

Global Partnership on Output Base Aid Project
Sub – Project Environmental Assessment Report – NO 01
Waste Water Collection, Decentralized Treatment and Disposal
System for Fisheries Houses at Diyawarapura

GPOBA Project

National Water Supply and Drainage Board

Sri Lanka

1.0 Project Description

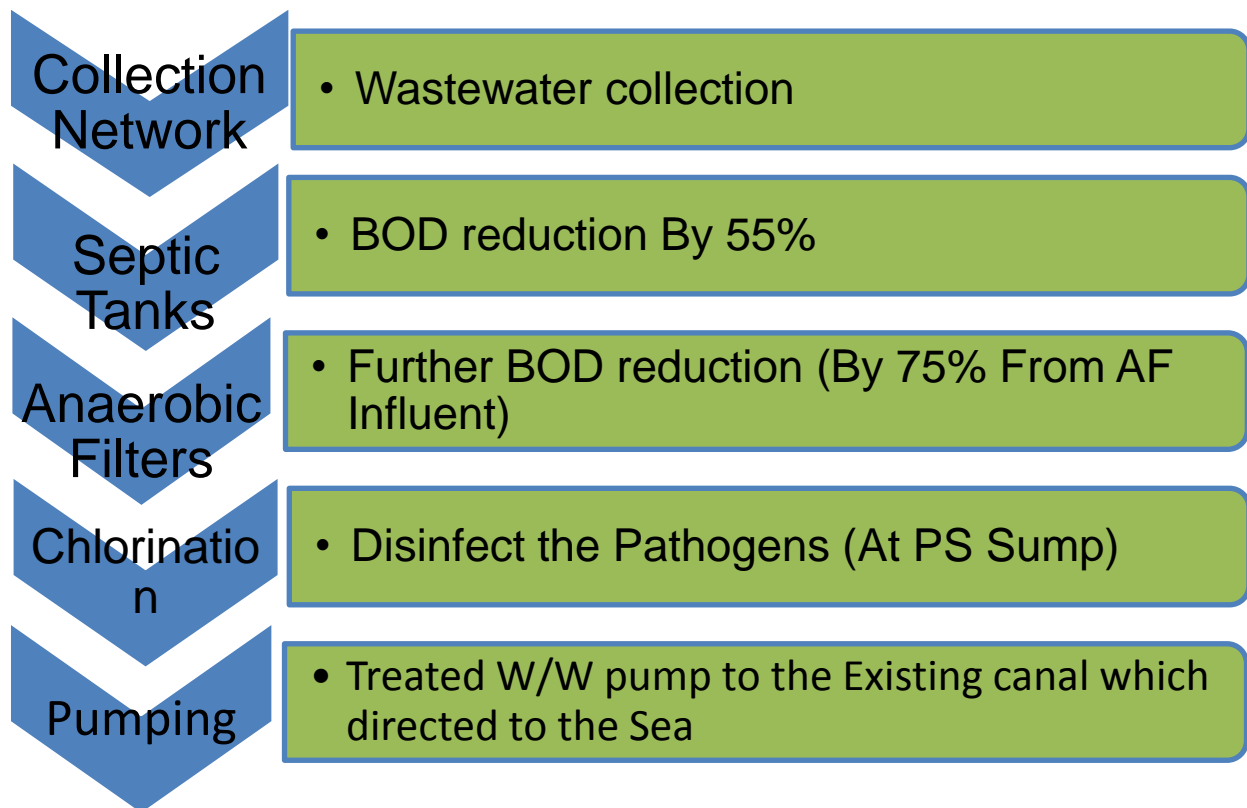
The Diyawarapura fisheries housing scheme is situated near the 5th km post along the new Galle road in the Moratuwa divisional secretary area of the southern part of the Colombo city. It is about 50m away from the main road. This is a low income housing settlement provided for fisheries families by the Ministry of fisheries. There are for flats and each flat consist of 16 housing units. The total of 64 housing units are occupying by approximately 300 people. This is located 150m away from the sea in a low lying flat surface area with a high water table of approximately 1 meter.

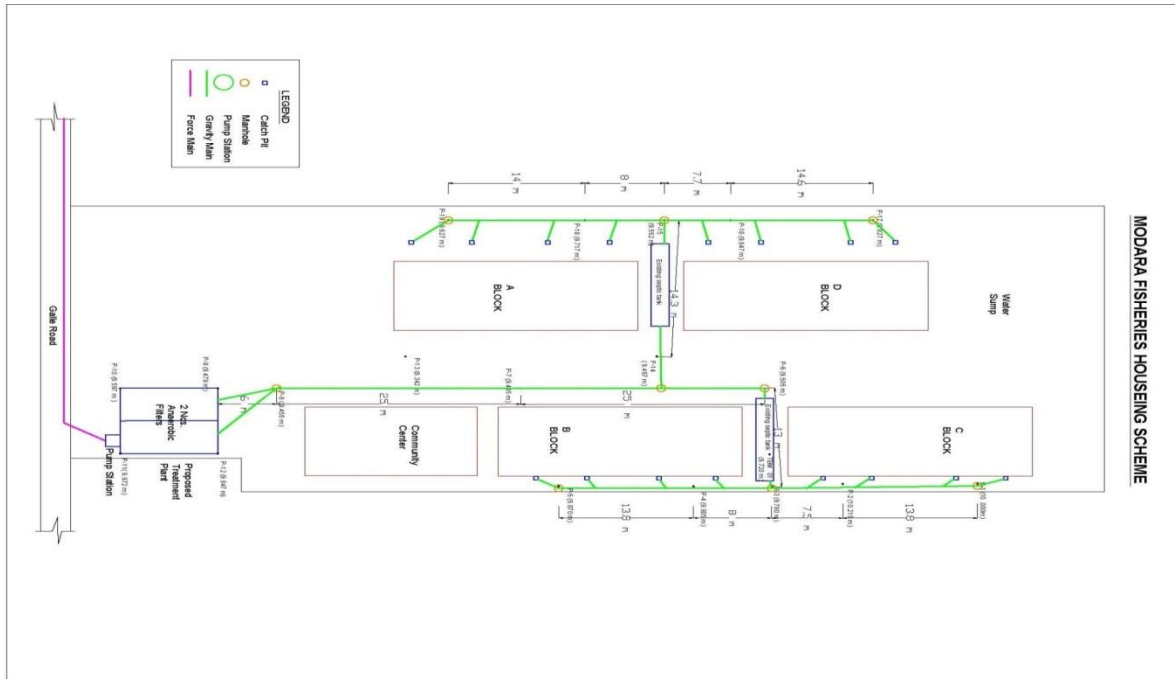
These people are severely suffering from lack of sanitation facilities as they are not having proper waste water disposal system. Existing septic tanks are frequently overflowing. Most of ground floor toilets are overflowing over the year.

DEWAT system was proposed for this scheme as it is approximately more than 5 kilometers away from the existing sewerage network.

1.1 Proposed system

All toilets are connected to proposed gravity sewer and collected wastewater will be connected to rehabilitated existing septic tanks. Effluent from the septic tank will filter from the anaerobic filter and filtered waste water will be disinfect at the wet well of the pump house and it will be pumped to the existing canal which is 150m away from the site.





2.0 Required approvals and permits

- Environmental clearance from the Central Environmental Authority (CEA).
- Construction Approval from Department of Coast Conservation
- Construction Approval from Moratuwa Municipal Council
- Land Clearance from Ministry of fisheries and consent letter from Divisional secretariat, Moratuwa

All approvals which have taken are attached in the annexure 1-4

3.0 Existing Environmental Condition in project area

3.1 Geology

The general topography of the Diyawarapura area consists of largely flat low lying terrain. Elevations vary only from 0m MSL to 1m MSL.

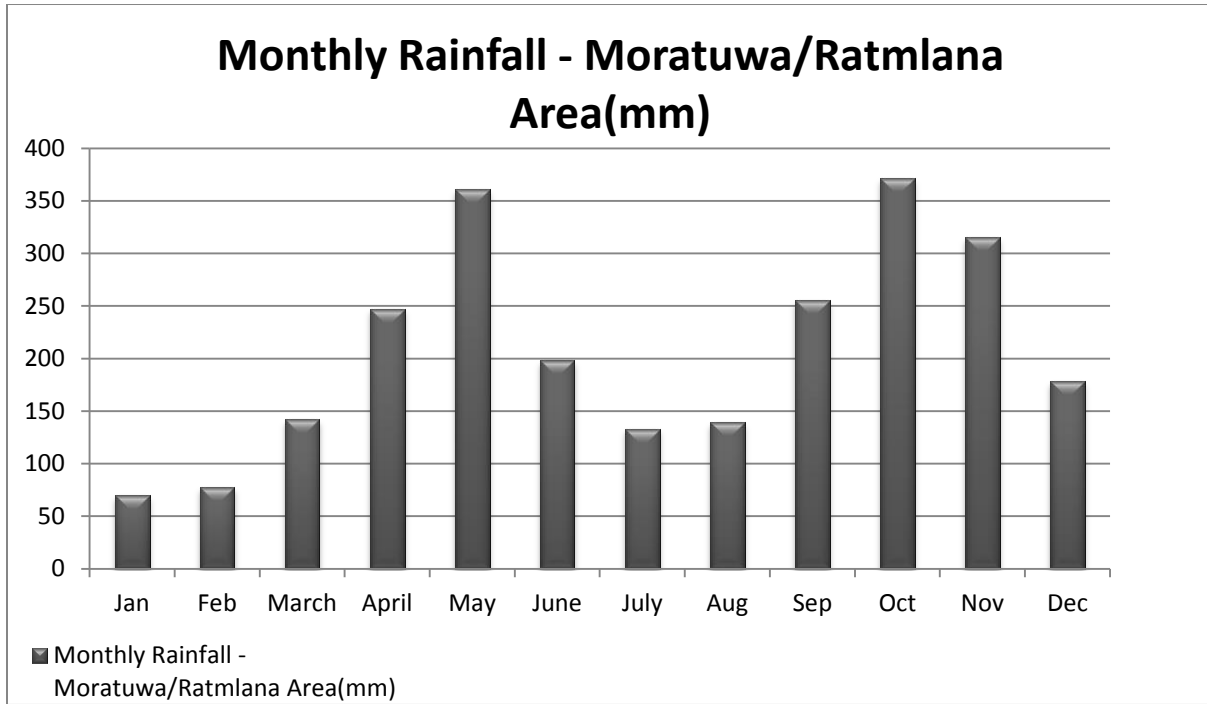
3.2 Stratigraphy and sub soil condition

Top most top layer is consisting of loose sand layer and there is a dense sand layer 3m below from the ground level. Due to the sandy sub soil layers permeability of sub soil is higher.

3.3 Rainfall characteristics and monthly average rainfall

Rainfall in the area is peaks in May to October. The general rainfall is monsoonal, conventional and digressional origin. The average annual rainfall for the project area is around 2000 – 3000 mm. Daily

rainfall is measured at the principal meteorological station Ratmalana maintained by the Department of Meteorology.



As the ground water table is close to the ground level surface runoff is high.

Monthly Runoff for Moratuwa/ Ratmalana area is as follows.

Month	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Runoff (mm)	49	54	99	173	252	139	93	98	178	260	220	124

3.4 Wind Speed and Direction

Average wind speed is in the range of 7-10km/hr according to the data recorded at the Colombo meteorological station.

Month	Wind Speed (km/hr)	Dominant Direction
January	9	North East
April	7	South West
July	10	South West
October	8	South West

3.5 Temperature

Average annual temperature in the area is in the range of 25-27.5 °C

3.6 Relative Humidity

Relative humidity data are available for Ratmalana meteorological station, which is in the project area. Relative humidity is from 66% to 75% during the daytime, and it varies from 84% to 90% during the nighttime.

3.7 Hydrology

Surface drain pattern

There is no better surface drain for the Diyawarapura housing scheme as it is low lying area and Egoda uyana area surface drain is largely determined by the sea and Bolgoda Lake.

Surface water availability & uses

Close to the site there some small canal which are draining surface runoff and domestic wastewater (Grey water) to the sea. There is a canal which carries surface runoff and wastewater close to the proposed site 150m away from the north bound. It is highly polluted. There is no surface water source close to the site, which stores portable water.

Height of Ground water table

Ground water table is high in the Diyawarapura area as it is close to the sea and low lying area. Ground water is contaminated by domestic wastewater due to partial treatment of domestic waste water in septic tanks and untreated wastewater by overflowed septic tanks and toilets.





Groundwater Uses

The quality of Groundwater is degraded in the area because of the domestic wastewater contaminated with the groundwater. Further to that groundwater is salty as the site is located very close to the sea. Hence there is hardly any use of groundwater in the project area.

Marine Outfalls

The shoreline within the proposed project area is a bare sandy beach with beach vegetation. Human settlements and carpentry shops can be seen along the beach and domestic sewerage and other waste have ruined the scenic value of the beach. Visual pollutants are scattered in the beach and in the surface water of the near shore area.

3.8 Water quality

NWSDB have established a water quality monitoring programme with sampling point located closer to the site (Annex . Samples will be taken quarterly basis.

Water quality testing for the first quarter of the year 2013 was done and results as follows.

	Parameter	Value
1	BOD ₅	480 mg/l
2	DO	Nil
3	E-coli5	18 x 10 ⁵
4	Total fecal coliforms	18 x 10 ⁵

Possible Environmental Impacts

- As we are discharging treated water in to existing canal water quality parameters of the existing canal can be changed
- Playing area of the scheme is disturbed due to the construction of anaerobic filters.
- Dust can be generated during the construction period.
- Possibility of odor from the anaerobic filters, discharge points and Pumping station

EMMP including preventing, Monitoring, Mitigation measures and identification of responsible parties

	Key Impacts	Mitigation Measures	Monitoring actions	Responsible parties
1	Water quality of existing Water canals	At the design stages follow up the marine standards as the canal is directed to sea and better operation and maintenance of the DEWAT system	Existing water quality testing prior to the project and post quality testing and quality testing for effluent from the treatment system quarterly.	NWSDB
2	Disturbance to the playing area of the scheme	Structures of the system finished at the ground level and landscaping at the end of construction and use minimum space during the construction	Site inspection, observations and sociological surveys before, during and after the construction.	NWSDB and contractor
3	Dust generation during the construction period	Dust control measures such as spaying water in the dry seasons during construction period	Monitoring during site inspection and feedback from the community around the area	NWSDB and Contractor
4	Possibility of odor from filters, Pumping stations and discharge points	Better operation and maintenance of the DEWAT system, O&M shall be done by NWSDB. Discharge the effluent through a seal Manhole		NWSDB

Modes of Public Consultation and Disclosure

Public consultation and awareness programmes were conducted with the participation of Honorable Mayer and Municipal council members and GS. There were no any objections from the community in the Diyawarapura scheme and they wanted to hurry up the implementation of the project as early as possible.



Annexure 05



Annex - 01

ඔබේ යොමුව
 உமது தொடர்பு
 Your Ref.

අපේ යොමුව
 எமது தொடர்பு
 Our Ref.

දිනය
 திகதி
 Date

WPO/07/01/407/2012

09.01.2012

Attn: Mr. Danu Ka

මධ්‍යම පරිසර අධිකාරිය
மத்திய சுற்றாடல் அதிகாரசபை
Central Environmental Authority



"පරිසර පියස", 104, ඩෙන්සිල් කොබ්බෑකඩුව මාවත, බත්තරමුල්ල, ශ්‍රී ලංකාව.
 "பரிசர பியச", 104, டென்சில் கொப்பேகடுவ மாவத்தை, பத்தரமுல்ல, ஸ்ரீ லங்கா.
 "Parisara Piyasa" 104, Denzil Kobbekaduwa Mawatha, Battaramulla, Sri Lanka.

Municipal Commissioner,
 Moratuwa Municipal Council,
 Moratuwa.

Obtaining Environmental Recommendations from Central Environmental Authority for Sewerage Treatment Plant of Institute of Diyawarapura Fisheries Houses, Moratuwa.

This has reference to the questionnaire on Environmental Impact Identification dated 31.07.2012 submitted by the National Water Supply and Drainage Board regarding above matter.

This is to inform you that this Authority has recommended granting your approval to establish the Sewerage Treatment Plant at the proposed location subject to following conditions, which should be strictly adhered by the developer to abate environmental pollution likely to arise from the operations of the above activity.

Special Condition :

Approval of Coast Conservation Department (CCD) should be obtained prior to construction of the sewerage treatment plant.

Conditions :

1. Noise Levels at the boundary of the Institution premises during the operation stage should be maintained at or below 63 dB(A) during day time (between 06.00 hrs and 18.00 hrs) and at or below 50 dB(A) during night time (between 18.00 hrs and 06.00 hrs)
2. 2.1 Generator shall be installed in a sound proof chamber to reduce spread of noise.
- 2.2 Emission of the generator shall be directed upwards through an exhaust line which shall be from the top of the sound proof chamber where the generator to be installed.

Chairman T. Phone : 2872361 Fax : 2872348	Director General T. Phone : 2872359 Fax : 2872608	Gen. Office T. Phone : 2872278, 2872263, 2873447-49, 2872415, 2872419 Hot Line : 2888999
Deputy Director General HRD, Admin & Finance Division T. Phone : 2865296 Fax : 2872601	Envl. Pollution Control Division T. Phone : 2873453 Fax : 2872605	Envl. Mgt. & Asses. Division T. Phone : 2872388 Fax : 2872296
Directors T. Phone : 2872607 (Admin), 2872301 (HRD), 2872603 (Finance) Fax : 2872601 (Admin), 2872603 (Finance)	2873452 (EPC), 2872606 (Lab) 2872402 (WM)	2872346 (NRM), 2876643 (EIA) 2867271 (RSP)
		2876641 (EEA) 2872604 (Legal) 2872609 (EEA)

පරිසර හා ස්වාභාවික සම්පත් අමාත්‍යාංශය, இயற்கை வளங்கள் அமைச்சு Ministry of Environment and Natural Resources

Water Pollution Control

3. 3.1 The quality of the effluents arising from the sewerage treatment plant shall conform to the tolerance limits for industrial and domestic waste discharged into marine coastal areas.(vide annexure –I).
- 3.2 The treated final effluent should be chlorinated in such a way that the residual chlorine in the treated effluent should always be maintained at 1 ppm before discharging into environment.
- 3.3 Stand by pumps/motors shall be kept in working order to be used immediately at site to enable continuous operation of the effluent treatment system.
- 3.4 Treated final effluent shall not be discharged into beach side.
- 3.5 Treated final effluent shall be discharged as recommended by Coast Conservation Department.

Solid Waste Management

4. All solid wastes,
 - 4.1 Solid waste should not be burnt in an open environment.
 - 4.2 Solid waste shall not be disposed of into water way or at a site where it is likely to enter a water body.
 - 4.3 All municipal solid waste shall be disposed environmentally safe and nuisance free manner in consultation with Moratuwa Municipal Council.
 - 4.4 According to gazette extraordinary No. 1627/19 dated 26.11.2009 municipal solid waste shall not be dumped along sides of any national highway.
 - 4.5 According to Gazette Extraordinary No.1466/5 dated 10/10/2006 polythene or polythene products which are 20 microns (20 μ m) or below in thickness shall not be used for the industrial/ domestic activities.

General Condition

5. Cleanliness and good house keeping practices shall be adopted.
6. Any changes expansions or extension to this sewage treatment plant should not be carried out without prior approval of the Central Environmental Authority.

7. Any additional conditions stipulated by the Central Environmental Authority as and when required for controlling any kind of pollution arising from the operation of this facility shall be strictly adhered to.
8. The letter of no objection is issued in relation to Diyawarapura Fisheries Houses should no way considered as a final approval granted for the sitting of this sewerage treatment plant at this location. The written approval of the relevant Local Authority (Moratuwa Municipal Council) should be obtained in order to establish this system at this location.
9. The letter of environmental recommendation is specially issued in respect to sewerage treatment plant of Diyawarapura Fisheries Houses, Moratuwa.
10. This letter of environmental recommendation is issued to carry on only the permitted activities stated in the above said questionnaire it shall not and is not intended to confer the recipient there of any right to assert ownership to the land where the permitted activities are carried on.

Actg. Director (W.P)
Western Provincial Office,
Central Environmental Authority.

Cc :

01. Director General, Coast Conservation Department(CCD).

02. D.P.M. Chandana(Project Manager),
(GPOBA Project) National Water Supply and Drainage Board, No. 480, Roxy Garden,
Wellawatta.

Annex – 2

රාජ්‍ය ආරක්ෂක හා නගරීක සංවර්ධන අමාත්‍යාංශය
 பாதுகாப்பு, நகர அபிவிருத்தி அமைச்சு
 Ministry of Defence & Urban Development



වෙරළ සංරක්ෂණ සහ වෙරළ සම්පත් කළමනාකරණ දෙපාර්තමේන්තුව
 கரைப்பாரம் பேணல் மற்றும் கரையோர மூலவள முகாமை திணைக்களம்
 COAST CONSERVATION AND COASTAL RESOURCE MANAGEMENT DEPARTMENT

ක. පො. 556, නව ලේකම් කාර්යාලය, මැලිගාවත්ත කොළඹ 10.
 த. பெ. இல. 556, புதிய செயலகம் மாளிகாவத்த, கொழும்பு 10.
 P.O. Box. 556, New Secretariat, Maligawatta, Colombo 10.
 Web : www.coastal.gov.lk E-mail: info@coastal.gov.lk



මගේ අංකය
 எனது இல.
 My No.

ඔබේ අංකය
 உமது இல.
 Your No.

CC/P/GEN/42B

28.02.2013



Mr. D.P.M.Chandana
 Project Manager(GPOBA) project
 National Water Supply and Drainage Board.

Dear Sir,

Permit Application under the Provision of Coast Conservation Act No. 57 of 1981
Construction of waste water Disposal system for Diyawarapura , Fisheries House , Moratuwa.

This has reference to your application submitted to this department on the above subject.
 This is to inform you that this department has no objection for the construction of above waste water Disposal system subject to following conditions.

1. All constructions should be carried out in accordance with the construction plan submitted by the developer to the Coast Conservation & Coastal Resource Management Department.
2. The available distance of 80 m from the coastal protection to the building should be maintained as a structure free area.
3. All necessary approvals should be obtained from the urban council - Moratuwa and other relevant Government Agencies.
4. This construction should not obstruct the existing beach accesses and fishing activities in the area.
5. Sewage or waste water should not be emitted to the beach or the coastal waters.
6. This approval will be invalid if violation of any of the above conditions. In such a case this Department will consider relevant structures as unauthorized and will take legal action according to the Coast Conservation & Coastal Resource Management Act No. 57 of 1981.
7. This letter will not be considered the ownership of the land.

Yours faithfully,

A. H. Gamini Hewage
 Deputy Director
 Coast Conservation Department
 Maligawatta,
 Colombo 10.

(Handwritten signature)
 D.P.M. Chandana

A.H. Gamini Hewage
 Deputy Director (Planning)
 For Director General/Coast Conservation.

- CC: 1. Divisional Secretary, Divisional Secretariat, Moratuwa
 2. Chairman, Urban Council, Moratuwa
 3. Area Engineer, Coast Conservation & Coastal Resource Management Department, Moratuwa.

S - Soori

දුරකථන / தொலைபேசி / Telephone

අධ්‍යක්ෂ ජනරාල්
 பணிப்பாளர் நாயகம்
 Director General } 011 2449197

කාර්යාලය
 அலுவலகம்
 Office } 011 2449754

ලේකම් අංකය
 பெக்ஸ் இல.
 Fax No. } 011 2438005



මොරටුව මහ නගර සභාව
මොහුරු වෙ මාநகரசபை
MORATUWA MUNICIPAL COUNCIL

මගේ අංකය : කර/ව්‍යාලි01/19/
 My No: 2013

ඔබේ අංකය :
 Your No :

දිනය : 2013.02.05
 Date :

දුරකථන Telephone : ප්‍රධාන කාර්යාලය Main Office: 2645251, 2647012 ශාඛික Fax : 2645384

D.P.M වන්දන මහතා
 ව්‍යාපෘති අධ්‍යක්ෂ (GPOBA Project),
 ජාතික ජල සම්පාදන හා ජලාපවහන මණ්ඩලය,
 ගාලු පාර, රත්මලාන.

Handwritten signature and notes:
 ජනරාල් (පාලන) / ජනරාල් (පාලන) / මහාලේඛන නිලධාරී

යෝජිත අපජල බැහැරලීමේ ව්‍යාපෘතිය - ඩීවර පුර නිවාස සම්බන්ධවයි.

උක්ත කරුණ සම්බන්ධයෙන් ඔබගේ අංක PD/GPOBA/DEWATS/2012/02 දිනැති ලිපිය හා සබැඳේ.

එකී ලිපිය මගින් සඳහන් කරුණු සම්බන්ධයෙන් මෙම සභාව , පහත සඳහන් කොන්දේසි වලට යටත්ව ඒ සඳහා අනුමැතිය ලබාදීමට තීරණය කර ඇති බව කාරුණිකව දන්වමි.

1. මෙම ව්‍යාපෘතියේ පොම්පාගාරය සහ අපජල ටැංකි ඉදිකිරීම් වලට අදාල මූලික සැලසුම් ඉදිරිපත් කර මෙම සභාව මගින් අනුමැතිය ලබාගත යුතුය. (නාගරික සංවර්ධන අධිකාරියේ රෙගුලාසි වලට යටත්ව)
2. මෙම සියලුම ඉදිකිරීම් මධ්‍යම පරිසර අධිකාරියේ දක්වා ඇති කොන්දේසිවලට අදාලව විය යුතුය.
3. අපජලය පවිත්‍ර කිරීමෙන් පසුව පොදු ජල මූලාශ්‍ර වලට මුදාහැරීමට කටයුතු කරන්නේ නම් ඒ සඳහා නියමිත ප්‍රමිතීන්ට අනුව (BOB) අගය ගණනය කර) පවිත්‍ර කිරීම් කළ යුතු අතර, නියමිත කාල පරාසයක් තුළ ඒ සම්බන්ධව දත්ත පරීක්ෂණ ලබා ගැනීමට කටයුතු සකස් කළ යුතුය.

Handwritten signature: S. Kasundara
 නාගරික කොමසාරිස් (රෝ.ප)
 මොරටුව මහ නගර සභාව
ඒ. ඩී. ජයසුන්දර
 (ශ්‍රී ලංකා පරි. සේ.)
 නාගරික කොමසාරිස්
 මහ නගර සභාව
 මොරටුව.

පිටපත්:-
 අධ්‍යක්ෂ (බ.ප) - දැ.ගැ.ස
 මධ්‍යම පරිසර අධිකාරිය

නගරාධිපති	Mayor	2645384	විමස Res.	2653656	නාගරික ගණකාධිකාරී	Municipal Accountant	2648412
	Fax	2645384			නාගරික සෞ.වෛ.නි.	Municipal M.O.H.	2645488
විද්‍යේජ්‍ය නගරාධිපති	Deputy Mayor	2645698			නාගරික ක්‍රීඩාකර්ම ඉංජිනේරු	Municipal Engineer	2645247
නාගරික කොමසාරිස්	Municipal Commissioner	2645406			නාගරික විදුලි ඉංජිනේරු	Municipal Elec. Supdt.	2641839
	Fax	2642197			නාගරික පශු වෛද්‍ය	Municipal Veter Surgeon	2655299
විද්‍යේජ්‍ය නාගරික කොමසාරිස්	Deputy Muni. Commr.	2641214			නාගරික ප්‍ර.ම.සෞඛ්‍ය පරීක්ෂක	Municipal C.PH.Inspector	2641793
නාගරික ලේකම්	Municipal Secretary	2645551					



ප්‍රාදේශීය මහ ලේකම් කාර්යාලය - මොරටුව

பிரதேசச் செயலகம் - மொறட்டுவை

DIVISIONAL SECRETARIAT - MORATUWA

739, කලු පාර, මොරටුව, 739, කාලී වීථි, මොරටුව. 739, Galle Road, Moratuwa

7

මගේ අංකය : MOR/LAN/02/FI/106	ඔබේ අංකය/නිසා2/නි7/එල්එ/1988	දිනය : 2013.01.24
எனது இல : My No :	உமது இல : Your No :	திகதி : Date :

සාමාන්‍යාධිකාරී,
ජාතික ජල සම්පාදන හා ජලාපවහන මණ්ඩලය

අපජල ප්‍රතිචක්‍රීයකරණ ව්‍යාපෘතිය
එගොඩලයන දියවරපුර ධීවර යෝජනාක්‍රමය

ඔබ මණ්ඩලයේ අතිරේක සාමාන්‍යාධිකාරී (සා.සේ) විසින් මා වෙත එවන ලද 2013.01.10 දිනැති ලිපිය හා බැඳේ.

මෙම ඉඩම් කැබැල්ල ඔබ මණ්ඩලය වෙත ලබා දීමට ධීවර හා ජලජ සම්පත් අමාත්‍යාංශය විසින් නිර්දේශ කර ඇත. ඒ අනුව අවශ්‍ය ඉඩම් කැබැල්ලේ සැලැස්මක් සාදා එවන ලෙස අප විසින් ඔබ මණ්ඩලය දැනුවත් කළ අතර ඒ අනුව බලයලත් මිනින්දෝරු එම්.ඒ.නසුර් මහතා විසින් පිලියෙල කරන ලද අංක 280 දරණ පිඹුරු පත මා වෙත ලැබී ඇත.

එම පිඹුරේ සඳහන් පර්චස් 05.19 ප්‍රමාණය ඔබ මණ්ඩලයට නිත්‍යාණුකූලව පවරා දෙන තෙක් කාර්යයෙහි හදිසි අවශ්‍යතාවය මත අවශ්‍ය වැඩ කටයුතු කරගෙන යාමට මෙයින් එකඟතාවය ප්‍රකාශ කරමි.

ප්‍රාදේශීය ලේකම්
මොරටුව

කේ.පී. නිරෝෂ්
ප්‍රාදේශීය ලේකම්
මොරටුව.



වයි.ඒ. දයාරත්න
ඉඩම් අත්කිරීමේ නිලධාරී
ජාතික ජල සම්පාදන හා ජලාපවහන මණ්ඩලය

කරු දැනගැනීම සඳහා