent to Operate - New and Renewal of Green small scale enterprises are being issued with the approval of the Chairman. About 50 applications for Consent to operate - New/Renewal of Consent to Operate are being placed before the TAC every week. The TAC is unable to process more than 25 applications per week.

After deliberations it was decided to place only applications for Consent to Establish, Consent to Operate New and Renewal of Consent to Operate for Red category of Large scale enterprise, Medium scale enterprise and small scale enterprises before the TAC adopting the risk based approach. Whereas, applications for Consent to Establish, Consent to Operate New and Renewal of Consent to Operate for Orange category industries and Green category industries for large, medium and small are to be processed internally and issued Consent with approval of Chairman.

Agenda item no. 26

Proposal for construction of Laboratory building for the Goa State Pollution Control Board.

Chairman informed the members that the laboratory of the Board is presently functioning on the 4th floor of the building, wherein analysis in respect of Water / Air samples are being carried out. Since the space on the 4th floor is inadequate to meet the laboratory needs of the Board taking into account the number of analysis being undertaken and as the laboratory consists of fume hoods and there is discharge of waste water after conducting analysis into the sewage pipe line of the building, which is not as per the norms of the Water Act and the Air Act, the Board is required to have an effluent treatment plant for disposal of such waste water.

Chairman informed the members that the earlier proposal made by the Board to the Goa Industrial Development Corporation for acquisition of land around 10000 sq. mtrs. at Verna Industrial Estate was rejected by the Goa Industrial Development Corporation. It was further informed that the plot admeasuring 4800 sq. mtrs. was available at Saligao and which is presently in possession of the Department of Science, Technology & Environment. It was stated that a proposal could be made to the Government of Goa, Department of Science, Technology & Environment, requesting for allocation of this plot to the Goa State Pollution Control Board to establish its own laboratory building for chemical and other analysis.

After discussion, it was approved that the proposal be forwarded to the Director, Department of Science, Technology & Environment for obtaining necessary approval from the State Government.

The land belonging to the Government at Department of Science Technology and Environment would be an ideal location. He further informed that an advanced chemical laboratory would be set up on this location.

The expenditure towards construction of the laboratory building shall be met from the funds of the Board / funding from the Ministry of Environment and Forests / Central Pollution Control Board.

109th Meeting of the Board

In the 109th Meeting the Board took the following decisions:

Agenda Item no. 1

Draft amendment to the Goa Water (Prevention and Control of Pollution) Rules, 1988 and the Goa Air (Prevention and Control of Pollution) Rules, 1989.

The members were informed that the Director, Department of Science, Technology & Environment had issued a Notification where the Consents fees to be paid by the mining units were based on the tonnage production, wherein 80% of the fee contribution was to be sent to the State Government and 20% of the fees to the Goa State Pollution Control Board. The mining companies aggrieved on the Notification, approached the Hon. High Court and challenged the fee structure, stating there was a quantum jump in the fees payable.

During the course of the hearing in the Hon. Court it was observed that the Rules of Business were not followed, a statement to this effect was made by the Counsel of the State Government in the Hon. High Court, and that the fee structure would be re-notified.

Since the file pertaining to the re-notification of the fee structure was moved by the Law Department, after making necessary changes, as per the Air and Water Acts, they submitted that there should be consultation with the Board, based on the recommendations of the Board members, the file is to be moved through the Department of Science, Technology & Environment to the Goa State Pollution State Government.

During the process of re-drafting the Board prepared a draft notification, taking into account the air monitoring and water quality, the Board has to conduct for the mining units, and also modified the categorization and fee structure.

Chairman informed the members that as decided during the 108th meeting wherein it was decided to waive the late fees and past fees of the units not operating without the Consent of the Board, it is decided that the waiver of fess / late fees be made effective till 31st December, 2013.

The members perused the proposed amendment to the Goa Water (Prevention and Control of Pollution) (amendment) Rules, 2013 and the Goa Air (Prevention and Control of Pollution) (amendment) Rules, 2013, and resolved to recommend the same to the State Government for approval and notification with the following substitution:

a. Table no. 9 in the Goa Water (Prevention and Control of Pollution) (amendment) Rules, 2013 to be substituted as follows:

Table no. 9

Every mining lease or group of contiguous leases having common Environmental Clearance issued by the Ministry of Environment and Forests, Government of India	Re. 1.00 per ton of production capacity per annum as specified in the Environmental Clearance issued by the Ministry of Environment and Forests, Government of India, or 5 lakhs whichever is more, in addition to the fees to be paid based on capital investment as specified in Table no. 2
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b. Table no. 9 of the Goa Air (Prevention and Control of Pollution) (amendment) Rules, 2013 to be substituted as follows:

Table no. 9

Every mining lease or group of contiguous leases having common Environmental Clearance issued by the Ministry of Environment and Forests, Government of India	Rs. 2.00 per ton of production capacity per annum as specified in the Environmental Clearance issued by the Ministry of Environment and Forests, Government of India, or 10 lakhs whichever is more, in addition to the fees to be paid based on capital investment as specified in Table no. 2.
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The representative of the Department of Mines and Geology suggested addition of the following:

Para 22 (10) of page 33 of 34	of the Goa Water (Prevention and Control of Pollution) (amendment) Rules, 2013
Para 23 (10) of page 34 of 34	
Para 22(11) of page 31 of 32	of the Goa Air (Prevention and Control of Pollution) (amendment) Rules, 2013
Para 23 (11) of page 31 of 32	

“Renewal of lease - Form ‘K’ as applicable”.

The members agreed for the same.

110th Meeting of the Board

In the 110th Meeting the Board took the following decisions:

Agenda Item No. 1

Confirmation of the minutes of the 108th meeting and 109th meeting (Special meeting) of the Goa State Pollution Control Board held on 11th February, 2013 and 15th February, 2013 respectively.

The members perused and confirmed the minutes of the 108th meeting and 109th meeting (Special meeting) of the Goa State Pollution Control Board held on 11th February, 2013 and 15th February, 2013 respectively so as to enter the same in the minutes book.

Agenda Item no. 02

(a) Follow up action on the decision taken at the 108th Meeting of the Board.

Agenda item no. 4, 5, 6, 7, 8, 9, 10 – The members noted the action taken by the Board

Agenda item no. 11 – The members approved for grant of Consent to Establish (expansion) under the Water Act and the Air Act to M/s Watson Pharma Pvt. Ltd., Application for Consent to Establish (expansion) under the Water and Air Acts of M/s Watson Pharma Pvt. Ltd., plot nos. A3 to A-6, Verna Industrial Estate, Phase I-A to M/s Watson Pharma Pvt. Ltd. for their pharmaceutical formulation manufacturing unit, as approved by the HPCC and subject to implementation of rain water harvesting and ground water recharge measures.

Agenda item no. 12 – The members noted that Consent to Establish under the Water and Air Acts to M/s Leading Hotels Limited has not been issued as the project proponent has to submit CRZ clearance.

Agenda item no. 14 – The members noted the action taken by the Board.

Agenda item no. 15 – The members perused the minutes of the Sub-Committee appointed by the Board to decide on the proposal submitted by Captain Lobo with regard to his project i.e for establishment of a Pilot plant for treatment of wash water / waste water from the drains of the Mapusa Municipal Council. It was informed that a NOC from the Mapusa Municipal Council was awaited and after receipt of the same, the work on the Pilot plant would commence.

Agenda item no. 17 – The members noted the action taken by the Board with regard to M/s Persistent System, Verna Industrial Estate.

Agenda item no. 18 – The members perused the issue with regard to of levying fee for construction of residential projects applying for Consent to Establish / Operate under the Water Act and Air Act.

An exercise was undertaken by the Board by obtaining references through the internet from other State Boards i.e (a) Rajasthan State Pollution Control Board (Environmental Guidance Manual – Building and Construction projects) (b) Delhi Pollution Control Committee (A reference of the Board meeting dated 09/12/2009 is taken in which the new structure for obtaining Consent fee was decided.) (c) West Bengal Pollution Control Board – An extract of the Annual Report 2007-2008 (d) Maharashtra Pollution Control Board – A reference of the 21st Consent Committee Meeting held on 25/03/2013) which were placed before the members.

It was further brought to the notice of the members that presently the Board issues Consent to Operate Sewage Treatment plant for residential complexes, whose total built up area exceeds 20,000 sq. mtrs. It was further stated that for purpose of Consent fee payable to the Board, only the value of STP was considered and it was explained that this calculation was resulting in a revenue loss to the Board.

Thereafter the members decided to adopt the fee structure of West Bengal Pollution Control Board, where Consent to Establish / Operate for housing complexes, commercial complexes, office complexes including IT and infrastructural and town development projects was decided on the basis of the total built up area and the total estimated investment. It was further decided that recognized charitable organizations would be permitted a concession of 25% of the total fees.

A. Structure of application fee for 'Consent to Establish' and 'Consent to Operate' for all industrial units (other than health care establishment and ship braking industry).

Capital investment on land, building, plant & machinery (without capital investment on pollution control equipment)	Fees for Consent to Establish (Rs.)			Fees for Consent to Operate (per year) (Rs.)		
	Red	Orange	Green	Red	Orange	Green
Upto Rs. 5 lakh	300	200	100	650	400	200
Above Rs. 5 lakh to Rs. 10 lakh	600	400	200	1,650	1,000	450
Above Rs. 10 lakh to Rs. 25 lakh	1,250	850	400	2,250	1,450	700
Above Rs. 25 lakh to Rs. 50 lakh	2,500	1,700	850	4,450	2,900	1,400
Above Rs. 50 lakh to Rs. 1 crore	15,000	9,000	4,200	7,600	5,000	2,500
Above Rs. 1 crore to Rs. 1.5 crore	21,000	15,000	6,300	16,000	10,000	5,000
Above Rs. 1.5 crore to Rs. 5 crore	28,000	18,000	8,400	19,000	12,500	6,000
Above 5 crore to Rs. 10 crore	0.075% of capital investment	0.063% of capital investment	0.06% of capital investment	25,500	20,000	16,000
Above Rs. 10 crore to 50 crore				50,000	42,000	33,000
Above 50 crore to Rs.				1,25,000	1,00,000	80,000

100 crore						
Above Rs. 100 crore to Rs. 500 crore	0.075% of capital investment subject to max. 30 lakh	0.063% of capital investment subject to max. 30 lakh	0.06% of capital investment subject to max. 30 lakh	2,50,000	2,00,000	1,50,000
Above Rs. 500 crore				5,00,000	4,00,000	3,00,000

B. Structure of application fee for 'Consent to Operate' for Housing Complexes, Commercial Complexes, Office Complexes including IT and Infrastructural and Town Development Projects.

Specification	Fees for Consent to Establish (Rs.)	Fees for Consent to Operate (per year)
Housing Complexes, Office Complexes including IT & Infrastructural and Town Development Projects Total Built up area (sq.m)		On the basis of the Capital investment as mentioned in table (A) subject to a maximum of Rs. 1,00,000/-
20,000 - < 50,000	2,00,000	Non-profit organizations will be allowed a concession of 25% on the fees.
50,000 - < 1,00,000	4,00,000	
1,00,000 - < 1,50,000	6,00,000	
1,50,000 and above	10,00,000	

Agenda item no. 19 – The Government departments have been informed of the decision taken by the Board with regard to grant of six months period for payment of fees and late fees.

Agenda item no. 20 - The members noted the proposal regarding strengthening of the Goa State Pollution Control Board which has been forwarded to the Department of Science, Technology & Environment for seeking approval of the State Government.

Agenda item no. 21 – The members noted with regard to providing insurance cover to the staff which is forwarded to Insurance companies to get more details from them.

Agenda item no. 22 – Members were informed that the scale of the post of the Member Secretary, Goa State Pollution Control Board has been revised by the State Government, an intimation in this regard has been received by the Board.

Agenda item no. 23 – It was informed that during the last Board meeting, the issue concerning payment of overtime to Drivers was discussed and it was decided that information be sought from the Government Printing Press (GPP), where overtime is paid to its employees on account of work done beyond normal duty hours and on Sundays / holidays. It was informed that after enquiries it was revealed that GPP was registered under the Factories Act and therefore comparison with the Goa State Pollution Control Board could not be made.

Member Secretary informed that the Board carries out various activities like ambient quality monitoring, water quality monitoring and sometimes noise monitoring at odd hours, which also include Saturday / Sundays / Holidays. It was also explained that on account of large number of complaints received by the Board such monitoring needs to be carried out even at night time in order to address the issues correctly. It was stated that the present system of payment of overtime to the Drivers meant that the overtime paid was negligible and the procedures for claiming of such overtime were laborious. The issue was discussed at length and it was decided that all Drivers be paid a monthly allowance of Rs. 1000/- towards their

overtime and Dearness allowance while on duty. It was further decided that when Drivers are on long leave (Earned leave / Commuted leave), such allowance would be admissible on a pro-rata basis.

Agenda item no. 24 – The members noted that the proposal for maintaining the age of retirement to the staff of Goa State Pollution Control Board at 60 years has been forwarded to the Department of Science, Technology and Environment.

Agenda item no. 26 – The members noted the proposal of the Board for constructing of laboratory building for the Goa State Pollution Control Board and approved for making necessary payments on determination of the rates by the Collector, North Goa, with regard to the rate of land to the Director, Department of Science, Technology & Environment.

(b) Follow up action on the decision taken at the 109th Meeting of the Board.

Agenda item no. 1 – The members noted that draft amendment to the Goa Water (Prevention and Control of Pollution) Rules, 1988 and the Goa Air (Prevention and Control of Pollution) Rules, 1989 have been forwarded to the Department of Science, Technology & Environment.

Agenda Item no. 03

Projects undertaken by the Board - National Water-quality Monitoring Programme (NWMP)

The members perused and noted the different projects undertaken by the Board under the National Water-quality Monitoring Programme (NWMP) supported by the Central Pollution Control Board (CPCB), the Goa State Pollution Control Board (GSPCB) at selective 50 locations of surface water sources – i.e. along the rivers, lakes, reservoirs and canals as well as certain groundwater sources – i.e. bore wells within Industrial Estates.

Agenda item no. 4.

Application of M/s Jimcap Electronics Private Limited., Plot no. L-12, Verna Industrial Estate, Verna Goa, for Consent to Establish (expansion) under the Air Act and Water Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Jimcap Electronics Private Limited for expansion in the manufacturing capacities of its products (i) Electrical capacitors from the existing capacity of 310 lakhs nos./annum to 650 lakh nos./annum, an increase by 340 lakhs/annum (ii) Metalized Poly propylene film (MPP film) from the existing capacity of 600 MT/annum to 1600 MT/annum, an increase by 1000 MT/annum and (iii) Power capacitors with a capacity of 3.50 lakh nos./annum and increase in the power load requirement of the nit from the existing 335 KVA to a total of 372 KVA, an increase by 37 KVA.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Jimcap Electronics Private Limited, Plot no. L-12, Verna Industrial Estate, Verna Goa, for Consent to Establish (expansion) under the Air Act and Water Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 5.

Application of M/s Mormugao Port Trust (Berth no. 11), Chalta no. 1 of PT sheet no. 31, Mormugao Goa, for Consent to Establish under the Air Act and Water Act.

Chairman informed the members that MPT had submitted an application for Consent to Establish under the Air Act and the Water Act to establish a fully mechanized system for coal/coke handling facility at berth no. 11. He further stated that this facility would have a capacity to handle two million tons of coke / coal/per annum. It was reminded that GSPCB had withdrawn the Consent to Operate at berth no. 10 and 11 in September, 2012 on account of large scale air pollution within and around the Port area.

Members expressed fears that such a facility especially considering that of M/s Jindal South West at berth no. 5A and 6A and the proposed Adani Port at berth no. 7 where totally almost Twelve million tons of coke/coal would be handled would lead to an increase in dust pollution in the Port area resulting from the cumulative effect of both these berths handling coal / coke

After detailed discussions, it was decided that MPT be asked to carry out a detailed Environmental Impact Assessment Study on the effects of handling coal / coke at Berth nos. 5A, 6A and 7 and submit the same to the Board for processing of the applications for Consent to Establish for berth no. 11 to handle 2 million tons/annum could be considered.

Agenda item no. 6

Installation of Sewage Treatment Plants by the Hotel units.

Chairman informed the members that at its 70th (Special) meeting held on 07/04/2006, vide Table item no. 5, the Board had decided that hotels having 25 rooms or more should compulsorily install a sewage treatment plant.

Chairman further informed that numerous complaints were received by the Board from areas where no sewerage network existed due to over flow of septic tanks and this was creating a health and sanitation issue when flats / buildings were constructed in such areas.

It was further stated that considering the per capita consumption of water to be 135 litres/day, it would be appropriate that any residential complex, housing 24 flats and above should mandatorily install a Sewage Treatment Plant.

After discussions it was unanimously decided that all residential complexes having 24 flats and above should install a Sewage Treatment Plant in order to prevent water contamination due to overflowing septic tanks / soak pits. It was further decided to forward this decision to the State Government for making necessary amendments in its Building Bye-Laws.

Further the members also highlighted that the night soil tankers carry the sewage from the hotels / establishments and at times discharge the same in the water bodies, thereby polluting the water bodies. In order to have a control on such activities, the members proposed that the night soil tankers be registered with the Board and this decision be placed before the appropriate authorities for implementation.

Agenda item no. 7

Extension of the term of contractual appointment of the Legal Assistants.

The members perused the item with regard to grant of four months extension in the contractual appointment of the Legal Officers of the Board, Mr. Antonio Godinho and Miss Pranali R. Dessai. After deliberations the members decided to extend the term of the contractual appointment by 12 months from the date of initial appointment on a consolidated salary of Rs. 15,000/- per month.

Agenda item no. 8.

Application of M/s Healthway Hospital Pvt. Ltd., Survey no. 132/1, Ella, Tiswadi Goa for Consent to Establish (New) under the Air Act and the Water Act.

The Chairman informed the members that the Technical Advisory Committee of the Board has recommended the application for grant of Consent to Establish (New) under the Water Act and the Air Act to M/s Healthway Hospital Pvt. Ltd. For construction of a 160 bedded hospital at Ella, Tiswadi, after the deficiencies in the inspection report of the Board are complied with.

The members approved the proposal of M/s Healthway Hospital Pvt. Ltd., Survey no. 132/1, Ella, Tiswadi Goa, for Consent to Establish under the Water Act and the Air Act, subject to the condition that the hospital complies with the recommendations of the TAC of the Board and with the Bio-medical waste (Management and Handling) Rules, 1998.

Agenda item no. 9

Application of M/s Manipal Hospital, Plot no. 164/1, Dr. E. Borges Road, Dona Paula, Goa, for Consent to Establish (expansion) under the Air Act and the Water Act.

The Chairman informed the members that the Technical Advisory Committee of the Board has recommended the application for grant of Consent to Establish (expansion) under the Water Act and the Air Act to M/s Manipal Hospital, for expansion of the existing hospital to a proposed 280 bedded hospital at Dona Paula, after the deficiencies in the inspection report of the Board are complied with.

The members approved the proposal of M/s Manipal Hospital, Plot no. 164/1, Dona Paula, Goa, for Consent to Establish under the Water Act and the Air Act, (expansion) subject to the condition that the hospital complies with the recommendations of the TAC of the Board and with the Bio-medical waste (Management and Handling) Rules, 1998.

Agenda item no. 10

Application of M/s Birla Furukawa Fibre Optics Limited, Plot no. L-62 to L-64, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Establish (expansion) under the Air Act and the Water Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Birla Furukawa Fibre Optics Limited for expansion in the manufacturing capacities of (a) Optical fibre from its existing capacity of 60,00,000 kms/year to an increase by 20,00,000 kms/year, totaling it to 80,00,000 kms/year. (b)

Increase in power load from the existing 1500 KVA to an increase by 1500 KVA, totaling it to 3000 KVA. (c) Increase in water requirement from the existing 35m³/day to an increase of 50 m³/day, totaling it to 85 m³/day.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Birla Furukawa Fibre Optics Limited, Plot no. L-62 to L-64, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Establish (expansion) under the Air Act and the Water Act as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 11

Application of M/s Indoco Remedies Limited, Plot no. L-32, 33 & 34, Plant – II, Verna Industrial Estate, Verna, Salcete Goa for Consent to Operate under the Air Act and Water Act and Hazardous Waste Authorization (expansion)

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Indoco Remedies Limited, for (a) manufacture of additional new product i.e tablets with a capacity of 6240 lakhs per annum (b) Increase in water requirement from the existing 60 m³/day to 100 m³/day and fresh power connection of 2500 KVA from Goa Electricity Board.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Indoco Remedies Limited, Plot no. L-32, 33 & 34, Plant – II, Verna Industrial Estate, Verna, Salcete, Goa for Consent to Operate under the Air Act and Water Act and Hazardous Waste Authorization (expansion) as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 12

Application of M/s Himachal Futuristic Communication Limited, Plot no. L-35, 36, 37, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Operate under the Air Act, the Water Act and Hazardous Waste Authorization (expansion).

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Himachal Futuristic Communication Limited for (a) Expansion in the manufacturing capacities of its products i.e Optical fibre cable from the existing capacity of 30000 kms/annum to a proposed 48000 kms/annum, an increase by 18000 km/annum. (b) Increase in power requirement of the unit from the existing 380 KVA to 680 KVA, an increase by 300 KVA. (c) Increase in the water requirement from the existing 5m³/day to a proposed 10 m³/day, an increase by 5 m³/day.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Himachal Futuristic Communication Limited, Plot no. L-35, 36, 37, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Operate under the Air Act, the Water Act and Hazardous Waste Authorization (expansion) as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 13

Application of M/s Sanofi India Limited, Plot no. L-121, Phase III, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Operate (expansion) under the Air Act and Water Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Sanofi India Limited, for expansion in the manufacturing capacity of its pharmaceutical products i.e tablets from the existing 4805.95 million nos./annum to 6090 million nos./annum.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Sanofi India Limited, Plot no. L-121, Phase III, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Operate (expansion) under the Air Act and Water Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 14

Application of M/s Schiffer & Menezes India Pvt. Ltd., Plot no. L-27, Phase II, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Establish and Consent to Operate (expansion) under the Air Act and Water Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Schiffer & Menezes India Pvt. Ltd for (a) manufacture of toothbrushes and caps with a capacity of 60 million nos./annum (b) change in power supply of 1000KVA from Reliance Energy to Department of Electricity, Govt. of Goa.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Schiffer & Menezes India Pvt. Ltd., Plot no. L-27, Phase II, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Establish and Consent to Operate (expansion) under the Air Act and Water Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 15

Application of M/s Abott India Limited, Plot no. L-18 and L-19, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Establish and Consent to Operate (expansion) under the Air Act and Water Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Abott India Limited for increase of pharmaceutical products from the existing 4880 KI/annum to 7100 KI/annum without additional investment.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal M/s Abott India Limited, Plot no. L-18 and L-19, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Establish and Consent to Operate (expansion) under the Air Act and Water Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 16

Application of M/s Syngenta India Ltd., Plot no. 28, Santa Monica Works, Corlim, Ilhas Goa, for Consent to Establish (expansion) under the Air Act and Water Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Syngenta India Ltd., for increase in the production of Thiamethoxam from 3500 tons/annum to 4300 tons/annum.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Syngenta India Ltd., Plot no. 28, Santa Monica Works, Corlim, Ilhas Goa, for Consent to Establish (expansion) under the Air Act and Water Act as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 17

Application of M/s Lupin Limited, Plot no. B-15, Phase IA, Verna Industrial Estate, Verna Goa, for Consent to Establish (expansion) under the Air Act and Water Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Lupin Limited for (a) increase in the production capacity of its pharmaceutical products i.e cardiovascular, anti T.B, anti-diabetes, NSAID, anti- depression and Oral generic tablets from the present capacity of 250 lakhs/day to 450 lakhs/day, an increase by 200 lakhs/day and capsules from the present capacity of 20 lakhs/day to 40 lakhs/day, an increase by 20 lakhs/day (b) Increase in water requirement from 240 Kld to 390 Kld, an increase by 150 Kld.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Lupin Limited, Plot no. B-15, Phase IA, Verna Industrial Estate, Verna Goa, for Consent to Establish (expansion) under the Air Act and Water Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 18

Application of M/s Micro Labs Limited, Plot no. S-155 to S-159, Phase III, and Plot no. N-1, Phase IV, Verna Industrial Estate, Verna, Goa, for Consent to Operate (expansion) under the Air Act and Water Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Micro Labs Limited for (a) Expansion in the pharma formulation plant for enhancing the manufacturing capacity of tablets from the existing 4 million tablets/day to 10 million tablets / day (b) Amalgamation of plot no. S-155 to s-159, Phase III and Plot no. N-1, Phase IV.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Micro Labs Limited, Plot no. S-155 to S-159, Phase III, and Plot no. N-1, Phase IV, Verna Industrial Estate, Verna, Goa, for Consent to Operate (expansion) under the Air Act and Water Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 19

Application of M/s Oriental Containers Limited, Plot no. 327-332, Kundaim Industrial Estate, Kundaim Goa., for Consent to Operate (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Oriental Containers Limited for (a) Expansion in the manufacturing capacity of Plastic Closures from its existing capacity of 2700 million nos./annum to a proposed 4800million nos./annum an increase of 1200 million nos./annum. (b) Water requirement of 10 KI for factory and 2.5 KI for domestic purpose.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Oriental Containers Limited, Plot no. 327-332, Kundaim Industrial Estate, Kundaim Goa., for Consent to Operate (expansion) under the Water Act and the Air Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 20

Application of M/s Umicore Anadeya India Pvt. Ltd., Plot no. 23 – 26, Phase III A, Sancoale Industrial Estate, Sancoale, Goa, for Consent to Operate (expansion) under the Air Act and Water Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Umicore Anadeya India Pvt. Ltd., for expansion in the manufacturing capacity of 750 MT/month of zinc oxide.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Umicore Anadeya India Pvt. Ltd., Plot no. 23 – 26, Phase III A, Sancoale Industrial Estate, Sancoale, Goa, for Consent to Operate (expansion) under the Air Act and Water Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 21

Application of M/s Glynwed Pipe Systems India Private Limited, Plot no. L-148 and L-149, Verna Industrial Estate, Verna, Goa, for Consent to Operate (expansion) under the Air Act and Water Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Glynwed Pipe Systems India Private Limited for (a) manufacture of additional new product i.e Insulated copper wire coil with a capacity of 2.00 lakh nos./annum (b) sub-lease of additional built up premises with an area of 1596 sq. mtrs. in the existing sub-leased plots at L-148 and L-149, Verna Industrial Estate.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Glynwed Pipe Systems India Private Limited, Plot no. L-148 and L-149, Verna Industrial Estate, Verna, Goa, for Consent to Operate (expansion) under the Air Act and Water Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 22

Application of the Department of Science, Technology & Environment for Consent to Establish for setting up a Solid Waste Management Facility at Cacora at Survey no. 167-168 of Cacora Village, Quepem Taluka.

Chairman informed the members that the Government of Goa through the Department of Science, Technology & Environment submitted an application for Consent to Establish under the Air Act, Water Act and Authorization under the Hazardous Waste Rules, for establishing a Solid Waste Management Facility (SWMF) at Survey no. 167-168 of Cacora Village, Quepem Taluka. It was further stated that the proposed

facility had a capacity to handle 100 tons of Municipal solid waste per shift and it was proposed that this plant be established over an area of 65,000 sq. mtrs. It was further stated that Technical Advisory Committee of the Board at its meeting held on 21/10/2013 had discussed and approved that Consent to Establish be granted.

Briefly explaining the process to the members, Chairman stated that the facility would include material segregation and re-cycling stations, where the wet and dry waste would be segregated. He further explained that during the process of bio-methanation, methane gas would be generated, which in turn would be used to generate 0.5 MW of power, which would be of captive consumption for the plant. It was further explained that all the sorted material would be either re-cycled or utilized as fuel in cement kilns.

It was also stated that part of this solid waste would be composted and this compost would be utilized as a fertilizer. The members appreciated the technology proposed to be implemented and the Chairman informed that a delegation of officials and members of various Village Panchayats / Municipal authorities would be taken on a study tour to Germany, Italy and Austria, by the Government, where such a technology is presently being utilized. Considering the urgency of the matter, especially since the management of municipal solid waste is seen as a difficulty at various Municipal bodies / Village Panchayats, the members decided to grant Consent to Establish under the Air Act, Water Act and Authorization under the Hazardous Waste Rules for setting up a Solid waste Management Facility at Survey no. 167-168 of Cacora Village, Quepem Taluka.

Agenda item no. 23

Application of the Department of Science, Technology & Environment for Consent to Establish for setting up a Solid Waste Management Facility at Calangute / Saligao at Survey no. 112,114, 115 and 116 of Saligao Village, Bardez Taluka.

Chairman informed the members that the Government of Goa through the Department of Science, Technology & Environment submitted an application for Consent to Establish under the Air Act, Water Act and Authorization under the Hazardous Waste Rules, for establishing a Solid Waste Management Facility (SWMF) at Calangute / Saligao at Survey no. 112,114, 115 and 116 of Saligao Village, Bardez Taluka. It was further stated that the proposed facility had a capacity to handle 100 tons of Municipal solid waste per shift and it was proposed that this plant be established over an area of 94970 sq. mtrs. (64975 sq. mtrs. in Calangute Village and 29995 sq. mtrs. in Saligao Village). It was further stated that Technical Advisory Committee of the Board at its meeting held on 14/10/2013 had discussed and approved that Consent to Establish be granted.

Briefly explaining the process to the members, Chairman stated that the facility would include material segregation and re-cycling stations, where the wet and dry waste would be segregated. He further explained that during the process of bio-methanation, methane gas would be generated, which in turn would be used to generate 0.5 MW of power, which would be of captive consumption for the plant. It was further explained that all the sorted material would be either re-cycled or utilized as fuel in cement kilns.

It was also stated that part of this solid waste would be composted and this compost would be utilized as a fertilizer. The members appreciated the technology proposed to be implemented and the Chairman informed that a delegation of officials and members of various Village Panchayats / Municipal authorities would be taken on a study tour to Germany, Italy and Austria, by the Government, where such a technology is presently being utilized. Considering the urgency of the matter, especially since the management of municipal solid waste is seen as a difficulty at various Municipal bodies / Village Panchayats, the members decided to grant Consent to Establish under the Air Act, Water Act and Authorization under the Hazardous Waste Rules for setting up a Solid waste Management Facility at Calangute / Saligao at Survey no. 112,114, 115 and 116 of Saligao Village, Bardez Taluka.

Agenda item no. 24

Career Advancement Scheme / Flexible Complimenting Scheme to the Group 'A' and 'B' Scientific and Technical staff of the Board.

Chairman informed the members that the Central Pollution Control Board has implemented a Flexible Complimentary Scheme for the Technical / Scientific staff (Group 'A') and AICTE (All India Council for Technical Education) has got a Career Advancement Scheme for the teaching staff at various Engineering Colleges in the Country. He further stated that there were no promotional avenues for the Group 'A' and 'B' Scientific and Technical Staff of the Board.

Chairman suggested that since this issue requires detailed study a Sub-Committee be formed to suggest the implementation of the Flexible Complimenting Scheme at the Goa State Pollution Control Board. Accordingly, a Sub-Committee comprising of the following members was constituted to study this proposal and accordingly its report before the next Board meeting:

1. Dr. Vassudev Deshprabhu- Convenor
2. Nominee of the Director of the National Institute of Oceanography, Dona Paula. - Member
3. Dr. Marconi Correia - Member
4. Director, Dept. of Mines and Geology or his nominee - Member

Shri Sanjeev Joglekar, Environmental Engineer of the Board, shall assist the Sub-Committee in providing the necessary information.

Table Item no. 01

Application of M/s Glenmark Generics Limited, Unit – II, Plot no. S-7, Colvale Industrial Estate, Colvale, Bardez Goa, for Consent to Operate (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Glenmark Generics Limited, Unit – II for (a) expansion in manufacturing capacities of pharmaceuticals products i.e. tablets from the existing 3702.36 lakhs/annum to 8711.25 lakhs /annum, capsules from the existing lakhs /annum, capsules from the existing 1515.00 lakhs /annum to 1569.54 lakhs /annum and Ointments from the existing 30.30 lakhs/annum to 1466.52 lakhs /annum, (b) Increase in water requirement from the present 116m³/day to an additional requirement of 30m³/day at its existing location.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Glenmark Generics Limited, Unit – II, Plot no. S-7, Colvale Industrial Estate, Colvale, Bardez Goa, for Consent to Operate (expansion) under the Water Act and the Air Act, as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Table Item no. 02

Revision of the pay scale of the Accounts cum Administrative Officer of the Board.

The members were informed that as per the decision taken by the Board at its 94th meeting held on 12th August, 2009, vide Agenda item no. 9, the members had decided that the Assistant Accounts Officer shall

be In-charge / Section head of the Accounts and Administrative section of the Board. It was also decided to re-designate the post from Assistant Accounts Officer to Accounts cum Administrative Officer.

However, the pay to be paid to the re-designated post i.e. Accounts cum Administrative office was not decided and revised thereon. Shri Manohar Borkar was deputed to the Goa State Pollution Control Board from the Accounts department with effect from 30th July, 2009, and is since discharging / performing the duties of Accounts cum Administrative Officer.

Since the pay scale of the Accounts cum Administrative Officer in the Directorate of Accounts as well as in other Government Departments as well as in Autonomous bodies is PB-3-15600 – 39100 + Grade pay Rs. 5400, whereas the pay scale sanctioned by the Board is in PB-2- 9300 – 34100 + Grade pay Rs. 4600, which is of Assistant Accounts Officer (as per VIth Pay Commission).

Since the Accounts cum Administrative Officer is also designated as Public Information Officer as well as the Drawing and Disbursing Officer along with the Member Secretary of the Board and considering the duties / responsibilities and the quantum of work assigned as Accounts cum Administrative Officer and P.I.O of the Board, the pay scale of the Accounts cum Administrative Officer needs to be revised from PB-2- 9300 – 34100 + Grade pay Rs. 4600 to PB-3-15600 – 39100 + Grade pay Rs. 5400, which is at par with Government Departments and other Statutory and Autonomous bodies.

The members approved the revision of the pay scale and decided to forward the proposal to the Department of Science, Technology & Environment for obtaining Government approval.

Table Item no. 03

Adoption of Office Memorandum issued by the Department of Personnel, Government of Goa in respect to contractual appointments.

As per Rule 17, clause 6 of the Goa Water (Prevention and Control of Pollution), Rules, 1974 published in the Official Gazette on 23/09/1988, Chairman shall have the authority to make appointments to the posts of maximum pay of which does not exceed Rs. 6000/ (six thousand only) provided such appointments are reported to the Board at the next meeting.

The Member Secretary informed the members that the Government of Goa vide Office Memorandum no. 10/1/77-PER(Part) dated 21/08/2013 had approved certain procedures for making contractual appointments and a copy of the Office Memorandum was placed before the members. After discussing in detail it was resolved that:

“The Office Memorandum No. 10/1/77-PER(Part) dated 21/08/2013 of the Department of Personnel, Govt. of Goa, for making contractual appointments be adopted by the Goa State Pollution Control Board”.

“It was also resolved that the Chairman of the Board shall have the authority to make such appointments and subsequently inform the Board such appointments at its next meeting and while making such appointments, conditions stated in the Office Memorandum be followed”

Table item no. 4

Application of M/s Gas Authority of India Limited, Govt. of India Undertaking GAIL) for Consent to Operate under the Water Act and the Air Act (expansion).

Chairman informed the members that application of M/s GAIL for Consent to Operate under the Water and Air Act (expansion) for the proposed commissioning of spurline to supply natural gas to various companies within the State tapped from the main 24” Gokak-Goa gas pipeline was discussed at the 108th Board meeting.

The members approved for grant of Consent to Operate under the Water Act and the Air Act, subject to obtaining approvals from the Chief Controller of Explosives, preparation of Disaster Management Plan approved by the District Disaster Management Authority / Collector / District Magistrate.

III. Chairman brought to the notice of the members that the Annual Report of the Board for the year 2012-2013 has been forwarded to the members for perusal. He further informed the members that the Annual Report has been given a new look and the same was printed at the Government Printing Press. The members appreciated the initiatives take by the Chairman and staff of the Board in preparing the Annual report of the Board for the year 2012-13.

Dr. Vassudev Deshprabhu suggested that the Annual report should also comprise a small photograph of each of the Board member and the Management of the Board. The suggestion was accepted by the members and the same was approved to be taken into consideration while preparing the next Annual report of the Board for the year 2013-14.

111th Meeting of the Board

In the 111th Meeting the Board took the following decisions:

Agenda Item no. 01

Confirmation of the minutes of the 110th meeting of the Goa State Pollution Control Board held on 23rd October, 2014.

The members perused and confirmed the minutes of the 110th meeting of the Goa State Pollution Control Board held on 23rd October, 2014, so as to enter the same in the minutes book.

Agenda Item no. 02

Follow up action on the decision taken at the 110th Meeting of the Board.

Agenda item no. 02 – Agenda item no. 18, 4, 5, 6, 8 to 2, Table item nos. 1 to 4 – The members noted the same.

Agenda Item no. 03

Follow up action on the decision taken at the 108th meeting of the Board held on 10/06/2013.

Agenda item no. 04 – The members noted the exercise undertaken by the Board for auctioning the Tempo Traveler (Mobile Laboratory) bearing registration no. GA-01-T-8332. After deliberations it was decided that since expenditure is already incurred on advertisement, it is not feasible to re-advertise for the sale of the vehicle.

After deliberations it was decided to sell the vehicle to Mr. Lourenco Fernandes for an amount of Rs. 80,000/- as quoted by him.

Agenda item no. 26 – The members perused the item with respect to the proposal for construction of laboratory building for the Goa State Pollution Control Board and staff quarters on lease basis for a period of 99 years with a lease rent for the first 33 years @ of Rs. 25/- per sq. mtr. per year i.e Rs. 1,20,075/- per year, totaling to Rs. 39,62,475/- for a period of 33 years to be deposited in advance by the Goa State Pollution Control Board and the lease to be further extended beyond 33 years with mutual consent and the lease rent for the extended period of lease to be fixed at the end of 33 years.

After deliberation, the members decided to transfer a total amount of Rs. 39, 62,475/- as lease rent for the first 33 years @ of Rs. 25/- per sq. mtr. per year i.e Rs. 1,20,075/- per year or a period of 33 years to the Department of Science, Technology & Environment, Government of Goa, Saligao Goa.

Chairman informed the members that he had approached the Goa State Infrastructure Development Corporation, a Government of Goa Undertaking, for carrying out construction of the Board laboratory and staff quarters. However, GSIDC have informed that they are not in position to carry out the construction as they are already overburdened. After deliberations it was resolved as follows:

‘Chairman, Goa State Pollution Control Board is hereby authorized to appoint an Architect for preparation of design and drawings for the construction of laboratory building and staff quarters for the Goa State Pollution Control Board.’

Agenda Item no. 04

Follow up action on the decision taken at the 105th (Special) meeting of the Board held on 1st November, 2013

Table Item no. 01 – (b) – The members noted the order passed by the Hon’ble Supreme Court to e-auction the stacked ore. Chairman informed the members that the Directorate of Mines and Geology has informed the Board that for disposal of the stocked ore after e-auctioning, necessary permissions under the Air (Prevention and Control of Pollution) Act, 1981 and under the Water (Prevention and Control of Pollution) Act, 1974, have to be obtained by the auctioneer. After deliberations the members approved for grant of Consent under the Air (Prevention and Control of Pollution) Act, 1981 and under the Water (Prevention and Control of Pollution) Act, 1974, for disposal of stacked ore, only after e-auction takes place.

It was also decided that handling and transportation of the auctioned ore be monitored by the Board, and the Board could levy the charges incurred on the said monitoring of the concerned mining unit.

Agenda Item no. 05

Application of M/s Manipal Hospital, Plot no. 164/1, Dr. E. Borges Road, Dona Paula, Goa, for Consent to Operate (expansion) under the Air Act and the Water Act.

The members perused the agenda item and approved for grant of Consent to Operate under the Air Act and Water Act to the expansion of M/s Manipal Hospital, to a proposed 280 bedded hospital.

Chairman informed the members that he had granted Consent for a period of three months, pending final approval of the Board. Since the hospital authorities had approached him stating that they would like to carry out a trial run of the facilities prior to full-fledged opening of the hospital for the public. He also informed the members that he had personally visited the hospital premises and was satisfied with the facilities.

While discussing on this issue, the members expressed concern that adequate facilities for handling and treatment of bio-medical waste needs to be created in the State. It was further expressed that large hospitals especially the modern ones would need to install its own captive bio-medical disposal facility. After detailed discussion, members approved that all hospitals providing 250 beds and above would have to compulsorily install captive bio-medical waste facility to take care of its own bio-medical waste.

Agenda Item no. 06

Approval of the Revised Budget Estimates of the Goa State Pollution Control Board for the financial year 2013-2014 and Budget Estimate’s of the Board for the financial year 2014-2015.

Chairman placed before the members of the Revised Budget Estimates for the financial year 2013-2014 and Budget Estimates for the financial year 2014-2015 and informed that the budget expenditure for 2014-2015 was proposed at Rs. 1772.20 lakhs. Chairman also informed that an amount of Rs. 763 lakhs has been provided for salaries and related expenditure. An amount of Rs. 300 lakhs has been earmarked for construction of Board laboratory and staff quarters.

After detailed discussion, the Revised Budget Estimates for the financial year 2013-2014 and Budget Estimate of the Goa State Pollution Control Board for the financial year 2014-2015 was approved. It was also resolved to forward the same to the Department of Science, Technology & Environment, Govt. of Goa

Agenda item no. 07

Application of M/s Vani Agro Farms Pvt. Ltd., Survey no. 81/2-A, Amdai, Taripanto, Sanguem Goa, for Consent to Establish under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Vani Agro Farms Pvt. Ltd., for production of Extra Neutral alcohol with a capacity of 7950 KI/annum, Impure spirit with a capacity of 450 KI/annum and IMFL with a capacity of 8100 KI/annum.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Vani Agro Farms Pvt. Ltd., Survey no. 81/2-A, Amdai, Taripanto, Sanguem Goa, for Consent to Establish under the Air Act and the Water Act as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge and the recommendations listed in the agenda notes.

Agenda item no. 08

Application of M/s Vani Agro Farms Pvt. Ltd., Survey no. 81/2-A, Amdai, Taripanto, Sanguem Goa, for Consent to Establish (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Vani Agro Farms Pvt. Ltd., for the manufacture of beer with a capacity of 2.5 lakhs H.L/annum.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Vani Agro Farms Pvt. Ltd., Survey no. 81/2-A, Amdai, Taripanto, Sanguem Goa, for Consent to Establish (expansion) under the Air Act and the Water Act as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge and the recommendations listed in the agenda notes.

Agenda item no. 09

Application of M/s Tata Consultancy Services Ltd., Plot no. 17-B, 5A, 5 B and 5C, Tivim Industrial Estate, Tivim, Bardez, for Consent to Establish (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Tata Consultancy Services Ltd., for the manufacture of Bank notes processing systems (Númeron CV, BPS C1, Stacker, ENC, TPS, Base Plate Assembly, etc.)- 1000 nos./month, SMT and through hole printed circuit board assemblies (PCB assemblies) - 10000 nos./month, Electro-Mechanical Assemblies- 500 nos./month.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Tata Consultancy Services Ltd., Plot no. 17-B, 5A, 5 B and 5C, Tivim Industrial Estate, Tivim, Bardez, for Consent to Establish (expansion) under the Air Act and the Water Act as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 10

Application of M/s Berger Paints India Ltd., Plot no. 316 & 317, Kundaim Industrial Estate, Kundaim Goa, for Consent to Establish (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Berger Paints India Ltd., for the manufacture of Solvent based paint – 3500 KI/month, Distemper – 750 MT/month, Emission paint – 1800 kl./month, Resin - 2500 KI./month

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Berger Paints India Ltd., Plot no. 316 & 317, Kundaim Industrial Estate, Kundaim Goa, for Consent to Establish (expansion) under the Air Act and the Water Act as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 11

Application of M/s JSW Jigarh Port Ltd., Berth no. 4, Mormugao Port Trust, Mormugao Goa for Consent to Establish under the Water Act and the Air Act.

The Chairman informed the members M/s JSW Jigarh Port Ltd, has submitted a proposal to handle finished steel products such as coils, slabs, bars, channels etc – 41667 MT/month.

The members approved the proposal of M/s JSW Jigarh Port Ltd., Berth no. 4, Mormugao Port Trust, Mormugao Goa for Consent to Establish under the Water Act and the Air Act, subject to the condition that the unit obtains approval from the State HPCC on Industries.

Agenda item no. 12

Application of M/s Adani Mormugao Port Terminal Pvt. Ltd., Berth No 7, Mormugao Port Trust Mormugao Port Trust, Mormugao Goa for Consent to Operate under the Water Act and the Air Act.

The Chairman informed the members M/s Adani Mormugao Port Terminal Pvt. Ltd, has submitted a proposal for mechanized handling of coal / coke of 5.2 MTPA.

Chairman informed the members that MPT had also moved an application for granting of Consent to Establish for handling coal / coke at berth no. 11, by establishing a full mechanized facility. Chairman further pointed out that this proposal was discussed by the Board at its meeting held on 23/10/2013 and the Board had taken into account that berth no. 5A and 6A were already handling coal to the extent to 6.8 million tons/annum and the Board had granted Consent to Establish to M/s Adani Mormugao Port Terminal to handle 5.2 MT/annum at berth no. 7. The members at that meeting had taken a considered view and directed MPT to submit a comprehensive EIA concerning air pollution as a result of coal / coke handling at berth no, 5A, 6A and 7 and the likely impact of establishing berth no. 11 for handling 1.5 million tons/annum

The members discussed the proposal of M/s Adani Mormugao Port Terminal Pvt. Ltd in detail and approved the same.

Agenda item no. 13

Amendment in Notification issued by the Department of Science, Technology and Environment, Government of Goa, vide Official Gazette – Extraordinary, Series I, No.50 dated 10th March, 2000.

Chairman informed the members that the Town and Country Planning Department, Government of Goa, at its Board meeting held on 26/08/2013 had decided that 'the Town and County Planning Board agreed to maintain the norms of minimum 15 metres distance between soak pit / septic tank from the well. It was also decided that such wells should be registered with competent authority i.e Water Resource Department.

He further informed that Goa State Pollution Control Board have conducted a preliminary study of some selective/ representative wells in the State of Goa through one time analysis of 42 wells located in Tiswadi, Sanguem, Quepem, Canacona, Ponda, Pernem, Bicholim, Sattari and Dharbandora Talukas. The microbiological analysis include testing of 3 parameters, i.e: Total Coliform (TC), Fecal Coliform (FC), and E.Coli to ascertain its biological contamination, if any.

Based on the analysis of data it has been inferred as under:

- (i) Most of the wells are contaminated with TC and FC. In cases of sloppy terrains with terrain gradient from toilet to well, the TC and FC is very high ranging from 35-540 MPN/100 ml and 4-5-46 MPN/100 ml respectively for TC and FC. Hence, it is probable that there is possibility of seepage from septic tank/soak pit (ST/SP) to the well. It may be noted that the distance of the ST/SP from the wells in these cases range from 17 – 35 mtrs.
- (ii) In cases of flat terrain, higher levels of TC and FC are observed in loamy (sandy), lateritic and gritty soils with TC and FC content ranging from 15->1600 MPN/100 ml and 540 MPN/100 ml respectively. It may be noted that the distance of the ST/SP from the wells in these cases range from 10-50 mtrs. Where the maximum concentration of TC (>1600MPN/100ml) is observed in a well which is located at the distance between 10-16mts.
- (iii) The wells in a given area show either very high or low contamination of TC/FC when the distances of ST/SP from the wells is small and big respectively. Conversely, very high or low contamination is also observed when the distance is big and small respectively.

The Board discussed the issue at length and unanimously proposed that the minimum distance of septic tank / soak pit from the wells should not be less than 15 metres. It was also decided to communicate the same to the Department of Science, Technology & Environment for issue of a suitable Notification.

Agenda item no. 14

Purchase of a Tata Sumo vehicle for the Board office under the DGS & D rate contract

Chairman informed the members that the Board is required to conduct inspection with regard to Consent Management, Air Quality Monitoring, complaints etc. and present vehicles are not sufficient to meet the requirements.

While deliberating on the issue, the members suggested that a Mahindra Quanto was a better vehicle and also it costs less than Tata Sumo and since the Board does not possess a similar vehicle as yet, it was recommended that one be procured and utilized for monitoring purpose.

After deliberations, the members unanimously decided that:

‘The Goa State Pollution Control Board shall purchase a Mahindra Quanto vehicle for the Board office under the DGS & D rate contract scheme.’

Agenda item no. 15

Continuing Education Programmes for the staff of the Goa State Pollution Control Board

Chairman informed the members that the staff of the Board (Scientific and Technical) needs to be trained on the latest developments in technology related to Environment and Pollution Control. He further informed that he had a meeting with the Director of BITS Pilani, Goa Campus and has proposed for the following programmes:

- a. M. Tech in Environmental Engineering
- b. Ph.D in Environmental Science
- c. Short term training programmes.

After deliberations, the members agreed that imparting Continuing Education Programme for the staff of the Goa State Pollution Control Board would help the staff in acquiring knowledge on the latest trends in pollution control. After deliberations, the members authorized the Chairman of the Board to take action as required in the matter.

Agenda item no. 16

Representation from Alloy and Steel Manufacturers Association of Goa for using coal pulverizer in rolling mills as alternative fuel.

The Member Secretary informed the members that the Board had received a representation from Alloy and Steel Manufacturers Association of Goa for using coal pulverizer in rolling mills as alternative fuel. It was further informed that the Board had deputed Dr. Mohan Girap, Scientist ‘C’ and Mrs. Nandan Prabhudessai, Junior Environmental Engineer, of the Board to Kholapur to study the impact on environment due to utilizing of pulverized coal instead of furnace oil. The findings of the visit indicate that:

1. Requirement of higher grade of coal with reference to calorific value and lesser sulphur content.
2. Formation of ‘Ash’ as by-product which needs to be handled carefully to be used as raw material for value-added products (i.e. alternate use) instead of land filling.
3. Emission of ‘**Particulate matter**’ as the raw coal is crushed in a pulverizer between the hammers and the serrated liners. As such, it is mandatory to install an effective APC measures such as cyclone separator followed by wet or ventury scrubber.
4. Possibility of ‘**Fugitive emission**’ arising due to improper coal handling while storage and/or during transit/transportation.

The members further decided that in the absence of pollution control equipment as recommended by the Board and the continuous ambient air quality monitoring stations installed to the total satisfaction of the Board, all proposals for use of pulverized coal instead of furnace oil be rejected.

Table item no. 01

Application of M/s Yatch Heaven, Sancoale Bay, Plot no. 260/2, 260/9, 261/3, 261/9 and 307, Village Sancoale, Vasco Goa, for Consent to Establish under the Air Act and the Water Act.

Chairman informed the members that the Board is receipt of an application from M/s Yatch Heaven, Sancoale Bay, for establishing a Marina for 350 berths with associated facilities for boat / yatch repair, boat club, yatch training school, restaurant etc. on a proposed land of 50000 m², for obtaining Consent to Establish under the Water Act and the Air Act.

The members perused the agenda and objected to the same stating that the bio-diversity and marine life of the place will be affected as the famous window pane oysters would be wiped off due to discharge of sewage from this activity. The harvesting of oysters is the main livelihood of the Schedule tribe population of the State living in the vicinity

After deliberations, the members rejected the application for Consent to Establish of M/s Yatch Heaven, under the Air Act and the Water Act.

Table Item no. 02

Complaint received in this office with regard to setting up a Petrol Pump at Poriem, Sattari Goa.

Chairman informed the members that the office is in receipt of an application from M/s Harekrishna Petroleum, for Consent to Operate under the Water Act and the Air Act for setting up of petrol. The members noted that the project proponent has obtained all the necessary approval from the State Government. The members also noted that the petrol pump is situated on the banks of river Valvanti, a drinking water source.

Chairman further informed that the Board had obtained views of the Water Resource Dept. in this regard and that the report did not present any factual detailed information.

The members perused the drawing submitted by the project proponent and it is seen that retaining wall and a compound wall has been constructed to prevent spillage of petrol in the river Valvanti. The project proponent was asked to present his proposal before the Board members and he has informed that necessary precautions have been taken to prevent spillage and runoff into the Valvanti River. He further stated that he owns a garden and a horticulture farm which exists near the petrol pump and there is no possibility of run-off into the river Valvanti.

After deliberations the members decided that a committee comprising the following Board members inspect the site along with the officials of the Board to get first hand information on the proposed works carried out by the project proponent. The inspection in this regard has been fixed on 29/01/2014

1. Mr. Shrirang Jamble
2. Mr. Narayan Naik
3. Mr. Tony Rodrigues

It was further decided that the report be submitted to the Chairman for further decision in the matter.

Table Item no. 3

Appointment of a Chartered Accountant to advice the Board on the finances with the regard to maintaining a Corpus fund.

Chairman informed the members that the Government has conveyed approval for creation of posts on temporary period of one year purely on contract basis. He further informed that the letter states that Goa State Pollution Control Board should create a corpus fund to meet the future requirements towards payment of retirement benefits. The GSPCB should reassess the requirements within a period of one year and re-submit the proposal thereafter. Accordingly, the Board has to appoint a Chartered Accountant to carry out this exercise.

Chairman further informed that the Board had taken the advice of Chartered Accountant, M/s R.K. Pikale & Associates, Panaji, and he had informed that an amount of a Corpus of Rs. 10 Crores is required in order to meet the requirements, which could be deposited in a Nationalized Bank.

After deliberations, it was decided to appoint Chartered Accountant, M/s R.K. Pikale & Associates, Panaji, to work out the present status of the finances of the Board and accordingly guide this office in creating a corpus fund to meet the future requirements towards payment of retirement and other benefits to the staff. The remuneration towards the services rendered by M/s R.K. Pikale & Associates is to be approved by the Chairman. It was further decided that the amount so arrived by the Chartered Accountant be deposited in a Nationalized Bank.

Table item no. 04

Levy of fees on the Casino operator towards monitoring of sewage disposal

Chairman informed the members that the Board is required to carry out monitoring of casino vessels for disposal of their sewage to the sewage treatment plant through sewage tankers. In this regard the Scientific staff of the Board is required to remain present to maintain records of the same at the Casino vessel to unseal the holding tanks for disposal of the sewage from holding tanks to barges, from which it is then pumped into sewage tankers at the Jetty. The sewage tankers then dispose the sewage for treatment at the Sewage Treatment Plant at Tonca.

He further informed that the casino vessel, M/s M.V. Pride, disposes the waste on weekly basis, whereas the remaining three casinos vessels, namely, M/s Casino Royale, M/s Horseshoe and M/s Boa Sorte disposes their waste daily.

In order to meet the expenses towards monitoring of the disposal of the sewage generated by the casino vessels, it was decided to levy fees on the Casino vessels.

After deliberations, it was decided to levy a fee of Rs. 5000/- per trip per casino vessel with regard to the monitoring carried out by the Board officials, and the casino operator to be informed accordingly.

Table item no. 05

Proposal for levying of fees to Ayurvedic clinics, Spas, Massage parlours, puncture repair shops, hair cutting saloons, Physiotherapy units, X-ray units etc.

Chairman informed the members that based on the orders of the National Green Tribunal, the Board had directed all the industries to apply for Consent to Operate from the Board.

Small units like ayurvedic clinics, spas, massage parlours, physiotherapy units, X-ray units etc. which generate negligible amount of domestic waste water, negligible emission and only a small amount of solid waste, were issued Consent to Operate by the Board, on a fee of Rs. 3000/- with a validity of ten years.

After deliberations it was decided to include the services such as Ayurvedic clinics, Spas, Massage parlours, puncture repair shops, hair cutting saloons, Physiotherapy units, X-ray units etc. as Orange category and a fee of Rs. 3000/- for Consent to Establish, with a validity of three years from the date of

commissioning of the unit, whichever is earlier and Rs. 3000/- for Consent to Operate with a validity of five years.

112th Meeting of the Board

In the 112th Meeting the Board took the following decisions:

Agenda Item no. 01

Confirmation of the minutes of the 111th meeting of the Goa State Pollution Control Board held on 24th January, 2014

The members perused and confirmed the minutes of the 111th meeting of the Goa State Pollution Control Board held on 24th January, 2014, so as to enter the same in the minutes book.

Agenda item no. 02

Follow up action on the decision taken at the 111th Meeting of the Board.

Agenda item no. 26 - The members perused the item wherein the proposal to appoint Architect Gerard Da Cunha as a Consulting Architect for the construction of the proposed office building for the Board laboratory and staff quarters at Saligao was discussed.

It was also informed that Architect Gerard Da Cunha had placed before the Board an order issued by Goa State Infrastructure Development Corporation, appointing him as a Consulting Architect on the following terms:

The terms of appointment area as follows:

Sr.	Item	
1.	For performing comprehensive Architectural services including site development for the items of services as described in the Handbook of Professional Documents – 2002 of Council of Architecture	4% of cost of work assigned
2.	Interior Architecture / Graphic design and signage as described in the handbook as referred to in Sr. no. 1 above	6% of cost of work of interior architecture assigned
3.	Landscape Architecture as described as described in the Handbook as referred to in Sr. no. 1 above.	5% of cost of work of landscape architecture assigned.

The stages of payment are as follows:

1.	On signing of this Agreement	8%
2.	On completion of Phase I as in 'Project Brief and Terms of Reference'	7%
3.	On completion of Phase II as in 'Project Brief and Terms of Reference'	30%
4.	On completion of Phase III as in 'Project Brief and Terms of Reference'	25%
5.	On completion of Phase IV as in 'Project Brief and Terms of Reference'	25%
6.	Upon submission of two sets 'As-constructed' Drawings' after the completion of project to the Goa State Pollution Control Board	5%

The total fees as mentioned above shall be all inclusive (i.e inclusive of fees payable to other Consultant Associates, designers, specialists and the like of the Architectural Consultants).

After detailed discussions, it was approved that Architect Gerard Da Cunha be appointed as a Consulting Architect for the Board and his total professional fees payable be restricted to 4% of all the work assigned including RCC consultancy, interior designing and landscaping.

It was further decided that Chairman may issue necessary orders to this effect.

Table item no. 02 – The members perused the inspection report enclosed with the agenda item of the visit to the petrol pump of M/s Harekrishna Petroleum. It was further stated that the petrol tanks are located at a distance of 18 metres from the water source.

The members were also informed of the possibility of spillage / safety / runoff of petrol into the river Valvanti, which is a drinking water source. It was cautioned that adequate care should be taken to ensure that the water body does not get contaminated with petrol.

It was also informed that the Board had issued instruction to M/s Hindustan Petroleum Corporation Ltd. (HPCL) to lift the petrol already supplied to M/s Harekrishna Petroleum and HPCL informed the Board that they do not have any provisions for collecting petroleum products already sold by them.

After detailed discussions, it was decided to permit M/s Harekrishna Petroleum to dispose off by sale the 12,000 litres of petrol / diesel presently held in their tanks. A decision regarding Consent to Operate under the Water Act and the Air Act to be taken after the monsoons.

Table item no. 03 – Members were informed that M/s R./K. Pikale & Associates had quoted a fee of Rs. 20,000/- per month plus service tax as applicable for the services to be provided, and if the work involves travel outside Panaji City, travelling expenses and out of pocket will be reimbursable, towards professional services to

work out the present status of the finances of the Board and accordingly guide this office in creating a corpus fund to meet the future requirements towards payment of retirement and other benefits to the staff, as approved at the 111th meeting of the Board held on 24th January, 2014.

After detailed discussions, it was approved that M/s R.K. Pikale & Associates should be assigned the work and the same be completed within a time frame of four months.

Agenda Item no. 03

Follow up action on the decision taken at the 106th Meeting of the Board held on 11/02/2013.

Agenda item no. 9 (b) – The members perused the agenda notes with regard to operation of cement godowns in residential areas, which as per the Goa Land Development and Building Construction Regulations, 2010, prohibits the following activities (a) Zones S1, S2, S3 & S4, wholesale trade, warehousing, all kind of industries, gas works, fabrication and assembly workshops, scarp yards, transport agencies, godowns, automobile workshops

After deliberations, the members decided that the following activities like cement godowns / fabrication units operating in residential areas and also glass cutting, glass designing, acrylic board/ sign board printing, garages etc. which are having detrimental effect on the health of the residents, should obtain Consents to Operate of the Board under the Air Act and the Water Act and also direct such units to shift to premises away from residences or in Industrial estates.

It was also decided that the decision of the Board be conveyed to the Department of Environment, Govt. of Goa, for issue of a suitable Notification.

Agenda item no. – 13 – Chairman informed the members that the staff of the Board scrutinized and compared the fee structure adopted by other State Pollution Control Board in levying fees for authorization under the Bio-medical Waste (Management and Handling) Rules, 1988, as the preset fees charged by the Board i.e Rs. 200/- was very meager.

Accordingly, it was proposed to make the following fee structure applicable for the Goa State Pollution Control Board, so as to forward the proposal to the Department of Science, Technology & Environment, Govt. of Goa, for issue of a suitable Notification.

Sr. no.	No	Particulars	Rate of fees (Rs.)
1.		HOSPITAL AND NURSING HOMES	
	a.	With 01 to 05 beds	500/-
	b.	With 6 to 25	1,250/-
	c.	With 26 to 50	2,500/-
	d.	With less than 50 beds	5000/-
	e.	With less than 100 beds	
	f.	With less than 50 beds and above, but less than 200 beds	
	g.	With 200 beds and above, but less than 500 beds	10,000/-
	h.	With 400 beds and above	
	i.	With 500 beds and above	15,000/-
2.		Government Hospitals, Charitable Hospitals and Public Sector	
3.		Private Nursing Homes and Health Care Establishments	
4.		Health care Institutions including clinics, Dispensaries, Pathological laboratory and blood banks generating bio-medical waste and providing treatment / service to more than 1000 patients per month	2,500/-
5.		Every Occupier of an institution generating, collecting, receiving, storing, transporting, treating, disposing and / or handling bio-medical waste in any other manner, including clinics, dispensaries, pathological laboratories, blood banks, Veterinary institution, animal house, by whatever name called.	2,500/-
6.		Veterinary college and hospital	5,000/- per annum
	(a)	Veterinary hospitals (District level)	1,000/- per annum
	(b)	Veterinary hospitals (Sub-Divisional level) and Veterinary clinics	500/- per annum
7.		Animal Research Institution	1,000/- per annum
8.		Animal Houses	
	(a)	Dairy farms (more than 100 cows)	2,000/- per annum
	(b)	Poultry farms (more than 10,000 birds)	5,000/- per annum
	(c)	Poultry hatchery (more than 10,000 birds)	1,000/- per annum
	(d)	(d) Piggery (more than 200 pigs)	1,000/- per annum
	(e)	(e) Goat/ sheep farms (more than 300 goats)	1,000/- per annum
9.		Medical Research Institution	1,000/- per annum
10.		Bio-medical Waste transporter	2,000/- per annum
11.		Operator of Common Treatment / dispose facility of Bio-medical waste	5,000/- per annum
12.		Forensic laboratories	1,000/- per annum
13.		EVERY INSTITUTION AND OPERATOR CONNECTED WITH MANAGEMENT AND HANDLING OF BIO-MEDICAL WASTE	
	(a)	The Operators having an incinerator with capacity upto 50 kgs/per hour	10,000/-
	(b)	Waste Operators having an incinerator with capacity of more than 50 kgs./per hour	20,000/-
	(c)	Operators having facilities other than incinerator	1,000/-

Agenda item no. 04

Application of M/s Counto Microfine Products Pvt. Ltd., Plot no. 161 and 162, Pissurlem Industrial Estate, Pissurlem Goa, for Consent to Operate under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Counto Microfine Products Pvt. Ltd., for the manufacture of additional products i.e Ordinary Portland cement – capacity 150000 tons/annum and Portland slag cement – capacity - 100000 tons/annum

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Counto Microfine Products Pvt. Ltd., Plot no. 161 and 162, Pissurlem Industrial Estate, Pissurlem Goa, for Consent to Operate (expansion) under the Air Act and the Water Act as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 05

Appointment of Consultant to guide the Board in Pilot Survey for disseminating SMEs Technology for ground water remediation by Bio-remediation – assisting the Japanese Delegation.

The members noted that the Board has entered into a Memorandum of Understanding (MoU) with M/s Asahi Geo Survey Co. Ltd., Japan for implementation of the project titles 'Pilot Survey for Disseminating Small and Medium Enterprises (SMEs) Technologies for Ground water Remediation by Bio-remediation of Sal river in Goa. Further, the said project has been formulated under the Governmental Commission on the project for Overseas Development Assistance(ODA) as Overseas Economic Co-operation in the current financial year 2012.

Chairman proposed to the members that in order to interact with the Japanese delegation for preparation of a tentative plan of action to initiate on-site feasibility study, the services of a retired official well versed in the field are required to be availed.

While discussing the proposal, it was suggested that an official with adequate knowledge of ground water studies in the State of Goa and particularly around the river Sal be appointed for the purpose. Chairman requested the Chief Engineer, Water Resource Department to suggest additional names of appropriate candidates for this position.

The Board approved that Chairman selects an appropriate candidate from amongst those recommended by the Chief Engineer, Water Resource Department and make an appointment as proposed for a period of four months on a consolidated salary of Rs. 20,000/ (Twenty thousand only) per month.

Agenda item no. 06

Application of M/s Cipla Limited – Unit X, Plot nos. S-103 to S-105, S-107 to S-112, L-138, L-147, L-150, S-116, L-147/1 to L-147/4, Verna Industrial Estate, Verna Goa for Consent to Operate (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Cipla Limited – Unit X., for the expansion in the manufacturing activities i.e Tablets from the existing 2400 million units/annum to a proposed 90 million/annum totaling it to 2490 million/annum., Capsules (soft gelatin) from the existing 120 million unit/annum to a proposed 28 million units/annum totaling it to 148 million units/annum., Capsules from the existing 1200 million units/annum to proposed 122 million units/annum totaling it to 1322 million units/annum.

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Cipla Limited - Unit X, Plot no. Plot nos. S-103 to S-105, S-107 to S-112, L-138, L-147, L-150, S-116, L-147/1 to L-147/4, Verna Industrial Estate, Verna Goa, for Consent to Operate (expansion) under the Air Act and the Water Act as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 07

Application of M/s Colorcon Asia, Plot no. M-14 to M-18, Verna Industrial Estate Verna Goa for Consent to Operate (expansion) under the Water Act and the Air Act.

The Chairman informed the members that the State's HPCC has cleared the proposal of M/s Colorcon Asia., for the expansion in the manufacturing activities in the formulation unit i.e production of 6500 MTPA of Opadry and operation of 150 Kld and D.G set of 250 KVA

The HPCC has cleared the above proposal with a condition that the unit shall make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Colorcon Asia, Plot no. M-14 to M-18, Verna Industrial Estate, Verna Goa, for Consent to Operate (expansion) under the Air Act and the Water Act as approved by the HPCC and subject to the implementation of rain water harvesting and ground water recharge.

Agenda item no. 08

Purchase of FRP motorboat for conducting National Water Quality Monitoring Programme (NWMP)

Chairman informed the members that under the National Water Quality Monitoring Programme (NWMP) supported by Central Pollution Control Board (CPCB), the Goa State Pollution Control Board monitors water quality at selective 50 (fifty) locations in the State, which comprise of surface water sources.

The water samples within the navigable riverine / estuarine stretches are collected at desired locations and analyzed in the Board laboratory for various physico-chemical and bacteriological parameters and are interpreted based on standards prescribed by CPCB for each parameter respectively. The water sampling, collection and its analysis is carried out on monthly or half yearly basis as per the categorization of water source.

Chairman further informed the members that the Ministry of Environment and Forest, Govt. of India (MoEF) has approved and sanctioned an amount of Rs. 23 lakhs (Rupees Twenty three lakhs) towards procurement of a FRP – motor boat to assist the Board officials in collecting water samples from desired locations.

The members expressed concern that once the Board has procured the FRP motor boat there would be difficulties in its safe docking, maintenance and other related issues concerning its safety. The possibility of hiring a boat in such conditions was also discussed and it was stated that the Ministry of Environment and Forests, Government of India had sanctioned an amount of Rs. 23 lakhs for the procurement of a boat and it would not be appropriate to hire the boat from the same funds.

After detailed discussions, it was approved that a FRP motor boat be procured for collection of samples after following due procedures.

Agenda item no. 09

Standards for Bio-chemical Oxygen Demand (BOD) as provided in Rule 3(2) of the Environment (Protection) Rules, 1986.

It was brought to the notice of the members that presently the BOD specified for treated water from ETP/STP was 30 mg/ltr., it was further stated that the treated water from the STP/ETP is normally utilized for gardening within the premises that is discharge on ground and as the ground water table in the State of Goa is high i.e ground water is available at very shallow depth in most of the areas in the State of Goa. In case of industries located on the plateau the strata is highly porous and the chances of contamination of the ground water is very high. Hence, the members decided to implement a stringent standard of 30mg/litre as specified for discharge into inland surface water in schedule VI of EP Rules for all discharges of treated sewage/effluent on land.'

After detailed discussions, the Board approved in terms of Rule 3(2) of the Environment (Protection) Rules, 1986 that the maximum limit for BOD for treated water from STP/ETP should be 30 mg/litre.

It was further decided to forward the decision of the Board to the Department of Environment, Govt. of Goa, for issue of a suitable Notification

Agenda item no. 10

Implementation of Office Automation System using SAP Enterprise Resource Planning at the Goa State Pollution Control Board.

It was informed that the Board presently utilizes the XGN software for Consent management and this system has been operating satisfactorily for the last 3 years. Chairman informed the members that taking e-governance a step forward would mean that the Board would have to implement an appropriate Enterprise Resource Planning (ERP) for its use to implement SAP, ERP software based on its utility for the various activities carried out by the Board as well as for administrative purposes including Accounts. He further informed that SAP tool was considered and e-tender floated and three bids were obtained:

Sr.	Agency	Amount quoted
1.	M/s Highbar Technologies Ltd., Mumbai	Rs. 3,41,73,475/-
2.	M/s SEAL Info Tech Pvt. Ltd., Chennai	Rs. 3,50,93,915/-
3.	M/s Yash Technologies Pvt. Ltd., Indore	Rs. 3,94,155,90/-

M/s Highbar Technologies being the lowest quoted price at Rs. 3,41,73,475/- was called for negotiation before the Chairman and the Board officials and the bidder agreed to a 6% discount (Rs. 3,21,23,067/-) besides providing the following:

1. Website design and development for GSPCB
2. Three months Annual maintenance service
3. Certification of SAP for two staff nominated by GSPCB

It was further discussed that the ERP would implement the following modules:

1. Document Management System
2. Human Resources Management
3. Payroll
4. Purchase and Inventory management
5. Fixed Asset Management
6. Equipment Maintenance
7. Vehicle Management and Maintenance
8. Integration of XGN software with SAP

While discussing the proposal to implement SAP, some Board members expressed the view that for successful implementation of SAP software, highly professional support is required from the IT department and also mentioned care should be taken to ensure that all staff handling this software would need to be adequately trained.

While discussing this matter, it was proposed that some systems like Oracle, RAMCO, Microsoft etc. be studied by the Committee constituted by the Chairman and its findings be placed at the Board at its next meeting.

Agenda Item no. 11

Providing uniform/ washing allowance / payment of monthly allowance to the Drivers appointed on contract in the Board.

Chairman informed the members that the Board has recruited 07 nos. of Driver on contract basis for a period of one year in the office on a consolidated salary of Rs. 13490/- per month. However, as per the decision taken at the 108th Board meeting held on 23rd October, 2013, the Drivers are paid a monthly allowance of Rs. 1000/- towards their overtime and Dearness allowance while on duty. However, when Drivers are on long leave (Earned leave / Commuted leave), such allowance would be admissible on a pro-rata basis.

Chairman also informed that the regular staff (Drivers) are provided with uniforms and washing allowances as per Rules.

Members agreed to provide payment of a monthly allowance of Rs. 1000/- towards overtime and dearness allowance to the Drivers while on duty and also provide them with uniforms and washing allowance as per Rules.

Agenda item no. 12

Application of M/s Zuari Agro Chemicals Ltd, Zuarinagar, Sancoale, for Consent to Operate under the Water Act and the Air Act (expansion)

The Chairman informed the members that the office is in receipt of a proposal of M/s Zuari Agro Chemicals Ltd., 'for Revamp of Ammonia plant for changeover of feedstock and fuel from Naphtha to NG/ RLNG and reduction to specify energy consumption along with debottlenecking the capacity of Ammonia-Urea plants, changeover of fuel from FO to NG/RLNG in utility boilers and also debottlenecking the capacity of NPK plant A and B along with product mix change', as listed below.

Sr. No	Product		Existing Quantity in MTPA	Proposed expansion quantity (MTPA)	Total
A.	Main Products		376200 /399300 *	118800	495000 MTPA
	1	Urea			

	2	Complex fertilizers produced in NPK-A Plant	150000*	350000	500000* MTPA
	3	Complex fertilizers produced in NPK-B Plant	150000**	350000	500000** MTPA
B.	By-Products				
	1	Carbon dioxide	18950	15450	34400 MTPA
	2	Argon	2.2 million Sm ³	--	2.2 million Sm ³
C.	Intermediate Products				
	1	Ammonia	220000	126500	346500 MTPA

*: Existing annual capacity of 150000 MT is based on production of 28:28:0 grade which has been discontinued. Proposed annual capacity of 500000 MT is based on production of 10:26:26 grade

** : Existing annual capacity of 150000 MT is based on production of 18:46:0. Proposed annual capacity of 500000 MT is based on production of 10:26:26 grade

The members approved for the proposal of M/s Zuari Agro Chemicals Ltd, Zuarinagar, Sancoale, 'for Revamp of Ammonia plant for changeover of feedstock and fuel from Naphtha to NG/ RLNG and reduction to specify energy consumption along with debottlenecking the capacity of Ammonia-Urea plants, changeover of fuel from FO to NG/RLNG in utility boilers and also debottlenecking the capacity of NPK plant A and B along with product mix change' and further approved that Consent to Operate (expansion) under the Air Act and the Water Act be issued.

Agenda item no. 13

Delegation of powers to the Accounts cum Administrative Officer of the Board.

Chairman informed the members that the Director, Department of Science, Technology & Environment vide letter no. 66/10/2013/STE-DIR/1506 dated 31/01/2014 conveyed Government approval for creation of one post of Accounts officer in the scale of PB-III – Rs. 15,600 – 39100 + 5400 (G.P) on deputation from the Common Accounts Cadre of the Directorate of Accounts, Panaji. It was further informed that the creation of post of Accounts cum Administrative Officer was in addition to the post of Assistant Accounts Officer already existing in the Board.

Chairman further informed the members that Member Secretary of the Board is allotted additional charges in other Government departments like Managing Director, Goa Handicrafts, Rural and Small Scale Industries Development Corporation, Director, Department of Science and Technology.. He further stated that there was a need to streamline the routine work and it was necessary to allocate certain works/ delegate works to the Accounts Cum Administrative Officer, presently being handled by the Member Secretary of the Board

The members agreed to the proposal submitted by the Chairman and it was proposed to designate the Accounts Cum Administrative Officer as the Head of Office in carrying out the following duties and to convey the decisions / approvals accordingly.

Sr. no.	Item of Delegation	Extent of Powers
I.	Powers of Incurring Contingent Expenditure (GDFPR)	Electricity bill, Telephone / mobile bills, water bills, petrol and other contingency bills upto Rs. 30,000/-.
II.	Sanction of Leave	Casual leave / Restricted leave / Special leave. Earned leave upto 30 days. Half pay leave, Commuted leave upto 30 days, Maternity leave / Paternity leave /Child care leave upto 30 days. Except of Section Heads.
III.	Controlling Officer	Full powers as Controlling Officer vis-à-vis medical reimbursement, Leave Travel concession, Travelling

		allowance, Tution fees, Children Education allowance etc. to all Non Gazetted staff, sanction of increments. Except of Section Heads.
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Agenda item no. 14

Prescribing period for re-application for Consent/ Renewal upon rejection by the Board.

Chairman informed the members that applications for Consent to Operate / Renewal of Consent to Operate are at times rejected by the Board due to non compliances observed during inspection including the samples of treated sewage / effluent not meeting the standards prescribed.

He further stated that once the Consent has been rejected, establishments prefer to upload their applications for Consent to Operate / Renewal on the very next day of their applications being rejected stating that all non compliances have been met with. It was informed that it would not be practically possible to comply with the deficiencies within a short period of time and therefore it was proposed that once the applications for Consent to Operate / Renewal was rejected, applications would be re-accepted for processing only after a period of thirty days from the date of rejection.

Members discussed this issue at length and approved that once the applications for Consent to Operate / Renewal was rejected, applications would be re-accepted for processing only after a period of thirty days from the date of rejection. It was further decided that this decision be forwarded to the Department of Environment, Government of Goa, for issue of a suitable Notification.

TABLE ITEM NO. 01

Follow up on the decision taken at the 108th Board meeting held on 10th June, 2013

It was brought to the notice of the members that the Board at its 108th meeting held on 10th June, 2013 had approved the proposal submitted by Captain Joseph Lobo for establishment of a Pilot plant for treatment of wash water / waste water from the drains of the Mapusa Municipal Council. It was further informed that a meeting was held between the representatives of Mapusa Municipal Councils, representatives of the Board and Captain Lobo, and the project was explained to the Municipal Council authorities in detail. It was further informed that at this meeting, Captain Lobo was directed to apply to the Mapusa Municipal Council for a NOC for undertaking this Pilot project. Members were informed that Mapusa Municipal Council had issued No Objection Certificate for the said project, subject to the condition that the agency should take proper care at the time of execution of the work so that no nuisance should be caused to the public in general and that the NOC was issued subject to the approval of the Goa State Pollution Control Board for the said project.

The members noted the progress on this project proposal.

TABLE ITEM NO. 02

Providing mobile handsets and SIM cards to the staff appointed on contract basis.

Chairman informed the members that the Board has appointed nineteen staff on contract basis for a period of one year. He also informed that the entire staff of the Board was provided with mobile hand sets and SIM card under the Closed User Group of Vodafone, subject to a monthly ceiling of Rs. 200/- to be paid by the Board. It was further informed that inorder to communicate with the Technical staff and the Drivers, when on field duty it was proposed to provide them with Mobile hand set with a SIM card in line with the other officials of the Board under the Closed User Group of Vodafone. The billing over and above this amount is to be debited from the respective salaries of the staff concerned.

Members approved providing Mobile hand set and SIM card to the nineteen staff appointed on contract basis.

CHAPTER 4

COMMITTEES AND SUB-COMMITTEES CONSTITUTED BY THE BOARD AND THEIR ACTIVITIES

4.1 TECHNICAL ADVISORY COMMITTEE

In order to develop uniformity in approach and to ensure timely clearance of the consent applications, Shri. Jose Manuel Noronha, Chairman of the Board constituted a Technical Committee comprising technically and scientifically qualified professionals which was re-constituted during the year under report vide Order no.8/11/09-PCB/Vol.VIII/2250 dated 05/07/2013. The Committee comprises of the following members:-

1. Shri. A.J.C. Afonso, BE (Met) M.M.S, Forro, St. Estevem, Ilhas Goa.
2. Dr. Savita Kerkar, Reader, Dept. of Marine Bio-Technology, Goa University, Bambolim – Goa.
3. Dr. Xivanand Verlekar, Retd. Scientist – (Biologist) N.I.O, 606, Pinto Vaddo, Candolim, Bardez Goa.
4. Mrs. A.A.B. Barretto, F W de Lima Fernandes, C-155, De Cunha Gonsalves Roas, Mala – Fountainhas – Panaji, Goa.
5. Mrs. Nandan Prabhudessai, Junior Environmental Engineer, Goa State Pollution Control Board.
6. Ms. Connie Fernandes, Scientist 'C', Goa State Pollution Control Board.
7. Mrs. Jenica Sequeira, Scientist 'C', Goa State Pollution Control Board.

Subsequently, the Technical Advisory Committee was again re – Constituted vide order no.8/11/09-PCB/ Vol.VIII/7150 dated 10/02/2014. The Committee comprises of the following members:-

1. Dr. Xivanand Verlekar, Retd. Scientist – (Biologist) N.I.O, 606, Pinto Vaddo, Candolim, Bardez Goa.
2. Dr. Fraddy D'Souza, Fellow, The Energy and Resource Institute (TERI), Western Regional Centre, House no. 233/GH-2, Vasudha Housing Colony, Alto Santa Cruz, Bambolim Goa 493202.
3. Prof. Neeraj Bale, Prof (Mechanical Engg.), Agnel Institute of Technology & Design, Assagao, Bardez Goa.
4. Mrs. Jenica Sequeira, Scientist 'C', Goa State Pollution Control Board, Panaji.
5. Mrs. Nandan Prabhudessai, Junior Environmental Engineer, Goa State Pollution Control Board.
6. Mr. Sanjeev Joglekar, Environmental Engineer, Goa State Pollution Control Board.

The Committee held weekly meetings on every Monday at 4.00 pm in the Conference hall of the Board to scrutinize and make recommendations / comments / suggestions on the applications from industrial units received by the Board for Consent to Establish / Operate / Renewal of Consents under the Water and Air Acts, Authorizations under the Hazardous Waste Rules, Bio-medical Waste Rules, etc. (except those of Green category industries). The applications from green category industries were scrutinized by the technical and scientific sections of the Board and approved by the Chairman on recommendation by the Member Secretary for grant of Consents.

The recommendations of the Technical Advisory Committee meetings, in the form of Minutes, were placed before the Chairman for approval and on approval by Chairman; Consent Orders were issued by the Member Secretary.

4.2 PURCHASE COMMITTEE

Shri. Jose Manuel Noronha, Chairman reconstituted the Purchase Committee under the Scientific Section and Administrative Section vide Orders no.1/5/12-PCB/Vol.XV/673 dated 16/01/2013 and no.1/5/12-

PCB/Vol.XV/6732 dated 18/01/2013 respectively. The Committee for Scientific Section comprises the following members:-

1. Mrs. Jenica Sequeira, Scientist 'C', Goa State Pollution Control Board.
2. Accounts cum Administrative Officer, Goa State Pollution Control Board
3. Mrs. Lizette D'Souza, Scientist 'F', National Institute of Oceanography.
4. Environmental Engineer, Goa State Pollution Control Board
5. Mrs. Francisca Pereira, Scientist 'B' Goa State Pollution Control Board
6. Mrs. Natalia Dias, Senior Law Officer, Goa State Pollution Control Board
7. Mr. Rajiv Nevgi, Industrialist, Shriram Sadan, Dattawadi, Mapusa, Goa

The Committee for the Administrative Section comprises the following members:-

1. Environmental Engineer, Goa State Pollution Control Board.
2. Accounts cum Administrative Officer, Goa State Pollution Control Board
3. Senior Law Officer, Goa State Pollution Control Board.
4. Office Superintendent, Goa State Pollution Control Board.

4.3 COMPLAINTS COMMITTEE

The present Board Constituted a Complaint Committee to scrutinize and take appropriate action on the complaints received by the Board. The Committee was constituted vide Order no.CH/GSPCB/JMN/12/04 dated 16/10/2013 and comprises the following members:

- | | |
|---|---------------|
| 1. Scientist 'C' |Member |
| 2. Senior Law Officer/Assistant Law Officer |Member |
| 3. Assistant Environmental Engineer |Convenor |

The Committee meets every Monday to screen and shortlist the complaints requiring action by the Board. These complaints are monitored by inspections and action deemed fit is initiated if required. Other cases not within the purview of the Board were forwarded to the respective departments for further needful action.

4.4 CONSTITUTION OF COMMITTEE ON PREVENTION OF SEXUAL HARASSMENT OF WOMEN AT WORKPLACE

The Committee re - constituted vide Order no.1/5/13-PCB/Vol.XVII/4610 dated 04/09/2013 under the Chairmanship of Mr. Jose Manuel Noronha was in force during the year under report. The Committee comprises of following members.

- | | |
|---|-------------|
| a. Mrs. Jenica Sequeira
Scientist 'C', Goa State Pollution Control Board | Chairperson |
| b. Dr. Mohan Girap,
Scientist 'C', Goa State Pollution Control Board | Member |
| c. Mrs Natalia Dias,
Senior Law Officer, Goa State Pollution Control Board | Member |
| d. Mrs, Swapna Naik,
Senior Stenographer, Goa State Pollution Control Board | Member |
| e. Miss Edma Fernandes,
Scientific Assistant, Goa State Pollution Control Board | Member |
| f. Representative from the Department of Science, Technology &
Environment, Govt. of Goa | Member |

4.5 CONSTITUTION OF DEPARTMENTAL PROMOTION COMMITTEE AND DEPARTMENTAL SELECTION COMMITTEE IN RESPECT OF GROUP 'A' AND 'B' POSTS.

The committee re-constituted vide Order no.1/5/10-PCB/Vol.XVI/3622 dated 25/07/2013 under the Chairmanship of Mr. Jose Manuel Noronha was in force during the year under report. The committee comprises of following members.

a.	Chairman of the Board	Chairman of the Committee
b.	Director, Department of Science, Technology & Environment, Govt. of Goa, or his representative	Member
c.	Ms. Analia Mesquita, Scientist 'F', National Institute of Oceanography, Dona Paula (in case of Scientific posts)	Member
d.	Prof. A.J.C Afonso, B.E (Met.) M.M.S. (in case of Technical Post)	Member
e.	Director, Department of Industries, Trade and Commerce	Member
f.	Member Secretary, Goa State Pollution Control Board	Member

4.6 CONSTITUTION OF A SUB-COMMITTEE TO SUGGEST THE IMPLEMENTATION OF FLEXIBLE COMPLIMENTING SCHEME AT THE GOA STATE POLLUTION CONTROL BOARD

The sub-committee constituted vide Order no.1/5/10-PCB/Vol.XVI/3622 dated 25/07/2013 under the Chairmanship of Mr. Jose Manuel Noronha was in force during the year under report. The committee comprises of following members.

a.	Dr. Vassudev Dehprabhu	Convenor
b.	Nominee of the Director of the National Institute of Oceanography	Member
c.	Dr. Marconi Correia	Member
d.	Director, Dept. of Mines and Geology or his nominee	Member

Shri Sanjeev Joglekar, Environmental Engineer of the Board shall assist the Sub-Committee in providing the necessary information.

CHAPTER 5

MONITORING NETWORK FOR AIR AND WATER QUALITY

The Goa State Pollution Control Board monitors the air and water quality under the Central Pollution Control Board sponsored projects National Air Monitoring Programme (NAMP) and National Water Monitoring Programme (NWMP). The NAMP project covers 16 air quality monitoring locations within the State of Goa and the NWMP project covers 49 water quality monitoring locations within the State of Goa. The details of the projects are given as under.

5.1 National Air Monitoring Programme (NAMP)

This is an ongoing activity funded by the Central Pollution Control Board, New Delhi under the National Air Monitoring Programme (NAMP). Under this programme the Board continued to monitor the ambient air quality at 16 locations within the state of Goa. The following are the 16 stations under the NAMP project.

1. Panaji Town, Near GSPCB Office
2. Vasco Town, Near Electricity Department
3. Near Fire Brigade Station, MPT
4. Assanora
5. Bicholim
6. Honda
7. Codli
8. Amona
9. Usgao
10. Curchorem
11. Sanguem
12. Tilamol-Quepem
13. Margao Town
14. Mapusa Town
15. Ponda Town
16. Kundaim Industrial Estate

The geographical locations of the 16 air quality monitoring stations are shown in the map presented in Figure 5.2. Out of the 16 stations, the Board operates 3 stations on its own, i.e., at Vasco, MPT- Mormugao and Panaji and the remaining 13 locations are outsourced to MoEF approved laboratories.

The Ambient Air samples at Panaji, Vasco and MPT are collected by Board officials at each station twice a week as per the standard norms for ambient air quality monitoring and parameters like RSPM, SPM, SO₂ and NO_x are analyzed. The ambient air quality data for these stations observed during the year are given in Annexure V. The analytical results show that all the above parameters are within the limits prescribed for ambient air quality for Vasco, MPT- Mormugao and Panaji,

The remaining 13 stations are operated by outsourcing to MoEF approved laboratories. The Ambient Air Quality at these locations is monitored as per the notification dated 18/11/2009 and parameters such as NO_x, SO₂, PM₁₀ and PM_{2.5} are monitored on regular basis. The monthly averages of the ambient air quality data indicates that there is an increase in the level of respirable particulate matter (PM₁₀ and PM_{2.5}) at some locations, however, the annual averages indicate that the particulate matter levels are within the limits.

Figure 5.1.1: Map of Goa showing the Ambient Air Quality Monitoring Stations under the National Air Monitoring Programme (NAMP)



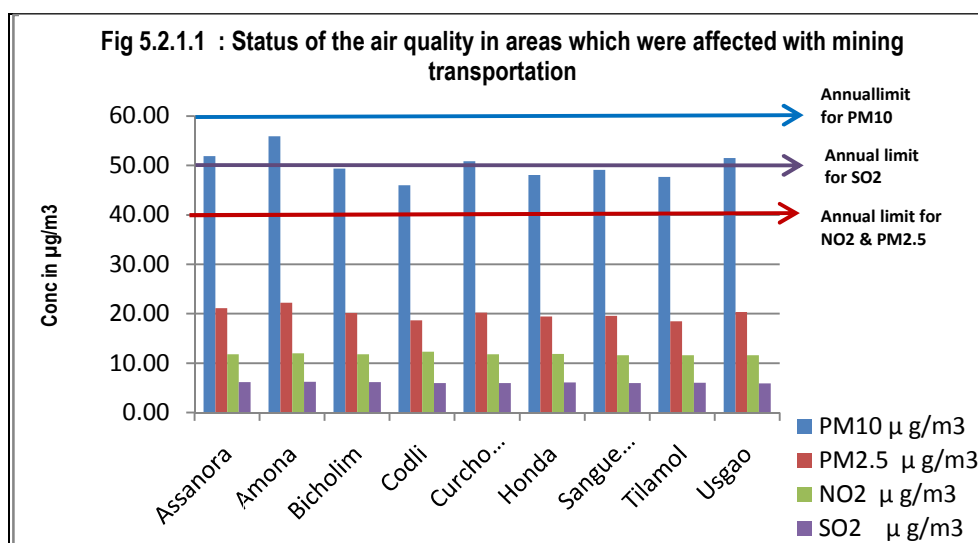
5.2 Trend Status of Ambient Air Quality in Goa

5.2.1 Ambient Air Quality in the Mining Areas of Goa

Under the National Air Monitoring programme (NAMP), the Board through the CPCB sponsored project conducts ambient air quality in areas affected due to mining transportation activities. The areas under the NAMP project in mining areas include Assanora, Bicholim, Honda, Codli, Amona, Usgao, Curchorem, Quepem and Sanguem. During the year under report there were no mining and related transportation activities in the State of Goa as a result of the Supreme Court directions. However, being a continuous study, the air monitoring programme was conducted in the above areas during the year. The data and graphical representation is placed in Table and Fig . The data indicates that the levels of SO₂, NO₂ levels and PM₁₀ are well within the permissible limits.

Table 5.2.1.1 :Trend status of Air Quality in areas which were affected with mining transportation during April 2012 – March 2013

Parameter Location	PM10 $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$
Assanora	51.93	21.13	11.77	6.14
Amona	55.95	22.21	12.01	6.19
Bicholim	49.35	20.17	11.82	6.15
Codli	45.98	18.65	12.34	5.96
Curcholem	50.85	20.23	11.81	5.99
Honda	48.10	19.44	11.83	6.11
Sanguem	49.13	19.58	11.63	5.98
Tilamol	47.66	18.49	11.61	6.05
Usgao	51.50	20.37	11.58	5.92

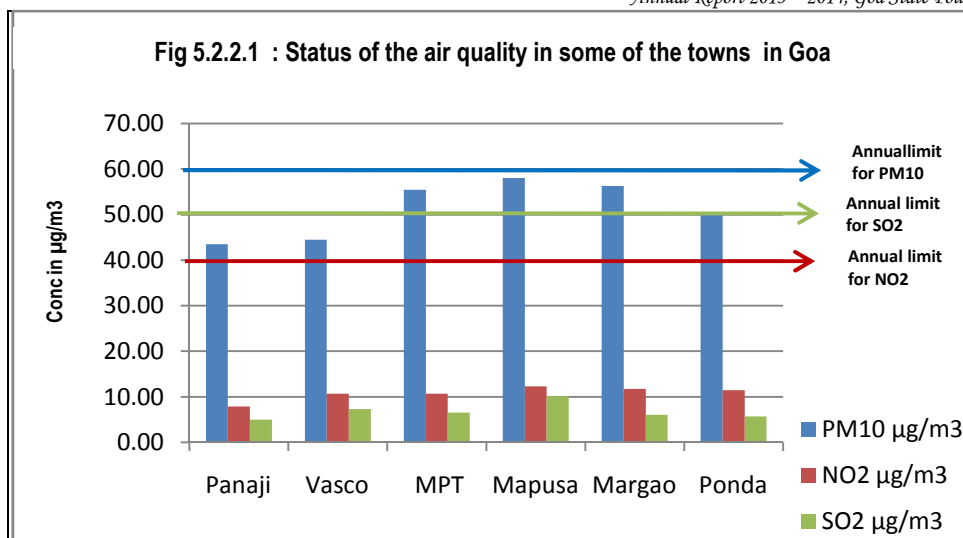


5.2.2 Ambient Air Quality in Other Areas of Goa

The Board is conducting ambient air quality monitoring at the following locations; viz; Panaji, Vasco, MPT area in Vasco, Mapusa, Margao, Ponda and Kundaim Industrial Estate. The Panaji, Vasco and MPT stations are being monitored by the Board staff, where as, monitoring at Mapusa, Margao, Ponda and Kundaim Industrial Estate are monitored through MoEF approved laboratories. The annual averages of PM10, SO2 and NO2 at some of the Towns is shown below in Table and Fig . The data indicates that the levels of SO2, NO2 levels and PM10 are well within the permissible limits.

Table-5.2.2.1: Trend status of Air Quality for the period April 2013 – March 2014 in some of the Towns of Goa

Parameter Location	PM10 $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$
Panaji	43.50	7.85	5.02
Vasco	44.48	10.67	7.33
MPT	55.48	10.67	6.52
Mapusa	58.08	12.28	10.14
Margao	56.30	11.71	6.03
Ponda	49.91	11.45	5.72



5.3 National Water Quality Monitoring Programme (NWMP)

The Goa State Pollution Control Board monitors water quality at 52 locations throughout Goa under the Central Pollution Control Board sponsored project NWMP. The water bodies monitored include rivers, wells, canals, lake, reservoir and creek. Among the rivers, the estuarine rivers as well the sweet water rivers which form a part of the network for water intake points for water treatment plants for public water supply have been covered. Ground water sources (well water) located within the industrial estates are also part of this programme.

The 52 locations covered under this programme are distributed throughout Goa such that 29 stations are located in the North District and 23 are located in the South District

Sr. No.	Type	Rivers/ Lake/Canal/Wells	Classification as per designated best use criteria	Location
1	R	Rv. Tiracol	Not classified	Tiracol
2	R	Rv. Chapora	Class 'C'	1.Near Alorna Fort, Pernem
3	R		Not classified	2.Siolim
4	R	Rv. Kalna	Class 'C'	Chandel, Pernem
5	R	Rv. Madei	Class 'C'	Dabos, Valpoi
6	R	Rv. Valvanti	Class 'C'	Sankli, Bicholim
7	R	Rv. Bicholim	Class 'C'	Baranzan Nagar, Bicholim
8	R	Rv. Assanora	Class 'C'	Assanora
9	R	Rv. Sinquerim	Not classified	1.Candolim Side Near Bridge
10	R		Not classified	2.Nerul Temple
11	R	Rv. Khandepar	Class 'C'	Opa - Ponda
12	R	Rv. Mandovi	Saline Water II	1.Tonca, Marcela
13	R		Not classified	2.Amona Bridge
14	R		Saline Water II	3.Mandovi Bridge
15	R		Not classified	4.IFFI Jetty
16			Not classified	5. Ribander - Chodna Ferry Point
17	R		Not classified	6.Near Hotel Marriot
18	R	Rv. Mapusa	Saline Water II	Culvert on Mapusa-Panaji Highway
19	L	Anjunem Lake	Not classified	Anjunem
20	L	Mayem Lake	Class 'C'	Mayem, Bicholim
21	L	Carambolim Lake	Not classified	Carambolim, Old Goa
22	C	Cumbarjua Canal	Saline Water II	Corlim (Discharge Point of Syngeta Ltd.)
23	W	Well - Kudaim I.E.	Class 'A'	M/s Cadila Healthcare Ltd.
24	W	Well - Corlim I.E.	Class 'A'	Corlim Industrial Estate

25	W	Well - Pilerne I.E.	Class 'A'	M/s Unichem
26	W	Borewell - Bethora I.E.	Class 'A'	Bethora Industrial Estate
27	W	Borewell - Madkaim I.E.	Class 'A'	Madkaim Industrial Estate
28	STP	Influent Sample	Not classified	Tonca STP
29	STP	Treated Effluent Sample	Not classified	Tonca STP

Sr. No.	Type	Rivers/ Lake/Canal/Wells	Classification as per designated best use criteria	Location
1	R	Rv. Zuari	Saline Water II	1.Panchawadi
2	R		Not classified	2.Borim Bridge
3	R		Not classified	3.Marciam Jetty
4	R		Saline Water II	4.D/S of point where Kumbargua Canal Joins
5	L	Rv. Sal	Not classified	1.Rumder
6	R		Not classified	2.Khareband, Margao
7	R		Saline Water II	3.Pazarconi, Cuncolim (Near Culvert Margao- Cancona NH)
8	R		Not classified	4.Orlim Bridge, Orlim
9	R		Saline Water II	5.Near Hotel Leela, Mobor, Cavelossim
10	R	Rv. Talpona	Class 'C'	1.Canacona
11	R	Rv. Khandepar	Class 'C'	Codli near Bridge, u/s OPA waterworks, Sanguem
12	R	Rv. Kushawati	Class 'C'	Near Bund at Kevona, Rivona, Sanguem
13	L	Salaulim Lake	Class 'C'	Salaulim, Sanguem
14	L	Raia Lake	Not classified	Curtorim
15	L	Saipem Lake	Not classified	Saipem
16	L	Curtorim Lake	Not classified	Curtorim
17	C	Agricultural Canal	Class 'E'	Agricultural Canal upstream of Cuncolim I.E. (1 Km from M/s Nicomet Ind.)
18	C	Agricultural Canal	Class 'E'	Agricultural Canal downstream of Cuncolim I.E. (1 Km from M/s Nicomet Ind.)
19	C	Dando Creek	Class 'C'	Dando Mollo, Velsao, Marmugao
20	W	Well - Verna I.E.	Class 'A'	M/s Cipla Limited
21	W	Well - Sancoale I.E.	Class 'A'	Sancoale Industrial Estate
22	W	Well - Zuari I.E.	Class 'A'	Zuari Industrial Estate, ZuariNagar
23	W	Borewell - Concolim I.E.	Class 'A'	Cuncolim Industrial Estate

The total 49 locations are divided into two groups i.e., (i) 46 locations which are being monitored monthly and (ii) 6 locations (i.e. Bore wells) are monitored half yearly.

Five Hundred and Fifty Seven samples were collected from all these water bodies and analyzed during the year (Five Hundred and Ten samples for 14 parameters during the regular monitoring and Forty Seven samples for 42 parameters during annual monitoring).

The analytical results indicate that all the rivers mostly satisfy the quality requirement of the designated best uses as recommended by Central Pollution Control Board. The water quality data for the rivers observed during the year are given in Annexure III.

Figure 5.2 below is a map of Goa showing the water quality monitoring locations under National Water Monitoring Programme; MINARS. The monitoring locations are indicated as stars.

Figure 5.3.1 : Map of Goa showing the Water Quality Monitoring locations under the National Water Monitoring Programme; MINARS



CHAPTER 6

PRESENT STATE OF ENVIRONMENT, ENVIRONMENTAL PROBLEMS AND COUNTER MEASURES

During the year under report, the Board initiated various studies with respect to important issues. Some of the studies have been initiated by signing Memorandum of Association (MoU) with reputed Institutions / Companies and some are initiated by the Board Scientists. The details of the studies are as follows:

6.1 STUDY OF SELAULIM DAM WATER WITH REFERENCE TO MANGANESE CONCENTRATIONS

INTRODUCTION: The Selaulim dam is located in Uguem village in the Sanguem taluka, on the Guleli River, which is a tributary of the Zuari River. The Selaulim Dam is an integral fraction of the Selaulim Irrigation Project which facilitates work on the development of irrigation and supply of drinking water to majority of areas in South Goa district.

Manganese is naturally present in the Earth's crust, usually occurring with iron, in many food sources, such as leafy vegetables, nuts, grains and animal products (IOM, 2002), including tea (ATSDR 2000). Manganese is an element essential to both humans and animals, as it is required for the functioning of many cellular enzymes. Manganese occurs naturally in many surface and groundwater sources and in soils. However, human activities are also responsible for much of the manganese contamination in water in some areas.

STUDY REPORT: A study of selaulim dam water with reference to manganese level was initiated from 29.04.13 to 15.07.13 by the Goa State Pollution Control Board (GSPCB) after it had received a correspondence concerning high Manganese content in the drinking water supply of South Goa, fed through the Selaulim reservoir located in Sanguem Taluka, South Goa.

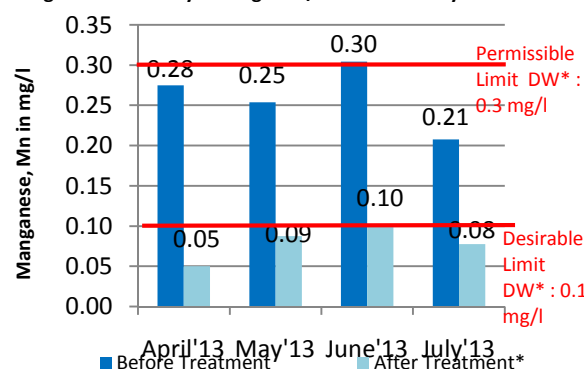
- (a) **WATER:** The water samples (Raw untreated water & Treated water) were collected at the Selaulim PWD (Div XII/Sub Div IV) water treatment facility located at Xelpem by the Board officials and the analysis was carried out independently in a NABL accredited Laboratories, i.e M/S Italab, Margao & the GSPCB Laboratory.

The comparative study of Manganese in the Selaulim Reservoir water samples was studied for pre-treated (raw) and post-treatment (treated). Refer Annexure I: Raw Water/Treated Water Collection points. The Manganese levels established in the study period of April'13 end to mid -July'13 are given in Table's 6.1.1 Fig. 6.1.1.

The Manganese levels in raw untreated water samples showed an increase in the last week of June 2013; with a peak noticed on 24.06.13 (sample collection during backwash was initiated).

Table 6.1.1: Analysis of Selaulim Reservoir Water samples by NABL approved Laboratory		
Manganese as Mn mg/l (Monthly Average)		
	M/s Italab	M/s Italab
Sample collected	Before Treatment	*After Treatment
April'13	0.28	0.05
May'13	0.25	0.09
June'13	0.30	0.10
July'13	0.21	0.08
AVG	0.26	0.08

Fig. 6.1.1: Monthly Average : M/S ITALAB : Analysis of Selaulim



*Limits for Treated water

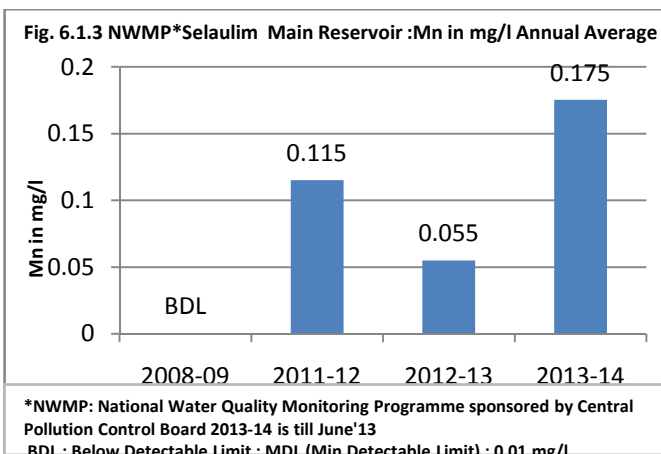
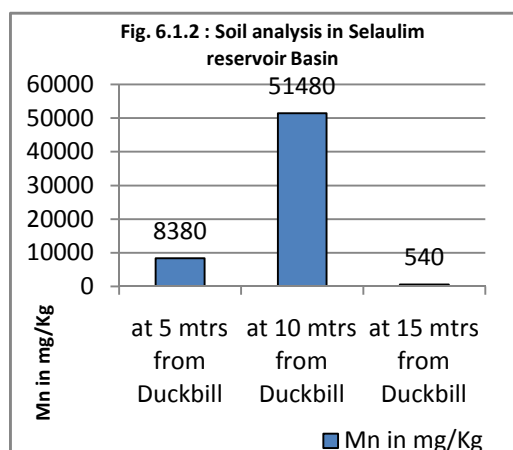
*Desirable limits for drinking water (DW) as per IS 10500:2004 Drinking Water specification

0.1 mg/l

*Permissible limits for drinking water (DW) as per IS 10500:2004 Drinking Water specification

0.3 mg/l

- (b) **Soil:** Soil samples were also collected and analysed at three locations on the elevated exposed ridge of the Selaulim Dam basin on 14.06.13. Their colors ranged from reddish brown to black. The results are given in Fig. 6.1.2. The average Manganese content in reservoir basin soil being approximately 20133 mg/Kg or 2.0%
- (c) **Tributaries to Selaulim Reservoir:** Samples from the Selaulim & Guleli Rivers (Class C Designated best use classification (CPCB) feeding the Selaulim Dam were drawn in May'13 & June'14 to determine presence of Manganese prior to joining the selaulim reservoir. Test results indicated Manganese levels to be 0.18 mg/l on an average.
- (d) **CPCB's NATIONAL WATER MONITORING PROJECT (NWMP):** The Selaulim Dam is also covered under the NWMP (National Water Monitoring Programme) a Project of CPCB since 2008. Samples are collected from the main reservoir body (near the Duckbill) (Ref Fig. 6.1.3) and analysed at a monthly frequency, shows an increasing trend.



- (e) **Water Treatment Facility (PWD Div XII/Sub Div IV):** The Water treatment facility at Selaulim Dam undertakes daily routine backwashing of the Selaulim Dam treatment twice daily. The backwashed waste water is then discharged on open soil, and then flows through rain water drains for approx. 1.0 kms through a residential colony and eventually discharges into River Ugem. Samples were collected and analysed indicated that Manganese and Iron were found exceeding stipulated limits for general discharge (ref Sch VI: General standards for discharge of environmental pollutants Part A-Effluents –EPR 1986), for which necessary directions were issued by the BOARD.

NOTE: May please refer the "Status report of Manganese Levels in Selaulim Reservoir- Sanguem" available in the Board Office

6.2 STUDY OF WATER CONTAMINATION OF BETHORA NALLAH, PONDA

Owing to the frequent cases of complaints from the locals regarding pollution of Bethora Nallah and also correspondence from the office of the Sewerage Infrastructure & Development Corporation of Goa Ltd. seeking details regarding pollution of River Zuari and Kapileshwari Nallah Ponda, the Board carried out inspection of the entire stretch of the Bethora Nallah. Water samples were collected at many locations along the entire stretch of the nallah.

The onsite observations implied that the nallah is heavily silted and is subject to a lot of indiscriminate disposal of garbage and sewage. At many stretches of the nallah, the water was stagnant giving a grey appearance. Some of the pictures of the Bethora Nallah are shown below in Fig. 6.2.1, Fig. 6.2.2, Fig. 6.2.3 and Fig 6.2.4.:



Fig. 6.2.1: Nallah near Kasarwada Junction



Fig. 6.2.2: Nallah near Sun Grace Garden



Fig. 6.2.3: Nallah near Varkhande Bridge



Fig. 6.2.4: Nallah at Khadpaband

The analysis details of the water samples collected is presented in the table 1 below. The data indicates that (1) the counts of total and faecal coliform is very high, so also, the results show the presence of E. Coli indicating contamination due to sewage.

(2) The Chemical and biological Oxygen Demand are quite at some stretches of the Nallah. The Dissolved Oxygen at many stretches is found to be very low indicating organic loading in the water bodies.

The report has been forwarded to the Directorate of Health Services and to the Village Panchayat of Bethora-Nirankal-Conxem-Codar for taking necessary action. Concurrently, the Board has also initiated study of the Nallah through M/s Asahi Geo Survey Co. Ltd., Japan. .

Table 6.2.1: STATEMENT OF THE ANALYSIS CONDUCTED OF THE NALLAH WATER SAMPLES COLLECTED AT VARIOUS POINTS FROM THE BETHORA NALLAH IN MARCH 2013

Sr. No	Parameters	units	Test Result																		
			Upstr eam nallah sample collected at Khari wada Gaun em	Downstr eam nallah sample collected at Ramnat hi	nallah water sample collected at Kapileshwari	nallah water sample collected at Talulem Bandh	nallah water sample taken at Varkhan de Bridge	Nallah water sample taken at Karasw ada junction Bethora	Nallah water sample taken at Sun Grace Garden ,Bethor a	D/s nallah sample taken going out from United Breweri es premise s	Midstre am nallah sample taken in United Breweri es premise s	Upstrea m nallah sample taken entering in United Breweri es premise s	Nallah water sample taken at Bethora junction	Nallah water sample collected at Mhalsh e Curti going to Bethora nallah	Nalla h water sample taken in Saha kari farm	Nalla h water sample taken at Curti Pond Bridg e	Nalla h water sample taken at Havel i Curti	Nalla h water sample taken at Khad paba ,Pond a	Nalla h water sample taken at Old Bus stand	Nallah water sample taken at Kavle ,near Shantlad urga temple	
1	pH	-	6.71	6.98	6.67	6.66	6.77	6.72	5.67	6.87	6.9	6.8	6.66	7.4	6.1	6.42	6.78	6.91	6.87	6.71	6.49
2	Chemical Oxygen Demand	mg/l	30.0	10.0	20.0	90.0	20.0	20.0	30.0	60.0	30.0	60.0	10.0	40.0	10.0	20.0	60.0	40.0	80.0	10.0	15.0
3	Biochemical oxygen Demand	mg/l	1.2	1.3	-	-	-	-	-	14.4	9.0	34.0	2.8	10.0	1.3	-	-	5.6	-	-	3.3
4	Suspended Solids	mg/l	10.0	7.0	5.0	26.0	6.0	16.0	48.0	45.0	12.0	55.0	8.0	38.0	2.0	3.0	5.0	6.0	3.0	9.0	11.0
5	Dissolved Oxygen	mg/l	4.3	6.2	3.4	5.8	3.9	4.2	2.9	0.3	2.1	NIL	6.0	1.1	6.4	3.3	3.7	2.3	5.2	3.9	5.3
6	Dissolved Solids	mg/l	312.0	10970.0	126.0	150.0	161.0	297.0	16598.0	1443.0	1895.0	2101.0	4263.0	850.0	25.0	483.0	377.0	287.0	191.0	291.0	190.0
7	Nitrite- Nitrogen	mg/l	0.072	0.040	0.139	0.028	0.092	0.03	2.171	0.013	0.004	0.008	0.14	0.006	0.001	BDL	BDL	BDL	0.003	0.04	0.49
8	Nitrate-Nitrogen	mg/l	0.94	0.770	1.05	0.166	0.91	0.065	10.429	0.082	0.02	0.02	0.16	0.02	0.11	0.22	0.06	0.02	0.34	0.19	1.74
9	Hardness as CaCO3	mg/l	110.0	100.0	86.0	82.0	80.0	118.0	116.0	16.0	760.0	880.0	2400.0	440.0	14.0	186.0	164.0	134.0	98.0	100.0	102.0
10	Calcium as Ca	mg/l	10.4	7.2	20.0	18.4	22.0	24.8	37.0	4.0	248.5	248.5	657.0	152.3	4.8	47.29	38.78	29.66	24.05	26.0	19.0
11	Magnesium as Mg	mg/l	20.4	20.0	9.0	9.0	6.32	13.6	5.8	1.4	34.02	63.2	185.0	14.6	0.49	16.52	16.52	14.58	9.23	9.0	13.0
12	Potassium as K	mg/l	6.8	7.7	6.8	6.9	6.7	7.3	24.8	16.2	13.3	13.4	32.3	10.9	6.6	7.3	7.8	8.0	7.1	7.3	7.0
13	Sodium as Na	mg/l	68.5	166.7	23.5	24.8	21.8	41.5	109.5	204.3	174.6	171.0	295.5	135.5	6.7	56.4	55.6	53.6	31.6	38.3	28.0
14	Phosphate as PO4	mg/l	0.071	0.016	0.09	0.151	0.085	0.063	0.546	2.250	0.07	0.13	0.06	1.08	0.02	0.13	0.20	0.18	0.21	0.10	0.04
15	Total Coliform	MPN/ 100ml	400.0	35000	24000	11000	7000	92000	>160000	92000	>160000	92000	11000	54000	3300	7900	54000	>160000	130000	17000	13000
16	Faecal Coliform	MPN/ 100ml	Nil	7900	680	450	2600	1300	160000	17000	92000	17000	7900	35000	1100	4900	17000	92000	9300	11000	NIL
17	E. Coli	-	Abse nt	present	Present	present	present	present	present	present	present	Present	present	Present	present	Prese nt	Prese nt	Prese nt	prese nt	prese nt	Absent

6.3 BIOREMEDIATION OF SAL RIVER

The Goa State Pollution Control Board (GSPCB) has entered into Memorandum of Understanding (MoU) with the **M/s Asahi Geo Survey Co. Ltd., Japan** for implementation of the project titled “Pilot Survey for Disseminating Small and Medium Enterprises (SMEs) Technologies for Groundwater Remediation by Bioremediation of Sal river in Goa” on 1st August 2013. The said project has been formulated under the Governmental Commission on the project for Overseas Development Assistance (ODA) as Overseas Economic Co-operation in financial year 2012. The duration of the entire project period is 18 months spanned in three phases as detailed below –

Phase I ; Feb. 2014 ~ Mar. 2014, Site Assessment

Phase II ; Mar. 2014 ~ May. 2014, Sampling Survey (Surface Soil / Boring)

Phase III; May. 2014 ~ Mar. 2015, Remediation Start ~ Monitoring

Monitoring; May. 2014 ~ Jul. 2015, Full-scale Remediation Planning ~ Report

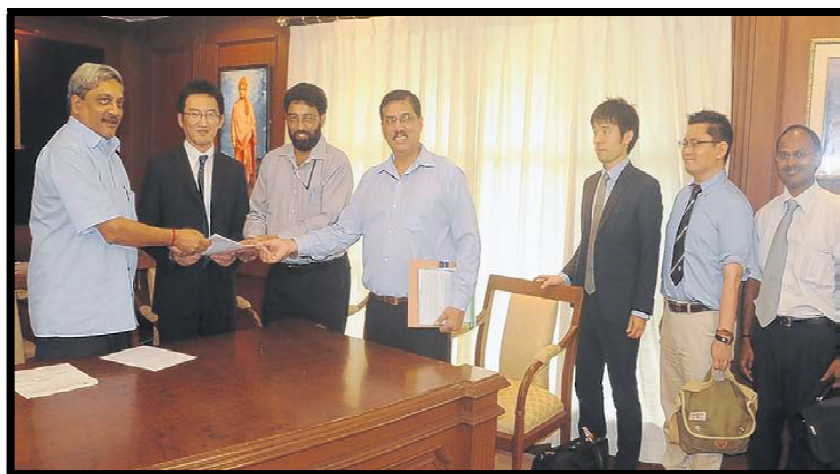


Fig. 6.3.1 : Memorandum of understanding between the Goa State Pollution Control Board and M/s. Asahi Geo Survey Co Ltd, Japan for study on River Sal

This survey aims to verify the effectiveness of SME's technologies in the developing countries and to enhance the development outcomes through dissemination of their product. The prime objective of the said survey is to ascertain the status analysis of Sal river with respect to its chemical content in respect of Chromium Hexavalent (Cr^{+6}) of both – Surface and Groundwater.

It is proposed to undertake the survey in three phases namely – during the first phase (February – March, 2014), Site assessment and Pre-processing test will be conducted to identify contaminants / pollutants, if any. During the second phase, Remediation by Bioremediation in-lab and on-site will be attempted after ascertaining the probable source of contamination / pollution. While, during the third phase, Groundwater monitoring for post-survey analysis and Flow simulation for effective water resources will be attempted for site-specific bioremediation.

During the kick-off meeting / initial visit of the **First phase** (i.e. 10th – 25th February 2014) on-site feasibility study was conducted by collecting water samples (28 nos.), at pre-selected representative locations, (surface and groundwater) along with few untreated and ETP-treated samples as well as few soil samples were collected from Cuncolim, Bethora and Kundaim industrial estates with a prime objective of ascertaining Cr^{+6} (i.e. Hexavalent chromium) contamination, if any. These water samples are being analysed at M/s SGS

Laboratories, Chennai. **Dr. Joe D'Souza – a retired Professor** from the Department of Microbiology, Goa University has been associated in the project in the capacity as “Technical Consultant” in the field of Microbiology.

The second visit is scheduled from 16th – 28th March 2014 during which, a probable source of Cr⁺⁶ contamination, if any, will be identified, if detected, which is based on the results obtained from water analysis carried out in the first phase. While, the third visit is scheduled from 6th to 16th December 2014 during which field-testing of the bioremediation technology will be conducted based on the output of the second visit.

Second phase will be scheduled from 15th March – 12th May 2014 wherein surface sampling as well as boring will be conducted. While, during the **Third phase** which is scheduled from May 2014 – March 2015, remediation interventions will start with simultaneous monitoring. The monitoring is proposed to be continued from May 2014 – July 2015 for ascertain the site-specific practical applicability of bioremediation technology.

6.4.1 STATE LEVEL MONITORING CUM WORKING COMMITTEE FOR SOLID WASTE MANAGEMENT AND HIGH LEVEL TASK FORCE TO RESOLVE THE SOLID WASTE MANAGEMENT PROBLEMS IN THE STATE OF GOA

- The Government of Goa has constituted a **Monitoring Cum Working Committee** to support, consolidate and assist in the activities of various Government Departments, Local Panchayati Raj Institutions, NGO's / VGO's; who are working in the field of Solid Waste Management and monitoring the enforcement of the Goa Non Bio-degradable Garbage (Control) Act 1996 & Rules 1997 and the Plastic Waste (Management and Handling) Rules, 2011 under the Chairmanship of Hon. Minister for Environment and the **High level Task Force (HLTF)** to provide directions and implement various measures as announced in the Budget Speech, 2012-13, towards resolving the solid waste management problems affecting the State of Goa.
- The decisions taken by the Committee as well as the HLTF are implemented through the Goa State Pollution Control Board. The records and the accounts are also maintained by the Goa State Pollution Control Board.
- The following tasks were undertaken by the Committee / HLTF
 1. The committee has signed a MoU with M/s. ACC Wadi Ltd. through Department of Science, Technology & Environment for disposal of baled non-recyclable combustible waste generated in the State in its cement kiln. Approx. 120 MT of the baled waste from Corporation of City of Panaji (CCP) has been transported and disposed at M/s. ACC Wadi Ltd. The cost of transportation was borne by the State Government.
 2. The Committee subsequently has signed a MoU with M/s. Vasavadatta Cements as M/s. ACC Wadi had stopped accepting waste due to maintenance.
 3. The Committee also had discussion with M/s. J. K. Cement and M/s. Bagalkot Cements regarding signing a MoU for disposal of the combustible waste. The waste was also sent to M/s. J. K. Cements for conducting trials. But so far no communication has been received in favor of the agreement for disposal of the waste.
 4. The Monitoring Cum Working Committee for Solid Waste Management has thereafter continued the activity of the collection of the Highway waste along the National Highway by appointing contractors for collection and transportation through the Goa State Infrastructure Development Corporation Limited.

5. The Government through Monitoring cum Working Committee conducted awareness programme for 100 selected schools regarding segregation of the waste at source. In this training programme teachers were selected from the respective schools that were then trained regarding the segregation of waste at source. Set of four different bins were given to the 94 selected schools all over Goa for collection and segregation of the household / domestic waste. The same is already being implemented in these schools.
6. The non biodegradable waste collected by the Schools, Village Panchayats, Municipalities, NGOs, Housing Colonies, etc. are transported to the Civil Supplies Godown at Karapur Sarvan / and GHRSSIDC shed at Kakoda by the Contractor appointed by the Committee.
7. The collected waste at Kakoda is segregated and baled by the contractor appointed by M/s. Vasavadatta Cements. The cost of baling is borne by M/s. Vasavadatta whereas the cost of electricity and other infrastructure is borne by the Committee. The baled waste is then sent to the Cement kiln of M/s. Vasavadatta Cements, Sedam for co-incineration. The cost of the transportation is borne by the Committee.
8. The waste collected at Karapur Sarvan is presently being segregated by the Contractor appointed by the Committee, which will be soon baled and transported to M/s. Vasavadatta Cements for co-incineration at the cost of Committee.
9. The non biodegradable combustible waste collected by the Corporation of the City of Panaji is also transported by the Committee to M/s. Vasavadatta Cements for co incineration.
10. Approx. 750 MT of the baled non biodegradable non recyclable combustible baled waste has been transported and disposed at M/s. Vasavadatta Cements, Sedam
11. The Committee through local TV channels is also telecasting video clip for creating awareness regarding segregation of waste at source and prevention of littering in public places.
12. Accordingly the drives for this purpose were held and further the drive was extended vigorously from 22nd April 2013 on the occasion of Earth Day all over Goa and around the beaches of Goa.
13. The decision was taken in the meeting of High Level Task Force (HLTF) to ban the sale of plastic less 40 micron thickness and impose fine on the violators. The fines collected were approximately Rs.1,20,000/-.
14. The decision was also taken to make the major producers who are selling their goods in plastic bags to pay the plastic cess. The committee decided to increase VAT or impose 2 % cess on the products. The money received would be utilized for garbage management.



Fig 6.4 (1) Baling Machine



Fig 6.4 (2) Baling of Plastic Waste in progress



Fig 6.4 (3) Bales ready for further process

6.4.2 CO-PROCESSING OF PLASTIC WASTE

The collected, baled plastic waste is transported to M/s. Vasavadatta Cement for co-processing. The co-processing of waste is done in hot disc reactor. The temperature is maintained at 1050- 1150Deg C. The alternative fuel like plastic waste is used for co-processing which has a minimum calorific value of 2500Kcal/Kg. The alternative fuel will be able to attain up to 19% of total coal substitution. The use of alternative fuel will reduce use of fossil fuel.



Fig. 6.4 (4): Co-Processing of Plastic Waste

6.4.3 ACTIVITIES CARRIED OUT BY GOA INSTITUTE OF MANAGEMENT (GIM)

The Board has signed MOU with Goa Institute of Management (GIM) on 05th June 2013. The purpose of the MoU is that GIM and Goa State Pollution Control Board (GSPCB) undertake activities to further their respective mandates by providing each other's members with opportunities to cooperate and promote environmental protection in Goa, especially among under-served sections of the society. Among others, the activities could include promoting better solid waste management practices among eateries along coastline, promoting better sanitation practices among rural schools and their neighbourhood, and enabling implementation of better practices through sharing of technical and managerial know-how. The students of GIMs have submitted the report giving details about the following

- Increased awareness about the types of wastes and its segregation
- Understanding about waste reusability
- Practiced waste reusability
- Recommendations of the feasible methods to the Colva Panchayat for Solid Waste Management involving the pros and cons of each practice.
- Recommendations for practices such as Organic Waste Converter and Bacteria Composting were provided to the Colva Panchayat.
- For the panchayat
- Land Site for disposal of waste has been approved
- Funds for implementing solid waste practices have been approved.

6.5 STATUS STUDY OF ST. INEZ CREEK TO CHECK THE EXTENT OF ENVIRONMENTAL DEGRADATION AS A RESULT OF ANTHROPOGENIC ACTIVITIES, CIVIC INFRASTRUCTURE AND NATURAL CAUSES.

Introduction: St Inez creek in Panjim is approx. 5.5 – 6.0 kilometres in length and originates at the Altinho hill; the paddy fields of Taleigao, Caranzalem and the Nagahali hills of Dona Paula from where it passes through St. Inez, finally emptying out into the River Mandovi. The existence of the Creek is dated back to

1829 as seen on the Portuguese plaque still visible on one of the 12 culverts running over the Creek, even though, Historian Percival Noronha dates it back to 1647.

The St. Inez Creek in its present state is found contaminated with wastes such as construction debris, plastic garbage, organic garbage, tyres, sewage, etc. The creek is heavily silted especially near the Fire Brigade Station, Tonca near STP, near the Ford Show room, etc. so much so that there is no free movement of water.

Study Initiated by the Board: Taking cognizance of the above and in order to study the prevailing conditions in the Creek and to come out with possible scientific assessment and suggestions for remediation, the Goa State Pollution Control Board initiated a Study entitled “Status Study of St. Inez Creek to check the extent of Environmental Degradation as a result of Anthropogenic Activities, Civic Infrastructure and Natural Causes” with the following objectives.

1. To make an attempt to explore and establish the sources responsible for degradation of the Creek.
2. To determine the extent of environmental degradation of the Creek as a result of reported indiscriminate disposal of wastes and natural runoffs.

The scope of the study is to cover the entire stretch of the Creek and the sources discharging into it. The study is a one year study initiated in November 2013 for determining seasonal variation.

An initial survey of the entire creek was carried out and mapping of the entire length of the creek has been done on the google map. During the survey a total of 22 locations were selected for collection of samples which were shortlisted to 18 during the month of December 2013. During the surveys, the following observations were made:

1. The Creek appeared to be heavily silted.
2. Raw sewage discharge was seen at many locations along the entire stretch of the Creek.
3. Heavy hyacinth growth was observed at a number of places including Kamara Bhat pond and near the Tonca STP.

Photographs of some of the locations of St. Inez Creek identified for the study are shown below:



Fig. 6.5 (1) & (2) : St. Inez Creek near Landscape shire and at Kamara Bhatt St. Inez



Fig. 6.5 (3) & (4) : St. Inez Creek opposite STP Tonca and at Nagueendra Hospital

Samples were collected at the above locations for the months of November 2013 (low tide), December 2013 and January 2014 (high tide) and analysed in the Board laboratory. Various parameters have been analysed, however, the details of some of the parameters is presented in the following table. The parameters presented in the table indicate the concentration range over the entire stretch of the creek. Generally, the minimum value of the range indicates the concentration at the upstream and the maximum value indicates the concentration at the extreme downstream.

Table 6.5: Parameters indicating concentration range over the entire stretch of the St. Inez Creek

Month of monitoring	pH	Conductivity μS/cm	TDS mg/l	Chloride s mg/l	DO mg/l	BOD Mg/l	Total Coliform MPN/100ml	Faecal Coliform MPN/100ml	E. Coli
November 2013	6.41 – 7.23	123.08 – 7160	73 - 2146	300	*BDL – 4.1	1.3 - 50	5400 - 9800000	2200 - 3500000	Present
December 2013	6.0 – 8.0	139.27 – 34420	78 - 15248	22 – 11741	*BDL – 2.7	3.2 - 26	13000 - 3500000	7800 - 1700000	Present
January 2014	6.87 – 7.77	-	326 - 37312	10 - 15473	NIL – 4.3	3.3 - 96	330000 - 3500000	130000 - 1700000	Present

NOTE: TDS (Total Dissolved Solids); DO (Dissolved Oxygen); BOD (Biological Oxygen Demand)

*BDL for DO is 1mg/l

Observations:

1. pH measured at most of the points is between 6.25 to 7.23, i.e., within the normal range and does not show any significant variation.
2. The conductivity values indicate presence of seawater up to the central point of the Creek during high tide. During low tide conductivity goes down indicating receding tide indicating influx of sea water up to central point of the creek during the high tide.
3. Dissolved Oxygen ranges from low to NIL or BDL at most of the sampling points probably because of high organic load from sewage and decomposed garbage. This can also be seen from BOD which ranges from 1.3mg/l to 50mg/l during low tide and 3.2mg/l to 96 mg/l during high tide.
4. All the sampling points show the presence of extremely high Total Coliform and Faecal Coliform and all indicate positive E-coli. This indicates discharge of raw sewage and stagnation of water due to decomposition of organic matter.

The study will continue till October 2014 after which a comprehensive report of findings will be prepared.

6.6 ENVIRONMENTAL STATUS OF THE CUNCOLIM INDUSTRIAL ESTATE

Introduction: Cuncolim Industrial Estate is located in the Southern District of Goa (Longitude 74°1'51.43"E and Latitude 15°10'59.09"N). It is bordering the Salcette Taluka. An Irrigation canal is located on the Northern side of the Industrial Estate. The Industrial Estate comprises of 128 units out of which 11 units are non – functioning and 20 units are closed. Of the operating units 79 nos. of units are registered with the Board of which approx. 13-14 nos. of units are induction furnaces and rolling mills engaged in the production of steel ingots and rolled products. These units generate steel slag as by-product. Two nos. of units i.e. M/s Nicomet Industries Ltd. and M/s Sunrise Zinc Ltd. (M/s Sunrise Zinc Ltd. is presently shutdown and purchased by M/s The Axis) are engaged in the production of trace metals such as copper, zinc, cobalt, nickel and lead using processes such as leaching/ solvent extraction/ electrolysis. The raw material used as stated by the unit is imported ore. The by-product of these two industries generated large quantities of solid hazardous. There is one fish meal unit and 4 nos. of fish processing units.

Existing relevant literature on the subject: The Goa State Pollution Control Board (GSPCB), Panaji had entrusted National Environmental Engineering Research Institute (NEERI), Nehru Marg, Nagpur a study on assessment of ground water, soil and surface water due to past and present activities of M/s Sunrise Zinc Ltd., Plot No. L-2 and M/s Nicomet Industries Ltd., Plot No. L-15, 19 & 20, Cuncolim Industrial Estate. The

report indicated that the quantum of filter cake generated amounts to about 15 metric tonnes per day (MTPD) as reported by M/s Nicomet Industries Limited (NIL) and M/s Sunrise Zinc Ltd (SZL) and the major constituents of the filter cake from NIL are arsenic (447 mg/kg), cobalt (5026 mg/kg) and copper (5848 mg/kg). The filter cake is amenable to leach cobalt, copper and manganese under worst case scenario. There is however no stipulated limit for cobalt, copper and manganese in the leachate. However, manganese were high in some of the samples making the source unfit for irrigation purpose. Based on leachability of filter cake as per the CPCB requirements (water leach test), the filter cake is not amenable to leaching hazardous elements under natural environmental conditions. However the possibility of leaching of copper, manganese and cobalt in significant concentrations as determined by the TCLP tests, cannot be ruled out due dumping of filter cake.

Presently, M/s Nicomet Industries Ltd. has constructed captive secured landfill site for storing the filter cake. It is necessary to periodically monitor the ground water quality and soil status around captive secured landfill site for which 5 nos. of test wells have been provided around the captive secured landfill site.

In view of the above, the Board officials, Ms. Jenica Sequeira, Scientist C and Mr. Nilesh S. Parsekar, Scientist B has initiated the project on **Environmental Status of the Cuncolim Industrial Estate** in the core zone followed by the buffer zone of the Cuncolim Ind. Est. within approximately 500m radius. The project study will be carried out for a period of one year. This Report represents the ground water quality and surface water quality results sampled on 14th October 2013, 29th November 2013 and 27th January 2014 at different locations.

Sampling locations: Sampling locations were identified in and around Cuncolim Industrial Estate for ground water and surface water like test wells (5 nos.), open wells (6 nos.), bore wells (6 nos.), Irrigation canal (3 locations), Laterite stone quarries (2 nos. at 3 locations).

Methods: All the samples were collected and analysed in the Board Laboratory using Approved Methods like APHA & IS. The metals like Cu, Cd, Zn, Pb, Co, Fe, Mn, Ni and Cr were analysed using Atomic Absorption Spectrophotometer and Nutrients like Nitrite, Nitrate and Sulphate were analysed using UV – Visible Spectrophotometer with Certified Reference Materials.

Results and Discussion: Permissible limits for drinking water as per BIS 10500 (2004) is used for **Test well samples, Open dug well samples and Bore well samples** and the Permissible limits for **Irrigation water** as per CPCB Standards (Scheme for Zoning and Classification of Indian Rivers, Estuaries and Coastal Waters – ADSORBS/3/78-79).

Graphical representation of the data monitored is presented below;

Graph 1 to 9 below indicates that Cu & Zn concentration in all the Test wells shows well within the permissible limit in drinking water where as Ni, Fe & Mn concentrations are beyond permissible limits at some of the test wells. Most of the test wells show Cd & Pb concentrations beyond permissible limits.

Graph 10 to 18 below indicates that Cu & Zn concentration in all the Open dug wells shows well within the permissible limit in drinking water where as Pb, Ni, Fe & Mn concentrations are beyond permissible limits at some of the open dug wells. Most of the open dug wells show Cd concentration beyond permissible limits.

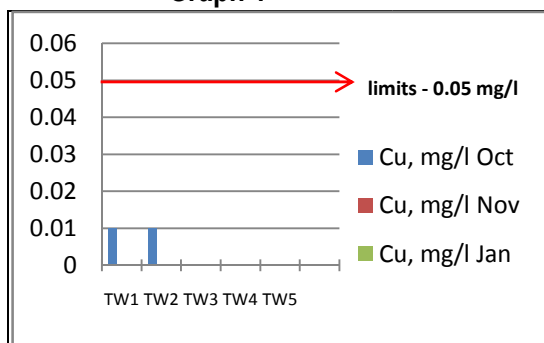
Graph 19 to 27 below indicates that Cu & Zn concentration in all the Bore wells shows well within the permissible limit in drinking water where as Pb, Ni, Fe & Mn concentrations are beyond permissible limits at some of the bore wells. Most of the bore wells show Cd concentration beyond permissible limits.

Irrigation Canal samples at mid point in front of Main gate of M/s Nicomet Industries Ltd and Downstream - 100 metres from the midpoint were also collected and analysed, which indicated that the pH

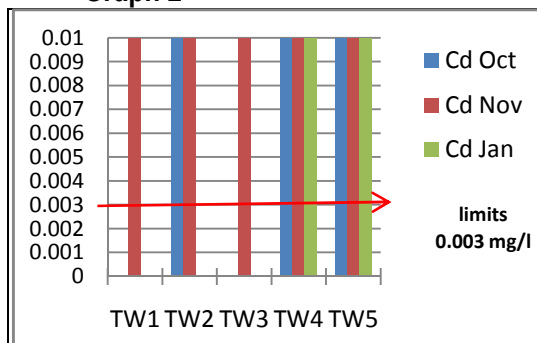
(4.80) for October 2013 and pH (5.28) for November 2013 and the pH (5.04) for October 2013 respectively are below permissible limit for irrigation water.

Samples were also collected and analysed from Laterite stone quarry within Cuncolim Industrial Estate during October 2013. Samples could not be collected from the Laterite stone quarry on during November 2013 and January 2014 as both the quarries were found dried.

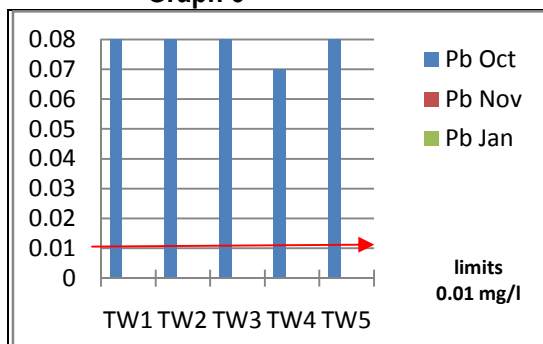
Graph 1



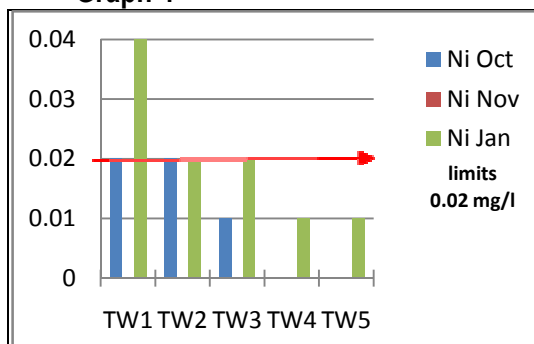
Graph 2



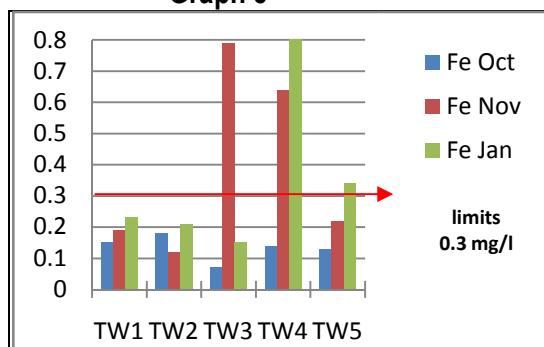
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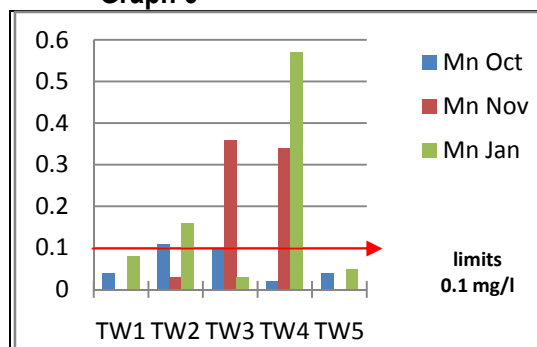
Graph 4



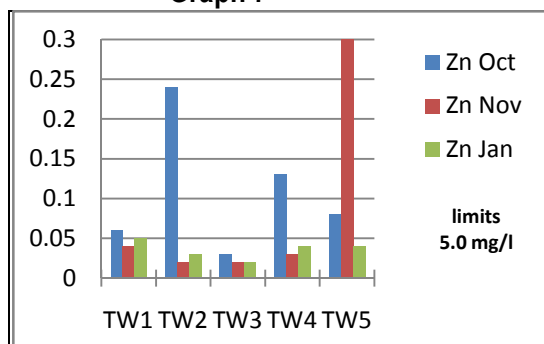
Graph 5



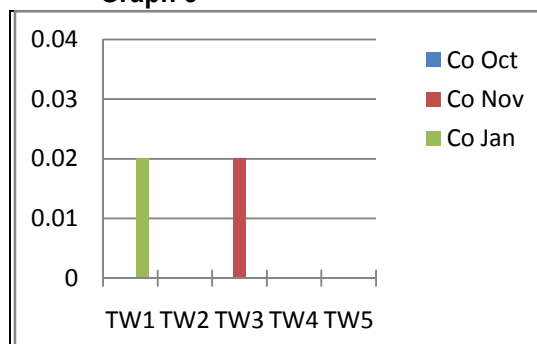
Graph 6



Graph 7

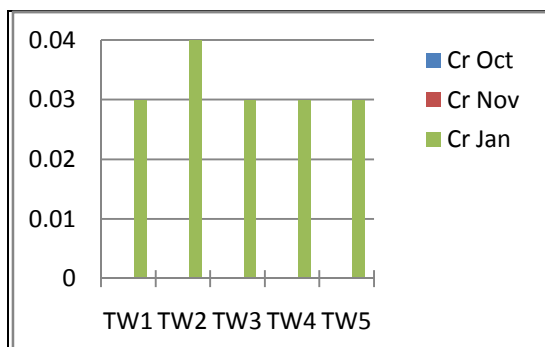


Graph 8

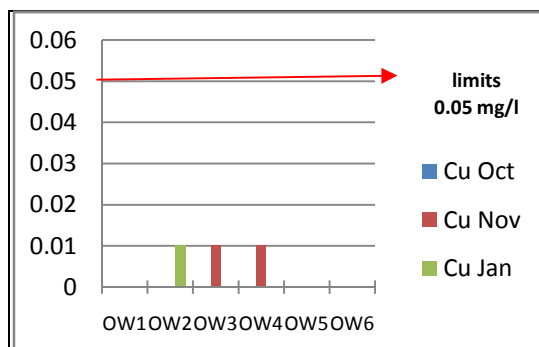


Graph 9

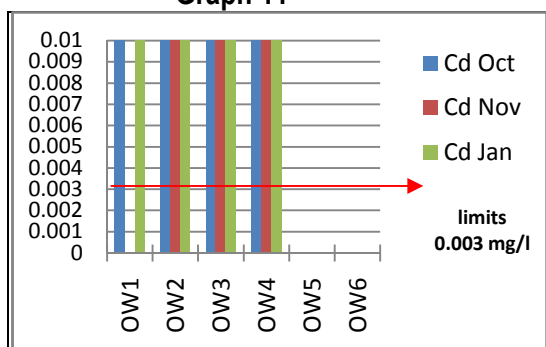
Graph 10



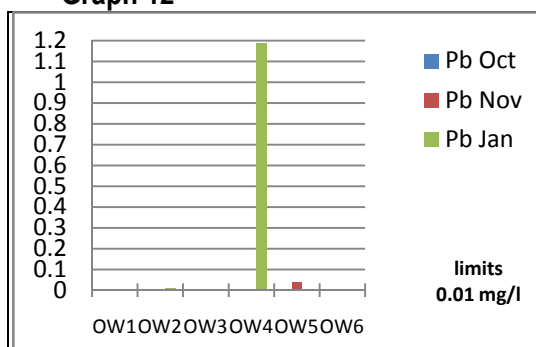
Graph 11



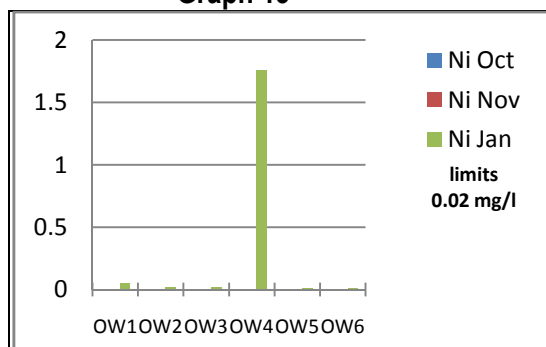
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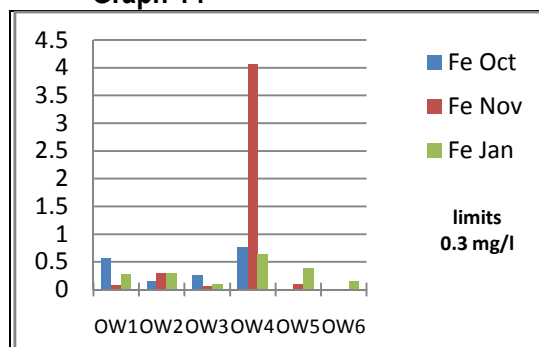
Graph 13



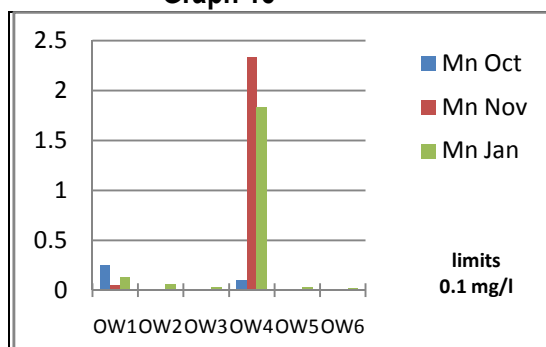
Graph 14



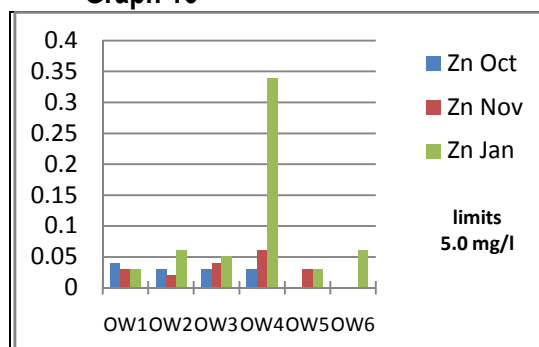
Graph 15



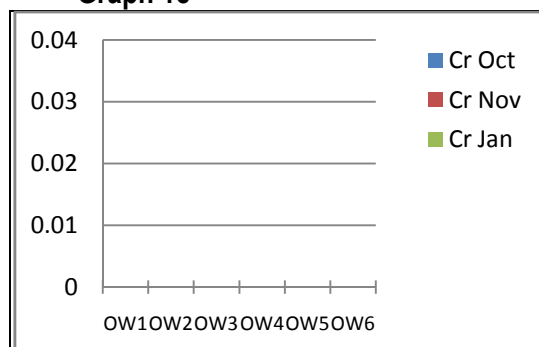
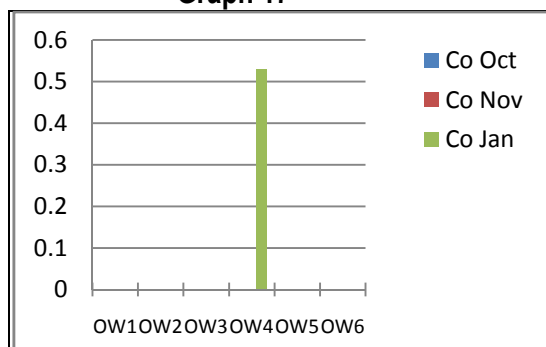
Graph 16



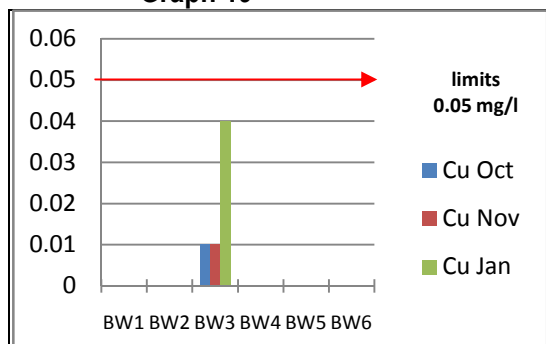
Graph 17



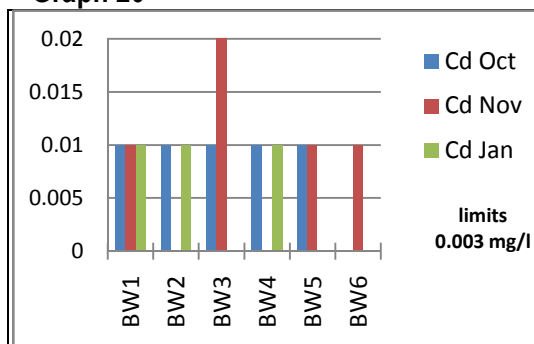
Graph 18



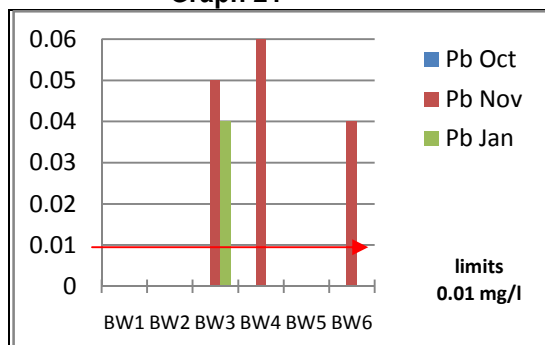
Graph 19



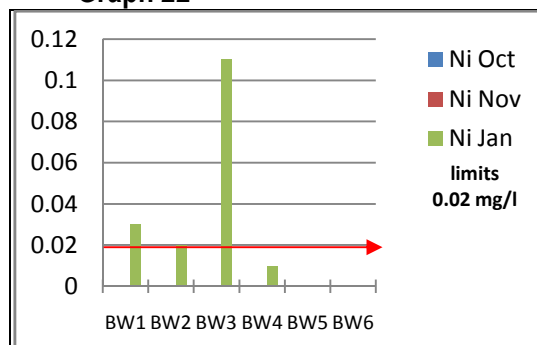
Graph 20



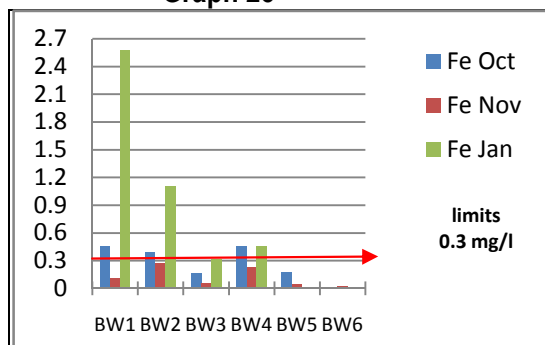
Graph 21



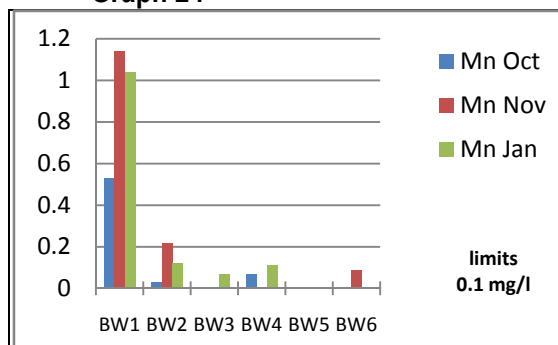
Graph 22



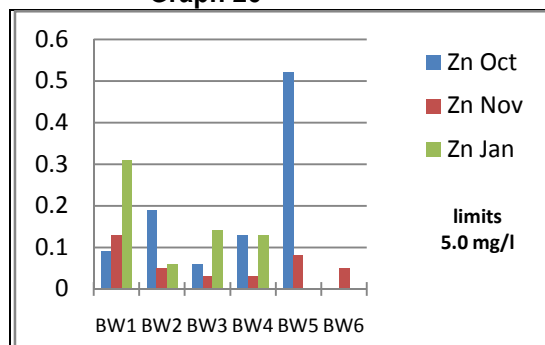
Graph 23



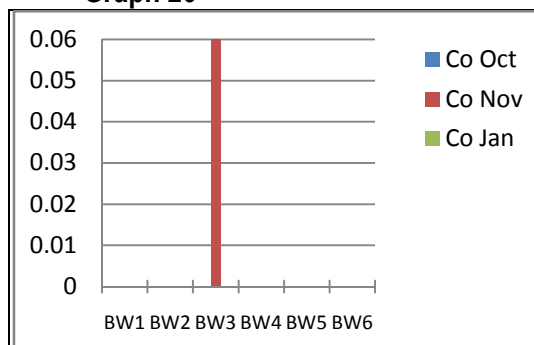
Graph 24



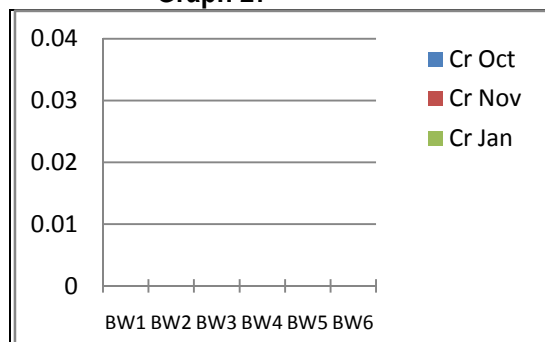
Graph 25



Graph 26



Graph 27



6.7 STUDY OF WATER QUALITY USING PHYSICO-CHEMICAL PARAMETERS AT SURROUNDING AREA OF VERNA INDUSTRIAL STATE

Background: Verna Industrial Estate is located in Verna village in Salcete taluka, south Goa District. There are a number of industries of different categories and capacities operating in the industrial estate. The Study is aimed to estimate current status of physico-chemical characteristics of water quality in and around Verna Industrial Estate with specific reference to permanent water sources. Spatial and temporal variation with emphasis on monthly trend in physico-chemical parameters will also be attempted.

Abstract: The present study is aimed at understanding current status of physico-chemical characteristic of water quality in and around Verna Industrial Estate. Monthly changes in physico- chemical parameters such as temperature, pH, turbidity, total dissolved solids, total hardness, dissolved oxygen and biological oxygen demand, chlorides, phosphate, nitrates, metals will be analyzed for a period of one year. The results, based on the analysis one-season data, have indicated that physico-chemical parameters of water are within the permissible limits.

Introduction: Water resources are of critical importance to both natural ecosystem and human development. It is essential for agriculture, industry and human existence. The healthy aquatic ecosystem is depended on the physico-chemical and biological characteristics. The quality of water in any ecosystem provides significant information about the available resources for supporting life in that ecosystem. Good quality of water resources depends on a large number of physico-chemical parameters and biological characteristics. To asses and monitor these parameters, it is essential to identify its magnitude and source of any pollution load. The characteristics can identify certain condition(s) for the ecology of living organisms and suggest appropriate conservation and management strategies.

In order to assess water quality index, the Board has carried out the physicochemical analysis of water of selective wells and spring water surrounding the area of Verna industrial area.

Objective: The aim of the study is to understand pollution status of wells and springs in terms of their physico-chemical characteristics, if any.



Fig. 6.7 (1) – Location of well-water collection within the lower-reaches of Verna Industrial Estate surrounding

Materials and method: *Collection of sample:* Nine representative sampling stations are selected for water collection from open wells (refer Fig. 1 & 2) to be analysed for a period from November 2013 to October 2014 on monthly basis (last week of every month). However, in the present article, observations for the period from November 2013 to January 2014 have been presented.



Lined Well

Unlined Well

Unlined Well

Fig.6.7 (2) – Location of well-water collection within the mid-reaches of Verna Industrial Estate surrounding.

Results and Discussion

The higher concentration of some parameters is probably due to anthropogenic activity. The pH and hardness levels indicate moderate quality of water. The average value of DO and COD levels indicate the absence of organic pollutant. As there are no major polluted industries located in Verna Industrial Estate, the major source of organic pollutants appears to be only the domestic source. Population density spread over sparsely located villages may be contributing towards faecal coliform and E-coli presence. The transportation of faecal coliform and E-coli very often takes place due to indiscriminate sewage disposal, improper location of septic tank.

Microbiological quality - presence of parameters like Fecal coliform, toatal coliform , *E-coli*, although marginally, in well waters indicate that water is not fit for drinking purpose and requires pre-treatment prior to its usage, specifically for drinking purpose.

Physico chemical parameters / Nutrients / Metal content -

1. **pH.** The National Drinking Water Quality Standard for pH ranges between 6.5 to 8.5. Stream water usually ranges from pH 6.5 (*slightly acidic*) to a pH of 8.5. In study area, pH varied from 4.88 to 6.74). However, its average (pH - 6.67) indicates that the water is good quality and can be used for irrigation and drinking purposes.
2. **Alkalinity:** A range of 100 to 250 ppm for river water is considered normal. If the alkalinity of water is too high, the water can be turbid, which inhibits the growth of underwater plants. In study area, the average value of alkalinity levels ranges from (2.0–40.0 mg/l) in the month of November to January 2014 indicating a good water quality.
3. **Biological Oxygen Demand (BOD):** Natural water with low BOD have low nutrient levels therefore, much of the oxygen remains in the water. Unpolluted, natural waters will have a BOD of 5 mg/l or less. Within the study area, BOD values ranges from 0.4 to 3.4 mg/l. Indicating good well-water quality.
4. **Chloride:** The presence of chloride, where it does not occur naturally, indicates possible water pollution. High levels of chloride kill plants and wildlife. The average value of chlorides (8.0-43.0 mg/l) observed within the study area analysed for a period from November to January indicates the absence of pollutants in the study area.
5. **COD:** In the study area, COD value is observed to be in ranging from 3.0 to 12.0 mg/l. This value indicates traces of organic matter present in wells, probably as a result of natural decomposition of leaves or other decomposed matter.
6. **Dissolved Oxygen (DO):** Dissolved oxygen is a measure of the amount of oxygen freely available in water. Dissolved oxygen values ranged from 2.3 -6.7 mg/l and are within the permissible limits.
7. **Metals:** The normal range for iron in freshwaters is 0.1-0.5 ppm or mg/l. In the study area, concentration of iron ranges from 0.05-0.33 mg/l. Most of the metals like Cu, Mn, Co, Ni, Zn ranges

from (0.01- 0.14 ppm) and are present at very trace levels. Other metals like Cd, Cr, Pb are below the detection limits thereby indicating good quality water.

8. **Nitrite and Nitrates:** Nitrogen is required by all organisms for the basic process of life to make proteins required for growth and reproduction. In the study area, average value observed for Nitrates ranges from (0.04 - 2.43 mg/l) and indicates good quality of water.
9. **Sulphate:** Sulphates in the watershed are primarily related to the occurrence of different types of minerals in the soil and bedrock. In the study area, Sulphate content ranges between 3.0 mg/l to 17.0 mg/l . The average value of sulphate (12.0 mg/l) indicates the absence of organic pollutants.

Table 6.7 (1) : Physico-chemical parameters analysed during the month of November, 2013

Sr. no	Parameter	well 1	well 2	well 3	well 4	Well 5	well 6	well 7
1	pH	6.2	5.99	5.67	5.68	5.21	5.67	5.87
2	Total Alkalinity (mg/l)	2	4	2	3	3	2	4
3	BOD (mg/l)	1.6	1.4	2.1	1.9	3.4	3.1	2
4	Chloride (mg/l)	8	15	8	43	9	9	21
5	COD (mg/l)	4	3	3	5	4	4	4
6	DO (mg/l)	2.4	2.3	5.6	5.1	3.9	4.7	2.4
7	Nitrite (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8	Nitrate (mg/l)	0.33	0.36	0.09	0.63	0.73	0.17	1.71
9	Sulphate (mg/l)	3	4	5	3	4	3	13
10	Cadmium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11	Copper (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12	Nickel (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13	Chromium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14	Zinc (mg/l)	0.02	0.01	0.01	0.01	0.01	0.07	0.01
15	Cobalt (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16	Lead (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17	Iron (mg/l)	0.1	0.12	0.07	0.05	0.09	0.14	0.05
18	Manganese (mg/l)	0.02	0.01	BDL	0.01	0.01	0.01	BDL
19	Total coliform	540	920	240	49	-	920	350
20	Fecal Coliform	240	540	17	23	-	79	240

Table 6.7 (2) : Physico-chemical parameters analysed during the month of December 2013

Sr. no	Parameter	well 1	well 2	well 3	well 4	Well 5	well 6	well 7
1	pH	5.93	5.9	5.64	5.68	5.21	5.67	5.87
2	Total Alkalinity (mg/l)	30	35	15	25	25	20	40
3	BOD (mg/l)	1.3	0.9	0.4	0.8	1.6	1.1	1.5
4	Chloride (mg/l)	9	13	8	17	36	12	33
5	COD (mg/l)	6	5	4	4	6	6	5
6	DO (mg/l)	1.7	3.6	4.4	4.8	3.7	3.6	2.5
7	Nitrite (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8	Nitrate (mg/l)	2	0.07	0.04	0.72	0.15	0.15	1.16
9	Sulphate (mg/l)	5	8	6	4	7	5	17
10	Cadmium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11	Copper (mg/l)	BDL	BDL	BDL	0.01	BDL	0.01	BDL
12	Nickel (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13	Chromium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14	Zinc (mg/l)	0.02	0.02	0.02	0.02	0.02	0.03	0.02
15	Cobalt (mg/l)	BDL	0.01	BDL	0.01	0.01	0.01	0.01
16	Lead (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17	Iron (mg/l)	0.07	0.06	0.05	0.04	0.07	BDL	0.08
18	Manganese (mg/l)	0.01	0.01	0.01	0.03	0.02	0.01	0.02
19	Total coliform	240	170	46	34	920	350	130
20	Fecal Coliform	79	49	45	NIL	40	2	17

Table 6.7 (3) : Physico-chemical parameters analysed during the month of January, 2014

Sr. no	Parameter	well 1	well 2	well 3	well 4	Well 5	well 6	well 7
1	pH	5.05	5.45	4.95	4.97	4.57	4.88	5.14
2	Total Alkalinity (mg/l)	20	40	25	15	35	10	40
3	BOD (mg/l)	1.6	0.9	0.6	0.7	0.9	-	-
4	Chloride (mg/l)	11	16	12	42	18	10	28
5	COD (mg/l)	7	10	6	6	4	12	8

6	DO (mg/l)	2.5	3.5	6	5.1	5	-	-
7	Nitrite (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8	Nitrate (mg/l)	0.23	0.23	0.19	2.34	1.37	0.21	2.43
9	Sulphate (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	5
10	Cadmium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11	Copper (mg/l)	BDL	BDL	BDL	0.01	BDL	0.01	BDL
12	Nickel (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13	Chromium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14	Zinc (mg/l)	0.04	0.03	0.06	0.05	0.04	0.03	0.03
15	Cobalt (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16	Lead (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17	Iron (mg/l)	0.33	0.23	0.75	0.2	0.17	0.2	0.24
18	Manganese (mg/l)	0.04	0.02	0.09	0.05	0.06	0.05	0.05
19	Total coliform	240	49	33	110	130	350	240
20	Faecal Coliform	22	22	11	49	49	34	17

Table 6.7 (4) : Comparative data of physico-chemical parameters analyzed from November 2013 to January 2014

Sr. no	Parameter	Maximum	Minimum	Range	Permissible limits for Drinking water
1	pH	6.74	4.57	4.57-6.74	6.5-8.5
2	Total Alkalinity (mg/l)	40	2	2.0-40.0	-
3	BOD (mg/l)	3.4	0.4	0.4-3.4	-
4	Chloride (mg/l)	43	8	8.0-43.0	25
5	COD (mg/l)	12	3	3.0-12.0	-
6	DO (mg/l)	6.7	2.3	2.3-6.7	-
7	Nitrite (mg/l)	-	-	-	-
8	Nitrate (mg/l)	2.43	0.04	0.04-2.43	45
9	Sulphate (mg/l)	17	3	3.0-17.0	200
10	Cadmium (mg/l)	-	-	-	0.003
11	Copper (mg/l)	-	-	-	0.05
12	Nickel (mg/l)	0.03	0.01	0.01-0.03	-
13	Chromium (mg/l)	-	-	-	-
14	Zinc (mg/l)	0.04	0.01	0.01-0.04	5
15	Cobalt (mg/l)	-	-	-	-
16	Lead (mg/l)	-	-	-	0.01
17	Iron (mg/l)	0.14	0.04	0.04-0.14	0.3
18	Manganese (mg/l)	0.09	0.01	0.01-0.09	0.1
19	Total coliform	540	33	33.0-540.0	Nil
20	Faecal Coliform	540	2	2.0-540.0	Nil

Conclusion: Based on the physico-chemical parameter (*analysed and interpreted for three months data from November 2013 to January 2014*) of representative well-water samples collected from the study area, it can be concluded that well-water is not polluted, as all results are within permissible limit when compared with Indian Standard for drinking water quality standards and Bureau of Indian Standards (BIS). Further, water is good for drinking purpose in terms of its physico-chemical parameter, however, it requires pre-treatment considering the presence of coliform. The presence of coliform probably indicates sewage contamination / close proximity to septic tank / soak pit. Some parameters like pH, are found slightly lower than the permissible limit at certain locations, However, the study needs to be continued and needs to be extended for a further period to be conclusive in the interpretation and suggest suitable site-specific remedial measures, if any.

6.8 AMBIENT AIR QUALITY AND STACK EMISSION MONITORING AT THE SITE OF M/S SESA STERLITE LTD. (M/S SESA GOA LTD.), AMONA

With respect to the High Court matter of M/s Sesa Goa Ltd. (M/s Sesa Sterlite Ltd.), the Board conducted ambient air quality monitoring in the vicinity of M/s Sesa Sterlite Ltd, at Amona, Maina and Navelim Villages and stack emission monitoring at Goa Energy Ltd., Pig Iron Plant and Metcoke Plant (Expansion). The AAQM programme was started in November 2013 and is in progress. The monitoring is conducted on

twice weekly basis for checking the concentration levels of Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂) and Particulate Matter (PM₁₀).



Fig6.8.1 & 2: Ambient Air Quality Monitoring in progress at M/s Sesa Goa Ltd, Amona



Fig6.8.3 & 4: Stack Emission Monitoring in progress at M/s Sesa Goa Ltd, Amona

The data monitored is presented in Table 6.8.1 below and in graphical representations (Fig 6.8.5 ,Fig 6.8.6 and Fig6.8.7).

Considering the standard for 24 hourly averages, the data and the graphical representations indicate that the particulate matter (PM₁₀ fraction) is exceeding the permissible limit of 100µg/m³ on many occasions at all the locations. Apart from the industrial operations, construction activity was observed at the station sites on some days.

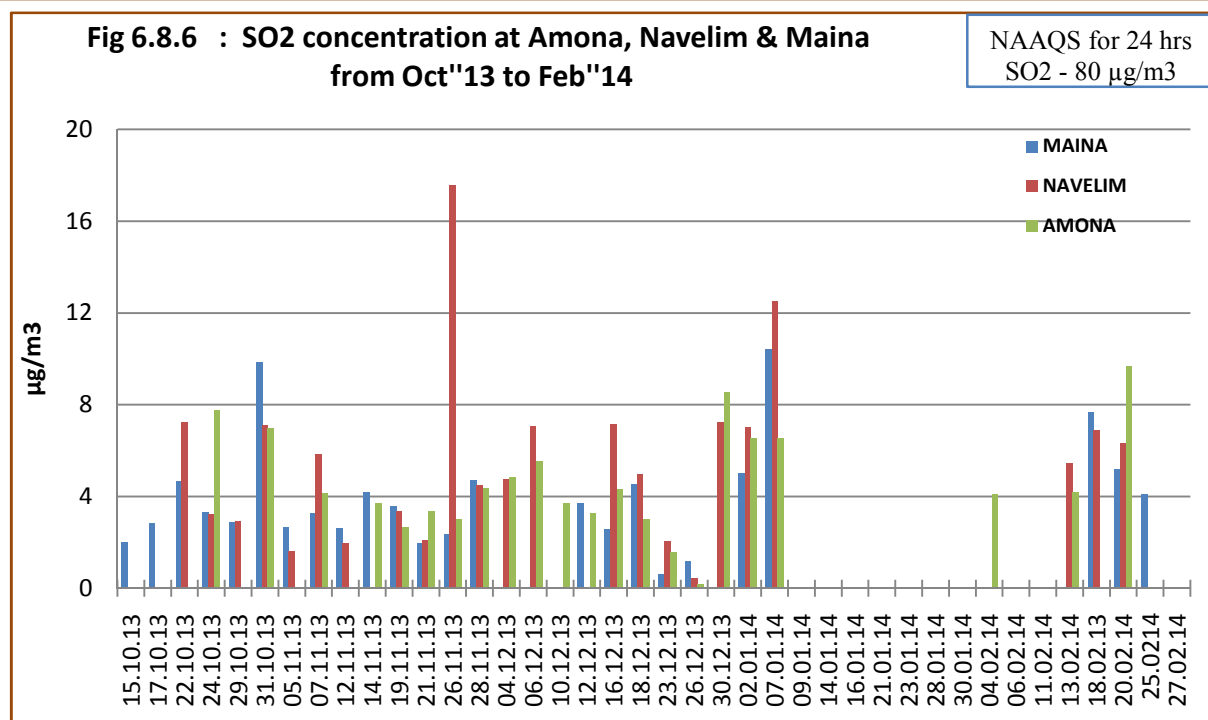
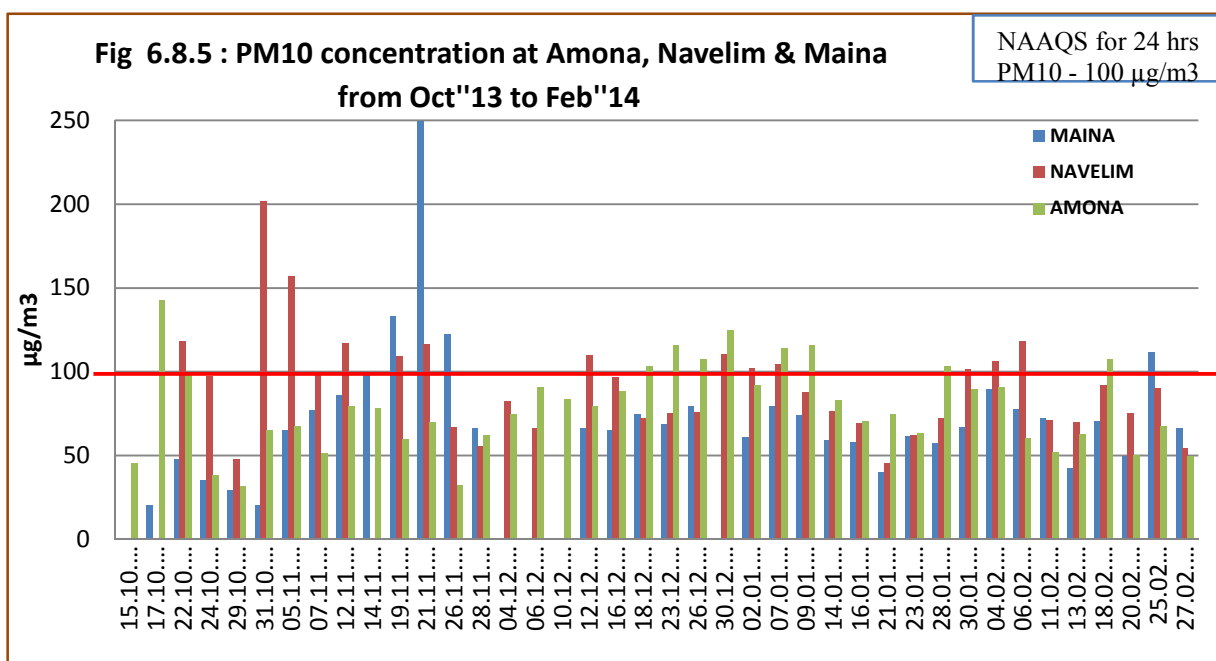
The stack emission monitoring was commenced at M/s Sesa Sterlite Ltd., Amona site from October 2013. The stack emission monitoring data is presented in Table 6.8.2 below.

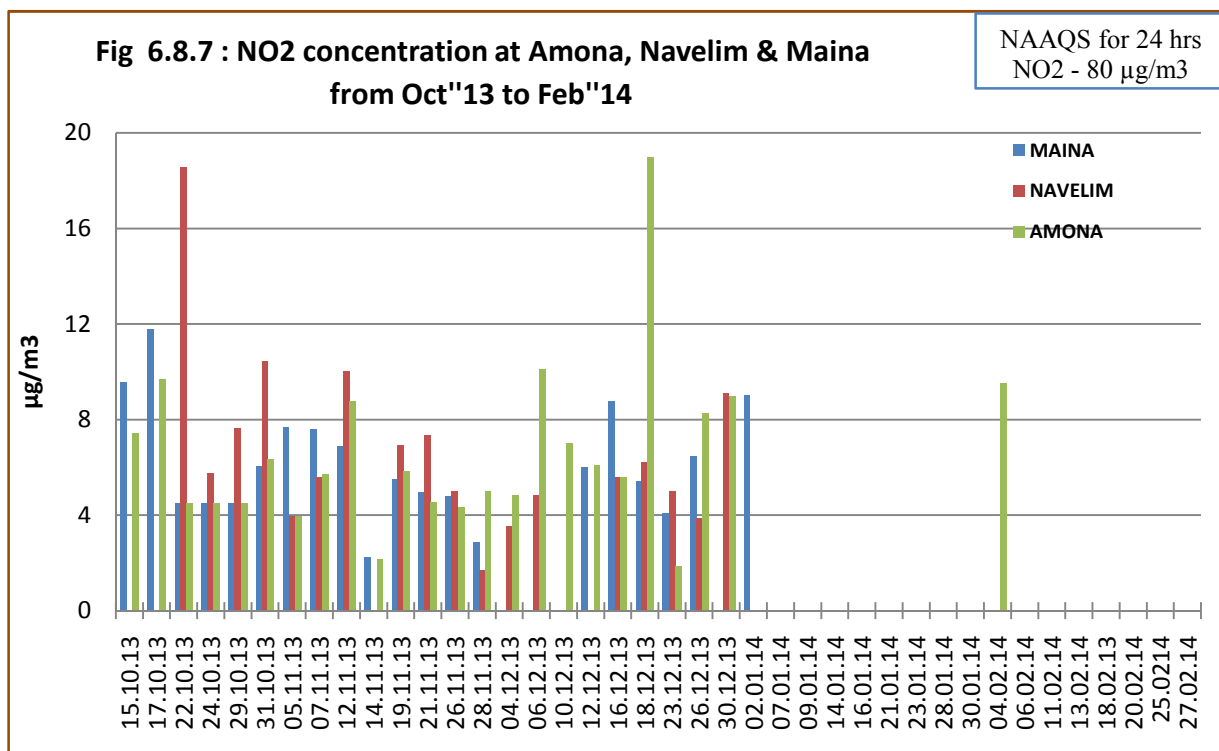
Table 6.8.1 : AAQM DATA FOR AMONA, NAVELIM AND MAINA FROM OCTOBER 2013 TO FEBRUARY 2014

DATE	SO ₂ µg/m ³			NO ₂ µg/m ³			PM ₁₀ µg/m ³		
	AMONA	NAVELIM	MAINA	AMONA	NAVELIM	MAINA	AMONA	NAVELIM	MAINA
15.10.13	BDL	*	2	7.41	*	9.56	45.44	*	
17.10.13	BDL	*	2.84	9.7	*	11.76	142.48	*	20.69
22.10.13	BDL	7.23	4.67	4.5	18.54	4.5	99.88	117.95	47.68
24.10.13	7.77	3.24	3.33	4.5	5.75	4.5	38.31	97.32	35.17
29.10.13	BDL	2.92	2.88	4.5	7.62	4.5	31.83	48.05	29.44
31.10.13	7	7.09	9.85	6.33	10.45	6.05	64.93	201.56	20.56
05.11.13	BDL	1.61	2.67	3.93	3.93	7.69	67.54	156.89	64.86
07.11.13	4.14	5.85	3.26	5.69	5.57	7.61	51.12	99.25	76.97
12.11.13	BDL	1.99	2.62	8.76	10.03	6.87	79.65	117.16	86.1
14.11.13	3.69	*	4.19	2.14	*	2.24	78.36	*	98.26
19.11.13	2.68	3.37	3.56	5.85	6.94	5.49	59.63	109.64	133
21.11.13	3.37	2.1	1.95	4.53	7.35	4.94	69.7	116.28	249.7
26.11.13	3.04	17.58	2.35	4.31	4.99	4.78	32.71	67.02	122.36
28.11.13	4.35	4.49	4.73	4.98	1.67	2.87	61.95	55.32	66.25
04.12.13	4.86	4.75	*	4.85	3.53	*	74.43	82.22	*
06.12.13	5.55	7.06	*	10.08	4.82	*	90.88	66.55	*
10.12.13	3.69	*	*	7	*	*	83.77	*	*
12.12.13	3.28	*	3.72	6.11	*	5.98	79.37	110.19	66.55
16.12.13	4.3	7.17	2.59	5.57	5.58	8.76	88.27	97.02	65.22
18.12.13	3.01	4.98	4.53	18.96	6.2	5.4	103.57	72.58	74.55
23.12.13	1.58	2.05	0.61	1.85	5.01	4.07	115.72	75.43	68.74
26.12.13	0.18	0.46	1.19	8.27	3.88	6.48	107.65	76.11	79.68

30.12.13	8.54	7.25	*	8.97	9.08	*	125.16	110.61	*
02.01.14	6.53	7.04	5.03	BDL	BDL	9	91.91	102.41	61.02
07.01.14	6.55	12.5	10.43	BDL	BDL	BDL	114.15	104.9	79.15
09.01.14	BDL	BDL	BDL	BDL	BDL	BDL	115.67	87.96	74.35
14.01.14	BDL	BDL	BDL	BDL	BDL	BDL	82.84	76.6	59.13
16.01.14	BDL	BDL	BDL	BDL	BDL	BDL	70.31	69.25	57.91
21.01.14	BDL	BDL	BDL	BDL	BDL	BDL	74.38	45.35	40.2
23.01.14	BDL	BDL	BDL	BDL	BDL	BDL	63.66	62.05	61.48
28.01.14	BDL	BDL	BDL	BDL	BDL	BDL	103.3	72.43	57.6
30.01.14	BDL	BDL	BDL	BDL	BDL	BDL	89.34	101.85	67.24
04.02.14	4.1	BDL	BDL	9.53	BDL	BDL	91.12	106.27	89.91
06.02.14	BDL	BDL	BDL	BDL	BDL	BDL	60.12	118.36	77.65
11.02.14	BDL	BDL	BDL	BDL	BDL	BDL	52.27	71.02	72.24
13.02.14	4.18	5.43	BDL	BDL	BDL	BDL	63.07	70.15	42.29
18.02.13	BDL	6.9	7.69	BDL	BDL	BDL	107.24	92.29	70.39
20.02.14	9.67	6.34	5.19	BDL	BDL	BDL	50.28	75.47	49.67
25.02.14	BDL	BDL	4.13	BDL	BDL	BDL	67.5	90.22	111.59
27.02.14	BDL	BDL	BDL	BDL	BDL	BDL	49.5	54.55	66.42

* No Monitoring



**Table 6.8.2: Stack Emission Monitoring at Amona M/s Sesa Goa Ltd. (M/s Sesa Sterlite Ltd.)**

Date of Monitoring	Name of the Unit	Stack attached to	Parameters Monitored			
			Total Particulate Matter mg/Nm ³	SO ₂ mg/Nm ³	NO _x mg/Nm ³	CO mg/Nm ³
05/02/2014	Goa Energy Ltd.	WHRB 1	61.3	89.6	BDL	-
12/03/2014			40.3	82.9	62.8	-
11/02/2014		WHRB 2	39.8	102.9	13.1	-
21/03/2014			52.0	17.2	38.7	-
28/01/2014	Pig Iron Plant	Hot Blast Stove 1	19.4	69.7	20.6	120
07/03/2014			51.5	70.4	290.4	326
30/01/2014		Hot Blast Stove 2	47.1	50.4	6.7	501
05/03/2014			42.5	17.6	43.8	0
21/10/2013	Metcoke Div (Exp)	Battery 1	69.4	-	-	-
01/10/2013		Battery 2	9.1	-	-	-
31/10/2013		WHRB 1	70.3	55.2	35.4	-
07/02/2014			42.7	165.7	6.7	-
26/03/2014			67.6	179.1	18.8	-
28/10/2013		WHRB 2	98.2	82.8	27.5	-
07/04/2014			68.3	188.2	26.5	-
13/11/2013	Metcoke Div (Exp Mini Blast Furnace)	Hot Blast Stove	16.1	53.0	27.0	233
02/04/2014			15.0	44.8	33.1	12486
15/11/2013	Pig Iron Plant (Exp Minin Blast Furnace)	Cast House De-dusting Init	25	-	-	-
16/04/2014			38.3	-	-	-

6.9 ANNUAL REPORT OF STACK MONITORING FOR THE YEAR APRIL 2013 TO MARCH 2014

During the year under report, the Goa State Pollution Control Board conducted Stack Emission Monitoring programmes for 32 stacks in 12 different industries within the State of Goa. The units mostly comprise of induction furnaces, reheating furnaces and sponge iron units. The stacks within the Met Coke and Pig Iron plants of M/s Sesa Goa Ltd. were also monitored during the year. The details of the stack emission monitoring conducted are presented below.

Table 6.9: Details of Stack Emission Monitoring conducted during the year

Sr. No.	Area	Industrial Area	Name of Unit	Type of Stack	Date of Sampling
1	-	Cuncolim Ind. Estate	M/S. Maa Durga Enterprises	Induction Furnace	15.05.13
2	-	Cuncolim Ind. Estate	M/S. Maa Durga Enterprises	Rolling Mill	17.05.13
3	-	Cuncolim Ind. Estate	M/S. Karthik Alloys	(Reheating Furnace) Rolling Mill	21.05.13
4	-	Cuncolim Ind. Estate	M/S. Trimurthy Industry	(Reheating Furnace) Rolling Mill	23.05.13
5.	Navelim – Amona Village	-	M/S. Sesa Goa Ltd	Battery NO.2 of 36 Coke Ovens (Expansion)	01.10.13
6.	Navelim – Amona Village	-	M/S. Sesa Goa Ltd	Battery NO.1 of 36 Coke Ovens (Expansion)	21.10.13
7.	Navelim – Amona Village	-	M/S. Sesa Goa Ltd	Waste Heat Recovery Boiler No. 2 (Expansion)	28.10.13
8.	Navelim – Amona Village	-	M/S. Sesa Goa Ltd	Waste Heat Recovery Boiler No. 1 (Expansion)	31.10.13
9.	Navelim – Amona Village	-	M/S. Sesa Goa Ltd	Hot Blast Stove - Blast Furnace(Expansion)	13.11.13
10.	Navelim – Amona Village	-	M/S. Sesa Goa Ltd	Pig Casting Machine Cast House Dedusting (Expansion)	15.11.13
11.	Sanguem Goa	-	M/S. Goa Sponge & Power Ltd	Induction Furnace I	27.11.13
12.	-	Cuncolim Ind. Estate	M/S. Trimurthy Industry	(Reheating Furnace) Rolling Mill	06.12.13
13.	Sanguem Goa	-	M/S. Goa Sponge & Power Ltd	Induction Furnace II	11.12.13
14.	Sanguem Goa	-	M/S. Shraddha Ispat Pvt Ltd	Boiler	13.12.13
15.	-	Kundaim Ind. Estate	M/S. Mandovi Casting Pvt Ltd.	Induction Furnace	24.12.13
16.	-	Kundaim Ind. Estate	M/S. Karthik Induction Ltd.	Induction Furnace	27.12.13
17.	-	Kundaim Ind. Estate	M/S. Mohit Ispat Ltd.	Induction Furnace	03.01.14
18.	-	Kundaim Ind. Estate	M/S. West Coast Ingots Pvt Ltd.	Induction Furnace	09.01.14
19.	-	Kundaim Ind. Estate	M/S. Mohit Steel Industries Ltd.	Induction Furnace	13.01.14
20.	-	Kundaim Ind. Estate	M/S. Shri Ambey Forging Pvt Ltd.	Induction Furnace	15.01.14
21.	Amona Village	-	M/S. Sesa Goa Ltd	Hot Blast Stove (Blast Furnace -1)	28.01.14
22.	Amona Village	-	M/S. Sesa Goa Ltd	Hot Blast Stove (Blast Furnace -2)	30.01.14
23.	Navelim Village	-	M/S. Goa Energy Pvt Ltd	Waste Heat Recovery Boiler No. 1	05.02.14
24.	Navelim – Amona Village	-	M/S. Sesa Goa Ltd	Waste Heat Recovery Boiler No. 1 (Expansion)	07.02.14
25.	Navelim Village	-	M/S. Goa Energy Pvt Ltd	Waste Heat Recovery Boiler No. 2	11.02.14
26	Amona Village	-	M/S. Sesa Goa Ltd	Hot Blast Stove (Blast Furnace -2)	05.03.14

27.	Amona Village	-	M/S. Sesa Goa Ltd	Hot Blast Stove (Blast Furnace -1)	07.03.14
28.	Navelim Village	-	M/S. Goa Energy Pvt Ltd	Waste Heat Recovery Boiler No. 1	12.03.14
29.		Cuncolim Ind. Estate	M/S. Global Ispat Pvt Ltd	Induction Furnace	19.03.14
30	Navelim Village	-	M/S. Goa Energy Pvt Ltd	Waste Heat Recovery Boiler No. 2	21.03.14
31.	Navelim – Amona Village	-	M/S. Sesa Goa Ltd	Waste Heat Recovery Boiler No. 1 (Expansion)	26.03.14
32.		Cuncolim Ind. Estate	M/S. Shri Balaji Rollings Pvt Ltd	Induction Furnace	28.03.14

The results of the stack emission monitoring indicate that the particulate and Sulphur Dioxide emissions from the flue gases are within the permissible limits except for two stacks of which one exceeded the permissible limits and for the other the levels were very close to the permissible limits. Necessary directions have been issued to the two units.

6.10 INITIATIVES ADOPTED BY THE INDUSTRIES TO REDUCE POLLUTION LEVELS

6.10.1 FREQUENT COMPLAINTS M/S. BERGER BECKERS COATINGS PVT. LTD, PILERNE INDUSTRIAL ESTATE, PILERNE REGARDING ODOUR EMISSIONS

Process:- The unit deals in the production of Solvent based Paints (Coil coatings, Metal coatings for earth moving equipments and CDF paints). The manufacturing process involves blending and grinding of raw materials (Mixing and grinding of Resin, Solvent, Pigment & additives), testing of paint samples for all mechanical and physical properties, shade adjustment by adding bases, filtration, and packed in a required pack sizes.

Measures adopted to reduce Odour emissions from the unit

One of the measures was to increase the height of the process stack to discharge the exhaust air generated from the process. The unit has increased the heights of stack (*refer fig 1*) as mentioned in *Table 1*. in order to reduce odour emissions and the stacks are monitored once in every four months for VOC (Volatile organic compounds) parameter. The VOC levels are low to the tune of 2-5 PPM. Thereafter to reduce the odour generated from the hazardous waste storage shed at the basement is discontinued and new fully closed shed with access control has been constructed close to the production area.

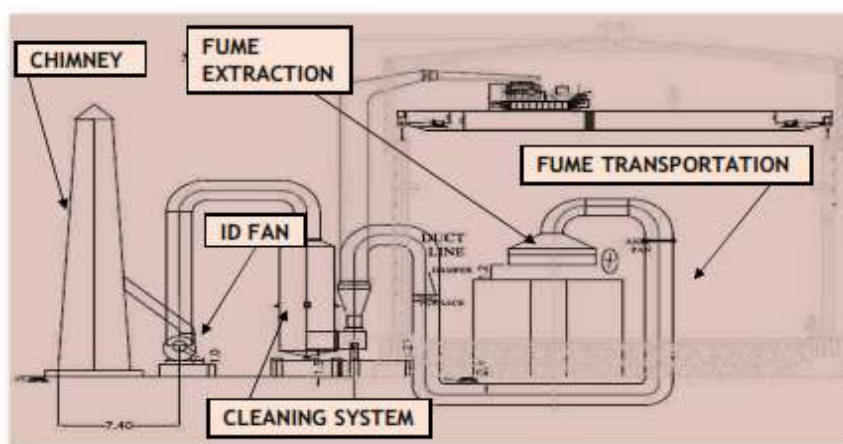
Further to reduce the odour emissions from the manufacturing process the unit has proposed to install automatic roll up doors in place of manual doors. As per the Board records, no fresh complaints are received against the unit after adopting the above said measures.

Table 6.10(1): Revised stack heights are as given below.

SR. No	Exhaust stack	Previous Height	Revised increased Height
1	Technical Lab	12.2	17.2
2	C D F Lab	15.5	18.5
3	C D F Spray booth	15.5	18.5
4	C D F Spray booth 2	13.5	18.5
5	C D F Exhaust duct	13.5	18.5
6	C D F Exhaust 2	12.5	18.5

Photographs for reference:-**Fig6.10 (1):. Increased Stack height****6.10.2 POLLUTION CONTROL SYSTEM FOR INDUCTION MELTING FURNACES INSTALLED BY M/S. SHRADDHA ISPAT PVT LTD.**

Medium Frequency Induction Melting Furnaces contribute to a significant extent of our country's steel production and these furnaces use a combination of variety of steel scrap, Coal based or Gas based DRI and carburizers like Cast Iron scrap or Pig Iron in various proportions suiting to the economics of the geographical location. Whenever melting of any combination of above raw materials is carried out, emissions are generated that need to be processed thoroughly. The normal discharge of emissions from any furnace varies in between 3-5grams/Nm³ and the pollution norms across the country usually demand emission levels that are equal to or less than 150-100milli-grams/Nm³

**Fig No.6.10 (2)**

A schematic sketch of the usual arrangement of a Pollution Control System is shown in Fig No. 6.10 (2). The major components of any Pollution System are Fume Collection, Fume Transportation, Cleaning System, ID Fan Configuration and Chimney. While each of the above components has its own significant role in the overall pollution control system, one has to understand the working of melting furnaces as well in order to design a system that suits the requirement of the industry. Medium Frequency Induction Melting Furnaces need to be fed continuously and charging of raw material, poking and de-slugging are ongoing activities over the entire melting cycle of any given Induction Furnace. Conventionally designed Pollution Control Systems often overlooked the importance of the melting behaviour of an Induction Furnace apart from the degree of emissions and their content. The following pictures are the conventionally designed fume extraction hoods that can be discovered at almost all Induction Furnace based melting Units across the country.

The conventional fume extraction hood is usually mounted on top of the furnace such that it is able to collect maximum fumes that are generated during the process. While this would have suited the fume extraction exercise, it failed when furnace has to be charged using magnetor grab or when furnace is poked using an EOT Crane mounted poker. It should be clearly understood that maximum fumes are generated during the charging/poking activity. In order to take care of this drawback, it was recommended to move the hood back in position either mechanically or manually so as to enable fume capture. An utter failure was experienced because all this was expected from the labour working on the furnace platform and since this always involved time and energy.



Fig No.6.10 (3)



Fig No.6.10 (4)

The only solution then appeared in designing a Fume Extraction Hood such that fumes would be captured even without moving the hood during any of the operations of the Induction Melting Furnaces like charging, poking and de-slagging. The latest design of fume extraction hood i.e. the Dish Antenna Type Fume Capturing Hood (DAFCH) was designed by Electrotherm specially provides arrangement with the angles of suction located such that more than 85% of fumes generated from the furnace are always captured, processed and then let out in the atmosphere post treatment. The novel design has been able to envisage the complete set of operations of any Induction Furnace that includes, but is not limited to the size and shape and diameter of the melting furnace, input power applied for melting, raw material composition, melting cycle etc.

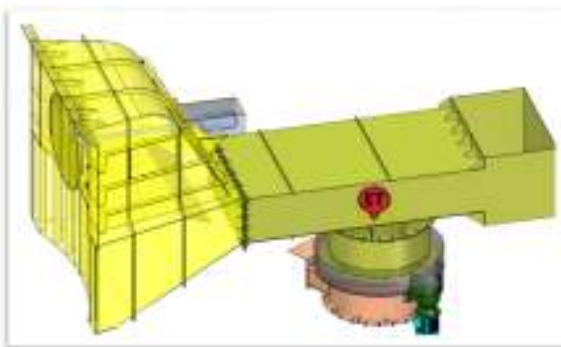


Fig No.6.10 (5)



Fig No.6.10 (6)

The DAFCH allows the charging, poking and de-slagging activities to be carried out simultaneously when fume extraction is in progress. An additional draft has been provided at the top which creates a steady vortex to suck the fumes in, a very fine balancing of this draft apart from the main extraction ensures maximum fume capture.

Post Fume Extraction/Capture, another key component is Transportation of these fumes to the cleaning unit. The diameter of the duct and number of bends define the effectiveness of any system because post fume extraction, dilution of these fumes has to be considered together with the degree of dilution based on various parameters like temperature, velocity and pressure of fumes etc. The Induced Draft Fan (ID Fan)

design is very critical and it should ensure generation of required volume of discharge at proper pressure so as to counter the pressure drop in the duct and filtering system and also take care of the air dilution volume.

Post ID Fan is located the Cleaning System of the Pollution Control. Two types of Cleaning Systems are available namely the Dry Type and Wet Type. Dry Type of cleaning systems are the ones that involve bag filters and the Wet Type of systems are commonly known as Wet Scrubbers. The choice of the type of filters/cleaning system however, is the Steel Plant owner's call depending upon the location of his plant and the type of raw material that is used by him.

The last component of the Pollution Control System is the Chimney, height of which usually varies in between 30-35m from the ground level depending upon the norms laid by the local Pollution Control Board authorities. Emissions from the stack are collected and monitored at regular intervals and these should conform to the limits set by them. M/s Shraddha Ispath Pvt Ltd, Cuncolim Industrial estate has installed one such system to control the fugitive emissions from the furnaces.



Fig No.6.10 (7) Fume Extraction (Conventional Top Mounted, vertical arrangement) BEFORE



Fig No.6.10 (8) Fume Extraction (Revised Electrotherm DAFCH, Horizontal arrangement) AFTER



Fig No.6.10 (9) Centrifugal Blower of 75KW and Capacity of 30000m³/Hr, Stack height 35 meters, Wet scrubbing system



Fig No.6.10 (10) Centrifugal Blower of 90KW and 1440RPM, Capacity 40000m³/Hr, Stack height 35meters, Wet scrubbing system

6.10.3 FREQUENT COMPLAINTS OF FOUL ODOUR FROM M/S UNITED MARINE PRODUCT, CUNCOLIM INDUSTRIAL ESTATE.

PROCESS: Fish meal is a commercial product made from processed fish. It is a brown powder or cake obtained by drying the fish or fish trimmings, often after cooking and then grinding it. Manufacturing process involves heating, which coagulates the protein, ruptures the fat depots and liberates oil and physico-chemically bound water; pressing which removes a large fraction of the liquids from the mass; separating the liquid into oil and water (stick water) evaporation of the stick water into a concentrate (fish soluble); drying of the solid material (press cake) plus added soluble, which removes sufficient water from the wet material to form a stable meal, grinding the dried material to the desired particle size. From an environmental point of view, the major problems of the fish meal industry are discharges of waste water which is rich in organic matter and nutrients and odour emissions.

ISSUES:**ODOUR CONTROL FROM THE MANUFACTURING ACTIVITY.**

One of the major problems with the Fish Meal processing units is the Odour emitted during the processing of the Fish meal. During actual production, the fish meal factories use a large amount of air in their dryers and fish meal coolers, as well as exhaust from process equipment to keep a negative pressure and removal of odour vapours. This air has traditionally been very heavy in odour. To curb the odour emissions M/s United Marine Product had installed biofiltes with the scrubber systems, the odour exhaust air/vapours from the cooker, dryer, pulveriser and coolers were passed through the bio-filters.

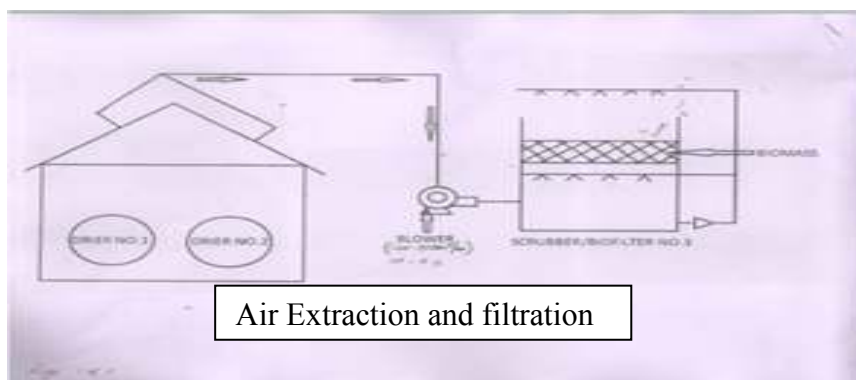


Fig No.6.10 (11)

There were frequent complaints from the nearby citizens regarding the foul smells generated from the unit. Unit implemented few measures to control the emissions. (Refer Fig No.6.10.12 & 13; Fig.6.10.14)



Fig No.6.10.12 & 13: MS Fabricated Shed around the dryers with air

The measures adapted involved installation of MS fabricated shed around the Dryers to trap the odour contaminated air from the Dryer section and conveying through the G.I air Duct into the Bio Filter for treatment. Also providing spray nozzle arrangement on the Bio-Filter **blower**



Fig No.6.10.14: Nozzles spray above the biofilter

Further emission control measure adopted was to completely enclose the processing area to avoid any leakages from processing area and maintain the sufficient Air and Humidity within the shed, involving intake of fresh air and removal of used air and treating the entire volume of air through wet scrubber. Air Blower is installed at the outlet of the air duct for the extraction of the air from the process area. The extracted air is treated by passing it through wet scrubber. To maintain the air flow with the process area, fresh air blowers and roof top blowers were installed. (Refer fig no.6.10.16 & 17)

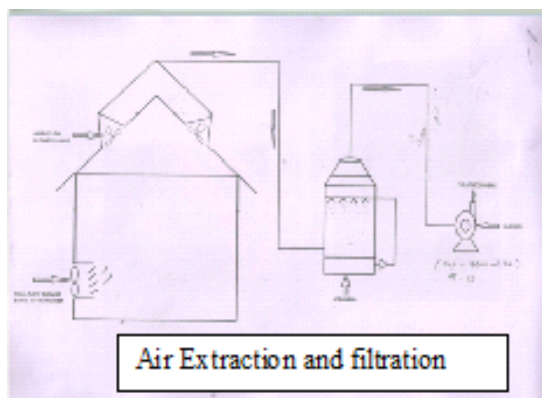


Fig. 6.10.15



Fig No.6.10.16 & 17: Blowers and wet scrubbers arrangements

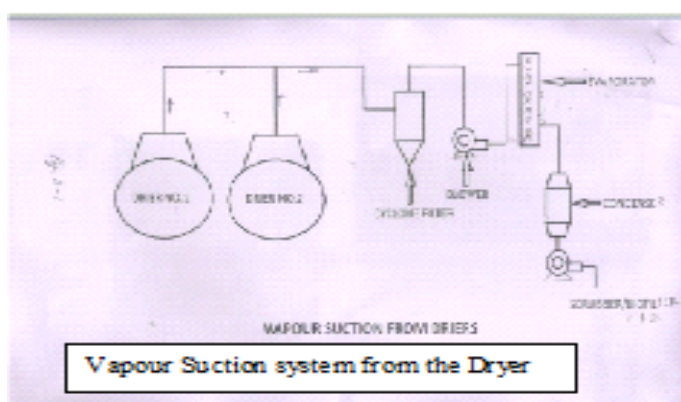


Fig 6.10.18

Thereafter to reduce the load on the bio-filters additional vapour suction system was introduced, thereby distributing the load on the bio-filters by introducing additional cyclone filters and increasing the efficiency of the condenser by trapping the suspended particles in the exhaust air. Additional blowers were installed for the removal of exhaust air from the dryer to maintain sufficient pressure in the system.



Fig No.6.10.19 &20: Vapour suction system from the Dryer



Fig No.6.10.21 & 22: Bio Filter Gas Scrubbing System

Further the unit installed a High pressure atomising system for controlling the odour generated from the process. Larger area was covered under the spray thereby increasing the number of nozzles & area of contact of ECOSORB with process area air. Additional nozzles were provided in the raw material handling area, bio-filter and the process area.

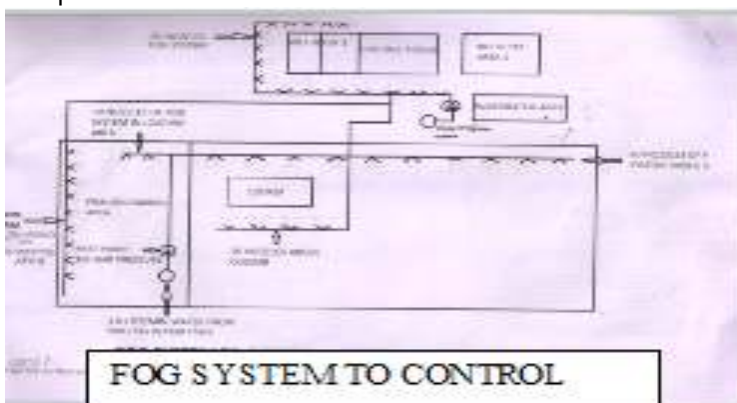


Fig. 6.10.23



Fig No.6.10.24 & 25: High pressure atomization system



Fig No.6.10.26 & 27: High pressure pump for atomising system.



Fig No.6.10.28 & 29: High pressure atomising system.

However though the unit has recently installed the system for odour control, comprehensive monitoring methods needs to be developed to check the working of the system. Also working of the control system has to be monitored during the full load operations of the unit during the course of time. Also regular preventive maintenance has to be carried out to ensure that the odour control equipment are always available for operations and operational records of the same has to be maintained.

6.10.4 CONTINUOUS ONLINE MONITORING SYSTEMS

During the year under report, the following industries have installed Continuous Online Monitoring Systems in compliance to the directions issued by the Board.

1. M/s. Merck (India) Ltd., Usgao
2. M/s. Reliance Energy Ltd., Sancoale
3. M/s. Sesa Goa Ltd., PIP Division, Bicholim
4. M/s. Syngenta India Ltd., Corlim
5. M/s. Zuari Industries Ltd., Zuarinagar
6. M/s. Goa Sponge & Power Ltd., Santona-stack provided
7. M/s. Shraddha Ispat Ltd., Santona-stack provided
8. M/s. Srithik Ispat, Sanguem--stack provided
9. M/s. Ambey Metallic, Pissurlem--stack provided
10. M/s. United Breweries, Bethora
11. M/s. United Spirits, Bethora
12. M/s. MRF Ltd., Ponda
13. M/s. John Distilleries, Cuncolim

6.11 PERFORMANCE EVALUATION OF EFFLUENT TREATMENT PLANTS OPERATING IN GOA

The Board conducted the performance evaluation study of the following three treatment plants.

6.11.1 THE SEWAGE TREATMENT PLANT AT TONCA, PANAJI WAS MONITORED FROM 29-08-2013 TO 30-08-2013 (24HRS COMPOSITE SAMPLING)

The performance study of the 12.5 MLD capacity of Sewage Treatment Plant was conducted to ascertain the quality of treated waste water and its compliance with the consent parameter limits. The Board Laboratory conducted 24 hrs composite sample collection and monitored the Sewage Treatment Plant – Tonca, Panaji Goa from 29th August 2013 to 30th August 2013.



Fig. 6.11.1: Fixing MLSS by Board Official



Fig.6.11.2: Sample for DO and MLSS at C-TECH Basin (Aeration tank)



Fig. 6.11.3: Sample collection by Board Official

There was marked increase in the quantity of waste water received by the treatment plant then the designed capacity which can be attributed to seepage of rain water. The mixed liquor suspended solids (MLSS) value C-Tech basin No1 was 2965 mg/l and C-Tech basin No. 2 was 2619 mg/l. The dissolved oxygen values at C-Tech basin No1 and C-Tech basin No. 2 was 2.3mg/l and 1.7mg/l respectively. The activated sludge plant was operating at F/M ratio at C-Tech basin No1 and C-Tech basin No 2 at 0.39 per day and 0.44 per day respectively. The excess sludge generated was centrifuged and disposed. However, no records have been maintained.

Analysis of data collected from 24 hours during operation of plant indicated that the consent parameters comply with the prescribed standard limits.

RECOMMENDATIONS

- The network pipelines and the collection points for carrying the raw sewage to the STP should be checked for ingress of rain water thereby increasing the load on the plant during monsoon.
- Records should be maintained of the sludge generated and disposed.
- As per consent the treated water should be disposed into River Mandovi. The discharge of treated waste water into St. Inez nallah should be stopped.
- The tertiary treatment given to the waste water is filtration followed by chlorination. Though chlorination remains the most common form of waste water disinfection due to its low cost and long term history of effectiveness, one of the disadvantages is that chlorination of residual organic material can generate chlorinated –organic compounds that may be carcinogenic or harmful to the environment. As a better alternative, [Ultraviolet](#) (UV) light can be used instead of chlorine. Because no chemicals are used, the treated water has no adverse effect on organisms that later consume it.

The following are the observations and conclusions of the performance study.

- There was marked increase in the quantity of waste water received by the treatment plant.

- b. The mixed liquor suspended solids (MLSS) value C-Tech basin No1 is 2965 mg/l and C-Tech basin No. 2 is 2619 mg/l.
- c. The dissolved oxygen values at C-Tech basin No1 and C-Tech basin No. 2 are 2.3mg/l and 1.7mg/l respectively.
- d. The activated sludge plant was operating at F/M ratio at C-Tech basin No1 and C-Tech basin No 2 at 0.39 per day and 0.44 per day respectively.
- e. The excess sludge generated is centrifuged and disposed. However, no records have been maintained.
- f. Analysis of data collected from 24 hours during operation of plant indicates that the consent parameters comply with the prescribed standard limits.

6.11.2 COMBINED EFFLUENT TREATMENT PLANT OF VENUS ETHOXYETHERS PVT.LTD; & GRAND ORGANICS PVT. LTD; BICHOLIM INDUSTRIAL ESTATE, BICHOLIM-GOIA WAS MONITORED FROM 08-10-2013 TO 09-10-2013 (24HRS COMPOSITE SAMPLING)



Fig. 6.11.4: ETP of M/s Venus Ethoxyethers Pvt. Ltd. and M/s Grand Organics Pvt. Ltd.

The Effluent Treatment Plant was designed for treatment of 50 M³/D from both the industrial Units ie. M/s. Venus Ethoxyethers Pvt. Ltd; and M/s. Grand Organics Pvt.Ltd; Bicholim Industrial Estate. However, only 8.0 KLD of waste water was received during monitoring period. The mixed liquor suspended solids (MLSS) value Aeration Tank is 1595 mg/l indicating that the sludge development is much below the required quantity ie. 3000 mg/l- 3500mg/l. The dissolved oxygen value at Aeration Tank was 6.2 mg/l indicating over aeration causing overflowing of sludge from the aeration tank. The activated sludge plant was operating at F/M ratio at 0.08 per day respectively. The sludge generated from the Primary Settling tank was removed and disposed in the sludge drying beds. The quantity of the same was not recorded. Also sludge from settling tanks was disposed in sludge drying beds. Analysis of data collected from 24 hours during operation of plant indicates that the consent parameters comply with the prescribed standard limits. The ETP is under capacity and hence treatment plant was operating below the designed capacity.

RECOMMENDATIONS

- a. The flow meters should be installed for influent and treated waste water generated and disposal.
- b. Records should be maintained of the sludge generated and disposed.
- c. Sludge drying beds should be covered during monsoon.

The following are the observations and conclusions of the performance study

- a. The Effluent Treatment Plant was designed for treatment of 50 M³/D from both the industrial Units ie. M/s. Venus Ethoxyethers Pvt. Ltd; and M/s. Grand Organics Pvt.Ltd; Bicholim Industrial Estate. However, only 8.0 KLD of waste water was received during monitoring period.
- b. The mixed liquor suspended solids (MLSS) value Aeration Tank is 1595 mg/l and it shows that sludge development is much below the required quantity ie. 3000 mg/l- 3500mg/l.

- c. The dissolved oxygen value at Aeration Tank is 6.2 mg/l indicating over aeration causing overflowing of sludge from the aeration tank.
- d. The activated sludge plant was operating at F/M ratio at 0.08 per day respectively.
- e. The sludge generated from the Primary Settling tank is removed and disposed in the sludge drying beds. The quantum of the same was not recorded. Also sludge from settling tanks are also collected and disposed in sludge drying beds.
- f. Analysis of data collected from 24 hours during operation of plant indicates that the consent parameters comply with the prescribed standard limits.
- g. The ETP is under capacity and hence treatment plant is operating below the designed capacity.
- h. The Effluent Treatment Plant was designed for treatment of 8 M³/D from the industrial Unit; however, only 4.0 KLD of waste water was received during monitoring period.
- i. The mixed liquor suspended solids (MLSS) value Aeration Tank is 3840 mg/l and it shows that sludge development is much below the required quantity ie. 3000 mg/l- 3500mg/l.
- j. The waste water generated is sent for An-Aerobic tank. After 24 hrs. the waste water is directly pumped in to aeration tank, due to the said practice the sludge also transferred in to aeration tank.
- k. The dissolved oxygen value at Aeration Tank is 0.0 mg/l indicating that Aeration is not sufficient as required. Due to lack of aeration facility DO is very low ie. NIL.
- l. The activated sludge plant was operating at F/M ratio at 0.44 per day respectively.
- m. The sludge generated from the Settling tank is removed and disposed in the sludge drying beds. The quantum of the same was not recorded.
- n. Analysis of data collected from 24 hours during operation of plant indicates that the consent parameters don't comply with the prescribed standard limits.
- o. The ETP is not properly designed for treatment of the waste water generated from the fish processing unit. The industry should upgrade the existing treatment facilities to treat the said waste water and meet the consent parameters.

6.11.3 EFFLUENT TREATMENT PLANT – SEAHATH CANNING COMPANY MARGAO INDUSTRIAL ESTATE, ST.JOSE DE AREAL, SALCETE -GOA WAS MONITORED FROM 17-10-2013 TO 18-10-2013 (24HRS COMPOSITE SAMPLING)



Fig. 6.11.5: ETP Performance Study at M/s Seahath Canning Company in progress

The following are the observations and conclusions of the performance study. The Effluent Treatment Plant was designed for treatment of 8 M³/D from the industrial Unit; however, only 4.0 KLD of waste water was received during monitoring period. The dissolved oxygen value at Aeration Tank is nil mg/l indicating that Aeration is not adequate. Analysis of data collected from 24 hours during operation of plant indicates that the consent parameters don't comply with the prescribed standard limits.

RECOMMENDATIONS

- a. The analysis reports indicates that treatment facility is not adequate to treat the waste water generated from the fish processing unit of M/s. Seahath Canning Company.

- b. The treatment plant should be upgraded to treat the waste water generated from the industry
- c. The flow meters should be installed for influent and treated waste water generated and disposal.
- d. Records should be maintained of the sludge generated and disposed.
- e. Tree plantation should be done during monsoon period.
- f. All the opening/ holes should be plugged so as to arrest the flow of waste water in to IDC drains.

The following are the observations and conclusions of the performance study.

- d. The analysis reports indicates that treatment facility is not adequate to treat the waste water generated from the fish processing unit of M/s. Seahath Canning Company.
- e. The treatment plant should be upgraded to treat the waste water generated from the industry
- f. The flow meters should be installed for influent and treated waste water generated and disposal.
- g. Records should be maintained of the sludge generated and disposed.
- h. The treatment plant should be upgraded to treat the waste water generated from the industry.
- i. Tree plantation should be done during monsoon period.
- j. All the opening/ holes should be plugged so as to arrest the flow of waste water in to IDC drains.

6.12 REPORT ON WATER QUALITY OF RIVER MANDОВI ALONG THE STRETCH OF OPERATIONS OF CASINOS

Background: The Mandovi river has a length of about 52kms in the State of Goa. The Capital of the State of Goa, Panaji is situated on the southern bank of the Mandovi River. The Mandovi river and its backwaters are governed by regular tides. The land use in the catchment area is mixed. The treated sewage from the sewage treatment plant of the Public Works Department of the Panaji City is discharged into the Mandovi river upstream of the estuarine mouth. During the collection of water samples at different tidal variations (High tide-Low Tide) monitored for a week it was observed that there are multiple sources of sewage discharge/outfalls at various points within this stretch of Mandovi Estuary as depicted in the figures. It could be attributed to multiple source for such a relatively high concentration of microbial contamination. The lower stretches of the Mandovi river where the limited study was carried out is used for recreation, navigation and fishing.

There exist a fishing jetty/ trawler jetty at Malim, a jetty for cruise boats at Panaji and at Betim, a ramp for ferry boats on either side of the banks in the stretch where water quality monitoring was carried out of the Board. There are also residential houses located on the northern bank of the said stretch of the Mandovi River. The first casino vessel was granted plying permission by the State Government in the year 2001. The plying permissions for the subsequent casinos were granted in the year 2008 - 2010. The Casinos are anchored/moored at one position in the Mandovi River as determined by the Captain of Ports.

Goa State Pollution Control Board granted consents to the casino since the year 2009. These Casino vessels have installed holding tanks for storage of sewage. The sewage is then transferred to the shore through night soil tankers which is further transported to the sewage treatment plant of the Public Works Department, Tonca for treatment as stipulated in the Consent issued by the Board. The Casino operators are submitting monthly returns of the disposal of the sewage at STP of PWD at Tonca. As a further regulatory measure the holding tanks of the Casino vessels were sealed in the presence of the officials of the Pollution Control Board and Captain of Ports. The seals of the holding tanks are opened in presence of the officials of the Pollution Control Board and Captain of Ports when the sewage is pumped from the holding tanks of the casino vessels into the holding tanks of a barge. The sewage is further transferred from the holding tanks on a barge to the night soil tankers on land. The night soil tankers then transport the sewage to the STP belonging to PWD at Tonca.

Scope of the Study: The casino vessels are anchored in the river Mandovi along the stretch – Miramar to Old Secretariat on either side of the river. With respect to the National Green Tribunal Western Zone Bench, Pune, Order dated 16th January 2014 regarding application no. 228/2013, the Board has collected and analysed

water samples at midstream of river Mandovi from the mouth of the river to the old Mandovi bridge at six locations (marked on map at pg 8) along the navigation canal. The period of sampling was from 27/01/2014 to 31/01/2014. The samples were collected at low & high waters on each day. The River Mandovi at the mouth has been classified as SWII (Bathing, Contact water sports and commercial fishing) as per the CPCB classification of rivers (ref; Scheme for Zoning and Classification of Indian Rivers, Estuaries and Coastal waters (Part 1 – Sweet water). The parameters to be monitored as per the classification are colour/odour, floating matters, pH, dissolved oxygen, turbidity, faecal coliform and biological oxygen demand.

Table 6.12 (1) :The sampling locations are as follows:

Sr. No.	Location	Latitude	Longitude
1.	At the Mouth of River Mandovi	15°29'28.54"N	73°48'30.21"E
2.	Near Light house at Verem	15°30'4.52"N	73°48'52.44"E
3.	Opposite Dempo house	15°30'13.83"N	73°49'13.36"E
4.	Opposite Panaji jetty	15°30'12.04"N	73°49'31.89"E
5.	Opposite Old secretariat bldg	15°30'9.69"N	73°49'48.39"E
6.	Near Old Mandovi bridge	15°30'9.47"N	73°50'11.82"E

Table 6.12 (2) : Faecal Coliform values in River Mandovi during Low Tide

Date of sample collection	L 1	L 2	L 3	L 4	L 5	L 6
27-01-2014	130	170	78	330	130	170
28-01-2014	130	45	230	110	78	68
29-01-2014	78	130	45	78	45	18
30-01-2014	110	170	140	78	110	45
31-01-2014	68	78	130	130	130	78

Fig 6.12 (1): Faecal Coliform values in River Mandovi during Low tide

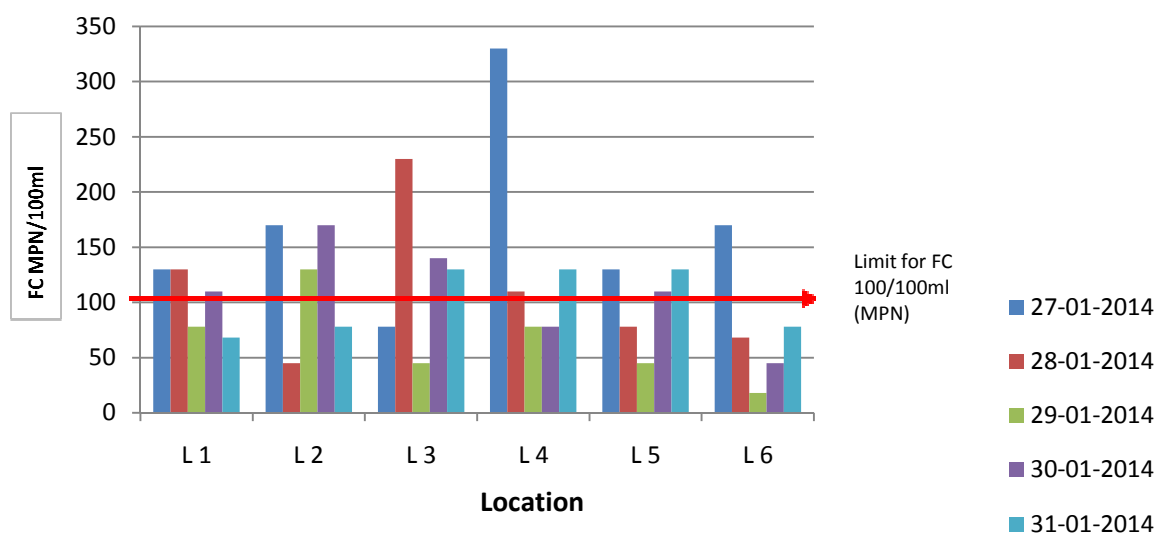
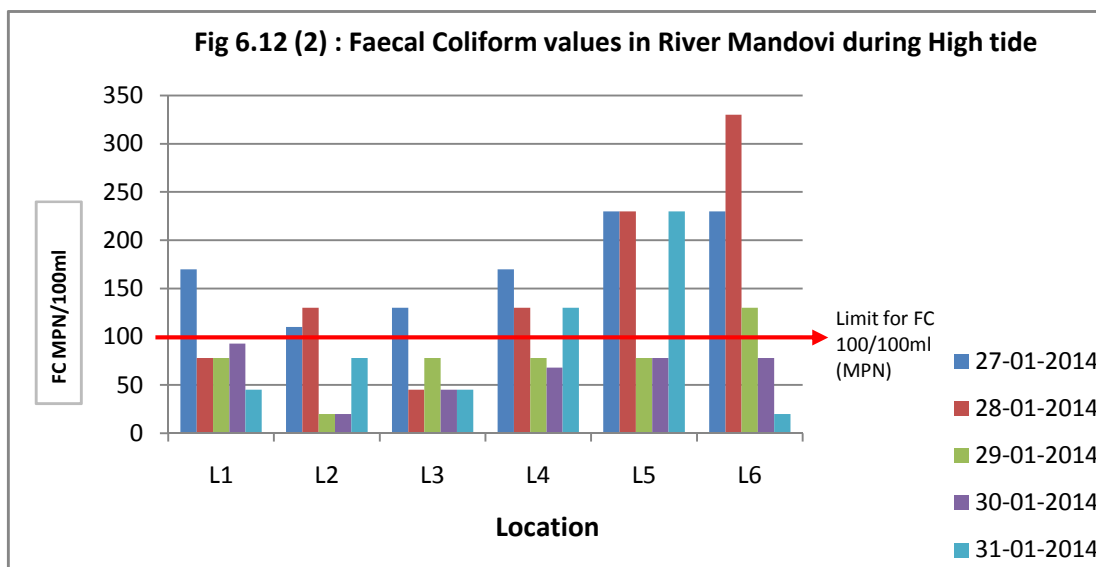


Table 6.12.3 : Faecal Coliform values in River Mandovi during high Tide

Date of sample collection	L1	L2	L3	L4	L5	L6
27-01-2014	170	110	130	170	230	230
28-01-2014	78	130	45	130	230	330
29-01-2014	78	20	78	78	78	130
30-01-2014	93	20	45	68	78	78
31-01-2014	45	78	45	130	230	20

**Fig 6.12 (3) : View of Malim fishing jetty**

The NIO studies conducted during 2002-2007 indicate presence of coliform/total coliform /faecal coliform etc and pathogens in the River Mandovi. The data from the water samples drawn by the Board at midstream of river Mandovi from the mouth of the river to the old Mandovi bridge at six locations for the period from 27/01/2014 to 31/01/2014 indicated that the water quality does not meet the classification of the rivers for SWII. The past data also indicated bacteriological contamination. The Casino vessels are complying with the condition of the Consent of the Board with regards to disposal of sewage through night soil tankers for treatment at the Sewage treatment plant of the Public Works Department, Tonca.

CHAPTER 7

ENVIRONMENTAL TRAINING

7.1 TRAINING / WORKSHOPS/ SEMINARS, ETC., ATTENDED BY BOARD OFFICIALS

During the year under report, the officials of the Board attended training programmes / workshops / seminars etc., organized by reputed Institutions. The details of the same are as follows:

Table 7.1: Trainings Programmes / Workshops / Seminars attended by the Board staff during the year

Sr. No	Name & Designation of the Official	Title of the Seminar	Duration
1	Mrs. Natalia S. Dias, Senior Law Officer	Dopt Sponsored Programme on Writing of ACRs at Old Goa.	11 th to 13 th February 2014
2	Mrs. Tulita da Costa e Fernandes, Office Superintendent	Dopt Sponsored Programme on Writing of ACRs at Old Goa.	11 th to 13 th February 2014
3	Mrs. Plancy Miranda, Lower Division Clerk	In-service training programme for Clerical staff	1 st April 2013 to 5 th April 2013
4	Miss. Valanie Abranches, Data Entry Operator	In-service training programme for Clerical staff	1 st April 2013 to 5 th April 2013
5	Miss. Joice Coutinho, Lower Division Clerk	In-service training programme for Clerical staff	1 st April 2013 to 5 th April 2013
6	Miss. Preeti Baretto, Lower Division Clerk	In-service training programme for Clerical staff	1 st April 2013 to 5 th April 2013
7	Mr. Sanjeev Joglekar, Environmental Engineer	Training programme under World Bank aided 'Capacity building on industrial pollution Management Project (CBIPMP) on use of Modern tools to identify the legacy sites and innovative remediation technologies for contaminated sites	22 nd April to 27 th April, 2013
		Training programme on Integrated Coastal Zone Management	29 th May to 3 rd June, 2013
		Workshop on Impact of Global Climate Change and adaption measures	16 th & 17 th January 2014
8	Mrs. Nandan Prabhudessai, Junior Environment Engineer	Conference on enhanced Usage of alternative fuels and raw materials – co- processing in cement plants	7 th and 8 th August, 2013
		Use of Coal as alternate Fuel from	23 rd to 25 th of August 2013
9	Mr. Keshav Fadke, Junior Environment Engineer	One day meeting to discuss the compliance and environmental issues related to sponge iron plants	5 th April, 2013
		To attend a workshop on RHEA of Goa Mining Region	30 th September 2013
10	Mr. Pravin Faldessai, Junior Environment Engineer	Visit to Sira, Dist. Tumkur, Karnataka to see the working of the operation of solid Waste Segregating Machine of JKBAL WAN-9000	14 August 2013
		Regional Workshop on Energy & Resource Efficiency in Urban Water management	27 th September 2013
		Regulators meet on Minamata (Mercury) Convention	13 th December 2013
11	Mr. Abner Rodrigues, Junior Environment Engineer	Visit to Sira, Dist. Tumkur, Karnataka to see the working of the operation of solid Waste Segregating Machine of JKBAL WAN-9000	14 August 2013
		CEP short term course on Municipal solid waste management : Options for Recycling and Recovery	3 rd to 5 th October, 2013

	Mr. Manoj Kudalkar, Junior Environment Engineer	Visit to Sira, Dist. Tumkur, Karnataka to see the working of the operation of solid Waste Segregating Machine of JKBAL WAN-9000	14 August 2013
		Regional Workshop on Energy & Resource Efficiency in Urban Water management	27 th September 2013
		CEP short term course on Municipal solid waste management : Options for Recycling and Recovery	3 rd to 5 th October, 2013
13	Mr. Amit Shanbag, Junior Environment Engineer	National Seminar on Odour Assessment and Control in India	30 th August 2013
14	Mr. Eknath Kerkar, Junior Environment Engineer	To attend training programme on 'Decentralized Waste Water Treatment System (DEWATSTM) Kengeri, Bangalore at Kengeri, Bangalore	27 th to 31 st May, 2013
15	Mr. Rohan Nagvekar, Junior Environment Engineer	To attend training programme on 'Decentralized Waste Water Treatment System (DEWATSTM) Kengeri, Bangalore at Kengeri, Bangalore	27 th to 31 st May, 2013
		A 5-Day All India Training Programme on Bio Medical Waste Management	15 th to 19 th February 2014
16	Mr. Sebastiao Baretto, Assistant Engineer	Training programme for Environmental , 2013-2014 on Compliance, Monitoring and Enforcement	2 nd to 28 th September, 2013
17	Ms. Indira Fal Dessai, Network Engineer	Intel India Academic Forum at Hotel Grand Hyatt	18 th & 19 th September 2013
18	Mrs. Jenica Sequeira, Scientist 'C'	National Seminar on Odour Assessment and Control in India	30 th August 2013
		Coast Guard Pollution Response Team (West)	21 st to 25 th October 2013
		Fifth National Level Pollution Response Exercise (NATPOLREX)	9 th to 10 th December 2013
19	Miss. Connie Fernandes, Scientist 'C'	Continuing Professional Development Program on NABL Accreditation of laboratory based on ISP/IEC 17025:2005 (Awareness, Documentation & effective implementation)	16 th April to 19 th April, 2013
		IMP Level – II – Pollution Response Course	26 th to 30 th August, 2013
		Coast Guard Pollution Response Team (West)	21 st to 25 th October 2013
20	Dr. Mohan Girap, Scientist 'C'	Conference on enhanced Usage of alternative fuels and raw materials – co- processing in cement plants	7 th and 8 th August, 2013
		To attend a workshop on RHEA of Goa Mining Region	30 th September 2013
		Two week training programme on Best Practices in Environmental Governance	17 th to 30 th October 2013
		Polluted River stretches- Preparation of Action Plan	23 rd December 2013
21	Mrs. Francisca Pereira, Scientist 'B'	National Seminar on Odour Assessment and Control in India	30 th August 2013
		Two week training programme on Best Practices in Environmental Governance	17 th to 30 th October 2013
22	Mr. Nilesh Parsekar, Scientist 'B'	One day Investor & user Workshop to familiarize new & existing users with the AVP	3 rd May 2013
		Water Quality Monitoring Introduction of Real Time Monitoring Systems	28 th to 30 th November 2013
		Training Programme on Water Quality Monitoring- Introduction of Real Time Monitoring System-IIIPA	12 th to 14 th December 2013
23	Mr. Sanjay Kankonkar, Scientist 'B'	Training Programme on Water Quality Monitoring- Introduction of Real Time Monitoring System-IIIPA	12 th to 14 th December 2013
		Water Quality Monitoring Introduction of Real Time Monitoring Systems	28 th to 30 th November 2013
24	Mrs. Livia D'silva, Scientific Assistant	Inventor & User workshop to familiarize existing users with the AVP	3 th May 2014

		National Seminar on Odour Assessment and Control in India	30 th August 2013
		Analytical Procedures for Water Quality parameters- Uniform Protocol	20 th to 22 nd February 2014
25	Mr. Ganpat Naik, Scientific Assistant	Continuing Professional Development Program on NABL Accreditation of laboratory based on ISP/IEC 17025:2005 (Awareness, Documentation & effective implementation)	16 th April to 19 th April, 2013
		Deputed for calibration of water current meter	30 th April, 2013
26	Miss. Edma Fernandes, Scientific Assistant	Continuing Professional Development Program on NABL Accreditation of laboratory based on ISP/IEC 17025:2005 (Awareness, Documentation & effective implementation)	16 th April to 19 th April, 2013
		One day Conference on Green Chemistry & Engineering Awareness	7 th December 2013
27	Mrs. Joshna Mahale, Scientific Assistant	National Seminar on Odour Assessment and Control in India	30 th August 2013
		Regional Workshop on Energy & Resource Efficiency in Urban Water management	27 th September 2013
		Pollution Monitoring Techniques and Instrumentation (Only Lab. Scientists)	20 th to 24 th of January 2014
		Water Quality & Best Laboratory Practices	27 th to 29 th March 2014
28	Mr. Chaitanya Salgaonkar, Scientific Assistant	Continuing Professional Development Program on NABL Accreditation of laboratory based on ISP/IEC 17025:2005 (Awareness, Documentation & effective implementation)	16 th April to 19 th April, 2013
		Inventor & User workshop to familiarize existing users with the AVP	3 rd May 2014
		Analytical Procedures for Water Quality parameters- Uniform Protocol	20 th to 22 nd February 2014
29	Mrs. Chetna Naik, Scientific Assistant	Pollution Monitoring Techniques and Instrumentation (Only Lab. Scientists)	20 th to 24 th of January 2014
30	Mr. Ravi Naik, Scientific Assistant	Pollution Monitoring Techniques and Instrumentation (Only Lab. Scientists)	20 th to 24 th of January 2014
31	Miss. Reshma Vaz, Scientific Assistant	Seminar cum demonstration programme on Rapid BOD analyser in 40 minutes	9 th May, 2013
32	Mr. Krishnanath Pednekar, Scientific Assistant	Seminar on continuous emission monitoring system in Goa	20 th April, 2013
		Short course on 'Operation, maintenance and New Instrumentation / Requirements for stack emission monitoring system	25 th to 27 th July, 2013
		Pollution Monitoring Techniques and Instrumentation (Only Lab. Scientists)	20 th to 24 th of January 2014
33	Miss. Denza Cardozo, Scientific Assistant	Training on microbiology, Toxicology and Biology parameters	6 th May to 10 th May, 2013
		Training programme for Environmental , 2013-2014 on Compliance, Monitoring and Enforcement	2 nd to 28 th September, 2013
		Inter Laboratory proficiency testing in Bio-monitoring of River Yamuna	9 th to 10 th December 2013
34	Mr. Waman Chari, Senior Laboratory Assistant	short course on 'Operation, maintenance and New Instrumentation / Requirements for stack emission monitoring system	25 th to 27 th July, 2013
35	Mr. Samir Borkar, Senior Laboratory Assistant	Water Quality Network Plan	29 th to 31 st January 2014
		Training Programme on Compliance, Monitoring and Enforcement	1 st to 28 th February 2014
36	Mr. Sanmesh Borkar, Senior Laboratory Assistant	Seminar cum demonstration programme on Rapid BOD analyser in 40 minutes	9 th May, 2013
		Waste water Treatment and the role of decentralized waste water management	18 th to 22 nd November 2013
37	Mr. Nilesh Surlekar, Senior	Training Programme on Compliance, Monitoring	1 st to 28 th February 2014

	Laboratory Assistant	and Enforcement	
38	Miss Reema Kaulekar, Junior Laboratory Assistant	Training on microbiology, Toxicology and Biology parameters	6 th May to 10 th May, 2013
		Inter Laboratory proficiency testing in Bio-monitoring of River Yamuna	9 th to 10 th December 2013

7.2 NOISE MONITORING TRAINING CONDUCTED BY M/S. SGS INDIA LTD

The Goa State Pollution Control Board organized a training programme on noise monitoring for the scientific and technical staff through M/s. SGS India Ltd. The training programme was held on 4th and 5th of October 2013 at the lecture hall of Directorate of Art & Culture, Panaji. The training programme included theory sessions and a practical session on measurement of noise levels which was conducted at the Board office site. The following scientific and technical staff of the Board participated in the training programme:-

Sr.No	Name & Designation of the Official
Scientist	
1	Mrs. Jenica Sequeira
2	Ms. Connie Fernandes
3	Dr. Mohan Girap
4	Mrs. Francisca Pereira
5	Mr. Sanjay Kankonkar
6	Mr. Nilesch Parsekar
Scientific Assistant	
1	Mrs. Livia D'Silva
2	Mr. Ganpat Naik
3	Ms. Edma Fernandes
4	Mrs. Joshna Mahale
5	Mr. Chaitanya Salgaoncar
6	Mrs. Chetna Naik
7	Ms. Reshma Vaz
8	Mr. Ravi Naik
9	Mr. Krishnananth Pednekar
Senior Laboratory Assistant	
1	Mr. Sajid Inamdar
2	Mr. Santosh Haldankar
3	Mr. Waman Chari
4	Mr. Samir Borkar
5	Mr. Sanmesh Borkar
6	Mr. Nilesch Surlekar
Junior Laboratory Assistant	
1	Mrs. Jocelyn Coelho
2	Mr. Deepak Naik
3	Mr. Sunny Pirankar
4	Mr. Kamlesh Kavlekar
5	Mr. Johny Moniz
6	Mr. Freddy Barbosa
7	Ms. Wilma Sanny D'Costa
8	Ms. Sophia Dias
9	Ms. Sheetal Yeshwant Laad
10	Mr. Anthony Miranda
Field Assistant	
1	Mr. Saby Fernandes
2	Mr. Xawollino Rodrigues
Environment Engineer	
1	Mr. Sanjeev Joglekar
Junior Environment Engineer	
1	Mr. Keshav Phadke
2	Mrs. Nandan Prabhudessai

3	Mr. Pravin Faldessai
4	Mr. Amit Shanbhag
5	Mr. Abner Rodrigues
6	Mr. Manoj Kudalkar
7	Mr. Eknath Kerkar
8	Mr. Rohan Nagvekar
Engineering Assistant	
1	Mr. Ashley Pereira
2	Mr. Sebastiao Colaco
3	Mr. Sebastiao Baretto
4	Mr. Vinson Quadros
5	Mr. Liston Fernandes

7.3 TRAINING ON WATER/AIR ANALYSIS AND INTERPRETATION OF DATA CONDUCTED BY GSPCB IN CO-ORDINATION WITH CPCB, BANGLORE.

The Goa State Pollution Control Board organized a training programme to impart training on Water/Air analysis and interpretation of data for the scientific staff. The training programme was imparted by Mr. Gnanavelu A, SSA from CPCB, Bangalore- Zonal Officer and was held on 24th to 26th of February 2014 at the Board Conference Hall.. The following scientific staff of the Board participated in the training programme:-

Sr.No	Name & Designation of the Official
Scientist	
1	Mrs. Jenica Sequeira
2	Ms. Connie Fernandes
3	Dr. Mohan Girap
4	Mrs. Francisca Pereira
5	Mr. Nilesh Parsekar
Scientific Assistant	
1	Mrs. Livia D'Silva
2	Ms. Edma Fernandes
3	Mr. Chaitanya Salgaoncar
4	Mrs. Anny Dias
5	Mrs. Avina Baretto Pereira
6	Ms. Reshma Vaz
7	Mr. Ravi Naik
8	Ms. Denza Cardozo
Senior Laboratory Assistant	
1	Mr. Sajid Inamdar
2	Mr. Santosh Haldankar
Junior Laboratory Assistant	
1	Mr. Sunny Pirankar
2	Mr. Kamlesh Kavlekar
3	Mr. Johnny Moniz
4	Ms. Wilma Sanny D'Costa
5	Ms. Felsy Pereira
6	Ms. Reema Kavlekar
7	Mrs. Quiteria Pereira

7.4 DEPUTATIONS IN THE BOARD

1. Vide Office Order no.995 issued vide no. DA/Admn./10-20 (24)/2013-2014/TR-2351/92 dated 21/11/2013 of the Directorate of Accounts, the deputation period of Shri. Vidyesh B. Mhamal, Accountant on deputation to the Board was extended for a further period of one year from 30/11/2013 to 29/11/2014 for the 2nd year.

2. Vide Office order no. DA/Admn/10-20(24)/2013-2014/TR-2694/68 dated 30/12/2013 of the Director of Accounts, Shri Devendra Arlekar, has been deputed to the Board on promotion as Assistant Accounts Officer in place of Shri. Manohar Borkar, A.A.O, who has been transferred on promotion.
3. Vide Government order no.66/10-2013/STE-DIR/1506 dated 31/01/2014 of the Department of Science, Technology & Environment one post of Accounts cum Administrative Officer, on deputation from the Common Accounts cadre of the Directorate of Accounts, Govt of Goa, had been created in the Board; Shri D.M. Naik, Dy Director of Accounts/Accounts Officer was posted on deputation to the Board vide order no. DA/Admn/45-2/2013-2014/TR-3238/85 dated 11/02/2014 issued by the Directorate of Accounts.

7.5 PROMOTIONS IN THE BOARD

The following officials of the Board were promoted to the said post since August 2013

- | | | |
|----|------------------------|--------------------------------|
| 1. | Shri Sanjeev Joglekar | Environmental Engineer |
| 2. | Shri. Sanjay Kankonkar | Scientist 'B' |
| 3. | Shri. Nilesh Parsekar | Scientist 'B' (On Adhoc basis) |

7.6 REPATRIATIONS IN THE BOARD

Shri Manohar Borkar was transferred on promotion to Directorate of Accounts w.e.f. January 2014.

7.7 RESIGNATION FROM SERVICE

1. Shri, Shivprasad Murari, Junior Environment Engineer (JEE), has vide his application dated 15/07/2013 has submitted Technical resignation from the post of JEE, so as to take up a new assignment in Town and Country Planning Department. Accordingly he was relieved from service w.e.f. 31/07/2014 (AN).
2. Shri Lourenco De Souza, Peon of the Board has availed voluntary retirement from services from the post since 31/03/2014 and his resignation has been accepted from 31/03/2014. A warm send off was accorded to Mr. Lourenco De Souza by the management and staff of the Board.

7.8 TERMINATION OF SERVICE

The services of the following 11 scientific staff of the Board have been terminated by the Board as their appointments were not in accordance with laid down procedure

1	Mrs. Payal Baadkar	Scientific Assistant
2	Miss. Shabana Nadaf	Scientific Assistant
3	Mrs. Elvira Martins	Scientific Assistant
4	Miss Jewela Miranda	Scientific Assistant
5	Miss Soneya Borges	Senior Laboratory Assistant
6	Miss Prisca Borges	Senior Laboratory Assistant
7	Mrs Fransquina Fernandes	Senior Laboratory Assistant
8	Mrs Luiza Ferrao e Gracias	Senior Laboratory Assistant
9	Miss Jessica Fernandes	Senior Laboratory Assistant
10	Mrs. Rowena Fernandes	Junior Laboratory Assistant
11	Mrs Clemy Rodrigues	Junior Laboratory Assistant

CHAPTER 8

LEGAL MATTERS OF THE BOARD

8.1 ACTION TAKEN FOR VIOLATIONS OF THE WATER ACT, THE AIR ACT AND ENVIRONMENT (PROTECTION) ACT

The Board while granting consent to operate under the Water Act and Air Act stipulates specific conditions for compliance by the various industries so as to control the level of pollution. The industrial units have to submit regular monitoring report including the stack analysis reports, water reports etc. for effective implementation of the measures adopted by them. The Board also conducts inspections of the industrial units to monitor the compliance. And wherever non compliance is reported show cause notice, Directions are issued to the concerned units.

Further it is also noted that numerous small scale units are operating without obtaining consent to operate of the as required under the Air Act and the Water Act, in such cases the Board has issued Show Cause notices to all such units to apply for consent to operate.

The Board has issued total number of 2025 Show cause notices and directions to the units which are operating without consent to operate and also in violations of consent conditions. The Board has issued directions for closure and suspension of the units to 101 numbers of units which have not complied with the conditions stipulated in the consent order and operating without obtaining consent to operate of the Board. The details are provided in **Annexure VI**.

8.2 WRIT PETITIONS/APPLICATIONS BEFORE THE SUPREME COURT/NATIONAL GREEN TRIBUNAL/HIGH COURT

(I) Original Application No.228/2013 filed before NGT by Sudip Narayan Tamankar V/s Union of India & ors (GSPCB Respondent No. 3

The issues relates to the alleged establishment of Offshore casinos mounted on the river Mandovi, Goa as a result of such operation of the casinos the river is polluted with waste water and other hazardous waste material. The Appellant has prayed that no new casinos should be allowed in the river and restrain the existing offshore casinos from dumping any materials on the river Mandovi.

The Board has filed Affidavit in the matter giving details of monitoring and inspections being conducted by the Board with respect to the discharge of sewage waste water and disposal of solid waste by all the Offshore casino vessels. It is also submitted the compliance of the consent conditions as contained in the Consent to Operate orders by the vessels have being periodically verified by the Board by way of regular inspections of the vessels and also verification of the records submitted by the vessels.

The said matter is presently pending before the National Green Tribunal for further orders.

(II) Petition regarding Pollution of the Colva creek due to discharge of sewage and other effluents by commercial establishments

(i) Public Interest Litigation No. 15/2011 filed by Colva Civic Consumer Forum V/s State of Goa and others.

(ii) W.P. No. 158/2014 filed by /s P.G. Holiday Inn Pvt. Ltd V/s GSPCB

(iii) W.P. No 166/2014 Graciano Cottages V/s GSPCB,

(iv) W.P. No 618/2014 Ramesh Karekar (M/s Colva Kinara) V/s GSPCB.

The grievances of the Petitioner in this petition is that large number of hotels and other commercial establishments in Colva area have been discharging sewage and other effluents in the creek which has resulted in pollution of the Colva Creek.

The High Court vide order dated 15/01/2013 has issued directions that hotels are required to install sewage treatment plants or to find out other ways of discharging the sewage and other effluent in other sewage plant which may be erected in that area. It was further directed to appoint a Committee of expert to visit the area and submit report in that regards. It was also directed that if there are persistent breach on the part of the hotels direction may be given under the Water Act.

The Board carried out inspection of the hotels units and establishment including residential units in order to ascertain the compliances made by them. During the inspection it was observed that some of the hotel units are operating without effective effluent treatment plants hence the Board issued closure directions to all such units.

Some of the units filed Writ Petition challenging the closure directions issued by the Board. The High Court passed an interim order dated 07/03/2014 staying the closure directions issued by Board. Board has filed the Affidavit placing all the facts regarding non compliance made by the hotels.

Presently the matter is pending for further disposal.

(III) Matters regarding recruitment and termination of the Board employees. Following writ petitions are filed before the Hon'ble High Court.

- (i)** W.P. 583/2013 Mrs. Payal Baadkar V/s State of Goa and GSPCB
- (ii)** W.P. No 595/2013 Fransquina Fernandes V/s State Of Goa, GSPCB
- (iii)** W.P. No 596/2013 Shabna Nadaf V/s State Of Goa, GSPCB
- (iv)** W.P. No 597/2013 Soneya Borges V/s State Of Goa, GSPCB
- (v)** W.P. No 598/2013 Luisa Ferrao Gracias V/s State Of Goa, GSPCB
- (vi)** W.P. No 599/2013 Prisca Borges V/s State Of Goa, GSPCB
- (vii)** W.P. No 600/2013 Rowena Fernandes V/s State Of Goa, GSPCB
- (viii)** W.P. No 610/2013 Clemy Quadros V/s State Of Goa, GSPCB
- (ix)** W.P. No 618/2013 Jessica Fernandes V/s State Of Goa, GSPCB
- (x)** Sayadri Sinari V/s State Of Goa, GSPCB & Chetna Naik

The GSPCB received complaints dated 01/08/2012 and 11/08/2012 from one Ms. Sahyadri S. Sinari, who was one of the candidates who had applied to the Board for various posts but was not selected to any of the said posts by the GSPCB. Ms. Sinari raised allegations of alleged illegalities, irregularities and manipulation in the process of selection and appointment of employees. The Board appointed Shri. D.M. Borkar, retired Joint Secretary, Personal, Government of Goa, as an Inquiry Officer, to enquire into the allegations and submitted his reports with findings and conclusions. The Board accepted the recommendations made in the report and after issuing show cause notices and personal hearing terminated the services of the employees.

The Board has filed detailed Affidavits in the aforesaid matters regarding procedure adopted by the Board while recruiting and termination of the employees. Presently the matter s is pending for disposal.

(IV) Application No.47/2013 filed before NGT by Village Panchayat of Navelim V/s GSPCB and others

This Matter pertains to pollution being caused in the village of Navelim due to operation of the pig iron plant of M/s Sesa Goa at Navelim -Bicholim. The consent to operate orders issued by the GSPCB to the unit has also been challenged. The mode of inspection and the samples collected by Officials are also challenged. GSPCB has filed a detailed affidavit-in reply. The Board is conducting ambient air quality monitoring in the vicinity of the unit of M/s Sesa Goa Ltd. matter is now fixed for final arguments.

8.3 COMPLAINT/FIR FILED BY GOA STATE POLLUTION CONTROL BOARD WITH THE POLICE

- (I) The Board lodged a Complaint/FIR with the Police Inspector, Calangute Police Station, Calangute Goa against M/s GKB Vision Ltd., located at Pilerne Industrial Estate, M/s GKB Ophthalmics Ltd located at Tivim Industrial Estate and Nayab International Baroda for dumping hazardous wastes in an open area near Directorate of Science & Technology, Opp. Saligao Seminary, Saligao Bardez Goa in a manner that is causing environmental degradation in the vicinity as indicated in the inspection report and analytical report as The same amounts to endanger human health and life and also amounts to offence under the Environment (Protection) Act, 1986.
- (II) The Board lodged a Complaint/FIR with the Police Inspector, Ponda, Goa against disposal of Bio-Medical Wastes such as human skeleton in haphazard manner by the hospital and college M/s Kamaxi Homeopathic hospital at Shiroda Goa.

8.4 COMPLAINT MECHANISM

The Goa State Pollution Control Board receives numerous complaints on varied subject matters. In order to scrutinize and examine all such complaints, a Complaint Committee has been constituted comprising of Scientist "C", Senior Law Officer and the Environmental Engineer. The complaints so received are examined so as to verify whether the grievances alleged by the complainants are within the purview of the Water Act, the Air Act or the Rules notified under the Environmental (Protection) Act.

During the year 2013-2014 the Board has received 281 complaints. Upon examining the said complaints it is noted that 134 numbers of complaints does not come within the purview of the Board, hence all such complaints were forwarded to the concerned Departments for initiating appropriate action in the matter with the copy endorsed to the complainant.

The complaints wherein the grievances were regarding air and water pollution the same were inspected and wherever violations are observed appropriate action are been initiated.

8.5 RIGHT TO INFORMATION ACT, 2005

The Right to information Act, 2005 provides access to all information *that is available and existing so as to make the functioning of the organizations transparent and accountable*. This is clear from a combined reading of section 3 and the definitions of 'information' and 'right to information' under clauses (f) and (j) of section 2 of the Act. If a public authority has any information in the form of data or analysed data, or abstracts, or statistics, an applicant may access such information, subject to the exemptions in section 8 of the Act. But

where the information sought is not a part of the record of a public authority, and where such information is not required to be maintained under any law or the rules or regulations of the public authority, the Act does not cast an obligation upon the public authority, to collect or collate such non available information and then furnish it to an applicant. A public authority is also not required to furnish information which require drawing of inferences and/or making of assumptions. It is also not required to provide 'advice' or 'opinion' to an applicant, nor required to obtain and furnish any 'opinion' or 'advice' to an applicant. The reference to 'opinion' or 'advice' 49 in the definition of 'information' in section 2(f) of the Act, only refers to such material available in the records of the public authority. Many public authorities have, as a public relation exercise, provided advice, guidance and opinion to the citizens. But that is purely voluntary and should not be confused with any obligation under the RTI Act.

The Goa State Pollution Control Board has appointed the following Officials as Public Information Officer, Assistant Public Information Officer and the First Appellate Authority as per the Right to Information Act, 2005:-

1)	Chairman	First Appellate Authority
2)	Assistant Account Officer	Public Information Officer.
3)	Senior Law Officer	Asst. Public Information Officer

During the year 2013-2014 the Board has received 262 applications, which are disposed in time bound manner. There were two Appeals filed before the First Appellate Authority and the same was disposed off in accordance with the Act.

CHAPTER 9

FINANCE AND ACCOUNTS OF THE BOARD

9.1 STATUS OF AUDITING OF ACCOUNTS OF THE BOARD

As per sub – sections 2 & 3 of section 40 of the Water (Prevention and Control of Pollution) Act, 1974, the accounts of the Board are to be audited by an Auditor duly qualified to act as an Auditor of Companies under section 226 of the Companies Act, 1956. The said Auditor is to be appointed by the State Government on the advice of Comptroller & Auditor General of India (CAG).

CAG Office vide their letter dated 12/09/2013 have appointed M/s Rege Kunkolienkar & Angle, Chartered Accountants Margao Goa as Statutory Auditors of Accounts of the Board for the year 2011 – 2012. Auditing of the Board accounts upto Financial Year 2010 - 2011 has been completed.

9.2 INCOME, EXPENDITURE AND FUNDING

The income and expenditure account of the Board for the year ended 31st March, 2014 is as per table below:

Table 9.1: Income and Expenditure Account for the year ended 31st March, 2014					
	Goa State Pollution Control Board 2013-14			Goa State Pollution Control Board 2013-14	
Particulars	1-Apr-2013 to 31-Mar-2014		Particulars	1-Apr-2013 to 31-Mar-2014	
Indirect Expenses		114173696.00	Indirect Incomes		2100000.00
Advertisement & Publicity	1381221.00		Interest Accrued		
Chairman Expenses	2905486.00		Bank Guarantee	2100000.00	
Laboratory Expenses	9165289.00		Direct Income		43695853.00
Office Expenses	1849050.00		Air Consent Fees	19597335.50	
Other Expenses	3129520.00		Ambient Monitoring Fees	631961.00	
Running & Maintenance of Vehicles	1472883.00		Bio Medical Fees	21200.00	
Courier	5630.00		E-Tendering Application	17500.00	
Honorarium	257000.00		Miscellaneous Fees	969591.00	
Hospitality Expense	99116.00		NOC Fees	2724660.00	
House Tax	98144.00		Other Receipts	341165.00	
Legal Fees	1767869.00		RTI Fees	11425.00	
Professional Fees	587267.00		Water Consent Fees	19381015.50	
Publication	3637.00		Excess of Expenditure over Income		111308062.00
Refund of Fees	89933801.00				
Rent Paid	717980.00				
Repairs & Maintenance - Office	5527.00				
Travelling Expense	512741.00				
Vehicle Hire Charges	19394.00				
Wages	262141.00				
Direct Expense		42930219.00			
Salaries	42930219.00				
Total		157103915.00	Total		157103915.00

The details of the funding received by the Board for the year under report is as follows:

Funds	Amount in Lakhs (2013 – 14)
1. Central Govt. (Partial reimbursement of NWMP & NAMP expenses by CPCB)	110.61
2 . State Govt.	-
3. Share of Water Cess from Central Govt.	39.69
4. Fees (consent, NOC, authorization and analysis charges)	423.73
5. Bank interest	424.05
6. Public Hearing	-
7. Other receipts (including grants of SEP programming & Right to Information)	13.84
Total	1011.92

CHAPTER 10

ANY OTHER IMPORTANT MATTERS DEALT WITH BY THE BOARD

10.1 IMPLEMENTATION OF HAZARDOUS WASTE (MANAGEMENT, HANDLING & TRANSBOUNDARY MOVEMENT) RULES, 2008

The Hazardous Waste (Management & Handling) Rules were notified by the Ministry of Environment & Forests in the year 1989 under the provisions of the Environment Protection Act, 1986. Later the Rules were amended in the years 2000 and 2003 and subsequently, they were modified as the Hazardous Wastes (Management, Handling & Transboundary Movement) Rules in the year 2008.

The Board grants authorizations to industries generating and handling hazardous wastes. At present the Goa State Pollution Control Board has identified 894 industrial units generating hazardous waste in Goa and authorizations have been granted to all 894 industries (since the inception of the Rules). During the year under report, 326 units have been granted authorization (new / renewals) under the Hazardous Waste (Management & Handling) Rules, 2008. The hazardous waste generated in the State of Goa for the year 2012-2013, is as follows: total recyclable waste: 2473.5493MT; total land fillable waste: 5513.676MT; total incinerable waste: 28566.122MT and discarded containers & filters :7883nos. The total no. of hazardous waste authorizations granted for 2012-2013:293 nos.

The details such as location of the unit, category of hazardous waste, quantity generated and mode of disposal are given in **Annexure VII**.

The implementation of Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008 is dealt with by Mr. Pravin Faldessai, Jr. Environment Engineer of the Board.

10.2 IMPLEMENTATION OF BIO-MEDICAL WASTE (MANAGEMENT & HANDLING) RULES, 1998

For the purpose of implementation of the Bio-Medical Waste (Management and Handling) Rules 1998, Hospitals have been classified as per their bedded capacity.

1. Category 1: With 500 beds and above	1 No.
2. Category 2: With 200 beds and above, but less than 500	3 Nos.
3. Category 3: With 50 beds and above, but less than 200	17 Nos.
4. Category 4: With beds less than 50 including Clinics & Patho Labs.	369 Nos.
5. All other institutions generating bio-medical waste (not included above)	7 Nos.

Till 31/03/2014, 398 Health Care Units were granted authorizations under the Bio-Medical Waste (Management & Handling) Rules, 1998. The status of the Bio Medical waste generated by these units during the year is given as Table 6 in **Annexure VIII**.

There are total three hundred and ninety seven Health Care Facilities (HCF) out of which one hundred and fifty are bedded Hospitals with five thousand five hundred and fifty three beds, one hundred and thirteen are non bedded hospital and sixty three are Veterinary hospitals/ research organizations in the State. All the facilities have been granted authorization. Out of these, one facility have incinerator with air pollution control device, one hundred and seventy five have autoclave for sterilization, one have microwave and three hundred and sixteen have shredders for preliminary disposal of hospital instruments such as syringes, needle etc. The total quantity of bio-medical waste generated per day during the year 2012-13 is 4950.90 Kg out of which the total recyclable treated biomedical waste sold by HCF is 43.40 kg/ day and the total treated bio-medical waste disposed by HCF is 4907.50 kg/ day.

The implementation of Bio-medical Waste (Management & Handling) Rules, 1998 is dealt with by Mr. Rohan Nagvenkar of the Board.

10.3 NOISE POLLUTION (REGULATION & CONTROL) RULES, 2000

The Board conducts monitoring of noise levels whenever any specific complaints of noise pollution are received and action is taken accordingly. In pursuance of clause (c) of rule 2 of the Noise Pollution Regulation & Control Rules, 2000, the Government of Goa vide Notification No. 2/51/2000 –II D (G) Vol I has designated (1) District Magistrates (2) Director General of Police (3) Deputy Collector and Sub-Divisional Magistrates (4) Superintendent of Police and Sub-Divisional Police Officers as ‘authority’ for the maintenance of ambient air quality standards in respect of noise under the said rules, with effect from 21.09.2000. In view of this, the Board forwards to the Competent Authority all the reports of Noise Level Monitoring conducted by the Board for necessary action.

10.4 IMPLEMENTATION OF MUNICIPAL SOLID WASTES (MANAGEMENT & HANDLING) RULES, 2000

The Board has issued an authorization to all the Urban Local Bodies under the provisions of Municipal Solid Waste (Management & Handling) Rules 2000. The authorizations have been issued independently for specific purpose to the Municipal Bodies.

As per the Annual Report for the year 2012 - 2013 submitted to the Central Pollution Control Board, out of 13 Municipal Councils and 1 Municipal Corporation; Seven Municipal Bodies have installed Garbage Treatment Plants and presently all are in operation and five Municipal Bodies have constructed sanitary landfill sites and presently all are in operation. Two Municipal Councils are in process of installation of Garbage treatment plant. Municipal Bodies except Sanguem & Curchorem Cacora Municipal Council have complied with the provisions of Municipal Solid Waste (Management & Handling) Rules 2000 in terms of collection, segregation, storage & transportation of the waste.

The implementation of Municipal Solid Wastes (Management & Handling) Rules, 2000 is dealt with by Mr. Manoj, Kudalkar, Jr. Environmental Engineer of the Board.

10.5 IMPLEMENTATION OF PLASTICS MANUFACTURE, SALE AND USAGE RULES, 1999

There are twenty two units involved in manufacture of plastic bags in the State. All these units have obtained consent and have also obtained registration under Recycled Plastic Usage Rules. There are thirty one units involved in plastic shredding and manufacture of granules (except plastic bags). **Annexure IX** gives the details on “Implementation of Plastic Waste (Management and Handling) Rules, 2011 in States/UTS”.

The Government of Goa through the High Level Task Force (HLTF) constituted to provide directions and implement various measures as announced in the Budget Speech, 2012-13, towards resolving the solid waste management problems affecting the State of Goa has taken a decision to phase out the plastic from domestic use.

Accordingly the Government has decided to strictly implement banning the manufacturing, sale and use of the plastic having thickness less than 40 microns and bags which do not have the name of manufacturer, thickness and registration number printed on them as per the provisions of the Plastic Rules 2011 and Goa Non Biodegradable Garbage (Control) Act, 1996.

A drive for this purpose has already commenced on 22nd April 2013 on the occasion of Earth Day all over Goa including in and around the beaches of Goa.

The implementation of Plastics Manufacture, Sale and Usage Rules, 1999 is dealt with by Mr. Eknath Kerkar, Jr. Environmental Engineer of the Board.

10.6 IMPLEMENTATION OF BATTERIES (MANAGEMENT AND HANDLING) RULES, 2001

Twenty three manufacturers / dealers and twenty two Bulk consumers are filing half yearly returns regularly to the Board. Most of the dealers are not filing half yearly returns to this office. Status reports on Batteries Management and handling Rules is under preparation. The details of the returns under the said rules are given in **Annexure X**.

The implementation of Batteries (Management & Handling) Rules, 2001 is dealt with by Mr. Amit Shanbag, Jr. Environmental Engineer of the Board.

10.7 IMPLEMENTATION OF ELECTRONIC WASTES (MANAGEMENT & HANDLING) RULES, 2000

The computer market in the State has been increasing due to lot of commercial development and IT related activities. The State is emerging with a large middle class group who are willing to buy PC's. A large chunk of demand is still met by Assemblers who compete primarily on low cost advantage.

PC usage increases with the increase of the income level and education level of people. Majority of obsolete PC's are diverted to the grey markets, wherein the non functional parts are changed and fixed with the new parts in PC's and further sold back to customers and remaining miscellaneous scraps are sold to scrap-dealers and recyclers.

There are no recyclers in the State specially doing recycling for obsolete PC's. Existing E-waste handling practices are not expected to manage future E-waste generation thus formal recycling center is needed for E-waste collection, segregation, dismantling and recycling of the material. There is a lack of awareness in public regarding E-waste handling, treatment and disposal.

Presently, there are two units registered with the Board for collection of E-waste from the State of Goa, which is then sent to the registered recycler for recycling.

The implementation of Electronic Wastes (Management & Handling) Rules, 2000 is dealt with by Mr. Eknath Kerkar, Jr. Environmental Engineer of the Board.

10.8 OBJECTIVES & ACHIEVEMENTS

10.8.1 OBJECTIVES SET BY THE BOARD

The Board has planned to implement certain programmes for infrastructure development in specific areas. Following are some of the programmes wherein studies have been initiated and the progress of the same is given below.

The CPCB has been supporting various programmes carried out by the Board. During the financial year 2009 - 2010, the Board received financial support to the tune of Rs. 2 Lakhs for each of the following studies carried out by the Board through outsourcing.

1. Preparation of report on 'Strengthening of Goa State Pollution Control Board'.
2. Preparation of report on 'Status of Sewage Management in Goa'.
3. Preparation of report on 'Status of Municipal Solid Waste Management in Goa'.
4. Preparation of report on 'Status of Bio Medical Waste Management in Goa'.

5. Preparation of report on 'Status of Plastic Waste Management and Inventorization of Recycling Units in Goa'.
6. Preparation of report on 'Status of E-waste generation/ Management in Goa'.
7. Preparation of report on 'Status of Batteries (Waste Handling) in Goa as per Batteries Waste Management Handling Rules'
8. Preparation of report on 'Status of SSI Inventorization'
9. Preparation of report on 'Status of Industrial Pollution Control'
10. Preparation of report on 'Status of Dessimination of State Pollution Control Boards'

The Draft Final Reports were submitted by the Consultants. All the studies have been approved and forwarded to CPCB except the study on 'Status of Sewage Management' which is presently under the scrutiny of the committee.

10.8.2 ACHIEVEMENTS MADE BY THE BOARD

- Recognition of the Goa State Pollution Control Board under ISO 9001:2008 (Quality Management System) vide certification dated 04.07.2013 and is valid upto 14.05.2015
- Recognition of the Goa State Pollution Control Board under BS OHSAS 18001:2007 (Occupational Health and Safety Management System) vide certification dated 13.08.2013 and is valid upto 12.08.2016.
- Recognition of the Goa State Pollution Control Board under ISO 14001:2004 (Environmental Management System) vide certification dated 13.01.2014 and is valid upto 12.01.2017

10.9 SILVER JUBILEE CELEBRATIONS

The Goa State Pollution Control Board completed 25 years of service in the State of Goa on 1st July, 2013. On the occasion, the Board organized a training session at Hotel Ginger, Panaji to the Scientific & Technical staff of the Board. Later, during the day a function was held in the Board office where in four of the Board staff, namely; Mrs. Elmana Martins da Silva, Mr. Ganpat Naik, Mr. Santosh Haldankar, Mr. Sajid Inamdar were felicitated and presented a memento each, as a token of appreciation for their 25 years of dedicated service to the Board. The former Chairmen and Member Secretaries, who served the Board during the last 25 years, were also invited and momentos were presented to them.

Chairman presented the achievements of the Board during the 25 years. The function was graced by the Hon. Minister for Environment and Forests, Smt. Alina Saldanha.



Fig.10.9.1 Chairman presenting the achievements of the Board for the past 25 years



Fig.10.9.2 Chairman, Shri Jose Manuel Noronha along with the former Chairmen and Member Secretaries



Fig10.9.3. Hon'ble Minister for Environment, Smt. Alina Saldanha present the gathering on the occasion of the Silver Jubilee Celebrations



Fig.10.9.4 Hon'ble Minister for Environment, Smt. Alina Saldanha along with staff of the Board who have completed 25 years of service

10.10.1 CELEBRATION OF WORLD ENVIRONMENT DAY



The World Environment Day (WED) is celebrated on 5th June every year by UNEP to initiate positive environmental action. The 2013 theme of World Environment Day was **“THINK. EAT.SAVE”**. It basically stressed on eating sustainably, i.e. preventing food waste and reducing individual food print. According to the UN Food and Agriculture Organization (FAO), every year 1.3 billion tonnes of food is wasted, equivalent to the same amount produced in the whole of sub-Saharan Africa. At the same time, 1 in every 7 people in the world go to bed hungry and more than 20,000 children under the age of 5 die daily from hunger.

The global food production occupies 25% of all habitable land and is responsible for 70% of fresh water consumption, 80% of deforestation, and 30% of greenhouse gas emissions. It is the largest single driver of biodiversity loss and land-use change. If food is wasted, it means that all the resources and inputs used in the production of all the food are also lost. For example, it takes about 1,000 litres of water to produce 1 litre of milk. This would all end up in vain when milk is wasted.

The officials of Goa State Pollution Control Board celebrated World Environment Day on 3rd & 5th June'2013 by involving Industries, public and staff so as to impart the importance of environment to the various food handling sectors especially Hotels. The **WORLD ENVIRONMENT DAY Programmes** were held at the Sanskruti Bhavan.

The activities included: **Children's Poster Competition** for age groups 5-12 years/13-16 years was held at the GSPCB Conference Hall, **What is my contribution to reduce Food Waste)**



Fig 10.10.1 : Childrens Painting competition: Jr.Cat. 1st : Aayush S. Naik, 2nd :Keane Sean Fernandes, 3rd Keith Freddy Fernandes and the Sr.Cat.:1st Maynard H. Da Costa, 2nd Sherwin R. Vaz

The GSPCB staff prepared Environmental slogans using words “**THINK**”, “**EAT**” & “**SAVE**” in their slogans. 44 people participated in the competition and the winners were: **1st Chetan Upadhye, 2nd Liston Fernandes, 3rd Sanmesh Borkar**

The industries were asked to participate in **Quiz Competition**, on the theme “**“THINK. EAT. SAVE”**”. : Eating sustainably and Environmental Issues including regulations. The Winners included:



Glenmark Generics Ltd.(marked)-1st Prize



Sesa Goa Ltd – 2nd Prize



Raddisson Blu Resort -3rd Prize

Wealth from Waste : The employees were invited to create wealth out of any waste and the same was judged on the basis of its usefulness, degree of effort in producing etc. and the best three were awarded. A total of 15 participants were there of which the top three selected were :



Sophia Dias- 1st Prize



Payal Baadkar- 2nd Prize



Wilma D' Costa- 3rd Prize

Industries/units adopting the **Best Environmental Practices** concerning “Food use: Sustainable Life cycle” and its measurable benefits , especially hotels (All starred Hotels, including small(e.g.shacks) were invited to give presentations of their best Environmental practices adopted towards food sustainability and the measurable and financial benefits incurred thereon, having initiated/adopted/addressed methodology in the field of the said Resource Utilization in line with the UNEP theme for 2013 “Think, Eat Save” [food/resource procurement, processing , use of fuel, electricity, and Waste generation and minimization vis-a-vis its scientific disposals].A total of 44 industries were invited , of which 21 reverted back , and seven gave presentations. The best selected for the waste minimizing practices included:



1st Prize: Hotel Leela Goa, Mobor, Cavelossim



2nd Prize :Royal Orchid Beach Resort & Spa ,Utorda



3rd prize :Hotel Fidalgo, Panaji

On 3rd & 5th June'2013, a **Street Play** was performed by the Board staff on World Environment Day theme titled “**Chintun khalet,fuddarak samballat**” at Patta Plaza and the Sanskruti Bhavan, in presence of Hon. Minister for Environment Ms.Alina Saldhana, respectively by on the theme **THINK. EAT.SAVE”: Prevent Food Waste**”. The skit was written and directed by Ms.Guadalupe Dias, staff of GSPCB



Skit participants: Reema Kaulekar, Ana Maria Lourenco, Neves Miranda, Suzee Fernandes , Guadalupe Dias (Script writer/Director), Daya Usgaonkar e Godinho, Quiteria Pereira, Nishtha Lolayekar, Georgie Dias , Rica D'Costa, & Maynard H. Da Costa

A **Beach Cleanliness Drive** was arranged at Colva (South Goa) & Calangute (North Goa) and was flagged off at 0945 hrs from Patta at the hands of Smt. Alina Saldhana , Hon. Minister for Environment .



A **panel discussion** on the WED theme “Think, Eat, Save” was also held at 1500 hrs at the Sanskruti Bhavan by distinguished panellists having Food background. The forum was chaired by Shri Jose Manuel Noronha-Chairman, GSPCB, and the distinguished panellists included.

1. Shri Sujeet Dongre-Scientist D-Centre for Environmnet Education (CEE)
2. Smt.Beryl Nassae- President ,British Group
3. Shri. Ajit Parulekhar- Associate Professor, Goa Institute of Management
4. Shri.Afonso Pereira-Principal, Agnel Institute of Food crafts and Culinary Sciences
5. Smt. Patricia Pinto-Subject Expert



Shri J. M. Noronha



Shri Sujeet Dongre



Smt.Beryl Nassae



Shri. A.Parulekhar



Shri. Afonso Pereira



Smt. Patricia Pinto



Open House



This was followed by distribution of the Awards, Certificates to the participants at the hands of Chief Guest, Ms. Alina Saldhana Hon. Minister for Environment.



Smt. Alina Saldhana Hon. Minister for Environment

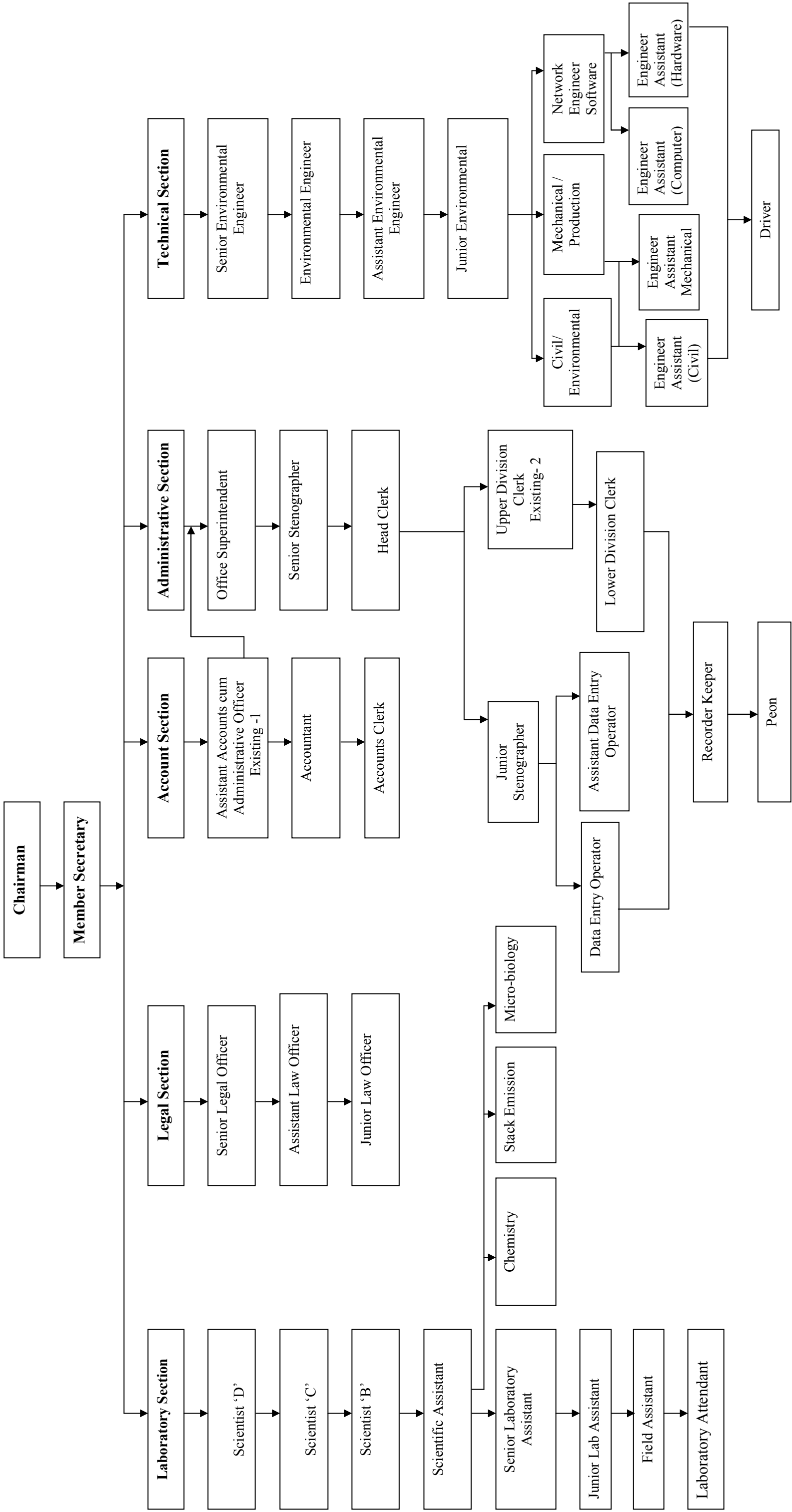
A documentary was also released by the GSPCB, on the theme “Think, Eat, Save” concerning issue of food wastage in Goa and imparting of general awareness. The same was distributed to students in schools and colleges. Additionally, the GSPCB also undertook a mass awareness program concerning “Think, Eat, Save” through month long advertising of relevant messages on the Radio services of Radio Indigo & Radio Mirchi.

The Awards Certificates, were given to the participants from the staff by Mr. Jose Manuel Noronha- Chairman GSPCB & Mr. Levinson J. Martins, Member Secretary on 07th June 2013.

10.11 IMPLEMENTATION OF THE SUPREME COURT GUIDELINES ON PREVENTION OF SEXUAL HARASSMENT OF WOMEN AT WORKPLACE

Information in this regard, as per the Supreme Court judgment dated 13/08/1997, is that no complaints about sexual harassment at work place were received by the Board during the financial year covered by this report.

Annexure I
ORGANISATION CHART FOR GOA STATE POLLUTION CONTROL BOARD



ANNEXURE II A

LIST OF APPLICATIONS FOR CONSENTS TO OPERATE (CCA) UNDER WATER (PREVENTION & CONTROL OF POLLUTION) ACT, 1974 AND AIR (PREVENTION & CONTROL OF POLLUTION) ACT, 1981 BIO-MEDICAL WASTE (MANAGEMENT & HANDLING) RULES, 1998 AND HAZARDOUS WASTE (MANAGEMENT & HANDLING) (AMENDMENT) RULES, 2000 PROCESSED AND APPROVED BY THE BOARD DURING THE YEAR 2013-2014.

Sr. No.	District	Industry Name	Category of Industry	Status
1	SOU	Goa Shipyard Limited	L	Granted - 21/03/2014
2	SOU	Mormugao Port Trust	M	Granted - 21/03/2014
3	NOR	United Spirits Ltd.	L	Granted - 21/03/2014
4	SOU	Dharieswari Workshop & Service	S	Granted - 21/03/2014
5	NOR	St.Francis Xavier Iron Art	S	Granted - 21/03/2014
6	SOU	Schiffer And Menezes India Pvt Ltd	M	Granted - 21/03/2014
7	SOU	M/s Saini Enterprises	S	Granted - 21/03/2014
8	NOR	Vikas Engineering Works	S	Granted - 16/03/2014
9	SOU	Paramount Conductors Ltd	S	Granted - 16/03/2014
10	SOU	Nagarsenkar's Classic Hospital	S	Granted - 16/03/2014
11	NOR	Shet Enterprises	S	Granted - 16/03/2014
12	SOU	M/s Pares H. N. Karmali	S	Granted - 16/03/2014
13	SOU	M/s Karmali Brothers	S	Granted - 16/03/2014
14	SOU	M/s Daniel Engineering Works & Ship Repairs (Unit li)	S	Granted - 16/03/2014
15	SOU	M/s Babu Sitaram Naik	S	Granted - 16/03/2014
16	SOU	M/s Associated Green Fuels India Ltd	M	Granted - 16/03/2014
17	NOR	M/s R. K. Industries	S	Granted - 16/03/2014
18	SOU	M/s Madani Metals	S	Granted - 16/03/2014
19	SOU	M/s Golden Marbles	S	Granted - 16/03/2014
20	SOU	M/s Elegant Flooring & Concrete Products	S	Granted - 16/03/2014
21	SOU	M/s Olvis Metal Industries	S	Granted - 16/03/2014
22	NOR	M/s Zuari Shipyard Pvt Ltd.	S	Granted - 16/03/2014
23	NOR	M/s Buildmat	S	Granted - 16/03/2014
24	SOU	Quality Granite	S	Granted - 16/03/2014
25	SOU	M/s Nutan Stone Industries	S	Granted - 16/03/2014
26	NOR	The Hawaii Comforts	S	Granted - 16/03/2014
27	SOU	Umicore Anandeya India	M	Granted - 16/03/2014
28	NOR	M/s Swastik Chemicals	S	Granted - 16/03/2014
29	SOU	Leofil Metals	S	Granted - 16/03/2014
30	NOR	Finolex Cables Limited (Cccr Division)	L	Granted - 16/03/2014
31	SOU	Trimurty Industry	S	Granted - 16/03/2014
32	SOU	Saini Motors	S	Granted - 16/03/2014
33	SOU	Hi Hill Rocks	S	Granted - 16/03/2014
34	SOU	M/s Black Gold Industry	S	Granted - 16/03/2014
35	SOU	Abs Electroplaters (India) Private Limited	S	Granted - 16/03/2014
36	NOR	Meal Makers	L	Granted - 16/03/2014
37	NOR	R. T. Metal Works	S	Granted - 16/03/2014
38	NOR	Mandovi Metals Pvt Ltd	S	Granted - 16/03/2014
39	NOR	Mandovi Metals Pvt Ltd	S	Granted - 16/03/2014
40	SOU	Goa Carbon Limited	M	Granted - 16/03/2014
41	SOU	Watson Pharma Private Limited	L	Granted - 16/03/2014
42	NOR	Mandovi Casting Pvt Ltd	S	Granted - 16/03/2014
43	SOU	Shirdi Steel Re-Rollers Pvt. Ltd	S	Granted - 16/03/2014
44	SOU	Shatul Engineering Industries	S	Granted - 16/03/2014
45	SOU	Coral Clinical Systems	S	Granted - 16/03/2014
46	NOR	M/s Prateek Alloys Pvt. Ltd.	S	Granted - 16/03/2014

47	NOR	Grand Organics Pvt. Ltd.,	S	Granted - 16/03/2014
48	NOR	Shree Ambay Forgings Pvt. Ltd.	S	Granted - 16/03/2014
49	SOU	Mohidin Metal Industries	L	Granted - 16/03/2014
50	SOU	M/s Goa Rajee Auto Pvt. Ltd.	S	Granted - 16/03/2014
51	NOR	Surla Jetty	S	Granted - 14/03/2014
52	NOR	Sinori Jetty	S	Granted - 14/03/2014
53	SOU	Chowgule & Company Private Limited	S	Granted - 14/03/2014
54	NOR	Chowgule & Company Private Limited	S	Granted - 14/03/2014
55	NOR	Chowgule & Company Private Limited (Khazan Jetty)	S	Granted - 14/03/2014
56	NOR	V. M. Salgaocar & Bro. Pvt. Ltd. (Ore Loading Facility - Vagus)	S	Granted - 14/03/2014
57	NOR	Dempo Mining Corporation Pvt. Ltd, Barge Loading Jetty At Sarmanus	S	Granted - 14/03/2014
58	NOR	V. M. Salgaocar & Bro. Pvt. Ltd. (Dry Screening Plant & Loading Facility)	S	Granted - 14/03/2014
59	NOR	Opaque Industries	S	Granted - 14/03/2014
60	SOU	Athi Resorts	S	Granted - 14/03/2014
61	SOU	Taparia Tools Ltd.	S	Granted - 14/03/2014
62	NOR	Sesa Goa Ltd. (Amona Barge Loading Jetty)	M	Granted - 14/03/2014
63	SOU	Sesa Goa Ltd.	S	Granted - 14/03/2014
64	SOU	Goa Paper And Board Converters Pvt. Ltd.	S	Granted - 14/03/2014
65	SOU	Hotel Green View	L	Granted - 14/03/2014
66	SOU	Khamamol Jetty, Sesa Resources Limited	S	Granted - 14/03/2014
67	SOU	Hotel Rukmini	L	Granted - 14/03/2014
68	NOR	Sapana Habitat	L	Granted - 14/03/2014
69	SOU	Benaulim Village Inn	L	Granted - 14/03/2014
70	SOU	Excel Enterprises	S	Granted - 14/03/2014
71	NOR	Overseas Beverages Private Limited	S	Granted - 14/03/2014
72	SOU	M.K.P Auto Engineers	L	Granted - 14/03/2014
73	SOU	M/s Shinde Industry	S	Granted - 14/03/2014
74	NOR	M/s. S.V. Industries	S	Granted - 14/03/2014
75	NOR	Desai Bricks	S	Granted - 14/03/2014
76	SOU	M/s Jutex (Plastic Division)	S	Granted - 14/03/2014
77	NOR	Krishna Granites & Marbles	S	Granted - 14/03/2014
78	NOR	M/s Saish Enterprises	S	Granted - 14/03/2014
79	SOU	Conbesco	M	Granted - 14/03/2014
80	NOR	Victor Hotels And Motels Ltd (M.V. Horseshoe Casino)	L	Granted - 14/03/2014
81	SOU	M/s Gail (India) Limited (Gokak-Goa Gas Pipe Line)	L	Granted - 14/03/2014
82	NOR	M/s Narayan Ganesh Prabhu Zantye & Co.	S	Granted - 14/03/2014
83	NOR	Martins Laser Imaging & Engraving	S	Granted - 14/03/2014
84	NOR	Hotel Neptune	S	Granted - 14/03/2014
85	SOU	M/s Topline Writing Instruments Pvt. Ltd.	M	Granted - 14/03/2014
86	NOR	M/s Damascus Hydraulics	S	Granted - 14/03/2014
87	NOR	Mansi Enterprises	S	Granted - 14/03/2014
88	NOR	M/s Swami Sweets	S	Granted - 14/03/2014
89	NOR	M/s Kansar Industry	S	Granted - 14/03/2014
90	NOR	M/s Rotoflex Filmpack Industries	S	Granted - 14/03/2014
91	NOR	M/s Prachi Aqua Mineral Pvt Ltd	S	Granted - 14/03/2014
92	NOR	Ms Ruby Industries	S	Granted - 14/03/2014
93	NOR	M/s Fadke Flour Mill	S	Granted - 14/03/2014
94	NOR	M/s Praveen Transformers Pvt. Ltd	S	Granted - 14/03/2014
95	SOU	Natasha Ice Plant & Cold Storage	S	Granted - 14/03/2014
96	NOR	M/s Shree Ram Traders	S	Granted - 14/03/2014
97	SOU	Techno Consultancy Services	S	Granted - 14/03/2014
98	NOR	Deepak Workshop	S	Granted - 14/03/2014

99	SOU	Designer Homes	S	Granted - 14/03/2014
100	NOR	Hotel Bela	S	Granted - 14/03/2014
101	SOU	New Age Printers	S	Granted - 14/03/2014
102	SOU	M/s Permos Stone Crusher	S	Granted - 14/03/2014
103	NOR	M/s Sa Air Conditioning Services	S	Granted - 14/03/2014
104	NOR	M/s Mahal Plastics & Fibres Pvt Ltd Unit II	S	Granted - 14/03/2014
105	SOU	Good Faith Lodge	S	Granted - 14/03/2014
106	NOR	M/s Jonsha Guest House	S	Granted - 14/03/2014
107	NOR	M/s Thomas Cardozo	S	Granted - 14/03/2014
108	SOU	Amble Bricks & Pavers	S	Granted - 14/03/2014
109	SOU	Kakodkar Metal Industries	S	Granted - 14/03/2014
110	SOU	M/s Aquamarina	S	Granted - 13/03/2014
111	SOU	Mahalaxmi Realtors (Colva Pearl)	S	Granted - 13/03/2014
112	SOU	M/s Gail (India) Limited (Gokak-Goa Gas Pipe Line)	L	Granted - 10/03/2014
113	NOR	M/s Zantye Brothers	S	Granted - 10/03/2014
114	NOR	Zantye Brothers	S	Granted - 10/03/2014
115	NOR	Omp Components (India) Pvt. Ltd	S	Granted - 10/03/2014
116	NOR	Gkb Ophthalmics Ltd.	S	Granted - 10/03/2014
117	SOU	M/s Crown Techno Appliances Pvt Ltd	S	Granted - 10/03/2014
118	NOR	M/s Ganesh Engineering Works	S	Granted - 10/03/2014
119	NOR	M/s Palm Grove Cottages	S	Granted - 10/03/2014
120	NOR	Goa Precision Stampings Pvt Ltd	S	Granted - 10/03/2014
121	NOR	M/s Mauli Associates	S	Granted - 10/03/2014
122	NOR	M/s Shree Mahamaya Bakers & Confectionary	S	Granted - 10/03/2014
123	NOR	Hotel Chandrageet	S	Granted - 10/03/2014
124	NOR	Pascoals Rooms, Bar And Restaurant	S	Granted - 10/03/2014
125	SOU	Masafi Bottling Company	S	Granted - 10/03/2014
126	NOR	M/s Luiza Guest House	S	Granted - 10/03/2014
127	SOU	M/s Santa Khuris Workshop	S	Granted - 10/03/2014
128	NOR	National Distilleries	S	Granted - 10/03/2014
129	NOR	M/s Calangute Beach Resort	S	Granted - 10/03/2014
130	SOU	M/s Hotel Nagina	S	Granted - 10/03/2014
131	SOU	Counto Automobile Pvt Ltd	M	Granted - 10/03/2014
132	SOU	M/s Hotel La Ben	S	Granted - 10/03/2014
133	NOR	Shree Renuka Pollution Checking Centre	S	Granted - 10/03/2014
134	NOR	Om Sai Flour Mill	S	Granted - 10/03/2014
135	NOR	Saibaba Fabrication Works	S	Granted - 10/03/2014
136	SOU	Samant Flour And Masala Mill	S	Granted - 10/03/2014
137	SOU	Fine Abrasive Products	S	Granted - 10/03/2014
138	NOR	Lloyd Nunes	S	Granted - 10/03/2014
139	NOR	Hotel Trimurti	S	Granted - 10/03/2014
140	SOU	M/s Somnath Rice & Flour Mill	S	Granted - 10/03/2014
141	NOR	Yogeshwari Flour Mill	S	Granted - 10/03/2014
142	NOR	Star Saloon & Spa	S	Granted - 10/03/2014
143	SOU	Linda Cottages	S	Granted - 07/03/2014
144	NOR	Kubal Enterprise	S	Granted - 07/03/2014
145	SOU	United Wood Industries	S	Granted - 06/03/2014
146	SOU	M/s S.J.P. Exports	S	Granted - 25/02/2014
147	NOR	Pyro Electric Instruments Goa Pvt. Ltd.	S	Granted - 25/02/2014
148	SOU	M/s Gonsalves Engineering	S	Granted - 25/02/2014
149	NOR	M/s Bhagawati Metal Trusts	S	Granted - 25/02/2014
150	SOU	M/s Dinonca Metal Industries	S	Granted - 25/02/2014
151	SOU	M/s Tulip Diagnostics (P) Ltd—unit li	S	Granted - 25/02/2014
152	SOU	Sea Blue Ice Plant	S	Granted - 25/02/2014
153	NOR	Ekang Electronic Binders	S	Granted - 25/02/2014
154	SOU	Om Shanta By The Beach	M	Granted - 25/02/2014
155	SOU	Hotel Paulino	S	Granted - 25/02/2014

156	NOR	Gopal Krishna Cement Products	S	Granted - 25/02/2014
157	NOR	M/s Hotel Golden Eye	S	Granted - 25/02/2014
158	SOU	M/s Saikrupa Flour Mill	S	Granted - 25/02/2014
159	SOU	P. D. Desai (Ssi Unit)	S	Granted - 25/02/2014
160	NOR	Naik Auto Industries Korporation	M	Granted - 25/02/2014
161	SOU	M/s Sea-View Resorts	S	Granted - 25/02/2014
162	SOU	M/s Sanman Hotels	S	Granted - 25/02/2014
163	SOU	M/s Alisha Bakery	S	Granted - 25/02/2014
164	SOU	M/s Mohan V. Sheldekar	S	Granted - 25/02/2014
165	NOR	south India Timber	S	Granted - 25/02/2014
166	SOU	Ms Ultratech Cement Limited	M	Granted - 25/02/2014
167	SOU	M/s. Pereira Pimenta Winery	S	Granted - 25/02/2014
168	NOR	N B Packaging Industry	S	Granted - 25/02/2014
169	NOR	Shreegurukrupa Autoworld	M	Granted - 25/02/2014
170	SOU	Indoco Remedies Ltd	L	Granted - 25/02/2014
171	SOU	Macbrout Engineering Pvt. Ltd.	L	Granted - 25/02/2014
172	SOU	Nanu Resort	M	Granted - 25/02/2014
173	NOR	Sandu Pharmaceuticals Limited	S	Granted - 25/02/2014
174	SOU	Himachal Futuristic Communications Ltd	L	Granted - 25/02/2014
175	NOR	Vivanta By Taj Panaji Goa.	L	Granted - 25/02/2014
176	SOU	Turbocam India Private Limited	S	Granted - 25/02/2014
177	NOR	Sipping Spirits Pvt. Ltd.	S	Granted - 25/02/2014
178	NOR	M/s L.N Techno	S	Granted - 25/02/2014
179	SOU	M/s New Era Handling Agency	S	Granted - 25/02/2014
180	SOU	B Bakers	S	Granted - 25/02/2014
181	SOU	M/s Agencia Commercial Maritima	S	Granted - 25/02/2014
182	SOU	M/s. Naik Auto Industries Korporation	S	Granted - 25/02/2014
183	SOU	M/s. Jimcap Electronics Pvt. Ltd.,	S	Granted - 25/02/2014
184	NOR	M/s Counto Microfine Products Pvt. Ltd.	L	Granted - 25/02/2014
185	NOR	Goa Medical Research Private Limited	M	Granted - 25/02/2014
186	SOU	M/s Padaria De Souza Bakery	S	Granted - 25/02/2014
187	SOU	Portofino Bar & Restaurant	S	Granted - 24/02/2014
188	NOR	Smile Auto Service	S	Granted - 18/02/2014
189	SOU	Hotel Colva Plaza	S	Granted - 18/02/2014
190	NOR	M/s Sunprint Ink Industries	S	Granted - 18/02/2014
191	NOR	Diebold Systems Pvt. Ltd.	L	Granted - 18/02/2014
192	NOR	Britacel Silicones Ltd.	S	Granted - 18/02/2014
193	NOR	M/s Convention Hotels India Pvt. Limited	L	Granted - 18/02/2014
194	NOR	Maberest Hotels Pvt. Ltd.	L	Granted - 18/02/2014
195	SOU	Goa Rajee Auto Pvt Ltd	S	Granted - 18/02/2014
196	SOU	Cipla Ltd	L	Granted - 18/02/2014
197	SOU	Colorcon Asia Private Limited	L	Granted - 18/02/2014
198	NOR	M/s Siddarth Engineering Works	S	Granted - 18/02/2014
199	NOR	Sri Tirupati Engineering Works	S	Granted - 18/02/2014
200	NOR	M/s Dattaprasad Cashew Industry	S	Granted - 18/02/2014
201	NOR	M/s Hotel Ave Maria	S	Granted - 18/02/2014
202	SOU	Furtado (Ssi Unit)	S	Granted - 18/02/2014
203	NOR	M/s Master Industries	S	Granted - 18/02/2014
204	SOU	Raj Resorts	S	Granted - 18/02/2014
205	SOU	M/s Gonsalves Enterprises	S	Granted - 18/02/2014
206	SOU	M/s Club Margarita	S	Granted - 18/02/2014
207	NOR	M/s Flying Dolphin	S	Granted - 18/02/2014
208	SOU	Ciarans	S	Granted - 18/02/2014
209	NOR	Vikas Industries	S	Granted - 18/02/2014
210	NOR	Scoop Industries Pvt Ltd (Unit Ii)	S	Granted - 18/02/2014
211	NOR	Shivam Aluminium	S	Granted - 18/02/2014
212	NOR	M/s Sesa Sterlite Ltd. (Waste Heat Recovery Power Plant)	L	Granted - 18/02/2014

213	NOR	M/s Acoustic Components Pvt Ltd Unit li	S	Granted - 18/02/2014
214	SOU	Prudential Landmarks Pvt. Ltd(Unit: The Beach House Goa)	S	Granted - 18/02/2014
215	NOR	M/s P.V Fernandes Beach Guest House	S	Granted - 18/02/2014
216	NOR	Glamazon Salon And Spa	S	Granted - 18/02/2014
217	NOR	Kamaxi Industries	S	Granted - 17/02/2014
218	SOU	M/s Geist Research Pvt. Ltd.	M	Granted - 17/02/2014
219	NOR	Prasad Packaging	S	Granted - 17/02/2014
220	NOR	Goaware Filaments - Unit li	S	Granted - 17/02/2014
221	SOU	Green Company	S	Granted - 17/02/2014
222	SOU	M/s Santimanos Cottages	S	Granted - 17/02/2014
223	NOR	Janata Flour Mill	S	Granted - 17/02/2014
224	NOR	Servoplast	S	Granted - 17/02/2014
225	SOU	Veedoit Servicing Center	S	Granted - 17/02/2014
226	NOR	M/s Emmanuel Guest House	S	Granted - 17/02/2014
227	NOR	M/s R.D. Engineering	S	Granted - 17/02/2014
228	NOR	M/s Rajkamal Fabrications	S	Granted - 17/02/2014
229	NOR	M/s Sai Metal Works	S	Granted - 17/02/2014
230	SOU	M/s Rotec Laminates	S	Granted - 17/02/2014
231	NOR	Robin Industries	S	Granted - 17/02/2014
232	SOU	Diawerke Industries	S	Granted - 17/02/2014
233	NOR	Chowgule Industries Pvt Ltd	S	Granted - 17/02/2014
234	SOU	M/s Hotel Pratiksha	S	Granted - 17/02/2014
235	SOU	M/s Konkani Retreads	S	Granted - 17/02/2014
236	NOR	Tavora Hotels & Restaurants(Navtara)	S	Granted - 17/02/2014
237	NOR	Sunrise Cashew Industries	S	Granted - 17/02/2014
238	SOU	M/s Jairaj Industries	S	Granted - 17/02/2014
239	NOR	M/s Kamat Metal Industries	S	Granted - 17/02/2014
240	SOU	M/s Akshay Plastimers Corporation	S	Granted - 17/02/2014
241	NOR	M/s Cement Brick Industries	S	Granted - 17/02/2014
242	NOR	Riomar Beach Resort	S	Granted - 17/02/2014
243	SOU	M/s Poonam Enterprises	S	Granted - 17/02/2014
244	NOR	Shriganesh Agro Product	S	Granted - 17/02/2014
245	SOU	Sea Pearl Hotel	S	Granted - 17/02/2014
246	SOU	Indoco Remedies Ltd. (Plant I)	S	Granted - 07/02/2014
247	NOR	Prudential Paradise	L	Granted - 07/02/2014
248	SOU	Dudhsagar River Side Guest House	S	Granted - 07/02/2014
249	NOR	Litches Spa & Saloon	S	Granted - 03/02/2014
250	NOR	M/s Damodar PUC Center	S	Granted - 03/02/2014
251	NOR	Hotel La Grande	S	Granted - 03/02/2014
252	NOR	Rishabh Industries	M	Granted - 03/02/2014
253	SOU	Shivam Engineers	S	Granted - 03/02/2014
254	SOU	Hotel Canacona Palace	S	Granted - 03/02/2014
255	SOU	Mallikarjun Pipes & Cement Products Pvt Ltd	S	Granted - 03/02/2014
256	NOR	Panshikar Engineering	S	Granted - 03/02/2014
257	SOU	Siddhivinayak Events	M	Granted - 03/02/2014
258	NOR	Svenska Technologies Pvt Ltd	S	Granted - 03/02/2014
259	NOR	Kamaxi Rice & Flour Mill	S	Granted - 03/02/2014
260	NOR	Mahalasa Engineering And Fabrication Works	S	Granted - 03/02/2014
261	SOU	O Palmar	S	Granted - 03/02/2014
262	NOR	Paperpack	S	Granted - 03/02/2014
263	NOR	M/s F. M. Instrumentation	S	Granted - 03/02/2014
264	NOR	M/s Salgaonkar Metal Trust	S	Granted - 03/02/2014
265	NOR	Gods Gift Guest House	S	Granted - 03/02/2014
266	NOR	M/s Gajanan Engineering	S	Granted - 03/02/2014
267	NOR	M/s Chaya Oil Mill	S	Granted - 03/02/2014
268	NOR	M/s Delma's Guest House	S	Granted - 03/02/2014
269	NOR	M/s Hardtech Industries	S	Granted - 03/02/2014

270	SOU	M/s Dempo Industries Pvt Ltd(Navhind Papers And Publications)	L	Granted - 03/02/2014
271	NOR	M/s Lokmanya Process	S	Granted - 03/02/2014
272	NOR	M/s Goan Bounty	S	Granted - 03/02/2014
273	SOU	M/s Paravati Industries	S	Granted - 03/02/2014
274	NOR	M/s N. V. Restaurant	S	Granted - 03/02/2014
275	NOR	M/s Alex Maria Guest House	S	Granted - 03/02/2014
276	NOR	M/s Octopus Guest House Bar & Restaurant	S	Granted - 03/02/2014
277	NOR	M/s Potrivit Distilleries Pvt Ltd	S	Granted - 03/02/2014
278	NOR	M/s Alidia Beach Cottages	S	Granted - 03/02/2014
279	SOU	Molyma Hotels	S	Granted - 03/02/2014
280	NOR	M/s Malvan Automobiles Pvt Ltd	S	Granted - 03/02/2014
281	NOR	I. A. DSOUZA	S	Granted - 03/02/2014
282	NOR	M/s Prathamesh Engineering Works	S	Granted - 03/02/2014
283	SOU	M/s Pee Gee	S	Granted - 03/02/2014
284	SOU	Anupam Insulating Industries	S	Granted - 03/02/2014
285	NOR	M/s Jeevadani Engineering Works	S	Granted - 03/02/2014
286	SOU	M/s Desai Agro Processors Pvt. Ltd.	S	Granted - 03/02/2014
287	NOR	M/s Print Master	S	Granted - 03/02/2014
288	NOR	M/s Sawaiakar Cashew Product	S	Granted - 03/02/2014
289	SOU	M/s Kushawati Crushers	S	Granted - 03/02/2014
290	SOU	M/s Hotel Sunaina	S	Granted - 03/02/2014
291	NOR	M/s N. V. Beach Resort	S	Granted - 03/02/2014
292	SOU	M/s Goa Perfumeries	S	Granted - 03/02/2014
293	NOR	M/s Famafa Beach Resort	S	Granted - 03/02/2014
294	NOR	M/s La Cabana Beach & Spa	S	Granted - 03/02/2014
295	NOR	M/s Mahalasa Polyfab	S	Granted - 03/02/2014
296	NOR	M/s Om Sai Engineering Works	S	Granted - 03/02/2014
297	NOR	M/s Palmarinha Resort	S	Granted - 03/02/2014
298	NOR	Aashiya Service Station	S	Granted - 03/02/2014
300	NOR	Amba Industries	S	Granted - 03/02/2014
301	SOU	Aaswad Cashew Industries	L	Granted - 03/02/2014
302	SOU	Wavelet Beach Resort	S	Granted - 03/02/2014
303	SOU	Cipla Ltd	L	Granted - 03/02/2014
304	NOR	Glenmark Genercis Limited (Plant I)	L	Granted - 03/02/2014
305	SOU	Puja Ferro Alloys Pvt. Ltd	M	Granted - 03/02/2014
306	SOU	Astra Metal Systems Pvt.Ltd.	S	Granted - 03/02/2014
307	NOR	Mayur Cashew Product	S	Granted - 03/02/2014
308	NOR	coastal Sunview Hotel Private	L	Granted - 03/02/2014
309	SOU	Macbrout Engineering Pvt. Ltd. ,A1\22, Margao Industrial Estate, San Jose De Are	L	Granted - 03/02/2014
310	NOR	Prasad Enterprises	S	Granted - 03/02/2014
311	SOU	M/s Marvcare	S	Granted - 03/02/2014
312	NOR	Hotel Miramar Comfort	S	Granted - 03/02/2014
313	NOR	M/s O Pescador - Dona Paula Beach Resort	S	Granted - 03/02/2014
314	NOR	M/s Hotel Linda Goa	S	Granted - 03/02/2014
315	NOR	M/s Hotel Linda Goa	S	Granted - 03/02/2014
316	SOU	M/s Maniyari Hotels Pvt. Ltd.	S	Granted - 03/02/2014
317	SOU	M/s Home Guest House	S	Granted - 03/02/2014
318	SOU	M/s Vijai Marine Services	M	Granted - 03/02/2014
319	NOR	M/s Koteswar Mosaic Tiles	S	Granted - 03/02/2014
320	NOR	M/s Rajaram Workshop	S	Granted - 31/01/2014
321	SOU	M/s Colva Beach Resort	S	Granted - 31/01/2014
322	NOR	Counto Metals & Mining Co. Ltd.	S	Granted - 31/01/2014
323	SOU	Pifran Holiday Beach Resort	S	Granted - 31/01/2014
324	NOR	Citrus Hotels.,Silla Goa Hotels Pvt. Ltd.,	M	Granted - 31/01/2014
325	NOR	Gera Developers Pvt. Ltd.	L	Granted - 31/01/2014
326	NOR	Prima Guest House.,	S	Granted - 31/01/2014

327	NOR	M/s Michael & Michael Pipes Pvt. Ltd.	S	Granted - 31/01/2014
328	SOU	M/s A. K. Enterprises	S	Granted - 31/01/2014
329	SOU	Hotel Rebelo	S	Granted - 31/01/2014
330	SOU	M/s S.P.Singla Constructions Pvt Ltd	M	Granted - 31/01/2014
331	NOR	M/s Guru Guest House	S	Granted - 31/01/2014
332	SOU	Shahil Enterprises	S	Granted - 31/01/2014
333	NOR	M/s Pratima Bakery	S	Granted - 31/01/2014
334	SOU	Datson Industries	S	Granted - 31/01/2014
335	NOR	M/s London Hotel	S	Granted - 31/01/2014
336	SOU	Pooja Industries	S	Granted - 31/01/2014
337	SOU	Bogmalo Hieght Holiday Apartments Pvt Ltd	S	Granted - 31/01/2014
338	SOU	Cuncoulim Oxygen Plant Pvt. Ltd.	S	Granted - 31/01/2014
339	NOR	Rodrigues Workshop	S	Granted - 31/01/2014
340	SOU	Bavish	S	Granted - 30/01/2014
341	SOU	M/s Bandekar Offset	S	Granted - 30/01/2014
342	NOR	M/s Sudiksha Engineering Works	S	Granted - 30/01/2014
343	SOU	Neha Ice Plant (Ssi Unit)	S	Granted - 30/01/2014
344	SOU	M/s Xec Ibrahim	S	Granted - 30/01/2014
345	SOU	D M Nadkarni & Sons	S	Granted - 30/01/2014
346	SOU	M/s Mundi Engineering Works	S	Granted - 30/01/2014
347	NOR	M/s Maureen Lodge	S	Granted - 30/01/2014
348	NOR	Ms Shree Mahalaxmi Industries	S	Granted - 30/01/2014
349	SOU	M/s Filu Engineering Works	S	Granted - 30/01/2014
350	NOR	M/s Behare Industries	S	Granted - 30/01/2014
351	SOU	Ashirwad Enterprises	S	Granted - 30/01/2014
352	NOR	M/s Sai Rubber Industries	S	Granted - 30/01/2014
353	NOR	M/s Menezes Kamco Foods Pvt Ltd	S	Granted - 30/01/2014
354	NOR	Midway Trading Co.	S	Granted - 30/01/2014
355	SOU	M/s Oceanic Paints Pvt Ltd	S	Granted - 30/01/2014
356	SOU	M/s F. C. Steel Works	S	Granted - 30/01/2014
357	SOU	M/s Shamin Bakery	S	Granted - 30/01/2014
358	SOU	M/s St. Xavier Bakery	S	Granted - 30/01/2014
359	SOU	M/s Raghuvir Industry	S	Granted - 30/01/2014
360	SOU	Fortune Distillers & Vintners Pvt. Ltd.	S	Granted - 30/01/2014
361	SOU	Tevapharm India Pvt. Ltd.	L	Granted - 30/01/2014
362	NOR	Shri Balaji Trading Co.	S	Granted - 30/01/2014
363	NOR	M/s Yash Agro Industries	S	Granted - 30/01/2014
364	SOU	M/s Agam Batteries Pvt. Ltd.	S	Granted - 30/01/2014
365	NOR	M/s Swadish Enterprises	S	Granted - 30/01/2014
366	SOU	Hotel La Flor	S	Granted - 30/01/2014
367	NOR	M/s Living Room Lifestyles Pvt Ltd	S	Granted - 30/01/2014
368	NOR	M/s Anagha Enterprises	S	Granted - 20/01/2014
369	NOR	M/s Hotel Musafir	S	Granted - 20/01/2014
370	SOU	Hotel Vasco	S	Granted - 20/01/2014
371	NOR	Scoop Industries Pvt Ltd	M	Granted - 20/01/2014
372	NOR	Vailankanni Bakery	S	Granted - 08/01/2014
373	NOR	Harekrishna Petroleum	S	Granted - 08/01/2014
374	SOU	Mukta Opticians	S	Granted - 08/01/2014
375	NOR	M/s Rydal Passavant	S	Granted - 08/01/2014
376	SOU	M/s Sidhivinayak Printing Press	S	Granted - 08/01/2014
377	SOU	M/s Venus Plastic Pipe Industries	S	Granted - 08/01/2014
378	NOR	M/s Elba Constructions Equipment	S	Granted - 08/01/2014
379	NOR	M/s Kamleshwar Detergent Industries	S	Granted - 08/01/2014
380	NOR	Precision Techno Services	S	Granted - 08/01/2014
381	SOU	M/s On & Offshore Hitech Engineers Pvt Ltd	S	Granted - 08/01/2014
382	NOR	Asha Printers	S	Granted - 08/01/2014
383	NOR	M/s Hill View Motel	S	Granted - 08/01/2014
384	NOR	M/s Rututek Enterprises	S	Granted - 08/01/2014

385	SOU	M/s Joma Metal Industries	S	Granted - 08/01/2014
386	SOU	Timblo Enterprises	L	Granted - 08/01/2014
387	SOU	The Village Inn.	S	Granted - 08/01/2014
388	SOU	Cipla Ltd	L	Granted - 08/01/2014
389	SOU	M/s Adani Mormugoa Port Terminal Pvt Ltd	L	Granted - 07/01/2014
390	SOU	M/s Naval Aircraft Yard(Goa)	L	Granted - 06/01/2014
391	NOR	Geno Pharmaceuticals Ltd. Unit II (Dainty Delights)	S	Granted - 23/12/2013
392	NOR	Aluwindoor Engineering	S	Granted - 18/12/2013
393	NOR	M/s Sea View Cottages	S	Granted - 18/12/2013
394	SOU	M/s Bhanudas Construction	S	Granted - 18/12/2013
395	NOR	M/s Shri Ganesh Reinforced Cement (G.R.C)	S	Granted - 18/12/2013
396	SOU	Gaurav Furniture	S	Granted - 18/12/2013
397	NOR	E. P. Industries	S	Granted - 18/12/2013
398	NOR	M/s Fantasy Delite	S	Granted - 17/12/2013
399	SOU	M/s Shree Sainath Industries	S	Granted - 17/12/2013
400	NOR	Aerocoach Unit 2	S	Granted - 17/12/2013
401	SOU	M/s Bhavi Metal Industries	S	Granted - 17/12/2013
402	SOU	Zoom Enterprises Ltd. (Woodbourne Resort)	M	Granted - 17/12/2013
403	SOU	Zoom Enterprises Ltd. (Woodbourne Resort)	M	Granted - 17/12/2013
404	NOR	M/s Qualishine Industries	S	Granted - 17/12/2013
405	NOR	M/s Vonco Plastic Pvt. Ltd	S	Granted - 17/12/2013
406	SOU	M/s Hotel Shangrila	S	Granted - 17/12/2013
407	NOR	Poshak Cashew Factory	S	Granted - 17/12/2013
408	NOR	M/s Nirvana Nest Buildcon Pvt. Ltd. (Nagoa Grande Hotel)	M	Granted - 17/12/2013
409	NOR	Menezes Lawns	S	Granted - 17/12/2013
410	NOR	Menezes Fishnet Industry Private Limited	S	Granted - 17/12/2013
411	NOR	Victor Hotels And Motels Ltd (M.V. Horseshoe Casino)	L	Granted - 17/12/2013
412	NOR	Shree Damodar Coach Crafts Pvt. Ltd.	S	Granted - 17/12/2013
413	SOU	M/s Sua Industries	S	Granted - 17/12/2013
414	SOU	M/s Petals Innovative Machines Pvt Ltd	M	Granted - 17/12/2013
415	NOR	Marina Resorts Pvt. Ltd.	L	Granted - 17/12/2013
416	NOR	Rajendra Iron & Steel Works	S	Granted - 17/12/2013
417	SOU	Popular Metals	S	Granted - 17/12/2013
418	NOR	Oceana The Holiday Home	S	Granted - 17/12/2013
419	NOR	Acron Developers Pvt. Ltd. Viscente Green	S	Granted - 17/12/2013
420	SOU	Daniel Engineering Works & Ship Repairs	S	Granted - 17/12/2013
421	SOU	Hotel Rukmini	L	Granted - 17/12/2013
422	SOU	C'Roque Resort	L	Granted - 17/12/2013
423	NOR	Manipal Hospital	L	Granted - 17/12/2013
424	NOR	Villa Vera Association	L	Granted - 17/12/2013
425	NOR	M/s Shrem Resort Private Limited	L	Granted - 17/12/2013
426	NOR	Siyaram Engineering Industry	S	Granted - 17/12/2013
427	SOU	Britacel Silicones Ltd.	S	Granted - 17/12/2013
428	NOR	Chemtrols Industries Ltd	S	Granted - 17/12/2013
429	NOR	Churi Industries,	S	Granted - 17/12/2013
430	NOR	United Breweries Ltd.	L	Granted - 17/12/2013
431	SOU	Shraddha Ispat Private Limited	L	Granted - 17/12/2013
432	SOU	Goa Sponge & Power Ltd	L	Granted - 17/12/2013
433	NOR	Goa State Co-Operative Milk Producers Union Ltd.	S	Granted - 17/12/2013
434	NOR	Panduronga Timblo Industrias	S	Granted - 17/12/2013
435	NOR	Putzmeister India Private Limited	M	Granted - 17/12/2013
436	SOU	Srithik Ispat Pvt. Ltd.	M	Granted - 17/12/2013
437	SOU	Vinka Industries	S	Granted - 17/12/2013
438	NOR	Goa Tractors Tillers & Agencies	S	Granted - 17/12/2013

439	SOU	M/s. John Distilleries Pvt. Ltd.	L	Granted - 17/12/2013
440	NOR	Swastik Cruises	S	Granted - 17/12/2013
441	NOR	M/s. Mahalasa Pharma	S	Granted - 17/12/2013
442	SOU	Model Infra Corporation Private Limited	L	Granted - 17/12/2013
443	NOR	M/s Top Marble & Granite	L	Granted - 17/12/2013
444	SOU	Prabhu Realtors (Residential Complex)	S	Granted - 17/12/2013
445	SOU	Prabhu Realtors (Residential Complex)	S	Granted - 17/12/2013
446	SOU	Justiniano Workshop	S	Granted - 17/12/2013
447	SOU	Prabhu Food Products	S	Granted - 17/12/2013
448	NOR	M/s Viraj Wood Industry	S	Granted - 17/12/2013
449	NOR	M/s Vinod Enterprises	S	Granted - 17/12/2013
450	NOR	M/s Om Sai Industries	S	Granted - 17/12/2013
451	NOR	M/s Supriya Industries	S	Granted - 17/12/2013
452	SOU	M/s Radha Industries	S	Granted - 17/12/2013
453	NOR	Laxmi Agro Industries	S	Granted - 17/12/2013
454	SOU	M/s Hotel Royal Palace	S	Granted - 17/12/2013
455	NOR	M/s Severina Guest House	S	Granted - 17/12/2013
456	NOR	M/s Chalston Hotel Pvt Ltd	S	Granted - 17/12/2013
457	NOR	M/s Avion Hydro Plast	S	Granted - 17/12/2013
458	NOR	Siddhant Engineering Services	S	Granted - 17/12/2013
459	NOR	Ms Merry Milk Foods	S	Granted - 17/12/2013
460	SOU	Monak Packaging (Ssi Unit)	M	Granted - 17/12/2013
461	SOU	M/s Hotel La Paz Gardens Pvt Ltd	L	Granted - 17/12/2013
462	NOR	M/s Vithal P Chari	S	Granted - 17/12/2013
463	NOR	M/s Sangeet Pepsi	S	Granted - 17/12/2013
464	NOR	Ravalnath Workshop	S	Granted - 17/12/2013
465	SOU	M/s Sai Engineering Works	S	Granted - 17/12/2013
466	NOR	M/s Sea View Apartments	S	Granted - 17/12/2013
467	NOR	Shalini Traders	S	Granted - 17/12/2013
468	NOR	M/s Bhagawati Printers	S	Granted - 17/12/2013
469	NOR	M/s Eagle Plastic Industries	S	Granted - 17/12/2013
470	NOR	Serenity Ayurvedic Medispa & Yoga	S	Granted - 17/12/2013
471	NOR	R. J. Industries	S	Granted - 17/12/2013
472	NOR	M/s St. Minguel Rice & Flour Mill & Masala\ Coconut Oil Mill	S	Granted - 17/12/2013
473	SOU	P.Y Auto Pollution Center	S	Granted - 17/12/2013
474	NOR	M/s New Vision Printing Services Pvt Ltd	L	Granted - 17/12/2013
475	SOU	Ideal Engineers	S	Granted - 17/12/2013
476	NOR	Gm Enterprise	S	Granted - 17/12/2013
477	NOR	Rose & Seby Guest House	S	Granted - 17/12/2013
478	NOR	Shree Gajanan Saw Mill	S	Granted - 17/12/2013
479	NOR	M/s Sagar Steel Furniture	S	Granted - 17/12/2013
480	SOU	M/s Apple Lodging And Restaurant	S	Granted - 17/12/2013
481	NOR	M/s Laxmikant K.S Parkar Flour Mill	S	Granted - 17/12/2013
482	NOR	Talaulicar Auto Service	S	Granted - 17/12/2013
483	SOU	M/s Shanta Ice Factory	S	Granted - 17/12/2013
484	SOU	M/s Shanta Ice Factory	S	Granted - 17/12/2013
485	SOU	M/s Air Engineering Workshop	S	Granted - 17/12/2013
486	SOU	M/s Base Workshop (Goa)	S	Granted - 17/12/2013
487	SOU	M/s Rukmini Rice, Coconut Oil Mill	S	Granted - 17/12/2013
488	NOR	M/s Regency Auto Garage	S	Granted - 17/12/2013
489	NOR	M/s Propack Industries	S	Granted - 17/12/2013
490	NOR	Sankatmochan Durga Enterprises	S	Granted - 17/12/2013
491	NOR	M/s Saibaba Saw Mill	S	Granted - 17/12/2013
492	NOR	M/s Krishnanath B. Fadte Saw Mill	S	Granted - 17/12/2013
493	SOU	M/s Super Engineering Works	S	Granted - 17/12/2013
494	SOU	M/s Dilkhush Cafe	S	Granted - 17/12/2013
495	NOR	M/s Rainbow Coats	S	Granted - 17/12/2013

496	NOR	M/s Koteswar Residency	S	Granted - 17/12/2013
497	NOR	M/s Rama Traders	S	Granted - 17/12/2013
498	SOU	M/s K.E. Enterprises	S	Granted - 17/12/2013
499	SOU	M/s Super Pack	S	Granted - 17/12/2013
500	NOR	M/s Modern Industries	S	Granted - 17/12/2013
501	SOU	M/s Sandesh H. N. Karmali	S	Granted - 17/12/2013
502	SOU	M/s Francisco Gomes	S	Granted - 17/12/2013
503	SOU	M/s Goldy Auto Stamping(India) Pvt Ltd	S	Granted - 17/12/2013
504	NOR	M/s Renzo's Inn	S	Granted - 17/12/2013
505	NOR	M/s Hotel Sunrise	S	Granted - 05/12/2013
506	NOR	M/s Cafe Central	S	Granted - 05/12/2013
507	NOR	M/s The Moonlight Restaurant And Bar	S	Granted - 05/12/2013
508	NOR	The Hotel Oasis	S	Granted - 29/11/2013
509	SOU	M/s Paramount Poultry Feed	S	Granted - 29/11/2013
510	NOR	M/s Creative Packs Inc (Unit I)	S	Granted - 29/11/2013
511	NOR	Bharat Lodge	S	Granted - 29/11/2013
512	NOR	M/s Nakita Resort	S	Granted - 29/11/2013
513	NOR	Creative Packs Inc Unit II	S	Granted - 29/11/2013
514	SOU	Mabpharm Private Limited	L	Granted - 29/11/2013
515	NOR	Hotel Cary's	S	Granted - 25/11/2013
516	NOR	M/s Metal Doors Manufacture Company	S	Granted - 25/11/2013
517	NOR	M/s Shri Sai Bakery	S	Granted - 25/11/2013
518	NOR	M/s Goa Pickles	S	Granted - 25/11/2013
519	NOR	M.V.Casino Royale	M	Granted - 25/11/2013
520	SOU	100m3 Stp At Headland Of Mormugao Port Trust	S	Granted - 25/11/2013
521	NOR	multipurpose	S	Granted - 25/11/2013
522	NOR	M/s Hotel Viva Baga	S	Granted - 25/11/2013
523	SOU	M/s Rosy Bakery	S	Granted - 25/11/2013
524	SOU	M/s Remedious Bakery	S	Granted - 25/11/2013
525	NOR	Elite Lodge Bar & Restaurant	S	Granted - 25/11/2013
526	NOR	M/s Fish N Feni Restaurant	S	Granted - 25/11/2013
527	NOR	M/s Manohar Bakery	S	Granted - 25/11/2013
528	NOR	Antonio Guest House	S	Granted - 25/11/2013
529	NOR	L. P. Soda Factory	S	Granted - 25/11/2013
530	NOR	La Sunila Suite Apartments	S	Granted - 25/11/2013
531	NOR	Best Food	S	Granted - 25/11/2013
532	NOR	M/s Nisha Bar & Restaurant	S	Granted - 25/11/2013
533	NOR	jose Santana B Pires	S	Granted - 25/11/2013
534	NOR	Tip Top Tiles	S	Granted - 31/10/2013
535	NOR	M/s Orchid Holiday Home	S	Granted - 31/10/2013
536	NOR	M/s Alepas Guest House	S	Granted - 31/10/2013
537	NOR	M/s Chetna Bottling	S	Granted - 31/10/2013
538	SOU	J&R Margao Cold Storage & Ice Plant	S	Granted - 31/10/2013
539	SOU	T.S Mistry	S	Granted - 31/10/2013
540	NOR	M/s Villa Calangute	S	Granted - 31/10/2013
541	SOU	Hotel Naaz (Lodging)	S	Granted - 31/10/2013
542	SOU	M/s Ami Industries	S	Granted - 31/10/2013
543	NOR	M/s Hotel Virashree	S	Granted - 31/10/2013
544	SOU	Novacem Pavers & Allied Products	S	Granted - 31/10/2013
545	SOU	Premium Pavers & Stone Products	S	Granted - 31/10/2013
546	SOU	M/s Intru Bakery	S	Granted - 31/10/2013
547	SOU	M/s Shri Auto Care	S	Granted - 31/10/2013
548	SOU	M/s Super Marble & Granites	S	Granted - 31/10/2013
549	NOR	M/s Hotel Goa International	S	Granted - 31/10/2013
550	NOR	M/s Shree Krupa Plastics	S	Granted - 31/10/2013
551	NOR	Shree Rameshwar Lodge	S	Granted - 31/10/2013
552	NOR	M/s Hotel El-Rose	S	Granted - 31/10/2013

553	SOU	Paulina's Guest House	S	Granted - 31/10/2013
554	NOR	M/s Ria Residency (Lodging And Boarding)	S	Granted - 31/10/2013
555	SOU	M/s Sai Kartik Industries	S	Granted - 31/10/2013
556	SOU	M/s Shree Samarth Automotive	S	Granted - 31/10/2013
557	SOU	M/s Prahlad Engineers	S	Granted - 31/10/2013
558	NOR	M/s Casa Sea Shell Annexe	S	Granted - 31/10/2013
559	NOR	M/s Casa Sea Shell	S	Granted - 31/10/2013
560	NOR	Ms Kashon	S	Granted - 31/10/2013
561	NOR	M/s Hotel Solmar	S	Granted - 31/10/2013
562	NOR	Mantravadi Industries	S	Granted - 31/10/2013
563	NOR	Sri Om Engineering Works	S	Granted - 31/10/2013
564	NOR	M/s Trinity Beverages	S	Granted - 31/10/2013
565	SOU	Nicomet Industries Ltd	S	Granted - 31/10/2013
566	SOU	Vivenda Hotels Private Limited	S	Granted - 31/10/2013
567	SOU	Shree Damodar Engineering	S	Granted - 31/10/2013
568	SOU	Oceanique Resort	L	Granted - 31/10/2013
569	SOU	Chowgule Industries Private Limited Unit I (MSIL Div.)	M	Granted - 31/10/2013
570	NOR	Goa Meat Complex Ltd	S	Granted - 31/10/2013
571	SOU	M/s Villagio-Inn	L	Granted - 31/10/2013
572	NOR	Ramnath Auto Rpairs & Fabrication	S	Granted - 31/10/2013
573	NOR	Ms Non Conventional Power Devices Pvt Ltd	S	Granted - 31/10/2013
574	NOR	Milroc Good Earth Property & Developers L.L.P (Milroc Kadamba)	L	Granted - 31/10/2013
575	SOU	M/s Chowgule Industries Pvt Ltd	S	Granted - 31/10/2013
576	SOU	Chowgule Industries Pvt. Ltd. Unit II (Sml Div.)	S	Granted - 31/10/2013
577	NOR	M/s Hotel Image Inn	S	Granted - 31/10/2013
578	NOR	Colonia Santa Maria (H) Pvt Ltd	M	Granted - 31/10/2013
579	SOU	Chowgule Industries Private Limited	S	Granted - 31/10/2013
580	NOR	Ved Metal Works	S	Granted - 31/10/2013
581	NOR	Mofet	S	Granted - 31/10/2013
582	SOU	Dura-Line India Pvt. Ltd.	L	Granted - 30/10/2013
583	NOR	M/s Villa Calangute	S	Granted - 22/10/2013
584	NOR	M/s Akash Fabricators	S	Granted - 22/10/2013
585	NOR	M/s Purvadeep Bakery	S	Granted - 22/10/2013
586	NOR	Ashwem Beach Resorts And Villa Pvt Ltd.	S	Granted - 22/10/2013
587	NOR	M/s S. Kumar Metals	S	Granted - 22/10/2013
588	SOU	Asian Magnetic Devices Pvt Ltd	S	Granted - 22/10/2013
589	NOR	Merck Limited	M	Granted - 22/10/2013
590	SOU	Kodak India Pvt. Ltd.	L	Granted - 22/10/2013
591	SOU	Kodak India Pvt. Ltd.	L	Granted - 22/10/2013
592	NOR	Omkar Gram Vikas Society	S	Granted - 22/10/2013
593	NOR	Kaykay Crown Corks Pvt. Ltd.	S	Granted - 22/10/2013
594	NOR	Siddharth Milk & Milk Products Pvt. Ltd.	S	Granted - 22/10/2013
595	NOR	M/s Sai Pack	S	Granted - 22/10/2013
596	NOR	Shivraj Metal Works	S	Granted - 22/10/2013
597	NOR	M/s Mandovi Dry Docks	M	Granted - 22/10/2013
598	NOR	Resort Terra Paraiso	M	Granted - 22/10/2013
599	SOU	shevanti Metals	S	Granted - 22/10/2013
600	NOR	M/s Sateri Metal	S	Granted - 22/10/2013
601	NOR	Unique Signboards & Allied Products	S	Granted - 22/10/2013
602	NOR	M/s Poonam Guest House	S	Granted - 22/10/2013
603	NOR	M/s Bhagavathi Fabrication	S	Granted - 22/10/2013
604	NOR	M/s Germania Batteries Pvt Ltd	S	Granted - 22/10/2013
605	NOR	Zam Zam Metal Industries	S	Granted - 22/10/2013
606	SOU	Zuari Engineering Services	S	Granted - 09/10/2013
607	SOU	Nicomet Industries Ltd	S	Granted - 09/10/2013
608	SOU	Glynwed Pipe Systems India Private Limited	L	Granted - 09/10/2013

609	NOR	Manohar Packagings Private Limited	L	Granted - 09/10/2013
610	NOR	The Indian Hotels Co. Ltd. Unit: Vivanta By Taj-Holiday Village, Goa	L	Granted - 09/10/2013
611	NOR	M/s Saraswati Traders	S	Granted - 09/10/2013
612	NOR	M/s Mahesh National Padaria	S	Granted - 09/10/2013
613	NOR	B. R. Holiday Resort	M	Granted - 09/10/2013
614	NOR	Silva Bakery	S	Granted - 09/10/2013
615	SOU	M/s Rosary Confectionery	S	Granted - 01/10/2013
616	SOU	M/s Sambari Flour Mill	S	Granted - 01/10/2013
617	SOU	M/s Control Centre	S	Granted - 01/10/2013
618	NOR	Sangam Bakery	S	Granted - 01/10/2013
619	NOR	Vijay Engineering Works	S	Granted - 01/10/2013
620	SOU	M/s Service Inn	S	Granted - 01/10/2013
621	NOR	M/s Anukul	S	Granted - 01/10/2013
622	NOR	M/s Victoria Villa	S	Granted - 01/10/2013
623	NOR	Nova Marbles & Granites	S	Granted - 01/10/2013
624	SOU	M/s Casmiro Bakery	S	Granted - 01/10/2013
625	SOU	M/s Patric & Co.	S	Granted - 01/10/2013
626	NOR	M/s Global Spirits & Foods	S	Granted - 01/10/2013
627	SOU	M/s Rodrigues Auto Repair & Engineering Works	S	Granted - 01/10/2013
628	SOU	M/s Morje Fabrication Works	S	Granted - 01/10/2013
629	SOU	Blue Moon Distilleries	S	Granted - 01/10/2013
630	NOR	Minco (India) Flow Elements Pvt. Ltd	L	Granted - 01/10/2013
631	SOU	M/s Bharat Hotels Ltd (Intercontinental The Lalit Goa Resort)	L	Granted - 16/09/2013
632	NOR	Excel Prints & Packs	S	Granted - 16/09/2013
633	SOU	Arcanjo Construction Private Limited	S	Granted - 16/09/2013
634	NOR	Cartini India Limited	S	Granted - 16/09/2013
635	SOU	Indian Oil Corporation Limited	L	Granted - 16/09/2013
636	SOU	Goa Ore Carriers	S	Granted - 16/09/2013
637	SOU	Sagar Marine Services	S	Granted - 16/09/2013
638	NOR	Ambey Metallic Ltd	M	Granted - 16/09/2013
639	SOU	. Marpol Pvt Ltd. Unit li	M	Granted - 16/09/2013
640	NOR	Gkb Hi-Tech Lenses Pvt.Ltd (Plot 50)	S	Granted - 16/09/2013
641	NOR	Gkb Hi-Tech Lenses Pvt.Ltd (Plot 12 & 13)	L	Granted - 16/09/2013
642	NOR	Automobile Corporation Of Goa Ltd - Plant - I	L	Granted - 16/09/2013
643	NOR	Hotel Germany	S	Granted - 16/09/2013
644	NOR	M/s Shriram Enterprises	S	Granted - 16/09/2013
645	SOU	danra Metals	S	Granted - 16/09/2013
646	NOR	Cmm Logistic Pvt. Ltd.	S	Granted - 16/09/2013
647	NOR	Vijaya Packaging	S	Granted - 16/09/2013
648	NOR	Suryakiran Residency	S	Granted - 16/09/2013
649	NOR	United Leadoxide Products Pvt Ltd	L	Granted - 16/09/2013
650	NOR	Vyoma Travels And Logistic Pvt. Ltd. (M.V. Fiesta)	S	Granted - 16/09/2013
651	NOR	Stanis Crushing Equipment	S	Granted - 16/09/2013
652	NOR	M/s Ritesh Stone Crushers	S	Granted - 16/09/2013
653	SOU	M/s Polyclass Industries	M	Granted - 16/09/2013
654	SOU	Hotel Goan Maharaja	S	Granted - 16/09/2013
655	SOU	M/s Neuza Chemicals	S	Granted - 16/09/2013
656	NOR	M/s Goa Paints & Allied Products Pvt Ltd	S	Granted - 16/09/2013
657	NOR	Unichem Laboratories Limited	L	Granted - 16/09/2013
658	NOR	Ashutosh Industries	S	Granted - 16/09/2013
659	NOR	Hotel 4 Pillars	L	Granted - 16/09/2013
660	NOR	Goa Auto Accessories Limited	S	Granted - 16/09/2013
661	NOR	Goa Auto Accessories Limited	S	Granted - 16/09/2013
662	NOR	M/s Hotel Kamal Palace	S	Granted - 16/09/2013

663	NOR	D. K. Industries	S	Granted - 16/09/2013
664	NOR	Mandovi Distilleries & Breweries Pvt Ltd	S	Granted - 16/09/2013
665	NOR	M/s Shanti Brick Industry	S	Granted - 16/09/2013
666	NOR	Sumo Industries	S	Granted - 16/09/2013
667	NOR	M/s Hotel Jeromes Holiday Inn	S	Granted - 11/09/2013
668	SOU	M/s Aney Industries	S	Granted - 11/09/2013
669	NOR	Laxmi Powder Coating & Engineering Works	S	Granted - 11/09/2013
670	NOR	M/s Shankar Agro Product	S	Granted - 11/09/2013
671	NOR	M/s Pack A Well	S	Granted - 11/09/2013
672	NOR	M/s Shreya Industries	S	Granted - 11/09/2013
673	NOR	M/s Hotel Venite	S	Granted - 11/09/2013
674	NOR	M/s H. K. G. N. Granite & Marble - Partnership Firm	S	Granted - 11/09/2013
675	NOR	M/s Goa Guest Ghar	S	Granted - 11/09/2013
676	NOR	M/s Hitech Press Tools	S	Granted - 11/09/2013
677	NOR	M/s Chaphekar Industries	S	Granted - 11/09/2013
678	NOR	M/s Krishna Industries	S	Granted - 11/09/2013
679	NOR	M/s Polyplast	S	Granted - 11/09/2013
680	NOR	M/s Raj Industries	S	Granted - 11/09/2013
681	NOR	Hydropack Industries Unit li	S	Granted - 11/09/2013
682	NOR	M/s Mandovi Marine Engineering Works	S	Granted - 11/09/2013
683	SOU	M/s Simon Cottages	S	Granted - 11/09/2013
684	NOR	M/s Laxmi Ravalnath Service Station	S	Granted - 11/09/2013
685	NOR	M/s Luretha & Pollyes Guest House, Bar And Restaurant	S	Granted - 11/09/2013
686	NOR	M/s Nv Guest House	S	Granted - 11/09/2013
687	NOR	M/s Pollyes Guest House	S	Granted - 11/09/2013
688	NOR	M/s Papaya Restaurant	S	Granted - 11/09/2013
689	NOR	M/s Villa Calangute	S	Granted - 11/09/2013
690	SOU	Lourenco Industries	S	Granted - 11/09/2013
691	NOR	Rajaram Rubber Industry	S	Granted - 11/09/2013
692	NOR	M/s E & E Guest House	S	Granted - 11/09/2013
693	NOR	M/s Azimoon Engineering	S	Granted - 11/09/2013
694	NOR	. Igloo Dairy Services Pvt. Ltd.	S	Granted - 11/09/2013
695	SOU	Marine Electricals India Pvt Ltd	S	Granted - 11/09/2013
696	NOR	Speciality Caps	S	Granted - 11/09/2013
697	NOR	M/s Astra Concrete Products	M	Granted - 11/09/2013
698	NOR	M/s Hindustan Auto Components	S	Granted - 11/09/2013
699	NOR	M/s Interface Engineering Pvt. Ltd.	S	Granted - 11/09/2013
700	NOR	Hotel Vilela	S	Granted - 11/09/2013
701	SOU	Crescent Frangrances Pvt. Ltd.	S	Granted - 11/09/2013
702	SOU	Abbott India Limited	L	Granted - 11/09/2013
703	NOR	Multy Electro Mechanical Works	S	Granted - 11/09/2013
704	NOR	Ronil Hotels & Resorts Pvt. Ltd.	M	Granted - 11/09/2013
705	NOR	Essel Propack Limited	L	Granted - 11/09/2013
706	NOR	Power Engineering (India) Pvt Ltd	S	Granted - 11/09/2013
707	SOU	Maria Yvonne Baptista	S	Granted - 06/09/2013
708	NOR	M/s Sai Pack	S	Granted - 04/09/2013
709	NOR	Hotel Belo Horizonte	S	Granted - 04/09/2013
710	NOR	Institute Of Hotel Management Catering Technology & Applied Nutrition	S	Granted - 04/09/2013
711	SOU	fabrica De Gas Carbonico Pvt. Ltd.	S	Granted - 04/09/2013
712	NOR	M/s Kaushik Metal Profiles	S	Granted - 04/09/2013
713	NOR	M/s Hotel Musafir	S	Granted - 04/09/2013
714	NOR	M/s Shreenaath Presressed Pvt Pvt. Ltd.	S	Granted - 04/09/2013
715	SOU	M/s Vishwakarma Furniture	S	Granted - 04/09/2013
716	NOR	The Pasta Makers	S	Granted - 04/09/2013
717	NOR	M/s Hotel Picnic Plaza	S	Granted - 04/09/2013

718	NOR	Rukmini Pack Print Pvt. Ltd.	S	Granted - 04/09/2013
719	SOU	M/s GMI Zarahak Moulders Pvt. Ltd	M	Granted - 04/09/2013
720	NOR	Durga Engineering Works	S	Granted - 04/09/2013
721	NOR	M/s Devki Beverages	S	Granted - 04/09/2013
722	SOU	M/s Grace Hospitalities	S	Granted - 04/09/2013
723	SOU	M/s Hotel Ricone	S	Granted - 04/09/2013
724	NOR	M/s Cochichos Resort	S	Granted - 04/09/2013
725	NOR	M/s Shaheena Plastics	S	Granted - 04/09/2013
726	NOR	M/s Raiyani Furnitures	S	Granted - 04/09/2013
727	NOR	Aerocoach	S	Granted - 04/09/2013
728	SOU	Conbesco	M	Granted - 04/09/2013
729	SOU	Sika India Pvt. Ltd.	M	Granted - 04/09/2013
730	NOR	M/s. Santana Beach Resort,	S	Granted - 04/09/2013
731	NOR	Marck Biosciences Ltd	L	Granted - 04/09/2013
732	NOR	Real Bottling Factory Pvt Ltd	L	Granted - 04/09/2013
733	NOR	Oravs Guest House	M	Granted - 04/09/2013
734	SOU	Goa Roller Flour Mills Private Limited	S	Granted - 04/09/2013
735	SOU	launderaids	S	Granted - 04/09/2013
736	SOU	Zenith Computers Limited	S	Granted - 04/09/2013
737	NOR	Filpak (India) Pvt. Ltd.	L	Granted - 04/09/2013
738	NOR	M/s. Ganpati Marble & Granite	L	Granted - 04/09/2013
739	SOU	Desai Packaging Pvt.Ltd	S	Granted - 04/09/2013
740	NOR	Yash Industries	S	Granted - 04/09/2013
741	NOR	Swanson Plastics (India) Private Limited	L	Granted - 04/09/2013
742	SOU	Praveena Industries	S	Granted - 04/09/2013
743	NOR	Indi Pharma Pvt. Ltd.	M	Granted - 04/09/2013
744	SOU	Panandiker Research And Development Private Ltd.	S	Granted - 04/09/2013
745	NOR	M/s Godrej Agrovet Limited	S	Granted - 04/09/2013
746	NOR	M/s. Krishna Polyplast	L	Granted - 04/09/2013
747	NOR	Essel Propack Limited	L	Granted - 04/09/2013
748	NOR	Maberest Hotels Pvt. Ltd.	L	Granted - 04/09/2013
749	SOU	Marpol Pvt Ltd. Unit I	L	Granted - 04/09/2013
750	SOU	Tulip Diagnostics (P) Ltd	S	Granted - 04/09/2013
751	SOU	Cipla Ltd	L	Granted - 04/09/2013
752	SOU	Dona Sylvia	S	Granted - 04/09/2013
753	NOR	M/s Packsel Packaging	S	Granted - 04/09/2013
754	NOR	M/s Park Lane Lodge	S	Granted - 04/09/2013
755	SOU	M/s Miranda Industries	S	Granted - 04/09/2013
756	SOU	M/s Goa Interpreserves	S	Granted - 04/09/2013
757	SOU	M/s Ava Engineering	S	Granted - 04/09/2013
758	NOR	M/s New Sports Bottling	S	Granted - 04/09/2013
759	NOR	M/s Indian Desalination Engineering Pvt Ltd	S	Granted - 04/09/2013
760	NOR	M/s Vinayaka Liquors Pvt. Ltd.	S	Granted - 04/09/2013
761	SOU	M/s Kamal Industries	S	Granted - 04/09/2013
762	NOR	Shantadurga Engineering Works	S	Granted - 04/09/2013
763	NOR	M/s Rich Bake Bakers	S	Granted - 04/09/2013
764	SOU	Sai Service Station Ltd	M	Granted - 04/09/2013
765	NOR	Pbn Automobiles	S	Granted - 04/09/2013
766	NOR	M/s Mahavir Plastic Industries	S	Granted - 04/09/2013
767	NOR	Meta-Creation Industries	S	Granted - 04/09/2013
768	NOR	M/s Deepkamal Engineering Works	S	Granted - 04/09/2013
769	NOR	Hydropack Industries	S	Granted - 04/09/2013
770	NOR	M/s Kaushik Rollformers Pvt Ltd	S	Granted - 04/09/2013
771	NOR	M/s Chamunda Enterprises	S	Granted - 04/09/2013
772	NOR	M/s Fullarton Distilleries	S	Granted - 04/09/2013
773	NOR	M/s Krishna Industries	S	Granted - 04/09/2013
774	NOR	Universal Industries	S	Granted - 04/09/2013

775	NOR	M/s Brown Packaging System Pvt Ltd.	S	Granted - 04/09/2013
776	NOR	M/s Babaji Bakers & Confectioners	S	Granted - 04/09/2013
777	NOR	M/s Samarth Plastic Industries	S	Granted - 04/09/2013
778	SOU	Ms Alagoa Resorts	S	Granted - 04/09/2013
779	SOU	M/s Zigzag Bar And Restaurant	S	Granted - 04/09/2013
780	NOR	M/s Sonali Industries	S	Granted - 04/09/2013
781	NOR	Sri Maa Industries	S	Granted - 04/09/2013
782	NOR	Dona Alcina Resorts Pvt. Ltd	S	Granted - 04/09/2013
783	SOU	M/s Damodar Rice Mill	S	Granted - 04/09/2013
784	SOU	M/s Kamakshi Engineering Works	S	Granted - 04/09/2013
785	NOR	Umiya Wood Industry	S	Granted - 04/09/2013
786	NOR	M/s Shantadurga Saw Mill	S	Granted - 04/09/2013
787	NOR	M/s Shree Shiv Vijay Saw Mill	S	Granted - 04/09/2013
788	NOR	M/s Jalaram Furniture Industries	S	Granted - 04/09/2013
789	SOU	M/s Schiffer & Menezes Ind. Pvt. Ltd (L-27)	L	Granted - 04/09/2013
790	SOU	Sumit Pack N Print	M	Granted - 04/09/2013
791	NOR	M/s Manomay Interiors Pvt Ltd	S	Granted - 04/09/2013
792	NOR	Shri Nirakar Industrial Services	S	Granted - 04/09/2013
793	SOU	M/s Venkatesh Shanbhag Hotels Pvt Ltd	M	Granted - 04/09/2013
794	SOU	Sweetie Ice Cream Factory	S	Granted - 04/09/2013
795	SOU	M/s Tonia Liquor Industries	S	Granted - 02/09/2013
796	NOR	M/s G & H Food And Beverages	S	Granted - 02/09/2013
797	NOR	Intech Pharma P Ltd	S	Granted - 26/08/2013
798	NOR	Intech Pharma P Ltd	S	Granted - 26/08/2013
799	NOR	Intech Pharma P Ltd	S	Granted - 26/08/2013
800	NOR	Tusker Motorcycles Pvt. Ltd.	S	Granted - 13/08/2013
801	NOR	M/s. Goan Real Estate And Construction Pvt. Ltd.	S	Granted - 13/08/2013
802	NOR	M/s Model Construction Pvt. Ltd. (Model Legacy)	S	Granted - 13/08/2013
803	SOU	Lupin Limited	L	Granted - 13/08/2013
804	NOR	Vaibhav Industries	L	Granted - 13/08/2013
805	NOR	Navelkar Landmarks	M	Granted - 13/08/2013
806	SOU	Upa Engineering Works	S	Granted - 13/08/2013
807	SOU	Hotel Green View	L	Granted - 13/08/2013
808	NOR	Colgate Palmolive (India) Ltd	L	Granted - 13/08/2013
809	NOR	M/s Executive Engineer Sd Iii Work Div Iv (Govt. Garage)	S	Granted - 13/08/2013
810	NOR	M/s Mahalaxmi Saw Mill	S	Granted - 13/08/2013
811	NOR	M/s Achutanand Maharaj Workshop	S	Granted - 13/08/2013
812	SOU	M/s Andrews Restaurant	S	Granted - 13/08/2013
813	NOR	M/s Mahadev Saw Mill	S	Granted - 13/08/2013
814	NOR	M/s Hotel Embassy Suites	S	Granted - 13/08/2013
815	NOR	M/s Vaibhav Print Pack	S	Granted - 13/08/2013
816	SOU	Ritika Packaging Private Limited	S	Granted - 13/08/2013
817	NOR	M/s Southern Engineering Project	S	Granted - 13/08/2013
818	NOR	M/s Goana Foods	S	Granted - 13/08/2013
819	NOR	M/s Peravel Beach Holiday Home	S	Granted - 13/08/2013
820	SOU	M/s. Bomba Laterite Stones	S	Granted - 12/08/2013
821	SOU	M/s Girish Flour Mill	S	Granted - 12/08/2013
822	SOU	Naval Transport Repair Workshop	S	Granted - 12/08/2013
823	SOU	M/s S. S. S. Batteries	S	Granted - 12/08/2013
824	SOU	Ins Hansa (Motor Transport Section)	S	Granted - 12/08/2013
825	SOU	Taprath Impex	S	Granted - 12/08/2013
826	NOR	M/s Jayashri Polymers	S	Granted - 12/08/2013
827	NOR	M/s Jayashri Enterprises	S	Granted - 12/08/2013
828	NOR	M/s Coastal Holding & Hotels Pvt.Ltd (Empire Beach Resort)	M	Granted - 12/08/2013

829	NOR	Jayraj Cashew Industry	S	Granted - 12/08/2013
830	NOR	Sai Pratik Enterprises	S	Granted - 12/08/2013
831	NOR	M/s Superpacks	S	Granted - 12/08/2013
832	SOU	M/s Adinco Distilleries	S	Granted - 12/08/2013
833	NOR	M/s Zuzart Ice Plant	S	Granted - 12/08/2013
834	NOR	M/s Narayan Ganesh Prabhu Zantye & Co.	S	Granted - 12/08/2013
835	SOU	Carina Beach Resort	S	Granted - 12/08/2013
836	SOU	Upa Engineering Sales & Services	S	Granted - 12/08/2013
837	NOR	M/s Godrej Agrovet Limited	S	Granted - 12/08/2013
838	NOR	Technical Precisions	S	Granted - 12/08/2013
839	NOR	Hindustan Lever Limited	L	Granted - 12/08/2013
840	SOU	Prestige Holiday Resorts Pvt. Ltd. (Haathi Mahal)	L	Granted - 12/08/2013
841	SOU	M/s Westend Hotel 'C'	S	Granted - 12/08/2013
842	SOU	M/s Marine Electricals (I) Pvt. Ltd. Unit I	L	Granted - 12/08/2013
843	SOU	R. B. S. Candiaparc	S	Granted - 12/08/2013
844	NOR	Apex Packing Products Pvt. Ltd.	L	Granted - 12/08/2013
845	NOR	M/s Fmd Industries	S	Granted - 12/08/2013
846	NOR	M/s Jeevan Rehka Enterprises	S	Granted - 12/08/2013
847	SOU	Shri Mario P. Mascarenhas	S	Granted - 12/08/2013
848	SOU	M/s Victoria Engineering	S	Granted - 12/08/2013
849	NOR	Hindustan Foods Ltd.	S	Granted - 12/08/2013
850	NOR	M/s Sai Cashewnut Products	S	Granted - 12/08/2013
851	NOR	M/s Zuzarts Ice Factory	S	Granted - 12/08/2013
852	NOR	hotel Satya Heera	S	Granted - 12/08/2013
853	NOR	Dr. Rege's Laboratories	L	Granted - 12/08/2013
854	SOU	Amicas Structural & Fibreglass Works	S	Granted - 12/08/2013
855	NOR	Prestige Industries	S	Granted - 12/08/2013
856	NOR	Dona Florina Beach Resort	S	Granted - 12/08/2013
857	NOR	Intech Pharma P Ltd	S	Granted - 10/08/2013
858	NOR	Intech Pharma P Ltd	S	Granted - 10/08/2013
859	NOR	M/s Aqua Resorts And Spa	M	Granted - 10/08/2013
860	SOU	Dci Pharmaceuticals Pvt Ltd	M	Granted - 10/08/2013
861	NOR	M/s Qualipro Industries	S	Granted - 10/08/2013
862	NOR	M/s Karthik Inductions Ltd	S	Granted - 10/08/2013
863	SOU	Zuari Foods & Farms Pvt. Ltd.	S	Granted - 10/08/2013
864	NOR	Attire Hotels & Resorts Pvt Ltd. (Country Inn & Suites)	L	Granted - 10/08/2013
865	SOU	M/s Essae Teraoka Limited	S	Granted - 10/08/2013
866	NOR	M/s Jakhotia Plastics Pvt Ltd	S	Granted - 10/08/2013
867	NOR	Shaiv Distilleries Pvt. Ltd.	S	Granted - 10/08/2013
868	SOU	Material Organisation	S	Granted - 10/08/2013
869	NOR	Shree Laxmi Metal Industries	S	Granted - 10/08/2013
870	SOU	M/s South Goa Distilleries	S	Granted - 10/08/2013
871	SOU	Britacel Silicones Ltd.	S	Granted - 10/08/2013
872	SOU	Cipla Ltd	L	Granted - 10/08/2013
873	NOR	Vassudeva Tamba Metal Quarry	S	Granted - 10/08/2013
874	NOR	Hindustan Petroleum Corporation Limited	M	Granted - 10/08/2013
875	NOR	Procter & Gamble Hygiene & Health Care Ltd.	L	Granted - 10/08/2013
876	SOU	Abbott India Limited	L	Granted - 10/08/2013
877	NOR	Unichem Laboratories Limited	L	Granted - 10/08/2013
878	NOR	Ranbaxy Laboratories Limited	L	Granted - 10/08/2013
879	NOR	Pernod Ricard India Private Ltd	S	Granted - 10/08/2013
880	SOU	Roiz Cottages	L	Granted - 10/08/2013
881	NOR	Centaur Pharmaceuticals Pvt. Ltd. (Plant II)	M	Granted - 10/08/2013
882	NOR	Arya Cashew Products Pvt. Ltd.	S	Granted - 10/08/2013
883	SOU	M/s Shri Krishna Carpentry Centre	S	Granted - 10/08/2013
884	NOR	M/s Titanic Resorts Pvt Ltd(Papa Jolly)	M	Granted - 10/08/2013

885	NOR	National Industrial Corporation Limited	S	Granted - 10/08/2013
886	NOR	M/s Hira Cashew Industries	S	Granted - 10/08/2013
887	NOR	M/s St. Anthony's Chemical Industries	S	Granted - 10/08/2013
888	NOR	M/s Metpro Industries	S	Granted - 10/08/2013
889	SOU	M/s Shree Gajanana Industries	S	Granted - 10/08/2013
890	SOU	M/s Kamaxi Body Builders (Unit li)	S	Granted - 10/08/2013
891	SOU	M/s Balaji Tyre Services	S	Granted - 10/08/2013
892	SOU	M/s M.C Industries	S	Granted - 10/08/2013
893	NOR	M/s Ravat Furnitures	S	Granted - 07/08/2013
894	SOU	Naval Armament Depot	L	Granted - 07/08/2013
895	SOU	Tantra Designs P) Ltd (Devasthali)	M	Granted - 07/08/2013
896	NOR	M/s Kaloshi Granites	S	Granted - 07/08/2013
897	NOR	The Sea Shell Beach Suites	M	Granted - 07/08/2013
898	SOU	M/s Wires And Profiles	S	Granted - 07/08/2013
899	SOU	M/s Mandovi Shipyard Pvt Ltd	M	Granted - 07/08/2013
900	NOR	Jai Ganesh Ispat & Ferro Alloys Private Limited	S	Granted - 07/08/2013
901	NOR	Paradise Ventures(Paradise-li)	S	Granted - 07/08/2013
902	NOR	Paradise Ventures(Paradise-l)	S	Granted - 07/08/2013
903	SOU	Coach Care Center, Konkarn Railway Corporation Limited,	S	Granted - 07/08/2013
904	SOU	Goldy Circlips & Retainers Rings	M	Granted - 07/08/2013
905	SOU	Sandray Luxury Resort Pvt Ltd	L	Granted - 07/08/2013
906	NOR	Mahalasa Acoustic Private Limited	S	Granted - 07/08/2013
907	SOU	Hindustan Petroleum Corporation Limited	S	Granted - 07/08/2013
908	NOR	M.V.Casino Royale	M	Granted - 07/08/2013
909	NOR	M/s Top Marble & Granite	L	Granted - 07/08/2013
910	SOU	Kesarval Springs Distillers Pvt Ltd	S	Granted - 07/08/2013
911	NOR	Chowgule & Company Private Limited	S	Granted - 07/08/2013
912	NOR	Centaur Pharmaceuticals Private Limited	M	Granted - 07/08/2013
913	NOR	Kundil Alloys Pvt Limited	M	Granted - 07/08/2013
914	SOU	Graciano Cottages	S	Granted - 07/08/2013
915	NOR	M/s Living Room Lifestyles Pvt Ltd	S	Granted - 07/08/2013
916	NOR	M/s Sai Laundry	S	Granted - 07/08/2013
917	NOR	M/s Nanu Industries	M	Granted - 07/08/2013
918	SOU	Universal Cables Ltd	L	Granted - 07/08/2013
919	SOU	M/s Rich Audio Systems	S	Granted - 07/08/2013
920	SOU	Gauri Packaging	S	Granted - 07/08/2013
921	NOR	The Anchorage	S	Granted - 07/08/2013
922	SOU	R. B. S. Candiaparc	S	Granted - 07/08/2013
923	SOU	M/s Monte Da Silva & Co.	S	Granted - 07/08/2013
924	SOU	M/s Srishanta Pumps - Unit li	S	Granted - 07/08/2013
925	NOR	M/s R.B.S Candiaparc	S	Granted - 07/08/2013
926	SOU	M/s Parwati Metal Works	S	Granted - 07/08/2013
927	SOU	Yeshwant Industries	S	Granted - 07/08/2013
928	SOU	M/s Chowgule & Co. Pvt. Ltd	L	Granted - 07/08/2013
929	SOU	M/s Chowgule & Co. Pvt. Ltd	L	Granted - 07/08/2013
930	SOU	M/s Chowgule & Co. Pvt. Ltd (Shipbuilding Division)	S	Granted - 07/08/2013
931	NOR	Cartini India Ltd.	S	Granted - 07/08/2013
932	NOR	M/s Real Food Exporters Pvt. Ltd	S	Granted - 07/08/2013
933	NOR	M/s Unitek	S	Granted - 07/08/2013
934	NOR	Navelcar Hotels (Hotel Rajdhani)	S	Granted - 07/08/2013
935	NOR	Intech Pharma P Ltd	S	Granted - 07/08/2013
936	SOU	Hotel Tanish	S	Granted - 07/08/2013
937	NOR	Sanquelim Municipal Council(Stp)	S	Granted - 07/08/2013
938	NOR	Ms Fresenius Kabi India Private Limited	L	Granted - 07/08/2013
939	SOU	M/s Shantha Pumps	S	Granted - 07/08/2013
940	SOU	Hotel Grand Liz	M	Granted - 07/08/2013

941	NOR	M/s Rekha Stone Crusher	S	Granted - 07/08/2013
942	SOU	Sialca Industries	S	Granted - 07/08/2013
943	NOR	M/s Kudnekar Granites	S	Granted - 07/08/2013
944	NOR	Glow Paints Pvt Ltd	L	Granted - 07/08/2013
945	NOR	Silver Sands Holiday Village	S	Granted - 07/08/2013
946	NOR	Classic Pavers	S	Granted - 07/08/2013
947	NOR	N.H.B Agro Industries Pvt. Ltd	M	Granted - 07/08/2013
948	SOU	Fdc Limited	L	Granted - 07/08/2013
949	SOU	M/s GMI Zarahak Moulders Pvt. Ltd	M	Granted - 03/08/2013
950	NOR	M/s Sanman Cafe	S	Granted - 03/08/2013
951	SOU	Hotel Leela Ventures Ltd. (The Leela Palace Goa)	L	Granted - 29/07/2013
952	SOU	Barton Firtop Engineering (I) Pvt Ltd	S	Granted - 29/07/2013
953	NOR	M/s Dynaquip Machines	S	Granted - 29/07/2013
954	NOR	M/s Fiemench Perfumes (India) Pvt. Ltd.	S	Granted - 24/07/2013
955	NOR	M/s Michael & Michael	S	Granted - 24/07/2013
956	NOR	Action Agro (India) Pvt. Ltd.	S	Granted - 24/07/2013
957	NOR	Gomantak Pvt. Ltd.	S	Granted - 24/07/2013
958	NOR	Goa Energy Private Limited	L	Granted - 24/07/2013
959	NOR	Berger Paints India Limited	L	Granted - 24/07/2013
960	NOR	Colgate Palmolive (India) Ltd	L	Granted - 24/07/2013
961	SOU	Cipla Ltd	L	Granted - 24/07/2013
962	NOR	M/s Maria Metals	S	Granted - 24/07/2013
963	SOU	M/s Shenaz Bakery	S	Granted - 24/07/2013
964	SOU	Star Of The Sea	S	Granted - 24/07/2013
965	NOR	M/s Mitasu Woods Pvt Ltd	S	Granted - 24/07/2013
966	SOU	Sparkle Service Station	S	Granted - 24/07/2013
967	NOR	M/s Om Fabrication	S	Granted - 24/07/2013
968	NOR	M/s Halarnkar Industries	S	Granted - 24/07/2013
969	NOR	M/s Halarnkar Industries	S	Granted - 24/07/2013
970	NOR	M/s Fiemench Perfumes (I) Pvt Ltd	S	Granted - 24/07/2013
971	NOR	Chinese Takeaway	S	Granted - 24/07/2013
972	NOR	Alcon Hotels Goa Pvt Ltd Unit Hotel Delmon	L	Granted - 24/07/2013
973	SOU	Martin's Comfort	M	Granted - 24/07/2013
974	NOR	Justperfect Resorts Goa Pvt. Ltd	M	Granted - 24/07/2013
975	NOR	M/s. Nitin Developers Pvt. Ltd.,	M	Granted - 24/07/2013
976	NOR	Chalston Hotel	S	Granted - 24/07/2013
977	SOU	Hotel Manish	S	Granted - 24/07/2013
978	SOU	Super Packaging	S	Granted - 03/07/2013
979	NOR	Cebon Apparel Pvt. Ltd.	S	Granted - 03/07/2013
980	NOR	M/s Maria Bakery	S	Granted - 03/07/2013
981	SOU	M/s Yunca Machinery Pvt Ltd	L	Granted - 03/07/2013
982	NOR	National Engineers	S	Granted - 03/07/2013
983	SOU	Sanofi India Limited	L	Granted - 03/07/2013
984	SOU	Nanutel-Margao	S	Granted - 03/07/2013
985	NOR	Goa State Co-Operative Milk Producers Union Ltd.(Cattle Feed Plant)	M	Granted - 03/07/2013
986	NOR	M/s J.M. Windings	S	Granted - 03/07/2013
987	NOR	M/s Sands Beauty Hotel Private Ltd	S	Granted - 03/07/2013
988	NOR	M/s Saulekar Flour Mill	S	Granted - 03/07/2013
989	NOR	M/s Pravin Cashew Industry	S	Granted - 21/06/2013
990	SOU	B/s Polymers Ltd	S	Granted - 21/06/2013
991	SOU	B/s Polymers Ltd	S	Granted - 21/06/2013
992	NOR	M/s Shantadurga Metal Industries	S	Granted - 21/06/2013
993	NOR	Wallace Pharmaceuticals Pvt. Ltd.	S	Granted - 21/06/2013
994	NOR	M/s Prateek Alloys Pvt. Ltd.	S	Granted - 21/06/2013
995	NOR	M/s Casa Gasper Guest House	S	Granted - 21/06/2013
996	NOR	M/s Panjim Inn	S	Granted - 21/06/2013

997	NOR	Five Star Granites	S	Granted - 21/06/2013
998	NOR	M/s Goa Pipes & Steel Co	S	Granted - 21/06/2013
999	NOR	Pradeep V Kamat, Prop M/s Praka Engineering	S	Granted - 21/06/2013
1000	NOR	Sai Service Station Limited	S	Granted - 21/06/2013
1001	NOR	Renuka Tyres And Treads	S	Granted - 21/06/2013
1002	NOR	Hotel Sunheads	S	Granted - 20/06/2013
1003	SOU	M/s J L Baptista	S	Granted - 20/06/2013
1004	SOU	Shantadurga Damodarindustries	S	Granted - 20/06/2013
1005	NOR	Highstreet Cruises And Entertainment Pvt Ltd	L	Granted - 20/06/2013
1006	NOR	Cosme Farma Laboratories Limited	S	Granted - 20/06/2013
1007	NOR	Hotel	S	Granted - 20/06/2013
1008	NOR	Fomento Resorts Hotels Ltd. (Cidade De Goa)	L	Granted - 20/06/2013
1009	SOU	Model Millenium Vistas, Model Real Estate Developers	S	Granted - 20/06/2013
1010	SOU	Model Mystique, Model Real Estate Developers	S	Granted - 20/06/2013
1011	NOR	Crystal Industries	S	Granted - 20/06/2013
1012	SOU	M/s.Harp Resorts Pvt. Ltd., (Bay Watch Resort)	L	Granted - 20/06/2013
1013	SOU	M/s. Zuri Hospitality Pvt. Ltd.(The Zuri White Sands, Goa Resort & Casi)	L	Granted - 20/06/2013
1014	SOU	Zuari Agro Chemicals Limited	L	Granted - 20/06/2013
1015	NOR	Bt Composites Ltd.	L	Granted - 18/06/2013
1016	NOR	nishita Industries	S	Granted - 18/06/2013
1017	NOR	M.V. 'Caravela', M/s Advani Pleasure Cruise Company Private Limited	L	Granted - 17/06/2013
1018	SOU	Casa Roiz Guest House	L	Granted - 17/06/2013
1019	NOR	Deepti Marbles & Granites	L	Granted - 17/06/2013
1020	SOU	Wavelet Beach Resort	S	Granted - 17/06/2013
1021	NOR	Twenty First Century Wire Rods Ltd	S	Granted - 17/06/2013
1022	NOR	Counto Automobiles Pvt. Ltd.	S	Granted - 17/06/2013
1023	SOU	Bharat Petroleum Corporation Ltd	L	Granted - 17/06/2013
1024	SOU	M/s. Advani Hotels & Resorts (I) Ltd., (Ramada Caravella Beach Resort)	L	Granted - 17/06/2013
1025	SOU	M/s Plastic Export Zundert (I) Pvt. Ltd.	S	Granted - 17/06/2013
1026	NOR	The Indian Hotels Co. Ltd. Unit: Vivanta By Taj-Holiday Village, Goa	L	Granted - 17/06/2013
1027	SOU	Shraddha Ispat Pvt. Ltd. (Meelting Division)	M	Granted - 17/06/2013
1028	NOR	Dempo Shipbuilding & Engineering Pvt. Ltd.	M	Granted - 17/06/2013
1029	SOU	Colorcon Asia Private Limited	L	Granted - 17/06/2013
1030	NOR	M/s. Anjali Engineering Works	S	Granted - 17/06/2013
1031	NOR	Beiersdorf India Pvt.Ltd	M	Granted - 17/06/2013
1032	SOU	Caculo Motors Pvt.Ltd	S	Granted - 17/06/2013
1033	NOR	Hosemann Goa Pvt Ltd	S	Granted - 17/06/2013
1034	NOR	J & J Electronics	S	Granted - 17/06/2013
1035	NOR	Roots Corporation Limited (Ginger Hotels)	L	Granted - 17/06/2013
1036	NOR	Goa Glass Fibre Ltd.	L	Granted - 17/06/2013
1037	SOU	Borkar Colorpacks Pvt Ltd	S	Granted - 17/06/2013
1038	NOR	Diebold Systems Pvt. Ltd.	L	Granted - 17/06/2013
1039	NOR	Nestle India Limited	L	Granted - 17/06/2013
1040	NOR	Shree Ambay Forgings Pvt. Ltd.	S	Granted - 17/06/2013
1041	NOR	Kamat Holiday Homes	L	Granted - 17/06/2013
1042	NOR	M/s. Goa Coastal Resorts & Recreation Pvt. Ltd.,	S	Granted - 17/06/2013
1043	NOR	Sonesta Inns Pvt.Ltd	S	Granted - 17/06/2013
1044	SOU	Qualpro Diagnostics	L	Granted - 17/06/2013
1045	SOU	Qualpro Diagnostics	L	Granted - 17/06/2013
1046	SOU	Orchid Biomedical Systems	L	Granted - 17/06/2013
1047	SOU	Orchid Biomedical Systems	L	Granted - 17/06/2013

1048	SOU	Nicomet Industries Ltd	S	Granted - 17/06/2013
1049	NOR	Aruna Engineering Works	S	Granted - 17/06/2013
1050	NOR	Mrf Ltd.	L	Granted - 17/06/2013
1051	NOR	Mrf Ltd.	L	Granted - 17/06/2013
1052	NOR	Syngenta India Limited	L	Granted - 17/06/2013
1053	SOU	Cipla Ltd	L	Granted - 17/06/2013
1054	SOU	Cipla Ltd	L	Granted - 17/06/2013
1055	NOR	Syngenta India Limited	L	Granted - 17/06/2013
1056	SOU	Birla Furukawa Fibre Optics Limited	L	Granted - 17/06/2013
1057	NOR	Petals Engineers Pvt. Ltd.	L	Granted - 17/06/2013
1058	NOR	Himgiri Castings Pvt. Ltd (Himcast)	L	Granted - 17/06/2013
1059	SOU	Imc Limited	M	Granted - 17/06/2013
1060	SOU	Jre Tank Terminal Pvt Ltd	S	Granted - 17/06/2013
1061	SOU	Real Flour Mill	S	Granted - 17/06/2013
1062	NOR	M/s Pankaj Tiles Industries	S	Granted - 17/06/2013
1063	SOU	M/s Vailankanni Cottages	S	Granted - 17/06/2013
1064	NOR	M/s Siddhi Cashew Industry	S	Granted - 17/06/2013
1065	NOR	M/s Guru Krupa Powder Coating And Plating	S	Granted - 17/06/2013
1066	NOR	M/s Le Grand Engineering Pvt Ltd	S	Granted - 17/06/2013
1067	NOR	M/s Vaishali Foods	S	Granted - 17/06/2013
1068	SOU	M/s Shree Ashapura Steel Furniture	S	Granted - 17/06/2013
1069	NOR	M/s Alnita Paper Products	S	Granted - 17/06/2013
1070	NOR	vasudev Marbles	S	Granted - 17/06/2013
1071	NOR	Hotel Shivram Classic	S	Granted - 17/06/2013
1072	SOU	M/s New Golden Bakery	S	Granted - 17/06/2013
1073	SOU	M/s Rebelo Metals	S	Granted - 17/06/2013
1074	SOU	M/s Eagle Ice Plant	S	Granted - 17/06/2013
1075	SOU	M/s Krishna Tiles & Pavers	S	Granted - 17/06/2013
1076	NOR	M/s Cazcar	S	Granted - 17/06/2013
1077	NOR	Laxmi Cashew Factory	S	Granted - 17/06/2013
1078	NOR	Shri Mahalsa Plastics	S	Granted - 17/06/2013
1079	NOR	M/s Heramb Industries	S	Granted - 17/06/2013
1080	NOR	M/s Shimmer Hotels & Resorts Pvt. Ltd.	S	Granted - 17/06/2013
1081	NOR	M/s Vaz Works	S	Granted - 17/06/2013
1082	NOR	M/s Ally - Pally Guest House	S	Granted - 17/06/2013
1083	NOR	Safira River Front Resort	S	Granted - 17/06/2013
1084	SOU	M/s Dhaniya Engineering Works	S	Granted - 17/06/2013
1085	SOU	M/s Machinotech Engineering Works	S	Granted - 17/06/2013
1086	SOU	M/s Mallikarjun Crushing Industries	S	Granted - 17/06/2013
1087	NOR	Whole Foods	L	Granted - 17/06/2013
1088	NOR	M/s Jai Hanuman Bottling	S	Granted - 17/06/2013
1089	NOR	Mystical Polycontainers Pvt Ltd.	S	Granted - 17/06/2013
1090	SOU	M/s Online Packaging Private Ltd.	S	Granted - 17/06/2013
1091	NOR	M/s Alpha Impex Pvt. Ltd.	S	Granted - 17/06/2013
1092	SOU	Prasad Engineering Works	S	Granted - 17/06/2013
1093	SOU	Muktar Automobiles Pvt Ltd	S	Granted - 17/06/2013
1094	SOU	Tonia Estates & Resort Pvt. Ltd.	M	Granted - 17/06/2013
1095	NOR	Aerocoach	S	Granted - 17/06/2013
1096	SOU	Virat Enterprises	S	Granted - 17/06/2013
1097	SOU	Yeshwant Enterprises	S	Granted - 17/06/2013
1098	SOU	Ram Sai Flour Mill	S	Granted - 17/06/2013
1099	SOU	M/s H.K Chemicals	S	Granted - 17/06/2013
1100	SOU	M/s Hotel Duttraj	S	Granted - 17/06/2013
1101	SOU	Jymi's Cottages	S	Granted - 17/06/2013
1102	NOR	Mayfair Resort (I) Ltd. (La Oasis)	S	Granted - 17/06/2013
1103	SOU	c.P. Industries	S	Granted - 17/06/2013
1104	NOR	Proenca Grand Vacation's Pvt Ltd	S	Granted - 17/06/2013
1105	NOR	M/s Kaloshi Granites	S	Granted - 17/06/2013

1106	SOU	Sunit Enterprises	S	Granted - 17/06/2013
1107	SOU	M/s. Palolem Beach Resort	L	Granted - 17/06/2013
1108	SOU	Dersy Cottages	S	Granted - 17/06/2013
1109	SOU	Dersy Cottages	S	Granted - 17/06/2013
1110	SOU	Vergo Pharma Research Laboratories Pvt Ltd	M	Granted - 17/06/2013
1111	NOR	Crompton Greaves Ltd	L	Granted - 17/06/2013
1112	SOU	Azurite Calf Nutrition Private Limited	S	Granted - 17/06/2013
1113	NOR	Annapurna Vishram Dhaam	S	Granted - 17/06/2013
1114	SOU	Schneider Electric India Pvt Ltd	S	Granted - 17/06/2013
1115	NOR	Hotel Sea View	S	Granted - 17/06/2013
1116	SOU	Camilsons Beach Resort	S	Granted - 17/06/2013
1117	SOU	Camilsons Beach Resort	S	Granted - 17/06/2013
1118	NOR	M/s. Ureka Plast Tech	S	Granted - 17/06/2013
1119	NOR	Hitek Brass Products Pvt. Ltd.	S	Granted - 17/06/2013
1120	NOR	Hydropneumatics Private Limited	S	Granted - 17/06/2013
1121	SOU	Palm Grove Cottages	S	Granted - 17/06/2013
1122	SOU	M/s Sateri Flour Mill	S	Granted - 17/06/2013
1123	NOR	Goldy Finepacks Private Limited	S	Granted - 17/06/2013
1124	NOR	Hotel Palacio De Goa	M	Granted - 17/06/2013
1125	SOU	Schiffer & Menezes India Pvt Ltd. Unit li Dta	M	Granted - 17/06/2013
1126	NOR	Konkan Paper Products	M	Granted - 17/06/2013
1127	NOR	Teracom Limited	L	Granted - 17/06/2013
1128	NOR	Teracom Limited	L	Granted - 17/06/2013
1129	NOR	Pbn Automobiles	S	Granted - 17/06/2013
1130	NOR	M/s Aditi Hotel Veg Restaurant	S	Granted - 17/06/2013
1131	SOU	Macben Exquisite Tradional Cusines	S	Granted - 17/06/2013
1132	NOR	M/s Nizam S. Ladji	S	Granted - 17/06/2013
1133	NOR	Clean Cat Conveyors Pvt Ltd(Unit li)	M	Granted - 13/06/2013
1134	NOR	Libox Chem (India) Pvt. Ltd.,	M	Granted - 13/06/2013
1135	SOU	M/s Shree Madhuram Engineering And Plastic Works	S	Granted - 13/06/2013
1136	SOU	Royal Goan Beach Club Resorts Pvt. Ltd.	M	Granted - 13/06/2013
1137	NOR	M/s Real House Distillary Pvt Ltd	S	Granted - 13/06/2013
1138	NOR	M/s Wikid Foods	S	Granted - 13/06/2013
1139	NOR	M/s Churi Electromech	S	Granted - 13/06/2013
1140	NOR	M/s Casa Paradiso	S	Granted - 13/06/2013
1141	SOU	M/s E. B. Crushers	S	Granted - 13/06/2013
1142	NOR	M/s Halarnkar Industries	S	Granted - 13/06/2013
1143	NOR	M/s Vilanova	S	Granted - 13/06/2013
1144	NOR	M/s Abania Paper Products	S	Granted - 13/06/2013
1145	NOR	M/s G & H Food And Beverages	S	Granted - 13/06/2013
1146	NOR	M/s Boshan Developers Pvt Ltd (Hotel Project)	S	Granted - 13/06/2013
1147	NOR	M/s Yash Foods	S	Granted - 13/06/2013
1148	NOR	Modern Plastic Industries	S	Granted - 13/06/2013
1149	NOR	M/s Surya Concrete Industries	S	Granted - 13/06/2013
1150	SOU	Goa Rajee Auto Pvt Ltd	S	Granted - 13/06/2013
1151	SOU	Britacel Silicones Ltd.	S	Granted - 13/06/2013
1152	NOR	Anaya Fruit Products	S	Granted - 13/06/2013
1153	NOR	Proto Can Care Pvt Ltd	S	Granted - 13/06/2013
1154	NOR	Lafarge Aggregates & Concrete India Pvt. Ltd.	S	Granted - 13/06/2013
1155	SOU	Andrew Telecommunications Indis Pvt Ltd	L	Granted - 13/06/2013
1156	NOR	Total Packaging	S	Granted - 13/06/2013
1157	SOU	M/s V.K Bakery & Stores	S	Granted - 31/05/2013
1158	NOR	M/s Om Fabrication	S	Granted - 31/05/2013
1159	NOR	M/s Super Moti	S	Granted - 31/05/2013
1160	NOR	M/s Pushpak Engineering Works	S	Granted - 31/05/2013
1161	NOR	M/s Vassanji Industries	S	Granted - 31/05/2013
1162	SOU	M.S Aditi Fabrication Workshop	S	Granted - 31/05/2013

1163	SOU	M/s Joanita Ice Plant	S	Granted - 31/05/2013
1164	NOR	M/s Vailankanni Fabricator	S	Granted - 31/05/2013
1165	SOU	M/s Mchreas Enterprises	S	Granted - 31/05/2013
1166	NOR	M/s Xavier Tooling Enterprises	S	Granted - 10/05/2013
1167	NOR	Phil Corporation Limited	S	Granted - 07/05/2013
1168	SOU	M/s Persistent Systems Limited	L	Granted - 07/05/2013
1169	SOU	Bhise Enterprises	S	Granted - 07/05/2013
1170	NOR	M/s Pride Industries	S	Granted - 26/04/2013
1171	SOU	sony Plastics	S	Granted - 26/04/2013
1172	NOR	Crompton Greaves Ltd	L	Granted - 26/04/2013
1173	SOU	Computer Graphics Pvt Ltd	S	Granted - 26/04/2013
1174	NOR	Crompton Greaves Limited., Lt Motor Division : Ind. System	L	Granted - 24/04/2013
1175	NOR	Funkskool India Ltd	L	Granted - 24/04/2013
1176	SOU	Ongc Ipshem Goa	S	Granted - 24/04/2013
1177	NOR	Crompton Greaves Ltd.	M	Granted - 19/04/2013
1178	SOU	Parle (Exports) Pvt.Ltd	S	Granted - 19/04/2013
1179	NOR	Phil Corporation Limited	S	Granted - 19/04/2013
1180	NOR	Onkar Industries	S	Granted - 19/04/2013
1181	SOU	M/s D. P. Chemicals & Aromatics	S	Granted - 19/04/2013
1182	NOR	M/s Siddhi Plastics	S	Granted - 19/04/2013
1183	SOU	M/s Aba Flour Mill	S	Granted - 19/04/2013
1184	SOU	Shree Siddhivinayak Steels Unit I	S	Granted - 19/04/2013
1185	NOR	M/s Casa Domani	S	Granted - 19/04/2013
1186	NOR	Mohit Candle Works	S	Granted - 19/04/2013
1187	SOU	M/s R.S Engineering Works	S	Granted - 17/04/2013
1188	NOR	Codon Biosciences Pvt Ltd	S	Granted - 17/04/2013
1189	NOR	M/s Agrawal Renewable	S	Granted - 17/04/2013
1190	NOR	Smita Enterprises	S	Granted - 17/04/2013
1191	NOR	M/s Om Ventures	S	Granted - 17/04/2013
1192	SOU	Bosch Limited	L	Granted - 17/04/2013
1193	NOR	R/s Aqua Valley	S	Granted - 17/04/2013
1194	NOR	Teracom Limited	S	Granted - 17/04/2013
1195	NOR	Elsteel Modular Products India Private Limited.,	L	Granted - 17/04/2013
1196	NOR	M/s Shantadurga Metal Industries	S	Granted - 15/04/2013
1197	SOU	Goa Medicare Devices Pvt Ltd	S	Granted - 15/04/2013

ANNEXURE II B

LIST OF APPLICATIONS FOR CONSENTS TO ESTABLISH (CCE) UNDER WATER (PREVENTION & CONTROL OF POLLUTION) ACT, 1974 AND AIR (PREVENTION & CONTROL OF POLLUTION) ACT, 1981 BIO-MEDICAL WASTE (MANAGEMENT & HANDLING) RULES, 1998 AND HAZARDOUS WASTE (MANAGEMENT & HANDLING) (AMENDMENT) RULES, 2000 PROCESSED AND APPROVED BY THE BOARD DURING THE YEAR 2013-2014.

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Sr. No.	District	Industry Name	Category	Status
1	SOU	Goa Shipyard Officer Colony (Stp)	S	Granted - 21/03/2014
2	SOU	Department Of Science, Technology & Environment (Cacora)	L	Granted - 21/03/2014
3	NOR	Ms Siddharth Dairy Foods Pvt. Ltd.	S	Granted - 16/03/2014
4	NOR	Ms Nizam S. Ladji	S	Granted - 16/03/2014
5	NOR	NIZMAR RESORT PVT LTD	L	Granted - 16/03/2014
6	SOU	Ramsukh Resort Pvt. Ltd.	L	Granted - 16/03/2014
7	SOU	William D'souza	S	Granted - 16/03/2014
8	SOU	Sapna City	L	Granted - 16/03/2014
9	NOR	Shivam Ispat Pvt. Ltd.	S	Granted - 16/03/2014
10	NOR	Shri Yash Cement Arts	S	Granted - 16/03/2014
11	SOU	Star Of The Sea	S	Granted - 16/03/2014
12	SOU	Ms Qualitat Infra Products Pvt. Ltd.	L	Granted - 16/03/2014
13	SOU	Hindustan Petroleum Corporation Limited, Asf	S	Granted - 16/03/2014
14	SOU	Trimurty Industry	S	Granted - 16/03/2014
15	NOR	Shubhalaxmi Technical Works	S	Granted - 16/03/2014
16	SOU	Sanofi Synthelabo India Limited	L	Granted - 16/03/2014
17	SOU	Maa Durga Enterprises Ltd., (ms ingots)	S	Granted - 16/03/2014
18	SOU	Mahalaxmi Fabrication	S	Granted - 14/03/2014
19	NOR	Swanson Plastics (India) Private Limited	L	Granted - 14/03/2014
20	NOR	Mayem Ice Plant.	S	Granted - 14/03/2014
21	SOU	Multitech Industries	S	Granted - 14/03/2014
22	SOU	Green Olive Residential Project	S	Granted - 14/03/2014
23	SOU	Ms. Jimcap Electronics Pvt. Ltd.,	S	Granted - 14/03/2014
24	NOR	Vidhya Engineering Work	S	Granted - 14/03/2014
25	SOU	Ms. Mahamaya Rice Mill	S	Granted - 14/03/2014
26	SOU	Ms Naik Auto Industries Korporation	S	Granted - 14/03/2014
27	NOR	Phoenix Alcobevz Pvt Ltd	S	Granted - 14/03/2014
28	NOR	Ms Aargee Pet Products	S	Granted - 14/03/2014
29	NOR	Pacl India Limited	M	Granted - 14/03/2014
30	NOR	Shivshakti Steel Furniture	S	Granted - 14/03/2014
31	SOU	Sika India Pvt. Ltd.	M	Granted - 14/03/2014
32	SOU	S. CHEMS & ALLIED PRODUCERS PVT. LTD.	S	Granted - 14/03/2014
33	SOU	Ms Sua Industries	S	Granted - 14/03/2014
34	SOU	Ms C C Jay Engineering	S	Granted - 14/03/2014
35	NOR	Poshak Cashew Factory	S	Granted - 14/03/2014
36	NOR	Niranjan Packaging	S	Granted - 14/03/2014
37	SOU	Shantadurga Enterprises	S	Granted - 14/03/2014
38	NOR	Ms Westfield Hydraulics & Pneumatics	M	Granted - 14/03/2014
39	NOR	V. T Switchgear & Transformers	S	Granted - 14/03/2014
40	NOR	SKS Electricals	S	Granted - 14/03/2014
41	NOR	Goa Plastic Industries	S	Granted - 10/03/2014
42	SOU	Ms Darshan Industries	S	Granted - 10/03/2014
43	NOR	Aditya Packaging	S	Granted - 25/02/2014
44	SOU	Ms Shankara Infrastructure Material Ltd.	S	Granted - 25/02/2014
45	NOR	Packwell	S	Granted - 25/02/2014
46	NOR	Neena Industries	S	Granted - 25/02/2014
47	SOU	Neelam Engineering Services	S	Granted - 25/02/2014

48	NOR	Aakaash Manufacturing Company Pvt Ltd	M	Granted - 25/02/2014
49	NOR	Ashok P. Kakodkar	S	Granted - 25/02/2014
50	SOU	Global Ispat Ltd.	M	Granted - 25/02/2014
51	NOR	Syngenta India Limited	L	Granted - 25/02/2014
52	SOU	B Bakers	S	Granted - 25/02/2014
53	SOU	Vergo Pharma Research Laboratories Pvt Ltd	M	Granted - 25/02/2014
54	NOR	Sing Brewery	S	Granted - 18/02/2014
55	NOR	M/s Siddhi Cashew & Allied Products	S	Granted - 17/02/2014
56	SOU	M/s S. N. Constructions (Essen Horizon)	S	Granted - 07/02/2014
57	SOU	Goa Fresh Foods	S	Granted - 03/02/2014
58	SOU	s N Constructions (Essen Whispring Willows)	S	Granted - 03/02/2014
59	NOR	S.S.V Electricals	S	Granted - 03/02/2014
60	NOR	M/s Mauli Shantadurga Packaging Enterprises	S	Granted - 03/02/2014
61	NOR	Healthway Hospitals Pvt. Ltd.	L	Granted - 03/02/2014
62	NOR	M/s Cremeux Bakeries Pvt. Ltd.	S	Granted - 03/02/2014
63	SOU	M/s S.S Industries	S	Granted - 03/02/2014
64	NOR	M/s Rajasthan Steel Furniture	S	Granted - 03/02/2014
65	NOR	Aerocoach Unit Iv	S	Granted - 03/02/2014
66	NOR	Mauli Industries	S	Granted - 31/01/2014
67	SOU	M/s Distilary Plant	L	Granted - 31/01/2014
68	NOR	Joaquim Tools Enterprises	S	Granted - 31/01/2014
69	NOR	M/s Balaji Plastics	S	Granted - 31/01/2014
70	SOU	M/s Safety Box India	S	Granted - 30/01/2014
71	NOR	Pearl Mahal Agencies Pvt. Ltd. (Unit Iii)	S	Granted - 30/01/2014
72	NOR	Rajeshwar Trading Co	S	Granted - 30/01/2014
73	SOU	Mahalaxmi Ice Plant	S	Granted - 30/01/2014
74	SOU	M/s Franstek Belts Private Limited	S	Granted - 30/01/2014
75	NOR	M/s Bhaskar Sabhagruha	S	Granted - 30/01/2014
76	SOU	M/s Shri Balaji Food And Beverages	M	Granted - 30/01/2014
77	NOR	M/s Premier Inn	L	Granted - 30/01/2014
78	SOU	classic Power Laundry	S	Granted - 28/01/2014
79	SOU	Glazetek Systems	S	Granted - 20/01/2014
80	NOR	Tata Consultancy Services Ltd.	L	Granted - 20/01/2014
81	SOU	Shiva Goa Palace Pvt. Ltd.	L	Granted - 16/01/2014
82	SOU	M/s Lourenco Marine Pvt. Ltd.	S	Granted - 16/01/2014
83	SOU	Jsw Jaigarh Port Ltd.	L	Granted - 08/01/2014
84	SOU	Niranjan Enterprises	S	Granted - 08/01/2014
85	SOU	Om Powder Coating	S	Granted - 08/01/2014
86	SOU	Shirdi Steel Re-Rollers Pvt. Ltd	S	Granted - 08/01/2014
87	NOR	Berger Paints India Limited	L	Granted - 08/01/2014
88	NOR	Procter & Gamble Hygiene & Health Care Ltd.	L	Granted - 18/12/2013
89	SOU	Betal Stone Crusher	S	Granted - 17/12/2013
90	SOU	Umicore Anandeya India	M	Granted - 17/12/2013
91	SOU	M/s Hotel Shangrila	S	Granted - 17/12/2013
92	NOR	M/s Sateri Fabrication	S	Granted - 17/12/2013
93	NOR	M/s Manguesh Saw Mill	S	Granted - 17/12/2013
94	SOU	Prabhu Realtors (Dabolim Project)	S	Granted - 17/12/2013
95	NOR	Manipal Hospital	L	Granted - 17/12/2013
96	SOU	Cipla Ltd	L	Granted - 17/12/2013
97	SOU	Abbott India Limited	L	Granted - 17/12/2013
98	SOU	Sai Service Station Ltd.	S	Granted - 17/12/2013
99	NOR	M/s. Mahalasa Pharma	S	Granted - 17/12/2013
100	SOU	Atlas Ice And Cold Storage Industries	S	Granted - 17/12/2013
101	NOR	M/s Bnn Power	S	Granted - 17/12/2013
102	NOR	Ms Parvatkar Industries	S	Granted - 17/12/2013
103	NOR	Mr Rajat Verma	M	Granted - 17/12/2013
104	NOR	M/s Bg Associates	M	Granted - 17/12/2013
105	SOU	M/s Amitron Tubulars Pvt Ltd	S	Granted - 17/12/2013

106	NOR	M/s B. M. Business Solutions Pvt Ltd	L	Granted - 17/12/2013
107	NOR	M/s A. P. Coated Drums And Barrels Pvt Ltd	S	Granted - 17/12/2013
108	NOR	Sukhadaa Premix	S	Granted - 17/12/2013
109	NOR	Parthprachet Industries	S	Granted - 17/12/2013
110	NOR	M/s Global Wood Packers	S	Granted - 17/12/2013
111	NOR	M/s Buildmat (Unit II)	S	Granted - 17/12/2013
112	SOU	M/s Shri Ganesh Packaging	S	Granted - 17/12/2013
113	SOU	M/s Vani Agro Farms Pvt Ltd	L	Granted - 17/12/2013
114	NOR	Maharudra Real Estates	L	Granted - 17/12/2013
115	SOU	Supreme Colmorod	L	Granted - 17/12/2013
116	NOR	Classic Squares Realty Pvt Ltd. (Zion Square)	S	Granted - 05/12/2013
117	NOR	Baga Waterfront Resort & Spa (Acron Hospitality Pvt Ltd)	L	Granted - 05/12/2013
118	SOU	Estilo Patio (Estilo Moderno Ralty Pvt Ltd)	M	Granted - 05/12/2013
119	NOR	Power Engineering (India) Pvt Ltd	S	Granted - 29/11/2013
120	SOU	Lego Poly Pack	S	Granted - 29/11/2013
121	NOR	Esteem Industries Pvt. Ltd.,	M	Granted - 25/11/2013
122	NOR	michael Braganza	S	Granted - 25/11/2013
123	NOR	M/s Laxmi Coach Building	S	Granted - 25/11/2013
124	SOU	Aryan Food Products	S	Granted - 25/11/2013
125	NOR	Dr. Punam S. Prabhu Homeopathic Clinic	S	Granted - 25/11/2013
126	NOR	M/s Mandovi Lubes	S	Granted - 28/10/2013
127	SOU	M/s Mehek Furniture	S	Granted - 22/10/2013
128	SOU	M/s Xavier Pig Unit	S	Granted - 22/10/2013
129	SOU	Lupin Limited	L	Granted - 22/10/2013
130	NOR	Merck Limited	M	Granted - 22/10/2013
131	NOR	Merck Limited	M	Granted - 22/10/2013
132	NOR	M/s Shreyash Brick And Cement Products	S	Granted - 22/10/2013
133	SOU	Changoer Trading And Exports Pvt. Ltd.	S	Granted - 22/10/2013
134	SOU	M/s Airport Authority Of India	S	Granted - 01/10/2013
135	SOU	Hotel Vian	S	Granted - 01/10/2013
136	NOR	Cartini India Limited	S	Granted - 16/09/2013
137	SOU	Ifb Industries Ltd.	S	Granted - 16/09/2013
138	NOR	Dhanulaxmi Cashewnuts	S	Granted - 16/09/2013
139	NOR	Ashwem Beach Resort & Villas	L	Granted - 16/09/2013
140	SOU	Sidharth Automobiles	S	Granted - 11/09/2013
141	SOU	M/s Aishwarya Industry	S	Granted - 11/09/2013
142	NOR	Yash Resorts(Kay Jay Construction Co.Pvt. Ltd)	M	Granted - 11/09/2013
143	SOU	M/s Veleny Enterprises	S	Granted - 11/09/2013
144	SOU	Birla Furukawa Fibre Optics Limited	L	Granted - 04/09/2013
145	SOU	M/s Floats India	S	Granted - 04/09/2013
146	SOU	M/s Swapna Developers	S	Granted - 04/09/2013
147	SOU	M/s Swapna Developers	S	Granted - 04/09/2013
148	NOR	M/s Suraksha Construction	S	Granted - 04/09/2013
149	SOU	M/s Fyregard Enterprises	S	Granted - 04/09/2013
150	SOU	M/s Swastik Enterprises	S	Granted - 04/09/2013
151	SOU	M/s Akar Creations Pvt Ltd	S	Granted - 04/09/2013
152	SOU	Vedanga Infratech	S	Granted - 04/09/2013
153	SOU	Vergo Pharma Research Laboratories Pvt Ltd	M	Granted - 13/08/2013
154	SOU	Ms Umiya Holding Pvt Ltd	S	Granted - 13/08/2013-RCN
155	NOR	Victor Hotels And Motels Ltd (M.V. Horseshoe Casino)	L	Granted - 13/08/2013
156	NOR	M/s Exclusive Meals L.L.P	S	Granted - 13/08/2013
157	NOR	M/s Praveen Transformers Pvt. Ltd	S	Granted - 12/08/2013
158	NOR	N/s Nisar Engineering Workshop	S	Granted - 12/08/2013
159	SOU	J L Fabrication	S	Granted - 10/08/2013
160	SOU	M/s Jog Construction Company Pvt Ltd	S	Granted - 10/08/2013
161	NOR	M/s Unicorn Real Estate	S	Granted - 10/08/2013

162	SOU	Residential Building (Prudential Developers)	S	Granted - 10/08/2013
163	NOR	M/s Npd Enterprises	S	Granted - 07/08/2013
164	SOU	M/s Dilip Fabrication	S	Granted - 07/08/2013
165	SOU	M/s Schiffer And Menezes India Pvt Ltd	M	Granted - 07/08/2013
166	SOU	M/s Matches Goa Private Limited	S	Granted - 07/08/2013
167	NOR	M/s Sun Cement Industries	S	Granted - 07/08/2013
168	NOR	M/s Union Motors	S	Granted - 07/08/2013
169	SOU	Abbott India Limited	L	Granted - 07/08/2013
170	NOR	Glenmark Genercis Limited (Plant I)	L	Granted - 07/08/2013
171	SOU	Cipla Ltd	L	Granted - 07/08/2013
172	NOR	Nofrills Hotels Pvt Ltd	M	Granted - 07/08/2013
173	NOR	M/s Kemtec India Photographic Co. Pvt Ltd.	S	Granted - 07/08/2013
174	SOU	M/s Tahir Isani	S	Granted - 07/08/2013
175	NOR	M/s Oriental Containers Ltd	L	Granted - 07/08/2013
176	NOR	M/s Karthik Inductions Ltd	S	Granted - 07/08/2013
177	SOU	Novacare Drug Specialities Pvt. Ltd.	M	Granted - 03/08/2013
178	SOU	Hotel Leela Ventures Ltd. (The Leela Palace Goa)	L	Granted - 29/07/2013
179	SOU	Ace Hotel & Resorts Pvt. Ltd	M	Granted - 29/07/2013
180	NOR	M/s Graviss Hotels & Resorts Ltd	L	Granted - 03/07/2013
181	NOR	M/s Power Engineering (India) Pvt. Ltd. Unit Iii	S	Granted - 21/06/2013
182	SOU	M/s Quality Cashews	S	Granted - 21/06/2013
183	NOR	Mikrocarb Tools	S	Granted - 21/06/2013
184	NOR	M/s Goa Process Controls	M	Granted - 21/06/2013
185	SOU	M/s Sanjana Fabrication	S	Granted - 21/06/2013
186	NOR	M/s Om Shree Ganesh Enterprises	S	Granted - 21/06/2013
187	NOR	M/s Sai Fabricators	S	Granted - 21/06/2013
188	NOR	M/s Saidurga Workshop	S	Granted - 21/06/2013
189	NOR	Durfab Engineering	L	Granted - 20/06/2013
190	NOR	Highstreet Cruises And Entertainment Pvt Ltd	L	Granted - 20/06/2013
191	SOU	Shania Entertainments	M	Granted - 20/06/2013
192	NOR	Emperor's "boulevard	L	Granted - 20/06/2013
193	NOR	Colgate Palmolive (India) Ltd	L	Granted - 20/06/2013
194	SOU	Colorcon Asia Private Limited	L	Granted - 17/06/2013
195	SOU	Cipla Ltd	L	Granted - 17/06/2013
196	NOR	Syngenta India Limited	L	Granted - 17/06/2013
197	SOU	Birla Furukawa Fibre Optics Limited	L	Granted - 17/06/2013
198	SOU	Himachal Futuristic Communications Ltd	L	Granted - 17/06/2013
199	SOU	M/s Vishwamalni Solutions	S	Granted - 17/06/2013
200	NOR	Ms Non Conventional Power Devices Pvt Ltd	S	Granted - 17/06/2013
201	SOU	M/s Prakash Corrugated Packaging Products	L	Granted - 17/06/2013
202	NOR	Durgadevi Enterprises	S	Granted - 17/06/2013
203	NOR	M/s Atharv Fabricators	S	Granted - 17/06/2013
204	SOU	Blessed Joseph Vaz Enterprises	S	Granted - 17/06/2013
205	NOR	M/s An Eco Resort	L	Granted - 17/06/2013
206	SOU	M/s General Workshop (Automechanical)	S	Granted - 17/06/2013
207	NOR	M/s Metal-Fab Engineering	S	Granted - 17/06/2013
208	NOR	Tukaram Carpentry	S	Granted - 17/06/2013
209	SOU	M/s Jet Set Hotels Pvt Ltd	S	Granted - 17/06/2013
210	NOR	J & J Precision Industries	S	Granted - 17/06/2013
211	SOU	M-Tech Developers Ltd.	L	Granted - 17/06/2013
212	SOU	Shatul Engineering Industries Unit II	S	Granted - 17/06/2013
213	SOU	Vergo Pharma Research Laboratories Pvt Ltd	M	Granted - 17/06/2013
214	NOR	Marck Biosciences Ltd	L	Granted - 17/06/2013
215	NOR	Konkan Paper Products	M	Granted - 17/06/2013
216	NOR	Tusker Motorcycles Pvt. Ltd.	S	Granted - 17/06/2013
217	NOR	Laxmidevi Business Enterprises	S	Granted - 17/06/2013
218	SOU	M/s Noorjan Bakery	S	Granted - 17/06/2013

219	NOR	sai Fabrication	S	Granted - 17/06/2013
220	NOR	M/s Fullarton Distilleries	S	Granted - 17/06/2013
221	NOR	M/s Service Center	S	Granted - 17/06/2013
222	SOU	Ms Ultratech Cement Limited	M	Granted - 17/06/2013
223	NOR	M/s Montage Distillers And Vintners Pvt Ltd	S	Granted - 13/06/2013
224	NOR	M/s Rajaram Workshop	S	Granted - 13/06/2013
225	SOU	Sir Biotech India Ltd	L	Granted - 13/06/2013
226	SOU	M/s Chandra Orgo Chem Combines	S	Granted - 13/06/2013
227	NOR	Captain Of Ports	L	Granted - 13/06/2013
228	SOU	Tanmay Cement Products	S	Granted - 13/06/2013
229	NOR	Alcon Developers	S	Granted - 13/06/2013
230	NOR	M/s M Goa Craft Paper	S	Granted - 13/06/2013
231	NOR	Fomento Resorts Hotels Ltd. (Cidade De Goa)	L	Granted - 13/06/2013
232	NOR	M/s Nitin Developers Pvt. Ltd.	S	Granted - 19/04/2013
233	NOR	Attire Hotels & Resorts Pvt Ltd. (Country Inn & Suites)	L	Granted - 19/04/2013
234	SOU	Spectra Pavers Private Limited	S	Granted - 19/04/2013

ANNEXURE III

NWMP DATA FOR THE YEAR 2013 - 2014

Table 3 a -RIVER CHAPORA NEAR ALORNA FORT, PERNEM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.77	7.28	6.9	6.49	6.75	7.06	6.93	7.07	6.46	7.45	6.76	7.06
2	Temperature °C	31	34	31	27	27	29	28	30	23	27	30	29
3	Conductivity µs/cm	10.74	3000	3360	79.4	44.5	62.57	59.44	62.88	57.79	71.39	1801	12.15
4	Dissolved Oxygen mg/l	6	5.9	6.3	6.9	7	7.5	7.7	7.1	7.5	7.6	6.9	6.77
5	Turbidity (NTU)	3.88	4.67	3.4	35.7	26.6	4.91	9.58	2.92	4.52	3.79	3.81	1.51
6	Nitrite Nitrogen mg/l	0.01	0.007	0.005	0.005	0.011	0.002	0.004	0.003	0.002	0.001	0.003	0.004
7	Nitrogen(Nitrate) mg/l	0.066	0.06	0.45	0.22	0.119	0.14	0.13	0.1	0.08	0.05	0.050	0.07
8	Phosphate mg/l	0.001	0.001	0.002	0.06	0.005	0.01	0.01	0.01	0.01	0.001	0.20	0.02
9	BOD mg/l	1.5	1.5	0.8	0.5	0.5	1.8	0.7	0.6	1.5	0.5	0.7	1.79
10	COD mg/l	5	15	7	8	13	2	2	6	1	2	5	29
11	Chloride mg/l	997.56	285	718.36	11.09	2.94	5	3.4	2.85	1.9	3.42	366.91	4.4
12	Fecal Coliform MPN/100 ml	1700	1100	200	1300	1300	1300	2300	1700	4900	2300	3300	3300
13	Total Coliform MPN/100 ml	3300	2100	450	2400	1700	2300	4900	3300	7000	3300	7000	7900
14	Ammonia mg/l	0.036	0.042	0.07	0.05	0.034	0.11	0.02	0.2	0.03	0.08	0.06	0.24

Table 3 b - RIVER KALNA AT CHANDEL, PERNEM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.73	7.18	6.95	6.25	6.76	7.12	6.7	7.06	6.44	7.29	7.03	7.34
2	Temperature °C	32	30	28	26	27	30	27	29	22	27	28	27
3	Conductivity µs/cm	42.23	58.9	66.28	47.6	42.9	62.3	55.61	70.77	71.9	57.19	60.4	64.9
4	Dissolved Oxygen mg/l	6.5	6.1	6.9	7.4	7.4	7.3	7.4	7.5	6.8	7.3	6.8	6.74
5	Turbidity (NTU)	2.26	3.68	5.51	19.5	24.5	3.63	14.68	2.6	4.23	3.24	3.88	2.52
6	Nitrite Nitrogen mg/l	0.006	0.002	0.002	0.003	0.01	0.002	0.004	0.002	0.002	0.001	0.002	0.002
7	Nitrogen(Nitrate) mg/l	0.061	0.047	0.28	0.11	0.073	0.05	0.08	0.04	0.04	0.04	0.026	0.06
8	Phosphate mg/l	0.016	0.001	0.006	0.19	0.007	0.01	0.01	0.01	0.01	0.003	0.015	0.02
9	BOD mg/l	1.1	1.1	0.6	0.8	1.1	1.8	0.8	0.5	1.5	0.7	0.7	1.09
10	COD mg/l	10	2	3	8	6	8.4	5	8	2	1.0	4.0	10
11	Chloride mg/l	2.85	3.33	9.16	7.23	2.45	3	2.5	1.9	1.9	1.47	3.42	4109.36
12	Fecal Coliform MPN/100 ml	780	920	200	45	450	4600	4900	3300	3300	2300	780	1300
13	Total Coliform MPN/100 ml	1300	1400	450	45	450	7000	7900	4900	4900	3300	1300	2300
14	Ammonia mg/l	0.022	0.244	0.076	0.03	0.047	0.13	0.02	0.08	0.03	0.01	0.02	0.02

Table 3 c - RIVER MAPUSA ON CULVERT ON HIGHWAY MAPUSA-PANAJI 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.63	7.07	6.87	6.33	6.53	6.92	6.56	6.77	6.71	6.66	6.80	7.00
2	Temperature °C	33	34	31	26	28.5	31	29	32	22	26	30	29
3	Conductivity µs/cm	9270	24720	10360	115.5	155.5	465300	167.7	928.74	4149	8.42	11.41	12.71
4	Dissolved Oxygen mg/l	6	4.9	3.4	5	4	2.9	4.1	3.5	3.4	4	6.7	7.33
5	Turbidity (NTU)	3.52	5.11	4.5	69.1	19.9	7.19	9.75	3.05	2.22	1.33	2.34	1.28
6	Nitrite Nitrogen mg/l	0.007	0.01	0.005	0.021	0.025	0.01	0.01	0.01	0.007	0.005	0.03	0.003
7	Nitrogen(Nitrate) mg/l	0.08	0.113	0.12	0.18	0.316	0.33	0.28	0.15	0.09	0.11	0.04	0.07
8	Phosphate mg/l	0.019	0.086	0.034	0.14	0.075	0.06	0.03	0.08	0.02	0.004	0.001	0.03
9	BOD mg/l	1.6	2.4	3	1.5	2	1.9	0.5	1.8	-	1.4	1.8	2.09
10	COD mg/l	31	40	36	13	7	8	7	3	18	15	14	2
11	Chloride mg/l	8740.55	7505.47	2073.12	22.65	26.91	300	30.4	185.26	1140.07	5870.5	4647.50	4402.89
12	Fecal Coliform MPN/100 ml	200	1100	3300	230	2300	7900	17000	13000	13000	13000	4900	3300
13	Total Coliform MPN/100 ml	1300	1700	4600	230	7900	13000	35000	24000	17000	22000	7900	7000
14	Ammonia mg/l	0.09	0.042	1.12	0.16	0.161	0.12	0.07	0.04	0.14	0.13	0.03	0.15

Table 3 d - RIVER ASSANORA AT ASSANORA 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.15	5.73	5.7	6.25	6.21	6.67	6.19	6.15	6.46	6.06	5.45	6.00
2	Temperature °C	28	29	28	27	28	29	28	26	23	26	30	27
3	Conductivity µs/cm	61.5	58.74	59	77.4	45.86	54.23	48.73	57.14	57.79	51.7	55.3	62.3
4	Dissolved Oxygen mg/l	6.4	5.8	6.7	6.9	6.8	6.5	6.8	7.2	7.5	7	7.1	6.2
5	Turbidity (NTU)	4.58	5.03	5.29	33.8	4.58	5.16	5.73	3.67	4.52	5.92	3.33	3.75
6	Nitrite Nitrogen mg/l	0.003	0.004	0.003	0.014	0.004	0.002	0.003	0.002	0.002	0.004	0.003	0.002
7	Nitrogen(Nitrate) mg/l	0.089	0.055	0.63	0.64	0.075	0.11	0.1	0.1	0.03	0.05	0.05	0.106
8	Phosphate mg/l	0.004	0.006	0.003	0.01	0.079	0.01	0.002	0.01	0.01	0.005	0.008	0.012
9	BOD mg/l	1.5	1.1	0.4	0.7	0.8	0.9	1.1	0.3	1.5	2.7	1.4	1.6
10	COD mg/l	2	2	1	11	6	24	-	6.8	1	6	6.0	2.0
11	Chloride mg/l	8.74	3.4	2.91	3.33	4.89	6.3	3.4	2.91	1.9	4.89	4.89	6.36
12	Fecal Coliform MPN/100 ml	3400	200	200	200	11000	13000	7900	2300	4900	780	780	2300
13	Total Coliform MPN/100 ml	13000	780	200	200	17000	22000	13000	3300	7000	1400	1100	4900
14	Ammonia mg/l	0.098	0.068	0.002	0.03	0.022	0.1	0.02	0.004	0.03	0.04	0.01	0.04

Table 3 e - RIVER VALVANTI AT SANQUELIM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.74	6.08	6.7	6.61	6.88	7.04	6.22	5.89	6.95	5.88	5.58	6.53
2	Temperature °C	31	34	28	27	29	29	28	30	27	29	30	31
3	Conductivity µs/cm	66.7	71.49	50.6	85.3	48.76	54.9	49.1	70.53	65.89	57.6	62.2	68.2
4	Dissolved Oxygen mg/l	6.6	6.4	7.2	7.7	7.5	7.3	7.1	7.1	7.8	8.3	7.3	7.3
5	Turbidity (NTU)	3.42	3.54	4.36	26.6	3.67	2.55	7.51	3.11	2.81	3.39	1.93	2.94
6	Nitrite Nitrogen mg/l	0.003	0.007	0.003	0.007	0.004	0.002	0.002	0.001	0.002	0.004	0.003	0.004
7	Nitrogen(Nitrate) mg/l	0.155	0.089	0.22	0.18	0.073	0.08	0.09	0.02	0.3	0.06	0.07	0.022
8	Phosphate mg/l	0.003	0.009	0.008	0.008	0.087	0.01	0.004	0.002	0.006	0.006	0.007	0.022
9	BOD mg/l	1.7	2.2	0	1	0.9	1	0.4	1.1	1.2	2.8	1.9	2.4
10	COD mg/l	5	7	2	12	6	20	9	BDL	3	7.0	9	15.0
11	Chloride mg/l	8.74	8.74	1.46	3.33	1.96	5.4	3.9	2.43	4.37	5.38	5.87	5.38
12	Fecal Coliform MPN/100 ml	3300	680	2700	2200	3300	7900	13000	4900	7900	4600	3300	13000
13	Total Coliform MPN/100 ml	11000	3300	3900	2700	7000	11000	17000	13000	13000	7000	4900	24000
14	Ammonia mg/l	0.101	0.067	0.02	0.027	0.035	0.05	0.02	0.01	BDL	0.04	0.02	0.05

Table 3 f - RIVER MADEI AT DABOSE, VALPOI 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.37	6.77	5.82	6.98	6.89	7.04	6.42	6.03	6.96	6.17	5.96	6.85
2	Temperature °C	34	33	26	26	28	28	27	28	26	28	30	31
3	Conductivity µs/cm	125.1	142.9	54	151.8	56.41	63.3	57.6	73.63	86.59	84.4	98	116.9
4	Dissolved Oxygen mg/l	6.6	6.3	7.3	8	7.4	7.4	8	7.1	7.5	7.1	7.3	6.8
5	Turbidity (NTU)	3.46	4	6.26	17.5	4.36	2.78	10.2	3.15	2.25	1.55	0.96	2.53
6	Nitrite Nitrogen mg/l	0.002	0.004	0.003	0.008	0.003	0.002	0.003	0.002	0.002	0.002	0.002	0.002
7	Nitrogen(Nitrate) mg/l	0.003	0.01	0.14	0.12	0.024	0.042	0.03	0.05	0.01	0.03	0.01	0.009
8	Phosphate mg/l	0.003	0.006	0.01	0.006	0.061	0.01	0.01	0.01	0.005	0.003	0.008	0.008
9	BOD mg/l	1.2	1	0.1	0.6	0.5	0.6	0.8	1.1	1.4	2	1.8	2.1
10	COD mg/l	6	2	3	13	6	12	7	BDL	8	8	11	3.0
11	Chloride mg/l	8.26	5.83	1.94	7.6	1.96	4.9	2.9	2.91	0.49	5.38	5.87	5.87
12	Fecal Coliform MPN/100 ml	NIL	680	930	450	780	1100	2300	450	4900	780	780	330
13	Total Coliform MPN/100 ml	180	1700	1500	1500	1100	1400	3300	680	7900	1300	1700	490
14	Ammonia mg/l	0.01	0.04	0.01	0.06	0.021	0.07	0.03	0.01	0.05	0.08	0.02	0.04

Table 3 g - RIVER KHANDEPAR, OPA, PONDA 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.11	7.4	6.82	5.9	6.58	6.62	5.04	7.79	7.34	6.70	7.11	7.08
2	Temperature °C	33	34	31	26	28	28	28	29	28	29	29	31
3	Conductivity µs/cm	103.43	108.25	98.99	80.7	50500	50.42	109.43	71.13	83.21	77.30	81.6	90.8
4	Dissolved Oxygen mg/l	6.3	7.2	5.6	6.8	6.3	7.3	6.7	6.7	6.8	7.03	6.8	7.9
5	Turbidity (NTU)	3.81	2.63	3.31	38.5	6.7	20	4.99	2.96	3.26	1.89	1.54	2.62
6	Nitrite Nitrogen mg/l	0.003	0.002	0.005	0.007	0.002	0.01	0.002	0.002	0.001	0.003	0.001	0.002
7	Nitrogen(Nitrate) mg/l	0.005	0.015	0.17	0.15	0.15	0.11	0.23	0.06	0.06	0.06	0.091	0.003
8	Phosphate mg/l	0.003	BDL	0.01	0.01	0.001	0.03	0.01	0.01	0.003	0.003	BDL	0.003
9	BOD mg/l	1.3	2.4	3.1	0.7	1.1	0.8	0.2	1.1	1.5	0.27	0.50	1.2
10	COD mg/l	10	6	7	3	4	1	4	1	2	8	4.00	2.00
11	Chloride mg/l	4.75	8.74	4.37	3.8	3.77	5.9	3.4	3.23	7.28	13.21	4.37	2.94
12	Fecal Coliform MPN/100 ml	200	450	110	2400	2400	7900	2300	3300		1300	400	200
13	Total Coliform MPN/100 ml	450	930	920	5400	5400	17000	3300	4900		2300	400	400
14	Ammonia mg/l	0.046	0.148	0.06	0.08	0.002	0.07	0.03	0.05	0.05	0.07	BDL	0.042

Table 3 h - RIVER KHANDEPAR AT CODLI 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	5.56	7.18	6.84	6.2	6.47	6.69	5.37	7.28	7.59	7.59	7.20	7.25
2	Temperature °C	32	35	32	26	28	29	28	29	28	28	30	32
3	Conductivity µs/cm	88.26	84.96	89.02	78.3	47700	49.16	100.63	63.51	73.4	63.3	73.3	78.6
4	Dissolved Oxygen mg/l	7.1	6.6	6.6	7.4	6.4	7.4	7.2	7.3	7.4	7.74	6.8	7.7
5	Turbidity (NTU)	2.21	2.06	6.29	32.2	5.8	19.7	3.76	2.29	2.44	130	7.48	1.71
6	Nitrite Nitrogen mg/l	0.002	0.002	0.004	0.005	0.002	0.01	0.001	0.002	0.002	0.001	0.000	0.002
7	Nitrogen(Nitrate) mg/l	0.037	0.093	0.13	0.13	0.17	0.11	0.06	0.05	0.03	0.09	0.118	0.128
8	Phosphate mg/l	0.001	BDL	0.001	0.01	0.001	0.03	0.03	0.02	0.004	0.003	BDL	0.012
9	BOD mg/l	1.1	0.7	1.4	1.2	0.4	0.7	0.3	1.9	0.4	0.78	0.6	
10	COD mg/l	2	3	3	4	4	4	3	5	11	BDL	3.0	2.00
11	Chloride mg/l	6.18	9.71	3.4	3.2	1.88	4.9	4.24	2.3	11.66	5.38	3.89	0.98
12	Fecal Coliform MPN/100 ml	780	1300	450	1300	780	13000	780	2200	-	1300	450	200
13	Total Coliform MPN/100 ml	1300	2300	1200	1700	1100	22000	1300	2700	-	1700	680	450
14	Ammonia mg/l	0.063	0.218	0.095	0.04	0.002	0.07	0.04	0.04	0.05	0.03	BDL	0.057

Table 3 I - RIVER KUSHAWATI NEAR BUND AT KEVONA, RIVONA, SANGUEM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	5.94	7.06	6.96	5.96	6.65	7.14	6.89	6.55	6.64	6.61	6.60	7.3
2	Temperature °C	30	36	31	26	28	27	28	28	26	28	27	32
3	Conductivity µs/cm	17.44	181.51	157.5	129.04	60800	55.9	55.11	76.97	106.86	111.5	127.2	154.2
4	Dissolved Oxygen mg/l	6.3	5.5	6.5	6.9	6.3	7.3	7.6	7.3	7.3	6.6	7.3	7.5
5	Turbidity (NTU)	1.44	1.22	2.1	8.6	5.26	2.02	2.16	2.3	3.24	1.73	2.40	1.52
6	Nitrite Nitrogen mg/l	0.003	0.003	0.002	0.003	0.02	0.002	0.003	0.004	0.002	0.003	0.003	0.0004
7	Nitrogen(Nitrate) mg/l	0.201	0.264	0.15	0.398	0.17	0.13	0.17	0.08	0.006	0.20	0.09	0.14
8	Phosphate mg/l	0.002	BDL	0.002	0.006	0.001	0.01	0.005	0.002	0.005	0.002	0.003	0.04
9	BOD mg/l	1.9	0.4	0.8	1.7	1.4	0.8	0.2	1.3	1.6	0.9	1.88	1.5
10	COD mg/l	3	1	8	2	5	2	3	2	8	54.0	BDL	12
11	Chloride mg/l	5.7	10.2	5.34	5.14	4.24	3.5	2.4	0.91	2.45	2.45	3.00	6.45
12	Fecal Coliform MPN/100 ml	450	200	450	2400	780	3300	1700	2200	13000	3300	780	780
13	Total Coliform MPN/100 ml	780	780	920	3500	1300	4900	2200	2600	17000	4900	1300	1100
14	Ammonia mg/l	0.051	0.125	0.08	0.03	0.04	0.05	0.04	0.02	0.033	0.10	0.01	0.07

Table 3 j - RIVER TALPONA AT CANACONA 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.89	6.93	6.34	5.44	8.02	6.49	6.91	6.03	6.38	6.63	6.55	6.50
2	Temperature °C	35	36	29	27	27	28	30	30	22	28	29	32
3	Conductivity µs/cm	67.57	65.17	55.1	51.56	51.71	49.68	60.26	52.3	113.86	58.46	57.2	74.2
4	Dissolved Oxygen mg/l	7.1	7.1	7.3	7.2	7.3	7.2	7.3	7.2	7.6	6.9	6.4	6.1
5	Turbidity (NTU)	2.35	2.24	3.07	25.1	1.19	6.58	1.9	2.51	1.63	1.57	2.14	4.70
6	Nitrite Nitrogen mg/l	0.003	0.001	0.004	0.004	0.006	0.002	0.002	BDL	0.003	0.002	0.002	0.003
7	Nitrogen(Nitrate) mg/l	0.022	0.003	0.49	0.182	0.11	0.78	0.07	0.02	BDL	0.002	0.01	0.015
8	Phosphate mg/l	0.005	0.029	0.02	0.017	0.001	0.004	0.001	0.01	0.02	BDL	0.007	0.006
9	BOD mg/l	0.8	1.4	1.1	0.4	0.5	0.4	1.5	1	0.9	1.00	1.6	1.4
10	COD mg/l	7	9	4	1	4	5	5	5	3	15.00	12.0	13.0
11	Chloride mg/l	2.85	8.26	7.34	1.41	3.3	10.2	1.9	8.32	7.34	2.43	5.38	4.89
12	Fecal Coliform MPN/100 ml	200	200	NIL	20	450	1100	2300	1300	-	1300	1300	1700
13	Total Coliform MPN/100 ml	200	680	400	78	780	2100	4600	2300	-	2100	2200	2100
14	Ammonia mg/l	0.15	0.107	0.07	0.08	0.005	0.07	0.004	0.06	0.01	0.063	0.01	0.05

Table 3 k - RIVER SAL AT PAZORCONI, CUNCOLIM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.39	6.83	6.05	5.2	7.71	6.44	6.72	6.09	6.33	6.38	6.50	6.20
2	Temperature °C	31	33	28	27	28	29	30	28	25	28	28	29
3	Conductivity µs/cm	70.42	78.29	96.1	69.55	71.64	84.48	87.62	69.65	76.58	82.92	68.1	68.9
4	Dissolved Oxygen mg/l	5	6.1	6.4	6.2	6.5	6.8	7	7.1	6.3	4.0	5.6	7.2
5	Turbidity (NTU)	9.57	10.68	17.6	24.8	6.5	8.86	9.67	8.93	10.04	12.78	6.89	7.26
6	Nitrite Nitrogen mg/l	0.005	0.004	0.01	0.009	0.008	0.01	0.01	0.003	0.008	0.002	0.009	0.004
7	Nitrogen(Nitrate) mg/l	0.08	0.152	0.68	0.452	0.32	0.23	0.14	0.19	0.08	0.123	0.23	0.016
8	Phosphate mg/l	0.007	0.004	0.008	0.009	0.001	0.01	0.01	0.02	0.04	0.013	0.02	0.012
9	BOD mg/l	1	1.5	1	0.6	1.5	0.8	1	2.4	2.7	2.1	1.5	0.9
10	COD mg/l	17	12	5	5	6	4	3	8	8	25.00	13.0	16.0
11	Chloride mg/l	1662.61	2792.57	11.74	2.83	99.01	18.94	4.3	12.72	10.27	1.46	6.36	4.89
12	Fecal Coliform MPN/100 ml	2200	1700	200	45	4900	4900	4900	7000	-	7900	4900	4900
13	Total Coliform MPN/100 ml	4900	3400	450	45	13000	7900	13000	11000	-	24000	13000	7900
14	Ammonia mg/l	0.46	0.087	0.04	0.06	0.02	0.04	0.03	0.11	0.04	0.064	0.06	0.03

Table 3 l - RIVER SAL AT MOBOR 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.45	8.39	7.63	6.81	7.55	8.01	7.7	7.7	7.78	8.01	7.60	7.81
2	Temperature °C	34	33	29	23	28	30	31	29	28	28	31	31
3	Conductivity µs/cm	47260	50800	52600	1159	40910	49770	58350	50600	54420	53.1	36.0	52.3
4	Dissolved Oxygen mg/l	5.5	6.1	6.2	5.4	6.5	5.6	5.3	5.3	5.7	5.8	5.4	6.1
5	Turbidity (NTU)	295	5	30.3	36.8	15.7	2.26	9.26	2.33	1.56	1.62	6.79	2.44
6	Nitrite Nitrogen mg/l	0.005	0.003	0.014	0.015	0.002	0.003	0.004	0.01	0.005	0.006	0.011	0.007
7	Nitrogen(Nitrate) mg/l	0.055	0.008	0.07	0.383	0.09	0.02	0.35	0.41	0.042	0.359	0.039	0.01
8	Phosphate mg/l	0.06	0.012	0.06	0.053	0.11	0.02	0.04	0.03	0.024	0.019	0.009	0.029
9	BOD mg/l	3.5	1.7	1	1.5	0.7	1.6	0.9	1.3	0.9	1.1	3.5	0.5
10	COD mg/l	26	47	27	16	9	32.8	47	44	43	9.0	31.0	33.0
11	Chloride mg/l	16269.78	20883.6	20057.61	1296.58	15087.52	17958.97	18212.44	19305.18	19912.3	2276.51	15905.53	22259.06
12	Fecal Coliform MPN/100 ml	1300	200	20	2300	2300	1300	450	1300	1300	450	450	1300
13	Total Coliform MPN/100 ml	3300	450	93	4600	4900	2300	780	2300	3300	780	780	1700
14	Ammonia mg/l	0.114	0.46	0.12	0.07	0.05	0.1	0.12	0.022	0.114	0.010	0.002	0.02

Table 3 m - HARWALE WATERFALL 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	5.99	7.53	6.48	6.77	7	6.96	6.98	7.3	7.0	7.40	7.67	6.8
2	Temperature °C	31	33	29	27	28	27	29	30	25	28	29	31
3	Conductivity µs/cm	88.56	95.6	64.5	38.23	40.08	54.25	68.4	77.54	77.17	78.1	97.3	109.9
4	Dissolved Oxygen mg/l	7.2	7.2	7.5	8.1	7.8	7.7	7.6	8.2	7.9	7.9	7.6	6.95
5	Turbidity (NTU)	5.22	6.9	11.45	94.2	6.88	5.66	7.6	6.12	4.11	3.56	4.36	3.26
6	Nitrite Nitrogen mg/l	0.006	0.004	0.006	0.008	0.003	0.003	0.002	0.003	0.002	0.003	0.003	0.003
7	Nitrogen(Nitrate) mg/l	0.186	0.087	0.69	0.24	0.34	0.29	0.31	0.13	0.08	0.16	0.16	0.21
8	Phosphate mg/l	0.005	0.002	0.008	0.014	0.002	0.004	0.01	0.01	0.003	0.004	0.02	1.013
9	BOD mg/l	1.8	2.1	1.1	0.9	1.9	1.4	0.9	0.9	1.5	0.9	2.5	2.77
10	COD mg/l	9	3	2	6	3	7	10	3	13	10.0	BDL	10.0
11	Chloride mg/l	6.65	8.74	5.38	2.83	5.7	10.68	12.14	7.83	0.98	6.36	63.60	7.34
12	Fecal Coliform MPN/100 ml	7000	7000	7900	230	13000	22000	13000	3300	54000	7900	13000	13000
13	Total Coliform MPN/100 ml	11000	14000	13000	490	24000	54000	35000	4900	24000	13000	35000	17000
14	Ammonia mg/l	0.024	0.144	0.04	0.07	0.015	0.04	0.05	0.04	0.05	0.02	0.02	0.007

Table 3 n - RIVER BICHOLIM, BARAZAN NAGAR, BICHOLIM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.9	7.06	6.33	6.54	6.55	6.67	6.48	7.08	6.77	7.15	7.45	7.2
2	Temperature °C	31	35	29	26	29	29	31	30	27	28.5	30	33
3	Conductivity µs/cm	2288	203.23	116.85	33.71	62.9	103.2	121.38	108.92	126.61	130.4	144.7	181.5
4	Dissolved Oxygen mg/l	5.2	7.6	6.3	7.3	6.6	6.9	7.1	8.1	7.9	8.7	11.1	9.03
5	Turbidity (NTU)	6.17	2.78	31.2	8.74	7.62	4.71	5.22	3.6	9.35	9.25	4.28	3.62
6	Nitrite Nitrogen mg/l	0.008	0.006	0.02	0.006	0.004	0.01	0.003	0.003	0.006	0.008		0.008
7	Nitrogen(Nitrate) mg/l	0.298	0.318	1.04	0.156	0.517	0.33	0.35	0.14	0.007	0.24		0.30
8	Phosphate mg/l	0.008	BDL	0.01	0.027	0.009	0.01	0.04	0.01	0.011	0.008		0.040
9	BOD mg/l	2.9	2.5	7.82	0.9	1.1	0.5	1	1.6	1.7	1.7	2.4	2.46
10	COD mg/l	11	2	17	2	4	4	11	3	4	2.0	1.0	4.0
11	Chloride mg/l	665.04	23.8	11.74	1.41	7.6	18.46	20.88	11.25	4.86	8.81	12.23	17.12
12	Fecal Coliform MPN/100 ml	24000	4900	35000	780	14000	13000	24000	7900	7900	13000		13000
13	Total Coliform MPN/100 ml	35000	13000	54000	1400	28000	24000	54000	13000	17000	35000		22000
14	Ammonia mg/l	0.05	0.079	BDL	0.06	0.023	0.06	0.06	0.01	0.049	0.06		0.03

Table 3 o - MAYEM LAKE AT MAYEM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.12	7.17	6.38	6.14	6.11	6.42	6.53	6.86	6.9	7.12	7.47	6.9
2	Temperature °C	33	36	29	28	30	31	31	33	27	29	31	32
3	Conductivity µs/cm	49.28	57.42	47.84	36.15	30.8	39.33	55.4	44.23	39.6	36.9	51	44.0
4	Dissolved Oxygen mg/l	7.1	6.2	6.8	7.1	7.6	7.2	6.6	7.4	8.2	7.2	7.9	7.49
5	Turbidity (NTU)	5.26	7.4	8.09	50.4	3.24	1.89	2.15	9.27	3.05	5.04	7.64	5.12
6	Nitrite Nitrogen mg/l	0.003	0.004	0.004	0.003	0.002	0.003	0.004	0.004	0.002	0.003	0.009	0.004
7	Nitrogen(Nitrate) mg/l	0.026	0.02	0.11	0.1	0.104	0.07	0.09	0.03	0.01	0.02		0.04
8	Phosphate mg/l	0.006	0.002	0.005	BDL	0.003	0.002	0.01	0.02	0.006	0.008	0.022	0.012
9	BOD mg/l	1.4	2.1	2.6	1	0.7	0.4	1.1	2.7	1.1	1.8	5.6	2.49
10	COD mg/l	22	15	10	3	1	2	5	11	8	9.0	10.0	11.0
11	Chloride mg/l	7.6	10.2	6.85	2.36	6.2	14.57	16.51	8.81	3.4	4.89	6.85	6.85
12	Fecal Coliform MPN/100 ml	1100	3300	780	2300	4900	17000	17000	13000	13000	3300	7900	7900
13	Total Coliform MPN/100 ml	1700	7900	1700	4900	7900	35000	35000	17000	22000	4900	13000	17000
14	Ammonia mg/l	0.025	0.104	0.013	0.02	0.014	0.07	0.07	0.06	BDL	0.04	0.02	0.02

Table 3 p - CUMBHARJUA CANAL, CORLIM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.69	7.5	5.63	6.42	6.3	7.1	6.45	7.8	7.3	6.80	7.20	7.42
2	Temperature °C	32	35	30	26	29	30	32	33	30	28	29	30
3	Conductivity µs/cm	49950	50620	3290	2027	1457	1.768	3737	23020	26740	39.97	35.6	43.9
4	Dissolved Oxygen mg/l	4.2	4.7	5.9	5.8	5.8	6.2	3.7	4.6	5.3	4.9	6.04	6.3
5	Turbidity (NTU)	14.41	16.1	9.14	18.6	7.63	16.3	12.6	8.4	11.51	14.1	4.42	18.0
6	Nitrite Nitrogen mg/l	0.011	0.045	0.004	0.003	0.006	0.01	0.01	0.01	0.006	0.009	0.036	0.006
7	Nitrogen(Nitrate) mg/l	0.188	0.034	0.234	0.249	0.068	0.01	0.04	0.05	0.64	0.030	0.04	0.03
8	Phosphate mg/l	0.053	0.017	0.004	0.004	0.014	0.01	0.01	0.01	0.006	0.011	0.015	0.014
9	BOD mg/l	2.4	2.4	0.6	1.9	1.8	2.4	1.8	1.2	1.8	1.7	2.93	2.6
10	COD mg/l	28	28	14	2	6	11.6	15	16	19	59.0	42.0	9
11	Chloride mg/l	18763.69	24768.92	1834.54	4.24	394.3	13.24	1087.8	2185.49	3156.82	15419.86	17119.69	16391.19
12	Fecal Coliform MPN/100 ml	NIL	NIL	200	2300	780	3300	4900	3300	-	4900	2300	450
13	Total Coliform MPN/100 ml	180	200	450	7900	1300	7900	7900	4900	-	7900	4900	450
14	Ammonia mg/l	0.091	0.169	0.356	0.07	0.044	0.09	0.08	0.07	0.12	0.152	0.10	0.06

Table 3 q - RIVER ZUARI AT PANCHAWADI 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.72	7.18	5.98	6.41	5.89	6.97	6.07	7.31	6.86	7.10	6.77	6.72
2	Temperature °C	33	33	29	28	28	31	31	31	28	29	30	32
3	Conductivity µs/cm	92.75	28760	246	103.86	37.72	887.37	178	665.25	7510	5.92	8.28	20.32
4	Dissolved Oxygen mg/l	5.7	4	5.3	6.4	7.3	6.6	6.8	6.5	5	5.86	6.9	5.5
5	Turbidity (NTU)	6.33	55.8	21.9	41.7	8.44	4.65	10.2	15.91	3.4	4.41	3.55	5.43
6	Nitrite Nitrogen mg/l	0.014	0.1	0.019	0.013	0.005	0.003	0.01	0.01	0.003	0.002	0.012	0.029
7	Nitrogen(Nitrate) mg/l	0.03	0.061	1.02	0.148	0.068	0.06	0.05	0.01	0.05	0.04	0.040	0.035
8	Phosphate mg/l	0.005	0.021	0.03	0.028	0.017	0.01	0.01	0.04	0.004	0.006	0.001	0.007
9	BOD mg/l	1.3	0.9	0.2	0.1	1	1	1.3	0.9	0.5	0.92	1.8	1.8
10	COD mg/l	6	38	7	3	14	4	5	10	14	BDL	15.00	16.0
11	Chloride mg/l	3562.73	13720.04	49.68	2375.15	9.8	249.5	5099.48	165.91	2792.57	4109.36	12768	6262.0
12	Fecal Coliform MPN/100 ml	NIL	200	1100	2400	3300	7900	1300	1700	-	1300	780	450
13	Total Coliform MPN/100 ml	200	780	1400	5400	4900	13000	2300	2200	-	2300	780	780
14	Ammonia mg/l	0.036	0.083	0.055	0.031	0.012	0.03	0.09	0.1	0.05	0.01	BDL	0.058

Table 3 r - RIVER ZUARI AT CORTALIM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.08	7.91	7.18	6.83	7.91	7.58	7.43	7.21	7.6	7.46	7.34	7.25
2	Temperature °C	31	32	28	28	31	30.0	32	29	27	28	32	33
3	Conductivity µs/cm	50920	52530	24930	11510	8724	37010	41280	44340	49100	46.3	3.59	46.6
4	Dissolved Oxygen mg/l	5.1	5.1	5.1	6	7.6	5.2	5.8	4.7	5.6	4.9	5.5	5.3
5	Turbidity (NTU)	9.27	13.62	34.1	19.45	28.3	37.3	8.25	9.05	5.78	18.26	50.3	13.1
6	Nitrite Nitrogen mg/l	0.01	0.01	0.104	0.009	0.009	0.04	0.03	0.03	0.013	0.023	0.045	0.019
7	Nitrogen(Nitrate) mg/l	0.046	1.105	0.446	0.353	0.05	0.13	0.1	0.15	0.1	0.187	0.192	0.03
8	Phosphate mg/l	0.023	0.012	0.029	0.029	0.04	0.24	0.02	0.02	0.02	0.043	0.014	0.036
9	BOD mg/l	1.4	3.2	2	0.6	4.4	2.3	0.4	2.3	2.6	1.3	1.8	2.4
10	COD mg/l	49	60	28	10	14	44.8	31	30	52	16.0	13.0	20.0
11	Chloride mg/l	18091.02	18051.14	8928.08	15.2	2003.8	12583.33	12384	15298.45	16998.3	17726.77	2792.57	25438.92
12	Fecal Coliform MPN/100 ml	680	4700	7900	130	13000	22000	22000	4900	1300	7000	3300	780
13	Total Coliform MPN/100 ml	1700	24000	11000	230	24000	35000	35000	13000	1700	11000	4900	1100
14	Ammonia mg/l	0.012	0.215	BDL	0.005	0.02	0.28	0.18	0.2	0.05	0.136	0.150	0.05

Table 3 s - CREEK AT DANDO MOLLO, VELSAO, MORMUGAO 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	8.88	7.9	7.03	6.58	7.15	7.3	6.72	6.87	6.66	8.53	6.92	7.75
2	Temperature °C	32	34	29	29	30	29	30	34	31	28	28	30
3	Conductivity µs/cm	15200	22160	699.2	821.3	814.61	15240	4220	10700	6210	9.71	6.91	40.1
4	Dissolved Oxygen mg/l		3.8	6.2	5.3	6.2	4.6	5.5	4.1	3.2	12.2	5.6	7.9
5	Turbidity (NTU)	1.98	1.08	7.76	8.34	2.5	7.76	6.68	22.3	9.2	3.84	1.68	3.35
6	Nitrite Nitrogen mg/l	0.574	0.017	0.132	0.025	0.024	0.01	0.02	0.01	0.008	0.041	0.056	0.010
7	Nitrogen(Nitrate) mg/l	5.58	0.362	40.43	1.935	2.106	0.6	2.71	1	0.02	0.14	0.245	0.31
8	Phosphate mg/l	0.024	0.084	0.096	0.04	0.065	0.05	0.04	0.1	0.05	0.036	0.047	0.127
9	BOD mg/l		2.7	2	1	0.7	1.2	2.6	1.9	1.6	3.4	3.1	3.1
10	COD mg/l	30	28	14	11	8	18	28	20	28	14	12.0	21.0
11	Chloride mg/l	6412.91	8013.47	2185.49	80.76	18.1	5900	3120.5	3179.87	180.52	4298.7	2306.91	15287.81
12	Fecal Coliform MPN/100 ml	NIL	450	4900	24000	7900	13000	4900	3300	-	1300	2300	2300
13	Total Coliform MPN/100 ml	400	780	7900	35000	24000	24000	7900	4900	-	3300	4900	3300
14	Ammonia mg/l	0.568	0.401	1.334	0.169	0.292	0.05	0.36	0.83	0.14	0.32	0.523	1.40

Table 3 t - RIVER MANDОВI AT PANAJI 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.8	8.13	7.98	6.64	7.27	7.45	7.42	7.59	7.79	7.30	7.22	7.80
2	Temperature °C	32	33	30	27	28	31	31	31	31	28	29	30
3	Conductivity µs/cm	54340	52800	42350	674.28	4250	11570	37070	46580	48510	44.03	46.9	48.5
4	Dissolved Oxygen mg/l	5.5	5.3	6.4	7.1	7	6.3	4.9	5.8	5.6	4.9	4.9	6.4
5	Turbidity (NTU)	11.19	7.92	12.37	30.9	16.4	15.6	7.42	6.95	15.79	2.83	4.23	9.38
6	Nitrite Nitrogen mg/l	0.01	0.05	0.006	0.009	0.008	0.01	0.004	0.01	0.004	0.01	0.024	0.009
7	Nitrogen(Nitrate) mg/l	0.03	1.1	1.86	0.201	0.13	0.07	0.06	0.04	0.02	0.049	0.025	0.04
8	Phosphate mg/l	0.051	0.028	0.032	0.014	0.03	0.004	0.04	0.05	0.01	0.022	0.019	0.02
9	BOD mg/l	1.3	1.5	1	0.9	0.9	0.3	1.1	1.3	1.4	0.6	2.0	1.7
10	COD mg/l	30	56	25	4	16	12	14	12	23	49.0	76.0	34
11	Chloride mg/l	21138.84	18288.66	13981.48	353.61	11079.9	4400	12730.8	9349.05	21369.26	17483.94	26225.91	19912.27
12	Fecal Coliform MPN/100 ml	NIL	NIL	200	13000	4900	13000	2300	2300	-	7900	1300	2300
13	Total Coliform MPN/100 ml	370	200	200	24000	11000	24000	3300	3300	-	11000	2200	4600
14	Ammonia mg/l	0.044	0.09	0.058	0.04	0.02	0.09	0.06	0.04	0.08	0.105	0.025	0.05

Table 3 u - RIVER MANDОВI AT TONCA MARCELA 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.34	7.34	5.79	6.58	6.85	6.7	7.14	6.82	6.71	6.90	7.34	7.1
2	Temperature °C	34	33	29	26	30	28	31	31	26	29	29	31
3	Conductivity µs/cm	39.1	47020	248	115.8	150.49	160.39	424.05	11470	22500	26.53	29.18	35.5
4	Dissolved Oxygen mg/l	4.2	4.6	6.5	7.3	6.9	7.1	6.7	6.3	5.6	5.4	6.0	4.99
5	Turbidity (NTU)	6.68	9.14	18.08	40.7	7.06	6.13	6.76	5.83	4.44	4.25	3.61	3.53
6	Nitrite Nitrogen mg/l	0.042	0.051	0.006	0.011	0.004	0.003	0.004	0.003	0.005	0.073	0.011	0.018
7	Nitrogen(Nitrate) mg/l	0.058	0.077	0.246	0.132	0.057	0.24	0.25	0.04	0.07	0.050		0.51
8	Phosphate mg/l	0.005	0.018	0.014	0.026	0.078	0.004	0.02	0.01	0.03	0.007	0.805	0.006
9	BOD mg/l	1.3	1.8	0.1	0.3	0.2	0.9	1.6	0.9	1.3	2.2	2.8	2.92
10	COD mg/l	32	18	10	8	8	9	5	11	6	12.0	9.0	12.0
11	Chloride mg/l	15419.86	16269.78	728.5	7.13	28.86	3278.24	3642.49	5479.15	7338.15	9637.44	12230.25	12572.69
12	Fecal Coliform MPN/100 ml	200	450	1300	1300	2300	2200	450	780	13000	780	2300	780
13	Total Coliform MPN/100 ml	450	1300	2300	2300	4900	2600	1300	1300	17000	1300	4900	1300
14	Ammonia mg/l	0.029	0.058	0.015	0.066	0.054	0.04	0.05	0.07	0.04	0.03	0.03	0.03

Table 3 v - RIVER SELAULIM LAKE AT SELAULIM, SANGUEM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.71	7.51	6.99	6.88	6.9	7.7	7.2	6.76	6.53	6.93	6.95	7.6
2	Temperature °C	34	35	31	30	28	31	29	33	30	32	31	33
3	Conductivity µs/cm	49.45	52.52	53.69	51.81	44.7	38	39.5	40.22	47.28	41.3	42.5	47.6
4	Dissolved Oxygen mg/l	7.5	6.8	7.3	7.2	6.4	7.8	7.6	7.3	7	7.4	7.7	7.7
5	Turbidity (NTU)	2.18	3.07	3.31	2.94	3.36	3.6	1.31	0.96	1.37	0.9	0.89	1.7
6	Nitrite Nitrogen mg/l	BDL	BDL	0.002	0.003	0.003	0.002	0.002	0.001	0.001	0.001	0.001	0.00096
7	Nitrogen(Nitrate) mg/l	0.01	0.01	0.015	0.129	0.1	0.02	0.04	0.06	0.01	0.01	0.002	0.0008
8	Phosphate mg/l	0.02	BDL	0.001	0.01	0.005	0.003	0.01	0.001	0.005	0.001	0.004	0.005
9	BOD mg/l	2.7	1.6	0.9	0.7	0.5	0.3	0.2	0.5	1.9	0.6	1.02	1.7
10	COD mg/l	13	10	3	11	7	2	5	9	4	1.0	7.0	8
11	Chloride mg/l	4.37	6.8	3.4	5.23	4.71	2	3.9	0.91	0.5	10.27	0.5	3.97
12	Fecal Coliform MPN/100 ml	NIL	20	2	490	78	20	23	33	790	790	200	230
13	Total Coliform MPN/100 ml	<1.8	45	17	1300	110	40	49	46	1300	2400	200	490
14	Ammonia mg/l	0.021	0.359	0.036	0.021	0.01	0.03	0.05	0.03	0.036	0.03	0.04	0.11

Table 3 w - RIVER SAL AT RUMDER, NUVEM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.08	6.64	6.19	5.64	6.55	6.76	6.9	6.51	6.88	6.66	7.33	6.71
2	Temperature °C	32	31	29	29	30	29	31	29	25	27	29.5	32
3	Conductivity µs/cm	143.65	169.14	81.86	82.08	82.8	87.8	197.23	192.56	241.4	11.93	131.3	226.5
4	Dissolved Oxygen mg/l	4.3	3.4	5.7	5.3	6.6	5.4	5.8	1.4	0	7.5	11.8	3.9
5	Turbidity (NTU)	8.37	16.97	63.9	25.7	15.6	38.9	56.9	9.48	8.49	6.64	38.2	11.1
6	Nitrite Nitrogen mg/l	0.006	0.016	0.033	0.037	0.018	0.01	0.012	0.03	0.004	0.009	0.004	0.011
7	Nitrogen(Nitrate) mg/l	0.017	1.133	0.74	0.628	0.45	0.22	0.2	0.34	0.113	0.209	0.393	0.28
8	Phosphate mg/l	0.348	0.019	0.044	0.083	0.04	0.04	0.055	0.05	0.028	0.145	0.112	0.050
9	BOD mg/l	2.6	3.4	1.9	1.1	1.5	1.8	0.6	0.9	3.64	2.1		23.6
10	COD mg/l	44	22	12	8	35	9.2	8	10	14	13.0	9.0	44.0
11	Chloride mg/l	26.71	27.55	11.25	3.33	9.43	13.02	19.91	28.17	39.82	2064.08	21369.26	122.30
12	Fecal Coliform MPN/100 ml	780	2300	1300	20	7900	11000	11000	3300	13000	7900	7900	4900
13	Total Coliform MPN/100 ml	1100	4900	1700	78	14000	22000	17000	7900	22000	13000	13000	13000
14	Ammonia mg/l	0.032	0.385	0.02	0.108	0.06	0.12	0.11	0.25	0.03	0.142	0.156	0.08

Table 3 x - RIVER SAL AT ORLIM BRIDGE 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.14	7.99	6.29	5.86	6.79	7.4	6.95	6.9	7.64	7.56	7.36	7.05
2	Temperature °C	33	34	28	29	30	31	31	30	29	29	31	33
3	Conductivity µs/cm	41710	40670	556.94	182.05	594.79	10380	2062	27910	36540	30.4	20.33	29.80
4	Dissolved Oxygen mg/l	5.5	7	3.9	4.1	5.9	4.6	5.8	5.1	5.7	5.7	6.4	5.3
5	Turbidity (NTU)	4.8	17.16	43.5	15.79	9.25	5.71	7.37	6.47	5.43	4.15	10.6	6.58
6	Nitrite Nitrogen mg/l	0.004	0.007	0.032	0.027	0.007	0.01	0.01	0.02	0.009	0.013	0.047	0.014
7	Nitrogen(Nitrate) mg/l	0.013	1.122	0.633	0.674	0.48	0.17	0.19	0.23	0.09	0.186	0.017	0.06
8	Phosphate mg/l	0.012	0.044	0.027	0.052	0.03	0.02	0.02	0.03	0.011	0.013	0.019	0.025
9	BOD mg/l	2	5.1	2.9	1.2	4.2	1.6	0.4	3.7	2.9	2.3	3.2	2.5
10	COD mg/l	48	43	27	18	18	31.2	10	16	52	21.0	49.0	27.0
11	Chloride mg/l	14448.53	13538.36	135.51	10.45	33	3181.99	1214.16	1554.13	12238.8	11291.71	16148.36	10762.6
12	Fecal Coliform MPN/100 ml	NIL	NIL	1300	20	4900	1700	2300	780	1300	2300	3300	780
13	Total Coliform MPN/100 ml	<1.8	780	1300	20	13000	3300	3300	2300	2300	3300	4600	1300
14	Ammonia mg/l	0.016	0.321	0.321	0.075	0.24	0.13	0.02	0.024	0.025	0.073	0.287	0.11

Table 3 y - RIVER SAL AT KHAREBAND, MARGAO 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH			6.15	5.73	6.66	6.69	6.81	5.57	6.93	6.83	6.70	6.06
2	Temperature °C			28	29	30	29	31	29	25	26	28	32
3	Conductivity µs/cm			115.82	91.31	123.18	144.9	244.88	348.44	417.21	3.48	383	343
4	Dissolved Oxygen mg/l			3.2	3	4.4	3.2	3.8	1.8	0.5	0.7	0.4	0
5	Turbidity (NTU)			39.1	15.89	11.7	17.1	19.73	18.43	13.06	12.42	28.5	22.0
6	Nitrite Nitrogen mg/l			0.037	0.024	0.023	0.02	0.025	0.02	0.006	0.007	0.051	0.017
7	Nitrogen(Nitrate) mg/l			0.83	0.74	0.51	0.29	0.312	0.24	0.123	0.270	0.165	0.21
8	Phosphate mg/l			0.052	0.137	0.05	0.06	0.05	0.05	0.339	0.164	0.232	0.304
9	BOD mg/l			2.2	1	2.1	3.1	0.6	0.8	3.1	4.1		17.9
10	COD mg/l			17	9	18	11.6	5	14	29	12.0	21.0	24.0
11	Chloride mg/l			16.14	11.4	353.61	19.28	23.8	23.8	4.86	1699.83	13234.37	244.60
12	Fecal Coliform MPN/100 ml			2300	20	7900	24000	24000	13000	24000	24000	13000	13000
13	Total Coliform MPN/100 ml			3300	20	13000	35000	35000	24000	35000	54000	24000	35000
14	Ammonia mg/l			0.253	0.086	0.18	0.52	0.24	0.13	7.46	0.516	0.583	2.20

Table 3 z - RIVER TIRACOL AT KERI, PERNEM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.73	8	6.92	7.17	6.8	7.62	7.96	7.9	7.84	7.84	7.73	8.01
2	Temperature °C	30	31	28	29	28	28	31	31	29	29	30	31
3	Conductivity µs/cm	55720	56060	70.56	1272	974.8	14300	50.59	25040	47450	50.25	49.7	53.2
4	Dissolved Oxygen mg/l	6.4	6	6.9	7.4	6.9	6.7	5.6	5.7	6.2	6.14	7.10	
5	Turbidity (NTU)	8.31	14.95	14.99	12.5	22.9	11.31	2.84	4.02	2.14	3.38	1.95	5.45
6	Nitrite Nitrogen mg/l	0.003	0.01	0.016	0.001	0.01	0.003	0.003	0.002	0.004	0.005	0.002	0.002
7	Nitrogen(Nitrate) mg/l	0.02	0.025	0.319	0.199	0.09	0.05	1.125	BDL	0.02	0.02	0.039	0.014
8	Phosphate mg/l	0.015	0.011	0.017	0.005	0.02	0.03	0.06	0.02	0.01	0.004	0.024	0.017
9	BOD mg/l	1.5	2.1	1	1.7	0.8	0.6		2.7	1.8	1.3	2.2	1.3
10	COD mg/l	26	30	13	4	2	17	31	18.4	61	40.0		-
11	Chloride mg/l	21574.8 7	32418 .14	3302.1 7	1068.82	1530.8 3	4435.5	2154	17678.2 1	15620.1 6	18212	18212	17366
12	Fecal Coliform MPN/100 ml	NIL	NIL	780	2400	4900	13000	200	450		2300	450	450
13	Total Coliform MPN/100 ml	200	200	780	3500	9400	17000	450	780		4600	780	450
14	Ammonia mg/l	0.055	0.13	0.095	0.003	0.03	0.12	0.04	0.01	0.08	0.003	0.012	0.011

Table 3 aa - RIVER CHAPORA NEAR SIOLIM BRIDGE 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.83	7.79	6.88	7.22	6.92	7.72	7.98	7.91	7.72	7.91	7.35	7.85
2	Temperature °C	30	32	28	28	28	27	32	31	28	30	30	30
3	Conductivity µs/cm	48470	38440	843.66	201.33		16420	40160	16050	26380	28.62	28.48	44.7
4	Dissolved Oxygen mg/l	6.7	5.4	6.6	7.4	7.2	6.3	6.1	6.4	6.4	5.93	5.8	
5	Turbidity (NTU)	6.57	8.42	19.41	7.86	24.6	10.43	2.66	2.94	6.58	3.29	4.22	2.52
6	Nitrite Nitrogen mg/l	0.003	0.017	0.017	0.004	0.012	0.004	0.001	0.002	0.021	0.002	0.003	0.003
7	Nitrogen(Nitrate) mg/l	0.018	0.045	0.369	0.156	0.09	0.07	0.05	0.013	0.02	0.02	0.057	0.008
8	Phosphate mg/l	0.014	0.005	0.019	0.005	0.03	0.027	0.03	0.02	0.03	0.010	0.100	0.025
9	BOD mg/l	1.7	2	0.8	1.4	1.3	0.9		2.3	1.3	1.4	1.7	1.2
10	COD mg/l	18	25	7	8	18	22	30	18.4	14	25.0		-
11	Chloride mg/l	22539.1 1	21005.0 1	1100.72	2018.88	2003.8 1	5447.9 6	16994	11267.4 3	8497.37	24440	9227	12964
12	Fecal Coliform MPN/100 ml	450	200	780	24000	2300	7900	450	780		780	780	780
13	Total Coliform MPN/100 ml	1300	200	780	54000	4900	11000	1100	1300		1300	1100	1100
14	Ammonia mg/l	0.037	0.128	0.079	0.001	0.04	0.098	0.1	0.02	0.02	0.012	0.038	0.025

Table 3 ab - RIVER SINQUERIM, CANDOLIM SIDE 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.77	7.64	7.21	7.43	7.63	7.77	7.8	7.82	7.65	7.54	7.32	7.64
2	Temperature °C	31	32	29	30	28	28	31	32	29	31	30	30
3	Conductivity µs/cm	55610	57030	19800	4758	23200	41510	44.1	24100	50440	50.68	52.2	52.9
4	Dissolved Oxygen mg/l	6.3	4.7	5.6	7.5	5.4	4.8	6	5.7	5	5.47	4.9	5.4
5	Turbidity (NTU)	6.38	20.9	14.29	23.7	12.8	5.53	5.47	4.77	11.83	7.57	9.8	7.09
6	Nitrite Nitrogen mg/l	0.004	0.016	0.025	0.016	0.009	0.005	0.003	0.003	0.003	0.007	0.004	0.004
7	Nitrogen(Nitrate) mg/l	0.032	0.035	0.29	0.479	0.1	0.063	0.1	0.013	0.03	0.02	0.035	0.005
8	Phosphate mg/l	0.023	0.015	0.012	0.013	0.04	0.036	0.06	0.02	0.06	0.024	0.026	0.019
9	BOD mg/l	1.4	2.2	1.7	1.8	0.9	1.1		2.1	1.3	2.5	1.6	1.4
10	COD mg/l	18	28	21	13	2	26	21	17.6	31	70.0		-
11	Chloride mg/l	26034.48	31203.98	8316.57	2137.64	10608.41	18127.71	18894	17483.94	18744.19	19183	19912	17122
12	Fecal Coliform MPN/100 ml	780	400	780	24000	4900	13000	780	1300	-	2200	780	780
13	Total Coliform MPN/100 ml	2200	680	780	35000	13000	24000	1100	2200	-	3400	1100	780
14	Ammonia mg/l	0.04	0.113	0.128	0.002	0.06	0.137	0.043	0.03	0.01	0.028	0.013	0.017

Table 3 ac - RIVER SINQUERIM, NEAR GANPATI TEMPLE 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.85	7.74	7.16	7.56	7.56	7.76	7.8	7.85	7.66	7.73	7.1	7.39
2	Temperature °C	31	32	29	30	29	28	31	33	29	31	31	30
3	Conductivity µs/cm	55490	56370	22030	9393	22200	41620	44.46	24310	50800	50.37	52.5	52.6
4	Dissolved Oxygen mg/l	6.4	4.7	5.5	6.6	5.2	4.7	5.9	5.5	5.2	5.49	4.8	5.1
5	Turbidity (NTU)	6.53	20.1	28.9	12.3	14.8	6.08	9.06	10.96	12.12	7.49	11.8	10.21
6	Nitrite Nitrogen mg/l	0.005	0.02	0.035	0.01	0.012	0.007	0.006	0.01	0.022	0.004	0.03	0.005
7	Nitrogen(Nitrate) mg/l	0.06	0.066	0.279	0.448	0.1	0.1	0.09	0.03	0.02	0.02	0.047	0.001
8	Phosphate mg/l	0.016	0.058	0.019	0.012	0.05	0.045	0.053	0.09	0.05	0.022	0.024	0.045
9	BOD mg/l	1.5	1.4	1.8	1.4	0.8	2.7		1.7	1.6	1.1	1.1	2.8
10	COD mg/l	19	25	24	16	12	27	26	19.2	78	75.0		-
11	Chloride mg/l	21574.87	25861.66	12230.25	3206.45	7897.37	15717.11	19194	18066.74	18744.19	19183	19912	16877
12	Fecal Coliform MPN/100 ml	1300	4900	4900	24000	1300	24000	450	1300	-	2200	1700	780
13	Total Coliform MPN/100 ml	3300	17000	7900	35000	2300	35000	1400	2600	-	4000	2700	1100
14	Ammonia mg/l	0.034	0.196	0.131	0.009	0.09	0.208	0.059	0.19	0.02	0.084	0.048	0.039

Table 3 ad - RIVER MANDОВI AT IFFI JETTY 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.95	8.35	7.83	7.45	7.18	7.6	7.85	7.95	7.95	7.60	7.70	7.79
2	Temperature °C	32	32	30	27	30	31	30	30	30	29	29	31
3	Conductivity µs/cm	54720	55350	44000	16870	14750	35180	47120	51000	51200	47.81	49.0	48.7
4	Dissolved Oxygen mg/l	6.5	4	6.5	7.2	7.3	6.7	6.4	6.5	6.4	5.7	6.5	6.2
5	Turbidity (NTU)	14.29	27.2	22.8	24.5	19.6	17.7	2.57	1.43	1.76	5.07	3.16	4.35
6	Nitrite Nitrogen mg/l	0.005	0.028	0.007	0.013	0.009	0.012	0.003	0.004	0.003	0.009	0.017	0.009
7	Nitrogen(Nitrate) mg/l	0.012	0.111	1.16	0.237	0.1	0.03	0.02	0.03	0.003	0.037	0.026	0.04
8	Phosphate mg/l	0.037	0.044	0.504	0.015	0.04	0.015	0.04	0.04	0.01	0.025	0.019	0.02
9	BOD mg/l	1.9	1.9	1.6	1.5	1.1	1.8	2.6	1	1.4	0.9	1.9	1.1
10	COD mg/l	23	70	26	3	10	44.8	23	33	38	31.0	31.0	27
11	Chloride mg/l	20663.81	21138.84	15138.57	2475.3	15676.88	15200	17338.6	16634.03	21733.51	18333.85	18212.44	21490.68
12	Fecal Coliform MPN/100 ml	NIL	450	1300	24000	7900	7900	7900	13000	-	7900	780	450
13	Total Coliform MPN/100 ml	450	2300	2300	35000	24000	13000	11000	22000	-	13000	1300	780
14	Ammonia mg/l	0.029	0.089	0.046	0.11	0.02	0.08	0.04	0.03	0.08	0.100	0.038	0.05

Table 3 ae - RIVER MANDОВI NEAR HOTEL MARIOTT 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	8.12	6.14	8.02	7.34	7.36	7.84	7.8	7.92	7.85	7.38	7.60	7.99
2	Temperature °C	33	32	29	27	30	31	30	31	30	30	29	31
3	Conductivity µs/cm	55310	55310	46130	16090	15580	32000	51000	50940	51550	48.68	50.8	49.3
4	Dissolved Oxygen mg/l	6.1	5.9	6.6	7.1	7.1	6.5	5.4	6.2	6.1	6.2		6.2
5	Turbidity (NTU)	12.25	12.47	15.63	29.3	21.4	26.2	9.29	1.57	3.01	4.24		8.59
6	Nitrite Nitrogen mg/l	0.007	0.028	0.014	0.009	0.011	0.016	0.01	0.01	0.003	0.008	0.012	0.010
7	Nitrogen(Nitrate) mg/l	0.016	1.11	1.47	0.193	0.1	0.03	0.02	0.03	0.01	0.037	0.093	0.33
8	Phosphate mg/l	0.035	0.038	0.036	0.013	0.05	0.013	0.053	0.06	0.02	0.040	0.016	0.013
9	BOD mg/l	2.6	2	1.3	0.4	1.2	1.3	3	1.3	2.2	1.3	2.7	2.2
10	COD mg/l	27	54	27	19	16	30.4	31	39	23	14.0	67.0	35
11	Chloride mg/l	21970.14	20663.81	15427.84	2475.3	13319.45	12800	21328.8	20397.93	27318.66	18940.94	18940.94	19912.27
12	Fecal Coliform MPN/100 ml	2300	4600	450	24000	2300	1700	450	1300	-	2300	200	450
13	Total Coliform MPN/100 ml	4900	35000	450	35000	6300	3300	780	2300	-	4900	450	680
14	Ammonia mg/l	0.048	0.05	0.103	0.04	0.04	0.33	0.012	0.01	0.03	0.071	0.014	0.03

Table 3 af - RIVER MANDОВI AT AMONA 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.02	7.53	6.7	6.68	7.12	7.34	7.21	7.01	6.78	7.05	7.41	7.1
2	Temperature °C	33	33	28	26	27	27	31	30	28	29.5	31	32
3	Conductivity µs/cm	36200	39780	397.89	203.67	62.1	413.44	289.5	6074	13970	18.92	23.29	30.4
4	Dissolved Oxygen mg/l	5	5	6.7	7.3	7.4	6.8	6.9	6.8	6.2	5.9	7.0	5.41
5	Turbidity (NTU)	4.68	3.76	20.7	18.82	14.6	12.1	10.2	4.55	14.8	3.67	8.16	3.54
6	Nitrite Nitrogen mg/l	0.029	0.077	0.029	0.005	0.006	0.004	0.01	0.002	0.004	0.061	0.016	0.014
7	Nitrogen(Nitrate) mg/l	0.162	0.033	1.64	0.152	0.13	0.095	0.11	0.033	0.07	0.07	0.05	0.03
8	Phosphate mg/l	0.002	0.01	0.012	0.004	0.01	0.003	0.021	0.011	0.02	0.005	0.043	0.026
9	BOD mg/l	2	0.6	0.5	1	1	0.6	1.5	0.7	0.8	0.7	2.1	1.01
10	COD mg/l	29	59	21	10	10	14	10	10	4	10.0	4.0	9.0
11	Chloride mg/l	14488.42	17576.11	85.33	589.36	51.86	3156.82	4006.74	1912.81	3179.87	6604.33	18687.82	9735.28
12	Fecal Coliform MPN/100 ml	200	200	2300	24000	4900	13000	1300	1300	1300	780	3300	1300
13	Total Coliform MPN/100 ml	610	200	3300	35000	24000	24000	3100	1700	1700	780	7900	1700
14	Ammonia mg/l	0.012	0.098	0.058	0.02	0.01	0.03	0.034	0.074	0.04	0.02	0.06	0.05

Table 3 ag - RAIA LAKE 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.02	-	6.73	6.88	6.77	6.19	6.35	5.68	7.04	7.79	6.78	7.3
2	Temperature °C	33		30	29	30	32	33	34	30	31	34	34
3	Conductivity µs/cm	117.07		90.94	66.17	67.33	76.58	157.73	103.9	104.91	86.2	98.6	123.0
4	Dissolved Oxygen mg/l	3.1		7.1	8.4	6.8	5.1	5	4.8	5.7	6.7	7.97	7.1
5	Turbidity (NTU)	215		6.2	3.16	3.51	2.6	2.79	3.18	5.41	4.19	7.46	13.9
6	Nitrite Nitrogen mg/l	0.028		0.005	0.018	0.005	0.003	0.003	0.003	0.004	0.002	0.003	0.006
7	Nitrogen(Nitrate) mg/l	0.013		0.676	0.0366	0.06	0.007	0.001	0.01	BDL	0.02		0.005
8	Phosphate mg/l	0.173		0.013	0.014	0.01	0.01	0.01	0.01	0.01	0.011	0.017	0.02
9	BOD mg/l	8		2	1.6	1.3	1.5	1.3	1.4	1.7	1.8	3.3	4.9
10	COD mg/l	42		8	7	1	8.8	5	8	11	9	28.0	28
11	Chloride mg/l	28.93		8.74	4.71	5.66	9	8	10.6	13.7	14.49	11.0	17.87
12	Fecal Coliform MPN/100 ml	200		200	130	200	780	7900	4600	-	2300	3300	1300
13	Total Coliform MPN/100 ml	780		780	220	450	1100	11000	7000	-	7900	7000	17000
14	Ammonia mg/l	0.586		0.005	0.01	0.01	0.12	0.033	0.05	0.02		0.08	0.52

Table 3 ah - SAIPEM LAKE, NAVELIM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH			5.94	6.46	6.69	6.65	6.76	6.57			6.42	6.24
2	Temperature °C			32	31	31	29	32	31			28	31
3	Conductivity µs/cm			308.46	287.5	241.6	332.8	483.67	373.08			343	332
4	Dissolved Oxygen mg/l			2	1.5	1.3	1.3	1.3	0.1			0	0.6
5	Turbidity (NTU)			32.5	7.65	10.2	13.4	16.3	8.41			76.4	40.9
6	Nitrite Nitrogen mg/l			0.005	0.097	0.05	0.007	0.31	0.02			0.012	0.016
7	Nitrogen(Nitrate) mg/l			2.941	0.878	0.23	BDL	BDL	0.15			0.04	0.50
8	Phosphate mg/l			0.207	0.051	0.17	0.3	0.3	0.64			1.25	0.301
9	BOD mg/l	-	-	1.8	1.3	7.01	6.3	1.2	0.8	-	-	18.4	18.8
10	COD mg/l			25	34	44	20.4	30	20			32.0	30.0
11	Chloride mg/l			28.17	24.05	11787.1	35	39	23.04			37.67	36.2
12	Fecal Coliform MPN/100 ml			24000	13000	13000	17000	24000	24000			7900	13000
13	Total Coliform MPN/100 ml			54000	24000	24000	35000	35000	35000			24000	24000
14	Ammonia mg/l			0.005	1.16	1.2	3.14	1.93	5.51			6.74	1.57

Table 3 ai - CURTORIM LAKE, CURTORIM 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	6.84		6.75	5.72	6.63	6.2	6.21	5.8	6.68	7.43	6.72	7.1
2	Temperature °C	34		31	30	30	31	33	34	32	30	35	34
3	Conductivity µs/cm	181.21		76.84	83.98	80.81	109.72	183.88	123.7	128.01	121.9	133	154.6
4	Dissolved Oxygen mg/l	5.8		6.3	3.3	3.4	4	4.5	6.6	3.1	6.8	7.8	6.7
5	Turbidity (NTU)	10.34		45.3	19.5	14.1	30.6	2.59	8.23	10.5	6.27	15.1	7.11
6	Nitrite Nitrogen mg/l	0.006		0.001	0.02	0.006	0.011	0.002	0.004	0.007	0.002	0.002	0.001
7	Nitrogen(Nitrate) mg/l	0.019		0.506	0.107	0.04	BDL	0.026	NIL	BDL	0.02		0.008
8	Phosphate mg/l	0.006		0.067	0.009	0.02	0.03	0.03	0.013	0.1	0.004	0.013	0.008
9	BOD mg/l	4.7		1.8	1.2	0.5	0.7	2.2	3.9	7.2	3.2	5.24	2.8
10	COD mg/l	23		14	10	28	38.4	22	13	22	19	24.0	21
11	Chloride mg/l	30.86		6.8	5.19	5.66	13	11	11.52	11.74	15.99	29.49	18.87
12	Fecal Coliform MPN/100 ml	1300		200	1300	1300	7900	7900	4900	-	1300	4900	4900
13	Total Coliform MPN/100 ml	3300		200	2200	2100	11000	13000	7900	-	2300	9400	11000
14	Ammonia mg/l	0.179		0.001	0.18	0.02	0.05	0.01	0.083	0.55	0.58	0.18	0.18

Table 3 aj - RIVER ZUARI AT MADKAI JETTY 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.28	7.77	7.36	6.75	6.52	7.71	7.27	6.82	7.49	7.18	7.30	7.79
2	Temperature °C	32	34	29	27	30	30	30	31	30	30	30	30
3	Conductivity µs/cm	51870	53430	21620	477.1	1275	43660	28200	40350	46840	46.8	43.6	50.2
4	Dissolved Oxygen mg/l	3.7	5.2	6	6.8	6.7	5.1	5.4	5	4.7	5.18	6.33	6.0
5	Turbidity (NTU)	8.2	36.4	39.3	62.4	39.5	6.56	8.05	11.16	7.43	15.10	15.6	3.46
6	Nitrite Nitrogen mg/l	0.02	0.024	0.017	0.02	0.03	0.006	0.009	0.01	0.009	0.011	0.005	0.003
7	Nitrogen(Nitrate) mg/l	0.04	BDL	0.709	0.212	0.071	0.065	0.84	0.02	0.05	0.06	0.031	0.002
8	Phosphate mg/l	0.03	0.123	0.063	0.042	0.164	0.051	0.027	0.062	0.01	0.046	0.015	0.020
9	BOD mg/l	0.9	1.1	1.1	1	2	3.2	3.1	1	1.6	3.36	1.7	1.7
10	COD mg/l	27	51	23	4	12	23	15	24	28	29	30.0	84.00
11	Chloride mg/l	19594.99	24526.08	6942.53	1781.36	684.9	22650.4	11777.38	13479.86	23433.34	13012.99	18455	16388.0
12	Fecal Coliform MPN/100 ml	200	400	780	2400	7900	3300	1300	1300	-	4900	780	200
13	Total Coliform MPN/100 ml	450	1100	1300	5400	13000	4900	1700	2300	-	7900	1300	450
14	Ammonia mg/l	0.056	0.038	0.028	0.032	0.086	0.084	0.096	0.112	0.04	0.07	0.012	0.017

Table 3 ak - RIVER ZUARI AT BORIM BRIDGE 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.38	7.65	7.22	6.56	5.84	7.1	7.38	6.79	7.05	7.04	6.93	7.25
2	Temperature °C	34	34	29	27	29	31	30	33	30	30	30	32
3	Conductivity µs/cm	27710	44100	165	221.2	5.473	21800	928.3	13420	26290	19.38	20.28	33.6
4	Dissolved Oxygen mg/l	5.9	4.9	5.2	6.9	7.4	4.9	7	5.5	5.1	6.5	6.8	4.5
5	Turbidity (NTU)	9.92	12.48	47	35.6	7.83	4.59	21.5	8.94	16.99	6.26	9.07	5.12
6	Nitrite Nitrogen mg/l	0.019	0.03	0.017	0.013	0.006	0.006	0.01	0.01	0.005	0.007	0.013	0.012
7	Nitrogen(Nitrate) mg/l	0.029	0.026	1.01	0.163	0.05	0.096	0.05	0.03	0.03	0.07	0.040	0.004
8	Phosphate mg/l	0.011	0.036	0.006	0.024	0.014	0.022	0.027	0.02	0.01	0.011	0.002	0.024
9	BOD mg/l	2.4	1.5	0.7	1.5	1.9	1.6	2.4	0.6	1.3	1.29	1.2	1.7
10	COD mg/l	24	40	7	6	12	12	11	11	21	82	31	26.0
11	Chloride mg/l	10331.9	18819.52	395.34	2018.88	34.2	21158.3	2549.7	3571.59	10320.38	9490.67	6799	8806.0
12	Fecal Coliform MPN/100 ml	200	1700	450	13000	4900	13000	1700	1300	-	2200	450	780
13	Total Coliform MPN/100 ml	2300	7000	450	24000	7900	17000	2200	1700	-	3400	780	780
14	Ammonia mg/l	0.049	0.049	0.068	0.008	0.019	0.128	0.073	0.073	0.08	0.02	0.001	0.066

Table 3 al - CARAMBOLIM LAKE 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	-	-	5.79	5.91	6.58	7.08	6.88	6.46	6.04	5.45	6.91	7.09
2	Temperature °C			29	29	29	31	30	31	25	26	28	30
3	Conductivity µs/cm			165.68	124.18	95.07	133.76	144.51	135.35	163.68	156.74	179.7	195.3
4	Dissolved Oxygen mg/l			4.5	3	5.1	1.1	2.6	1.6	1	0.8	1.83	3.9
5	Turbidity (NTU)			27	11.9	6.73	12.6	6.53	19.79	16.4	28.2	27.7	12.1
6	Nitrite Nitrogen mg/l			0.001	0.005	0.005	0.005	0.002	0.004	0.004	0.005	0.002	0.002
7	Nitrogen(Nitrate) mg/l			0.134	0.132	0.01	0.01	0.016	0.034	BDL	0.146		0.01
8	Phosphate mg/l			0.086	0.015	0.02	0.02	0.015	0.022	0.003	0.007	0.007	0.004
9	BOD mg/l			2.3	1.1	1.5	6	2.4	1.2	0.7	7.9	29	3.7
10	COD mg/l			18	6	24	16.8	6	11	9	19.0	75.0	8
11	Chloride mg/l			16.51	9.43	7.07	11	12.4	17	10.76	17.48	29.99	6070.81
12	Fecal Coliform MPN/100 ml			200	230	2300	17000	200	400	2300	7900	7900	3300
13	Total Coliform MPN/100 ml			200	330	4900	22000	200	680	4900	11000	24000	4900
14	Ammonia mg/l				0.1	0.03	0.18	0.014	0.03	0.02	0.107	0.16	0.024

Table 3 am - BOREWELL/TUBE WELL/ OPEN WELL IN ZUARI INDUSTRIES LTD, ZUARINAGAR 2013-2014

Sr. No	Parameters	Apr-13	Oct-13
1	pH	6.79	6.55
2	Temperature °C	33	32
3	Conductivity µs/cm	257.46	267.85
4	Dissolved Oxygen mg/l	2.5	3.2
5	Turbidity (NTU)	0.21	5.88
6	Nitrite Nitrogen mg/l	0.001	BDL
7	Nitrogen(Nitrate) mg/l	0.14	0.17
8	Phosphate mg/l	0.012	0.02
9	BOD mg/l	0.9	0.8
10	COD mg/l	BDL	2
11	Chloride mg/l	8.26	12.1
12	Fecal Coliform MPN/100 ml	NIL	NIL
13	Total Coliform MPN/100 ml	<1.8	<1.8
14	Ammonia mg/l	0.049	0.27

Table 3 an - BOREWELL/TUBE WELL/OPEN WELL AT SANCOALE INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-13	Oct-13
1	pH	6.83	6.37
2	Temperature °C	33	29
3	Conductivity µs/cm	248.06	109.06
4	Dissolved Oxygen mg/l	3.4	7.2
5	Turbidity (NTU)	1.35	5.66
6	Nitrite Nitrogen mg/l	0.001	0.001
7	Nitrogen(Nitrate) mg/l	0.009	0.64
8	Phosphate mg/l	0.05	0.01
9	BOD mg/l	1	0.5
10	COD mg/l	BDL	6
11	Chloride mg/l	4.86	11.6
12	Fecal Coliform MPN/100 ml	NIL	17
13	Total Coliform MPN/100 ml	<1.8	21
14	Ammonia mg/l	0.035	0.008

Table 3 ao - BOREWELL/TUBE WELL/ OPEN WELL AT VERA INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-13	Oct-13
1	pH	7.19	6.65
2	Temperature °C	33	32
3	Conductivity µs/cm	222.08	440.31
4	Dissolved Oxygen mg/l	6	4.5
5	Turbidity (NTU)	1.82	0.81
6	Nitrite Nitrogen mg/l	0.001	0.001
7	Nitrogen(Nitrate) mg/l	0.039	0.02
8	Phosphate mg/l	0.024	0.05
9	BOD mg/l	1	2.2
10	COD mg/l	BDL	11
11	Chloride mg/l	6.31	10
12	Fecal Coliform MPN/100 ml	NIL	11
13	Total Coliform MPN/100 ml	<1.8	14
14	Ammonia mg/l	0.051	0.038

Table 3 ap - BOREWELL/ TUBE WELL/ OPEN WELL KUNDAIM INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-13	Oct-13
1	pH	5.92	5.08
2	Temperature °C	30	32
3	Conductivity µs/cm	238.87	205.55
4	Dissolved Oxygen mg/l	5	3.7
5	Turbidity (NTU)	60.5	4.54
6	Nitrite Nitrogen mg/l	0.002	0.001
7	Nitrogen(Nitrate) mg/l	0.208	0.736
8	Phosphate mg/l	0.16	0.02
9	BOD mg/l	0.6	0.4
10	COD mg/l	BDL	11
11	Chloride mg/l	4.37	6
12	Fecal Coliform MPN/100 ml	NIL	NIL
13	Total Coliform MPN/100 ml	<1.8	<1.8
14	Ammonia mg/l	0.179	0.005

Table 3 aq - BORE WELL/ TUBE WELL / OPENWELL IN CORLIM INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-13	Oct-13
1	pH	5.69	5.38
2	Temperature °C	32	30
3	Conductivity µs/cm	40.2	92.7
4	Dissolved Oxygen mg/l	6.9	5.2
5	Turbidity (NTU)	0.31	0.37
6	Nitrite Nitrogen mg/l	0.001	0.002
7	Nitrogen(Nitrate) mg/l	0.997	0.48
8	Phosphate mg/l	0.002	0.004
9	BOD mg/l	0.4	1.5
10	COD mg/l	BDL	9
11	Chloride mg/l	1.94	15.54
12	Fecal Coliform MPN/100 ml	NIL	NIL
13	Total Coliform MPN/100 ml	560	<1.8
14	Ammonia mg/l	0.098	0.029

Table 3 ar - BOREWELL/TUBE WELL/OPEN WELL IN PILERNE INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-13	Oct-13
1	pH	6.17	6.86
2	Temperature °C	33	33
3	Conductivity µs/cm	266.2	173.04
4	Dissolved Oxygen mg/l	2.6	3.7
5	Turbidity (NTU)	2.24	2.42
6	Nitrite Nitrogen mg/l	0.001	0.005
7	Nitrogen(Nitrate) mg/l	0.49	0.01
8	Phosphate mg/l	0.051	0.07
9	BOD mg/l	0.7	
10	COD mg/l	BDL	6
11	Chloride mg/l	2.43	8
12	Fecal Coliform MPN/100 ml	NIL	NIL
13	Total Coliform MPN/100 ml	<1.8	<1.8
14	Ammonia mg/l	0.101	0.057

Table 3 as - BORE WELL/TUBE WELL/ OPEN WELL IN CUNCOLIM INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-13	Oct-13
1	pH	6.77	6.22
2	Temperature °C	36	31
3	Conductivity µs/cm	288.46	569.76
4	Dissolved Oxygen mg/l	5.4	2.6
5	Turbidity (NTU)	4.91	3.99
6	Nitrite Nitrogen mg/l	BDL	0.005
7	Nitrogen(Nitrate) mg/l	0.035	0.599
8	Phosphate mg/l	0.036	0.017
9	BOD mg/l	0.5	0.5
10	COD mg/l	4	3
11	Chloride mg/l	11.88	59.3
12	Fecal Coliform MPN/100 ml	NIL	2
13	Total Coliform MPN/100 ml	<1.8	13
14	Ammonia mg/l	0.057	0.03

Table 3 at - BOREWELL/TUBE WELL/OPEN WELL IN BETHORA INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-13	Oct-13
1	pH	6.61	4.74
2	Temperature °C	32	31
3	Conductivity µs/cm	972.75	159.21
4	Dissolved Oxygen mg/l	6.7	5.2
5	Turbidity (NTU)	0.42	0.64
6	Nitrite Nitrogen mg/l	0.001	0.002
7	Nitrogen(Nitrate) mg/l	0.326	1.37
8	Phosphate mg/l	0.003	0.01
9	BOD mg/l	0.4	1.1
10	COD mg/l	3	10
11	Chloride mg/l	9.5	7
12	Fecal Coliform MPN/100 ml	NIL	450
13	Total Coliform MPN/100 ml	180	680
14	Ammonia mg/l	0.015	0.001

Table 3 au - BOREWELL/ TUBEWELL/OPENWELL IN MADKAI INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-13	Oct-13
1	pH	5.16	5.96
2	Temperature °C	32	31
3	Conductivity µs/cm	60300	135.14
4	Dissolved Oxygen mg/l	6.3	6.8
5	Turbidity (NTU)	0.02	0.51
6	Nitrite Nitrogen mg/l	BDL	0.001
7	Nitrogen(Nitrate) mg/l	0.828	0.58
8	Phosphate mg/l	BDL	0.003
9	BOD mg/l	0.4	1.4
10	COD mg/l	2	1
11	Chloride mg/l	10.93	13.6
12	Fecal Coliform MPN/100 ml	NIL	NIL
13	Total Coliform MPN/100 ml	<1.8	<1.8
14	Ammonia mg/l	0.051	0.337

Table 3 av - AGRICULTURAL CANAL UPSTREAM OF CUNCOLIM INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.6	canal was dry	6.12	5.65	7	6.41	Canal was dry	Canal was dry	Canal was dry	6.74	6.75	6.57
2	Temperature °C	33		31	29	28	30				28	28	30
3	Conductivity µs/cm	56.08		54.02	102.21	115.1	108.35				49.80	46.7	49.3
4	Dissolved Oxygen mg/l	6.5		5	6	7	8.4				7.7	7.7	7.9
5	Turbidity (NTU)	2.34		12.43	20.9	16	9.42				1.70	1.52	1.83
6	Nitrite Nitrogen mg/l	0.002		0.009	0.006	0.009	0.01				0.002	0.002	0.002
7	Nitrogen(Nitrate) mg/l	0.05		0.96	0.94	0.417	0.59				0.015	0.02	0.013
8	Phosphate mg/l	0.003		0.009	0.003	0.012	0.01				0.004	0.005	0.022
9	BOD mg/l	1.4		0.6	0.5	0.1	1.5				1.1	0.9	0.3
10	COD mg/l	10		9	4	8	3				7.00	6.0	3.0
11	Chloride mg/l	4.75		4.37	5.23	12.23	19.91				5.83	3.42	3.91
12	Fecal Coliform MPN/100 ml	1300		33	3500	1300	1300				3300	3300	1300
13	Total Coliform MPN/100 ml	17000		49	5400	5400	5400				7000	4900	2300
14	Ammonia mg/l	0.048		0.027	0.015	0.055	0.09				0.064	0.03	0.02

Table 3 aw - AGRICULTURAL CANAL DOWNSTREAM OF CUNCOLIM INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	8.26	canal was dry	6.2	5.6	5.78	5.78	5.82	5.58	6.01	6.78	6.65	7.08
2	Temperature °C	37		32	30	30	31	31	28	25	28	29	30
3	Conductivity µs/cm	107.11		1454	881.43	534.7	397.36	632.41	542.2	1212	50.04	45.7	50.0
4	Dissolved Oxygen mg/l	6.7		4.5	4.7	5.8	6	6.5	5.2	8.2	7.9	7.6	8.3
5	Turbidity (NTU)	2.62		13.29	11.6	9.59	2.41	0.85	0.95	1.1	1.95	1.88	2.23
6	Nitrite Nitrogen mg/l	0.006		0.024	0.006	0.01	0.01	0.003	0.001	0.004	0.006	0.002	0.001
7	Nitrogen(Nitrate) mg/l	0.086		12.23	3.323	2.29	1.25	0.77	0.52	0.12	0.015	0.01	0.008
8	Phosphate mg/l	0.008		0.017	0.001	0.01	0.002	0.002	0.003	0.02	0.002	0.007	0.035
9	BOD mg/l	1.4		0.7	0.2	0.3	0.2	1	1.1	1.3	1.4	0.6	1.2
10	COD mg/l	11		8	3	8	8	4	4	5	BDL	10.0	3.0
11	Chloride mg/l	10.45		2671.16	24.23	30.82	32.05	48.7	43.05	49.9	1.46	2.45	3.91
12	Fecal Coliform MPN/100 ml	1700		NIL	78	790	78	13000	13000		4900	3300	2300
13	Total Coliform MPN/100 ml	22000		<1.8	130	1700	130	24000	17000		7900	7000	3300
14	Ammonia mg/l	0.11		1.63	0.266	0.415	0.4	0.395	0.51	0.05	0.063	0.02	0.02

Table 3 ax - ANJUNEM LAKE 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.51	7.29	5.96	6.82	7.11	7.33	6.6	6.09	7.13	6.47	6.01	8.04
2	Temperature °C	33	33	30	26	30	28	31	30	27	28	31	33
3	Conductivity µs/cm	48.1	50.53	51.3	90.76	41.35	41.74	42.23	49.43	48.24	42.6	45.5	51.0
4	Dissolved Oxygen mg/l	7.5	7.5	7.5	7.1	8.2	7.7	7.8	7.2	6.1	7.8	8.2	8.2
5	Turbidity (NTU)	2.47	2.7	3.74	2.92	2.2	1.98	2.43	1.25	1.29	0.85	2.73	3.70
6	Nitrite Nitrogen mg/l	0.002	0.003	0.005	0.001	0.003	0.002	0.001	0.001	0.002	0.001	0.001	0.002
7	Nitrogen(Nitrate) mg/l	0.029	0.007	0.39	0.355	0.005	0.007	0.015	0.01	BDL	BDL	0.01	BDL
8	Phosphate mg/l	0.003	0.009	0.015	BDL	0.062	0.007	0.003	0.01	0.004	0.004	0.008	0.008
9	BOD mg/l	1.1	1.3	0.3	0.1	0.2	0.5	0.7	0.3	1.3	1.0	1.7	1.1
10	COD mg/l	5	2	1	7	3	14	6	5.2	7	6.0	10.0	6.0
11	Chloride mg/l	6.8	5.83	0.97	3.8	2.44	4.4	2.4	0.97	0.49	3.42	3.91	4.89
12	Fecal Coliform MPN/100 ml	NIL	NIL	NIL	200	20	40	450	78	170	790	790	130
13	Total Coliform MPN/100 ml	<1.8	400	400	400	45	68	780	130	540	1700	1300	350
14	Ammonia mg/l	0.014	0.03	0.132	0.029	0.016	0.047	0.019	0.02	0.03	0.03	0.02	0.02

Table 3 ay - RIVER MANDОВI AT RIBANDAR

Sr. No	Parameters	Jan-14	Feb-14	Mar-14
1	pH	7.41	7.33	7.84
2	Temperature °C	29	27	31
3	Conductivity µs/cm	38.7	39.7	43.2
4	Dissolved Oxygen mg/l	5.4	5.9	8.0
5	Turbidity (NTU)	3.96	3.52	14.2
6	Nitrite Nitrogen mg/l	0.057	0.023	0.005
7	Nitrogen(Nitrate) mg/l	0.04	0.04	0.03
8	Phosphate mg/l	0.01	0.017	0.01
9	BOD mg/l	1.6	1.87	3.7
10	COD mg/l	13.0	41.0	27
11	Chloride mg/l	13942.49	20243.7	17605.36
12	Fecal Coliform MPN/100 ml	1300	3300	780
13	Total Coliform MPN/100 ml	2300	7900	1300
14	Ammonia mg/l	0.03	0.10	0.096

Table 3 az - INLET SAMPLE TO STP AT TONCA-PANAJI

Sr. No	Parameters	Jan-14	Feb-14	Mar-14
1	pH	6.43	6.65	6.75
2	BOD mg/l	264	94.9	42.4
3	COD mg/l	400	280	85
4	Suspended Solids mg/l	30	27	18

Table 3 aaa - OUTLET SAMPLE TO STP AT TONCA-PANAJI

Sr. No	Parameters	Jan-14	Feb-14	Mar-14
1	pH	6.89	4.67	7.12
2	BOD mg/l	0.4	0.8	0.7
3	COD mg/l	20	40	22
4	Suspended Solids mg/l	4.0	4.0	2.0

Table 3aab 1 - DATA FOR THE MONTH OF APRIL 2013

Sr. No	Parameters	RIVER CHAPORA NEAR ALORNA FORT, PERNEM	RIVER KALNA AT CHANDEL, PERNEM	RIVER MAPUSA ON CULVERT ON HIGHWAY MAPUSA-PANAJI	RIVER ASSANORA AT ASSANORA	RIVER VALVANTI AT SANQUELIM	RIVER MADEI AT DABOSE, VALPOI	RIVER KHANDEPAR, OPA, PONDA	RIVER KHANDEPAR AT CODLI	RIVER KUSHAWATI NEAR BUND AT KEVONA, RIVONA, SANGUEM	RIVER TALPONA AT CANACONA	RIVER SAL AT PAZORCONI, CUNCULIM	RIVER SAL AT MOBOR
1.	Total Dissolved Solids(mg/l)	1387	81	17779	34	0	24	66	6	125	74	70	36890
2.	Total Fixed Solids (mg/l)	250	11	3334	106	78	56	13	5	57	15	14	8368
3.	Total Suspended Solid (mg/l)	2	1	1	16	4	8	2	8	4	2	20	652
4.	Hardness(mg/l)	1500	30	4000	22	20	54	52	40	84	26	26	3000
5.	Fluoride(mg/l)	0.128	0.07	0.895	0.07	0	1.17	0.12	0.02	0.06	0.029	0.041	1.163
6.	Boron(mg/l)	0.525	0.293	2.25	0.92	0.91	0.71	0.21	0.38	0.43	0.324	0.42	1.627
7.	Sulphate (mg/l)	2.242	4.92	10.416	4.17	3.06	2.1	2.16	2.78	2.7	4.603	7.182	8.531
8.	Total Alkalinity(mg/l)	40	60	120	6	4	10	10	6	16	50	50	130
9.	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0
10.	Sodium(mg/l)	238.2	4.1	3197	5.3	6.2	8.6	3	2.6	3.4	4.6	6.9	7034
11.	Potassium(mg/l)	12.3	0.8	131.6	2.1	4.1	3.1	0.3	0.2	0.5	0.6	0.5	256.9
12.	Calcium(mg/l)	17.635	7.214	601.2	10	6	28	26	22	42	4.008	3.206	1002
13.	Magnesium(mg/l)	1489.31	25.63	3635.5	12	14	26	26	18	42	23.57	24.06	2392.5
14.	Nickel(mg/l)	0.05	0.033	0.37	ND	ND	ND	0.019	0.034	0.022	0.028	0.044	0.9
15.	Copper(mg/l)	0.016	0.014	0.075	ND	ND	ND	ND	ND	ND	0.005	0.015	0.124
16.	Chromium(mg/l)	ND	ND	0.157	ND	ND	ND	ND	ND	ND	ND	ND	0.585
17.	Cadmium(mg/l)	0.008	0.012	0.007	0.024	0.018	0.025	0.014	0.024	0.011	0.014	0.01	0.009
18.	Zinc(mg/l)	0.061	0.082	0.093	0.03	0.037	0.109	0.043	0.046	0.046	0.053	0.068	0.115
19.	Lead(mg/l)	0.048	ND	ND	0.069	0.053	0.109	ND	ND	ND	0.01	ND	1.116
20.	Iron(mg/l)	0.162	0.338	0.394	0.713	0.179	0.49	0.085	0.095	0.009	0.127	0.882	0.348
21.	Manganese (mg/l)	0.265	0.265	0.384	0.501	0.265	0.543	0.269	0.281	0.291	0.204	0.222	0.312
22.	Alpha BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23.	Beta BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24.	Gamma BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25.	Hexachloro benzene (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26.	Heptachlor (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27.	Aldrin (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28.	Dieldrin (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29.	Edrin (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30.	Methoxychlor (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31.	414'DDE (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
32.	2,4'DDD (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33.	2,4'DDT (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
34.	414'DDT (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
35.	Heptachlor endo-epoxide (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
36.	Alpha endosulphate (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
37.	β-endosulphar (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
38.	carbaryl (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
39.	Anilofos (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
40.	Parathion methyl (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
41.	Malathion (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
42.	Chloropylos (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 3aab 2 - DATA FOR THE MONTH OF APRIL 2013

Sr. No	Parameters	HARWALE WATERFALL	RIVER BICHOLIM,BA RAZANAGAR, BICHOLIM	MAYEM LAKE AT MAYEM	CUMBHARJU A CANAL, CORLIM	RIVER ZUARI AT PANCHAWADI	RIVER ZUARI CORTALIM	CREEK AT DANDO OLLO, VELSÃO, MORMUGAO	RIVER MANDОВI AT PANAJI	RIVER MANDОВI AT TONCA MARCELA	RIVER SELAULIM LAKE AT SELAULIM,	BOREWELL/TUB E WELL/ OPEN WELL IN ZUARI INDUSTRIES LTD	BOREWELL/TUBE WELL/ OPEN WELL AT SANGOALE IE
1.	Total Dissolved Solids(mg/l)	744	648	23	25126	5910	35760	7972	49306	44584	34	120	102
2.	Total Fixed Solids (mg/l)	182	312	28	3598	1460	1127	5510	14568	23586	12	40	29
3.	Total Suspended Solid (mg/l)	38	6	14	30	7	516	22	4	132	376	1064	1060
4.	Hardness(mg/l)	34	400	18	6500	700	12200	8000	3800	4520	18	106	104
5.	Fluoride(mg/l)	0.116	0.093	0.006	1.25	0.41	1.44	0.86	1.36	0.07	BDL	0.08	0.1
6.	Boron(mg/l)	0.33	0.444	0.324	4.722	0.41	3.93	1.87	1.34	3.59	0.1	0.07	0.06
7.	Sulphate (mg/l)	5.436	84.461	2.301	1405.56	240.06	2765.33	292.56	1355.92	1891.76	12.61	7.38	1.48
8.	Total Alkalinity(mg/l)	60	90	50	130	8	20	100	18	16	2	16	20
9.	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	4	0	0	1	1
10.	Sodium(mg/l)	3.7	154.2	0.4	7433	1127	7771	1929	7988	8543	3.8	9.2	8
11.	Potassium(mg/l)	0.6	8.5	0.3	257.8	46.8	275.8	115.8	277.9	269	0.8	1.8	2.3
12.	Calcium(mg/l)	7.214	20.842	3.206	801.6	200	3800	400.8	1100	700	10	56	50
13.	Magnesium(mg/l)	29.63	387.36	16.06	6014	500	8400	7757	2700	3820	8	50	54
14.	Nickel(mg/l)	ND	0.021	ND	0.978	ND	0.896	0.139	0.847	ND	0.01	ND	ND
15.	Copper (mg/l)	ND	ND	ND	0.123	ND	0.118	0.012	0.11	0.031	ND	ND	0.272
16.	Chromium(mg/l)	ND	ND	ND	0.61	ND	0.549	0.083	0.583	0.449	ND	ND	ND
17.	Cadmium(mg/l)	0.029	0.014	0.02	0.02	0.023	0.035	0.015	0.034	0.023	0.018	0.022	0.025
18.	Zinc(mg/l)	0.074	0.095	0.086	0.06	0.052	0.039	0.061	0.096	ND	0.083	0.071	0.028
19.	Lead(mg/l)	ND	1.17	ND	1.355	0.069	1.136	0.198	1.321	0.06	ND	0.068	0.06
20.	Iron(mg/l)	0.79	0.146	0.053	0.395	0.665	0.486	0.307	0.938	0.172	0.096	0.194	0.596
21.	Manganese (mg/l)	0.138	0.311	0.136	0.157	0.284	0.154	0.053	0.251	0.091	0.182	0.09	0.044
22.	Alpha BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23.	Beta BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24.	Gamma BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25.	Hexachloro benzene (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26.	Heptachlor (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27.	Aldrin (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28.	Dieldrin (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29.	Edrin (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30.	Methoxychlor (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31.	414'DDE (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
32.	2,4'DDD (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33.	2,4'DDT (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
34.	414'DDT (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
35.	Heptachlor endo-epoxide (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
36.	Alpha endosulphate (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
37.	β-endosulphar (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
38.	carbaryl (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
39.	Anilofos (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
40.	Parathion methyl (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
41.	Malathion (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
42.	Chlorpyrifos (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 3aab 3 - DATA FOR THE MONTH OF APRIL 2013

Sr.	Parameters	BOREWELL/ TUBE WELL/ OPEN WELL AT VERNIA IE	BOREWELL/ TUBE WELL/ OPEN WELL KUNDAM IE	BORE WELL/ TUBE WELL/ OPENWELL IN CORLIM IE	BOREWELL/TU BE WELL/OPEN WELL IN PILERNE IE	AGRICULTURA L CANAL UP-STREAM OF CUNCOLIM IE	AGRICULTURAL CANAL DOWNSTREAM OF CUNCOLIM IE	RIVER SAL AT RUMDER, NUVEM	RIVER SAL AT ORLIM BRIDGE	RIVER TIRACOL AT KERI, PERNEW	RIVER CHAPORA NEAR SIOLIM BRIDGE	RIVER SINQUERIM, CANDOLIM SIDE	RIVER SINQUERIM, NEAR GANPATI TEMPLE
1.	Total Dissolved Solids(mg/l)	98	100	20	120	108	84	70	25724	42820	37032	42190	41934
2.	Total Fixed Solids (mg/l)	11	28	5	78	20	10	52	1080	11430	9952	10818	10282
3.	Total Suspended Solid (mg/l)	80	36	16	2	6	6	6	298	376	268	308	356
4.	Hardness(mg/l)	90	100	8	98	22	36	160	14600	7200	5600	6600	6200
5.	Fluoride(mg/l)	0.91	0.23	0.02	0.25	0.012	0.029	BDL	0.49	1.45	1.41	1.41	1.49
6.	Boron(mg/l)	0.04	0.12	0.06	0.04	0.179	0.204	0.13	3.2	5.5	4.55	4.72	4.07
7.	Sulphate (mg/l)	9.92	30.55	1.15	3.29	1.984	5.139	17.17	1887.65	2811.12	2243.81	2800.94	2739.89
8.	Total Alkalinity(mg/l)	14	14	4	20	20	7	6	18	18	16	18	16
9.	Phenolphthalein Alkalinity(mg/l)	0	0	0	1	0	0	0	0	4	2	2	4
10.	Sodium(mg/l)	9.8	6	4.1	23.1	3.7	9	16.6	5731	7240	7170	6899	7055
11.	Potassium(mg/l)	3.5	4.9	0.6	4.3	0.8	1.6	2.3	235.1	315.8	350	410	328
12.	Calcium(mg/l)	38	60	6	52	3.206	8.016	120	2800	2400	2000	2000	2200
13.	Magnesium(mg/l)	52	40	2	46	20.06	31.14	40	11800	4800	3600	4600	4000
14.	Nickel(mg/l)	0.414	ND	ND	ND	ND	0.012	0.024	0.651	0.889	0.844	0.998	1.246
15.	Copper(mg/l)	ND	ND	ND	ND	ND	ND	ND	0.09	0.137	0.108	0.117	0.153
16.	Chromium(mg/l)	ND	ND	ND	ND	ND	ND	ND	0.415	0.645	0.571	0.673	0.767
17.	Cadmium(mg/l)	0.026	0.025	0.023	0.021	0.019	0.015	0.013	0.013	0.021	0.032	0.026	0.02
18.	Zinc(mg/l)	0.047	0.117	0.007	0.029	0.048	0.056	0.054	0.072	0.112	0.079	0.092	0.041
19.	Lead(mg/l)	0.081	0.062	0.046	0.054	ND	ND	ND	0.797	1.345	1.174	1.363	1.554
20.	Iron(mg/l)	0.455	5.747	0.611	0.231	0.056	0.017	0.793	1.208	0.477	0.304	0.492	0.675
21.	Manganese (mg/l)	0.084	0.831	0.024	0.039	0.174	0.47	0.379	0.161	0.121	0.091	0.106	0.164
22.	Alpha BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23.	Beta BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24.	Gamma BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25.	Hexachloro benzene (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26.	Heptachlor (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27.	Aldrin (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28.	Dieldrin (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29.	Endrin (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30.	Methoxychlor (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31.	414'DDE (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
32.	2,4'DDD (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33.	2,4'DDT (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
34.	414'DOT (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
35.	Heptachlor endo-epoxide (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
36.	Alpha endosulphate (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
37.	β-endosulphar (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
38.	carbonyl (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
39.	Anilofos (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
40.	Parathion methyl (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
41.	Malathion (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
42.	Chlorpylos (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 3aab 4 - DATA FOR THE MONTH OF APRIL 2013

Sr.	Parameters	RIVER MANDOLI AT IFFI JETTY	RIVER MANDOLI NEAR HOTEL MARIOTT	RIVER MANDOLI AT AMONA	RAIA LAKE	CURTORIM LAKE, CURTORIM	RIVER ZUARI AT MADKAI JETTY	RIVER ZUARI AT BORIM BRIDGE	BOREWELL/TUBE WELL IN MADKAI INDUSTRIAL ESTATE	ANJUNEM LAKE	BOREWELL/TUBE WELL IN CUNCOLIM INDUSTRIAL ESTATE	BOREWELL/TUBE WELL/OPEN WELL IN BETHORA INDUSTRIAL ESTATE
1.	Total Dissolved Solids(mg/l)	51404	51142	26980	880	104	41874	20398	124	666	62	818
2.	Total Fixed Solids (mg/l)	17678	17286	5484	326	28	11312	5248	28	236	84	386
3.	Total Suspended Solid (mg/l)	66	42	24	94	16	10	16	4	30	4	4
4.	Hardness(mg/l)	3600	3700	2100	14	48	3300	1800	130	14	14	270
5.	Fluoride(mg/l)	1.54	1.29	1.21	1.28	0.05	1.38	0.82	0.14	0.06	0.08	0.16
6.	Boron(mg/l)	1.76	1.56	0.93	1.45	1.01	1.47	2.25	0.18	0.68	0.2	0.32
7.	Sulphate (mg/l)	1372.93	1497.92	357.12	63.6	17.81	1051.52	299.58	3.25	3.85	0.67	5.24
8.	Total Alkalinity(mg/l)	18	8	12	2	8	20	12	22	4	4	18
9.	Phenolphthalein Alkalinity(mg/l)	2	4	0	0	0	0	0	2	0	0	0
10.	Sodium(mg/l)	8419	8730	4680	7.9	9.8	7613	3661	5.6	2.5	9.5	109.2
11.	Potassium(mg/l)	306.9	219	185.9	4.4	3.8	282.1	141.7	0.4	0.4	1.8	1.1
12.	Calcium(mg/l)	1100	1400	2100	14	46	1100	600	74	4	6	216
13.	Magnesium(mg/l)	2500	2300	700	0	2	2200	1200	56	10	8	54
14.	Nickel(mg/l)	0.977	1.088	0.57	ND	ND	0.742	0.254	ND	0.041	ND	ND
15.	Copper(mg/l)	0.125	0.15	0.077	ND	ND	0.097	0.032	ND	ND	ND	ND
16.	Chromium(mg/l)	0.634	0.688	0.402	ND	ND	0.526	0.196	ND	ND	ND	ND
17.	Cadmium(mg/l)	0.033	0.032	0.03	0.021	0.023	0.021	0.021	0.026	0.024	0.026	0.025
18.	Zinc(mg/l)	0.102	0.118	ND	0.095	0.04	0.08	0.046	0.038	0.024	0.021	0.044
19.	Lead(mg/l)	1.328	1.641	0.447	0.093	1.112	0.488	0.132	0.049	0.064	0.071	0.101
20.	Iron(mg/l)	2.09	0.951	0.746	6.28	1.632	0.273	0.156	1.54	0.708	0.721	0.39
21.	Manganese (mg/l)	0.307	0.284	0.213	0.63	0.419	0.232	0.223	0.028	0.099	0.038	0.086
22.	Alpha BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23.	Beta BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
24.	Gamma BHC (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
25.	Hexachloro benzene (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
26.	Heptachlor (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
27.	Aldrin (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28.	Dieldrin (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
29.	Endrin (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
30.	Methoxychlor (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31.	414'DDE (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
32.	2,4'DDD (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
33.	2,4'DDT (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
34.	414'DDT (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
35.	Heptachlor endo-epoxide (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
36.	Alpha endosulphate (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
37.	β-endosulphar (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
38.	carbaryl (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
39.	Anilofos (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
40.	Parathion methyl (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
41.	Malathion (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
42.	Chloropylos (ppb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ANNEXURE IV

GANESH VISARJAN DATA

Table 4 a - River Mandovi at Ferry Point 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7.31	7.59	7.8
2	Temperature °C	31	28	28
3	Cond ms/cm	23.83	20.84	17.68
4	Turb NTU	5.91	26.6	8.13
5	DO mg/l	5.7	5.6	6.4
6	BOD mg/l	4	1.7	2.4
7	COD mg/l	25.2	24.8	10
8	No ₃ -N mg/l	BDL	0.06	0.09
9	No ₂ -N mg/l	0.01	0.012	0.003
10	PO ₄ -P mg/l	0.07	0.13	0.01
11	Ca mg/l	241	241	321
12	So ₂ -4 mg/l	888.1	1174.99	987.25
13	Chloride mg/l	7732.35	9005	7827
14	NH ₃ -N mg/l	0.66	0.24	0.06
15	Fecal Coliform MPN/100ml	13000	4900	17000
16	Total Coliform MPN/100 ml	24000	7900	54000
17	Ni mg/l	0.131	ND	0.135
18	Cr mg/l	ND	ND	ND
19	Zn mg/l	0.03	0.045	0.014
20	Cd mg/l	0.032	0.004	0.018
21	Cu mg/l	0.03	0.01	BDL
22	Co mg/l	0.009	ND	ND
23	Pb mg/l	0.116	BDL	BDL
24	Fe mg/l	0.396	3.843	0.4
25	Mn mg/l	0.109	0.501	0.08

Table 4 b - River Mapusa at Taricode- Mapusa 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7.2	6.56	6.52
2	Temperature °C	32	27	28.5
3	Cond µs/cm	943.03	252.6	290.34
4	Turb NTU	5.92	17.3	13.22
5	DO mg/l	3.9	3.2	3
6	BOD mg/l	1.7	2.5	2
7	COD mg/l	8.4	13.2	7
8	No ₃ -N mg/l	0.13	0.16	0.24
9	No ₂ -N mg/l	0.02	0.014	0.01
10	PO ₄ -P mg/l	0.02	0.04	0.05
11	Ca mg/l	15	10	9
12	So ₂ -4 mg/l	30.15	50.63	69.5
13	Chloride mg/l	113.16	24	16
14	NH ₃ -N mg/l	0.33	0.26	0.12
15	Fecal Coliform MPN/100ml	7900	13000	13000
16	Total Coliform MPN/100 ml	11000	24000	24000
17	Ni mg/l	-	-	0.01
18	Cr mg/l	-	-	ND
19	Zn mg/l	-	-	0.038
20	Cd mg/l	-	-	0.006
21	Cu mg/l	-	-	BDL
22	Co mg/l	-	-	ND
23	Pb mg/l	-	-	BDL
24	Fe mg/l	-	-	0.953
25	Mn mg/l	-	-	0.109

Table 4 c - Carambolim Lake at Carambolim 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	6.79	6.35	6.42
2	Temperature °C	30	32	32
3	Cond µs/cm	124.55	136.6	130.67
4	Turb NTU	3.09	7.76	10.2
5	DO mg/l	4.5	1.4	2.4
6	BOD mg/l	1.8		1.7
7	COD mg/l	21.6	16.4	9
8	No ₃ -N mg/l	0.002	0.01	0.005
9	No ₂ -N mg/l	0.001	0.002	0.001
10	PO ₄ -P mg/l	0.004	0.01	0.003
11	Ca mg/l	13	15	14
12	So ₂ -4 mg/l	7.85	54.85	285.2
13	Chloride mg/l	3.3	16	11
14	NH ₃ -N mg/l	0.37	0.09	0.01
15	Fecal Coliform MPN/100ml	24000	13000	13000
16	Total Coliform MPN/100 ml	35000	24000	24000
17	Ni mg/l	ND	ND	ND
18	Cr mg/l	ND	ND	ND
19	Zn mg/l	0.038	0.053	0.032
20	Cd mg/l	0.016	0.006	0.005
21	Cu mg/l	BDL	0.014	BDL
22	Co mg/l	0.02	ND	ND
23	Pb mg/l	BDL	BDL	BDL
24	Fe mg/l	0.658	0.622	1.256
25	Mn mg/l	0.055	0.11	0.053

Table 4 d - Carkhamba (Mansher) Panaji – St. Cruz road 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7.3	7.24	7.21
2	Temperature °C	32	29	29
3	Cond ms/cm	15.68	18.03	5.468
4	Turb NTU	3.9	7.58	7.19
5	DO mg/l	5.7	5.2	6
6	BOD mg/l	2.9	1.5	2.2
7	COD mg/l	26.4	17.2	12
8	No ₃ -N mg/l	0.01	0.06	0.09
9	No ₂ -N mg/l	0.002	0.006	0.003
10	PO ₄ -P mg/l	0.02	0.03	0.02
11	Ca mg/l	160	321	321
12	So ₂ -4 mg/l	902.87	1149.68	299.55
13	Chloride mg/l	5280.63	6601	5045
14	NH ₃ -N mg/l	0.11	0.15	0.06
15	Fecal Coliform MPN/100ml	13000	13000	17000
16	Total Coliform MPN/100 ml	17000	17000	28000
17	Ni mg/l	0.015	0.188	0.035
18	Cr mg/l	ND	ND	ND
19	Zn mg/l	0.06	0.036	0.052
20	Cd mg/l	0.021	0.024	0.009
21	Cu mg/l	0.016	BDL	BDL
22	Co mg/l	ND	ND	ND
23	Pb mg/l	BDL	0.658	BDL
24	Fe mg/l	0.425	1.164	0.317
25	Mn mg/l	0.052	0.195	0.015

Table 4 e - Near the bridge , Chereaband , Dandora, Cuncolim 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7.18	5.71	5.45
2	Temperature °C	30	28	28
3	Cond µs/cm	62.3	61.77	61.56
4	Turb NTU	4.46	12.69	20
5	DO mg/l	7.4	6.9	6.7
6	BOD mg/l	0.7	0.7	0.6
7	COD mg/l	2.4	5.6	4
8	NO ₃ -N mg/l	0.23	0.26	0.23
9	NO ₂ -N mg/l	0.002	0.003	0.005
10	PO ₄ -P mg/l	0.03	0.02	0.01
11	Ca mg/l	5	5	6
12	So ₂ -4 mg/l	2.76	4.68	5.23
13	Chloride mg/l	3.77	16	5
14	NH ₃ -N mg/l	0.07	0.11	0.03
15	Fecal Coliform MPN/100ml	7900	13000	24000
16	Total Coliform MPN/100 ml	13000	24000	35000
17	Ni mg/l	0.162	ND	ND
18	Cr mg/l	ND	ND	ND
19	Zn mg/l	0.032	0.031	0.037
20	Cd mg/l	0.002	0.007	0.018
21	Cu mg/l	BDL	BDL	BDL
22	Co mg/l	ND	ND	ND
23	Pb mg/l	BDL	BDL	BDL
24	Fe mg/l	0.277	0.503	1.158
25	Mn mg/l	0.052	0.036	0.05

Table 4 f - Near Railway bridge, Khandiwada , Curchorem 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	6.2	6.9	7.22
2	Temperature °C	30	26	27
3	Cond µs/cm	107.9	51.16	58.77
4	Turb NTU	9.2	18.5	4.79
5	DO mg/l	6.2	8	7.3
6	BOD mg/l	2	4.6	1.2
7	COD mg/l	8.4	14	2
8	NO ₃ -N mg/l	0.03	0.08	0.07
9	NO ₂ -N mg/l	0.004	0.005	0
10	PO ₄ -P mg/l	0.004	0.03	0.001
11	Ca mg/l	5	3	4
12	So ₂ -4 mg/l	6.87	6.98	5.42
13	Chloride mg/l	8.02	20	9
14	NH ₃ -N mg/l	0.14	0.15	0.002
15	Fecal Coliform MPN/100ml	17000	24000	7900
16	Total Coliform MPN/100 ml	35000	35000	13000
17	Ni mg/l	ND	ND	ND
18	Cr mg/l	ND	ND	ND
19	Zn mg/l	0.039	0.028	0.029
20	Cd mg/l	0.005	0.007	0.004
21	Cu mg/l	BDL	BDL	BDL
22	Co mg/l	ND	ND	ND
23	Pb mg/l	BDL	BDL	BDL
24	Fe mg/l	0.769	1.345	0.333
25	Mn mg/l	0.306	0.139	0.066

Table 4 g - Paraste, Harmalkar wada, Pernem 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7.06	7.39	7.42
2	Temperature °C	32	27	28
3	Cond µs/cm	2294	137.28	248.61
4	Turb NTU	3.74	12.91	88
5	DO mg/l	7.3	7.1	6.3
6	BOD mg/l	0.9	0.7	3
7	COD mg/l	9.2	6	3
8	NO ₃ -N mg/l	0.03	0.05	0.11
9	NO ₂ -N mg/l	0.004	0.005	0.03
10	PO ₄ -P mg/l	0.01	0.02	0.02
11	Ca mg/l	18	6	6
12	SO ₂ -4 mg/l	48.35	7.36	11.41
13	Chloride mg/l	2498.87	36	26
14	NH ₃ -N mg/l	0.06	0.1	0.07
15	Fecal Coliform MPN/100ml	13000	17000	17000
16	Total Coliform MPN/100 ml	24000	35000	35000
17	Ni mg/l	0.238	0.176	ND
18	Cr mg/l	ND	ND	ND
19	Zn mg/l	0.028	0.036	0.037
20	Cd mg/l	0.004	0.001	0.008
21	Cu mg/l	0.013	BDL	BDL
22	Co mg/l	BDL	ND	ND
23	Pb mg/l	BDL	BDL	BDL
24	Fe mg/l	0.188	0.735	4.083
25	Mn mg/l	0.105	0.057	0.174

Table 4 h - Daudkiwada River, Daudkiwada-velus, ward no. 1, Valpoi 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7.09	6.38	6.42
2	Temperature °C	28	27	29
3	Cond µs/cm	69.83	67.6	62.09
4	Turb NTU	1.78	10.5	8.04
5	DO mg/l	7.6	7	7.2
6	BOD mg/l	0.6	0.3	0.5
7	COD mg/l	5.2	16.8	5
8	NO ₃ -N mg/l	0.04	0.06	0.08
9	NO ₂ -N mg/l	0.002	0.009	0.002
10	PO ₄ -P mg/l	0.004	0.02	0.003
11	Ca mg/l	5	9	5
12	SO ₂ -4 mg/l	3.57	6.41	1.88
13	Chloride mg/l	2.83	14	2
14	NH ₃ -N mg/l	0.1	0.07	0.02
15	Fecal Coliform MPN/100ml	3300	7900	3300
16	Total Coliform MPN/100 ml	4900	13000	4600
17	Ni mg/l	ND	ND	ND
18	Cr mg/l	ND	ND	ND
19	Zn mg/l	0.023	0.034	0.033
20	Cd mg/l	ND	0.026	0.005
21	Cu mg/l	BDL	BDL	BDL
22	Co mg/l	ND	ND	ND
23	Pb mg/l	BDL	BDL	BDL
24	Fe mg/l	0.271	0.556	0.567
25	Mn mg/l	0.033	0.043	0.018

Table 4 i - Near bridge, Orcotto, ward no. 4, Sanguem 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	5.6	6.76	6.84
2	Temperature °C	29	26	28
3	Cond µs/cm	58.8	30.39	72.02
4	Turb NTU	12.4	22.1	7.05
5	DO mg/l	5.6	6.4	6.1
6	BOD mg/l	0.8	0.6	0.5
7	COD mg/l	6.8	10.4	15
8	NO ₃ -N mg/l	0.06	0.01	0.07
9	NO ₂ -N mg/l	0.004	0.009	0.002
10	PO ₄ -P mg/l	0.01	0.03	0.01
11	Ca mg/l	4	2	2
12	So ₂ -4 mg/l	5.06	6.29	4.41
13	Chloride mg/l	3.77	15	4
14	NH ₃ -N mg/l	0.11	0.11	0.02
15	Fecal Coliform MPN/100ml	4900	13000	11000
16	Total Coliform MPN/100 ml	13000	17000	14000
17	Ni mg/l	0.02	ND	ND
18	Cr mg/l	ND	ND	ND
19	Zn mg/l	0.042	0.027	0.022
20	Cd mg/l	ND	0.001	0.007
21	Cu mg/l	BDL	BDL	BDL
22	Co mg/l	ND	ND	ND
23	Pb mg/l	BDL	BDL	BDL
24	Fe mg/l	0.618	2.109	1.163
25	Mn mg/l	0.075	0.099	0.174

Table 4 j - Pimpolcotto, ward no. 2, Sanguem 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7	6.66	6.79
2	Temperature °C	29	26	27
3	Cond µs/cm	51.8	35.63	59.69
4	Turb NTU	4.11	134	11.7
5	DO mg/l	7	6.2	7.3
6	BOD mg/l	0.8	1.2	0.7
7	COD mg/l	2	31.6	3
8	NO ₃ -N mg/l	0.13	0.07	0.15
9	NO ₂ -N mg/l	0.002	0.02	0.002
10	PO ₄ -P mg/l	0.004	0.1	0.003
11	Ca mg/l	2	5	6
12	So ₂ -4 mg/l	2.7	16.1	3.82
13	Chloride mg/l	2.83	42	4
14	NH ₃ -N mg/l	0.06	0.19	0.01
15	Fecal Coliform MPN/100ml	3300	4900	4900
16	Total Coliform MPN/100 ml	4900	7000	7900
17	Ni mg/l	ND	ND	ND
18	Cr mg/l	ND	ND	ND
19	Zn mg/l	0.045	0.051	0.022
20	Cd mg/l	ND	0.004	0.007
21	Cu mg/l	BDL	BDL	BDL
22	Co mg/l	ND	ND	ND
23	Pb mg/l	BDL	BDL	BDL
24	Fe mg/l	0.228	4.48	0.194
25	Mn mg/l	0.147	0.812	0.144

Table 4 k - Panefond River, Kindlebag, ward no. 5, Canacona 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7.7	6.34	7.02
2	Temperature °C	30	29	28
3	Cond ms/cm	18.03	0.9936	0.0114
4	Turb NTU	2.71	7.09	8.76
5	DO mg/l	7.5	7.5	6.5
6	BOD mg/l	3	0.3	1.2
7	COD mg/l	23.2	8	11
8	NO ₃ -N mg/l	0.15	0.22	0.31
9	NO ₂ -N mg/l	0.004	0.003	0.005
10	PO ₄ -P mg/l	0.03	0.02	0.01
11	Ca mg/l	400.8	561	401
12	So ₂ -4 mg/l	1103.27	92.82	592.77
13	Chloride mg/l	6412.19	7544	6459
14	NH ₃ -N mg/l	0.2	0.1	0.05
15	Fecal Coliform MPN/100ml	13000	24000	13000
16	Total Coliform MPN/100 ml	24000	35000	24000
17	Ni mg/l	0.655	0.368	0.086
18	Cr mg/l	ND	ND	ND
19	Zn mg/l	0.045	0.022	0.02
20	Cd mg/l	0.005	0.003	0.045
21	Cu mg/l	0.015	BDL	BDL
22	Co mg/l	ND	ND	ND
23	Pb mg/l	BDL	BDL	0.013
24	Fe mg/l	0.139	0.187	0.334
25	Mn mg/l	0.051	BDL	0.008

Table 4 l - Baina Beach, Vasco 2013

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7.75	8.16	7.95
2	Temperature °C	26	28	29
3	Cond ms/cm	54	47.43	49650
4	Turb NTU	13.39	6.76	6.64
5	DO mg/l	6.6	6.9	6.3
6	BOD mg/l	2.2	2.4	6
7	COD mg/l	42.4	38.4	39
8	NO ₃ -N mg/l	0.06	0.07	0.01
9	NO ₂ -N mg/l	0.005	0.008	0.002
10	PO ₄ -P mg/l	0.07	0.04	0.03
11	Ca mg/l	1523.04	481	481
12	So ₂ -4 mg/l	3404.73	2514.52	2771.88
13	Chloride mg/l	20651.04	22631	19708
14	NH ₃ -N mg/l	0.18	0.13	0.01
15	Fecal Coliform MPN/100ml	7900	7000	7900
16	Total Coliform MPN/100 ml	13000	14000	13000
17	Ni mg/l	0.021	ND	0.36
18	Cr mg/l	ND	ND	ND
19	Zn mg/l	0.063	0.025	0.047
20	Cd mg/l	0.027	0.007	0.002
21	Cu mg/l	0.018	BDL	BDL
22	Co mg/l	0.249	ND	ND
23	Pb mg/l	BDL	BDL	0.345
24	Fe mg/l	0.824	0.545	0.357
25	Mn mg/l	0.104	0.029	0.034

Annexure V

AMBIENT AIR QUALITY DATA

Table 5-a Station : Panaji

Month	RSPM	SPM	NO ₂	SO ₂
	µg/m ³	µg/m ³	µg/m ³	µg/m ³
Apr-13	46.0	88.0	11.0	7.0
May-13	30.0	61.0	14.0	4.0
Jun-13	34.8	70.8	14.2	5.2
Jul-13	18.0	40.0	10.0	9.0
Aug-13	21.0	52.0	9.0	BDL
Sep-13	30.0	70.0	BDL	8.0
Oct-13	33.0	74.0	BDL	9.0
Nov-13	59.0	121.0	BDL	4.0
Dec-13	71.0	99.0	BDL	6.0
Jan-14	67.0	100.6	9.0	BDL
Feb-14	56.2	99.7	BDL	BDL
Mar-14	56.0	81.3	BDL	BDL

Table 5-b Station : Fuse Call Office,Vasco

Month	RSPM	SPM	NO ₂	SO ₂
	µg/m ³	µg/m ³	µg/m ³	µg/m ³
Apr-13	48.0	90.0	12.0	7.0
May-13	40.0	70.0	12.0	BDL
Jun-13	48.0	78.0	13.0	5.0
Jul-13	35.0	64.0	9.0	8.0
Aug-13	29.0	56.0	11.0	5.0
Sep-13	26.0	44.0	12.0	10.0
Oct-13	35.0	63.0	9.0	11.0
Nov-13	50.0	85.0	9.0	4.0
Dec-13	57.0	103.0	BDL	12.0
Jan-14	64.0	116.0	BDL	BDL
Feb-14	57.8	110.9	BDL	4.0
Mar-14	43.9	86.0	9.0	BDL

Table 5-c Station : Nr. Fire Brigade Station-MPT,Vasco

Month	RSPM	SPM	NO ₂	SO ₂
	µg/m ³	µg/m ³	µg/m ³	µg/m ³
Apr-13	72.0	164.0	12.0	8.0
May-13	59.0	126.0	12.0	4.0
Jun-13	49.0	112.0	12.0	5.0
Jul-13	25.0	55.0	9.0	8.0
Aug-13	25.0	52.0	10.0	5.0
Sep-13	34.0	66.0	12.0	9.0
Oct-13	43.0	96.0	11.0	11.0
Nov-13	60.0	112.0	8.0	4.0
Dec-13	90.0	137.0	10.0	7.0
Jan-14	79.0	125.0	BDL	BDL
Feb-14	72.8	166.8	BDL	4.2
Mar-14	56.9	121.9	BDL	BDL

Table 5-d Station : Assanora

Month	RSPM	PM2.5	NO ₂	SO ₂
	µg/m ³	µg/m ³	µg/m ³	µg/m ³
Apr-13	52.8	28.1	12.7	6.8
May-13	58.1	26.1	12.9	7.4
Jun-13	39.2	21.5	12.4	6.8
Jul-13	37.5	17.8	11.3	6.1
Aug-13	43.6	19.0	11.0	5.7
Sep-13	41.4	16.5	10.2	5.5
Oct-13	56.9	21.6	11.4	6.3
Nov-13	48.8	17.2	12.7	5.8
Dec-13	62.2	22.8	11.8	6.0
Jan-14	65.0	22.4	11.8	5.8
Feb-14	56.6	19.2	11.5	5.8
Mar-14	61.1	21.3	11.5	5.7

Table 5-e Station : Amona

Month	RSPM	PM2.5	NO ₂	SO ₂
	µ g/m ³	µ g/m ³	µ g/m ³	µ g/m ³
Apr-13	57.7	27.6	13.8	7.7
May-13	56.6	24	13.0	7.5
Jun-13	51.1	20	13.0	7.3
Jul-13	46.8	19.8	13.0	7.2
Aug-13	53.5	21.5	11.2	5.6
Sep-13	42.0	17.2	10.1	4.7
Oct-13	65.7	26.8	11.2	5.8
Nov-13	47.8	18.5	10.9	5.3
Dec-13	61.3	24.9	11.1	5.6
Jan-14	77.6	27.0	12.4	5.9
Feb-14	58.3	20.5	12.0	6.0
Mar-14	53.0	18.7	12.4	5.7

Table 5-f Station : Bicholim

Month	RSPM	PM2.5	NO ₂	SO ₂
	µ g/m ³	µ g/m ³	µ g/m ³	µ g/m ³
Apr-13	66.4	30.8	13.8	8.0
May-13	62.9	28.0	13.5	7.8
Jun-13	50.9	23.0	13.1	7.3
Jul-13	40.1	18.7	12.4	6.5
Aug-13	45.4	18.5	11.3	5.8
Sep-13	47.1	19.0	10.4	5.2
Oct-13	36.8	14.1	11.0	5.8
Nov-13	42.7	15.3	10.8	5.2
Dec-13	59.7	23.5	11.3	5.4
Jan-14	44.9	16.9	11.8	5.8
Feb-14	43.7	15.8	11.2	5.5
Mar-14	51.6	18.4	11.2	5.5

Table 5-g Station : Codli

Month	RSPM	PM2.5	NO ₂	SO ₂
	µ g/m ³	µ g/m ³	µ g/m ³	µ g/m ³
Apr-13	50.9	23.8	12.7	7.2
May-13	50.0	23.4	12.8	7.4
Jun-13	30.0	14.8	12.6	7.1
Jul-13	33.4	14.6	11.6	5.7
Aug-13	34.6	15.8	10.9	5.7
Sep-13	39.4	16.0	21.0	5.2
Oct-13	38.4	16.1	10.8	5.5
Nov-13	40.8	15.4	10.0	5.2
Dec-13	57.4	22.2	11.0	5.4
Jan-14	52.6	18.6	11.6	5.8
Feb-14	65.8	21.9	11.4	5.6
Mar-14	58.5	21.2	11.7	5.7

Table 5-h Station : Curchorem

Month	RSPM	PM2.5	NO ₂	SO ₂
	µ g/m ³	µ g/m ³	µ g/m ³	µ g/m ³
Apr-13	65.8	28.1	13.8	7.5
May-13	55.2	24.7	13.3	7.5
Jun-13	41.5	19.6	12.7	6.9
Jul-13	41.2	16.1	11.7	5.5
Aug-13	39.3	16.0	11.4	5.7
Sep-13	37.5	14.7	10.8	5.1
Oct-13	44.3	19.7	11.3	5.8
Nov-13	45.5	18.0	10.9	5.4
Dec-13	58.5	20.4	11.0	5.4
Jan-14	67.4	24.3	11.7	5.7
Feb-14	57.0	20.3	11.5	5.7
Mar-14	57.0	20.9	11.6	5.7

Table 5-i Station : Honda

Month	RSPM $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$
Apr-13	60.6	29.1	12.9	7.4
May-13	67.7	25.2	13.4	7.9
Jun-13	47.4	21.2	13.6	8.0
Jul-13	35.8	15.7	12.2	6.3
Aug-13	46.7	19.8	11.0	6.0
Sep-13	37.9	16.5	10.3	5.4
Oct-13	42.1	17.6	11.2	5.6
Nov-13	49.0	19.8	10.6	5.0
Dec-13	52.0	19.5	11.0	5.4
Jan-14	48.7	17.0	11.4	5.6
Feb-14	44.5	15.9	12.7	5.1
Mar-14	44.8	16.0	11.7	5.6

Table 5-j Station : Kundaim Industrial Estate

Month	RSPM $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$
Apr-13	50.9	23.8	12.7	7.2
May-13	50.0	23.4	12.8	7.4
Jun-13	30.0	14.8	12.6	7.1
Jul-13	33.4	14.6	11.6	5.7
Aug-13	34.6	15.8	10.9	5.7
Sep-13	39.4	16.0	21.0	5.2
Oct-13	38.4	16.1	10.8	5.5
Nov-13	40.8	15.4	10.0	5.2
Dec-13	61.4	23.0	11.8	6.2
Jan-14	65.0	22.8	11.8	5.8
Feb-14	71.2	24.8	11.9	5.9
Mar-14	70.0	24.1	12.7	6.3

Table 5-k Station : Mapusa

Month	RSPM $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$
Apr-13	73.7	31.7	12.7	10.7
May-13	75.6	32.3	12.8	10.8
Jun-13	43.6	20.2	12.8	10.8
Jul-13	33.9	14.3	12.9	10.8
Aug-13	38.0	16.1	12.9	10.8
Sep-13	45.7	20.6	13.2	11.0
Oct-13	56.9	22.4	12.2	10.0
Nov-13	68.1	23.6	12.3	10.0
Dec-13	66.5	26.8	11.9	9.6
Jan-14	65.7	29.2	11.7	9.5
Feb-14	63.3	30.0	11.0	8.8
Mar-14	66.0	30.1	11.0	8.9

Table 5-l Station : Margao

Month	RSPM $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$
Apr-13	70.9	29.9	12.9	7.3
May-13	78.9	26.4	12.7	6.8
Jun-13	57.0	22.4	12.4	7.0
Jul-13	47.7	19.8	12.2	6.1
Aug-13	54.4	20.6	11.3	6.2
Sep-13	40.7	17.3	10.5	5.7
Oct-13	43.2	16.6	10.9	5.4
Nov-13	44.4	20.5	10.3	5.3
Dec-13	52.1	21.5	11.0	5.4
Jan-14	66.2	24.1	13.0	5.8
Feb-14	57.8	19.7	11.6	5.7
Mar-14	62.3	22.5	11.7	5.7

Table 5-m Station : Ponda

Month	RSPM $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$
Apr-13	70.6	27.5	13.1	6.7
May-13	57.9	24.6	12.5	6.7
Jun-13	38.7	18.2	12.1	6.5
Jul-13	42.9	17.5	11.2	5.6
Aug-13	41.9	16.9	11.3	5.9
Sep-13	38.2	14.8	10.6	5.1
Oct-13	34.7	13.9	10.9	5.3
Nov-13	45.7	16.1	10.2	4.9
Dec-13	50.1	20.2	10.8	5.2
Jan-14	51.0	19.3	12.1	5.8
Feb-14	56.9	21.3	11.3	5.5
Mar-14	70.3	22.8	11.3	5.4

Table 5-n Station : Sanguem

Month	RSPM $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$
Apr-13	63.0	27.3	13.2	7.7
May-13	56.2	24.5	13.2	7.4
Jun-13	42.6	20.5	12.1	6.7
Jul-13	39.3	20.8	11.8	6.4
Aug-13	53.5	18.7	11.9	5.7
Sep-13	39.2	17.8	10.9	5.2
Oct-13	35.9	14.1	10.8	5.7
Nov-13	53.5	18.4	10.4	5.1
Dec-13	55.7	21.7	11.0	5.3
Jan-14	55.2	18.4	11.5	5.6
Feb-14	45.8	15.3	11.4	5.5
Mar-14	49.7	17.4	11.3	5.4

Table 5-o Station : Tilamol-Quepem

Month	RSPM $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$
Apr-13	61.1	27.5	13.2	7.9
May-13	65.0	25.3	12.8	7.2
Jun-13	49.5	20.9	13.3	7.8
Jul-13	42.1	17.5	11.4	5.8
Aug-13	43.7	16.9	11.1	5.5
Sep-13	42.7	16.0	10.3	5.2
Oct-13	32.9	12.7	11.0	5.8
Nov-13	37.6	15.8	10.7	5.3
Dec-13	48.3	18.3	10.9	5.2
Jan-14	42.9	14.7	11.8	5.8
Feb-14	33.5	11.7	11.3	5.4
Mar-14	72.6	24.6	11.5	5.7

Table 5-p Station : Usgaon

Month	RSPM $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	NO ₂ $\mu\text{g}/\text{m}^3$	SO ₂ $\mu\text{g}/\text{m}^3$
Apr-13	62.2	28.5	13.3	6.9
May-13	63.7	26.1	12.5	7.2
Jun-13	44.9	19.3	12.0	6.4
Jul-13	40.5	17.4	12.2	6.4
Aug-13	39.4	17.5	11.0	5.7
Sep-13	47.1	18.6	10.3	5.2
Oct-13	50.5	19.3	11.1	5.6
Nov-13	46.5	17.4	10.5	5.2
Dec-13	60.0	22.1	11.1	5.3
Jan-14	53.8	20.3	11.9	5.8
Feb-14	56.5	19.6	11.6	5.7
Mar-14	52.9	18.3	11.4	5.6

Annexure VI

Table 5: CLOSURE DIRECTIONS ISSUED UNDER THE WATER ACT AND THE AIR ACT

Sr. No.	Name of the unit	Action taken
1	M/s. Mallikarjun Stone Crushing Unit, Dramapur-Sarzora, Goa	The Crushing unit, directed to suspend/close the operation of your stone crusher unit until further orders. FURTHER, directed to comply with the recommendations made by the Board officials during inspection conducted on 11/03/2013.
2	M/s. Mario P.Mascarenhas, Survey no.62/1, Santona village, Sanguem, South Goa	Directed to immediately suspend/close the operation of the stone crusher as well stone quarry, till appropriate pollution control measures are taken and environmental clearance is submitted.
3	M/s. Hotel Villa De Penha, (M/s. V.G. Properties Pvt. Ltd.), survey no.47-6-A and 47/7, Marlim, Penha de France, Britona, Bardez Goa	Directed to immediately suspend/close the operation of the hotel unit, till appropriate compliance report is submitted.
4	Mrs. Archana Prashant Mandrekar, H.No.39, Tulsimala, Poriem, Satari Goa	Directed to immediately stop the ongoing activity of construction of the petrol pump, located at village Poriem adjacent to river Valvanti and submit the compliance report to this Board.
5	1) The Dy.Collector, Tuem-Pernem G 2) The Director, Directorate of Mines & Geology, Udyog-Bhavan, Panaji 3) The Sarpanch, Village Panchayat of Tuem Pernem Goa.	Directed to ensure that the quarry is closed the operation of the said laterite stone quarry bearing survey no.81/0 of the Tuem Village with immediate effect.
6	M/s Seahath Canning Company. Plot No. 8, Margao Industrial Sao Jose de Areal, Post , Margao Goa.	Directed to suspend the unit till such a time the Effluent Treatment Plant installed at the unit is satisfactorily modified/repared.
7	M/s Shaikh Shamsudin & Sons Curchorem, Quepem Goa	Directed to suspend the operation of the unit till consent to operate is obtain by the unit
8	M/s Prakash V.N. Karmali (Flour Mill) Curchorem, Quepem Goa	Directed to suspend the operation of the unit till consent to operate is obtain by the unit
9	M/s Chodnekar Rice & Flour mill Church Road, Curchorem, Quepem Goa.	Directed to suspend the operation of the unit till consent to operate is obtain by the unit
10	M/s Rice & Flour Mill, C/o Dinanath V.S. Kuncolikar, Church Road, Curchorem, Quepem Goa	Directed to suspend the operation of the unit till consent to operate is obtain by the unit
11	Smt. Surekha Pundalik Naik, Near Damodar Temple Pale-Murdi Velsao	Directed to immediately stop the installation of the mobile base station tower on the roof top of their residential house with immediate effect until further orders or till such a time the unit obtain consent to establish/consent to operate of this Board and adequate measures are taken for controlling and preventing the air and water pollution caused due to the installation of such mobile tower
12	M/s. Rukmini Workshop, Gaulebhat, Chimbél, Tiswadi Goa	Directed to stop all the operations of the unit and not to commence operation until Consent to Operate orders are obtained from the Board.
13	M/s. National Distilleries, Mr. Neil Mathew Monteiro, H.No.963, Near Govt. Higher Secondary School, Sanquelim, Bicholim, Goa.	Directed to stop all the operations of the unit and not to commence operation until Consent to Operate orders are obtained from the Board.
14	M/s Jamies Bar & Restaurant (Harry's Bar and Restaurant)	Directions to close/suspend the establishment by 06/03/2014 till such a time sewage disposal facility i.e soakpit installed at the

	H. No. 432, Quarto Bairo, Colva, Salcete	establishment and is effectively maintained to the satisfaction of the Board.
15	M/s Residence cum Raphael Bar and Restuarant H. No. 430, 4 th Ward, Colva, Salcete Goa	Directed to close/suspend the establishment by 06/03/2014 till such a time consent to operate is obtained from the Board.
16	M/s Maria Guest House Colva, Beach, Salcete Goa	Directed to close/suspend the establishment by 06/03/2014 till such a time consent to operate is obtained from the Board
17	M/s South West Railway Guest House Near Colva, Beach, Salcete Goa	Directed to close/suspend the establishment by 06/03/2014 till such a time consent to operate is obtained from the Board
18	M/s Amigo Plaza, 4 th Ward Colva Beach, Salcete, Goa	Directions to close/suspend the establishment by 06/07/2014 till such a time sewage disposal facility i.e soakpit installed at the establishment is effectively maintained to the satisfaction of the Board.
19	M/s. William Beac Resort, Colva Beach, Colva, Salcete-Goa.	Directions bearing no. 1/25/13-PCB/7532 dated 26/02/2014 located at Colva, Salcete Goa to close/suspend your establishment by 06/03/2014 till such a time sewage treatment facility at the establishment is effectively maintained to the satisfaction of the Board. Inspected on 05/03/2014. Since the reports indicated the parameters are within the limits
20	M/s PG Holiday Inn Pvt. Ltd (Silver Sand Beach Resort) located at Sy. No 24/2, 3, 11&12, Colva Beach, Colva Salcete Goa	Directions issued to close/suspend the establishment by 06/03/2014 till such a time sewage treatment facility at the establishment is effectively operated to the satisfaction of the Board.
21	Palm Crest Holiday Homes Co-op Housing Maintenance Society Ltd, C-2-B 4 th Ward, Colva Salcete	Directed to stop the establishment for discharging outside the premises.
22	Colva Pearl/ Mahalaxmi Realtors, near Colva Creek, Colva Salcete Goa	Directions issued to close/suspend your establishment by 06/03/2014 till such a time sewage disposal facility at the establishment is effectively maintained to the satisfaction of the Board.
23	Graciano Cottages 4 th Ward, Colva Salcete Goa	Directions issued to close/suspend the establishment by 06/03/2014 till such a time sewage treatment facility at the establishment is effectively operated to the satisfaction of the Board.
24	M/s Aquamarinha Housing Complex Colva, Salcete Goa (Akar Creations Pvt. Ltd Lake Plaza Opp, Nehru Stadium Fatorda Margao Goa)	Directions issued to close/suspend the establishment by 06/03/2014 till such a time sewage treatment facility at the establishment is effectively operated to the satisfaction of the Board.
25	M/s Blonnel, Sy. No. 36/3, Colva Beach Salcete Goa	Directions issued to close/suspend the establishment by 06/03/2014 till such a time sewage disposal facility i.e soakpit installed at the establishment is effectively maintained to the satisfaction of the Board and consent to operate is obtained from the Board.
26	M/s. UBI Pride Building , 4 th Ward, Colva, Salcete-Goa.	Directed to close the unit by 06/03/2014 till such time the unit install soak pit.
27	M/s Colva Kinara H. No. 4042, 4 th Ward, Colva Salcete Goa	Directions issued to close/suspend your establishment by 06/03/2014 till such a time sewage treatment facility at the establishment is effectively operated to the satisfaction of the Board.
28	M/s Trinity Beverages, Batim, Portel Bhat, Goa Velha, Ilhas, Goa	Directions issued to close/suspend the unit for operating without Consent to Operate.
29	M/s Goa Auto Works Durbhat Road, Talaulim, Ponda - Goa	Directed to close /suspend the operations of your unit within 7 days till such a time that the unit obtains Consent to Operate from this Board and constructs oil & grease trap and soak pit to dispose the waste water
30	M/s Yeshwant Power Laundry Ararim, Socorro, Bardez - Goa	Directed to close /suspend the operations of the unit within 7 days till such a time that the unit obtains Consent to Operate from this Board.
31	M/s Ulka Seafoods Pvt. Ltd., Survey no. 6/2 & 7/3, Orgao, Marcela – Goa	The Consent to Operate order no. 5/2379/03-PCB/6244 dated 20/12/2012 issued by this Board is hereby suspended/kept in abeyance with immediate effect, until further orders

32	Shri Anil B. Gadvi, Proprietor, M/s Naveen Distillery Shed no. A2-1, Margao Industrial Estate, St. Jose de Areal, Margao, Salcete – Goa	Directed to close /suspend the operations of the unit within 7 days till such a time that the unit obtains Consent to Operate from this Board and installs an ETP
33	M/s Smile Auto Service, mollocca, Mercedes, Tiswadi - Goa	Directed to immediately suspend the operation of the unit till further orders.
34	M/s Casa Grande, C/o. Meena Judith Tavora, h.No. 33, Viegas vaddo, Arpora, Bardez - Goa	Directed not to commence operations of the hotel until Consent to Operate is obtained by from the Board.
35	M/s G.R.T. Metal Works, C/o. Mr. Girish Tamba, FO-64, Ponda Commerce Centre, Ponda - Goa	Directed to immediately suspend/close the operation of the stone crusher as well as stone quarry till appropriate measures are taken & EC is submitted.
36	M/s The Anchorage, H.no. 1559/5, 1 & 2, Pequeno Chinvar, Vagator, Anjuna, Bardez - Goa	Directed to stop operations of the hotel unit within 15 days of receipt and not to commence operation of the unit until CTO orders are obtained from the board.
37	M/s Kansar Industries, H.No. 47, Ward No. 8, Aatil Peth, Bicholim - Goa	Directed to stop all the operations of the industrial unit and not to commence operations of the unit until CTO orders are obtained from this Board
38	M/s Vailankanni Service Centre Sy no. 416/6, Segundo Bairro, Calapur, Santa Cruz - Goa	Directed to stop operations of the unit within 15 days for failing to install oil and grease trap
39	M/s Total Packaging , Plot no. D4/4A, 4B, Corlim Indl Estate,	To stop all the activities at the unit with immediate effect
40	M/s Shangrila, Plot no. 83/12-14, Majorda - Goa	To suspend the operation of the unit for operating without Consent to Operate.
41	Shri. Jose Caitan Durat r/o Gadiamoll, Shiroda, Ponda - Goa	Directed to immediately close/suspend the operation of the said laterite stone quarry in survey no. 768/22, located at Dhansade Torla, Shiroda village, Ponda - Goa till further orders.
42	The Collector and District Magistrate, (North Goa District), Collectrote building, Panaji - Goa	Directed to seal the unit of M/s. Lairai workshop in view of operating the unit inspite of closure direction issued to the unit for operating without consent to operate.
43	M/s. Sands Beauty Hotel Pvt. Ltd, Candolim. Bardez-Goa.	Directed to close the unit for non compliance of consent conditions regarding installation of STP and composting unit within the stipulated time period.
44	M/s. Pratik Motors(Yamaha Service Centre), Mapusa Industrial Estate, Mapusa, Bardez- Goa.	Directed to close /suspend the unit for operating without consent to operate
45	M/s. Manohar Packaging, Plot No. D2-6 & 7, Mapusa Industrial estate, Mapusa, Bardez- Goa.	Directed to close/suspend the unit for not complying with Boards direction regarding discharging of waste water outside the premises and causing pollution in the vicinity.
46	M/s. Sagar Fish Meal, Shri Shrikhand Govind Naik, H. No. 33, Comba, Margao-Goa.	Directly to immediately close/suspend the operation of the unit
47	M/s Chick and Fish restaurant Naika waddo, Calangute, Bardez - Goa	Directed o close/suspend the operation of your unit
48	Mr. Kavi karmali, Gandhinagar, Sanvordem	Directed to suspend the operation of the said stone quarry
49	M/s. Durvankar Mechanical Works Pvt. Ltd., Shed No. D4/4, Cacora Ind. Estate. Ravindra P. Bhare. 2653871.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
50	M/s. Vikram Workshop, Shabgini, Cacora, Quepem-Goa. Mr. Nagesh Sawant 2650009.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
51	M/s. Sanjay Enterprises, Uma Sadan, Nr. Masjid, Cacora, Quepem-Goa. Mr. R. R. Popot, 9822982345.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
52	M/s. Stallion, Prop. Philip Martin, Pernetachi Mordi, Tilamol, Quepem-Goa. 9822120923.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
53	M/s. Narayan Gharo Chari, Gaonkarwado,	Directions issued to close/suspend the unit for operating without

	malkarnem, Quepem-Goa. 9850970663.	obtaining Consent to Operate of the Board
54	M/s. Suresh B. Chari, Malkarnem, Quepem. 9420755062.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
55	M/s. Raghunath Y. Chari, Gaonkarwado, Malkarnem, Quepem - Goa. 9823804812.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
56	Shri Preetam Bottling, Cotto, Balli, H. No. 74 & 76, Quepem, Goa. Prop. Shri Prakash C. Naik. Mob. 9822070133.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
57	M/s. Prashila Bottling, Balli, Cotto, Quepem, Goa. Smt. Prashila P. Naik, Mob. 9822070133.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
58	M/s. Zulpo Rice & Flour Mill, H. No. 114, Cotta, Fatorpa-Goa. Shri Faresh Zulpo Naik Dessai. Mob. 9923469152.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
59	Shri Shantadurga Industry, Balli Mutt, H. No. 45, Balli, Quepem, post Cuncolim - Goa. Mr. Anil S. Phaldessai. Mob. 9423312831.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
60	Vinayak V. P. Agrasani, Near Primary Health Centre, Balli, Quepem. Tel. 2670057.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
61	M/s. Arjun P. Velip, Morpiria, Quepem-Goa. (Dharmu Velip) No contact No.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
62	M/s. Laxmi Inds., Barcem, Quepem, Runvanpan. Arjun Sonu Velip 9823567874, Shri Sonu V. Velip.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
63	Somnath Rice & Flour Mill, Prop. Sada Nilu Phaldessai, Adnnem, Balli, Quepem-Goa. Tel. 2670175.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
64	M/s. Valance Bakery, Prop. Carlos Siman Mascarenhas, H. No. 386/3, Velip wado, Quepem, Balli, Goa. Vaance Dias. Mob. 9545472964.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
65	St. Francis Bakery, H. No. 113, Balli Mutt, Balli, Quepem, Goa. Prop. Lt. Mr. Antonio Fernandes/ Smt. Santana Fernandes. Tel. 2670824.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
66	Prabhakar R. Raut, Balli, Quepem, Balli Math, Quepem, Goa. Naresh Prabhakar Raut, Mob.9657181869.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
67	M/s. Mukta Opticians, Curchorem, U G 13, Gurudev Mansion, Curchorem, Goa. Tel. 3200512 Fax. 2650466 Mob. 9822102692/ 9420688788. Mr. Kishore Sarsolkar.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
68	M/s. Sai Graphics, Church Road, Vaz Building, Curchorem, Goa. Mob. 7875218788.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
69	Swastik Cement Product & Superstone Industry, Mr. Namdev V. Naik, Triveni, Coreamoddi, Kakoda, Curchorem, Goa. Mr. Uday Naik Mob. 9960407119 Tel. 2650450.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
70	Damodar Workshop, H. No. 3, Dulbanagar, Mirabag, Sanvordem, Goa. Shri Shamrao B. Naik, Mob. 9822140519.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
71	M/s Salimar Bakery, C/o Joseph Fernandes, Ponguivol, Cacora, Pantimol,	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
72	M/s Ramkrishna D. Chari, Chechewado, Ambaulim, Quepem, Goa M.No. 9922026589	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
73	M/s Laxmikant N. Chari, Chichwado, Ambaulim, Quepem, Goa M.No. 9921937878	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
74	M/s Narayan Vaman Bale, Chichwada, Ambaulim, Quepem, Goa P.No. 2662517	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board

75	M/s Modern Bakery, C/o Smt. Maria Francisca Fernandes, Avedem, Quepem, Goa	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
76	M/s United Wood Industry, C/o Shekhar Ganjekar, Kakomoddi, Kakoda, Curchorem, Goa M.No. 9823938151	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
77	M/s Gopika Wood Industries, C/o Murlidhar S. Salelkar, Kakoda, Quepem, Goa M.No. 9822152669	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
78	M/s Naik Furniture Works, C/o Namdev C. Naik, H.No. 416, Curchorem, Goa M.No. 9890294306	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
79	M/s Abbhaya Chari, Chichwadi, Ambaulim, Quepem, Goa M.No. 9850925931	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
80	M/s.Stallion C/o. Philip Martins, Borimol, Shiroda, Tilamol, Quepem	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
81	M/s Fatima Bakery, Smt. Antonia Dias, Tilamol Xeldem, Quepem H.No. 216, Near Fish Market	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
82	M/s Indian Saw Mill, C/o. Suresh Gajanan Naik, Xeldem, Opp. Kakodkar Crusher, Tilamol, Quepem, Goa Mobile: 9822121539	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
83	M/s Varun Marbles & Granite, Xeldem. C/o. Subhash P.Naik, Xeldem, Opp. Kakodkar Crusher, Tilamol, Quepem, Goa	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
84	M/s Kakodkar Metal Industry, c/o Mahendra S. Kakodkar, Karagal, Xeldem, Tilamol, Quepem Mobile:9822103050 Office: Abbed Faria Road, Kokodkar Building, Margao, Goa	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
85	M/s Maa Bakery, C/o Sylvester fernandes, Tilamol, Xeldem, Goa Mobile- 9822383304	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
86	M/s Damodar Rice & Flour Mill, C/o Janardhan B.P. Chimulkar, Tilamol, Quepem, Goa PH: 2662325	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
87	M/s Evan Peter Fernandes, C/o Michal D'Souza, Church Building, Tilamol, Xeldem, Quepem, Goa	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
88	M/s Atlantic Spining & Winding Mill Limited., Xeldem, Quepem, Goa	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
89	Janardhan L. Chari, Dhamadwadam Xeldem, Near Shantadurga Temple, Quepem, Goa. C/o Sameer J. Chari, Mobile : 9763756407	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
90	M/s Savita Industries, C/o Agustino J. Barretto, Karamuddi, Patimo Road, Near CADA Hall, Kakoda, Curchorem, Goa Mobile: 9422846002	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
91	M/s Francisco Fernandes Garage, C/o Francisco Fernandes, Devarxet, Taker, Quepem-saverdem Road, Xeldem, Goa C/o Imtiyaz Bhojgar Mobile: 995166923	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
92	M/s Janata Rice Mill, (sateri Rice Mill), Shri Vallabh Raut Dessai, Hodamol, Assolda, Quepem	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
93	M/s Raman Wood Industries, C/o Rosario Mariano Fernandes, Musdem, Assolda, Quepem M.No. 9822996787	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
94	M/s Usha Industries, C/o Mahadev kakodkar, kakoda, Curchorem, Goa M.No. 750779987	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
95	M/s Leena Lotlikar, Kamamol, Opp. Railway	Directions issued to close/suspend the unit for operating without

	Station, Curchorem, Goa M.No. 8906472531	obtaining Consent to Operate of the Board
96	M/s. Santosh Workshop, opp. Railway station, Panjifond, Margao, Salcete-Goa.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
97	M/s Srivari Packing Industries Pvt. Ltd., , C/o Sudesh Rane, D2/11, Kakoda Inds. Estate, kakoda, Quepem, Goa M.No. 9960796024	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
98	M/s Dynamic printers, C/o Rashida Hamza Shaik, Shalini Apts, Shop No.2, Opp. Ravindra Bhavan, Curchorem, Goa M.No. 9326442030	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
99	M/s Kamaxi Engineering , C/o Madhav Chari, Madogal, Kakoda, Curchorem M.No. 9822131532	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
100	M/s. Bentley Pharmaceuticals & Chemicals, 60,, Xeldem, Quepem, Goa. Mr. Crisna P. S. Pissurlekar 9405921458/ 9822135159.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board
101	M/s. Antonio Piedade Rodrigues, Ambaulim, Qupem-Goa.	Directions issued to close/suspend the unit for operating without obtaining Consent to Operate of the Board

ANNEXURE VII

Table 7: HAZARDOUS WASTE AUTHORIZATION GRANTED FOR THE YEAR 2013-2014

Sr. No	Name of unit	category	Type of waste	Quantity	Mode of disposal
1	M/s ABBOTT INDIA LIMITED, Plot ,No. L-18 & L-19, Verna Industrial Estate, Verna, Salcete - Goa.	5.1	Used/spent oil	0.114 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
2	M/s. SUPERPACKS Plot No. 88, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used/Spent oil	5 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
3	M/s. UNITED LEADOXIDE PRODUCTS PVT. LTD. Plot No. 216, Kundaim Industrial Estate, Kundaim-Goa.	5.1	Used /Spent Oil	10 litres/ month	To recycler registered with CPCB and having valid authorization of SPCB
			Grease	4 kg/ month	
		B-4	Lead Dross	7 MT/ month	To recycler registered with CPCB and having valid authorization of SPCB
		34.3	ETP sludge	800 kg/month	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
4	M/s. INS HANSA (Motor Transport Section) Dabolim, Vasco-Goa.	5.1	Used/Spent oil	0.91 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Waste Residues Containing oil (Oil soaked cotton waste)	0.1 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
5	M/s. NAVAL TRANSPORT REPAIR WORKSHOP. Plot No: 71, Naval transport repair workshop, Vasco-go.	5.1	Used /Spent Oil	0.001 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
6	M/s. SHATUL ENGINEERING INDUSTRIES Shed No. D4/2, Plot No. 32 and Shed No. D4/1, Plot No. 33, Kakoda Industrial Estate, Kakoda, Curchorem-Goa	5.1	Used/Spent Oil	200 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
7	M/s. ASHUTOSH INDUSTRIES Plot No. A-40, Madkaim Industrial Estate, Madkaim-Goa.	20.2	Spent Solvents	1 ton/day	To be used as raw materials for preparation of paints
		33.3	Empty paint tins/barrels	10 nos./month	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins are reused in process
8	M/s. GOA SPONGE & POWER LTD. Survey No. 58, 59, 60, Santona Village, Sanguem-Goa	5.1	Used /Spent Oil	200-250 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB.
9	M/s. MAHALASA PHARMA. Plot No. 53, 54, 55, Bethora Industrial Estate, Bethora-Goa.	5.1	Used /Spent Oil	80 litres/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		29.2	Chemical sludge from ETP	1.5 MT/Annum	To be sent to M/s ACC Wadi Cement Works, Gulbarga, Karnataka for co- processing in cement kiln
10	M/s. SIKA INDIA PVT. LIMITED Plot No. L-41, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used /Spent Oil	0.1 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		20.1	Contaminated aromatic, aliphatic or naphthenic solvents	5.0 MT/ annum	To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration

		21.1	Process waste residue and sludge	20 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		23.1	Waste residue - resin	20 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		33.3	Discarded containers/ barrels	10.5 MT/annum	Wash water treated in Effluent Treatment Plant & decontaminated containers given for recycling.
		34.1	Flue gas cleaning residue	0.5 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		34.3	Chemical sludge from waste water treatment	0.5 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
11	M/s. RITIKA PACKAGING PVT. LTD. Plot No. 10 & 11, Sancoale Industrial Estate, Zuarinagar-Goa	5.1	Used/Spent oil	0.02 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
12	M/s. DR. REGE'S LABORATORIES Plot No. D-3/15 Kundaim Industrial Estate, Kundaim-Goa	5.1	Used/Spent oil	0.03 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
13	M/s. SOUTH WEST PORT LTD. (Berth No. 5A & 6A) Chalta No. 1 of P.T. Sheet No. 7, 1 st Floor, Port Users Complex, Mormugao Harbour, Mormugao-Goa	5.1	Used/Spent oil	9.0 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Waste residues Containing oil	2.0 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
14	M/s. SHIKARA BEACH GUEST HOUSE, C/o. Shri Pankaj Kumar Krishna Thakur, Luisa by the sea, Mobor, Cavelossim, Salcete-Goa.	5.1	Used/Spent oil	100 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
15	M/s. Amicas Structural & Fibre Glass Works C/o. Shri Sayed Nizamuddin, Flat no. 1, Kamat Apts., Housing Board, Gogal, Margao-Goa.	5.1	Used/Spent oil	2 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
16	M/s. JUTEX Shed No. SA-4, Sancoale Industrial Estate, Zuarinagar-Goa	5.1	Used/Spent oil	0.1 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
17	M/s. WAINGANKAR ENGINEERING C/o. Mr. Vinod Waingankar, T-2/B, Virginkar Residency, Ambaji, Fatorda, Salcete-Goa.	33.3	Empty paint tins	2 nos/month	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling
18	M/s. CIPLA LIMITED Plot No. S-103 to S-105, S-107 to S-112, L-138, L-147, L-147/1 to L-147/4 & L-150 Verna Industrial Estate, Verna-Goa.	5.1	Used /Spent Oil	5.3 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		20.2	Spent Solvents	20 MT/annum	To be sent to recycler registered with CPCB and having valid consent and authorization of SPCB
		28.1	Pharmaceutical waste	5 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		28.3	Off specification products	5 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		28.4	Date expiry products, off-specification products	5 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		28.5	Spent Organic Solvents	20 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		34.1	Flue gas cleaning residue	5 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		34.3	Effluent Treatment Plant Sludge	7 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
19	M/s. MANDOLI CASTING PVT. LTD.	5.1	Used /Spent Oil	100 litres/	To recycler registered with CPCB and

	Plot No. 341, Kundaim Industrial Estate, Kundaim-Goa			annum	having valid authorization of SPCB
20	M/s HINDUSTAN UNILEVER Ltd. Plot No. 128-139 & 324-326, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used /Spent Oil	5 - 15 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Waste Residues Containing oil	1.5 - 4 MT/annum	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling
			Sludge and Filters Contaminated with oil	0.3 - 2 MT/annum	
		B-21	Torn Asbestos gasket/ropes	0.3 - 1 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Discarded containers/ drums	6400 nos./ annum	Wash water treated in Effluent Treatment Plant & decontaminated drums given for recycling.
		34.1	Flue gas cleaning residue	3 - 5 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		34.2	Spent resin from DM plant, Softener	0.3 - 1 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
21	M/s. PBN AUTOMOBILES Siddeshwarnagar Lane II, H. No. 289, Talsai, Shirshirem, Borim, Ponda-Goa.	5.1	Used/Spent oil	5 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Oil Filters	2 MT/annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board
		5.2	Cotton waste contaminated with oil	1 MT/annum	
22	M/s. SRITHIK ISPAT PVT. LTD. Plot No. 3, Sanguem Industrial Estate, Sanguem-Goa	5.1	Used/ Spent oil	180 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
23	M/s. MOHIT STEEL INDUSTRIES PVT. LTD. Plot No. 342, Kundaim Industrial Estate, Kundaim-Goa.	5.1	Used /Spent Oil	100 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
24	M/s. MABEREST HOTELS P LTD. (HOTEL FIDALGO) 18 th June Road, Panaji-Goa.	5.1	Used/ Spent Oil	20 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
25	M/s. BHISE ENTERPRISES C/o. Sunil Krishnanath Naik, Redualdo da Costa's Bldg, P.O.Box 226, Margao – Goa.	33.3	Empty Paint tins	25 Nos./Annum	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling.
26	M/s. GRACE HOSPITALITIES. H.No: 19, La Grace, Cotto, Fatorpa, Quepem-Goa.	5.1	Used /Spent Oil	20 litres/annum	To recycler registered with CPCB and having valid authorization of SPCB
27	M/s. HIRA CASHEW INDUSTRIES Survey No. 87/2 Vithalapur, Sanquelim, Bicholim-Goa	5.1	Used/Spent oil	0.2 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
28	M/s. GKB HI-TECH LENSES PVT. LTD. Plot No. 12 & 13, Shed No. D3-4 & D3-5, Tivim Industrial Estate, Mapusa-Goa	5.1	Used/Spent oil	0.100 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
29	M/s. REAL BOTTLING FACTORY PVT LTD Survey No. 31/1, Bainguinim, Old -Goa	5.1	Used/Spent oil	0.05 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
30	M/s. CRESCENT FRAGRANCES PVT. LTD. Plot No. SB-6, 7, 8, Cuncolim Industrial Estate, Cuncolim, Salcete-Goa	5.1	Used/Spent oil	0.005 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
31	M/s. VISHWAKARMA FURNITURE INDUSTRY C/o. Mr. Pandurang E. Chari, H. No. 835, Bombordem, Moira, Bardez-Goa	33.3	Empty paint tins	2 nos./month	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling
32	M/s. ALAGOA RESORTS Survey No. 109/1, Part B/1, Ranwaddo, Betalbatim, Salcete-Goa	5.1	Used/Spent oil	0.006 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB

33	M/s.MANOHAR PACKAGINGS PVT. LTD., Plot No. 36,37 & 38, (D-2-6/7 & D-3-9) Mapusa Industrial Estate, Mapusa-Goa	5.1	Used/Spent Oil	500 Liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
		21.1	Process Waste, Residue & Sludges (Ink Tins)	250 nos./annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
34	M/s. TULIP DIAGNOSTICS (P) LTD. Plot No. 92/96, Phase II C, Verna Industrial Estate, Verna-Goa	5.1	Used/Spent oil	0.120 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
35	M/s. QUALISHINE INDUSTRIES Plot No: 57, Tuem Industrial Estate, Tuem, Pernem-Goa.	34.3	ETP Sludge	200 kgs/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
36	M/s. ALCON RESORT HOLDINGS LTD. (Radisson Blu Resort Goa) Alcon Chambers, 2 nd floor, M.G. road, Panaji-Goa	5.1	Used /Spent Oil	0.2 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
37	M/s. DURGA ENGINEERING WORKS C/o. Shri Arun Vaman Girodkar, Gala No. 16, Kundaim Industrial estate, Kundaim-Goa.	33.3	Empty Paint container	4 nos./month	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling.
38	M/s. MRF Ltd. (Unit- I) P.O.Box No. 1, Ponda-Goa.	5.1	Used /Spent Oil	30 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Wastes/ residues containing oil	80 MT/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
		36.2	Incinerator ash	7 MT/ annum	Disposal in a secured landfill site having valid authorization from SPCB
		34.3	ETP Sludge	29 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
39	M/s. MRF LTD. (Unit –II) P.B. No. 1, Ponda – Goa	5.1	Used /Spent Oil	80 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Wastes/ residues containing oil	40 MT/ annum	To recycler having valid authorization of SPCB and having valid water & Air Consent of the Board.
40	M/S. RONIL HOTELS & RESORTS PVT. LTD. (Survey No. 229/1, 4, 5, 6, 10, 11, 12, 13, 14 & 15, Baga, Calangute, Bardez-Goa.	5.1	Used/Spent oil	0.150 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
41	M/s. DURALINE INDIA PVT. LTD. Plot No. 19-22 & 37-40, Sancoale Industrial Estate, Sancoale-Goa	5.1	Used/Spent oil	1.72 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Waste residues containing oil	0.1 MT/annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
42	M/s. B. R. HOLIDAY RESORT H. No. 5/188/A, Umta Vaddo, Calangute, Bardez-Goa	5.1	Used/Spent oil	0.04 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
43	M/s. GOA STATE CO-OPERATIVE MILK PRODUCER'S UNION LTD. Survey no. 79/1, Curti, Ponda -Goa	5.1	Used/Spent oil	200 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
44	M/s. INTERFACE ENGINEERING PVT. LTD. Plot No. 5/D-5, Kundaim Industrial Estate, Kundaim-Goa	33.3	Discarded barrels	1 nos./month	The Resin should be collected, hardened and disposed in a secured landfill having valid authorization from GSPCB. The empty barrels should be cut and sold as metal scrap
			Discarded carboys	7 nos./month	
45	M/s. ZOOM ENTERPRISES LIMITED (Woodbourne Resort & Country Club) Survey No. 233/1, Gonvoloy, Nuvem, Salcete-Goa.	5.1	Used /Spent Oil	0.003 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
46	M/s. SUMO INDUSTRIES. Plot No: 115, Bicholim Industrial Estate Goa.	5.1	Used /Spent Oil	0.050 M.T/Annum	To recycler registered with CPCB and having valid authorization of SPCB
47	M/s. MAHALASA PHARMA. Plot No. 53, 54, 55, Bethora Industrial Estate, Bethora-Goa.	5.1	Used /Spent Oil	80 litres/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		29.2	Chemical sludge from ETP	1.5 MT/Annum	To be sent to M/s ACC Wadi Cement Works, Gulbarga, Karnataka for co-processing in cement kiln

48	M/s. ZUARI ENGINEERING SERVICES D4, 4 th Floor, Commerce Centre, Vasco-Da-Gama, Goa. 403802.	5.1	Used/Spent oil	0.001 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
49	M/s. AEROCOACH – UNIT II Plot No. 118-D, Bethora Industrial Estate, Bethora, Ponda-Goa	33.3	Discarded paint tins	240 Nos/Annum	Wash water treated in effluent treatment plant of Aerocoach unit I & decontaminated tins given for recycling.
50	M/s. MARTINS COMFORT Survey no. 142/1, Ranvaddo, Betalbatim, Salcete-Goa.	5.1	Used /Spent oil	0.05 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
51	M/s. FABRICA DE GAS CARBONICO PVT. LTD. Survey No. 87/6, Nuvem, Salcete-Goa	5.1	Used/Spent oil	0.2 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Empty paint tins	0.05 MT/annum	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling
52	M/s. BABAJI BAKER'S AND CONFECTIONERS C/o. Mr. Devendra Dinkar Dhawaskar, H. No. 96-A/10, Telang Nagar, Khorlim, Mapusa, Bardez-Goa.	5.1	Used/Spent oil	5 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
53	M/s NICOMET INDUSTRIES LTD. Plot Nos. L-15, L-19 & L-20, Cuncolim Industrial Estate, Cuncolim-Goa	5.1	Used/Spent oil	1.96 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		7.2	Process Residue	9,600 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
54	M/s.LAXMI POWDER COATING & ENGINEERING WORKS. Plot No: 31, Bethora Industrial Estate, Bethora Ponda-Goa	33.3	Empty paint tins	36 Nos/Annum	Thinner to be used for cleaning paint tins and same thinner to used for dilution of paint and decontaminated tins given for recycling
55	M/s. CASA SEA SHELL ANNEXE C/o. Shri Shelley Gonsalves, H. no. 581, Murrod Vaddo, Candolim, Bardez-Goa	5.1	Used/Spent oil	0.05 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
56	M/s. HOTEL GOA INTERNATIONAL, Tonca, Miramar, Panaji-Goa	5.1	Used/Spent oil	0.014 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
57	M/s RELIANCE INFRASTRUCTURE LIMITED (Goa Power Station) Opp. Sancoale Industrial Estate, Sancoale, Zuariagar- Goa 403 726	5.1	Used /Spent Oil	20 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Wastes/ residue containing oil and Cotton waste	5 MT/annum	To be sent to M/s Mumbai Waste Management Ltd, Taloja for incineration
		3.1	Oil containing cargo residue, washing water & sludge	2 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		3.3	Sludge & filters contaminated with oil	0.5 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		34.4	ETP sludge	1 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
58	M/s. FINOLEX CABLES LTD. (CCCR Division) Survey No. 263/2a, Panaji Belugm Road, Usgaon Tisk, Ponda-Goa	5.1	Used/ Spent Oil	7800 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
59	M/s. SWANSONS PLASTICS (INDIA) PVT LTD., Plot No. 2, Honda Industrial Estate, Honda, Sattari -Goa	5.1	Used /Spent Oil	240 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
60	M/s. SHIRDI STEEL RE-ROLLERS PVT. LTD Plot No. L-8, Cuncolim Industrial Estate, Cuncolim-Goa.	5.1	Used /Spent Oil	50 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
61	M/s. Zenith Computers Ltd. Plot No. 33/37, Sancoale Industrial Estate,	5.1	Used/Spent oil	0.030 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Waste residues	0.002	To recycler having valid authorization of

	Zuarinagar-Goa		containing oil	MT/annum	SPCB and having valid Water & Air Consent of the Board
62	M/s. HOTEL CARY'S C/o. Cary Sequeira, Kamat Estate, Bldg. No. 9,F/2, Tonca, Panaji-Goa	5.1	Used /Spent Oil	10 litres/annum	To recycler registered with CPCB and having valid authorization of SPCB
63	M/s. SHRADDHA ISPAT PVT LTD. Survey.No 53 /1,Santona Village, Sanguem- Goa.	5.1	Used/ Spent oil	150 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
64	M/s. Navelkar Landmark C/o. Hotel Rajdhani Building, Dr. A. Borkar Road, Panaji-Goa.	5.1	Used/Spent oil	80 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
65	M/s. MARINE ELECTRICALS (INDIA) PVT. LTD Plot No: N-51,52,59 & 60, Phase IV, Verna-Industrial Estate, Verna, Salcete-Goa.	5.1	Used/ Spent Oil	0.1 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Cotton waste contaminated with oil	0.02 MT/Annum	To be sent to M/s Mumbai Waste Management Ltd. At Taloja for incineration
		12.5	Phosphate Sludge	0.6 MT/Annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		34.3	Etp Sludge	0.6 MT/Annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
66	M/s. PURVADEEP BAKERY C/o. Smt. Shubhada Sudhakar Mulvi, H. No. 44, Parshuram Nagar, Bandora, Ponda-Goa.	5.1	Used/Spent Oil	0.005 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
67	M/s. RODRIGUES AUTO REPAIRS & ENGINEERING WORKS C/o. Shri. Antonio Joao Baptista Rodrigues, H. no. 485, Near Holy Cross Chapel,New Vaddem, Vasco da Gama-Goa	33.3	Empty paint tins	5 nos./month	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling
68	M/s. UPA ENGINEERING SALES & SERVICES C/o. Shri Upendra Pai Angle, H. No. 557, Dandevado, Chinchinim, Salcete-Goa.	5.1	Used/Spent oil	0.020MT/ann um	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Oil soaked Cotton waste	0.040 MT/month	To be sent to M/s Mumbai Waste Management Ltd, Taloja for incineration
		33.3	Empty paint tins	2 nos./month	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling
69	M/s. SHREE SAMARTH AUTOMOTIVE C/o. Shri. Damodar S. Thakur, H. No. 25-F-1,Matol, Verna, Salcete-Goa	5.1	Used/Spent oil	2.29 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Oil soaked Cotton waste	0.120 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
70	M/s. SERVICE INN C/o. Shri. Vivian Coutinho, H. No. 368, Fatorda, Margao-Goa.	21.1	Process Waste , Residues and sludge	0.01 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		33.3	Empty tins	4 nos./month	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling
71	M/s. MANDOLI DISTILLERIES & BREWERIES PVT LTD. Plot No. D-8, Madkai Industrial Estate, Madkai-Goa	5.1	Used/Spent oil	70 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
72	M/s. APEX PACKING PRODUCTS PVT. LTD. Plot No. 186, 187, 188A, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used/Spent oil	30 kg/month	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Discarded containers	600 nos./month	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling.
73	M/s MARPOL PVT.LTD. Plot No. 12 to 18, Kakoda Industrial Estate,	5.1	Used/Spent oil	0.144MT/ann um	To recycler registered with CPCB and having valid authorization of SPCB
		21.1	Paint waste	42 MT/annum	To be sent to M/S. Mumbai Waste

	Kakoda-Goa		powder/sludge		Management Ltd. at Taloja for incineration.
74	M/s. VIVENDA HOTELS PRIVATE LIMITED C/o. Shri Anthony Simon B. Hayward, H. No. 371, Costa Vaddo, Majorda, Salcete-Goa.	5.1	Used/Spent oil	0.001 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
75	M/s. HOTEL PICNIC PLAZA C/o. Shri. Nelson Heredia, H. No. 181/1, Bella Vista, Sangolda, Bardez-Goa	5.1	Used/Spent oil	0.005 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
76	M/s. SHRI AUTO CARE. House No: 1452, Ward No: 3, Agalli-Fatorda-Margao-Goa	5.1	Used /Spent Oil	0.546 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Waste residue containing oil (oil soaked cotton)	0.018 MT/Annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
77	M/s. GLYNWED PIPE SYSTEMS (INDIA) PVT. LTD., Plot No. L-148 & L-149, Verna Industrial Estate, Verna-Goa	5.1	Used/Spent oil	1000 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
78	M/s ABBOTT INDIA LIMITED, Plot ,No. L-18 & L-19, Verna Industrial Estate, Verna, Salcete - Goa	5.1	Used/spent oil	0.114 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
79	M/s. HIMACHAL FUTURISTIC COMMUNICATIONS LTD. Plot No L-35, 36, 37, Phase II, Verna Indst. Estate, Verna, Salcete-Goa	5.1	Used/Spent oil	0.115 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
80	M/s. MABPHARM PRIVATE LIMITED Plot No. 147/4, Verna Industrial Estate, Verna, Salcete -Goa.	5.1	Used/Spent oil	1 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.1	Pharmaceutical Residues and wastes	0.005 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		28.3	off specification	0.008 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		28.4	Date expired, discarded & off-specification products	0.002 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
81	M/s. ORIENTAL CONTAINERS LTD. Plot No. 327 to 332, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used/spent oil	1000 ltrs/annum	To recycler registered with CPCB and having valid authorization of SPCB
82	M/s. HOTEL LEELA VENTURE LTD. (The Leela Palace, Goa) Survey No. 99/1, 100/1, 100/2, 100/3, Mobor, Cavelossim, Salcete-Goa	5.1	Used /Spent Oil	6.72 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		3.3	Filters contaminated with oil	320 nos./annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
83	M/s. LUPIN LIMITED Plot no. B-15, Phase I-A, Verna Industrial Estate, Verna, Salcete-Goa.	5.1	Used /Spent Oil	75 kg/ month	To recycler registered with CPCB and having valid authorization of SPCB
		28.3	Off specification product	70000 kg/ annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s. ACC wadi cement work, Gulbarga Karnataka for co-processing in cement kiln OR to M/s. Mumbai Waste Management Ltd. at Taloja for incineration
		28.4	Date expired product & discarded off-specification product	4000 kg/ month	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration

		33.3	Discarded containers/ barrels/ liners	2000 nos./ month	Wash water treated in Effluent Treatment Plant & decontaminated drums given for recycling.
		34.2	Spent ion exchange resin	120 kg/ month	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		34.3	E.T.P. Sludge	60000 kg/ annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s. ACC wadi cement works, Gulbarga Karnataka for co-processing in cement kiln OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration.
84	M/s. UNITED BREWERIES LIMITED. Survey No. 164, 166 & 167, Bethora, Ponda-Goa.	5.1	Used / Spent Oil	0.2 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		35.3	Spent Carbon	0.4 MT/ annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		34.3	E.T.P. Sludge	10.5 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
85	M/s. UMICORE ANANDEYA ZINC OXIDES PVT. LTD. Phase III-A, Plot No. 23, Sancoale Industrial Estate, Sancoale, Zuarinagar-Goa.	6.3	Distillation residue containing Zinc dross	20 MT/ year	To recycler registered with CPCB and having valid authorization of SPCB
		15.1	Asbestos containing broken sheets & ropes	100 kg/ year	To be disposed in a secured landfill site having valid authorization from SPCB
		5.1	Used /Spent Oil	100 litres/ year	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Oil soaked cotton waste, used oil filters	20 kg/ year	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		15 (Schedule 4)	Recycling of Zinc dross	600 MT/ Month	No hazardous waste to be generated
86	M/s. JIMCAP ELECTRONICS PVT. LTD. Plot No. L-12, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used /Spent Oil	0.100 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Discarded paint tins	48 nos./ annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling.
		6.2	Zinc dust	0.300 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
87	M/s. CREATIVE PACKS INC Plot No. 109, Kundaim Industrial Estate, Kundaim-Goa.	5.1	Used/Spent oil	0.060 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
88	M/s. LA SUNILA SUITE APPTS C/o. Mrs. Sunila Sapra, Plot No. 75, 97, & 98, H. no. 520/3, 520/4, & 520/5, Dr. Constancio Mascranhas River Riew, Arpora, Bardez-Goa. M/s. Laxmi Coach Builder C/o. Shri. Tukaram Salgaonkar H. No. 318/9, Housing Board Colony, Mapusa Goa	5.1	Used/Spent oil	0.05 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
89	M/s. MARINE ELECTRICALS (INDIA) PVT. LTD. Plot No: S-17 & 18, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used /Spent Oil	0.1 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
90	M/s. Sapana Habitat, C/o. The Sapana Habitat Co-operative Housing Society Ltd., Chogam Road, Socorro, Alto-Bardez-Goa.	5.1	Used/Spent oil	0.042 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
91	M/s. SIDDHANT ENGINEERING SERVICES Plot No. D4/5, Bethora Industrial	33.3	Empty paint tins	0.300 MT/annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for

	Estate, Bethora, Ponda-Goa				recycling.
92	M/s. New Vision Printing Services Pvt. Ltd. Shed No. D 2 -4, 5, 6, Thivim Industrial Estate, Thivim Goa	5.1	Used Spent Oil	0.035 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Empty ink tins	0.001 MT/annum	Thinner to be used for cleaning ink tins & same thinner to be used for dilution of ink & decontaminated tins given for recycling
93	M/s. Naval Aircraft Yard (Goa) Plot No. 160/ B, 104, & 104/ E, Dabolim Airport Vasco – da - Gama	5.1	Used spent oil	10 MT/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
94	M/s. Putzmeister India Pvt. Ltd. Plot No. 190/ 191, Kundiam Industrial Estate, Kundiam - Goa	33.3	Empty paint tins	1.50 MT/ annum	Thinner to be used for cleaning ink tins & same thinner to be used for dilution of ink & decontaminated tins given for recycling
95	M/s. Maharudra Real Estates C/o. Shri. Tushar L. Usgaonkar Shop No. 3, Shantadurga Housing Society, Super, Market, Ponda Goa.	5.1	Used spent oil	0.50 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
96	M/s. Modern Industries C/o. Shri. Vincent Peter Coelho H. No. 653, Attafondem Moira, Bardez - Goa	33.3	Empty paint tins	0.010 MT/ annum	Thinner to be used for cleaning ink tins & same thinner to be used for dilution of ink & decontaminated tins given for recycling
97	M/s. C' Roque Resorts Novo Vaddo, Sernabatim, Colva, Salcete Goa	5.1	Used spent oil	200 ltrs/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
98	M/s. JUSTINIANO WORKSHOP C/o. Mr. Justiniano Cardoso, H. No. 419, Coldem, Telaulim, Navelim, Salcete-Goa.	33.3	Empty paint tins	0.03 MT/annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling
99	M/s. INSTITUTE OF HOTEL MANAGEMENT, CATERING TECHNOLOGY AND APPLIED NUTRITION Survey No. 73 (part), 172 (part) & 128 (part), Alto Porvorim, Bardez-Goa	5.1	Used/ Spent Oil	0.040 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
100	M/s. Om Sai Industries Plot No. 47, Tuem Industrial Estate Tuem – Pernem Goa	33.3	Empty paint tins	300 nos/ annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling
101	M/s. JOHN DISTILLERIES LTD. Plot No. M-21 & M-21 A, Cuncolim Industrial Estate, Cuncolim-Goa.	5.1	Used /Spent Oil	115 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
102	M/s. HOTEL EL-ROSE C/o. Shri. Patrick F. Fernandes, H. No. 17/85, Amaral Vaddo, Taleigao, Tiswadi-Goa	5.1	Used/Spent oil	0.009 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
103	M/s Adani Mormugao Port Terminal Pvt. Ltd. Mechanized Coal Handling Terminal At Berth No: 7 of MoPT, Ground floor, Port Users Complex, Mormugao Harbour, Vasco-Da-Gama.	5.1	Used/ Spent Oil	3 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
104	M/s. RICH BAKE BAKERS C/o. Shri Chirag Datta Naik, H. No. 444, Next to Miramar Residency Hotel, D.B. Marg, Miramar, Panaji-Goa.	5.1	Used/Spent oil	0.015 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
105	M/s. MANIPAL HOSPITAL GOA. Survey No. 264/1, Dr. E. Borges Road, Dona Paula, Goa	5.1	Used /Spent Oil	0.350 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
106	M/s. HOTEL SATYAHEERA Near Mapusa Bus Stand, Mapusa-Goa	5.1	Used/Spent oil	0.020 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
107	M/s. MORJE FABRICATION WORKS C/o. Mr. Vasudev Sakaram Marje, H. No. 248/1, Jetty Mormugao, Vasco-Goa. 403803	33.3	Paint tins	12 nos/annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling
108	M/s. HOTEL SOLMAR H. No. 456, Ward No. 13, Miramar, Panaji-Goa	5.1	Used/Spent Oil	0.010 MT/annum	recycler registered with CPCB and having valid authorization of SPCB

109	M/s. ASTRA CONCRETE PRODUCTS Plot No. B-10, Madkaim Industrial Estate, Madkaim-Goa	5.1	Used/Spent oil	0.005 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
110	M/s. B.M. Business Soltns Pvt. Ltd./C/o. Capt. Peter N. D'Souza Alto – Porvorim, Bardez Goa	5.1	Used spent oil	0.20 MT/annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
111	M/s. GAURAV FURNITURE Plot No. 59/60, Kakoda Industrial Estate, Kakoda-Goa	33.3	Empty paint cans	0.050 MT/annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling.
112	SAI ENGINEERING WORKS. H.No: L-441, Rumdamol. Davorlim, Salcete-Goa.	5.1	Used /Spent Oil	120 litres/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Cotton Waste	120 kgs/annum	To be sent to M/s Mumbai Waste Management Ltd, Talaja for incineration
113	M/s. Parvatkar Industries C/o. Mr. Shivcharan Parvatkar H. No. 26, Gurupurpa, Mulas, Paroda, Salcete, Goa	33.3	Empty paint tins	10 MT/annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling
114	M/s. SHIVAM ISPAT PVT. LTD. Plot No. 333 – 335, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used/ Spent Oil	20 KL/annum	To recycler registered with CPCB and having valid authorization of SPCB
115	M/s. CHETNA BOTTLING C/o. Shri. Hemant Jagannanth Phadte, H. No. 204/2, Near Mahalaximi Temple, Bandora, Ponda-Goa	5.1	Used/Spent oil	0.100 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
116	M/s. SYNGENTA INDIA LTD Survey no. 28, Santa Monica Works, Corlim, Ilhas-Goa	5.1	Used /Spent Oil	20 tons	To recycler registered with CPCB and having valid authorization of SPCB/ To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		5.2	Waste oil	5 tons	To recycler registered with CPCB and having valid authorization of SPCB/ To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		19.1	Phenolic waste water	50 tons	To be incinerated in hazardous waste incinerator on site / To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		20.3	Distillation residue	10 tons	To be incinerated in hazardous waste incinerator on site/ To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		21.1	Spoiled printing ink	104 kg	Collection of spoiled printing ink from Department of Printing & Stationery, Panaji and to be incinerated in hazardous waste incineration/ To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration For one time disposal only
		29.1	Pesticide waste/ residues	35,000 tons	To be incinerated in hazardous waste incinerator on site OR To be sent to M/s. Mumbai Waste Management Ltd. at Talaja for incineration OR to be sent to M/s. Ambuja Cement Limited, Raipur for Co processing in Cement Kiln:
		29.2	Chemical sludge from ETP ongoing generation from the unit (inorganic sludge)	1200 tons	Secured temporary storage within premises/To be sent to M/s ACC Wadi Cement Works, Gulbarga, Karnataka for co-processing in cement kiln OR to be sent to M/s. Ambuja Cement Limited, Raipur for Co processing in Cement Kiln:
117	M/s. SYNGENTA INDIA LTD Survey no. 28, Santa Monica Works, Corlim, Ilhas-Goa		Accumulated ETP sludge stored at Dharbandora	3,500 tons	To ensure disposal to M/s ACC Wadi Cement Works, Gulbarga, Karnataka for co-processing in cement kiln within 8 months from the date of issue of this

					202 authorization OR to be sent to M/s. Ambuja Cement Limited, Raipur for Co processing in Cement Kiln:
		29.3	Date expired/ off specification pesticides	200 tons	To be incinerated in the hazardous waste incinerator of the unit on site OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration or To be sent to M/s. Ambuja Cement Limited, Raipur for Co processing in Cement Kiln:
		33.1	Chemical sludge from decontamination	20 tons	To be incinerated in hazardous waste incinerator on site/ To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		33.3	Discarded drums/ liners	30,000 nos.	Wash water treated in Effluent Treatment Plant & decontaminated drums given for recycling./ To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		34.1	Carbon from boiler	250 tons	To be sent to ACC Wadi, Karnataka for co-processing in Cement Kiln. For one time disposal only./Secured temporary storage on site./ To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		35.1	Contaminated filters/ liners	5 tons	To be incinerated in solid waste incinerator on site / To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		35.3	Spent Carbon	2 tons	To be incinerated in solid waste incinerator on site / To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
118	M/s. SYNGENTA INDIA LTD Survey no. 28, Santa Monica Works, Corlim, Ilhas-Goa	36.1	Sludge from wet scrubber	1 ton	To be incinerated in solid waste incinerator on site/ To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		36.2	Incineration ash/ lava	3000 tons	To be stored securely within premises for final treatment and disposal in the Common Hazardous Waste Facility once it is made operational
		36.2	Contaminated pesticide retractor from incineration	400 tons	To be sent to Mumbai waste management Taloja for incineration . For one time disposal only.
119	M/s. RUTUTEK ENTERPRISES Plot No. 65, Bethora Industrial Estate, Bethora, Ponda-Goa	34.3	ETP Sludge	0.100 MT/month	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
120	M/s. TALAULICAR AUTO SERVICE Chalta No. 8, P. T. Sheet No. 6, 25-T-1, Cunchelim, Mapusa, Bardez-Goa	5.1	Used/Spent oil	0.001 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
121	M/s. MODEL INFRA CORPORATION PVT. LTD Plot No. L-13, Verna Industrial Estate, Verna, Salcete-Goa	5.2	Wastes and residues containing oil	0.030 MT/month	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board
		A-5	Metal grit	0.050 MT/month	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		33.3	Empty Tins Paint Containers	0.120 MT/month	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling
122	M/s. ELBA CONSTRUCTIONS EQUIPMENT. Survey No: 89, Pileme Industrial Estate, Bardez-Goa.	5.1	Used /Spent Oil	0.200 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Wastes / residue containing oil	0.015 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB OR to be sent M/s. Mumbai waste management ltd, taloja for incineration

		33.3	Discarded barrels/containers/ liners	0.010 MT/Annum	Wash water treated in Effluent Treatment Plant & decontaminated drums given for recycling.
123	M/s. FILPAK (INDIA) PVT. LTD., Plot No. 46 & 47, Pilerne Indst Estate, Pilerne, Bardez-Goa	5.1	Used/Spent oil	0.017 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Rejected empty cans, empty barrels & Liners	0.011 MT/annum	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling
124	M/s. VISHWAKARMA FURNITURE INDUSTRY C/o. Mr. Pandurang E. Chari, H. No. 835, Bombordem, Moira, Bardez-Goa	33.3	Empty paint tins	2 nos./month	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling
125	M/s. SOCIEDADE DE FORMENTO INDUSTRIAL PVT. LTD. Plot No. : P.T.Sheet No. 1 Chalta No. 84, Sonsoddo, Margao-Goa	5.1	Used/Spent Oil	0.001 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
126	Mr. Rajat Verma C/o. Mr. John M. Desouza Sunset Boulevard, XT 5 & 6, Dangui Colony, Mapusa	5.1	Used spent oil	20 ltrs/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
127	M/s. VERGO PHARMA RESEARCH LABORATORIES PVT. LTD. Plot No. B-5, B-22, B-23 & B-23A, Phase I-A, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used/Spent oil	30 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
		34.3	ETP sludge	60 kg/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
128	M/s. NARAYAN GANESH PRABHU ZANTYE & CO. Survey No. 96, Bicholim-Goa	5.1	Used/Spent oil	0.100 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
129	M/s. SHREM RESORT PRIVATE LIMITED (NOVOTEL) Survey No. 179/1, Anna Waddo, Candolim, Bardez-Goa	5.1	Used/Spent oil	0.220 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
130	M/s. SUPER PACK C/o. Shri Gabriel Mascrenhas, Don Jose Moddemvaddo, Guirdolim, P.O. Chondar-Goa.	33.3	Empty ink cans	0.600 MT/month	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
131	M/s. MENEZES FISHNET INDUSTRY PRIVATE LIMITED Menezes House, Menezes Industrial Compound, Murda, Mercas-Goa	5.1	Used/Spent oil	0.010	To recycler registered with CPCB and having valid authorization of SPCB
132	M/s. MONAK PACKAGING Plot No. A-3/1 & 3/2, Margao Industrial Estate, St. Jose de Areal, Salcete - Goa	5.1	Used/Spent oil	0.040 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
133	M/s. HOTEL LA PAZ GARDENS Swatantra Path, Vasco-Da-Gama, Goa – 403 802	5.1	Used/Spent oil	0.040 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
134	M/s. RAMNATH AUTO REPAIRS & FABRICATORS H. No. 72, Dhumre, Kapilehwari, Ponda-Goa.	5.1	Used/Spent oil	0.100 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Cotton waste contaminated with oil	0.050 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		33.3	Discarded Paint Tins Containers	10 nos./annum	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling
135	M/s. PROPACK INDUSTRIES Plot No. A-35, Madkaim Industrial Estate, Ponda-Goa.	5.1	Used/Spent oil	0.020 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
136	M/s. SHREE MAHALAXMI INDUSTRIES Survey No. 191/1-B, Nirankal Road, Bethora, Ponda-Goa.	5.1	Used/Spent oil	0.010 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
137	M/s. TIMBLO ENTERPRISES Common Wealth Developers Pvt. Ltd, Foundation Head, Opp. CD Countryside, Murda, Fatorda,	5.1	Used/Spent oil	0.001 Mt/annum	To recycler registered with CPCB and having valid authorization of SPCB

	Salcete-Goa. 403602				
138	M/s. PRASAD ENTERPRISES Plot No. 282, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used/Spent oil	0.005 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB.
139	M/s. TEVAPHARM INDIA PVT. LTD. Plot No: A-1, Phase 1-A, Verna-Industrial Estate, Verna-Goa	5.1	Used/ Spent oil	2.5 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.2	Spent Carbon	10.0 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.3	Off-specification	10.0 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.4	Date expired product & discarded off specification products drugs/medicines	24.0 MT/ Annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		28.5	Spent organic solvents	12.0 MT/Annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		34.3	ETP Sludge	14.5 MT/Annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
140	M/s. MICHAEL & MICHAEL PIPES PVT. LTD. Cardoso Building, Near Kadamba Bus Terminus, Panaji-Goa. 403001	5.1	Used/Spent oil	0.020 Mt/annum	To recycler registered with CPCB and having valid authorization of SPCB
141	M/s. SHAHIL ENTERPRISES. H. No: 883/B, Vanxem -Loutolim, Salcete-Goa	5.1	Used /Spent Oil	0.010 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
142	M/s. EXCEL ENTERPRISES Plot No. C-10, Phase 1-A, Verna Indst. Estate,Verna, Salcete-Goa	33.3	Empty Ink Container	12 nos./annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
143	M/s. GERA DEVELOPERS PVT. LTD. 200, Gera Plaza, Boat Club Road, Pune 411001	5.1	Used/Spent oil	0.050 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
144	M/s. GRAND ORGANICS PVT. LTD. Plot No. D2-26, Bicholim Industrial Estate, Bicholim-Goa	5.1	Used /Spent Oil	0.05 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		34.3	E.T.P. sludge	0.3 MT/ annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
145	M/s. DONA ALCINA RESORT PVT. LTD. Survey No. 226/2, Sequeira vaddo,Opp. Candolim Health centre, Candolim, Bardez-Goa	5.1	Used/Spent oil	0.050 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
146	M/s. Desai Agro Processors Pvt. Ltd Survey No. 90/4, Near Village Panchayat,Sancorda, Sanguem	5.1	Used spent oil	0.010 MT/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
147	M/s. VENUS ETHOXYETHER PVT. LTD. Plot No. 109-111, Bicholim Industrial Estate,Bicholim-Goa	5.1	Used/Spent oil	0.050 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		34.3	ETP Sludge	1.2 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
148	M/s. AGAM BATTERIES PVT. LTD.Plot No. 43, Phase III-A, Sancoale Industrial Estate, Zuarinagar-Goa	B-4 (Schedule-II)	Lead dross waste	500 kg/ month	To recycler registered with CPCB and having valid authorization of SPCB
149	M/s. PRESTIGE HOLIDAY RESORTS PVT. LTD. (HAATHI MAHAL) Survey No. 110/1, Cavelossim, Salcete-Goa	5.1	Used/Spent oil	300 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
150	M/S. RISHABH INDUSTRIES H.No.382, Carrem, Soccoro, Porvorim, Bardez Goa	5.1	Used /Spent Oil	20 kg/ annum	To recycler registered with CPCB and having valid authorization of SPCB
151	M/s. SVENSKA TECHNOLOGIES PVT. LTD. Plot No. 178,	5.2	Oil soaked cotton waste	0.080 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for

	Shed No. D3-3, Kundaim Industrial Estate, Kundaim-Goa				incineration
152	M/s RAJASTHAN STEEL FURNITURE Plot No. A/29, Madkai Industrial Estate, Madkai-Goa	33.3	Empty paint drums	84 nos./ annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling.
153	M/s. Cremeux Bakeries Pvt. Ltd. C/o Shri. Dean Wilfred Lopes De Menezes, H.No.-550/13, Palmar Colony, Bambolim Complex, Bambolim – Goa	5.1	Used Spent Oil	0.020 - M.T/annum	To recycler registered with CPCB and having valid authorization of SPCB
154	M/s. S. P. SINGLA CONSTRUCTIONS PVT. LTD. Plot No. 67-70, Sancoale Industrial Estate, Sancoale, Mormugao-Goa.	5.1	Used/Spent oil	0.018 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
155	M/s. DEMPO INDUSTRIES PVT. LTD. Navhind Bhawan, Rau de Ismail Gracias, Panaji-Goa.	5.1	Used/Spent oil	0.120 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Empty ink tin containers	3 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
156	M/s. CUNCOLIM OXYGEN PLANT PVT. LTD., Plot No. M-17, Cuncolim Industrial Estate, Cuncolim, Salcete-Goa	5.1	Used/Spent oil	0.100 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Empty Paint Containers	0.010 MT/annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling.
157	M/s. PAPERPACK Plot No. 143, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used/spent oil	80 ltrs/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Ink containers	5 nos/month	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
158	M/s. Premier Inn C/o. Shri.ShashiBhusan Singh 11 th Floor, Dr. Gopal Das Bhawan, 28, Barakhamba Road, New Delhi 110 001	5.1	Used spent oil	77.2 ltrs/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
159	M/s. BHAGAWATI PRINTERS C/o. Smt. Veena Vishnukant Behare, H. No. 52/E, Near Matruchaya, Kapileshwari, Ponda-Goa	33.3	Empty Ink Containers	15 nos./month	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
160	M/s. BANDEKAR OFFSET C/o. Shri. Sudesh Rohidas Bandekar, H. No. 495, Shirfod, Curchorem-Goa	33.3	Empty ink tins	0.014 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
161	M/s. Filu Engineering Works, H. No. 162/1, Antonio Pereira ward, Utorda, P.O. Majorda, Salcete - Goa	33.3	Empty paint tins	3 nos./ annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling
162	M/s. REGENCY AUTO GARAGE C/o. Shri Manuel Rodrigues, Plot No 56/3, Malim penha de franca, Bardez-Goa M/s. NAKITA RESORT. H.No: 5/85, Umta Vaddo, Calangute, Bardez-Goa.	33.3	Empty paint tins	0.100 MT/annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling
163	M/s. PALMARINHA RESORT Survey No. 386/5, Porbo Waddo, Calangute, Bardez-Goa	5.1	Used/Spent oil	0.05 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
164	M/S. MALVAN AUTOMOBILES PVT. LTD. H.No.22/111, Villa Fatty, Bay View Colony, Near N.I.O. Circle, Donapaula, Goa -403004	5.1	Used /Spent Oil	75 lts/month	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Cotton Waste	5 kg/month	To be sent to M/s Mumbai Waste Management Ltd, Taloja for incineration
165	M/s. CHOWGULE INDUSTRIES PRIVATE LIMITED. Plot No: 43,44,57, Tivim Industrial Estate, Karaswada Mapusa-Goa	5.1	Used /Spent Oil	600 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Oil soaked cotton waste	3 kg/ annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration

		3.3	Sludge and filters contaminate with oil	550 MT/Annum	To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		33.3	Empty paint drums	10-12 Nos/Month	Thinner to be used for cleaning paint tins and same thinner to be used for dilution of paint and decontaminated tins given for recycling
166	M/s. D. M. NADKARNI & SONS Plot No. 318, Santa Rita Vaz Bldg, Behind Police Station, Comba, Margao-Goa.	33.3	Empty Ink Container	0.002 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
167	M/s. BRITACEL SILICONES LTD. Plot No. L-124, Phase IIIA, Verna Industrial Estate, Verna -Goa	5.1	Used/Spent oil	0.024 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		2.7	Silicone oil residues & silicone oil	0.060 MT/annum	To be sent to M/s Mumbai waste Management Ltd., Talaja for incineration or to be disposed in a secured landfill site having valid authorization from SPCB
		33.3	HMHDPE Carboy/drums	1100 nos/year	Wash water treated in Effluent Treatment Plant & decontaminated drums given for recycling
			MS drums	50 nos/year	
			PP bags	200 nos/year	
		34.3	Effluent Treatment Plant Sludge	0.120 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
168	M/s. PUJA FERRO ALLOYS LIMITED. Plot no: L-4, Cuncolim Industrial Estate, Cuncolim Salcete – Goa.	5.1	Used /Spent Oil	20 litres/annum	To recycler registered with CPCB and having valid authorization of SPCB or Usage in the gear boxes as lubricant.
169	M/s. INDOCO REMEDIES LIMITED (PLANT-II) Plot No: L-14, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used /Spent Oil	0.28 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.3	Discarded & off-specification drugs and medicines	0.4 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site or incineration having valid authorization from SPCB
		33.3	Discarded containers/ barrels used for hazardous waste	150 nos./annum	Wash water treated in Effluent Treatment Plant & decontaminated drums given for recycling.
		34.1	Flue gas cleaning residue	0.4 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		34.3	ETP sludge	1.8 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
170	M/s. ASTRA METAL SYSTEMS PVT. LTD. H.No: 419, Rawanfond, Aquem Baixo, Navelim, Salcete-Goa.	5.1	Used /Spent Oil	160 kg/annum	To recycler registered with CPCB and having valid authorization of SPCB
		34.3	ETP sludge	200 kg/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
171	M/s. MANDOLI CASTING PVT. LTD. Plot No: 341, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used /Spent Oil	100 litres/annum	To recycler registered with CPCB and having valid authorization of SPCB
172	M/s. MOLYMA HOTELS C/o Shri. Mario J. C. Fernandes, Flat No. G-3, Barreto Encalve, Near Art Adds, Vidya Nagar, Aquem, Margao, Salcete-Goa	5.1	Used/Spent oil	0.007 Mt/annum	To recycler registered with CPCB and having valid authorization of SPCB
173	M/s. MARINA RESORTS PVT. LTD. (Paradise Village Beach Resort) Survey No. 160/1 & 161/0, Tivai Vaddo, Calangute, Bardez-Goa	5.1	Used /Spent oil	55 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
174	M/s. NEHA ICE PLANT Plot No. SB 50, Cuncolim Industrial Estate, Cuncolim, Salcete-Goa	5.1	Used/Spent oil	0.050 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
175	M/s. GLENMARK GENERICS LTD. Plot No. S-7,	5.1	Used/Spent oil	0.05 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB

	Colvale Industrial Estate, Colvale, Bardez-Goa	28.3	Off Specification	0.15 MT/annum	Chemical – Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		28.4	Date expired products	0.05 MT/annum	Chemical – Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB/Or To be sent to M/s. Mumbai Waste Management Ltd. at Taloja for incineration.
		34.3	E T P Sludge	0.1 MT/annum	Chemical – Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
176	M/s. ASHA PRINTERS C/o. Smt. Asha B. Naik, H. No. 46, Tarvalem, Shiroda, Ponda-Goa.	33.3	Empty Ink Containers	0.010 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
177	M/S. Lourenco Marine Pvt. Ltd. C/o. Shri.ViterboSerafim Lourenco Flat Mo. 303, Prudential Panache, Near Chinamy Mission, Gogal – Aquem Margao Goa	5.1	Used spent oil	0.050 MT/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
		33.3	Empty paint tins	12 tins/ annum	Thinner to be used for cleaning ink tins & same thinner to be used for dilution of ink & decontaminated tins given for recycling
		5.2	Cotton waste	0.050 MT/ annum	To be sent to M/s Mumbai Waste Management Ltd, Taloja for incineration
178	M/s. Sidhivinayak Printing Press C/o. Mr. Vishnu Parab H. No. 855, Near Ganesh Temple, New Vaddem Vasco Da Gama - Goa	33.3	Empty ink tins	2 nos/ month	Thinner to be used for cleaning ink tins & same thinner to be used for dilution of ink & decontaminated tins given for recycling
179	M/s. GOAN BOUNTY Svy No. 51-B, Dhulapi, Corlim-Goa	5.1	Used/Spent oil	0.200 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
180	M/s. COLVA BEACH RESORT Survey No. 36/1, 4 th Ward, Colva, Salcete-Goa	5.1	Used/Spent oil	0.020 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
181	M/s. ROSARY CONFECTIONERY C/o. Shri. Suresh Raghuvir Phadte, H. No. 584, Ravora, Navelim, Salcete-Goa.	5.1	Used/Spent oil	0.100MT/ann um	To recycler registered with CPCB and having valid authorization of SPCB
182	M/s. Aaswad Cashew Industries Survey No. 113/6, Vagona – Dabal, Kirlapal, Sanguem - Goa	5.1	Used spent oil	0.025 MT/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
183	M/s. THE VILLAGE INN C/o. Smt. Liby Dias, 118/2, Francisco Pereira Vaddo, Utorda - Goa.	5.1	Used/Spent oil	0.020 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
184	M/s. VIJAI MARINE SERVICES C/o. Shri. Jairam L. Dialani, B-14, 3 rd floor, Kosambe Building, Swatantra Path, Vasco-da-Gama-Goa	3.3	Sludge & filters contaminated with oil	0.6 MT/Annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		5.1	Used/Spent oil	50 liters/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Wastes/ residues containing oil	0.45 MT/Annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board
185	M/s. PROCTER & GAMBLE HYGIENE & HEALTH CARE LTD. Plot No. 173, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used /Spent Oil	6 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Wastes/ residues containing oil	0.5 MT/annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
		21.1	Spent ink & solvents	5 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		33.3	Discarded containers of paints	0.6 MT/annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling.
186	M/s. F.C. Steel Works C/o. Shri Antonio V. Fernandes H. No. 483/1 (A), Gabriel Cruz Ward,	33.3	Empty paint tins	0.10 MT/ annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for

	Utorda, Salcete - Goa				recycling
187	M/S. BAGA WATERFRONT RESORT & SPA (ACRON HOSPITALITY PVT. LTD.), Eliza Estate, C3/T2, Karrowado, Bardez Goa.	5.1	Used Spent Oil	0.036 MT	To recycler registered with CPCB and having valid authorization of SPCB
188	M/s. SAGAR STEELFURNITURE. H.No: 114, Near Maruti Temple, Ponda-Goa.	33.3	Empty paint tins	60 Nos/Annum	Thinner to be used for cleaning paint tins and same thinner to be used for dilution of paint and decontaminated tins given for recycling
189	M/s. Cipla Ltd Plot No. S – 103 to S – 105, S – 107 to S – 112, L – 138, L – 147, L – 150, S – 116, L – 147/1 to L – 147/4, Verna Industrial Estate, Verna Goa	5.1	Used spent Oil	0.800 MT/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
190	M/s. DILKHUSH CAFÉ Old Station Road Margao - Goa.	5.1	Used/Spent oil	0.050 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
191	M/s. HOTEL LINDA GOA Cobrawaddo, Calangute, Bardez-Goa	5.1	Used/Spent oil	0.005 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
192	M/s. LOKMANYA PROCESS. Survey NO: 81, Opp Milroc Woods, Corlim-Tiswadi-Goa.	33.3	Used ink cans	02 kg/month	To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
193	M/s. SWASTIK CRUISES, (M.V. Swastik) Radha Bldg, 2 nd Floor, Berneard Guedes Road, Near Market Panaji, Near Ferry Ramp, Betim, Bardez - Goa.	5.1	Used/Spent oil	100 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
		3.4	Bilge Water	2000 ltrs/annum	To recycler registered with CPCB and having valid authorization of SPCB <u>OR</u> To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
194	M/s. WATSON PHARMA PVT. LTD. Plot No. A3 to A6, Phase 1-A, Verna Industrial Estate, Verna, Salcete-Goa.	5.1	Used /Spent Oil	1.7 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.2	Spent Carbon	3 MT/ Annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.4	Date expired product & discarded off specification products	60 MT/ Annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB <u>OR</u> To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		28.5	Solvent waste	12 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB <u>OR</u> To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		34.3	ETP Sludge	5MT/Annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		5.2	Wastes residues containing oil	1 MT/Annum	To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		34.2	Ion exchange resin	2.5 MT/Annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB <u>OR</u> To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
195	M/s. WAVELET BEACH RESORT Survey No. 120/21-A, H.No: 1436/A, Dulgal, Polem, Loliem, Canacona-Goa.	5.1	Used/Spent oil	30 liters/Annum	To recycler registered with CPCB and having valid authorization of SPCB
196	M/s. ABS ELECTROPLATERS(INDIA) PRIVATE LIMITED Plot No. SC-1/38 & 39, Verna Industrial Estate, Verna, Salcete-Goa.	5.1	Used/Spent oil	0.100 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		21.1	Sludge from paint booth	1 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		34.3	ETP Sludge	0.020 MT/month	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB

		33.3	Empty paint tins	25 nos./annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling.
197	M/s. KAYKAY CROWN CORKS PVT. LTD. Plot No. D 2/5, Bicholim Industrial Estate, Bicholim-Goa.	33.3	Empty Ink Container	10-12 nos./annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling
		21.1	Varnish waste	0.025 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		5.2	Cotton Waste	0.010 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
198	M/s. MACBROUT ENGINEERING PVT. LTD., C/o. Roger Gomes, Plot No. A1/22, Margao Industrial Estate, St. Jose de Areal, Salcete - Goa	5.1	Used/Spent oil	1 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
199	M/s. Mauli Industries C/o Mr. Martin A. Barbosa H. No. 317, Dassolwada, Kundaim, Ponda-Goa	5.1	Used spent oil	0.005 MT/annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
200	M/S. GLAMAZON SALON AND SPA Survey No.247/24A, Opp. Sun City Resort, Saunta Vaddo, Baga, Calangute - Goa	5.1	Used /Spent Oil	0.002 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
201	M/s. Midway Trading Co. Shop No. G – 25, Jairam Complex, Neugi Nagar, Panaji - Goa	33.3	Empty ink tins	0.006 MT/annum	Thinner to be used for cleaning ink tins & same thinner to be used for dilution of ink & decontaminated tins given for recycling
202	M/s. GODREJ AGROVET LIMITED. Survey No. 37/1, Gomal-Velguem, P.O. Valpoi, Sattari-Goa	5.1	Used/Spent oil	0.080 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		34.3	ETP Sludge	20 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
203	M/s Panduronga Timblo Industrias Subhash Timblo Bhavan, Post Box No. 242, Margao-Goa	5.1	Used/Spent oil	0.05 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
204	M/s. EXECUTIVE ENGINEER SD III WORK DIV IV Sheet No. 62, Chalta No.72, Opp. Don Bosco High School, Panaji, Tiswadi-Goa.	5.1	Used/Spent oil	0.420 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
205	M/s. CHEMTROLS INDUSTRIES LTD. Plot No. 141 & 142, Kundaim Industrial Estate, Kundaim-Goa.	5.1	Used/Spent oil	0.08 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
206	M/s. BIRLA FURUKAWA FIBRE OPTICS LIMITED. Plot No: L-62 (sub-leased part premises) Verna Industrial Estate, Verna-Salcete-go.	5.1	Used /Spent Oil	0.5 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Cotton waste	0.02 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		20.2	Spent solvent	0.5 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		21.1	Ink waste & residue	1 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		23.1	Waste & residue (resin)	3 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		33.3	Discarded containers	7 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
207	M/s. CHOWGULE INDUSTRIES PRIVATE LIMITED. Plot No: 40, Canacona Industrial Estate, Shristhal-Canacona.	5.1	Used /Spent Oil	5040 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		3.3	Sludge and filters contaminate with oil	1800 MT/Annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration

		5.2	Oil soaked cotton waste	40 kg/Annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		34.3	E.T.P. Sludge	200 Kg/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
208	M/S. SAI METAL WORKS H.No.207, Fondvem, Ribander, Tiswadi Goa	33.3	Empty paint tins	10 nos./ month	Wash water treated in Effluent Treatment Plant & decontaminated containers given for recycling.
209	M/s. JIMCAP ELECTRONICS PVT. LTD. Plot No. L-12, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used /Spent Oil	0.100 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Discarded paint tins	48 nos./ annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling.
		6.2	Zinc dust	0.300 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
210	M/S. AKSHAY PLASTIMERS CORPORATION Plot No. L-70, Verna Industrial Estate, Verna, Salcete - Goa	21.1	Waste contaminated with ink	0.200 MT/ annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		5.1	Used spent oil	0.100 MT annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Empty ink tins		Thinner to be used for cleaning ink tins & same thinner to be used for dilution of ink & decontaminated tins given for recycling
211	M/s. TAVORA HOTELS & RESTAURANTS. Plot No: 107 of P.T Sheet No: 38, Trionora Apts, Near Municipal Market Area, Panaji-Goa.	5.1	Used/Spent Oil	0.002 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
212	M/S. ULTRATECH CEMENT LIMITED Plot No.8,9 Chowgule Industrial Estate, Gadegally, Sancoale Goa.	5.1	Used /Spent Oil	150 kg/ annum	To recycler registered with CPCB and having valid authorization of SPCB
213	M/s. GONSALVES ENGINEERING C/o Shri Rosario Gonsalves, Survey. No. 262, H no. 84(2), Arlem, Raia, Salcete - Goa.	33.3	Paint tins	4 nos/month	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling
214	M/S. SIPPING SPIRITS PVT. LTD. Plot No.S6B, Colvale Industrial Estate, Colvale, Bardez Goa.	5.1	Used /Spent Oil	0.018 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
215	M/s. VERGO PHARMA RESEARCH PVT. LTD. Survey No. 24/1-D, Plot No. D-1, Mologa De Orora, Corlim, Tiswadi-Goa.	5.1	Used /Spent Oil	150 Litres/Annum	To recycler registered with CPCB and having valid authorization of SPCB
216	M/s. Vergo Pharma Research Laboratories Pvt. Ltd. Plot No. B-5, B-22, & B-23A, Phase I-A, Verna Industrial Estate, Verna, Salcete – Goa.	5.1	Used /Spent oil	0.030 – M.T/annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
217	M/s SHREENAATH PRESTRESSED PVT.LTD. Survey No. 78/7, Assonora, Bardez-Goa	33.3	Paint discarded Containers	10 MT/annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling
218	M/S. SUNPRINT INK INDUSTRIES Shed No.D-2/27, Sy.No.500 (Part), 501 (Part) Tivim Industrial Estate, Karaswada, Goa – 403 526	5.2	Cotton waste contaminated with ink	240 kg/ annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		33.3	Empty ink tins/Cans	60 nos./ annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		21.1	Process waste residue and sludge	0.250MT/ annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
219	M/s. NANU RESORTS PVT. LTD. Nanu House, V. V. Road, P.O. Box 125, Margao-Goa.	5.1	Used/Spent oil	0.030 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB

220	M/S. TURBOCAM INDIA PRIVATE LIMITED D2-9, Margao Industrial Estate, St. Jose De Areal, Salcete Goa.	5.1	Used /Spent Oil	0.3 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
221	M/S. RAJKAMAL FABRICATIONS Plot No. A/28, Madkai Industrial Estate Madkai - Goa	33.3	Empty paint tins	0.010 MT/annum	Thinner to be used for cleaning ink tins & same thinner to be used for dilution of ink & decontaminated tins given for recycling
222	M/s. Sea Blue Ice Plant, C/o. Mr. Shaikh Ismail Ramned Survey No. 233/1, Gounlloy, Nuvem, Salcete – Goa.	5.1	Used /Spent Oil	0.4 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
223	M/s. ROBIN INDUSTRIES. Survey No: 3, Plot A, H.No: 234, Barazan Usgao, Ponda-Goa.	33.3	Empty paint tins	5 nos/month	Thinner to be used for cleaning paint tins and same thinner to be used for dilution of paint and decontaminated tins given for recycling
224	M/S. OM SHANTA BY THE BEACH Survey No.138/1-E-1, H.No.741/B, 2 nd Fatrada, Near Ramada Hotel, Varca, Salcete Goa - 403717	5.1	Used /Spent Oil	0.010 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
225	M/S. JSW JAIGARH PORT LTD. C/o. Shri.BaburaoSatardekar 1 st Floor, Port Users Complex, MormugaoHarbour, Head Land Sada, Harbour, Vasco Goa	5.1	Used spent oil	0.060 MT/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
226	M/s. SMILE AUTO SERVICE C/o.Shri Ismail Sab Bepari, H. No. 541, Ubo Dando, Santa Cruz, Ilhas-Goa.	5.2	Oil sludge	50 liters/annum	To recycler having valid authorization of SPCB & having valid Water & Air Consent of the Board.
227	M/s CHOWGULE INDUSTRIES PVT. LTD., Survey No. 279/5, C/o Chowgule and Co. Pvt. Ltd., Par Usgao, Ponda - Goa	5.1	Used spent oil	2.4 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Filters contaminated with oil	600 nos./annum	To be sent to M/s Mumbai Waste Management Ltd, Talaja for incineration
		5.2	Cotton Waste	0.024 MT/annum	
228	M/s. INDOCO REMEDIES LTD. (PLANT-II) Plot No. L-32, 33 & 34, Phase-II, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used /Spent Oil	400 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Wastes and Residues containing oil	0.8 MT/ annum	To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		15.2	Discarded asbestos	0.07 MT/ annum	To a secured landfill site having valid authorization from SPCB
		21.1	Waste ink, plastic waste	20 litres/ annum	To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		28.1	Pharmaceutical residues & wastes	0.5 MT/ annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration
		28.2	Spent carbon	0.6 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
229	M/s. BRITACEL SILICONES LTD. Shed No. D-2/6, Plot No. 192F, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used/Spent oil	0.024 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		27.1	Silicone oil residues & Silicone oil	0.060 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Talaja for incineration or to be disposed in a secured landfill site having valid authorization from SPCB
		33.3	Empty drums	25 nos./annum	To recycler registered with CPCB and having valid authorization of SPCB
230	M/s. DIEBOLD INDIA PVT. LTD. Plot No. 45/46/47, Tivim Industrial Estate, Karaswada, Mapusa-Goa.	5.1	Used / Spent Oil	20 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.1	Grease	5 kg/Annum	To recycler registered with CPCB and having valid authorization of SPCB

		5.2	Oil soaked cotton waste/waste oil	10 kg/Annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		5.2	Oil filter	10 kg/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
231	M/s. KONKAN RETREADS. Flat No: B-303, Kurtarkar Gardens, Housing Board Road, Gogal, Margao-Goa.	5.1	Used/Spent oil	0.010 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
232	M/s DATTAPRASAD CASHEW INDUSTRY lot No. 47/1, Podocem, Sanquelim, Sattari - Goa	5.1	Used/spent oil	0.004 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
233	M/s NAIK AUTO INDUSTRIES KORPORATION Plot No. 41 & 42, Mapusa Industrial Estate, Mapusa, Bardez - Goa	5.1	Used/spent oil	4.8 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Wastes residues containing oil	0.18 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		34.3	ETP Sludge	1.2 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
234	M/s. Vani Agro Farms Pvt. Ltd. H. No. 19, Danika Residency, Colva, Salcete Goa	5.1	Used spent oil	110 MT/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
		34.2	Ion exchange resin	210 MT/ annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
235	M/s. Berger Paints India Ltd. Plot no. 316 & 317, Kundaim Industrial Estate, Kundiam - Goa	5.1	Used spent oil	0.05 MT/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
236	M/s. CEMENT BRICKS INDUSTRIES. Survey No. 69/1-F, Near Govt. Milk Diary, Curti, Ponda-Goa.	5.1	Used /Spent Oil	10 litres/annum	To recycler registered with CPCB and having valid authorization of SPCB
237	M/s. MANIYARI HOTELS PVT. LTD. 200 Rua Leopold Flores, Opp. Hindustan Petroleum, Vasco-Da-Gama, Goa	5.1	Used/Spent oil	0.020 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
238	M/S. PYRO ELECTRIC INSTRUMENTS GOA PVT. LTD. Plot No. 71, Bicholim Industrial Estate, Bicholim – Goa.	5.1	Used /Spent Oil	0.010 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
239	M/s. VEEDOIT C/o. Shri. Sachin G. Toranagatti, H. No. 5, Maimar Apts. Mongor-Hill, Vasco-Da-Gama, Mormugoa-Goa.	5.1	Used/Spent oil	1.200 Mt/annum	To recycler registered with CPCB and having valid authorization of SPCB
240	M/s. MANIPAL HOSPITAL GOA. Survey No. 264/1, Dr. E. Borges Road, Dona Paula, Goa.	5.1	Used /Spent Oil	0.350 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
241	M/S. TATA CONSULTANCY SERVICES LTD Plot No. 17 – B, Tivim Industrial Estate Karaswada, Mapusa, Goa	5.1	Used spent oil	0.2 MT/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
		B-4	Solder Dross (with Lear)	1.80 MT/ annum	To recycler registered with CPCB and having valid authorization with SPCB
		33.3	Discarded containers or barrels	0.05 MT/ annum	Wash water treated in Effluent Treatment Plant and decontaminated drums given for recycling

242	M/s. KINECO PRIVATE LIMITED Plot No. 41,42,43,34 & 35, Pilerme Industrial Estate, Pilerme, Bardez-Goa.	5.1	Used/Spent oil	30 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
243	M/s. Paradise –II, C/o. Paradise Ventures, Nizari Bhavan, 5 th floor, Menezes Braganza Road, P.O.Box no. 143, Panaji-Goa.	5.1	Used/Spent oil	100 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
244	M/s. BHARAT HOTELS LTD. (Intercontinental The Lalit Goa Resort) Survey No. 28/1, 29/1, 33/1, 33/2, 30/41, Rajbaga, Canacona- Goa.	5.1	Used /Spent Oil	600 to 800 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
245	M/s. CROMPTON GREAVES LIMITED (LT Motors Division) Plot No. S-14 & S-15, Colvale Industrial Estate, Colvale, Bardez-Goa	5.1	Used/Spent oil	0.6 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		21.1	Varnish waste & residue	1.2 MT/annum	To be sent to M/s. Mumbai Waste Management Ltd. at Taloja for incineration
			Paint waste & residue	1.2 MT/annum	
246	M/s. SIALCA INDUSTRIES. Plot No. SA 63-66 & 80-83, Cuncolim Industrial Estate, Cuncolim-Goa.	5.1	Used /Spent Oil	0.1 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
247	M/s. SANDRAY LUXURY RESORTS PVT. LTD. Plot No. 54/5,Behind Colva Police Station, Colva Benaulim Road, Colva, Salcete-Goa	5.1	Used/Spent oil	13 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
248	M/s. PARLE (EXPORTS) PVT. LTD. Plot No. L-72, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used/Spent oil	50 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
249	M/s. GMI ZARHAK MOULDERS PVT.LTD. Plot No. S-91, Phase II-C, Verna Electronic City, Verna, Salcete-Goa	5.1	Used/Spent oil	0.009 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
250	M/s. HOTEL DELMON Caetano de Albuquerque Road,Panaji- Goa	5.1	Used /Spent Oil	35 litres/annum	To recycler registered with CPCB and having valid authorization of SPCB
251	M/s. ORIENTAL CONTAINERS LTD. Plot No. 327 to 332, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used/spent oil	1000 ltrs/annum	To recycler registered with CPCB and having valid authorization of SPCB
252	M/s. GRACIANO COTTAGES. Survey No. 40/4-B, 37/2-A, 4 th Ward, Colva Beach Colva, Salcete-Goa.	5.1	Used /Spent Oil	50 kg/ annum	To recycler registered with CPCB and having valid authorization of SPCB
253	M/s. GLENMARK GENERICS LTD. Plot No. S-7, Colvale Industrial Estate, Colvale, Bardez-Goa	5.1	Used/Spent oil	0.05 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.3	Off Specification	0.15 MT/annum	Chemical – Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		28.4	Date expired products	0.05 MT/annum	Chemical – Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB/Or To be sent to M/s. Mumbai Waste Management Ltd. at Taloja for incineration.
		34.3	E T P Sludge	0.1 MT/annum	Chemical – Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
254	M/s. THE ANCHORAGE. Plot No: 443/3 Part, Pequeno Chinvar Vagator , Anjuna Bardez-Goa.	5.1	Used /Spent Oil	0.001 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
255	M/s CHOWGULE INDUSTRIES PVT. LTD., Survey No. 279/5, C/o Chowgule and Co. Pvt. Ltd., Par Usgao, Ponda - Goa	5.1	Used spent oil	2.4 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Filters contaminated with oil	600 nos./annum	To be sent to M/s Mumbai Waste Management Ltd, Taloja for incineration
			Cotton Waste	0.024	

				MT/annum	
256	M/s. CENTAUR PHARMACEUTICALS PVT. LTD. Plot No. 3, Tivim Industrial Estate, Karaswada, Mapusa-Goa	5.1	Used /Spent Oil	50 kg/annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.1	Pharmaceutical wastes & residues	250 kg/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		28.3	Date expiry products, off-specification products	3.1 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		34.3	ETP Sludge	30 kg/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB

257	M/s. CMM LOGISTICS PVT. LTD. CMM Building, Rua De Ourem, Panaji-Goa.	5.1	Used/Spent oil	40 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
258	M/s. VYOMA TRAVELS AND LOGISTIC PVT. LTD. Plot No: 16, 2 nd Floor, EDC Complex , Patto Center, Panaji-Goa.	5.1	Used /Spent Oil	10 litres/annum	To recycler registered with CPCB and having valid authorization of SPCB
259	M/s. GOA PAINTS & ALLIED PRODUCTS PVT. LTD. C/o. Mr. Jaiprakash V. Dempo, Dempo Trade Centre, 1 st floor, Patto Plaza, Panaji – Goa.	5.1	Used/Spent oil	19.2 kg/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Discarded containers/barrels	980 nos./annum	To recycler registered with CPCB and having valid authorization of SPCB
260	M/s. HINDUSTAN PETROLEUM CORPORATION LTD. (LPG Bottling Plant) Plot No. 150, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used /Spent Oil	500 litres/ year	To recycler registered with CPCB and having valid authorization of SPCB
		21.1	Paint waste	120 kg/ year	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		34.3	ETP Sludge	300 kg/ year	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
261	M/s. CARTINI INDIA LTD. Plot No. D2-38/39, Tivim Industrial Estate, Karaswada, Mapusa-Goa.	5.1	Used /Spent Oil	0.025 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
262	M/s. GLOW PAINTS PVT. LTD. Plot no. 121, Bethora Industrial Estate. Bethora, Ponda-Goa.	21.1	Paint waste	4 kg/day	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Paint tins	3 kg/day	To recycler registered with CPCB and having valid authorization of SPCB
263	M/s. SILVER SANDS HOLIDAY VILLAGE C/o. Mr. Agnelo Fernandes, H. No. 888B, Camotim Waddo, Candolim, Bardez-Goa	5.1	Used/Spent oil	10 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
264	M/s. MATERIAL ORGANISATION. Plot No: 49/1, Dabolim vasco-Goa.	5.1	Used /Spent Oil	40 litres/year	To recycler registered with CPCB and having valid authorization of SPCB
265	M/s. WILLIAMS BEACH RETREAT PVT. LTD. Survey no. 25/4, 5 & 7(Part), Colva Beach, Colva, Salcete-Goa.	5.1	Used/Spent oil	20 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
266	M/s. GAURI PACKAGING C/o. Mr. Nitendra N. Bhandari, Shed No. D-2-3, Kakoda Industrial Estate, Kakoda-Goa.	33.3	Used ink cans	48 nos./annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
267	M/s. CLASSIC PAVERS C/o. Narainrao Desai, Desai House, Khadpabandh, Ponda-Goa.	5.1	Used/Spent oil	0.05 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
268	M/s. KUNDIL ALLOYS PVT. LTD. C/o. Chiranjib Baruah Plot No. A-1, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used/Spent oil	0.075MT/ann um	To recycler registered with CPCB and having valid authorization of SPCB
269	M/s HINDUSTAN PETROLEUM CORPORATION LTD. (Vasco Terminal) P. O. Box No. 48, F. L. Gomes Road, Vasco-da-Gama, Goa	5.1	Used/Spent Oil	0.06 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		3.1	Oil containing cargo residue, washing water and sludge	100 Mt/Annum	To recycler registered with CPCB and having valid authorization of SPCB <u>OR</u> To be sent to M/s. Mumbai waste Management Ltd. at Taloja for

					incineration.
270	M/s RANBAXY LABORATORIES LIMITED Plot No. B-2, Madkai Industrial Estate, Madkai-Goa	5.1	Used /Spent Oil	0.768 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.4	Date expired, discarded & off-specification drugs/ medicines	0.10 MT/ annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
271	M/s. UNICHEM LABORATORIES LTD. Plot No. 17, 17a & 18, Pilerne Industrial Estate, Pilerne, Bardez-Goa.	34.3	Effluent Treatment Plant Sludge	0.048 MT/ annum	To be sent to M/s. Mumbai Waste Management Ltd. at Taloja for incineration.
		5.1	Used /Spent Oil	2 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.4	Date expiry products, off-specification products	15 MT/Annum	Chemical-Physical Treatment followed by disposal in a secured landfill site or incineration having valid authorization from SPCB <u>OR</u> To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
272	M/s. Paradise –I, C/o. Paradise Ventures, Nizari Bhavan, 5 th floor, Menezes Braganza Road, P.O.Box no. 143, Panaji-Goa.	5.1	Used/Spent oil	100 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
273	M/s. OM FABRICATION. Plot No: 180/0, Gaunem Bandora, Ponda-Goa.	33.3	Discarded containers/ empty paint tins	15 MT/ Year	To recycler registered with CPCB and having valid authorization of SPCB
274	M/s. DCI PHARMACEUTICALS PVT. LTD. P.O.Box No. 739, Vidyanagar, Margao, Salcete-Goa	5.1	Used /Spent Oil	50 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.3	Date expiry products, off-specification products	7 kg/ annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		28.5	Spent Organic Solvent	3 litres/ month	To recycler registered with CPCB and having valid authorization of SPCB
275	M/s. KESARVAL SPRINGS DISTILLERS PVT. LTD. Plot No. L-22, Cuncolim Industrial Estate, Cuncolim-Goa	5.1	Used/Spent Oil	13 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
276	M/s. HOTEL TANISH Reliance Trade centre, V. V. Road, Margao – Goa.	5.1	Used Spend Oil	4 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
277	M/s. NAVAL ARMAMENT DEPOT. Plot No: 165/1,139/1,125/1,134/11, Chicalim Goa Vasco Da gama, Chicalim-goa.	5.1	Used /Spent Oil	15 litres/year	To recycler registered with CPCB and having valid authorization of SPCB
278	M/s. SRI SHANTHA PUMPS. S. no. 44/4, H. no. 751 A, Ambelim Velim, Salcete– Goa.	5.1	Used /Spent Oil	20 kg/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		21.1	Sludge from paint booth	100 kg/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration.

279	M/s. BRITACEL SILICONES LTD. Plot No. L-125/126, Phase III A, Verna Industrial Estate, Verna-Goa.	5.1	Used /Spent Oil	2 kg/ month	To recycler registered with CPCB and having valid authorization of SPCB
		27.1	Silicone oil residues & silicone oil	5 kg/ month	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		33.3	HMHDPE carboys/ drums	1100 nos./ year	Wash water treated in Effluent Treatment Plant & decontaminated drums given for recycling
			MS drums	50 nos. year	
			PP bags	200 nos./ year	
		34.3	Effluent Treatment Plant Sludge	10 kg/ month	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
280	M/s. NAGARSENKAR'S CLASSIC HOSPITAL Plot no. 77,78,79 P.T.Sheet No. 251, Malbhat, Margao -Goa.	5.1	Used/Spent oil	0.018MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
281	M/s. SAINI MOTORS(SERVICING) Sukhmani Enclave, Arlem, Bypass Highway, Arlem, Margao-Goa.	5.1	Used/Spent oil	8-10 liters/day	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Cotton waste	5 kg/month	To be sent to M/s Mumbai Waste Management Ltd, Taloja for incineration
282	M/s. Arcanjo Construction Pvt. Ltd. C/o. Narayan Automobiles, Shop No. 1, Shobha Appt, Behind Kunde Petrol Pump, Margao-Goa.	5.1	Used/Spent Oil	3 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
283	M/s. INTECH PHARMA PVT. LTD. Survey No. 33/1-A, Dhargal village, Pernem-Goa	5.1	Used/Spent Oil	0.8 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
284	M/s. CIPLA LTD. Plot No. N-5a, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used /Spent Oil	396 MT/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Wastes and residues containing oil	3.6 MT/ annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
		34.1	Flue gas cleaning residue	1.8 MT/ annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
285	M/s. PRESTIGE HOLIDAY RESORTS PVT. LTD. (ROYAL GOAN BEACH CLUB) Survey No. 268/1, Monte Rio, Arpora, Bardez-Goa	5.1	Used/Spent oil	120 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
286	M/s. STANIS CRUSHING EQUIPMENTS. Plot no: 285, kundaim industrial estate, Kundaim-goa.	33.3	empty paint tins	5 kg/month	To recycler registered with CPCB and having valid authorization of SPCB
287	M/s. RESORT TERRA PARAISO Survey No. 148/2, Gaura Vaddo, Calangute, Bardez-Goa	5.1	Used /Spent Oil	40 litres/annum	To recycler registered with CPCB and having valid authorization of SPCB
288	M/s. PENTAIR WATER INDIA PVT. LTD. Plot No. L/52-55, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used/Spent oil	1.200 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
289	M/s. CHODANKAR BROTHERS C/o. Shri Gurudas Sanju Chondankar,	5.1	Used/Spent oil	100 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Paint tins	50	To recycler registered with CPCB and

	Plot No. 29, Tivem Industrial Estate, Tivem, Bardez-Goa.			nos./month	having valid authorization of SPCB
290	M/s. JUST PERFECT RESORTS GOA PVT. LTD. Plot No. 1669/3, Chiuvar, Anjuna, Bardez-Goa.	5.1	Used/Spent oil	0.020 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
291	M/s. AUTOMOBILE CORPORATION OF GOA LTD. (Bus Body Division) Plant-II Survey no. 39/3, Bhuimpal, Sattari-Goa	5.1	Used/Spent oil	5 liters/month	To recycler registered with CPCB and having valid authorization of SPCB
		21.1	Paint Sludge	200 kg/month	To be sent to M/s. Mumbai Waste Management Ltd. at Taloja for incineration
292	M/s. SOUTH WEST PORT LTD. (Berth No. 5A & 6A) Chalta No. 1 of P.T. Sheet No. 7, 1 st Floor, Port Users Complex, Mormugao Harbour, Mormugao-Goa	5.1	Used/Spent oil	9.0 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Waste residues Containing oil	2.0 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
293	M/s. GOAORECARRIERS. Survey No. 310/3 Village Rassaim, Loutolim, Salcete-Goa	5.1	Used /Spent Oil	100 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
294	M/s. MERCK LIMITED Survey No. 11/1, Marvasado, Usgaon, Ponda-Goa.	5.1	Used /Spent Oil	4 tons	To recycler registered with CPCB and having valid authorization of SPCB
		20.2	Spent Solvents	52 tons	To recycler registered with CPCB and having valid authorization of SPCB OR To be sent to M/s Mumbai waste Management Ltd., Taloja for incineration
		28.4	Date expired/ discarded and off specification drugs/medicines	14 tons	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		33.3	Discarded containers/ barrels/ liners used for hazardous chemicals	5 tons	Wash water treated in Effluent Treatment Plant & decontaminated drums given for recycling.
		34.3	Chemical sludge from ETP	13 tons	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		C14/D6	Spent acetic acid conc. & Zinc salt mixture	218 tons	To a party having valid authorisation and consent from SPCB or Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		D6	Organic oxygen compounds (acetic acid)	10 tons	To a party having valid authorisation and consent from SPCB OR To be sent to M/s Mumbai waste Management Ltd., Taloja for incineration
		D2	Inorganics Acids (Spent Ortho Phosphoric acid)	70 tons	To a party having valid authorisation and consent from SPCB OR Chemical- Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		C8	G.B. Oil high boiler (plant extract)	15 tons	To a party having valid authorisation and consent from SPCB OR Chemical- Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
			Aromatized high boiler of GB Oil (Plant extract)	23 tons	
			Transformed GB Oil	20 tons	

			(Plant extract)		
		C13	Sodium hydrogen sulphide	82 tons	To a party having valid authorisation and consent from SPCB OR Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		28.5	DEHM/ Oxyne Forerun	27 tons	To be sent to M/s Mumbai waste Management Ltd., Taloja for incineration
			Mother liquor residue	16.5 tons	
		28.1	Oxyne Residue	13.8 tons	To be sent to M/s Mumbai waste Management Ltd., Taloja for incineration OR Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
			DEHM Residue	5.4 tons	
		6.2	Zinc dust	7.5 tons	To recycler registered with CPCB and having valid authorization of SPCB
295	M/s. MITASU WOODS PVT. LTD. Plot No. 269, Kundaim Industrial Estate, Kundaim – Goa.	5.1	Used/Spent oil	5 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Paint tins	10 nos./month	To recycler registered with CPCB and having valid authorization of SPCB
296	M/s ZUARI FOODS & FARMS PVT.LTD. Survey No. 170/0 & 170/1, Zuari Marg, Bhatpal, Canacona-Goa	5.1	Used/Spent Oil	0.02 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
297	M/s. TITANIC RESORTS PVT LTD (Papa Jolly's) H. no. 749/A, New Wada, Morjim, Pernem-Goa	5.1	Used/Spent oil	0.036MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
298	M/s. QUALIPRO INDUSTRIES Plot no. 57, Tuem Industrial estate, Tuem, Pernem-Goa	34.3	ETP Sludge	0.6 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		12.5	Phosphate Sludge	0.1 MT/annum	
299	M/s VASSANJI INDUSTRIES Plot No. 58 & 59, Bethora Industrial Estate, Bethora, Ponda-Goa Pin: 403409	33.3	Empty Paint tins	317 nos./annum	Thinner to be used for cleaning paint tins & same thinner to be used for dilution of paint & decontaminated tins given for recycling.
300	M/s. METPRO INDUSTRIES Plot No. 51, Pileme Industrial Estate, Pileme, Bardez-Goa	5.1	Used/Spent Oil	0.015 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
301	M/s. NATIONAL ENGINEERS Plot No. 24, 39 & 40, Kundaim Industrial Estate, Kundaim-Goa	33.3	Empty Paint tins	7 kg/month	To recycler registered with CPCB and having valid authorization of SPCB
302	M/s. ATTIRE HOTELS & RESORTS PVT. LTD. Plot No. 31, EDC, Patto Plaza, Panaji-Goa.	5.1	Used/Spent Oil	0.036 MT/Annum	To recycler registered with CPCB and having valid authorization of SPCB
303	M/s. Praveen Transformers Pvt. Ltd., C/o.Shri. T. Rudrappa, Plot No.336, Kundaim Industrial Estate, Kundaim, Ponda – Goa	5.1	Used/Spent oil	0.06 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
304	M/s. MANDONI DRY DOCKS. Survey No. 224/ 22, Tarichowada, Piligao, Bicholim-Goa.	5.2	Waste oil	250 litres/annum	To recycler having valid authorization of SPCB and having valid water & Air consent of the Board.

305	M/s. AMBEY METALLIC LTD Plot No 69 To 75 & 143 To 160, Pissurlem Industrial Estate, Pissurlem, Sattari- Goa.	5.1	Used /Spent Oil	200 KL/ annum	To recycler registered with CPCB and having valid authorization of SPCB
306	M/s. CORAL CLINICAL SYSTEMS Plot No. M-46, Phase III-B, Verna Industrial Estate, Verna-Goa	5.1	Used/Spent oil	120 kg/Annum	To recycler registered with CPCB and having valid authorization of SPCB
307	M/s. NITIN DEVELOPERS PVT. LTD (Phase- I). Plot No: 402/2, Kamatnagar, Socorro, Porvorim-Goa.	5.1	Used /Spent Oil	100 litres/annum	To recycler registered with CPCB and having valid authorization of SPCB
308	M/s. D.K INDUSTRIES. Survey No.28/1, Thane-Dongurim Village, Valpoi, Sattari-Goa.	5.1	Used /Spent Oil	20 litres/annum	To recycler registered with CPCB and having valid authorization of SPCB
309	M/s. GERMANIA BATTERIES PVT. LTD. Shed No. B3/1-4, Corlim Industrial Estate, Corlim, Ilhas-Goa	B-4 (Schedule-II)	Lead dross waste	8 MT/ a nnum	To recycler registered with CPCB and having valid authorization of SPCB
310	M/s BARTON FIRTOP ENGINEERING (I) PVT. LTD. Plot No. L-74, Phase II-D, Verna Industrial Estate, Verna-Goa	5.1	Used/Spent oil	20 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Cotton waste	30 kg/month	To be sent to Mumbai Waste Management at Taloja for incineration.
		33.3	Empty paint tins	5 tins/month	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling.
311	M/s TOPLINE WRITING INSTRUMENTS PVT.LTD. Plot No. L-70 & 71, Verna Industrial Estate, Verna-Goa	5.1	Used /Spent Oil	0.01 MT	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Wastes/ residue containing oil	0.18 MT	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
		21.1	Waste Ink	0.0625 MT	To be sent to CHWTSDF at Taloja for incineration
		33.3	Discarded containers/ barrels/ liners	125 Nos.	Thinner to be used for cleaning ink tins & same thinner to used for dilution of ink & decontaminated tins given for recycling..
312	M/s. YUNCA MACHINERY MANUFACTURING PVT. LTD. Plot No. L-21, Verna Industrial Estate, Verna, Salcete -Goa.	33.3	Discarded Paint Tins Containers	0.5 MT/annum	Wash water treated in Effluent Treatment Plant & decontaminated containers given for recycling
313	M/s. AQUA RESORTS & SPA PVT. LTD. C/o. Mr. Peter Vaz, 4th floor, Joffre Residency, Behind Goa Pharmacy College, Panaji-Goa.	5.1	Used /Spent oil	0.02 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
314	M/s. NATIONAL INDUSTRIAL CORPORATION LTD. Plot No. D2/40, Tivim Industrial Estate, Mapusa, Bardez-Goa	5.1	Used/Spent oil	10 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
		34.3	ETP Sludge	150 kg/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
315	M/s. SHAIV DISTILLERIES PVT. LTD. Plot No. 101 to 104, Bicholim Industrial Estate, Bicholim-Goa	34.2	Used ion exchange material	240 kg/ year	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB

316	M/s. GODREJ AGROVET LIMITED. Survey No. 37/1, Gomal-Velguem, P.O. Valpoi, Sattari-Goa	5.1	Used/Spent oil	0.080 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		34.3	ETP Sludge	20 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
317	M/s. PROCTER & GAMBLE HYGIENE & HEALTH CARE LTD. Plot No. 173, Kundaim Industrial Estate, Kundaim-Goa	5.1	Used /Spent Oil	6 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Wastes/ residues containing oil	0.5 MT/annum	To recycler having valid authorization of SPCB and having valid Water & Air Consent of the Board.
		21.1	Spent ink & solvents	5 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		33.3	Discarded containers of paints	0.6 MT/annum	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling.
318	M/s. CASA ROIZ GUEST HOUSE H. No. 392, Villa Roiz, 4th Ward, Colva, Salcete-Goa	5.1	Used/Spent oil	14 liters/annum	To recycle registered with CPCB and having valid authorization of SPCB
319	M/s. CIPLA LTD. Plot No. M-61, M-62 & M-63, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used /Spent Oil	1.2 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.1	Pharmaceutical Residues and wastes	0.105 MT/annum	Incineration at the existing incinerating facility of the unit OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja
		28.3	Off Specification products	0.3 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
		33.3	Discarded containers/ barrels/ liners	300 MT/annum	Wash water treated in Effluent Treatment Plant & decontaminated drums given for recycling.
		34.1	Flue gas cleaning residue	0.18 MT/annum	Incineration at the existing incinerating facility of the unit OR To be sent to M/s Mumbai Waste Management Ltd. at Taloja
		34.3	ETP Sludge	0.9 MT/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
320	M/s. Goa Carbon Limited, Dempo House, Campal, Panaji-Goa.	5.1	Used /Spent Oil	150 – 400 litres/ annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Cotton waste contaminated with oil	240 kg/ annum	To be incinerated in the settling chamber of the kiln
321	M/s. VICTORIA ENGINEERING H. No. 1/440/B, Mungul, Pequeno, Margao-Goa	33.3	Empty Paint Tins	0.24 MT/annum	Thinner to be used for cleaning paint tins & same thinner to used for dilution of paint & decontaminated tins given for recycling
322	M/s. CENTAUR PHARMACEUTICALS PVT. LTD. Plot No. 3, Tivim Industrial Estate, Karaswada, Mapusa-Goa	5.1	Used /Spent Oil	50 kg/annum	To recycler registered with CPCB and having valid authorization of SPCB
		28.1	Pharmaceutical wastes & residues	250 kg/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		28.3	Date expiry products, off-specification products	3.1 MT/ annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		34.3	ETP Sludge	30 kg/annum	Chemical-Physical Treatment followed by disposal in a secured landfill site having valid authorization from SPCB
323	M/s. ACHUTANAND MAHARAJ WORKSHOP. H. No. 863/7, Aframent, Bhati,	33.3	Empty paint tins	0.100 MT/annum	Thinner to be used for cleaning paint tins and same thinner to used for dilution of paint and decontaminated tins given for recycling

	Shiroda, Ponda-Goa				
324	M/s. ADINCO DISTILLERIES C/o. Mr. Alleuia Diniz, Resurrection Bldg, Avedem, Qupem-Goa.	5.1	Used/Spent oil	0.01 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
325	M/s. KODAK INDIA PRIVATE LIMITED Plot No. L-16, Verna Industrial Estate, Verna, Salcete-Goa	5.1	Used/Spend oil	0.200 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Waste/Residue Containing oil	0.050 MT/annum	To be sent to M/s Mumbai Waste Management Ltd. at Taloja for incineration
		B-10 (Sch.2)	Film Scrap	48 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
		33.3	Discarded plastic containers/barrels	0.250 MT/annum	To recycler registered with CPCB and having valid authorization of SPCB
326	M/s. M.K.P AUTO ENGINEERS C/o. Mrs. Mansi N. Desai, H. no. 501, Murida, Cuncolim, Salcete-Goa.	5.1	Used/spent oil	25 liters/annum	To recycler registered with CPCB and having valid authorization of SPCB
		5.2	Oil filters	50 nos./annum	To be sent to Mumbai Waste Management at Taloja for incineration.

ANNEXURE VIII
Table 9: Annual Returns of Bio-medical waste for April 2013

Hospitals & Nursing homes (HCF's) in village/town/city as per schedule VI (1)	Total no. of HCF's irrespective of number of patients treated (2)	Total no. of Beds (3)	No. of HCF's required to take authorisation (4)	No. of HCF's granted authorisation (5)	No. of HCF's having treatment and disposal facilities (6)	Total no. of captive treatment equipment installed by HCF's (i.e excluding CBWTF) (7)					No. of CBWTF (8)		Total Qty of BMW generated kg/day (10)	Total Qty of BMW treated kg/day (11)	No. of Health Care Facilities violated BMW Rules (HCF) (12)		Total no. of Show Cause Notices/Directio ns issued to defaulter HCF (13)	
						Incinerator	No. of Autoclave	No. of Microwave	No. of Hydroclave	No. of Shredder	In operation	Under Construction			HC F	CBWTF	HC F	CBWTF
A) HCF in town with population of 30 lakhs and above	0					With Air Pollution Control Device (APCD)												
B) HCF in town with population below 30 lakhs:																		
a) with 500 beds and above	1																	
b) with 200 beds but less than 500 beds	3	5153	NIL	NIL	1	1	121	-	-	-	NIL	NIL	8614.4	8614.4	1	-	1	-
c) with 50 beds but less than 200 beds	17																	
d) with less than 50 beds	369																	
C) All other institutions generating bio-medical waste not included in A) and B)	7																	
Total	397	5153	NIL	NIL	1	1	121	-	-	-	NIL	NIL	8614.4	8614.4	1	-	1	-

ANNEXURE IX

Table 10.1: IMPLEMENTATION OF PLASTIC WASTE (MANAGEMENT AND HANDLING) RULES 2011 IN STATES/UTS.

Name of SPCB/CP CB	Estimated Plastic Waste generation Tons Per Annum (TPA) or TPD	No. Of registered Plastic Manufacturing/Recycling (including multilayer, compostable) units (Rule 9)			No. Of unregistered Plastic Manufacturing /recycling units in residential area	Explicit Pricing of carry bags (Rule 10)	Detailed Status of Plastic Waste Management (PWM) (Rule 6-a to h) eg. Collection, segregation, disposal (Co-processing, road construction etc, conversion of plastic waste into fuel etc.	Partial Ban on usages of Plastic Bags (through executive order) (please mention name tourist places, pilgrimage centres historical places etc.	Complete ban on use of plastic bags including multilayer sachets on Gutkha etc.	Status of Constitution of State Level Advisory Body (Rule 11)	No. Of violation and action taken against manufacturing stock and use of thin (<40µ) carry bags and sachets etc. (Rule 5)
		Plastic units	Compostable Plastic units	Multilayer Plastic units							
(1)	(2)	(3)			(4)	(5)	(6)	(7)	(8)	(9)	(10)
Goa State Pollution Control Board	Approximately 4.50T /day	25	Nil	Nil	23	Goa No-Biodegradable Act	MOU signed with M/s. ACC, Wadi & Vasavadatta cement works for co-processing of plastic waste generated in the State of Goa	No	yes	Monitoring cum Working committee on Solid waste Management & High level Task Force	125 Violations against manufacturing stock and use of thin (<40µ) carry bags Collected fine of Rs. 31800/-

ANNEXURE X

Table 8: Annual Returns of Lead Acid Batteries from April 2013-March 2014

Table A - Status of Lead Acid Battery Manufacturer, Reconditioner, Assembler											
Sr. No.	Type of category	Total No.	Production of LAB		Sale of LAB		Total collection of Used LAB		Annual Returns submitted	Action Taken	Remarks
			Nos	Weight (MT)	Nos	Weight (MT)	Nos	Weight (MT)			
1	Manufacturer	15	76382	573.216	74239	504.879	16557	154.13	Yes	Units which have not filed the annual returns have been directed to so.	Battery Scrap has been sent to 1. Sterling Lead Pvt. Ltd, Kolhapur, 2. Krishna Metal Refinery, Thane, 3. Chloride Alloys Ltd, 4. Chloride Metals Ltd, 5. Associated Pigments.
2	Reconditioner	0									
3	Assembler	0									

Table B - Status of Lead Acid Battery Dealer								
Sr.No.	Total number of dealers	Sales of LAB		Total collection of used LAB		Annual Returns Submitted	Action taken	Remarks
		Nos	Weight (MT)	Nos	Weight (MT)			
1	14	24238	168.49	7449	53.697	Yes		Used batteries sent to :1. Sterling Lead Pvt Ltd, Kolhapur, Exide Industries, Margoa, 3. Germania Batteries, Corlim 4. Amit Sales Corporation.

Table C - Status of Lead Acid Battery Importer								
Sr.No.	Total number of dealers	Sales of LAB		Total collection of used LAB		Annual Returns Submitted	Action taken	Remarks
		Nos	Weight (MT)	Nos	Weight (MT)			
1	NIL							NIL

Table D - Status of Lead Acid Battery Bulk Consumer, Autioneer						
Sr.No.	Total number of Bulk Consumer, Autioneer	Total collection of used LAB		Annual Returns Submitted	Action taken	Remarks
		Nos	Weight (MT)			
1	33	2316	91.54	Yes	Units which have not filed the annual returns have been directed to so.	Used batteries sent to : 1. M/s Quantum Power solutions, 2. Jayval Enterprises, Malur, 3. M/s Santosh, 4. M/s Gem Battery Centre, 5. Sanyo & Sanyo, 6. Superlife Battery Service, 7. Solar Enterprises, 8. Krishna Metal Refinery.

Table E - Status of Lead Acid Battery Recycler						
Sr.No.	Total number of Recycler	Total collection of used LAB		Annual Returns Submitted	Action taken	Remarks
		Nos	Weight (MT)			
1	NIL					NIL