

Semi-Annual Environmental Monitoring Report

Project Number: 35290
July 2015

IND: North Easter Region Capital Cities
Development Investment Program (Tranche 1)
Project City: Kohima, Nagaland State

Prepared by State Investment Program Management and Implementation Unit and Urban Development Department, Government of Nagaland for the Government of India and the Asian Development Bank.

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ABBREVIATIONS

| | |
|----------|--|
| ADB | - Asian Development Bank |
| BTA | - Bridging Technical Assistance |
| CC | - Construction Contractor |
| DOC | - Date of Completion |
| DOS | - Date of Start |
| DSMC | - Design, Supervision and Management Consultant |
| EA | - Executing Agency |
| EARP | - Environmental Assessment & Review Procedure |
| EHS | - Environment, Health and Safety |
| EIA | - Environmental Impact Assessment |
| EMR | - Environmental Monitoring Report |
| EO | - Environmental Officer |
| ES | - Environmental Specialist |
| Gol | - Government of India |
| IA | - Implementing Agency |
| IEE | - Initial Environmental Examination |
| IPCC | - Investment Program Coordination Cell |
| MFF | - Multi-tranche Financing Facility |
| MLD | - Million Liters per Day |
| mn | - Million |
| MoUD | - Ministry of Urban Development |
| NEA | - National Executing Agency |
| NERCCDIP | - North Eastern Region Capital Cities Development Investment Program |
| NSC | - National level steering committee |
| PD | - Project Director |
| PPTA | - Project Preparatory Technical Assistance |
| SEA | - State level Executing Agency |
| SIPMIU | - State Investment Program Management and Implementation Unit |
| SWM | - Solid Waste Management |
| UDD | - Urban Development Department |

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I. INTRODUCTION

A. Background

1. North Eastern Region Capital Cities Development Investment Program (NERCCDIP) is being undertaken for improvement of existing infrastructure, environmental quality and access to basic urban services of Kohima Municipal Council area. The NERCCDIP's objective is to improve the urban environment and promote reforms for sustainable, efficient, and responsive urban service delivery. The Program components are Water supply and Solid Waste Management infrastructure.

2. With an overall objective of sustainable urban development, the NERCCDIP is being implemented in the five capital cities- Gangtok, Aizawl, Kohima, Gangtok and Shillong. NERCCDIP will be implemented over a six year period beginning in 2009, and is funded by a loan via the Multitranchise Financing Facility (MFF) of the Asian Development Bank (ADB).

3. In Kohima, capital city of Nagaland, the Executing Agency (EA) for the program is the Urban Development Department (UDD) of the Government of Nagaland (GoN); and the Implementing Agency (IA) is the State-level Investment Program Management and Implementation Unit (SIPMIU), created within the UDD, specifically for the Investment Program implementation. At central level an Investment Program Coordination Cell (IPCC) is established in MOUD. IPCC is responsible for overall management of the Investment Program and is supported by Program Management & Monitoring Consultants (PMMC).

4. One solid waste management subproject is currently under implementation at Kohima under Tranche-1 (Loan No. 2528 IND). One water supply sub project was also under implementation under Tranche-1. However, all civil works under the water supply sub project were completed during the previous reporting period. Both the sub projects have been classified as Category B as per the ADB Environmental Policy, and accordingly Initial Environmental Examination (IEE) reports were prepared during PPTA/BTA and they were approved by the ADB.

5. Changes in location of some water tanks were proposed in the water supply sub project during implementation and IEE including Environmental Monitoring Plan was updated to address the changes in the location of tanks. The updated IEE was approved by ADB in December, 2013. Solid waste management sub project is being implemented as a design, build, operate and transfer project. Some additional works were proposed as part of this sub project. Therefore, IEE including EMP was updated and it was approved by ADB in December 2013. However, these additional works were not approved by MoUD in Tranche 1 and they have been proposed as a new subproject in tranche 2, for which a separate IEE has been prepared. Hence, the updated IEE is not applicable now. The sub projects in Tranche 1 were screened using ADB checklist for any change in scope and it was found that re-categorization of the sub projects is not required.

6. An Environmental Monitoring Plan which addresses the potential impacts and risks identified by the environmental assessment has been included in the IEE reports. The level of complexity of the EMP and the priority of the identified measures and actions commensurate with the Project's impact and risks. The EMP is part of bidding and contract documents. The EMPs were updated as part of the IEEs updated for the changes in the sub projects. The updated EMPs were issued to the Contractors and the updated IEEs were disclosed in the SIPMIU website. However, the updated IEE for the solid waste management subproject is not applicable now since the proposed changes in the subproject were not approved by MoUD.

B. Project Profile

7. At present, Subprojects under Tranche-1 (Loan No. 2528 IND) are under implementation in Kohima and focus on water supply improvements and solid waste disposal facilities. The water supply subproject (package no. KHM-WA 1) covers construction of 18 ground level RCC tanks (service reservoirs) and refurbishment of an existing water treatment plant.

8. The solid waste management subproject (package no. KHM-SWM 1) covers design, build, operation and transfer of a sanitary land fill, compost plant and internal access roads.

9. Details of the project activities under Tranche-1 (Loan No. 2528 IND) as of June 2015 are presented in the following Table.

Table 1. Sub Project Details under Tranche-1 (Loan No. 2528 IND)

| S. No. | Name of Work | Location | Description | Changes if any from approved scope |
|--------|---|--------------------------------------|---|---|
| 1 | Refurbishment of Kohima water supply scheme (KHM-WA 1) | Spread over Kohima Municipal Council | construction of 18 ground level RCC tanks (service reservoirs) and rehabilitation of the Water Treatment Plant | Locations of 8 ground level service reservoirs were changed and hence the IEE report was updated and it was approved by ADB in December 2013. |
| 2 | Civil works and procurement of equipment for development of sanitary land fill, compost plant and internal access (KHM-SWM 1) | At Landfill site, Lerie | Design, build, operate and transfer of sanitary landfill, compost plant, leachate treatment plant and associated infrastructure | Additional infrastructure such as trommel, shredding, pressing and packing unit, canteen, barracks, toilets, retaining walls, culverts, and step drain were proposed and hence the IEE report was updated and it was approved by ADB in December 2013. However, these additional works were not approved by MoUD under Tranche 1. Hence, these additional infrastructure have been proposed as a new subproject under Tranche 2, for which a separate IEE report has been prepared. Hence, the updated IEE is not applicable now. |

10. Civil works of water supply sub project under Tranche-1 commenced during December 2011 and the estimated duration of works was 18 months. This sub project was originally for the construction of 18 ground level rectangular RCC tanks. During implementation, there was difficulty in starting works at 8 tank sites due to severe space constraint & accessibility (at 7 sites) or non-availability of land (at one site). Hence, it was decided to re-locate these 8 tanks to 4 new sites to resolve the problem. Repair and renovation of existing RCC tank/clarifier at Assam Rifles compound was also included as an additional work in the sub project. In addition to the construction of tanks at the newly identified sites, small distribution tanks had to be constructed at the original locations having constraints for construction. Hence, the IEE report was updated and it was approved by ADB

in December 2013. Physical progress of this sub project as of June 2015 is 92.37%. Construction of 17 tanks has been completed. Construction of the tank at Assam Rifles HQ has been removed from the scope of the Contractor due to non-availability of land and it has been shifted to tranche 2. All the completed tanks have been commissioned. All the civil works under this sub project were completed during the previous reporting period. Installation of two new electro chlorinators and some minor works as part of refurbishment of the old water treatment plant at Jotsoma are in the concluding stage.

11. Civil works of the solid waste management sub project under Tranche-1 commenced during January 2012 and the estimated duration of works was 24 months. Additional infrastructure were proposed at the landfill site such as, (i) A 70 mm Trommel unit for pre-sorting of Municipal Solid Waste along with ancillaries for shredding, pressing and packing (ii) Provision of basic amenities such as canteen, barracks and separate toilet block for males & females, (iv) Retaining walls at 5 locations to control landslide and to develop a Y junction on the access road to landfill site and (v) One step-drain and two culverts for the control of storm water over flow from the approach road drain to the farm lands below. Hence, the IEE report was updated and it was approved by ADB in December 2013. However, these additional works were not approved by MoUD under Tranche 1. They have been proposed as a new subproject under Tranche 2, for which a separate IEE Report has been prepared. Hence, the updated IEE is not applicable now. Construction of landfill site and compost plant is under progress. Physical progress of this sub project as of June 2015 is 83.32%. All works are targeted to be completed by September 2015

12. The Semi Annual Environmental Monitoring Report presents the status of sub project implementation, details of compliance with environmental regulations of the Government and policies of ADB, details of compliance with environmental loan covenants, details of complaints received and their redressal and the status of compliance with various aspects of EMP as stated in the IEE reports.

13. Monitoring of compliance with EMP is a continuous activity carried out by the DSMC and SIPMIU. Guidelines on general construction EHS measures to be followed / implemented have been issued to the Contractor. A reporting format to be filled up by the Contractor on a daily basis on compliance with EMP has been issued and they are being compiled on a monthly basis. Daily EMP Implementation Monitoring Reports from January to June 2015 have been attached to this report as **Appendix 6**. This is the consolidated report on implementation of Environmental Management Plan (EMP) from January to June 2015, and is prepared in compliance with the ADB Policies.

II. ENVIRONMENTAL ASSESSMENT AND REVIEW PROCEDURE

A. Environmental Legal Requirements

14. The following Regulations are currently in force in India that deals with environmental issues that could apply to infrastructure development. Acts and Rules related to monuments and archeological sites are also listed herein.

- (i) The Water (Prevention and Control of Pollution) Act, 1974, amended 1988
 - The Water (Prevention and Control of Pollution) Rules, 1975
- (ii) The Air (Prevention and Control of Pollution) Act 1981, amended 1987
 - The Air (Prevention and Control of Pollution) Rules, 1982

- (iii) The Environment (Protection) Act, 1986, amended in 1991 and including the following Rules/Notification issued under this Act
 - The Environment (Protection) Rules, 1986, including amendments
 - The Municipal Solid Wastes (Management and Handling) Rules, 2000
 - The Hazardous Wastes (Management and Handling) Rules, 1989
 - The Bio-Medical Waste (Management and Handling) Rules, 1998
 - Noise Pollution (Regulation and Control) Rules, 2000,
 - Environmental Impact Assessment Notification, 2006
 - Environmental Standards of Central Pollution Control Board (CPCB)
- (iv) The Indian Wildlife (Protection) Act, 1972, amended 1993
 - The Wildlife (Protection) Rules, 1995
- (v) The Indian Forest Act, 1927
- (vi) Forest (Conservation) Act, 1980, amended 1988
 - Forest (Conservation) Rules, 1981 amended 1992 and 2003
 - Guidelines for Diversion of Forest Lands for Non-Forest Purpose under the Forest (Conservation) Act, 1980
- (vii) Ancient Monuments and Archaeological Sites and Remains Act 1958
 - Ancient Monuments and Archaeological Sites and Remains Rules 1959
 - Government of India Notification of 1992 under the above-stated Rules

B. Compliance with Environmental Regulations

15. The GoI EIA Notification of 2006 sets out the requirement for Environmental Assessment in India. The Tranche-1 water supply improvement subproject does not fall under the ambit of the EIA Notification, and therefore does not require environmental clearances. However, the Tranche-1 water supply subproject requires consent to establish and operate under the Water Act and Air Act from the State Pollution Control Board.

16. The Tranche-1 Solid Waste Management subproject requires environmental clearance under the EIA Notification from Nagaland State EIA Authority. The Tranche-1 Solid Waste Management subproject further requires authorization under the Hazardous Wastes (Management and Handling) Rules, 1989 and Municipal Solid Waste (Management and Handling) Rules 2000 and consents to establish and operate under the Air and Water Acts from the State Pollution Control Board.

17. No other environmental or forest clearances are required for the subprojects in Kohima.

18. The following Table shows the regulatory requirements of subproject/components under Tranche-1 and the present status of compliance. Copy of Consent to Establish for water supply sub project is presented as **Appendix 1**. Copy of Environmental Clearance for Solid Waste Management subproject is presented as **Appendix 2**. Copy of Consent to Establish and Authorization for Solid Waste Management subproject is presented as **Appendix 3**.

Table 2: Present Status of Environment & Forest and Other Clearances

| Town | Work (Package No.) | Applicable Legislation / Type of Clearance | Clearances given by and Date | Conditions | Remarks / Action needed |
|-------------|---|---|--|---|--|
| Kohima | Refurbishment of Kohima water supply scheme (KHM-WA 1) | Consent to establish under Water Act | Consent to establish has been issued by Nagaland Pollution Control Board vide consent no. 203 dated 07.07.2009. | <p>1. The consent is valid for establishing a WTP, Jotsoma, Kohima</p> <p>2. The applicant shall ensure environmentally sound management practices</p> <p>3. The applicant shall submit the analysis report of the treated water sample while applying for consent to operate</p> <p>4. The applicant shall apply for consent to operate before operation of the plant.</p> <p>5. The consent is liable to be cancelled if terms and conditions are not implemented</p> | <p>1. No action needed</p> <p>2. EMP is being implemented</p> <p>3. Will be submitted on completion of works</p> <p>4. Will be applied on completion of works</p> <p>5. No violation of terms and conditions</p> |
| | Civil works and procurement of equipment for development of sanitary land fill, compost plant and internal access (KHM-SWM 1) | Environmental clearance under the EIA Notification 2006 | Application for Environmental Clearance (EC) was submitted to Nagaland State EIA Authority. Since clearance was not issued by the EIA Authority within the time period specified in the EIA Notification, Government of Nagaland has granted deemed approval of the EC vide letter no. UDD/19-ADB/02/2009 dated 28.10.2011 as per the provisions of the EIA Notification 2006. | No conditions | No action needed |

| Town | Work (Package No.) | Applicable Legislation / Type of Clearance | Clearances given by and Date | Conditions | Remarks / Action needed |
|------|--------------------|--|--|---|---|
| | | Consent to establish under Air and Water Acts and authorization to setup landfill and compost plant under the MSW (Management and Handling) Rules 2000 and Hazardous Wastes (Management and Handling) Rules 1989 | Consent to establish and Authorization to set up landfill and compost plant has been issued by Nagaland Pollution Control Board vide consent no. 202 dated 07.07.2009. | 1. The consent is valid for establishing a SWM Facility at Lerie, Kohima 2. The applicant shall ensure environmentally sound management practices 3. The applicant shall ensure that SWM facility will be taken up as per the DPR and MSW Rules. 4. The applicant shall apply for consent to operate before operation of the facility. 5. The consent is liable to be cancelled if terms and conditions are not implemented | 1. No action needed 2. EMP is being implemented 3. Complying with MSW rules. Any changes in design will be intimated to PCB 4. Will be applied on completion of works 5. No violation of terms and conditions |

C. Compliance of Environmental Loan Covenants

19. Table 3 shows the environmental safeguard related loan covenants and their compliance status in implementation. All the covenants are being complied in implementation.

20. Tranche-1 water supply and solid waste management subprojects have been classified as Category B as per the ADB Environmental Policy. Accordingly IEE reports were prepared during PPTA/BTA and were approved by the ADB. During the implementation of water supply sub project, there was a change in the location of eight ground level service reservoirs. Hence, an updated IEE report was prepared and it was approved by ADB in December 2013. Similarly, for the solid waste management subproject, some additional infrastructures were proposed and hence, an updated IEE report was prepared and it was approved by ADB in December 2013. However, these additional infrastructures were not approved by MoUD in Tranche 1 and hence the updated IEE is not applicable now.

Table 3: Compliance Status of Environmental Loan Covenants

| Project Specific Covenants | Status / Issues |
|--|--|
| GOI and the States will ensure that the design, construction, operation and implementation of all sub-project facilities is carried out in accordance with the environmental assessment and review procedures and Initial Environmental Examinations (IEEs) for core sub-components agreed upon between the Government and ADB, and complies with the Government's environmental laws and regulations and ADB's Environment Policy (2002). | IEE approved by ADB, disclosed in public, and included in bid document and contract. |

| Project Specific Covenants | Status / Issues |
|--|--|
| <p>Any adverse environmental impacts arising from the construction, operation and implementation of sub-component facilities will be minimized by implementing the environmental mitigation and management measures, and other recommendations specified in environmental assessment reports (e.g., IEEs). The Government will ensure environmental requirements will be incorporated in bidding documents and civil works contracts. Issuance of bid documents will be made after review and clearance of IEE/EIA by ADB and SEIAA or MOEF.</p> <p>GOI will prepare and submit annually to ADB an environmental monitoring report that describes progress in implementation of the EMP and EARP and issues encountered and measures adopted; and compliance with the relevant assurances and loan covenants</p> | <p>Clearances obtained as per applicable regulations.</p> <p>Semi-annual environmental monitoring report is being submitted to ADB</p> |

ADB – Asian Development Bank; EARP – Environmental Assessment & Review Procedures; EIA – Environmental Impact Assessment; IEE – Initial Environmental Examination; MOEF – Ministry of Environment and Forest; SEIAA – State Environmental Impact Assessment Authority.

D. Environmental Organization and Management

21. The main agencies involved in managing and implementing the subproject are:

- (i) **Ministry of Urban Development (MOUD)** - The national-level Executing Agency (NEA) for the Investment Program;
- (ii) **Investment Program Coordination Cell (IPCC)** -It is established in MOUD. IPCC is responsible for overall management of the Investment Program in the 5 cities. It comprise of social/environmental safeguard specialists whose tasks include monitoring Program implementation and reviewing and screening the subprojects submitted by the States in accordance with subproject selection criteria, in accordance with the environmental provisions;
- (iii) **State Investment Program Management and Implementation Unit (SIPMIU)**- It is established under the State Government and headed by a Program Director (PD). SIPMIU will oversee the implementation of the sub projects as per the Program's environment and resettlement planning. This includes the preparation of all documentation needed for decision-making, contracting, and supervision of work, providing progress-monitoring information as well as the compliance of all environmental safeguards.

The SIPMIU comprises of a Safeguards and Social Cell staffed with an Environmental Officer (EO). The EO is responsible for implementing the environmental safeguard provisions in the project including (i) ensuring environmental criteria for subproject selection in the EARP, (ii) ensuring mitigation requirements in the Bid documents and (iii) liaising with various Central and State government agencies on compliance matters. The SIPMIU will appoint and manage Construction Contractors (CC) to build elements of the infrastructure who are required to submit Environmental Implementation Plans (EIPs) to SIPMIU approval.

- (iv) **Design, Supervision and Management Consultant (DSMC)** - The SIPMIU is assisted by the DSMC, who is responsible for the design of the infrastructure, manage tendering of contracts, and supervise the construction process;

An Environmental Specialist (ES) in the DSMC is responsible for addressing the environmental issues in the project components during design and implementation. The ES will ensure that all mitigation requirements are in the bidding documents and EIPs, and will supervise the effective implementation of environmental provisions during construction. In addition, the ES will assist the

SIPMIU on the procurement needs and other project implementation aspects and shall play a central role in ensuring capacity building on environmental management of the SIPMIU, the Contractor and the Line Departments through capacity development support and training.

22. No grievances were received during the reporting period. A grievance redressal mechanism has been established. Grievances of affected persons will first be brought to the attention of the SIPMIU. Grievances not redressed by the SIPMIU will be brought to the Independent Grievance Redress Committee (IGRC) set up to monitor project implementation in Kohima. The GRC will determine the merit of each grievance, and resolve grievances within 10 days of receiving the complaint. Grievance not redressed by the IGRC will be referred to the appropriate courts of law. The DSMC will keep records of all grievances received including: contact details of complainant, date that the complaint was received, nature of grievance, agreed corrective actions and the date these were affected, and the final outcome. The IGRC was constituted vide SIPMIU notification dated 18.01.2013. Details of grievance redressal mechanism and the IGRC notification for the sub projects are presented as **Appendix 4**.

III. EMP COMPLIANCE STATUS

23. This section presents the compliance status of Environmental Management and Monitoring Plans of tranche-1 subprojects under implementation.

24. Under the water supply subproject no civil works were carried out during the reporting period because the Contractor had completed all the civil works as per the revised scope of work during the previous reporting period itself. Under the solid waste management subproject, the civil works and procurement of equipment for development of sanitary land fill, compost plant and internal access are in progress. Photographs of ongoing construction works and environmental management measures are presented as **Appendix 5**. The SWM Contractor is following the Environmental Monitoring Plan (EMP), which is part of the IEE and Contract document. The Contractor has not prepared any Environmental Implementation Plan. Alternatively, the Contractor is following the guidelines on general construction EHS measures to be followed / implemented issued to them. The EMP was updated as part of the IEE updated for the changes in the sub projects and the updated EMP was issued to the Contractor. A reporting format to be filled up by the Contractor on a daily basis on compliance with EMP has been issued and they are being compiled on a monthly basis. Daily EMP Implementation Monitoring Reports from January to June 2015 have been attached to this report as **Appendix 6**.

25. Air quality, noise level, ground water quality, surface water quality, and soil quality monitoring was conducted by the SWM Contractor during the reporting period. Monitoring results of all the parameters were within the standards. The monitoring results have been attached to this report as **Appendix 7**. Air quality, water quality and noise level monitoring was conducted by the SWM subproject Contractor during September 2013 and the results were presented in the Semi Annual Environmental Monitoring Report for the period July to December 2013. Air quality and noise level observed at the sub project site were within the standards. Water samples were collected from rivers near the landfill site and analyzed for microbiological parameters. The water quality test results showed that there is no pollution of the rivers due to construction activities at the landfill site. Physicochemical parameters of water from rivers near the landfill site were tested during April 2013 and the results were presented in the Semi Annual Environmental Monitoring Report for the period January to June 2013.

Table 4: Compliance of EMP and OH&S Norms

| Sl. No. | Mitigation Activities and Method | Location | Responsible for Mitigation | Monitoring Method | Responsible for Monitoring | Compliance Status |
|---|--|-------------------------------|----------------------------|--------------------|----------------------------|---|
| Civil Works and Procurement of Equipment for Development of Sanitary Landfill, Compost Plant & Internal Access | | | | | | |
| 1 | All the vehicles used for construction should comply with relevant environmental standard | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | Vehicles are keeping pollution under control certificate and fitness certificate |
| 2 | It should be ensured that the workers are provided with PPEs like earplugs, dust masks etc. to minimize the health impacts | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | workers are provided with PPEs |
| 3 | It should be ensured that construction at night time is restricted to the extent possible | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | No work is conducted during night-time |
| 4 | Regular water sprinkling should be undertaken to ensure the dust suppression | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | Water sprinkling is being done |
| 5 | Two trees should be planted for every one removed | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | Trees have already been planted along the approach road and in the vacant land around the landfill site. However, very less trees have survived the summer. Hence, the contractor has to plant trees again. |
| 6 | Excavated earth should be conserved for re-use | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | Excavated earth is used for levelling landfill |
| 7 | Water supply and sanitation facilities should be provided in labour camps | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | Labour camps are provided with Water supply and sanitation facilities |
| 8 | 50% of the work force should be employed from local community near work site | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | Local workforce is being used to the extent |

| Sl. No. | Mitigation Activities and Method | Location | Responsible for Mitigation | Monitoring Method | Responsible for Monitoring | Compliance Status |
|---------|--|-------------------------------|----------------------------|--------------------|----------------------------|---|
| | | | | | | available. However, 50% local workers are not available. |
| 9 | Contractor should prepare a construction site management plan | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | Guidelines on general EHS measures have been issued to the Contractor. These include measures to exclude public from all construction sites. Compliance being strictly monitored by the DSMC |
| 10 | This plan should have measures to exclude public from all construction sites | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | |
| 11 | Health and safety training should be imparted to all personnel | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | Health and safety training was given to the Contractor's Supervisors by the ES of DSMC. The Contractor has not repeated the health and safety training given to all their personnel periodically. |
| 12 | Restoration of borrow areas should be undertaken after borrowing | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | No borrow areas have been opened |
| 13 | All accident reports and records should be maintained periodically and appropriately | Landfill site at Lerie Colony | Contractor | Visual Observation | DSMC | The Contractor is maintaining an accident report register. No accidents have been reported during the reporting period. |



IV. OBSERVATIONS, RECOMMENDATIONS AND ACTIONS TAKEN

26. As presented in this report, tranche-1 of this Investment Program is being implemented in compliance with the loan covenants, subproject selection criteria and overall EARF. There are some non-compliant EMP activities noticed in the monitoring report regarding the solid waste management sub project. The Contractor has not prepared a construction site management plan. To compensate this, guidelines on general EHS measures to be followed at construction sites have been issued to the Contractor. These include measures to exclude public from all construction sites. Compliance to these measures is being strictly monitored by the DSMC. Health and safety training was given to the Contractor's Supervisors by the ES of DSMC. The Contractor has to repeat the health and safety training given to all their personnel periodically. Since very less trees planted around the landfill site have survived, the Contractor has to plant trees again. The Contractor has provided caution boards and information boards at the work site. The Contractor is maintaining an Accident Report Register. No accidents were reported during January – June 2015. Monitoring of ambient air quality, noise level, ground water quality, surface water quality and soil quality was conducted by the Contractor during the reporting period.

27. Necessary instructions have been given to the Contractor by DSMC/SIPMIU to specifically focus on safety aspects, and in general on EMP measures to improve the compliance.

APPENDICES

Appendix 1: Consent to Establish for Water Supply Sub Project

| NAGALAND POLLUTION CONTROL BOARD SIGNAL POINT : DIMAPUR: NAGALAND | |
|---|------------------|
| <u>Consent Order / Authorization</u> | |
| Consent No. 203 | Dated 07.07.2009 |
| <p>Consent to Establish under Section 25/ 26 of the Water (Prevention & Control of Pollution) Act, 1974, as amended and under Section 21 of the Air (Prevention & Control of Pollution) Act. 1981, as amended to be referred as Water Act and Air Act respectively.</p> <p>Consent is granted to State Investment Program Management and Implementation Unit, Asian Development Bank, (ADB) Assisted Project Kohima, Nagaland, located in the area declared under the provisions of the Water Act & Air Act and subject to the provisions of the Act and the Rules and the Orders that may be made further and subject to the following terms and conditions:-</p> <ol style="list-style-type: none">1. The Consent is valid for: Establishing a Water Treatment Plant, Jotsoma, Kohima, Nagaland.2. The applicant shall also ensure environmentally sound management practices by taking necessary steps to protect health and environment against adverse effects which may result from the plant.3. The applicant shall submit the analysis report of the treated water sample from a recognized laboratory while applying for consent to operate.4. The applicant shall apply for Consent to operate for the Unit before the operation of the Plant.5. The Consent/Authorization is liable to be cancelled /revoked if the terms and conditions specified are not observed/ implemented. <div><div><p>Member Secretary</p><p>Member Secretary Nagaland Pollution Control Board Nagaland : Dimapur</p></div></div> | |

Appendix 2: Environmental Clearance for SWM Sub Project

GOVERNMENT OF NAGALAND URBAN DEVELOPMENT DEPARTMENT

NOTIFICATION

Dated Kohima, the 28th Oct.' 2011.

NO.UDD/19-ADB/02/2009 :: As provided in clause 8(iii) of the Environmental Clearance Notification, dated 14th September, 2006 of the Ministry of Environment and Forests, Government of India, the Governor of Nagaland is pleased to grant deemed approval of the Environmental Clearance for Solid Waste Management Project at Kohima under the ADB assisted NERCCDIP by the State Environmental Impact Assessment Authority (SEIAA) in terms with the recommendations of the State Expert Appraisal Committee (SEAC).


Sd/- NEIHU C. THUR, IAS
Secretary to the Govt. of Nagaland.

NO.UDD/19-ADB/02/2009

Dated Kohima, the 28th Oct.' 2011.



Copy to:-

1. The Secretary to Governor of Nagaland, Raj Bhavan, Nagaland, Kohima.
2. The Addl. Chief Secretary to Chief Minister, Nagaland, Kohima.
3. The Sr. P.S to Minister, Urban Development, Nagaland, Kohima.
4. The OSD to Chief Secretary, Nagaland, Kohima.
5. The Secretary, Government of India, Ministry of Urban Development, Nirman Bhawan, New Delhi - 110011. Fax: 011-23061459.
6. The Secretary, Government of India, Ministry of Environment & Forests, 104, New Moti Bagh, New Delhi - 110023. Fax: 011-24362746.
7. The Director, ADB, Urban Development and Water Division, South Asia Department, 6-ADB Avenue, Mandaluyong City, 1550 Metro Manila, Phillippines. Fax: 0632-636-2444.
8. The Commissioner & Secretary, Forest Department, Nagaland, Kohima.
9. The Chairman, State Environmental Impact Assessment Authority (SEIAA), Nagaland, Kohima.
10. The Principal Chief Conservator of Forest, Nagaland, Kohima.
11. *The Publisher, Nagaland Gazette, Kohima for kind publication in the next issue of the State Gazette.*
12. The Director, Urban Development, Nagaland, Kohima.
13. ~~The Program Director, SIPMIU-ADB assisted project, Kohima.~~
14. Guard file/office copy.

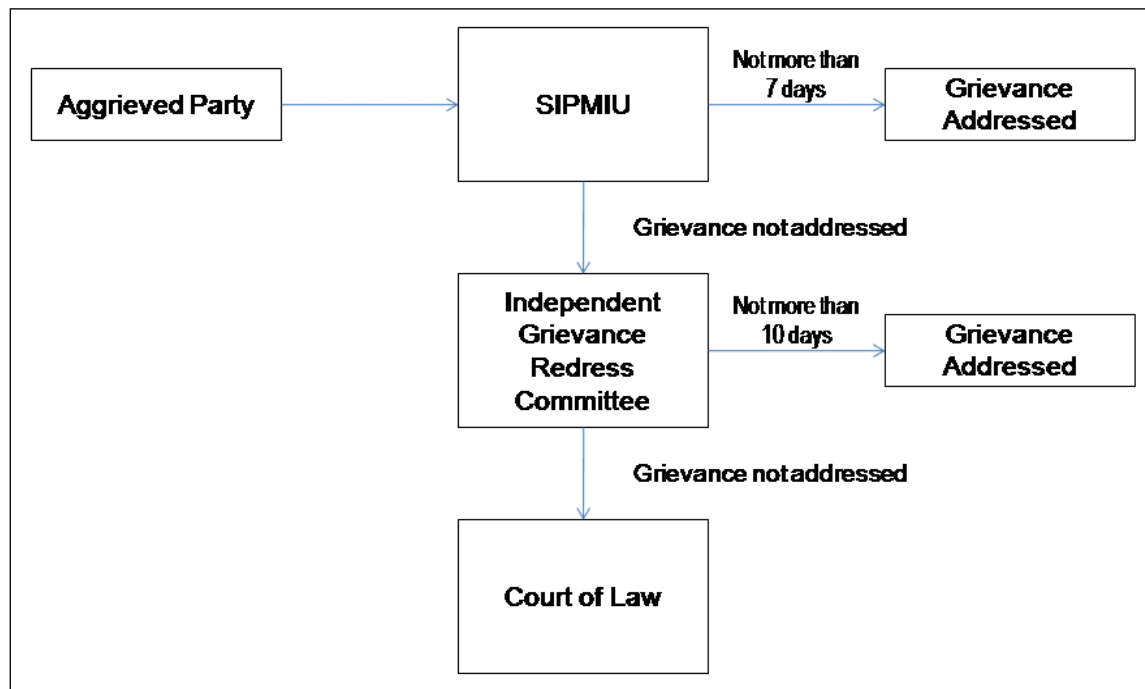

(Ahola Those)

Joint Secretary to the Govt. of Nagaland.

Appendix 3: Consent to Establish and Authorization for SWM Sub Project

| NAGALAND POLLUTION CONTROL BOARD SIGNAL POINT : DIMAPUR: NAGALAND | |
|---|-------------------------|
| <u>Consent Order / Authorization</u> | |
| Consent No. 202 | Dated 07.07.2009 |
| <p>Consent to Establish under Section 25/ 26 of the Water (Prevention & Control of Pollution) Act, 1974, as amended and under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981, as amended and Authorization/ Renewal of Authorization under Rule 5 of the Hazardous Wastes (Management & Handling) Rules, 1989 , as amended (to be referred as Water Act, Air Act and HW (M&H) Rules, respectively).</p> <p>Consent is granted to State Investment Program Management and Implementation Unit, Asian Development Bank, (ADB) Assisted Project, Kohima, Nagaland, located in the area declared under the provisions of the Water Act/ Air Act and authorization under the provisions of HW (M&H) Rules subject to the provisions of the Act and the Rules and the Orders that may be made further and subject to the following terms and conditions:-</p> <ol style="list-style-type: none">1. The Consent is valid for: Establishing a Solid Waste Management Facility at Lerie, Kohima, Nagaland.2. The applicant shall also ensure environmentally sound management practices by taking necessary steps to protect health and environment against adverse effects which may result from the plant.3. The applicant shall ensure that the Solid Waste Management Facility be taken up as per the DPR and shall comply with the standards and terms & conditions as laid down in the Municipal Solid Waste (Management & Handling) Rules, 2000.4. The applicant shall apply for Consent to operate for the Unit before the operation of the facility.5. The Consent is liable to be cancelled /revoked if the terms and conditions specified are not observed/ implemented. <div><div><p>Member Secretary Member Secretary Nagaland Pollution Control Board</p></div></div> | |

Appendix 4: Grievance Redressal Mechanism



**STATE INVESTMENT PROGRAMME MANAGEMENT AND IMPLEMENTATION UNIT
ASIAN DEVELOPMENT BANK (ADB) – ASSISTED PROJECT
KOHIMA : NAGALAND**

NOTIFICATION

Dated Kohima, the 18th January 2013

NO.SIPMIU/SCL/CP/2011:: In pursuance to Asian Development Bank (ADB) guidelines; the Independent Grievance Redress Committee (IGRC) is hereby constituted to address the grievances of persons affected due to the sub-projects implemented in Kohima under the ADB assisted North Eastern Region Capital Cities Development Investment Program.

- | | | |
|--|---|------------------|
| i. Program Director, SIPMIU | : | Chairman |
| ii. Addl. Program Director, SIPMIU | : | Member Secretary |
| iii. Dy. Program Director/ Environment Officer, SIPMIU | : | Member |
| iv. Sociologist, SIPMIU | : | Member |
| v. Assistant Engineer, SIPMIU | : | Member |
| vi. Team Leader, DSMC | : | Member |
-
2. The IGRC shall determine the merit of each grievance and resolve the grievance/s within 10 (ten) days of receiving the compliant.
 3. Grievances not redressed by the IGRC will be referred to the appropriate court of law.
 4. All costs involved in resolving the grievances shall be borne by SIPMIU.
 5. The Design Supervision & Management Consultants shall keep records of all grievances received including contact details of complainant, date the complaint was received, nature of grievance, agreed corrective actions and the date of redressing the grievance and the final outcome.

Sd/-
K. HARALU
Program Director

NO.SIPMIU/SCL/CP/2011

Dated Kohima, the 18th January 2013

Copy to:

- i) The Commissioner & Secretary, Urban Development Department, Nagaland, Kohima for information.
- ii) The Director, Urban Development, Nagaland, Kohima for information.
- iii) The Chief Engineer, PHE, Nagaland, Kohima for information.
- iv) The CEO, Kohima Municipal Council, Kohima, Nagaland for information.
- v) All the members
- vi) Office copy

1c


(NELL VASA)
Dy. Program Director

Appendix 5: Site Photographs

Civil Works & Procurement of Equipment of Sanitary Landfill, Compost Plant and Approach Road at Lerie

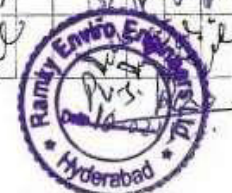
| | |
|---|--|
|  |  |
| Workers Wearing PPEs | Compost Plant under Construction |
|  |  |
| Workers without PPEs | Water Sprayed to Control Dust |
|  |  |
| Construction of Approach Road | Leachate Treatment Plant under Construction |
|  |  |
| Leachate Collection Tank under Construction | Erection of Compost Plant Machineries |

Appendix 6: Daily EMP Implementation Monitoring Reports (January to June 2015)

Civil Works & Procurement of Equipment of Sanitary Landfill, Compost Plant and Approach Road at Lerie

| Northeastern Region Capital Cities Development Investment Programme | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-------------------|---|---------------------------|---|-----------------------------|---|-------|---|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| State Investment Program Management and Implementation Unit, Government of Nagaland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Daily EMP Implementation Monitoring Report for Solid Waste Management (Tranche 1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract Package No.: | | KHM-SWM-1 | | Name of the Contractor: | | Ramky Enviro Engineers Ltd. | | DSMC: | | CDM Smith Inc. | | | | | | | | | | | | | | | | | | | | | | |
| Date of Start of Construction: | | JAN 2012 | | Reporting Month and Year: | | JAN 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sl. No. | Mitigation Measures as per EMP | Compliance Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| 1. | Whether all the construction vehicles have PUC certificate? | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 2. | Whether workers are provided with PPE's like earplugs, dust masks etc. ? | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| 3. | Whether it is ensured that construction at night time is restricted? | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| 4. | Whether regular water sprinkling is undertaken for dust suppression ? | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| 5. | Whether two trees are planted for every one removed ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Whether excavated earth is conserved for re-use ? | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| 7. | Whether water supply and sanitation facilities are provided in labour camps? | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8. | Whether 50% of the work force is employed from local community? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Whether contractor has prepared a construction site management plan? | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10. | Whether measures are taken to exclude public from all construction sites ? | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11. | Whether health and safety training has been imparted to all personnel ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. | Whether restoration of borrow areas is undertaken after borrowing ? | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13. | Whether all accident reports and records are maintained periodically? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Signature of Engineer of Contractor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Signature of Engineer of DSMC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Note: ✓ for Complied, X for not Complied. Blank for Not Applicable



| Northeastern Region Capital Cities Development Investment Programme | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-------------------|---|-------------------------|---|-----------------------------|---|---|---|---|----|---------------------------|----|----------|----|-------|----|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| State Investment Program Management and Implementation Unit, Government of Nagaland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Daily EMP Implementation Monitoring Report for Solid Waste Management (Tranche 1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract Package No.: | | KHM-SWM-1 | | Name of the Contractor: | | Ramky Enviro Engineers Ltd. | | | | | | | | | | DSMC: | | CDM Smith Inc. | | | | | | | | | | | | | | |
| Date of Start of Construction: | | Jan 2012 | | | | | | | | | | Reporting Month and Year: | | Feb 2015 | | | | | | | | | | | | | | | | | | |
| Sl. No. | Mitigation Measures as per EMP | Compliance Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| 1. | Whether all the construction vehicles have PUC certificate? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| 2. | Whether workers are provided with PPE's like earplugs, dust masks etc. ? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| 3. | Whether it is ensured that construction at night time is restricted? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| 4. | Whether regular water sprinkling is undertaken for dust suppression ? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| 5. | Whether two trees are planted for every one removed ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Whether excavated earth is conserved for re-use ? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| 7. | Whether water supply and sanitation facilities are provided in labour camps? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| 8. | Whether 50% of the work force is employed from local community? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Whether contractor has prepared a construction site management plan? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| 10. | Whether measures are taken to exclude public from all construction sites ? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| 11. | Whether health and safety training has been imparted to all personnel ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. | Whether restoration of borrow areas is undertaken after borrowing ? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| 13. | Whether all accident reports and records are maintained periodically? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Signature of Engineer of Contractor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Signature of Engineer of DSMC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Note: ✓ for Complied, X for not Complied, Blank for Not Applicable



| Northeastern Region Capital Cities Development Investment Programme | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-------------------|---|---------------------------|---|-----------------------------|---|-------|---|----------------|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| State Investment Program Management and Implementation Unit, Government of Nagaland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Daily EMP Implementation Monitoring Report for Solid Waste Management (Tranche 1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract Package No.: | | KHM-SWM-1 | | Name of the Contractor: | | Ramky Enviro Engineers Ltd. | | DSMC: | | CDM Smith Inc. | | | | | | | | | | | | | | | | | | | | | | |
| Date of Start of Construction: | | JAN 2012 | | Reporting Month and Year: | | MARCH 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sl. No. | Mitigation Measures as per EMP | Compliance Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | ① | 2 | 3 | 4 | 5 | 6 | 7 | ⑧ | 9 | 10 | 11 | 12 | 13 | 14 | ⑮ | 16 | 17 | 18 | 19 | 20 | 21 | ②② | 23 | 24 | 25 | 26 | 27 | 28 | ②⑨ | 30 | |
| 1. | Whether all the construction vehicles have PUC certificate? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 2. | Whether workers are provided with PPE's like earplugs, dust masks etc. ? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 3. | Whether it is ensured that construction at night time is restricted? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 4. | Whether regular water sprinkling is undertaken for dust suppression ? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 5. | Whether two trees are planted for every one removed ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Whether excavated earth is conserved for re-use ? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 7. | Whether water supply and sanitation facilities are provided in labour camps? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8. | Whether 50% of the work force is employed from local community? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Whether contractor has prepared a construction site management plan? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10. | Whether measures are taken to exclude public from all construction sites ? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11. | Whether health and safety training has been imparted to all personnel ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. | Whether restoration of borrow areas is undertaken after borrowing ? | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13. | Whether all accident reports and records are maintained periodically? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Signature of Engineer of Contractor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Signature of Engineer of DSMC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Note: ✓ for Complied, X for not Complied, Blank for Not Applicable



| Northeastern Region Capital Cities Development Investment Programme | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-------------------|---|-------------------------|---|-----------------------------|---|---|---|---|----|---------------------------|----|------------|----|----------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| State Investment Program Management and Implementation Unit, Government of Nagaland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Daily EMP Implementation Monitoring Report for Solid Waste Management (Tranche I) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract Package No.: | | KHM-SWM-1 | | Name of the Contractor: | | Ramky Enviro Engineers Ltd. | | | | | | | | | | DSMC: CDM Smith Inc. | | | | | | | | | | | | | | | | |
| Date of Start of Construction: | | Jan 2012 | | | | | | | | | | Reporting Month and Year: | | April 2015 | | | | | | | | | | | | | | | | | | |
| Sl. No. | Mitigation Measures as per EMP | Compliance Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| 1. | Whether all the construction vehicles have PUC certificate? | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 2. | Whether workers are provided with PPE's like earplugs, dust masks etc. ? | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 3. | Whether it is ensured that construction at night time is restricted? | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 4. | Whether regular water sprinkling is undertaken for dust suppression ? | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 5. | Whether two trees are planted for every one removed ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Whether excavated earth is conserved for re-use ? | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 7. | Whether water supply and sanitation facilities are provided in labour camps? | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8. | Whether 50% of the work force is employed from local community? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Whether contractor has prepared a construction site management plan? | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10. | Whether measures are taken to exclude public from all construction sites ? | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11. | Whether health and safety training has been imparted to all personnel ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. | Whether restoration of borrow areas is undertaken after borrowing ? | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13. | Whether all accident reports and records are maintained periodically? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Signature of Engineer of Contractor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Signature of Engineer of DSMC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Note: ✓ for complied, ✗ for not complied, Blank for Not Applicable



Northeastern Region Capital Cities Development Investment Programme

State Investment Program Management and Implementation Unit, Government of Nagaland

Daily EMP Implementation Monitoring Report for Solid Waste Management (Tranche 1)

| Contract Package No.: | | KHM-SWM-1 | | Name of the Contractor: | | Ramky Enviro Engineers Ltd. | | DSMC: | | CDM Smith Inc. | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|--|-------------------|---|---------------------------|---|-----------------------------|---|-------|---|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| Date of Start of Construction: | | Jan 2012 | | Reporting Month and Year: | | MAY - 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sl. No. | Mitigation Measures as per EMP | Compliance Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| 1. | Whether all the construction vehicles have PUC certificate? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| 2. | Whether workers are provided with PPE's like earplugs, dust masks etc.? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| 3. | Whether it is ensured that construction at night time is restricted? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| 4. | Whether regular water sprinkling is undertaken for dust suppression? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| 5. | Whether two trees are planted for every one removed? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Whether excavated earth is conserved for re-use? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| 7. | Whether water supply and sanitation facilities are provided in labour camps? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| 8. | Whether 50% of the work force is employed from local community? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Whether contractor has prepared a construction site management plan? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| 10. | Whether measures are taken to exclude public from all construction sites? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| 11. | Whether health and safety training has been imparted to all personnel? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. | Whether restoration of borrow areas is undertaken after borrowing? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| 13. | Whether all accident reports and records are maintained periodically? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Signature of Engineer of Contractor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Signature of Engineer of DSMC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| | | | | | |
|--------------------------------|-----------|---------------------------|-----------------------------|-------|----------------|
| Contract Package No.: | KHM-SWM-1 | Name of the Contractor: | Ramky Enviro Engineers Ltd. | DSMC: | CDM Smith Inc. |
| Date of Start of Construction: | Jan-2012 | Reporting Month and Year: | JUNE-2015 | | |

Appendix 7: Results of Environmental Monitoring Conducted at Landfill Site



AMBIENT AIR QUALITY MONITORING & ANALYSIS REPORT

| | |
|--|--|
| Issued to: M/s. Ramky Enviro Engineers Ltd, Ramky Grandiose, 13th floor, Ramky Tower Complex, Gachibowli, Hyderabad - 500032. | Date : 22.06.2015 Our Re. No: VL/RESN/AAQ/150604313821 Your Re.No: as per discussion |
| Sample Collected at M/s.Ramky Enviro Engineers Ltd, SWM site,Kohima, Nagaland. | Dated : 08.06.2015 |

TEST RESULTS

| | |
|------------------|-----------------------|
| Sampling Station | AAQ1 (Entrance Gate) |
| Sampling Date | 12.06.2015 |

| Parameter | PM ₁₀ | PM _{2.5} | SO ₂ | NH ₃ | CO | CH ₄ |
|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----------------|
| Units | µg/m ³ | µg/m ³ | µg/m ³ | µg/m ³ | µg/m ³ | ppm |
| CPCB Limit | <100 | < 60 | < 80 | <400 | <2000 | -- |
| Test Results | 45.2 | 23.8 | 8.6 | 18.9 | 325 | 1.7 |

NOTE: -

1. The results of the monitored data indicate that the ambient air quality of the region in general is conformity with respect to norms of National Ambient Air Quality standards of CPCB
2. Sampling & Analysis were done as per standard method prescribed by SPCB/CPCB

C. S. S.

Authorized Signature

AMBIENT AIR QUALITY MONITORING & ANALYSIS REPORT

| | |
|--|--------------------------------------|
| Issued to: M/s. Ramky Enviro Engineers Ltd, Ramky Grandiose, 13th floor, Ramky Tower Complex, Gachibowli, Hyderabad - 500032. | Date : 22.06.2015 |
| <u>Sample Collected at</u> M/s.Ramky Enviro Engineers Ltd, SWM site,Kohima, Nagaland. | Our Re. No: VL/RESN/AAQ/150604313822 |
| | Your Re.No: as per discussion |
| | Dated : 08.06.2015 |

TEST RESULTS

| | |
|------------------|--------------------------|
| Sampling Station | AAQ2 (Admin Block Area) |
| Sampling Date | 12.06.2015 |

| Parameter | PM ₁₀ | PM _{2.5} | SO ₂ | NH ₃ | CO | CH ₄ |
|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----------------|
| Units | µg/m ³ | µg/m ³ | µg/m ³ | µg/m ³ | µg/m ³ | ppm |
| CPCB Limit | <100 | < 60 | < 80 | <400 | <2000 | -- |
| Test Results | 36.6 | 21.1 | 13.1 | 20.3 | 253 | 2.1 |

NOTE: -

1. The results of the monitored data indicate that the ambient air quality of the region in general is conformity with respect to norms of National Ambient Air Quality standards of CPCB
2. Sampling & Analysis were done as per standard method prescribed by SPCB/CPCB



Authorized Signature

AMBIENT AIR QUALITY MONITORING & ANALYSIS REPORT

| | |
|--|--------------------------------------|
| Issued to: M/s. Ramky Enviro Engineers Ltd, Ramky Grandiose, 13th floor, Ramky Tower Complex, Gachibowli, Hyderabad - 500032. | Date : 22.06.2015 |
| <u>Sample Collected at</u> M/s. Ramky Enviro Engineers Ltd, SWM site, Kohima, Nagaland. | Our Re. No: VL/RESN/AAQ/150604313823 |
| | Your Re.No: as per discussion |
| | Dated : 08.06.2015 |

TEST RESULTS

| | |
|------------------|----------------------|
| Sampling Station | AAQ3 (Compost Plant) |
| Sampling Date | 13.06.2015 |

| Parameter | PM ₁₀ | PM _{2.5} | SO ₂ | NH ₃ | CO | CH ₄ |
|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----------------|
| Units | µg/m ³ | µg/m ³ | µg/m ³ | µg/m ³ | µg/m ³ | ppm |
| CPCB Limit | <100 | < 60 | < 80 | <400 | <2000 | -- |
| Test Results | 71.3 | 42.5 | 16.5 | 89 | 125 | 2.6 |

NOTE: -

1. The results of the monitored data indicate that the ambient air quality of the region in general is conformity with respect to norms of National Ambient Air Quality standards of CPCB
2. Sampling & Analysis were done as per standard method prescribed by SPCB/CPCB



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AMBIENT NOISE LEVEL MONITORING REPORT

| | |
|--|---|
| Issued to: M/s. Ramky Enviro Engineers Ltd, Ramky Grandiose, 13th floor, Ramky Tower Complex, Gachibowli, Hyderabad - 500032. | Date : 22.06.2015 Our Re. No: VL/RESN/ANQ/150604313824 |
| <u>Sample Collected at</u> M/s. Ramky Enviro Engineers Ltd, SWM site, Kohima, Nagaland. | Your Re. No: as per discussion Dated : 08.06.2015 |

| | |
|------------------|----------------------|
| Sampling Station | : Near Compost Plant |
| Sampling Date | : 12.06.2015 |

TEST RESULTS

| Time (Day) | Noise Level dB(A) | Time (Night) | Noise Level dB(A) |
|------------|-------------------|--------------|-------------------|
| 6.00 | 66.6 | 22.00 | 52.3 |
| 7.00 | 68.3 | 23.00 | 51.5 |
| 8.00 | 69.7 | 24.00 | 53.6 |
| 9.00 | 70.1 | 1.00 | 55.1 |
| 10.00 | 66.3 | 2.00 | 56.9 |
| 11.00 | 64.8 | 3.00 | 57.3 |
| 12.00 | 63.4 | 4.00 | 59.9 |
| 13.00 | 66.7 | 5.00 | 63.5 |
| 14.00 | 69.1 | -- | -- |
| 15.00 | 68.5 | -- | -- |
| 16.00 | 66.3 | -- | -- |
| 17.00 | 62.5 | -- | -- |
| 18.00 | 58.4 | -- | -- |
| 19.00 | 57.3 | -- | -- |
| 20.00 | 56.1 | -- | -- |
| 21.00 | 55.2 | -- | -- |
| Average | 64.2 | Average | 50.0 |
| Max. | 70.1 | Max. | 63.5 |
| Min. | 55.2 | Min. | 51.5 |
| Lday | 49.8 | Lnight | 41.2 |

Note:-

1. Testing were done as per standard method prescribed by IS 4954 1968, day time means 6.00 am to 10.00pm night time means 10.00pm to 6.00 am.
2. Silence Zone is defined as areas up to 100 meters around such premises as hospitals, educational institutions and courts.

C. Jay

Authorized Signature

AMBIENT NOISE LEVEL MONITORING REPORT

| | |
|--|--------------------------------------|
| Issued to: M/s. Ramky Enviro Engineers Ltd, Ramky Grandiose, 13th floor, Ramky Tower Complex, Gachibowli, Hyderabad - 500032. | Date : 22.06.2015 |
| | Our Re. No: VL/PESN/ANQ/150604313825 |
| | Your Re.No: as per discussion |
| Sample Collected at M/s.Ramky Enviro Engineers Ltd, SWM site,Kohima, Nagaland. | Dated : 08.06.2015 |

| | |
|------------------|--------------|
| Sampling Station | : Admin Area |
| Sampling Date | : 12.06.2015 |

TEST RESULTS

| Time (Day) | Noise Level dB(A) | Time (Night) | Noise Level dB(A) |
|------------|-------------------|--------------|-------------------|
| 6.00 | 47.2 | 22.00 | 39.6 |
| 7.00 | 48.9 | 23.00 | 38.2 |
| 8.00 | 51.3 | 24.00 | 37.8 |
| 9.00 | 55.2 | 1.00 | 36.2 |
| 10.00 | 53.9 | 2.00 | 39.1 |
| 11.00 | 51.4 | 3.00 | 40.2 |
| 12.00 | 49.6 | 4.00 | 42.5 |
| 13.00 | 48.7 | 5.00 | 45.6 |
| 14.00 | 51.2 | -- | |
| 15.00 | 52.9 | -- | |
| 16.00 | 53.7 | -- | |
| 17.00 | 56.2 | -- | |
| 18.00 | 53.4 | -- | |
| 19.00 | 51.2 | -- | |
| 20.00 | 49.7 | -- | |
| 21.00 | 41.4 | -- | |
| Average | 51.2 | Average | 35.5 |
| Max. | 56.2 | Max. | 45.6 |
| Min. | 41.4 | Min. | 36.2 |
| Lday | 52.1 | Lnight | 40.9 |

Note:-

1. Testing were done as per standard method prescribed by IS: 4954 1968, day time means 6:00 am to 10:00pm night time means 10:00pm to 6:00 am.
2. Silence Zone is defined as areas up to 100 meters around such premises as hospitals, educational institutions and courts.



Authorized Signature



VISON LABS

Environmental Consultants & Analytical Services

Recognised by NABL, NABET-QCI,

ISO : 9001:2008, OHSAS : 18001:2007 &

MoEF, S.O. 1680(E), valid upto 31/07/2015

AMBIENT NOISE LEVEL MONITORING REPORT

| | |
|---|--------------------------------------|
| Issued to: | Date : 22.06.2015 |
| M/s. Ramky Enviro Engineers Ltd, | Our Re. No: VL/PESN/ANQ/150604313826 |
| Family Grandiose, | Your Re.No: as per discussion |
| 13th floor, Ramky Tower Complex, | |
| Gachibowli, Hyderabad - 500032. | |
| <u>Sample Collected at</u> | Dated : 08.06.2015 |
| M/s.Ramky Enviro Engineers Ltd, | |
| SWM site,Kohima, Nagaland. | |

| | |
|------------------|----------------------|
| Sampling Station | : Near Entrance Area |
| Sampling Date | : 12.06.2015 |

TEST RESULTS

| Time (Day) | Noise Level dB(A) | Time (Night) | Noise Level dB(A) |
|------------|-------------------|--------------|-------------------|
| 6.00 | 51.6 | 22.00 | 41.5 |
| 7.00 | 54.3 | 23.00 | 40.0 |
| 8.00 | 55.9 | 24.00 | 38.6 |
| 9.00 | 56.4 | 1.00 | 36.0 |
| 10.00 | 57.9 | 2.00 | 38.9 |
| 11.00 | 56.3 | 3.00 | 39.7 |
| 12.00 | 55.5 | 4.00 | 42.4 |
| 13.00 | 53.7 | 5.00 | 46.5 |
| 14.00 | 54.6 | -- | -- |
| 15.00 | 53.1 | -- | -- |
| 16.00 | 52.8 | -- | -- |
| 17.00 | 51.9 | -- | -- |
| 18.00 | 50.3 | -- | -- |
| 19.00 | 48.5 | -- | -- |
| 20.00 | 44.2 | -- | -- |
| 21.00 | 42.3 | -- | -- |
| Average | 52.5 | Average | 36.0 |
| Max. | 57.9 | Max. | 46.5 |
| Min. | 42.3 | Min. | 36.0 |
| Lday | 49.8 | Lnight | 41.2 |

Note:-

1. Testing were done as per standard method prescribed by IS: 4954 1968, day time means 6.00 am to 10.00pm night time means 10.00pm to 6.00 am.

2. Silence Zone is defined as areas up to 100 meters around such premises as hospitals, educational institutions and courts.

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WATER ANALYSIS REPORT

| | |
|---|-------------------------------------|
| Issued to: | Date : 22.06.2015 |
| M/s. Ramky Enviro Engineers Ltd, | Our Re. No: VL/PESN/WQ/150604313827 |
| Ramky Grandiose, | Your Re.No: as per discussion |
| 13th floor, Ramky Tower Complex, | |
| Gachibowli, Hyderabad - 500032. | |
| <u>Sample Collected at</u> | Dated : 08.06.2015 |
| M/s.Ramky Enviro Engineers Ltd, | |
| SWM site,Kohima, Nagaland. | |
| Sample Particulars: Bore Well Water Collected From Site Office. | |
| Sample Collection Date: 12.06.2015 | |
| Sample Tested as Received basis. | |

TEST RESULTS

| S.No | Parameters | Units of Measurement | Test Method | Test Results | Drinking Water Limits As per IS: 10500; 1991(reaffirmed-2012) | |
|--------------------------|--------------------|----------------------|------------------|--------------|--|---|
| | | | | | Desirable Limits | Permissible limits in absence of alternative Source |
| MICROBIOLOGICAL ANALYSIS | | | | | | |
| 1. | Total Colony Count | CFU/mL | IS:5402-1969 | Not detected | -- | -- |
| 2. | Coli form Bacteria | CFU/100ml | IS: 15185 : 2002 | Not detected | Absence | Absence |
| 3. | E Coli Bacteri | CFU/100ml | IS: 15185 : 2002 | Absent | Absence | Absence |

NOTE:

1. Sampling & Analysis were done as per Standard Methods prescribed by BIS



Authorized Signature

WATER ANALYSIS REPORT

| | |
|--|-------------------------------------|
| Issued to: M/s. Ramky Enviro Engineers Ltd, Ramky Grandiose, 13th floor, Ramky Tower Complex, Gachibowli, Hyderabad - 500032. | Date : 22.06.2015 |
| <u>Sample Collected at</u> M/s.Ramky Enviro Engineers Ltd, SWM site,Kohima, Nagaland. | Our Re. No: VL/RESN/WQ/150604313828 |
| | Your Re.No: as per discussion |
| Sample Particulars: Surface Water Collected at Below Admin Building (Up Stream). Sample Collection Date: 12.06.2015 Sample Tested as Received basis. | |

TEST RESULTS MICROBIOLOGICAL ANALYSIS

| S. No | Parameters | Units of Measurement | Test Method | Test Results | Surface Water Standards as Per IS: 2296 Limits |
|-------|--------------------|----------------------|------------------|--------------|--|
| 1. | Total Colony Count | CFU/mL | IS 5402-1969 | 658 | -- |
| 2. | Coli form Bacteria | CFU/100ml | IS: 15185 : 2002 | 419 | 5000 |
| 3. | E Coli Bacteria | CFU/100ml | IS: 15185 : 2002 | Absent | Absence |

NOTE: 1. Sampling & Analysis were done as per Standard Methods prescribed by BIS



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WATER ANALYSIS REPORT

| | |
|--|-------------------------------------|
| Issued to: M/s. Ramky Enviro Engineers Ltd, Ramky Grandiose, 13th floor, Ramky Tower Complex, Gachibowli, Hyderabad - 500032. | Date : 22.06.2015 |
| Sample Collected at M/s. Ramky Enviro Engineers Ltd, SWM site, Kohima, Nagaland. | Our Re. No: VL/PESN/WQ/150604313829 |
| | Your Re.No: as per discussion |
| | Dated : 08.06.2015 |
| Sample Particulars: Surface Water Collected at Joining Of River Three (Down stream). Sample Collection Date: 12.06.2015 Sample Tested as Received basis. | |

TEST RESULTS MICROBIOLOGICAL ANALYSIS

| S. No | Parameters | Units of Measurement | Test Method | Test Results | Surface Water Standards as Per IS: 2296 Limits |
|-------|--------------------|----------------------|------------------|--------------|--|
| 1. | Total Colony Count | CFU/ml | IS:5402:1969 | 1245 | -- |
| 2. | Coli form Bacteria | CFU/100ml | IS: 15185 : 2002 | 860 | 5000 |
| 3. | E.Coli Bacteria | CFU/100ml | IS: 15185 : 2002 | Absent | Absence |

NOTE: 1. Sampling & Analysis were done as per Standard Methods prescribed by BIS



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SOIL QUALITY ANALYSIS REPORT

| | |
|--|-------------------------------------|
| Issued to: M/s. Ramky Enviro Engineers Ltd, Ramky Grandiose, 13th floor, Ramky Tower Complex, Gachibowli, Hyderabad - 500032. | Date : 22.06.2015 |
| | Our Re. No: VL/RESN/SQ/150604313830 |
| | Your Re.No: as per discussion |
| Sample Collected at M/s.Ramky Enviro Engineers Ltd, SWM site,Kohima, Nagaland. | Dated : 08.06.2015 |
| Sample Particulars: Soil Sample Collected by Admin Building Sample Collection date: 12.06.2015 Sample Tested as received basis. | |

TEST RESULTS

| Sr. No. | Parameters | Unit of measurements | Results | Agriculture Soil Limits |
|---------|------------------------------|----------------------|---------|-------------------------|
| 1. | pH (10% Slurry) | - | 7.62 | 6.50-8.50 |
| 2. | Conductivity | dS/cm | 156 | <500 |
| 3. | Total Organic Carbon | % | 0.89 | -- |
| 4. | Sodium Absorption Ratio | % | 0.96 | -- |
| 5. | Calcium as Ca | mg/kg | 1.36 | -- |
| 6. | Magnesium as Mg | mg/kg | 0.98 | -- |
| 7. | Sodium as Na | mg/kg | 1.58 | -- |
| 8. | Nitrogen as N | kg/ha | 243 | 272-544 |
| 9. | Potassium as K | kg/ha | 11.01 | 11.2-22.4 |
| 10. | Phosphorus as P | kg/ha | 98.6 | 120-280 |
| 11. | Zinc as Zn | meq/100gr | 3.31 | -- |
| 12. | Cadmium as Cd | meq/100gr | 0.09 | -- |
| 13. | Mercury as Hg | meq/100gr | 0.0001 | -- |
| 14. | Lead as Pb | meq/100gr | 0.006 | -- |
| 15. | Sulphates as SO ₄ | meq/100gr | 9.6 | -- |
| 16. | Chlorides as Cl | meq/100gr | 12.1 | -- |

NOTE: 1. Sampling & Analysis were done as per Standard Methods prescribed by BIS



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SOIL QUALITY ANALYSIS REPORT

| | |
|--|-------------------------------------|
| Issued to: M/s. Ramky Enviro Engineers Ltd, Ramky Grandiose, 13th floor, Ramky Tower Complex, Gachibowli, Hyderabad - 500032. | Date : 22.06.2015 |
| | Our Re. No: VL/RESN/SQ/150604313831 |
| | Your Re.No: as per discussion |
| Sample Collected at M/s.Ramky Enviro Engineers Ltd, SWM site,Kohima, Nagaland. | Dated : 08.06.2015 |
| Sample Particulars: Soil Sample Collected by Land Filling Area Sample Collection date: 12.06.2015 Sample Tested as received basis. | |

TEST RESULTS

| Sr. No. | Parameters | Unit of measurements | Results | Agriculture Soil Limits |
|---------|------------------------------|----------------------|---------|-------------------------|
| 1. | pH (10% Slurry) | - | 8.06 | 6.50-8.50 |
| 2. | Conductivity | dS/cm | 232 | <500 |
| 3. | Total Organic Carbon | % | 0.99 | -- |
| 4. | Sodium Absorption Ratio | % | 0.88 | -- |
| 5. | Calcium as Ca | mg/kg | 2.64 | -- |
| 6. | Magnesium as Mg | mg/kg | 1.12 | -- |
| 7. | Sodium as Na | mg/kg | 1.36 | -- |
| 8. | Nitrogen as N | kg/ha | 256 | 272-544 |
| 9. | Potassium as K | kg/ha | 12.3 | 11.2-22.4 |
| 10. | Phosphorus as P | kg/ha | 112.5 | 120-280 |
| 11. | Zinc as Zn | mg/100gr | 4.52 | -- |
| 12. | Cadmium as Cd | mg/100gr | 0.13 | -- |
| 13. | Mercury as Hg | mg/100gr | 0.0006 | -- |
| 14. | Lead as Pb | mg/100gr | 0.013 | -- |
| 15. | Sulphates as SO ₄ | mg/100gr | 12.3 | -- |
| 16. | Chlorides as Cl | mg/100gr | 16.5 | -- |

NOTE: 1. Sampling & Analysis were done as per Standard Methods prescribed by BIS



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