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No-J-27018/8/-2010-NRCD-II
Government of India
Ministry of Environment & Forests
NATIONAL RIVER CONSERVATION DIRECTORATE

"Paryavaran Bhawan", C.G.O. Complex, Lodhi Road,
New Delhi-110003

Dated:- 20th May, 2011

OFFICE MEMORANDUM

Sub:- Demonstration/pilot projects of "In-situ treatment of sewage through bio-remediation" under National River Conservation Plan (NRCP)/ National Ganga River Basin Authority (NGRBA).

The undersigned is directed to say that the National River Conservation Directorate (NRCD) has sanctioned 4 (four) demonstration/pilot projects of "In-situ treatment of sewage through bio-remediation" at (i) Budha Nala, Ludhiana, Punjab (ii) Bakarganj Nala at Patna, Bihar (iii) Morigate Nala, Allahabad, U.P and; (iv) City Drain, Farukhabad, U.P, under National River Conservation Plan (NRCP)/ National Ganga River Basin Authority (NGRBA) with the Central Pollution Control Board (CPCB) as the nodal agency for project implementation.

2. To monitor and evaluate the implementation of these project and their outcomes, a Committee with the following composition has been constituted;

- Handwritten initials: JS, 30.05.11
- i) Shri Brijesh Sikka, Director, NRCD, MoEF- (Convenor)
 - ii) Dr. R. Dalwani, Director, NRCD, MoEF-Member
 - iii) Representative from Department of Bio-technology- Member
 - iv) Representative from CPHEEO, Ministry of Urban Development- Member
 - v) Dr. M.N.V Prasad, Professor, Deptt. of Plant Science, University of Hyderabad- Member

3. The Committee, in its first meeting, will decide on the frequency of meetings and the methodology of monitoring and evaluation. CPCB will provide necessary inputs/documentation as required from time to time and also keep the Committee appraised of the progress/ developments on the projects.

Handwritten signature: C. Uppili
20/5/2011
(C. UPPILI)

Under Secretary to the Government of India

Handwritten: JS, 30.05.11
Copy with a request to nominate a representative in the Committee to:

- i) Shri Sreeshan Raghavan, Joint Secretary, Deptt. of Bio-technology, Block 2, CGO Complex
- ii) Shri A.K. Mehta, Joint Secretary UD&A, Nirman Bhawan

Copy to:

- i) Shri Brijesh Sikka, Director, NRCD, MoEF- (Convenor)
- ii) Dr. R. Dalwani, Director, NRCD, MoEF-Member
- iii) Member Secretary, CPCB, East Arjun Nagar, Shahdara Delhi-110032
- iv) Dr. M.N.V Prasad, Professor, Deptt. of Plant Science, University of Hyderabad
- v) PS to JS(RG)

Government of India
Ministry of Environment & Forests
National River Conservation Directorate

Paryavaran Bhawan,
CGO Complex,
Lodi Road,
New Delhi.

Dated: 8th August, 2011

OFFICE MEMORANDUM

The undersigned is directed to enclose Minutes of the Meeting held on 2.8.2011 at 12.00 Noon in Conference Room No. 403, Paryavaran Bhawan, CGO Complex, New Delhi under the chairmanship of Secretary, Ministry of Environment & Forests to discuss the four demonstration/pilot projects sanctioned under NRCP/NGRBA on 'In-situ treatment of sewage through bio-remediation', for information/ necessary action.

Encl.- as above


(C. Uppili)

Under Secretary to the Govt. of India

Copy to:

1. Dr. S.P. Gautam, Chairman, Central Pollution Control Board, Delhi (Fax No. 011-22304948/22307863)
2. Dr. Babu Ram, Member Secretary, Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, Patiala. (Fax No. 0175- 2215802, 2216980)
3. Dr. C.S. Bhatt, Member Secretary, U.P. Pollution Control Board, 111rd Floor, PICUP Bhawan, Vibhuti Khand, Gomti Nagar, Lucknow. (Fax No. 0522- 2720895/2720764)
4. Shri M.K. Singh, Member Secretary, Bihar Pollution Control Board, Beltron Bhawan, Shastri Nagar, Jawahar Lal Nehru Marg, Patna. (Fax No. 0612- 2281050)

Internal Distribution:

PPS to Secretary (E&F) / Sr. PPS to AS (MM) / PPS to AS &FA / PPS to JS (RG)
/ Dir. (BS).

1/3

Minutes of the Meeting on the Demonstration/Pilot Projects sanctioned under NGRBA/NRCP on 'In-situ treatment of sewage through Bio-remediation' held on 2.8.2011 at Paryavaran Bhawan, CGO Complex, New Delhi.

A meeting to discuss the implementation of 4 pilot projects sanctioned under NGRBA/NRCP on 'In-situ treatment of sewage through Bio-remediation' for Buddha Nala, Ludhiana, Mori Gate Nala, Allahabad, City drain, Farrukhabad and Bakarganj Nala, Patna was held on 2.8.2011 under the chairmanship of Secretary, Ministry of Environment & Forests. The list of participants is annexed.

2. At the outset Secretary (E&F) welcomed the participants and requested Chairman CPCB to provide detailed technical aspects of the projects and the implementational arrangements. Chairman, CPCB gave a brief presentation about the projects. The project for Buddha Nala in Ludhiana is based on Green Bridge Technology. Green bridge uses filtration power of biologically originated cellulosic/fibrous material in combination with sand and gravel and root system of green plants. All floatable and suspended solids are trapped in this biological bridge and the turbidity of flowing water is reduced substantially. The growing green plants help in absorption of soluble substances including heavy metals. There will be four treatment cells between five green bridges which would be activated and provided with microbial dosing system at the bottom. The CPCB also informed that the embankments will be treated with plantation and rocks for further enhancement of treatment process, which will take care of the contamination of groundwater by seepage into the surrounding drain areas. He further explained that project for City drain at Farrukhabad is based on Bio-mimicry technology for sewage treatment, project for Bakarganj Nala is based on EBB (Eco-Bio Block) technology. EBB is made of porous volcanic rock, cement and beneficial bacteria & the blocks will be laid in the Nala bed. The project for Mori Gate Nala, Allahabad is based on "Emtech" technology, which involves bio-augmentation of microbial consortia.

3. In response to a question by Secretary (E&F) on the expected performance of the technologies and their outcomes, it was explained by Chairman, CPCB that while the concept is common, being based on application of microbial consortia, the technology in each of the four projects is different because of application of combinations of different microbial consortia. The Chairman, said that the application of these technologies will achieve the desired standards for treated effluents i.e. BOD=<30 mg/l, COD=<250 mg/l and SS=< 100 mg/l.]

4. AS & FA enquired about the process of selection of firms for the projects. The Chairman, CPCB confirmed that a competitive process was adopted. Based on Eols

published by CPCB, 7 firms applied. These seven firms were asked to make technical presentations before the Expert Committee under the chairmanship of Chairman, CPCB. The Committee included Ms. Sunita Narain, Director General, Centre for Science and Environment, Dr. S.K. Rohilla, Programme Director, Centre for Science and Environment and Dr. A.K. Nema, Associate Professor, IIT, Delhi. The Expert Committee recommended all the technologies of in-situ sewage treatment for demonstration and execution. The firms for individual projects were selected by CPCB based on their past experience, competence and the size of the project and the feasibility of the technology for the particular place and based on quantum of flow. He also informed that detailed appraisal was carried out by the CPCB to choose the location specific technologies based inter alia on quantum of flow. CPCB has also satisfied itself about the cost aspects of the projects before submitting them to the Ministry.

5. Secretary (E&F) asked the Member Secretary, Punjab Pollution Control Board about the involvement of SPCB and State Government in the project. The Member Secretary, Punjab Pollution Control Board informed that SPCB has also appraised the project for Buddha Nala, Ludhiana and they have fully satisfied themselves about the technology and its suitability for this site. Regarding O&M of the project, it was stated that the State Government has been requested to provide commitment to bear the O&M cost after completion of the project.

6. Chairman, CPCB also mentioned that the Green Bridge technology to be used in Buddha Nala project has been tried out in Ahar river project in Udaipur and Eco- Bio Block (EBB) technology to be used in Patna has been tried out earlier in Mayur Vihar drain in Delhi. CPCB has evaluated both the projects and results were found satisfactory. It is proposed that the outcomes of these four pilot projects will be used for standardisation of the results and further replication. He further informed that Shri K. Kasturirangan, Member, Planning Commission has visited the Ahar river project and appreciated the work done through Green Bridge technology. He was requested to provide a copy of the report of visit of Member, Planning Commission.

7. On being asked by AS &FA about the higher project cost of Buddha Nala project, it was informed by CPCB that this is due to the significantly larger flow in Buddha Nala i.e., about 600 mld which also consist of 100 mld of industrial effluent. Further the length of Nala is also about 36 km. Secretary (E&F) observed that this flow is comparable to the wastewater generation of a medium sized town.

8. After detailed deliberations the following decisions were taken:

(i) Based on the conditions stipulated in AA&ES, CPCB will submit the Bank Guarantee for instalment of funds to be released. A performance guarantee in respect of each of the projects will also be submitted. Ministry will release the 1st instalment of the sanctioned cost of the projects after CPCB furnishes Bank

Guarantee from the individual firms equivalent the first instalment to be released as well as Bank Guarantee equivalent to 5% of the total project cost as Performance Guarantee.

- c (ii) CPCB will also obtain commitment from the State Governments for O&M of the assets created under the projects after one year of operation (for which provision is available within the sanctioned project cost) to ensure their sustainability. This commitment will be obtained before commencement of actual work. MoEF would also address a letter to the concerned State Governments in this regard.

The Meeting ended with thanks to the chair.

Annexure

List of participants for the Meeting on the Demonstration/Pilot Projects under NGRBA/NRCP on 'In-situ Treatment of Sewage through Bio-remedation' held on 02.08.2011 in Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi

1. Shri T.Chatterjee, Secretary, MoEF - in chair
2. Ms. Meera Mehrishi, Additional Secretary, MoEF & Project Director, NRCD
3. Ms. Gauri Kumar, Additional Secretary & Financial Adviser, MoEF
4. Shri S.P.Gautam, Chairman, CPCB
5. Shri Rajiv Gauba, Joint Secretary, NRCD, MoEF
6. Shri Brijesh Sikka, Director, NRCD, MoEF
7. Shri Sanjay Kumar Singh, Deputy Director, NRCD, MoEF
8. Shri A.B.Akolkar, Additional Director, CPCB
9. Shri Babu Ram, Member Secretary, Punjab Pollution Control Board, Patiala
10. Shri Manoj Kumar Singh, Member Secretary, Bihar State Pollution Control Board, Patna.
11. Dr. Rajeev Upadhyay, Chief Environmental Officer, Uttar Pradesh Pollution Control Board, Lucknow

No. J-14011/5/2010- NRCD-II

Government of India
Ministry of Environment & Forests
National River Conservation Directorate

Paryavaran Bhawan,
CGO Complex,
Lodi Road,
New Delhi.

Dated: 6th January, 2012

OFFICE MEMORANDUM

The undersigned is directed to enclose Minutes of the Meeting held on 23.12.2011 in Paryavaran Bhawan, CGO Complex, New Delhi under the chairmanship of Secretary, Ministry of Environment & Forests to discuss the demonstration/pilot projects sanctioned under NRCP/NGRBA on 'In-situ treatment of sewage through bio-remediation', at Mori Gate Nala, Allahabad & City Drain in U.P. and Bakarganj Nala, Patna, Bihar for information/ necessary action.

Encl. - as above


(C. Uppili)

Under Secretary to the Govt. of India

Copy to:

1. **Shri D.S. Mishra**, Principal Secretary, Department of Urban Development, Govt. of U.P., Lucknow
2. **Shri S.S. Sharma**, Principal Secretary, Department of Urban Development, Govt. of Bihar., Patna.
3. **Dr. S.P. Gautam**, Chairman, Central Pollution Control Board, Delhi (Fax No. 011-22304948/22307863)
4. **Dr. C.S. Bhatt**, Member Secretary, U.P. Pollution Control Board, 111rd Floor, PICUP Bhawan, Vibhuti Khand, Gomti Nagar, Lucknow. (Fax No. 0522-2720895/2720764)
5. **Shri M.K. Singh**, Member Secretary, Bihar Pollution Control Board, Beltron Bhawan, Shastri Nagar, Jawahar Lal Nehru Marg, Patna. (Fax No. 0612-2281050)
6. **Shri Rabindra Kumar Varma**, Executive Engineer, Patna Municipal Corporation, Patna.

Internal Distribution:

PPS to Secretary (E&F) / Sr. PPS to AS (MM) / PPS to AS &FA / PPS to JS (RG)
/ Dir. (BS) / Dir (IFD), DD(SS)

15/14

List of participants for the meeting on the demonstration/pilot projects of 'In-situ treatment of sewage through bio-remedation' in UP & Bihar under NGRBA held on 23.12.2011 in Paryavaran Bhawan, New Delhi

Ministry of Environment & Forests (MoEF)

1. Shri T.Chatterjee, Secretary, MoEF - in chair
2. Smt. Mira Mehrishi, Additional Secretary, MoEF & Project Director, NRCD.
3. Smt. Gauri Kumar, Additional Secretary & Financial Adviser, MoEF
4. Shri S.P.Gautam, Chairman, Central Pollution Control Board
5. Shri Rajiv Gauba, Joint Secretary, NRCD, MoEF
6. Shri Brijesh Sikka, Director, NRCD, MoEF
7. Shri Hari Har Mishra, Director (Finance), MoEF
8. Shri M.K. Chaudhary, Scientist 'D', Central Pollution Control Board

Government of Uttar Pradesh

9. Shri D.S.Mishra, Principal Secretary (Urban Development)
10. Shri A.K.Mittal, Chief Engineer (Ganga), UP Jal Nigam
11. Dr. Rajeev Upadhyay, CEO, UP Pollution Control Board

Government of Bihar

12. Shri Manoj Kumar Singh, Member Secretary, Bihar State Pollution Control Board
13. Shri Rabindra Kumar Varma, Executive Engineer, Municipal Corporation, Patna

Minutes of the meeting on demonstration/pilot projects on 'In-situ treatment of sewage through bio-remediation' under NGRBA/NRCP held on 23.12.2011 in Paryavaran Bhawan, New Delhi

A meeting to discuss the demonstration/pilot projects on 'In-situ treatment of sewage through bio-remediation' at Mori Gate Nala, Allahabad & City Drain, Farrukhabad in UP and Bakarganj Nala, Patna in Bihar under the National Ganga River Basin Authority (NGRBA) programme as well as Budha Nala, Ludhiana in Punjab under the National River Conservation Plan (NRCP) was held on 23rd December, 2011 in Paryavaran Bhawan, New Delhi under the chairmanship of Secretary, Ministry of Environment & Forests (MoEF), Government of India. List of participants is at *Annexure*.

2. Welcoming the participants, Secretary, MoEF requested the Chairman, Central Pollution Control Board (CPCB) to give the updated status on the pending issues relating to these projects.

Based on the proposals received from CPCB and after recommendation of the Research Advisory Committee (RAC) of NGRBA, 4 demonstration/pilot project proposals relating to 'In-situ treatment of sewage through bio-remediation' were sanctioned under NGRBA/NRCP at an estimated cost of Rs. 19.85 crore in April, 2011. These include the projects at Mori Gate Nala, Allahabad (UP) costing Rs. 1.38 crore, City Drain, Farrukhabad (UP) costing Rs. 0.94 crore and Bakarganj Nala, Patna (Bihar) costing Rs.2.24 crore, including one year O&M cost. These demonstration/pilot projects would be implemented by CPCB through the project implementing agencies (PIAs)/firms chosen by them.

However, the release of 1st instalment of funds by the Ministry to CPCB for these demonstration/pilot projects could not take place due to the following:

- Non-submission of a set of 2 bank guarantees by the PIA/firm to CPCB (i) against the amount to be released and equivalent to each installment, and (ii) related to performance of the technology for achieving the targeted results.
- Non-receipt of commitment of the State Government for bearing the O&M costs of assets created after one year of completion of the demonstration/pilot project.

3. Chairman, CPCB informed that for the projects of City Drain, Farrukhabad and Bakarganj Nala, Patna, the respective PIAs/firms have submitted their bank guarantees equivalent to their first installment of advance. However, no bank guarantee (against advance) had been received for the project of Mori Gate Nala, Allahabad. He also informed that they had already written to the State Governments of UP & Bihar for furnishing the requisite commitment for bearing the O&M cost. Reply from both the State Governments was still awaited.

4. Principal Secretary (Urban Development), UP observed that the cost of O&M for the projects in UP was very high (Rs. 1.38 crore/annum in Allahabad & Rs. 61 lakhs/annum in Farrukhabad). Also, both these nalas were already partially tapped and once the sewerage system is fully laid in these towns in the near future, no untreated sewage would flow in these nalas. He suggested that the pilot projects may be taken up in more appropriate locations in smaller towns in UP, where laying of sewerage system and construction of STP will be taken up later and the annual O&M cost would also be much lower. It was agreed that UP Govt. would suggest 2 alternate locations/towns for taking up the in-situ bio-remediation pilot projects.

5. Chairman, CPCB informed that for the project of Bakarganj Nala, Patna, the PIA/firm had already submitted its bank guarantee equivalent to their first installment of advance for the project. The Member Secretary, Bihar State Pollution Control Board informed that directions had already been issued by the Urban Development Department, Bihar to Municipal Corporation, Patna to bear the O&M cost after the demonstration period of the pilot project is over. The Chairman requested that the requisite commitment may be furnished by Bihar Government/ULB to the Ministry. In so far as performance guarantee is concerned, it was agreed after discussions that an amount equal to the performance guarantee would be withheld from the last installment of fund release until satisfactory performance of the project has been observed and certified by CPCB.

6. The status of the 4th demonstration/pilot project at Budha Nala in Ludhiana (Punjab) under NRCP was also reviewed. Joint Secretary, NRCD recalled that in the meeting taken by Secretary, MoEF on 24.11.2011 regarding the project, the Chairman, CPCB had informed that the PIA/firm had indicated that no advance is required by them and funds could be reimbursed to the PIA/firm based on bills raised by them and after verification of the work is done by CPCB. Thus, no bank guarantee was required to be submitted by the PIA/firm as no advance funds were being released to them by CPCB. With regard to the submission of the bank guarantee relating to performance, the Chairman, CPCB informed that no funds would be released by CPCB to the PIA/firm till the work is completed and the performance of the technology to meet the stipulated targets has been demonstrated. Based on the commitments given by Chairman, CPCB in the meeting and the receipt of commitment from Municipal Corporation, Ludhiana to bear the O&M cost of the project after the one year demonstration period, the release of 1st installment of funds to CPCB for the project had already been approved.

However, the fund release had to be withheld in view of a letter received subsequently (on 22.12.2011) from CPCB indicating that the PIA/firm had stated that they would not be in a position to complete the entire project and then get reimbursement, as agreed in the meeting on 24.11.2011. The firm is willing to incur expenditure upto 25% of the project cost and claim reimbursement of the work done after verification by CPCB, with this arrangement to continue during the entire project period. In the letter, the CPCB has also informed that the firm was willing to give

bank guarantee for performance amounting to Rs. 77 lakhs (5% of the project cost) which will be effective from the date of reimbursement of the 3rd installment.

Secretary, MoEF expressed his concern over the change in implementation arrangements agreed during the earlier meeting on 24.11.2011, as a result of which the fund release to CPCB for the pilot project had to be withheld. The contention of the PIA/firm that the bank guarantee for performance should be effective from the date of reimbursement of the 3rd installment was not agreed. The suggestion that the PIA/firm would incur expenditure upto 25% of the project cost and claim reimbursement of the work done after verification by CPCB, with the arrangement to continue during the entire project period, was agreed to. With regards to the performance guarantee, it was agreed that the project could be implemented as per arrangements agreed for the project in Bihar as discussed in Para 5 above.

The meeting ended with thanks to the Chair.
