Environmental Due Diligence Report

Document Stage: Draft
Project Number: 42173-013
April 2020

Bangladesh: Dhaka Environmentally Sustainable Water Supply Project – 19 Deep Tube Wells (PART 2)

Package No: NCB 4.1

Prepared by Dhaka Environmentally Sustainable Water Supply Project (DESWSP) of Dhaka Water Supply and Sewerage Authority (DWASA), Government of Bangladesh for the Asian Development Bank.

Environmental Due Diligence Report (DDR): Part-2

Loan No.: 3051
April 2020

BAN: Dhaka Environmentally Sustainable Water Supply Project (DEWSP)

Package Number: NCB 4.1
[DDR (Part-2) for 19 Deep Tube Wells (DTWs)]

Prepared by Dhaka Environmentally Sustainable water Supply Project (DESWSP) of Dhaka Water Supply and Sewerage Authority (DWASA), Government of Bangladesh (GoB) for the Asian Development Bank

This Environmental Due Diligence Report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

CURRENCY EQUIVALENTS
(as of 02 November 2020)

Currency Unit	–	Bangladesh Taka (BDT)
$1.00	=	84.00

ABBREVIATIONS

ADB	_	Asian Development Bank
AFD	-	Agencies Frances De Development
DDR	-	Due Diligence Report
DESWSP	–	Dhaka Environmentally Sustainable Water Supply Project
DMAs		District Metering Areas
DP	-	Development Partner
DTW	-	Deep Tube Well
DWASA	-	Dhaka Water Supply and Sewerage Authority
EA	–	Executing Agency
EC	–	Environmental Clearance
EIA	–	Environmental Impact Assessment
EIB	-	European Investment Bank
GoB		Government of Bangladesh
IA	–	Implementing Agency
IEE	–	Initial Environmental Examination
MoEFCC	–	Ministry of Environment, Forest and Climate Change
PMU	–	Program Management Unit
PPTA	–	Project Preparatory Technical Assistance
SPS	–	Safeguard Policy Statement

NOTES

(i) The fiscal year (FY) of the Government of Bangladesh and its agencies ends on June
(ii) In this report, "$" refers to US dollars.

Contents

I. INTRODUCTION

1. Dhaka Environmentally Sustainable Water Supply Project (DESWSP) is the part of Water Supply Sector Development Program into Dhaka Metropolitan Area and jointly financed by Asian Development Bank (ADB) and the Government of Bangladesh (GoB). The aim of the Project is to improve the water supply network of Dhaka city by forming District Metering Areas (DMAs); rehabilitation of water lines; and replacement of service connections, Intake, RW Pipeline, Gandharbpur Water Treatment Plant (WTP), Treated Water Pipeline & Distribution Network.

2. Reliable source of safe drinking water would be established in the DMA.

- Loan agreement: The loan Agreement between the government (GOB) and ADB, AFD and EIB was signed on April 24, 2014, January 29, 2015 and June 30, 2014 respectively. Co-financing agreement between ADB and AFD and aide-memoire on co-financing between ADB and EIB were signed on February 25, 2015 and July 9, 2014 (amended on February 12, 2015) respectively. The ADB loan became effective on February 23, 2015.
- Loan Number: 3051-BAN (SF)
- Project Number: 42173-013
- Development Partner`s (DP`s): Asian Development Bank (ADB), Agence Francaise de Development (AFD) and European Investment Bank (EIB)
- Project Title: Dhaka Environmentally Sustainable Water Supply Project (DESWSP). Package No. NCB 04.1 MODs Zone-6.
- Borrower: People`s Republic of Bangladesh (GoB).
- Implementing Agency: Dhaka Water Supply and Sewerage Authority (DWASA).
- Executing Agency: Project Director, Dhaka Environmentally Sustainable Water Supply Project (DESWSP), DWASA.

3. The project is being implemented under the contract package ICB 02.7 covers the area commonly known as MODS Zone-6 of DWASA comprising of 16 DMAs from DMA 601-616. Package No. ICB-02.7 includes (i) rehabilitation and extension about 376-km (revised 500 km) (as per outline design and schedule the work consists of 305 km (revised 399 km) of water distribution network, 71 km (revised 100 km) of reticulation line) distribution network in 16 DMAs (DMA 601 to 616); (ii) replacement of all fitting of all production tube wells (Up gradation of more than 100 Deep Tube Wells are included in the package which includes survey, modeling and detailed design); (iii) about 40,000 service connections including installations of meter chamber, domestic meters and floating valve; and (iv) installations of valves, bulk meters and loggers, etc. The cumulative physical and financial achievements of the project's ICB 2.7 till December 2019 are 97.43% and 67.50% respectively. At the same time the cumulative achieved output including pipe laying over 493.84 km and house connections about 35,672.

For efficient and effective execution, the package will be implemented through a design-built contract *i.e.* the civil works contractors will also prepare the detail designs. For P1 starting at Bisnandi intake point at Meghna River, Transmission main from intake point to Gandharbpur treatment Plant, and Gandharbpur treatment Plant, for P2 starting from Gandarbpur Treatment plant to near at American embassy in Dhaka city and for P3.1 & P3.2, the distribution network. The Works consist of Construction of New/ Replacement DTW with ancillary works & supply of necessary materials.

4. The project is expected as contribute to the sustained economic growth and public health improvement in urban water supply sector, particularly in Dhaka Metropolitan Area, through the improvement of living standard in the basic human needs by improving the water supply. The supply of clean water will impact on reduction in child mortality and improvement of general health, conversion to economic activity by saving time to fetch and to store water and conservation of precious natural resources the surface and ground water. Dhaka Water Supply and Sewerage Authority (DWASA) is both the Executing Agency (EA) and the Implementing Agency (IA).A Project management unit (PMU) has been established

for effective execution and implementation. This Environmental Due Diligence Report aims to (i) provide facts, findings, and recommended actions; (ii) present the national and local legal requirements and institutional framework within which the subproject will be implemented; (iii) review of the subproject's likely positive and negative; (iv) describe the monitoring measures and reporting procedures to be included.

5. It may be mentioned that the currency conversion (USD to BDT) factor in the original DPP was 1 USD = 77.76 BDT [June 19, 2013]. But the conversion rate was about 1 USD = 83.90 BDT when revised DPP(1st) [January 01, 2019, Source: Bangladesh Bank].

6. The legal framework and principles adopted for addressing environmental issues in the proposed project have been guided by the existing legislation and policies of the GoB and ADB. ADB requires the consideration of environmental issues in all aspects of its operations, and the requirements for environmental assessment are described in ADB's Safeguard Policy Statement (SPS), 2009 and the law that applies to the Contract is the existing Laws of Bangladesh.

II. SUBPROJECT DESCRIPTION

7. The Site is located at the Area of MODS Zone 6 & surrounding areas under DWASA jurisdiction where is to be installed 19 New/ Replacement Deep Tube Wells (DTWs) under NCB package No.04.1 based on detailed design during implementation. Other materials like pumps and pump related materials will be needed for installation and reinstallation of 50 pumps (install 15 and reinstall 35 pumps). The objective of the component of the project is to install 15 New Deep Tube Wells (DTW) and reinstallation of 35 existing DTW under NCB package No.04.1.

8. As such, a sampling analysis plan was developed based upon several sites inspection conducted on October 01, 2019 –September 15, 2020 and review of historical aerial photos. The objective of investigation was to assess the presence of random objects for the purpose of internal due diligence. At the time of commencement of investigation PMU-NGO had undertaken a site visit and reviewed historical aerial photos as part of works. The scope of work was prepared in consultation with local people; public representatives, MOD Zone 6 and old pump houses employees and others with based on the known information at the time of visits. A photographic log, detailed location map and detailed field observation are presented in Appendixes 1-5. There are no non titled users in any of the 19 DTW/PTW sites, covered in this DDR (Part-2). The location map of each of the DTW/PTW within the DMA is given in **Appendix- 1**. The list of co-ordinates of the replacement/new DTWs/PTWs is given in Table**- 1**. The photographs of the locations are given in **Appendixes- 2**. In the locations identified for replacement there are existing tube wells which are been operated by DWASA. Within the existing site no structure loss is anticipated as the DTW/PTW will be done adjacent to the existing DTW/PTW. The certification that DWASA has the user rights for the installation of DTWs/PTWs has been given by Project Director, PMU in **Appendix- 3**. These lands were previously obtained through different contract agreement between DWASA and the community/ housing society/ individual as the case may be, for the construction of the DTW/PTW. DWASA is not the owner of these locations but has user rights to establish the tube well and associated services such as pump house etc. The contract agreement for the 15 DTWs / PTWS which have been identified for replacement, are with the Land Division of WASA. For the new DTWs a contract agreement has been signed on stamp paper, where the housing society has agreed to provide the earmarked land to WASA for drilling of new tube wells. The contract agreement signed for replacement/ new DTWs are given in **Appendix-4**. This will be updated in this document on receiving the same. This agreement will be included in the updated DDR once the contract is signed. Consultations were held in various locations, covering 1-24 DTWs/PTWs in each meeting. Information about the DTW/PTW work was explained to the participants. The participants are well aware of the DTW/PTW work, as the demand to construct the same has been put forth by the community to the DWASA due to water crisis in the area. Consultation meetings helped to establish that there was no impact on community in terms of loss of livelihood or

resettlement. The Minutes of the Meeting, photographs and Attendance Sheet is given in **Appendix- 5**. ADB and DWASA management will review and clear the revised DDR during detailed design and prior to commencement of works. At this stage, there are 2 new DTWs/PTWs that will be installed and 17 DTWs/PTWs will be replaced under NCB Package No.04.1. The sites for the DTWs/PTWs is located in different areas of MODS Zone 6 and adjoining areas under DWASA jurisdiction. DTW/PTW works will include drilling of tube wells in all the locations. The replacement tube wells will also require drilling at a location adjacent to the existing tube wells. For putting up a DTW/PTW minimum land requirement is 1080 sqft. Other components include DTW/PTW delivery lines, electrical installations such sub stations, transformers, High Tension lines, control cubicle/ Variable Frequency Drive (VFD), chlorination system, joist for pump maintenance, pump house, SCADA etc. The list of DTWs/PTWs covered in this DDR are given in Table 1.

Table 1: List of Deep Tube Wells to be Constructed/ Replaced

Sl. No.	Deep Tube Well Name &Location	DMA No.	New/ Replacement	Land Use rights
1.	Goran 10 No. Water Pump, Dhaka	DMA-606	Replacement	DWASA
2.	Mothertek Water Pump, Dhaka.	DMA-606	Replacement	DWASA
3.	Moghbazar Wireless Gate, Water Pump, Dhaka.	DTW-611	Replacement	DWASA
4.	Modhubag Old Water Pump, Moghbazar, Dhaka.	DTW-611	Replacement	DWASA
5.	Khilgaon 04 No. Water Pump, Dhaka	DMA-612	Replacement	DWASA
6.	New Eskaton Water Pump, Ramna, Dhaka	DMA-614	Replacement	DWASA
7.	Eskaton Garden Water Pump, Ramna, Dhaka	DMA-614	Replacement	DWASA
8.	AGB Colony (Al-Helal Zone) Water Pump, Dhaka	DMA-615	Replacement	DWASA
9.	Fakirapul Water Pump, Palton, Dhaka	DMA-615	Replacement	DWASA
10.	Segunbagicha Water Pump, Palton, Dhaka	DMA-615	Replacement	DWASA
11.	Mouloveertek Water Pump, Moulovirtek, Dhaka	DMA-617	Replacement	DWASA
12.	Dhaka Uddan Water Pump, Mohammadpur, Dhaka	MODS Zone-3	Proposed (New)	DWASA.
13.	Salimullah Road Water Pump, Mohammadpur,Dhaka	MODS Zone-3	Replacement	DWASA
14.	Dhaka College Campus Water pump, Dhanmondi, Dhaka	MODS Zone-3	Proposed (New)	DWASA
15.	Salauddin Ahmed Adorsho School Water Pump, Dhaka	MODS Zone-7	Replacement	DWASA
16.	Rayerbag Water Pump,Kadomtoli, Dhaka	MODS Zone-7	Replacement	DWASA
17.	Joyersahara 01 No. Water Pump, Kuril, Dhaka	MODS Zone-8	Replacement	DWASA
18.	Mirpur 11/C, (Avenue-5) Water Pump, Dhaka	MODS Zone-10	Replacement	DWASA
19.	Matikata 2No. Water Pump, Dhaka Cantonment, Dhaka	MODS Zone-10	Replacement	DWASA

9. According to the section 6 of bid document (Technical Specification) the contractor will progress the work round the clock on 24 hours basis during well construction, (i.e. during drilling, fixture installation and gravel shrouding, jetting, development & testing). Each well

shall be completed in all respects up to test pumping and capping of the well within 32 (Thirty two) days from commencement including mobilization time. Before commencement of work Contractor shall submit a bar chart on schedule of detail work program mentioning with days involvement in each work.

10. The works would be supervised by the PR and consultant as notified to the contractor. They will be responsible for overall supervision, and will inspect important aspects of construction such as drilling, sediment sampling, geophysical logging, well assembly design, well installation, gravel shrouding, high pressure water jetting, development and test pumping, The contractor will provide access to the site of the works at all times and will provide such assistance and information as is reasonably required by the nominated representatives.

11. According to the section 6 of bid document it will be the Contractor's responsibility to schedule the work and maintain liaison with Project Manager or his authorized representative to permit the field officer for rendering timely decision in all matters relating to construction of Deep Tube Well. The Contractor will notify the Project Manager at least 24 (twenty four) hours prior to commencement of any work, such as drilling, geophysical logging, well assembly design, high pressure water jetting, well development, step drawdown test and test pumping etc. for arranging necessary supervision.

12. The Contractor will carry out the works in accordance with the Contract Documents. In the event of failure during well construction due to caving, misalignment, defective welding, or other defects of workmanship or materials, the contractor will be required to replace the well without any compensation.

13. In case of failure to withdraw the fixture materials safely and in reusable condition from abandoned bores, the cost of materials would be adjusted from the Performance Guarantee or from payable billed amount of contractor or from both to realize the total cost of damaged or lost materials.

14. Before drilling commences, the Contractor will ensure that all tube well materials, drilling equipment and machineries are at site and fully operational. The contractor will make necessary arrangement for continuous supply of makeup water before drilling commences and prepare a suitable sized settling pit.

15. The pit will be divided into two parts separated by a retaining bund to provide a setting area and a supply area. It would be better if the return flow can be taken from the end of the settling Lagoon opposite the discharge point. The water used for drilling operations shall be reasonably free of suspended solids, oily contamination etc. The minimum circulation rate for the makeup water will be approximately 28 l/sec, and the volume of the pit shall be adequate for the planned borehole. Immediately after commencement of drilling, properly graded gravel, etc. will be brought to the site.

16. Before drilling commences, the contractor will set the drilling rig vertical. Each well will be drilled at a minimum diameter of 700 to 750mm to a depth up to UWC + 3m and 550mm to 600mm diameter up to bottom of target depth in continuous operation. The borehole will be kept full of drilling fluid from the start of drilling through to the completion of gravel packing.

17. When the well has been drilled to full depth, the drill bit will be lifted off the bottom and drilling fluid circulation continued for at least 15 minutes or until no more cuttings are to be removed from the well. During the drilled process the contractor will clean the vat & filled up with drilling fluid after every 6m to 10m of drilling. Measurement of drilling will be made in linear meters from the original ground surface to the depth ordered by the Project Manager.

18. The contractor will provide details of the proposed method of sediment sample collection and will obtain the approval of the Project Manager before drilling commences. Samples would be collected at 1.5 m (5 feet) intervals or at any change of lithology along the total length of bore hole. Minimum 500 gm. representative sample from each type of formation material would be collected for further analyses. For visual inspection, each sample will be stored in a sample box divided into a separate compartment for each sample.

19. Each compartment will be clearly marked with depth location and shall be thoroughly cleaned after each use. Beside the sample collection, drilling behaviour would be documented as drilling progresses. This recorded information would be included depth(s) of occurrence of low or lost drilling fluid circulation, drill-cutting description, depths of sample(s) taken from the hole and any other data identified as necessary and pertinent to the needs of the well design.
20. This information including lithologs would be recorded in the prescribed form approved by the Project Manager for recording borehole lithology, sampling depth and description.
21. All samples would properly be identified with labels and markings. The identification will include job name and number, sampling date, well ID and location, depth or elevation and sample orientation. Care would be taken that the markings or labels are adequate to survive in case of transportation needed. On completion of the drilling, the contractor shall keep the collected samples ready for visual inspection and subsequent delivery to the office of the Project Manager.
22. On completion of reasonable depth of drilling, Project Manager will inspect the sample and select those that require sieve analysis. Sediment samples of granular formation of that depth location targeted for screening may only be selected for sieve analyses. The collected samples would be divided into three parts.
23. Two parts will be stored in the duplicate containers and a standard sieve analysis would be carried out on the third part. The contractor will deliver one set of samples to the Project Manager. These analysis, together with any duplicate tests ordered by the Project Manager will be completed and standard grain size distribution reports in prescribed format be provided to the Project Manager within 6 hours of selecting the samples. If the contractor receives no order for any further analysis within 30 days he may dispose of the remaining samples.
24. The contractor will deploy an experienced technician along with a BS 410 or ASTM standard sieve set, a burner, a mechanical shaker and an accurate weighing balance complete with all weights and other accessories together for the exclusive use at the drilling site.

Geophysical logging

25. Geophysical logging is to carry out to avoid any confusion on lithological boundary defined at every change of sediment characteristics derived from wash samples collected while drilling is in progress.
26. The Contractor will carry out Geophysical logging in the drilled bore holes immediately after completion of drilling up to the total drilled depth. Geophysical logging will include (i) Spontaneous Potential, (ii) Electric Resistivity and (iii) Natural Gamma Intensity. These loggings would be carried out at site with advanced technology and machine.
27. The Contractor will furnish the soft and hard copy recorded geophysical log sheets and their necessary interpretation at site for confirming the well assembly design on the spot.
28. Well Construction: Immediately after completion of drilling, sieve analysis and geophysical logging, Project Manager shall design the well assembly and deliver it to the Contractor. The Design will contain details of the grading of the gravel pack, lengths of UWC, LWC and depth location of screen to be used and the sequence of the well components. The top of the UWC would be 750mm above finished ground level and 150mm above the finished pump house floor and will depend on highest recorded flood level.
29. On completion of drilling and design of the well assembly, the contractor will immediately assemble the components and lay them out in ascending order. The contractor will weld the joints of the individual segments of well components. All welds will be clean, free of blowholes and would be done in accordance with accepted welding practice for three layer butt weld technique. The contractor will make bevelling of ends where necessary.
30. The contractor will place centralizers on the outside of the blank casing and strainer to hold the fixture in the centre of the drilled hole. The contractor will provide strong, durable, inert stabilizer, as specified and approved by the Project Manager. The centralizers would be fixed at intervals of not more than 10m apart.

31. Borehole Protection & Housing: During installation of the blank casing and screen, the drilling fluid level must be maintained at ground level to reduce the risk of well collapse. If collapse occurs, the contractor will withdraw the well components to clear the hole up to the full drill depth and reinstall fixture at his own cost.
32. It would be the contractor's responsibility to protect the drill hole from any caving or collapse. With the approval of the Project Manager Contractor will provide M.S. casing pipe (700 mm dia) or may take any other measures deemed necessary to protect the bore hole from caving while drilling is in progress and during fixture installation up to required depth at the contractor's own cost.

33. The Deep Tube Well would be gravel packed. Gravel for the filter will consist of the best natural materials available in the country, well rounded and not crushed. It would be uniform size hard siliceous materials, washed clean and containing no iron, pyrites, coal, mica, shale or other laminated or flaky particles. Range of particle size would be from 1.5mm to 4mm. Size and quality of supplied gravel would be as per direction of Project Manager.

34. The contractor will collect total estimated quantity of gravels for all DTW to be constructed and maintain a stockpile of gravel material at his yard and sieved to prepare the filter pack for each hole according to the grading as directed by Engineering.

35. The Contractor will store required graded and quantity of gravel materials as specified or instructed by the Project Manager at respective well site before completion of drilling and inspection of gravel materials would be carried out before well design by the Project Manager.

36. The contractor will check alignment and verticality of the UWC prior to the start of gravel packing as per Clause - 1.3.21Straightness of UWC. After filling Gravel up to the reducing cone, verticality will be checked again.
37. The contractor will place a 50 mm pipe with a packer inside the permanent well casing and screen up to 6m above the lowest section of screen and pour clean water down the pipe so that it flows and rises up through the screen and annular space. When a return flow of clean water comes out at ground surface from the annulus then the shrouding of gravel is started slowly and steadily into the annulus.
38. During shrouding of gravel, volume for each 3m interval for the screen length and every 6m interval for the LWC and LWC, contractor will measure the level of the gravel in the annulus by a weighted cord to ensure that it has penetrated fully and it is not bridging in annulus.
39. To fill the annulus between the 550 mm bore- hole and LWC or Well Screen, the quantity of gravel required is about 0.20m^3/m and between the 700mm bore hole and UWC is about 0.23 m^3/m considering no caving in the drilled hole.The contractor will fill the annular space between the outside of the casing assembly and the wall of the drilled hole with gravel of the specified grading by placing the hopper on the top of the upper well casing. Placement would be done by pouring the gravel at a gentle and constant rate into the annular at the top, while maintaining a small upward circulation of water from within the casing and, returning this to the annular.
40. This work will be done by suitable tools such as Gravel pack insertion Hopper. Gravel packing will then be continued up to 15m below ground surface and the verticality of UWC should be checked finally.
41. Well Inspection Pipe: The Contractor will install a 25mm diameter G.I. inspection pipe placed vertically through the pump well cap in the pump-housing pipe.
42. Straightness of UWC: The verticality of the drilled hole and of the assembled and installed well components shall be such that UWC will not deviate more than 75mm in any direction from the centre line of well at no point of UWC. The contractor will provide the necessary equipment and devices required to carry out the tests for verticality and straightness of the UWC for the approval of the Project Manager.

43. The test equipment will consist of a cylindrical plumb bob suspended from the tripod aligned over the centre of the well by fine wire. The plump bob would be in approximately 0.45m long with a diameter 13mm less than the internal diameter of the UWC.
44. The top point of plump bob suspension for the verticality test will be 3m above the top of the UWC. The bob would be suspended at the top of UWC, Lowered at 3m and the position of the string relative to the casing shall be measured, a disc plate would be placed on the top of the upper well casing and aligned to the north so that as the plumb bob is lowered into well the displacement from the centre and the direction of the displacement can be measured.
45. Any deviation from the centre will be recorded by taking the reading on the disc plate placed on the top of the UWC. This test would be repeated every 3-m depths, until the full depth of the UWC has been reached. Each time a deviation is calculated, it will be corrected by adding computed disc factor, which is half of the difference in diameter between the plumb bob and the UWC to the calculated deviation.
46. Where a casing string is found to be outside the permitted tolerance for verticality, the UWC will be repositioned in the drilled hole. If the UWC cannot be repositioned as to comply with requirement for verticality, the contractor will pull out the casing and screen string and re-drill the hole. The contractor will also test the UWC for straightness.
47. The straightness of the well will be such that both before and after placement of the gravel filter cylindrical dolly will pass freely down the full length of the UWC. The contractor will provide a suitable dolly, which would be 0.6m long with an outer diameter 13mm less than the internal dia meter of the UWC.
48. Well Development stabilizes the shrouded gavels and aquifer sand around the screen of a well so that the well produces sand free water. It increases the porosity and permeability of the surrounding aquifer materials to the well. A fundamental objective in the development operation is to create reversal of flow direction through the screen opening to the formation particles adjacent to the screen.
49. Development will be carried out within 24 hours of completion of well construction. The contractor subject to the approval of the Project Manager will establish methods of well development. The following are the standard methods for well development.
50. Preliminary Operation: After completion of the gravel packing, the contractor will pump / wash the tube well at a low rate of approximately 50% of the designed capacity of the well. This operation will be undertaken for a minimum of 3 hours and will be in accordance with the approvals & directions of Project Manager.
51. Development by Compressed Air: Compressed air will be pumped in the well through a combined airline and educator pipe. The compressor will be capable of developing a pressure of at least 400 psi. The lower end of the educator pipe will explore successive screen lengths.
52. The essential feature will be the ability to discharge on the inner surface of screen while still delivering compressed air into the well so that the flow is reversed.
53. The development will start with setting the educator pipe at the mid-point of the lowest screen segment and raised upward slowly one after another screen segment until the highest screen segment is reached.
54. At each mid-point position, compressed air will be pumped for 10 minutes at a time before cleaning the water discharge valve to initially back washing. This sequence will be repeated five times at each mid-point or until the flow of water remains clear after reversal.
55. Contractor will record the status of development with necessary comments for full development period in the approved format.
56. The well screen slots, shrouded gravel and the wall of the drilled hole may require washing with Sodium Hexa-meta-Phosphate solution or any other approved dispersant mixed together with a solution of Chlorine.
57. The solution would be prepared at the wellhead by mixing 15 kg of the dispersant crystals in one cubic meter of clean water, then 1.25 kg of dry loose Calcium Hypochlorite powder (with 65% available Chlorine) would be added and mixed with the solution.

58. This is an estimated quantity; it may increase considering well depth and inside water column. The Solution would be poured by tremie pipe throughout the full length of the well screen. The dispersant Chlorine solution will be driven out into the gravel pack by adding 3.5m^3 of clean water at the top of the hole.
59. The solution will be left in the well for 24 hours and during this period the water will be agitated either by periodical air lifting and back washing with compressed air or by water jetting. In both the cases the agitation would not remove water from the well.
60. Following the use of dispersant chlorine solution into the well for 24 hours or as for required time high velocity water jetting will be carried out for developing the well. Water jets projected out at wall of borehole and agitate the shrouded gravels to facilitate fines and flaky materials are removed thus increasing the yield of the tube-well.
61. The jetting tool would have the capacity of discharging horizontally at a rate of 100m per second velocity from four opposite nozzles and 750 psi pressure on screen surface. 100mm diameter jetting head and 75mm dia jetting pipe would be used inside the screen.
62. First, the jetting tool will be lowered to the bottom section of screen and pumping commences down through the string of pipe. The jetting tool will be slowly rotated and simultaneously raised until the full length of the screen section is thoroughly covered. Simultaneous discharge would be maintained from the tube well during the jetting operation to maintain a negative head to remove the fines as they are passed into the screen.
63. Several passes will be made for each section of the screen. Development by jetting will thus be completed until the entire surfaces of installed screen lengths unto the top of the upper most section of screen is covered satisfactorily. Contractor will record the status of development with necessary comments for full development period in the approved format.

Development by Over Pumping
64. Over pumping means pumping the well at a higher rate than the rate of pumping when the well is put into service. Over-pumping will consist of step pumping at increasing rates from 75% - 150% of design capacity of the tube well. The contractor will install a high capacity pump of about 100 l/s (3.5 cusec) and 90 m head or with required head. The pump will be equipped with a suitable valve or other throttling device to permit varying the discharge.
65. After pumping at the rate required for 20 to 25 minutes, the pump will be switched off for a short period (5 Minutes), Pumping will then resume and the sequence repeated. The contractor will keep a careful record of static water level, before development and pumping water levels during development, Development will be continued until the water is free of turbidity and contains no sand by volume measured with Im-hoff cone.
66. As development proceeds the contractor will monitor the loss of the gravel pack and will refill the annular space from time to time as necessary. The cost of additional gravel packing will be deemed to be included in the rates.
67. The contractor will measure the tube well inside depth upon completion of development and bail out all the sand inside of the well using air or water compressor or by any other suitable bailer.
68. Following development, the well pumping test would not commence until the static water level has recovered to within 100 mm of the static water level recorded prior to development in nearby areas.
69. The design capacity of well is 2 cusec (56.6 l/sec.). The acceptable specific capacity of any production well in the project areas would not be less than 5 (five) l /sec/m.
70. In case of poor aquifer availability by thickness and permeability, Project Manager will reduce the design capacity of the well and accordingly all other testing parameter will be changed.
71. A step draw down test will be carried out at 75%, 100%, 125%, and 150% of the design well capacity. At each test rate pumping will continue for 120 minutes and be increased to the next rate without stopping the pump. At the end of the test water level recovery will be measured overnight. Following step draw down test, the contractor will commence a constant discharge test at the design capacity of well. The pumping will be continuous for 8 hours and the pumping rate should be maintained constant throughout this test. After

carrying out step draw down test contractor will assess the well loss and aquifer loss. Well loss would be maximum of 20%.

Pumping at 75%	120 minutes	1.5 cusec (42 L/sec)
Pumping at 100%	120 minutes	2.00 cusec (56 L/sec)
Pumping at 125%	120 minutes	2.50 cusec (70 L/sec)
Pumping at 150%	120 minutes	3.00 cusec (84 L/sec)

72. The Project Manager may require different test pumping rates. The pumping test rates quoted above may be varied within 10% but the Contractor will hold the rates constant in any particular step.

73. In the event of test, equipment's break down or pumping interruption for any reason whatsoever the test will be abandoned and has to be repeated in full, only after the water has recovered to within 0.25m of the pretest static water level. If the discharge in any step varies by more than 5% of the values indicated and the well loss is more than acceptable limit, then the Project Manager may order the abandonment of the test and direct for a redevelopment and retest of well at contractor's own cost.

74. Discharge of constructed Deep Tube Well would be measured following Orifice – Manometer method. For application of this method two discharge pipes of 150 mm and 200 mm diameter and about 2.4m long fitted with gate valves, manometers and sharpened orifices will be used to accurately cover the discharge range as stated without interrupting the discharge. The pipe will be set up completely horizontal with the manometer tapping exactly of its center line. The discharge rate will be recorded at exactly same time and intervals as water levels.

75. As soon as the operation of the test pump is started, or the rate is changed, or it is stopped, during the step draw down or the constant discharge tests, contractor will measure the pumping or recovery water level at each of the stated steps at the following intervals. 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 120 minutes and there after every 30 minutes till the recovery level comes near to the static water level.

76. As part of the final constant discharge pumping test of the well the sand content of the discharge will be measured by the Contractor by averaging the results of 5 samples collected (1) 15 minutes after the start of the test (2) after 25% of the planned test time has elapsed (3) after 50% of the planned test time has elapsed (4) after 75% of the planned test time has elapsed (5) near the end of the test. The sand content measured in an Im-hoff cone. The test will be considered satisfactory when there is no turbidity and sand content found.

77. If the sand content is greater than this amount then the well will be deemed as not acceptable to Project Manager and the contractor will have to repeat the development procedures.

Recording of Test Results

78. The contractor will record the yield, time, draw down and specific capacity and other data & information generated from all tests and development processes carried out for the construction of Deep Tube Well on the approved format.

79. Just before end of the constant pumping test at design discharge Contractor will take two water samples from the nipple installed on the discharge pipe, one to test for bacteriological quality and the other for chemical quality. The nipple would be disinfected by washing with a Chlorine solution and a clean polyethylene pipe attached to it.

80. Each sample container will be a clean, airtight plastic bottle of 1.0 litre capacity for bacteriological quality and 2.0 liter in two separate bottles as acidified and non-acidified samples for chemical quality and the bottles will be stored in an icebox at a temperature of less than 05^0 C. The Contractor completely fills the sample bottle with the water to be tested. The contractor will deliver the sample bottles to the referred laboratories, clearly labelled with the well reference number, sample number and the date of sampling within 12 hours of the sample being taken. Contractor would at his own cost complete the laboratory test of the collected sample for following parameters; Ca, HCO_3, Fe, F, PO_4, NO_3, Cl, Cd, B, As, Mn, EC, pH and Eh including Total coliform, and Faecal coliform.

Sanitary Seal

81. The contractors will backfill the annular space between the UWC and the bore hole with cement grout approved by the Project Manager up to 10m depth from the surface.

82. Cement grout will be prepared with proportion 50% cement to 50% of sand and with 25-30 litre of water to 50 kg of cement. The sanitary seal should be done after completion of the well development and pump testing.

Well Disinfections

83. Disinfecting of the tube well will be carried out by the Contractor at the end of discharge test by placing 1.5 kg of dry, loose Calcium Hypochlorite powder in a container that is perforated by a few small holes through its top and bottoms caps. The container will be lowered and raised through the full depths of the well until the powder becomes dissolved. Then 0.02 kg of Calcium Hypochlorite should be dissolved in 0.2 m^3 of clean water at the well head and the solution shall be applied by hosepipe to wash the inner surface of the well casing above the SWL (0.5 kg. of calcium hypochlorite in 1000 gallon of water).

Clean-up

84. Immediately following completion of work at each site the contractor willl remove all equipment, plant and unused materials fill in the pit and clean up the site to the satisfaction of the Project Manager.

Well Head Termination

85. At the time of commissioning the concerned project official will furnish and securely fix a well head plate and will label the elevation of the wellhead plate to prevent entrance of foreign materials above of highest flood level. The contractors will furnish and securely fix a welded pressure flange, conforming with the EC standard NP 16, to the top of the casing. The upper well casing below the flange will not have any opening or fissures.

86. The contractors will provide and bold to the top of the flange a rubber gasket and a steel plate 5mm thick a 25mm diameter nipple shall be inserted into the plate for installation of the well inspection pipe according to the specification and as per direction of Project Manager.

Records

87. On completion of the well test, the contractor will furnish one set of collected sediment samples and three certified copies of all records and measurements described in these documents to the Project Manager.

88. A graphic log and description of well constructions, including formation descriptions, “AS BUILT” construction drawing adequately dimensioned, gravel packing and test results would be furnished. The contractor will furnish all records to the Project Manager within 7 days of satisfactory completion of the pumping test. The contractor will submit necessary graph & calculation sheet on well loss using results of test pumping.

Acceptance of the Tube Well

89. For acceptance the acceptable specific capacity of any tube well in Project area would not be less than 5 (five) l/s/m and well loss would not be more than 20%. Upon fulfilling all the condition of contract an acceptance certificate will be issued by Project Manager on recommendation of supervising PR and Consultant.

Liability of the Contractor

90. The liability of the Contractor will expire after 365 days from the date of commissioning and handing over to the Employer of all unit / sections of the project components. But during this two years period, Deep Tube Well would be in such a condition that whenever it start and even during hours of operation, deep tube well yield would be not less than design volume. During this period the contractor will rectify any fault in any individual unit / section of work without any additional cost to the Employer, A complain centre with a full time maintenance squad along with necessary man power, vehicle, fuels, equipment, telephone etc. will have to be made available by the contractor.

Material Reconciliation Schedule

91. A. Upon completion of work, the Contractor will submit to the Project Manager a materials reconciliation schedule in respect of the materials supplied. The schedule will give the following detailed for each item:
Quantity ordered;
Quantity delivered;
Where used;
Quantity surplus and in good condition;
Quantity surplus but partially complete cut or damaged and in repairable condition;
Quantity surplus but damaged beyond repair;
Quantity missing or lost.

B. The Contractor will collect and transport the surplus materials to a central location near the job site for inspection by Project Manager's Representative. Materials in group would be stacked separately. All materials would be in reasonably clean and each piece will be marked with its items number for easy identification.
C. The Employer may accept some or all of the surplus or all surplus materials for maintenance purposes. The Contractor will load the materials to be taken into stock and transport and off-load them at the Employer's storage yards within 10 km. of the job site. The Contractor will be paid for all surplus materials in good condition taken into stock.
Excess Materials (Issued from Dhaka WASA Store)
94. If any material supplied by Dhaka WASA becomes excess after execution of the work, the same would be returned to WASA store as per direction of the Executive Engineer of concerned Division. In case of any material is lost, damaged or not refunded to the stores cost of the same will be deducted from the contractor's bill at the double of the departmental issue rate.
Operation & Maintenance
95. Contractor will be responsible for 12 (twelve) months operation & maintenance after construction & completion of each DTW. Contractor must have 3 (three) nos. experience Pump Operators in each DTW (Minimum SSC & 2 years of experience on Pump Operation) for operation of DTW on 24 hour (3 person x 8 hour/day) basis. Contractor will also handle all types' breakdowns with supply of equipment's at the time of defect liability period and will supply all necessary spares, manpower & bear expenses for operation maintenance.
Technical Specifications (Pump House, Boundary wall & Joist)
Earth work in excavation
96. The contractor will make excavations, from embankments and dispose of surplus excavated material all as specified, shown on the Drawing or ordered by the Project Director or Project Manager and referred to generally as earthworks. Before commencing any earthworks on the Site the Contractor will give the Project Director or Project Manager at least 7 days written notice of the proposed date of commencing the works, which will not be less than 7 days after the appropriate part of the site, has been cleared. Within this period the Contractor will make a record of the original ground levels and topography to the satisfaction of the Project Director or Project Manager.
Brick flat soling
97. Brick Flat soling to the base of water pipe line chamber including the supply of first class bricks, all in accordance standard Detail drawings at all depths & direction of the Project Director or Project Manager, Bricks would be in accordance with the description of BOQ.
Mass concrete
Batching and Mixing of Concrete
98. The Contractor will provide such means and equipment, all to the approval of the Project Director or Project Manager, as are required to determine and control the quantity of each ingredient for the concrete mix.
99. Batches of concrete will be produced based on full bags of cement only. Fine aggregates, coarse aggregates and water will be matched by volume. The Contractor will prepare measuring boxes for each individual aggregate of the following capacities:

Fine aggregate-28 L (1 cft) equivalent to 2 parts by volume of fine aggregate for 1 full bag of cement.
Coarse aggregate-28 L (1 cft) equivalent to 2 parts by volume of coarse aggregate for 1 full bag of cement.
100. The boxes will be deep and narrow and subject to the approval of the Project Director or Project Manager. The measuring boxes will be filled within compaction and due allowance will be made for bulking of the fine aggregate due of excessive moisture.
101. The amount of water required for each batch would be added direct to the concrete mixer, after initial mixing of the Regular cheeks on the accuracy of the measuring equipment will be made in the presence of the Project Director or Project Manager.
102. The Contractor will prepare only such quantity of concrete as is required for immediate use in the Works so as to complete a scheduled casting in on continuous operation. The concrete materials would be mixed in an approved mechanical batch mixer for a minimum period of per minutes or until the concrete is of uniform color and consistency. The mixed concrete would be discharged to a clean level and water tight platform receptacle or shute. The entire contents of the mixing drum would be discharged before the materials for the next batch are added.
Transporting, Placing and Compacting Concrete.
103. The Contractor will ensure that the concrete is mixed at a suitable location such that it can be transported from the batch mixer to the position in which it is to be placed within 30 minutes.
104. The concrete would be handled in such a way that at the point of deposition it is of the specified quality and approved consistency, nothing having been added to or lost from it since leaving the mixer. The mode of transportation will be such that initial setting and segregation do not occur. Any concrete which has occurred initial setting and segregation will be rejected, removed from site and disposed of at the Contractor's cost.
105. The Contractor will not place any concrete until the formwork and steel reinforcement has been checked and approved by the Project Director or Project Manager. Any free water will be removed from the formwork before concrete is placed. Concreting operations will not be commenced during periods of heavy rain.
106. The Contractor will regard the compaction of concrete as work of critical importance and shall make every effort to produce a watertight concrete of maximum density compatible with the approved mix.
107. Compaction will be assisted by the use of mechanical, immersion type vibrators and will not involve vibration of the formwork or reinforcement. Immersion type vibrators shall be inserted slowly to the full depth of newly poured concrete, kept in place for 15 seconds and slowly withdrawn to prevent the formation of voids. The process will be continuous with points of insertion 200 mm apart.
108. Where steps and splays occur these will be cast in one with the main concrete pour and the Contractor shall take additional care with the compaction and finishing to ensure that no cracks are formed in the unset concrete.
Curing concrete
109. Curing of concrete would be done minimum of fifteen days.
110. A written record of the concrete works will be made each day by the contractor and kept available for inspection by the Project Director or Project Manager. The diary will contain notes and records of:
The names of the Contractor's Project Director or Project Manager who are responsible for the different phases of the concrete work, and also the name of their assistants.
(b) The temperature of the air, together with the air humidity and type of weather.
(c) Deliveries to the store of concrete materials (quantity, brand of cement, etc.)
(d) Inspections carried out, tests performed, etc, and their results.
(e) Times of commencement and completion of different parts of the concrete works, and times of erection and striking of forms.
(f) Quantity of cement, find and coarse aggregate and admixture use for each section of work, and the number and kind of test samples taken on these ingredients.

Cement

111. Unless otherwise specified or approved, all cement will be sulfate resisting cement of approved manufacture conforming to BS 4027. Cement will be supplied to the Contractor in 50 Kg or 1 cwt bags marked with the manufacture's brand.

112. The Contractor would be responsible for the transport and storage of cement from the time of delivery. Until it is incorporated into the Works. Cement will be stored in weather tight buildings of sufficient size to allow the various consignments of cement to be stored separately. The cement will be stored on a raised floor and all precautions will be taken to protect the cement from moisture.

113. Cement will be used in the chronological order in which it is received and a record will be maintained showing the date of arrival at site and date of incorporation into the works. Only one brand of cement shall be used per placement.

114. Cement bags which are split and cement which show signs of hardening or other deterioration will be rejected and removed from site at once. Cement which has been held in stock for more that 45 days will not use in the works unless first tested and the test results approved by the Project Director or Project Manager.

115. The Contractor will carry out sampling, inspection and testing of the cement as the Project Director or Project Manager may consider necessary, from the store of cement at site or from the source of any additional cement which fails to meet the requirements of the specification.

Aggregates

116. Aggregates would be stockpiled separately at site in such a manner that they are not mixed or contaminated by earth, organic matter or other foreign materials, Aggregates from different sources will be stocked separately and will not be combined for one concrete placement.

117. The Project Director or Project Manager will order any tests on the aggregates that he considers necessary and the Contractor will remove from site any material which the Project Director or Project Manager may reject for failing to comply with the Specification

Fine Aggregates

118. Fine aggregate will consist of natural sand. It will be free from silt, clay, fine dust and organic impurities. If necessary, the sand will be screened and washed before use. A sample of the sand to be used in the works will be submitted to the Project Director or Project Manager for approval before the sand is delivered to site.

119. The fineness modulus of the fine aggregate will not be less than 2.5.

Coarse Aggregates

120. Coarse Aggregates will consist of natural or broken stone ships or broken first class brick. Coarse Aggregates will comprise well shaped rounded or cubicle particles free from silt, clay, dust, organic matter and all imperious that may affect the setting time, strength or appearance of the concrete. A sample of each coarse aggregate to be used in the works will be submitted to the Project Director or Project Manager for approval before the materials is delivered to site.

Water

121. Water used for concrete and mortar will be free from hydrocarbons and from suspended organic matter. Inorganic matter that not exceed 50 mg,/1 by weight in solution and 500 mg/I by weight suspension. The water used in the work will not affect the setting time of cement or the strength of concrete and will not produce discoloration on the surface of the hardened concrete.

122. The Project Director or Project Manager will direct which batches of concrete are to be sampled and fresh concrete will be taken at random to cylinders will direct which batches of concrete are to be sampled and fresh concrete will be taken at random to complete a concrete slump test and prepare 3 cubes or cylinders for compression strength at 28 days. 123. The cubes or cylinders would be marked with the date of casting and will be cured in standard manner until transported to the test laboratory.

124. If the average test results show a compressive strength less than the minimum required the Project Director or Project Manager may instruct the Contractor to break-out the appropriate concrete and reconstruct it.
125. All costs associated with the testing of concrete and any breaking out and reconstruction required by the Project Director or Project Manager will be come by the Contractor.

R.C.C.

126. The contractor is fully responsible for the design, construction and erection of all works (formwork) necessary to properly support the concrete during pouring, compaction and setting, such that the lines and dimensions of the hardened concrete comply with the specification and Drawings. The Contractor will rectify any defects in the formwork that may occur, and any defects in the concrete due to poor formwork, at his own cost.
127. The materials used, the type of construction and the manner of erection of formwork shall be subject to the approval of the Project Director or Project Manager before concreting commences. Such approval does not, however, relieve the Contractor of any of his responsibilities for the adequacy or maintenance of the formwork.
128. All surfaces in contract with concrete would be planed and sanded smooth such that the surface is free from irregularities and defects to give a smooth watertight finish to the concrete. Such inside faces of the formwork would be coated with a release agent of non-staining mineral oil, mold cream emulsion or other approved material, immediately prior to pouring the concrete.
129. The Contractor will not place concrete within the formwork until it has been inspected and approved by the Project Director or Project Manager.
130. The minimum periods which would elapse before removal of forms shall be 3 days after concreting for side forms and 14 days for beams, slabs and similar members.
131. The Contractor will be responsible for completing all remedial works to repair damage to the concrete caused during the removal of formwork.
132. Aforementioned Specification would be followed for materials and concreting.

MS reinforcement

133. Reinforcement for concrete will comprise plain found mild steel bars conforming to BS 4449 with minimum yield strength of 2812 kg/em2. The Contractor shall provide the Project Director or Project Manager with the suppliers test certificates for each batch of reinforcement delivered to site. The Contractor will have samples of the reinforcement tested if required by the Project Director or Project Manager,
134. Steel reinforcement will be cut from straight bars free from kinks and bends or other damage and cold bent by experienced workmen to the shape required.
135. The distance between parallel bars will not be less than 5mm more than the nominal size of the coarse aggregate, except at approved laps as identified on the Drawings.
136. The contractor will place and fix steel reinforcement accurately in the positions shown on the Drawing and shall ensure it remains rigidly in position during the pouring, compacting and setting of the concrete.
137. Spacers, claps and tying wire will be of such materials and design as will be durable, not give rise to corrosion of the reinforcement and not cause spalling of the concrete, all to the approval of the Project Director or Consultant.
138. The contractor will not place concrete around reinforcement until it has been inspected and approved by the Project Director or Project Manager.
139. The cover to the reinforcement will be accurately maintained as shown on the Drawings, nominally 40 mm.

Brick work

140. Only first class bricks will be used in the works of dimensions 241 mmx114mm x7Omm (9-1/2"x4- 1/2"x2-3/4"). Bricks shall be of uniform size and even color made from good quality well puddle cay. They will ring metallic when struck. The bricks will be well shade with sharp edges and even surfaces without cracks, rainspouts or flaws of any kind. The bricks will not absorb water more than 116th of their weight when submerged for 24 hours.

141. Aforementioned Specification would be followed for Cement, sand and water.
142. The proportions, in which the various constituent materials are mixed, are designed on the basis of the strength of mortar required in the Works. Mortar will be mixed one part of cement to 5 parts of sand (by volume).
143. The Contractor will thoroughly and uniformly mix the dry cement and fine aggregate and sufficient water will then be added in successive stages to obtain a mortar paste which will not flow but will give a suitable workable consistency for plastering over brickwork faces. The Contractor will prepare only such quantity of mortar as is immediately required, or for continuous, work the quantity of mortar required for the scheduled work of one hour duration. If any quantity of mortar remains unused one hour after mixing it would be discarded and not used in any work or re-mixed with a fresh batch of mortar.

Bonding

144. The bond between successive courses of bricks in a masonry wall or structure would be in such a manner that no vertical joint in the bricks will be continuous, Bricks in each courses would be laid with 'Fork Mark' upwards to form a key in the mortar layer between two successive courses.

Erection of Brickwork

145. Each layer of bricks will be laid according to the center-lines and levels established from the Drawings with verticality checked by plumbing.
146. Bedding mortar will be laid with uniform thickness and well compacted on to the surface of the previous course of bricks. The mortar between brick joints will be well compacted with a steel trowel before the next layer of bricks are laid above. In no circumstances will additional water be added to the mortar during bricklaying.
147. No brick will be used unless immersed in water for 24 hours. Bricks will be well cleaned ahead of use. All brick to joints on the faces of a wall will be raked out to a depth of 12 mm.

Plaster

148. Aforementioned Specification would be followed for Cement, sand and water.
150. The proportions, in which the various constituent materials are mixed, etc., designed on the basis of the strength of mortar required in the Works, Mortar would be mixed one part of cement to 5 parts of sand (by volume).
149. The Contractor will thoroughly and uniformly mix the dry cement and fine aggregate and sufficient water will then be added in successive stages to obtain a mortar paste which will not flow but will give a suitable workable consistency for plastering over brickwork faces. The Contractor will prepare only such quantity of mortar as is immediately required, or for continuous work the quantity of mortar required for the schedule work of one hour duration. If any quantity of mortar remains unused one hour after mixing it will be discarded and not used in any work or re-mixed with a fresh batch of mortar.
150. Gate valve and washout chambers will receive minimum 15mm thick internal and external plaster.

As-built drawing

151. After the work has been completed according to the specification, as-built drawing would have to be submitted by the contractor duly authenticated by the Project Director or Project Manager.
152. Contractor at his own cost and arrangement will provide standard officer accommodation along with safe water, good sanitation and better lighting arrangement for supervisory officer of Project Manager and Contractor's staffs separately at work site.
153. There is no land acquisition under the proposed package. The main resettlement impact is the potential reduction in the income of shops and other businesses if the presence of trenches, excavated soil, and machinery make access difficult for customers. A small number of items including old steel pipes, old water pumps, small pump houses, sheds, small stock lots and other materials are stored in various places of the sites. In the

old pumps areas a short electrical lines with electrical utilities are exists above ground. Some of the sites appear to have been small greenfield with the exclusion of cultivation activities. There is no visible asbestos containing materials on the land or within old pump areas.

III. Objectives/Rationale of the Subproject and Components

154. The objective of the project is to contribute to the environmentally sustainable provision and operations of urban water supply, particularly in Dhaka City from surface water instead of ground water resources. To improve health and quality of life and reduces scarcity of drinking water in the project area by providing access to adequate, sustainable safe water supply facilities. Specific task of the project is to improve the overall distribution network in the project area to ensure 24/7 water supply line with pressure 1 bar (10m). Also, the water supply system will run with system lossless than15% in the DMA areas. Each DMA will be hydraulically isolated from other DMA.

IV. Construction of Deep Tube Wells

155. The total package covers 50 DTWs/PTWs construction/replacement, of which, 15 are new and the rest are 35 are replacement. This Environmental Due Diligence Report (DDR) is prepared for the construction of 2 new DTWs/PTWs and 17 existing DTW/PTW replacements. There has been severe water scarcity in the DMA thus the urgent need to construct/ replace the DTWs/PTWs and to make the DMA sustainable construction/replacement is necessary until the availability of surface water. The new DTWs/PTWs are being constructed due to the demand of the local people.

V. Construction of Pump House, Boundary Wall and Joist

156. DTW/PTW works will include drilling of tube wells in all the locations. The replacement tube wells will also require drilling at a location adjacent to the existing tube wells. For putting up a DTW/PTW minimum land requirement is 1080 sqft. The list of DTWs/PTWs covered in this DDR are given in Table 1.

VI. Electrical Supply

157. Other components include DTW/PTW delivery lines, electrical installations such sub stations, transformers, High Tension lines, control cubicle/ Variable Frequency Drive (VFD), chlorination system, joist for pump maintenance, pump house, SCADA etc.

VII. Operations of Deep Tube Wells (Chlorination)

158. Contractor will be responsible for 12 (twelve) months operation & maintenance after construction & completion of each DTW. Contractor must have 3 (three) nos. experience Pump Operators in each DTW (Minimum SSC & 2 years of experience on Pump Operation) for operation of DTW on 24 hour (3 person x 8 hour/day) basis. Contractor will also handle all types' breakdowns with supply of equipment's at the time of defect liability period and will supply all necessary spares, manpower & bear expenses for operation maintenance.
Technical Specifications (Pump House, Boundary wall & Joist).

VIII. SCREENING AND ASSESSMENT OF POTENTIAL IMPACTS, CATEGORIZATION

159. ADB requires the consideration of environmental issues in all aspects of the Bank's operations, and the requirements for environmental assessment are described in ADB's Safeguard Policy Statement (SPS), 2009.

Screening.

160. The potential impacts of the subproject were screened using ADB Rapid Environmental Assessment Checklist for Water Supply projects. The following are summary of the screening results:

Location

161. The subproject components are not adjacent to or within any environmentally sensitive areas such as cultural heritage site, protected area, wetland, mangrove, estuarine, buffer zone of protected area, special area for protecting biodiversity or bay.

162. Potential impacts (during construction) – include:

(a) health and safety hazards to workers
(b) health and safety hazards to community adjacent to the work areas
(c) increase in noise
(d) dust
(e) increased road traffic
(f) wastes and debris

163. Potential impacts (during operation and maintenance) – include:

(a) health and safety hazards to workers from handling and management of chlorine used for disinfection
(b) inadequate chlorination due to lack of adequate monitoring of chlorine residuals in distribution systems
(c) accidental leakage of chlorine gas

IX. Categorization

164. The Risk Ranking Matrix (Table 1) was used to assess the likelihood and the severity or consequences of each potential impact and to give it a "risk rating". Table 2 provides the risk rating for the potential impacts during construction and operations and maintenance. Together with the risk rating, review of subproject implications and ADB SPS, the subproject assessed to be likely to have minimal or no adverse impacts thus falls under environmental Category C per ADB SPS.

Table 2: Risk Ranking Matrix for Potential Impacts of Package NCB 4.1

Likelihood Rating	Descriptor	Description	Suggested Frequency
5	Almost certain	The event is expected to occur	Recurring event during the lifetime of the subproject e.g. more than once per month.
3	Possible	The event should occur	Event that may occur during the lifetime of the subproject e.g. once in 3 months.
1	Likely/Rare	The event may occur only in exceptional circumstances	Event that is very unlikely to occur during the subproject e.g. once in 3-5 years.

Consequence Rating	Safety	Health	Environment
1 Minor	Single minor injury to one person. First aid or no treatment required. No lost time.	Reversible health effects of minor concern only requiring minor first aid treatment.	Issues of non-continuous nature with promptly reversible impact or consequence (e.g. within shift). Low-level incident, site contained.
2 Moderate	Medically treated injury. Reversible injury. Does not lead to	Reversible health effects of concern that results in medical treatment but does	Issues of a non-continuous nature and minor impact and consequence. Low-level incident, site

	restricted duties.	not lead to restricted duties.	contained. Short term reversible (e.g. within days).
3 Serious	Reversible injury or moderate irreversible impairment. Less than 10 days lost time.	Severe but reversible health effects. Results in a lost time illness of less than 10 days.	Issues of a continuous nature - limited impact and consequence Incident resulting in some site contamination. Medium term recovery impact.
4 Major	Severe irreversible damage to one or more persons. Lost Time Injury greater than 10 days.	Severe and irreversible health effects or disabling illness.	Compliance issue with large fine, media attention. Serious harm not immediately recovered. Significant site contamination or off-site impact. Long term recovery.
5 Catastrophic	Fatality. Permanent disabling injuries.	Life threatening or permanently disabling illness.	Issues of a continuous nature with major long-term impact and potentially serious consequences

Table 3: Risk Rating[1] of Potential Impacts of Package NCB 4.1

Potential Impacts	Likelihood	Consequence	Remarks
During construction:			
(a) health and safety hazards to workers	1	2	The health and safety hazard may be avoided by providing the worker's code of conduct and toolbox training to workers. In addition, a competent EHS officer will be appointed to monitor the implementation of the EMP and health and safety plan.
(b) health and safety hazards to community adjacent to the work areas	1	2	Provision of temporary barriers and warning tape/signage in the project area.
(c) increase in noise	3	1	Can be avoided and mitigation measures are available
(d) dust	1	1	Can be avoided

[1] The risk ratings provided (likelihood and consequence) were based on the

			and mitigation measures are available
(e) increased road traffic	1	1	Can be avoided and mitigation measures are available
(f) wastes and debris	1	1	Can be avoided and mitigation measures are available
During operation and maintenance:			
(a) health and safety hazards to workers from handling and management of chlorine used for disinfection	1	1	Can be avoided and mitigation measures are available
(b) inadequate chlorination due to lack of adequate monitoring of chlorine residuals in distribution systems	1	1	Can be avoided and mitigation measures are available
(c) accidental leakage of chlorine gas	1	1	Can be avoided and mitigation measures are available

X. PURPOSE OF THE ENVIRONMENTAL DUE DILIGENCE REPORT

165. ADB SPS specifies for environment Category C projects, no environmental assessment is required although environmental implications need to be reviewed. Thus this environmental due diligence report has been prepared which aims to provide (i) applicable environmental laws, regulations, and policies; (ii) mitigation measures and monitoring program to be implemented during execution of works; (iii) consultation, information disclosure and grievance redressal mechanism; and (iv) reporting procedures to be followed; and (v) roles and responsibilities of the PMU, consultants and contractor.

166. This environmental due diligence report will be included in Package NCB 4.1 bid and contract documents to be included in the specific provisions requiring contractors to comply with all other conditions required by ADB.

XI. APPLICABLE NATIONAL AND LEGAL REQUIREMENTS

A. Government of Bangladesh

167. A wide range of laws and regulations related to environmental issues are in place in Bangladesh. Many of these are cross-sectoral and partially related to environmental issues. The most important of these are the Environment Conservation Act, 1995 (ECA, 1995), and the Environment Conservation Rules (ECR, 1997). The ECA 1995 is primarily an instrument for establishing the Department of Environment (DOE), and for controlling industrial and project related pollution. The Act also defines in general terms that if any particular activity is causing damage to the ecosystem, the responsible party will have to apply corrective measures. Until the appearance of ECR, 1997, enforcement of the Act was not possible, as many of the clauses refer to specifications detailed in the Rules. ECA and ECR were further amended to address the growing environmental challenges.

168. In addition to the Environmental Conservation Act and Rules, there are a number of other policies, plans and strategies which deal with the water sector, agricultural development, coastal area, protected area disaster management and climate change. These are the National Water Policy, 1999; the Forest Act 1927 (last modified 30th April 2000); National Forest Policy, 1994; the National Conservation Strategy1992; National Environmental Management Action Plan (NEMAP), 1995; Coastal Zone Policy, 2005; Coastal Development Strategy, 2006; National Agricultural Policy, 1999; National Fisheries Policy, 1996; National Livestock Development Policy, 2007; Standing Orders on Disaster, 1999 (revised in 2010); Bangladesh Climate Change Strategy and Action Plan, 2009; National Plan for Disaster Management, 2010-2015. Some of these policies and legislations are described in this chapter for reference.

169. The national environmental legislation known as Environmental Conservation Act, 1995 (ECA'95) is currently the main legislative document relating to environmental protection in Bangladesh, which replaced the earlier environment pollution control ordinance of 1992 and has been promulgated in Environmental Conservation Rules, 1997 (ECR'97). This Act is amended in 2000 and 2002. The main objectives of ECA'95 are: i) conservation of the natural environment and improvement of environmental standards; and ii) control and mitigation of environmental pollution.

170. The Environment Conservation Rules provide a first set of rules under the Environment Conservation Act, 1995. These rules are further amended in 2002 and 2003. These provide, amongst other items, standards and guidelines for:

- Categorization of industries and development projects
- Procedure for obtaining environmental clearance
- Environmental quality standards in relation to water pollution, air pollution and noise, as well as permitted discharge/emission levels of water and air pollutants and noise by projects

171. The Rules incorporate "inclusion lists" of projects requiring varying degrees of environmental investigation. The Government is also empowered to specify which activities are permissible and which restricted in the ecologically critical area. Under this mandate, MOEF has declared Sunderban, Cox's Bazar-Tekhnaf Sea Shore, Saint Martin Island, Sonadia Island, Hakaluki Haor, Yanguar Haor, Marzat Baor and Gulshan-Baridhara Lake as ecologically critical areas and accordingly has prohibited certain activities in those areas.

Environmental Conservation Rules (1997) classifies industrial units and development projects into four categories for the purpose of issuance of Environmental Clearance Certificate (ECC). These categories are:

i. Green
ii. Orange A
iii. Orange B, and
iv. Red

172. Green Category projects are considered relatively pollution-free and hence do not require initial environmental examination (IEE) and EIA. An environment clearance certificate (ECC) from the Department of Environment (DoE) is adequate.

173. Orange Category projects fall into two categories. Orange A projects are required to submit general information, a feasibility report, a process flow diagram and schematic diagrams of waste treatment facilities along with their application for obtaining DOE environmental clearance. Orange B projects are required to submit an Initial Environmental Examination (IEE) report, along with their application and the information and papers specified for Orange B projects.

174. Red Category projects are those which may cause 'significant adverse' environmental impacts and are, therefore, required to submit an EIA report. It should be noted that they may obtain an initial site clearance on the basis of an IEE report, and subsequently submit an EIA report for obtaining environmental clearance along with other necessary papers, such as feasibility study reports and no objections from local authorities.

175. As per ECR '97 all existing and new industries and projects in Orange B and Red category require an Environmental Management Plan (EMP) to be prepared (after conducting an IEE or EIA) and submitted along with other necessary papers while applying for environmental clearance.

176. The Government of Bangladesh prepared the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) in 2008 and revised in 2009. This is a comprehensive strategy to address climate change challenges in Bangladesh. It is built around the following six themes:

- **Food security, social protection and health** to ensure that the poorest and most vulnerable in society, including women and children, are protected from climate change. All programs focus on the needs of this group for food security, safe housing, employment and access to basic services, including health.
- **Comprehensive disaster management** to further strengthen the country's already proven disaster management systems to deal with increasingly frequent and severe natural calamities.
- **Infrastructure** to ensure that existing assets (e.g., coastal and river embankments) are well maintained and fit for purpose and that urgently needed infrastructures (cyclone shelters and urban drainage) is put in place to deal with the likely impacts of climate change.
- **Research and Knowledge management** to predict that the likely scale and timing of climate change impacts on different sectors of economy and socioeconomic groups; to underpin future investment strategies; and to ensure that Bangladesh is networked into the latest global thinking on climate change.
- **Mitigation and low carbon development** to evolve low carbon development options and implement these as the country's economy grows over the coming decades.
- **Capacity building and Institutional strengthening** to enhance the capacity government ministries, civil society and private sector to meet the challenge of climate change

B. ADB Safeguard Policy Statement

177. ADB requires the consideration of environmental issues in all aspects of ADB's operations, and the requirements for environmental assessment are described in ADB SPS, 2009. This states that ADB requires environmental assessment of all ADB investments.

Screening and categorization:

178. The nature of the environmental assessment required for a project depends on the significance of its environmental impacts, which are related to the type and location of the project; the sensitivity, scale, nature, and magnitude of its potential impacts; and the availability of cost-effective mitigation measures. Projects are screened for their expected environmental impacts, and are assigned to one of the following four categories:

Category A:

Projects could have significant adverse environmental impacts. An Environmental Impact Assessment (EIA) is required to address significant impacts.

Category B:

Projects could have some adverse environmental impacts, but of lesser degree or significance than those in category A. An IEE is required to determine whether significant environmental impacts warranting an EIA are likely. If an EIA is not needed, the IEE is regarded as the final environmental assessment report.

Category C:

Projects are unlikely to have adverse environmental impacts. No EIA or IEE is required, although environmental implications are reviewed.

Category FI:

Projects involve a credit line through a financial intermediary or an equity investment in a financial intermediary. The financial intermediary must apply an environmental management system, unless all projects will result in insignificant impacts.

Environmental Management Plan:

179. An EMP, which addresses the potential impacts and risks identified by the environmental assessment, shall be prepared. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the project's impact and risks.

Public disclosure:

180. ADB will post the safeguard documents on its website as well as disclose relevant information in accessible manner in local communities:

i. For environmental category A projects, draft EIA report at least 120 days before Board consideration;
ii. Final or updated EIA and/or IEE upon receipt; and

Environmental monitoring reports submitted by the implementing agency during project implementation upon receipt.

XII. MITIGATION MEASURES AND MONITORING PROGRAM

181. Though the impacts are mostly insignificant the contractors must follow the mitigation measures and monitoring program specified in Table 3 below to ensure the potential impacts are managed and remain to be not significant during construction and operations and maintenance. The performance of the contractor is to be monitored by PMU with the assistance of the Management, Design and Supervision Consultant (MDSC).

Table 4: Mitigation Measures and Monitoring Program for Package NCB 4.1

Potential Impacts	Mitigation Measures	Monitoring Program	Indicator of Compliance
During construction:			
(a) health and safety hazards to workers	Providing the health and safety equipment's like, gumboots, Shoes, Gloves, Googols etc.	Awareness Training, Inspection etc.	Quality control, Quality assurance, Standard Operating Procedures etc.
(b) health and safety hazards to community adjacent to the work areas	Temporary barriers and warning tape/signage in the project areas	Awareness, Inspection etc.	Quality assurance, Standard Operating Procedures etc.
(c) increase in noise	Through barriers protect/ control the noise	Awareness, Inspection etc.	Quality assurance, Standard Operating Procedures etc.
(d) dust	Spraying water during dry season	Awareness, Inspection etc.	Quality assurance, Standard Operating Procedures etc.
(e) increased road traffic	Traffic control during working time	Awareness, Inspection etc.	Quality assurance, Standard Operating Procedures etc.
(f) wastes and debris	Collect and dumping at proper dumping sites.	Awareness, Inspection etc.	Quality assurance, Standard Operating Procedures etc.
During operation and maintenance:			
(a) health and safety hazards to workers from handling and management of chlorine used for disinfection	Use Musk's	Awareness, Inspection etc.	Quality assurance, Standard Operating Procedures etc.
(b) inadequate chlorination due to lack of adequate	Ensure adequate chlorination	Inspection etc.	Quality assurance, Standard

monitoring of chlorine residuals in distribution systems			Operating Procedures etc.
(c) accidental leakage of chlorine gas	Ensure control of leakage	Inspection etc.	Quality assurance,

182.

XIII. CONSULTATION, INFORMATION DISCLOSURE AND GRIEVANCE REDRESSAL MECHANISM

A. Consultations

(i) During preparation of package components and environmental due diligence

(ii) Consultation plan during execution of works

B. Information Disclosure

183. This environmental due diligence will be disclosed on ADB and Project Management Unit's website. Site-specific information will be translated to local language and will be disseminated during consultations. Contractor is required to post summary of mitigation measures in worksites and provide copies to workers.

184. The Safeguard Implementation Unit (SIU) of PMU consisted of Safeguard Officer (Environmental) and Safeguard Officer (Social and Gender) are being assisted by relevant Specialists updated the draft DDR and EMPs based on detailed designs in accordance with ADB's Safeguards Policy Statement (SPS, 2009) and Environmental Conservation Rules (ECR 1997) and submit to ADB for review, final approval, and disclosure prior to commencement of works. The Social Safeguard and environmental reporting to ADB is being submitted on a semiannual basis. Consultation and public participation is being done throughout the project implementation and any social and environmental grievance is being handled in accordance with the Grievance Redress Mechanism Developed by the project.

- Establishment of **PMU** including one full-time PD, 2 DPDs, one Senior Water supply engineer 4 XENs and Junior Members *of the Dhaka Environmental Sustainable Water Supply Project (DESWSP), as well and has not yet been replaced.*
- Establishment of a SIU to provide policy guidance and overall coordination in Project implementation.
- Providing **counterpart funds** by the Government of Bangladesh for project implementation on time- *Ongoing. The GOB has allocated required counterpart funds.*
- The Government is to **involve concerned ministries, agencies, and divisions** in the implementation of the Project - *Ongoing. The GOB has ensured cooperation of the concerned ministries and agencies.*
- Creation of **project website** by DWASA within 9 months of the effective date- is under process.
- Preparation of **grievance redress mechanism** by DWASA within 9 months of the effective date- *DWASA established a taskforce to receive and resolve complaints and/or grievances or act upon reports from stakeholders on misuse of funds and other irregularities, including grievances due to resettlement. DWASA also opened the help & complaint desk in January 2011 on pilot basis, and is expanding it in full scale. Awareness campaign has been launched and ongoing.*
- **Involuntary resettlement** is being carried out in accordance to Resettlement Framework to ensure that all land and right-of-way required for the project made available- *For NCB-4.1 resettlement business survey has been carried out, resettlement action plans have been prepared and implementation is in progress.*
- To **comply environmental requirements** the DWASA ensures that the design, construction, operation and implementation of all project facilities is being carried out in accordance with the

DDR and complies with GOB environmental laws and regulations and ADB's Environmental Policy (2002)- *ongoing. DWASA is aware and following up the issue. Contractor prepares Environmental Management Plans implementation of which is monitored and reported on to ADB semi-annually.*

- Preparation and implementation of the project in accordance with ADB's Policy on **Indigenous People**- Ongoing. Although the socio-economic survey showed that there are no any indigenous people within the zone 6. Participation of IP in the development and avoidance of undesired effect of development will be ensured in the project activities if any indigenous people are found in the project.
- The project is carried out in accordance with ADB's Policy on **Gender and Development** (1998) - *Ongoing. The upgraded gender action plan is being implemented by DWASA with support of consultants.*
- **Social Issues.** The Government and Dhaka WASA ensure that the civil works contractors comply with all applicable labor, health and safety laws and regulations of Bangladesh- *Ongoing. Specific clauses have been provided in the bidding documents and contracts to ensure adherence to the provisions of Bangladesh labor laws and in the Health and Safety Plan.*
- The Government and DWASA ensure that **financial management capacity** of DWASA is maintained and strengthened. *MSC mobilized a financial accounting expert to assist PMU in this connection. A computerized accounts program (Tally) has been procured and accounts set up according to a chart of accounts, which reflects the budget lines of the DPP.*
- Dhaka WASA conducts initial baseline physical and socio-economic surveys for the purpose of project performance **monitoring and evaluation**. *Baseline conditions are being established as part of the network modeling process. PMU Consultants are mobilized and will submit the report to layout the PMU plan.*
- The Borrower shall enable **ADB's representatives to inspect** the Project, the Goods and Works financed out of the proceeds of the Loan and all other plants, sites, properties and equipment of the Borrower and any relevant records and documents- *Ongoing*
- The Borrower shall take all action which shall be necessary on its part to enable **Dhaka WASA to perform its obligations** under the Project Agreement, including the establishment and maintenance of tariffs as stipulated in the WASA Act 1996, and shall not take or permit any action which would interfere with the performance of such obligations- *Ongoing*
- Dhaka WASA will furnish to ADB all such **reports and information** as ADB shall reasonably request. DWASA will also furnish to ADB quarterly reports on the execution of the Project and on the operation and management of the Project facilities - *Ongoing.*
- Dhaka WASA shall (i) maintain separate accounts for the Project and for its overall operations; (ii) have such accounts and related financial statements (balance sheet, statement of income and expenses, and related statements) audited annually by independent auditors; and (iii) furnish to ADB, promptly after preparation but in any event not later than 6 months after the close of the fiscal year to which these are related ongoing.

Site Environmental **Plan (SEP)/ Site Specific Environmental Management Plan (EMP)**

185. Site Environmental Plan (SEP) circulated at worksites by contractors for Construction DTWs. The facilities to be provided to both workers & staffs and alternative passages were described properly in the circulated SEP. The contractors were instructed by the Safeguard Officer (Environmental), DESWSP, DWASA, to provide the detailed SEP as instructed earlier and clip to the all site/project offices display board. Site environmental plan has been circulated at the work site, base camp etc. Site Environmental Plan (SEP) was provided showing arrangement for disposal of sanitary and other house hold waste, location of fuel, oil and lubricant depots, sheds for equipment, garage for the vehicle, labor and housing facilities.

186. Consultations were held in various locations, covering 1-2 DTWs/PTWs in each meeting. Information about the DTW/PTW work was explained to the participants. The participants are well aware of the DTW/PTW work, as the demand to construct the same has been put forth by the community to the DWASA due to water crisis in the area. Consultation meetings helped to establish that there was no impact on community in terms of loss of livelihood or resettlement. The Minutes of the Meeting, photographs and Attendance Sheet is given in **Appendix- 5**.

187. Following ADBs SPS 2009 requirements this Due Diligence Report will be posted on the official website of DWASA and the website of ADB after approval and endorsement of the report by DWASA and ADB.

C. Grievance Redressed Mechanism

188. The BAN: DESWSP's grievance redress mechanism approved by ADB will be applicable to this Package. Below are the specific information:

189. Following ADB Safeguard Policy Statement (SPS), 2009 established time bound grievance committees together with procedures at three levels to address or resolve unusual incidences occurs during implementation of the project activities. The solution of incidences would be based on the complaints raised from APs and community people. In case of any unsettle dispute, GRC through submission of formal reference from DWASA will resolve the problem.

Formation of GRC:

190. Grievance Redress Committee (GRC) constituted comprising of a panel of five members; 1st is DWASA representative, 2nd NGO representative; 3rd MSC representative 4th DWASA Representative and the other one is also from DWASA Safe Guard Officer (Social & Gender) as member Secretary.
The GRC of DMA 616 under ICB Package 02.7 of MODs Zone 6 is as below:

Table-5: GRC Composition

S.I	Name	Designation at GRC	Institution/ Organization	Designation
1	Executive Engineer, DESWSP	Convener	DWASA	EE, DESWSP
2	Resettlement and Awareness Expert	Member	Consultant (MSC)	Resettlement and Awareness Expert
3	Safeguard Officer (Env.)	Member	DESWSP DWASA	Safeguard Officer (Env.)
4	Safeguard officer (Social and Gender)	Member Secretary	DESWSP DWASA	Safeguard Officer (S&G) DESWSP

Procedures of resolving grievances

Step 1

191. In case of any grievances, the complainant approaches to the NGO field level officials for clarification, or submits any formal complaints. The NGO will provide clarification to the Displace Persons (DPs) and try to resolve the problem at the local level with the involvement of SIU social safeguards officer, If not resolved.

Step 2

192. The NGO will recommend that APs submit their complaints to the GRC. NGO staff assists the DPs filing the complaints and organizes hearing within 14 days of receiving the complaints.

Step 3

193. GRC to scrutinize applications determine whether the submitted cases are within their mandate. Cases related to compensation under the ARIPO will be referred to DC through DWASA SIU for further review and action GRC invites representatives of APs to attend the meetings.

Step 4

194. If within the GRC mandate and not related to compensation under ARIPO, GRC will hold session with aggrieved APs, minutes recorded. If resolved, the project director approves. If not resolved;

Step 5

195. The DP may accept GRC decision; if not, he/she may file a case in the court of law for further appeal.

Step 6

196. The GRC minutes, approved by the project director will be received at the conveners' office.

197. The approved verdict is communicated to the complainant AP in writing. APs will be able to submit their grievance/complaint about any aspects of resettlement plan implementation and compensation. Grievances can be shared with DWASA verbally or in written form, but in case of verbal form, the NGO representatives in the GRC will write it down at the first instance during the meeting at no cost to APs. The AP will sign and formally submit the written report to the GRCs at the office of the NGO by assisting DWASA in implementing the RP. Any AP can also take their case to the court following the country legal system at any stage without going through the project GRM, if they wish to do so.

198. The GRCs has been activated with power to resolve resettlement and compensation issues not to be addressed under legal suit in the courts. The GRCs is ready to receive grievance cases from the affected persons through the resettlement awareness NGO. The NGO will assist the APs in lodging their resettlement complaints in a proper format acceptable to the GRCs after they get ID cards from DWASA or are informed about their entitlements and losses.

199. The appeal procedure and conflict resolution

(i) All complaints from the APs will be received at the field office of the resettlement awareness NGO, the member secretary of the GRCs, with a copy for the concerned City Corporation Ward Commissioner's representatives.

(ii) The representative of the NGO in the GRCs, upon receipt of complaints, will inform the convener (DWASA representative) of the GRC and convener will organize a hearing session from the complainants in the concerned City Corporation/Word Commissioner office, where the complaint was received.

(iii) The GRC will review the proceedings and pass verdicts to convey to the concerned AP through the NGO.

(iv) If there are matters relating to arbitration or compensation under the existing law, the matter will be referred to the DC and the courts. The DC has to make decision within maximum of 14 days.

(v) The GRC will settle the disputes within a maximum of 21 days of receiving the complaints from the APs.

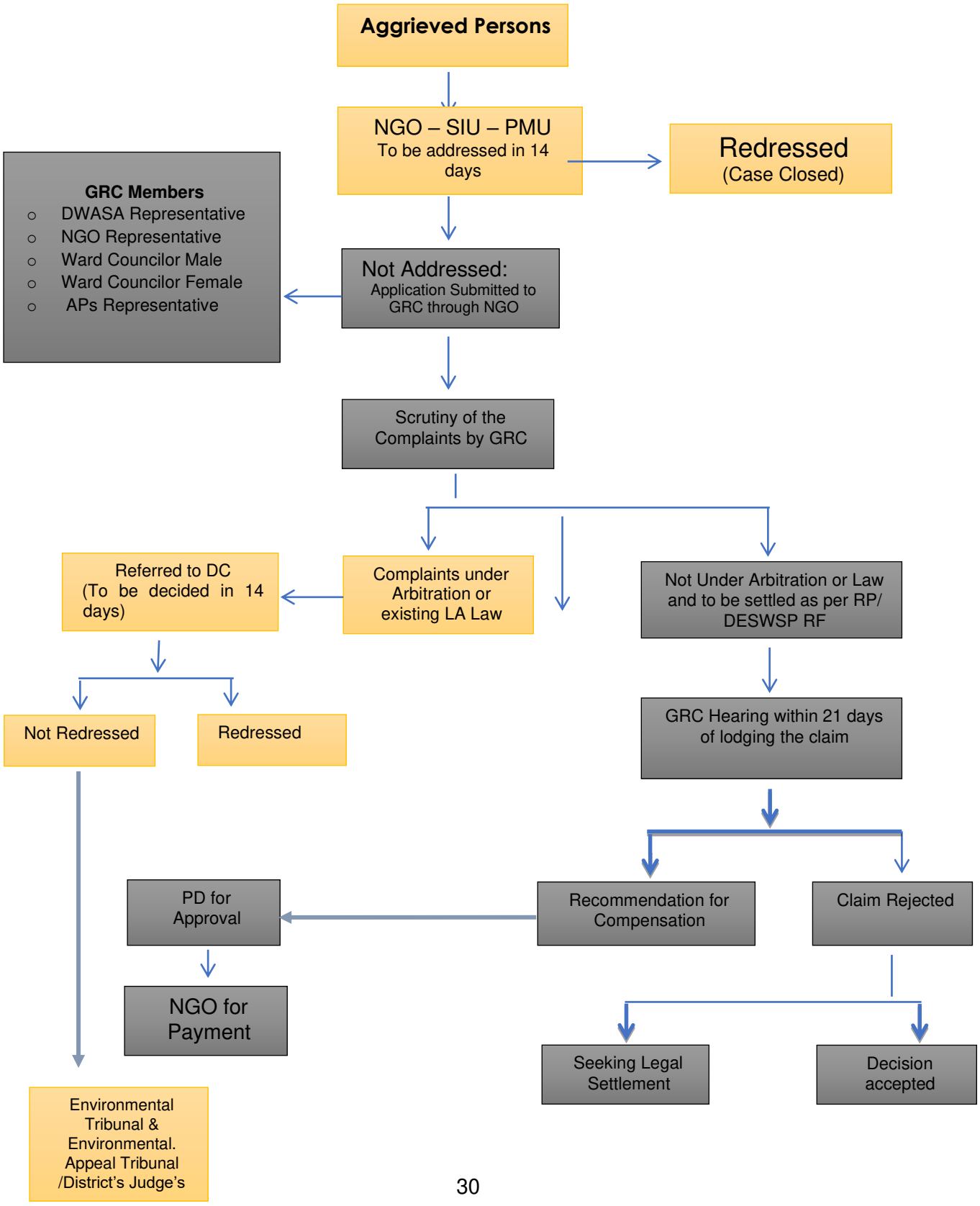
(vi) Resolution of the GRCs will be sent to the PD for approval, and after approval these will be adopted in the process of resettlement for issuance of ID cards, determination of loss and entitlements, and payment thereof.

200. In the event that the established GRM is not in a position to resolve the issue, the affected person can also use the ADB Accountability Mechanism (AM) through directly contacting (in writing) the Complaint Receiving Officer (CRO) at ADB

Headquarters or the ADB Bangladesh Resident Mission (BRM). The complaint can be submitted in any of the official Languages of ADB's DMCs. The ADB Accountability Mechanism information will be included in the PID to be distributed to the affected communities, as part of the project GRM.

201.

Flow Chart of Grievance Redress Mechanism



202. In the event that the established GRM is not in a position to resolve the issue, the affected person can also use the ADB Accountability Mechanism (AM) through directly contacting (in writing) the Complaint Receiving Officer (CRO) at ADB Headquarters or the ADB Bangladesh Resident Mission (BRM). The complaint can be submitted in any of the official Languages of ADB's DMCs. The ADB Accountability Mechanism information will be included in the PID to be distributed to the affected communities, as part of the project GRM.

XIV. REPORTING

203. The contractor is required to submit to PMU a report on implementation of mitigation measures and monitoring program on a monthly basis. PMU will submit a semi-annual monitoring report to ADB.
204.

XV. ROLES AND RESPONSIBILITIES

A. Contractor

205. The contractor is required to:

(i) designate an Environment, Health and Safety (EHS) supervisor to ensure implementation of mitigation measures and monitoring program during civil works.

(ii) submit to PMU, for review and approval, a site-specific environmental management plan (SEMP) including (i) proposed sites/locations for construction work camps, storage areas, hauling roads, lay down areas, disposal areas for solid and hazardous wastes

(iii) ensure no works can commence prior to approval of SEMP

206. Non-compliance with, or any deviation from, the conditions set out in this environmental due diligence or approved SEMP constitutes a failure in compliance and will require corrective actions.

XVI. APPENDIXES (1-6):

207. All the tube well replacement locations are already in use by DWASA, there are some structures in the existing locations such as pump houses, supply lines etc. which will be impacted, but these are structures built by WASA for the service of the tube well. In the new locations, contract agreements have already been signed with the concerned housing societies for 3 locations and for 2 locations it is under process.

i. The contract agreement of Protik Housing will have to included in this document after it is recived from the Land Division.

ii. Contract agreement of Layan Hati, Sorkerbari, Trimohonee location will be added to the report once it executed by both the parties.

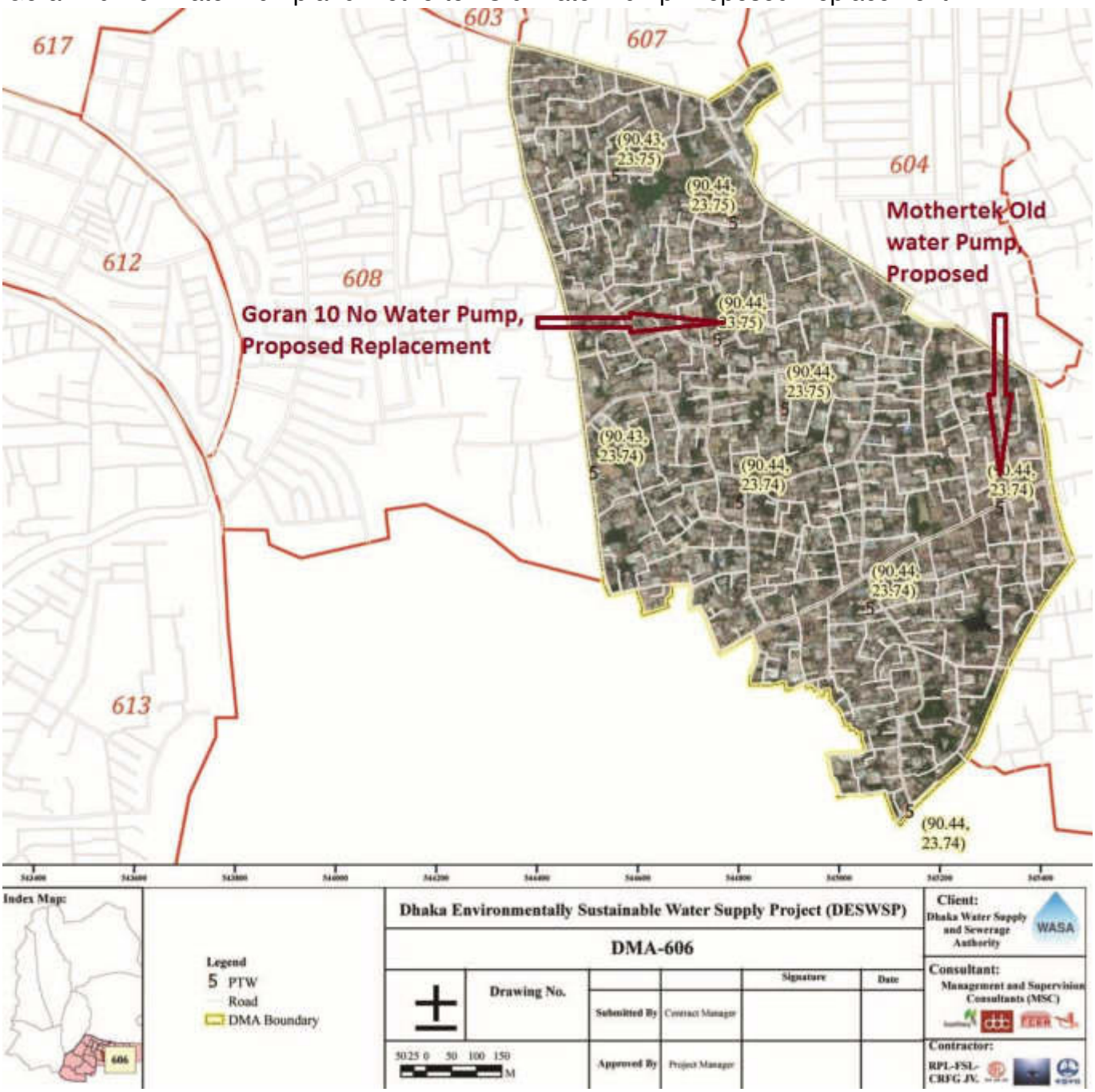
ii. Existing maps will be supplemented with Google Earth maps depicting the DTW locations (with Latitude Longitude coordinates) and surrounding land use at each location.

iii. Additional sites which will be subsequently taken up for installation works, if no impacts are identified will be updated in this document. DDR will be updated in lots of 8-10 DTW locations without impacts, and ADB's No Objection obtained prior to start of construction in the concerned sites.

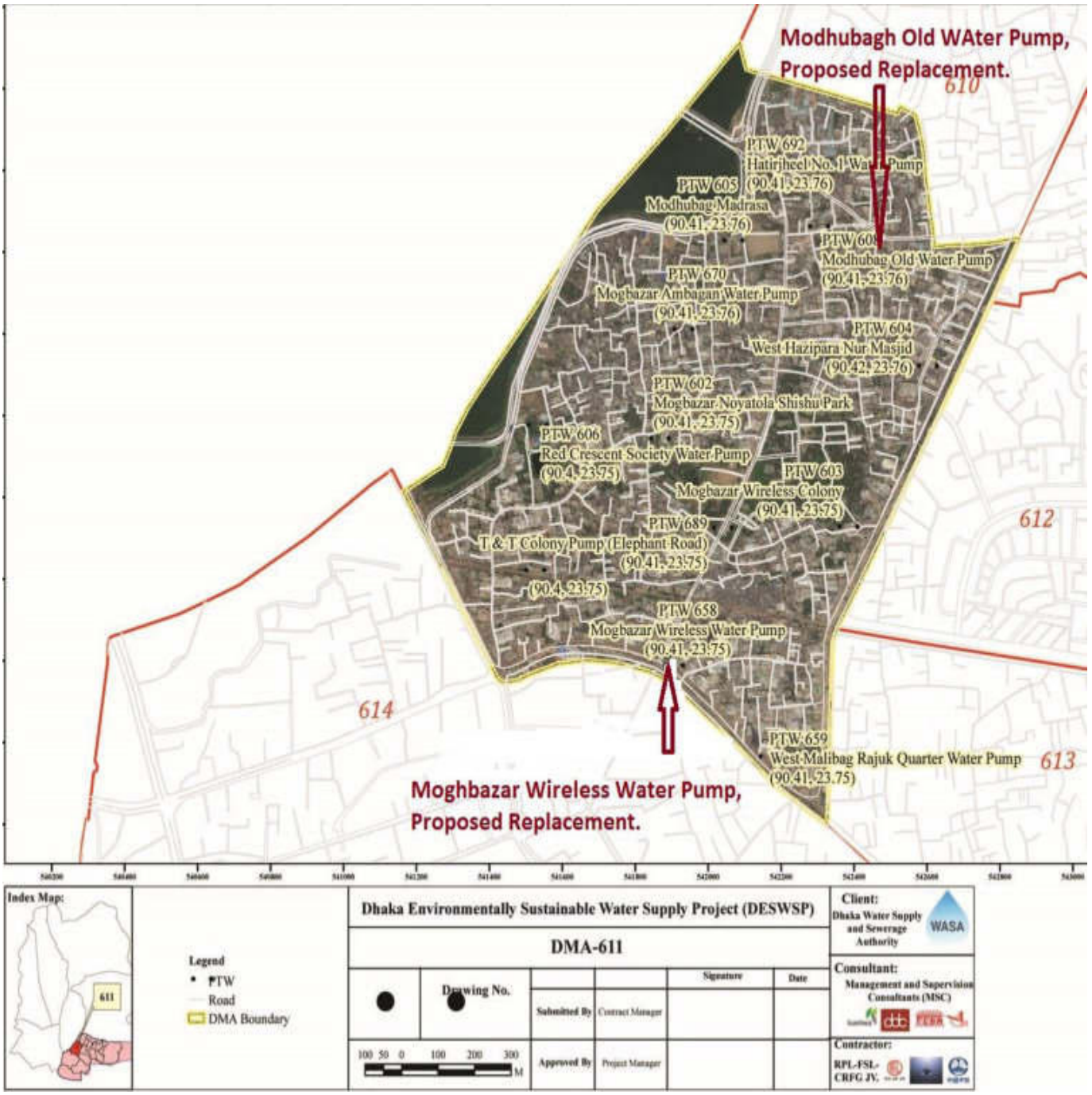
iv. If impacts are identified in any DTW/PTW location, Resettlement Plan will be prepared in accordance with the Resettlement Framework of the Project and ADBs SPS 2009, submitted to ADB for No Objection prior to start of construction, and disclosed on DWASA and ADB websites.

Appendix- 1: DTW/PTW location Map

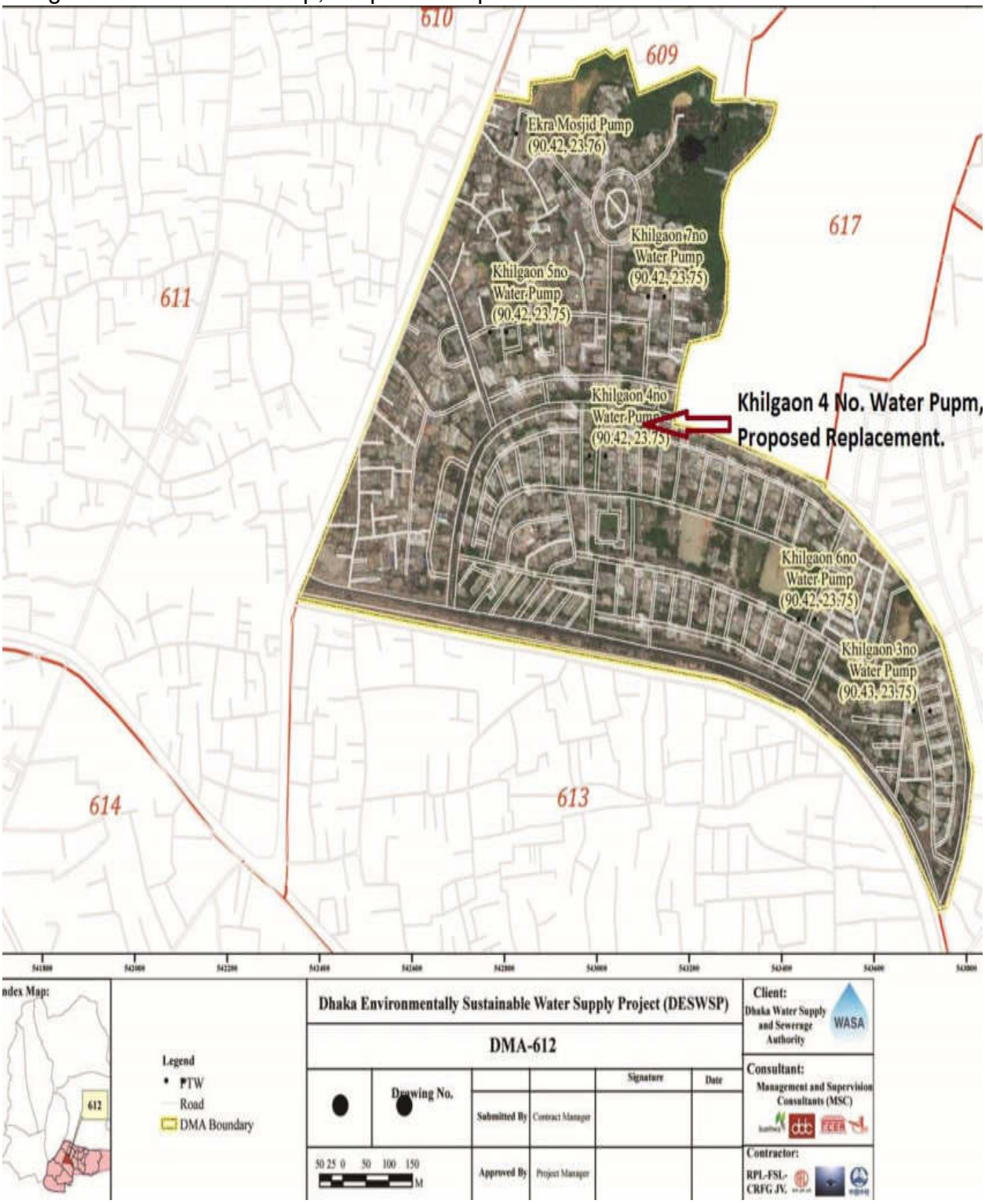
Goran 10 No. Water Pump and Mothertek Old Water Pump Proposed Replacement.



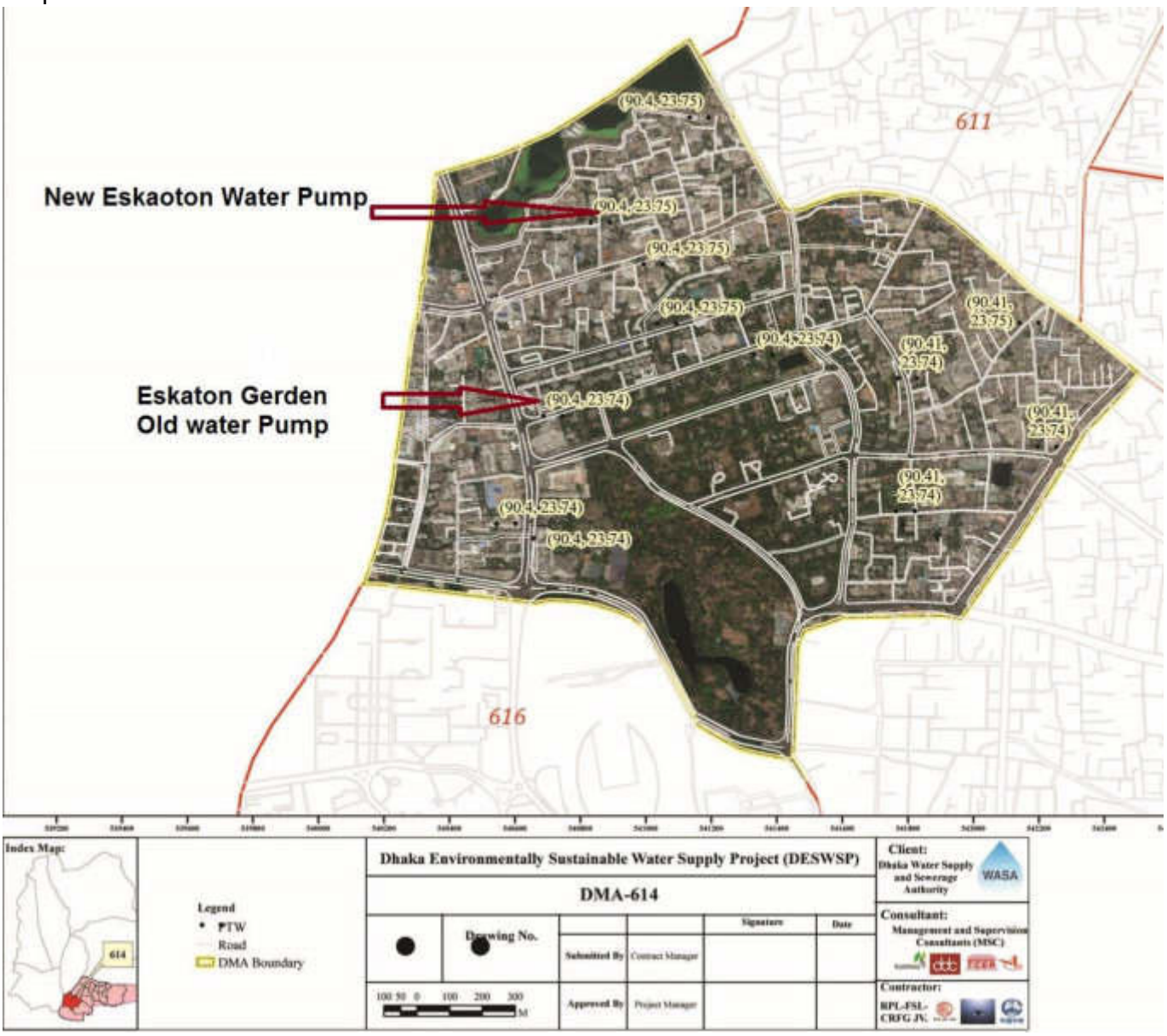
Moghbazar Wireless Water Pump and Modhubagh Water Pump Proposed Replacement



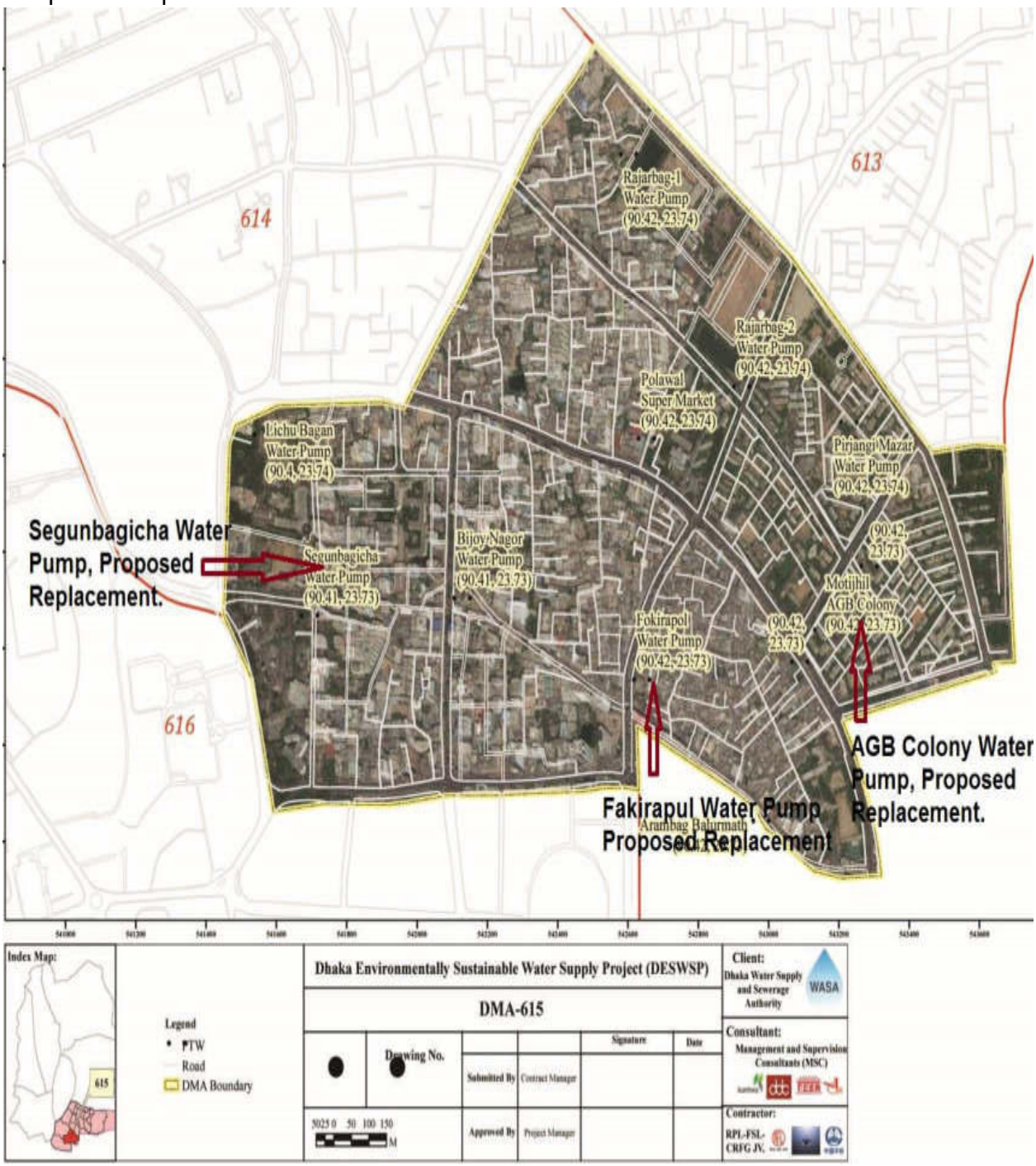
Khilgaon 4 No. Water Pump, Proposed Replacement.



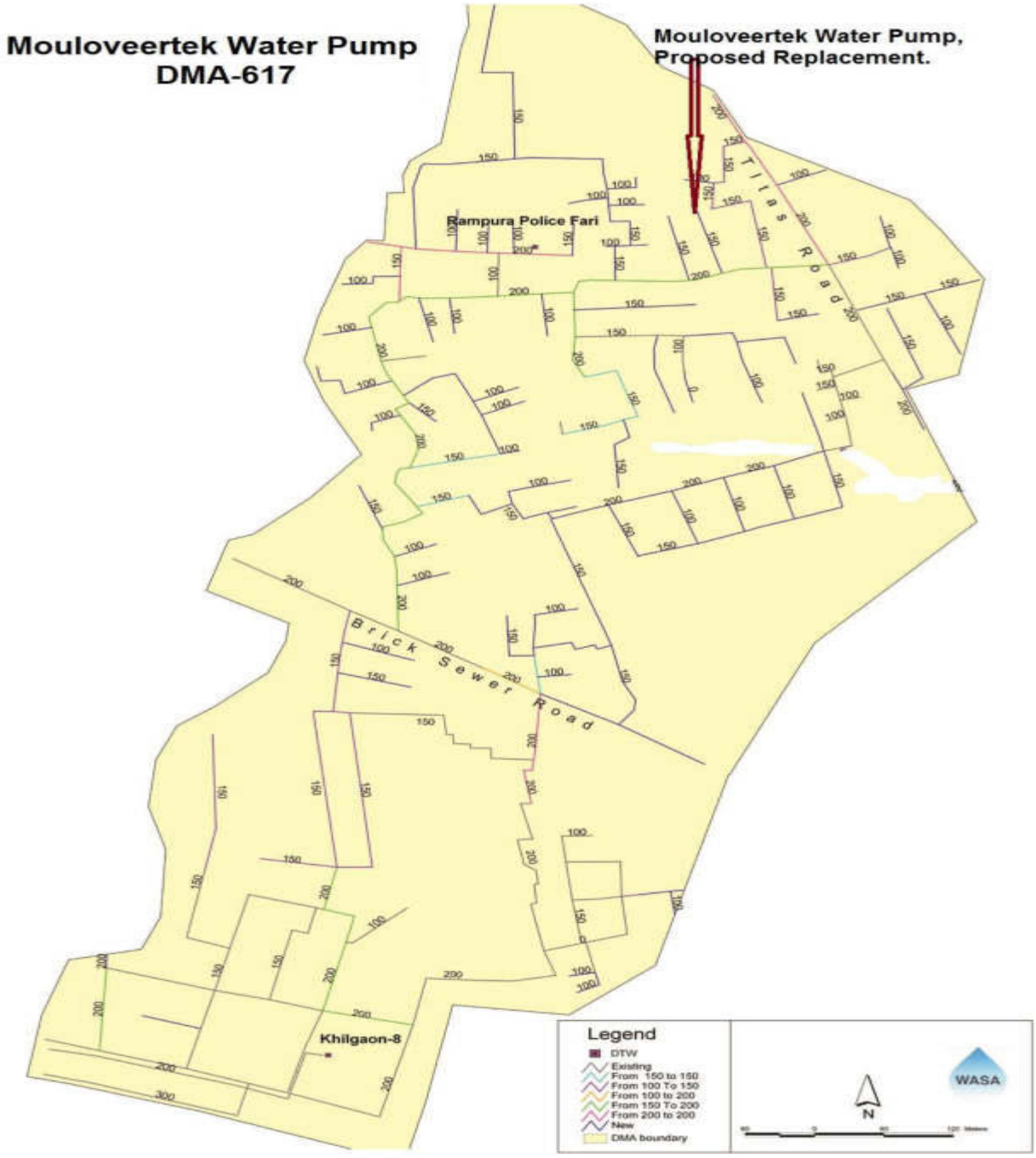
New Eskaton Water Pump and Eskaton Garden Old Water Pump, Proposed Replacement.



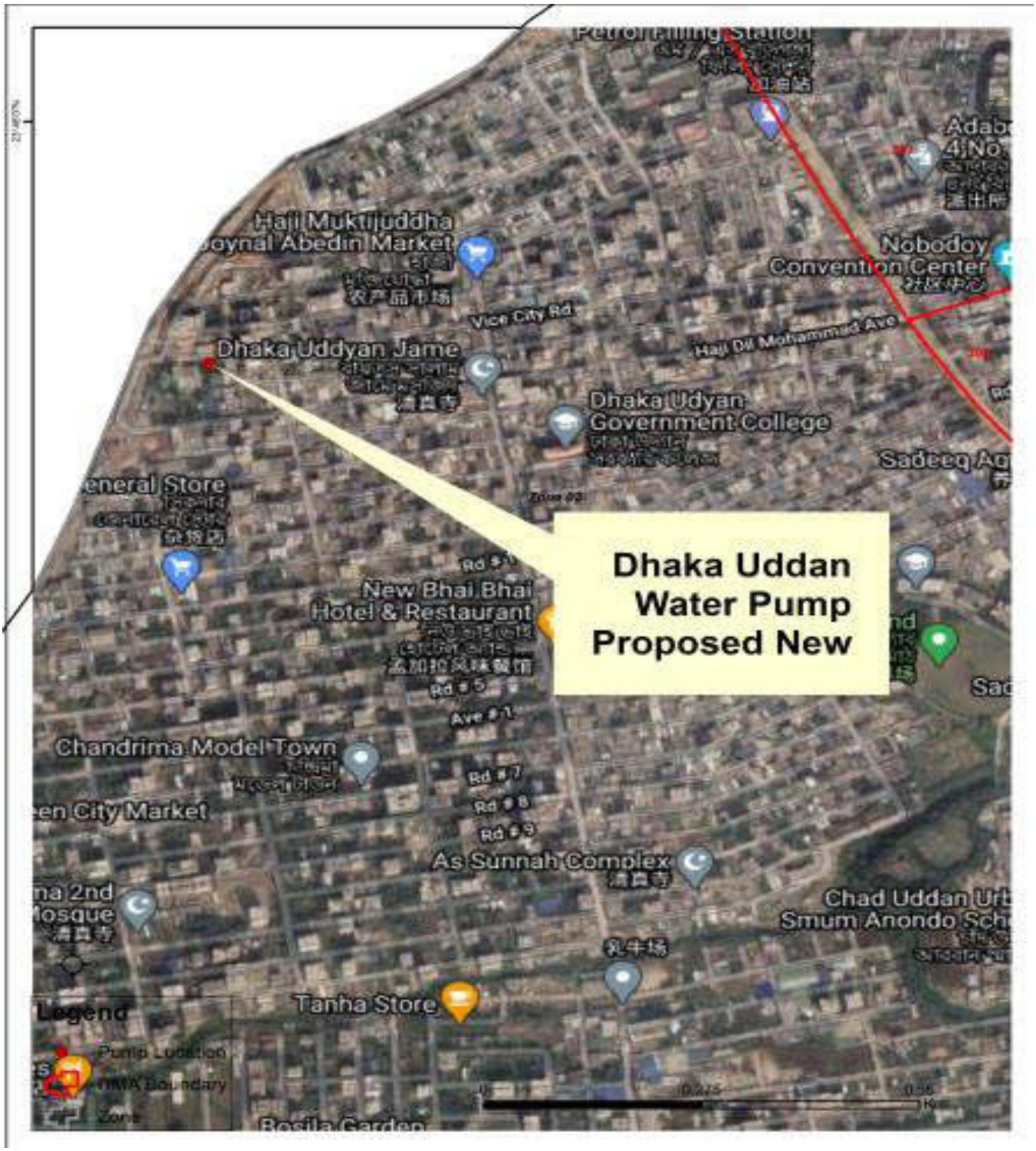
AGB Colony Water Pump, Fakirapul Water Pump and Segunbagicha Water Pump, Proposed Replacement.



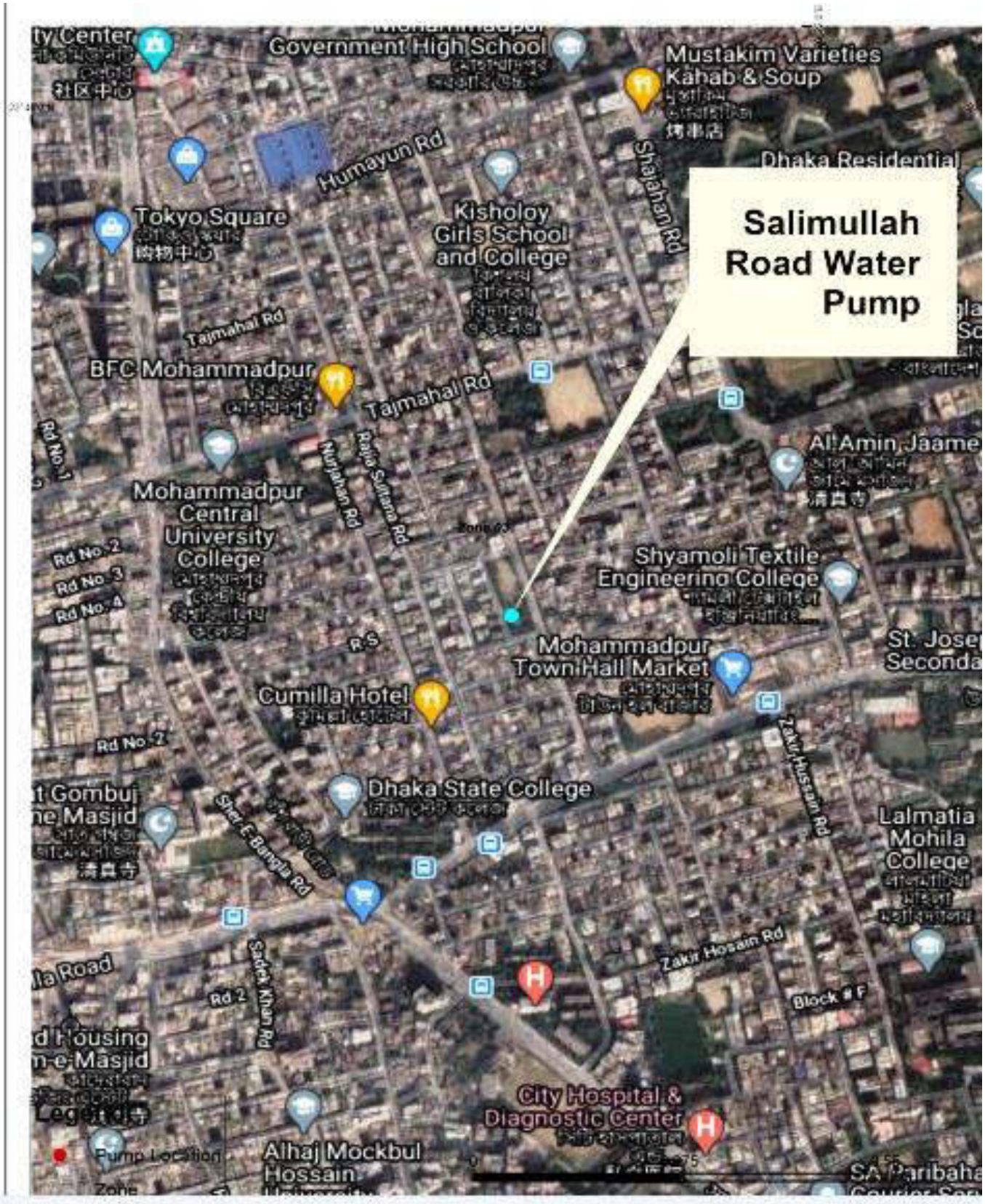
Mouloveertek Water Pump, Proposed Replacement.



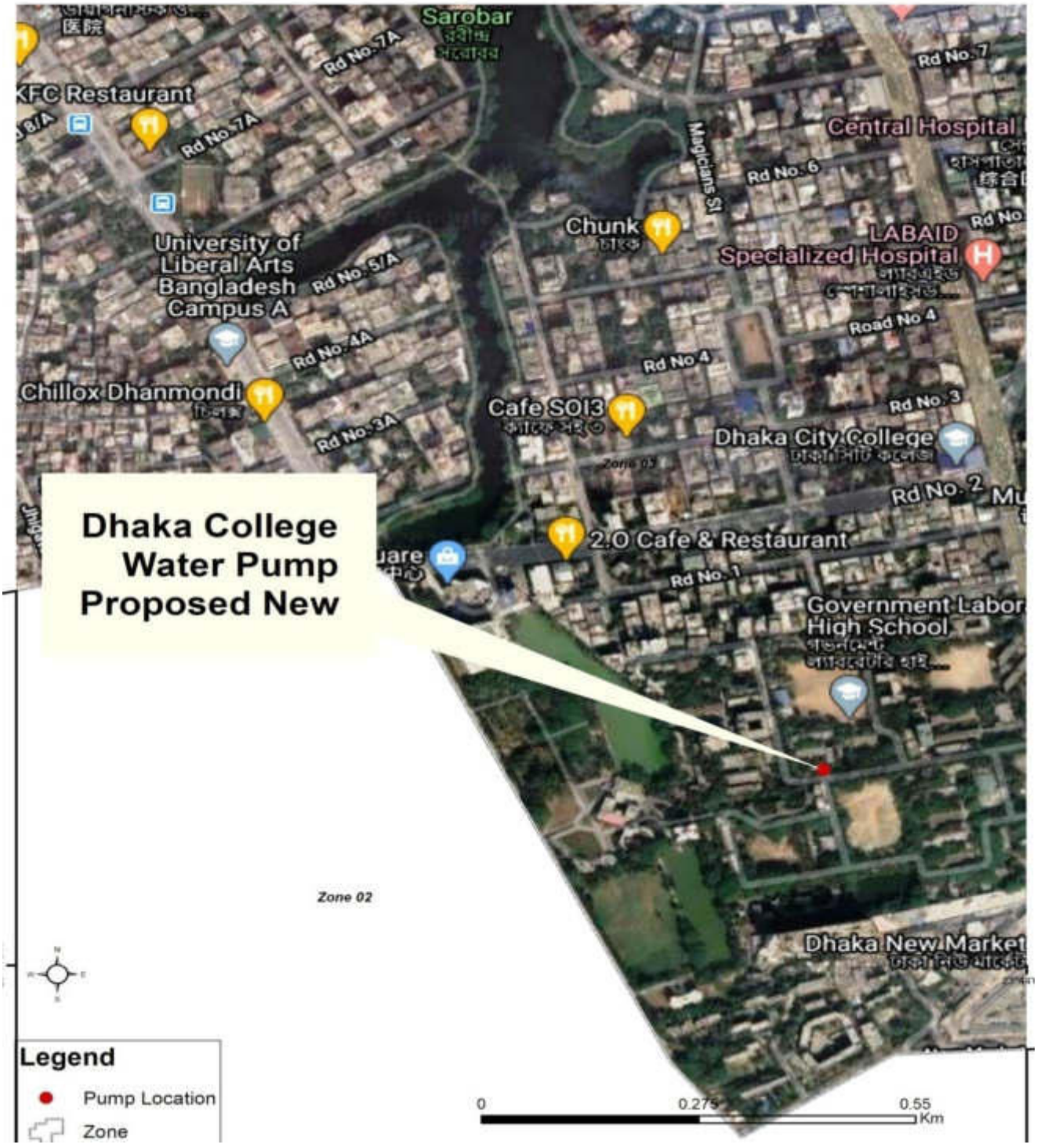
Dhaka Uddan Water Pump Proposed new (MODS Zone-3)

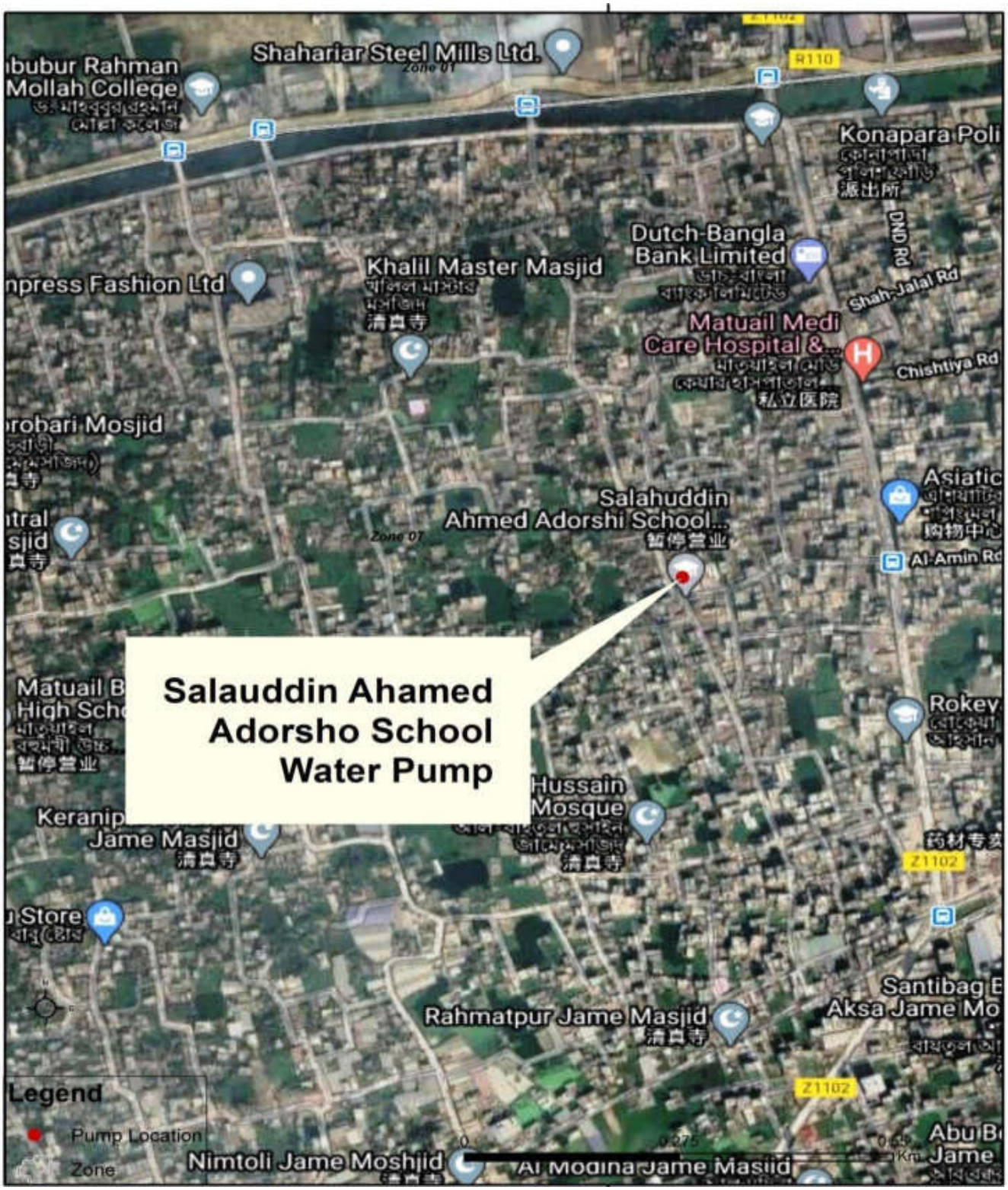


Salimollah Road Proposed Replacement (MODS Zone-3)

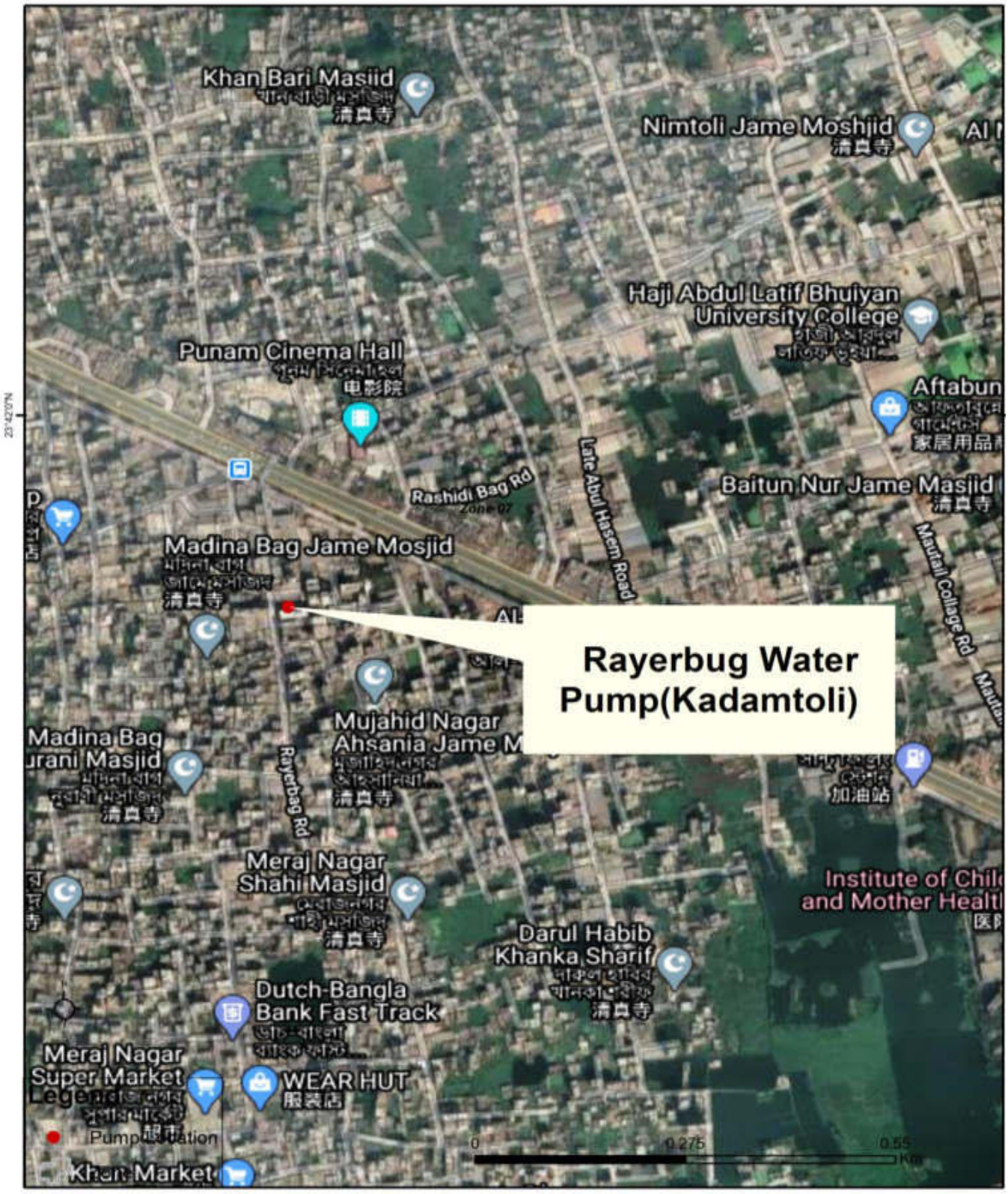

Salimullah
Road Water
Pump
Government High School
Mustakim Varieties
Kabab & Soup
Humayun Rd
Shajahan Rd
Dhaka Residential
Tokyo Square
Kisholoy
Girls School
and College
Tajmahal Rd
BFC Mohammadpur
Tajmahal Rd
Rd No. 1
Nurjahan Rd
Roja Sultana Rd
Al-Amin Jaame
Mohammadpur
Central
University
College
Zone 03
Rd No. 2
Rd No. 3
Rd No. 4
Shyamoli Textile
Engineering College
R.S
Mohammadpur
Town Hall Market
St. Josep
Seconda
Cumilla Hotel
Rd No. 2
Zaki Hussain Rd
Dhaka State College
Lalmatia
Mohila
College
Sher-E-Bangla Rd
Zakir Hosain Rd
Block # F
Sadek Khan Rd
Rd 2
City Hospital &
Diagnostic Center
Alhaj Mockbul
Hossain
Pump Location
Zone

Dhaka College Campus Water Pump Proposed new (MODS Zone-3)

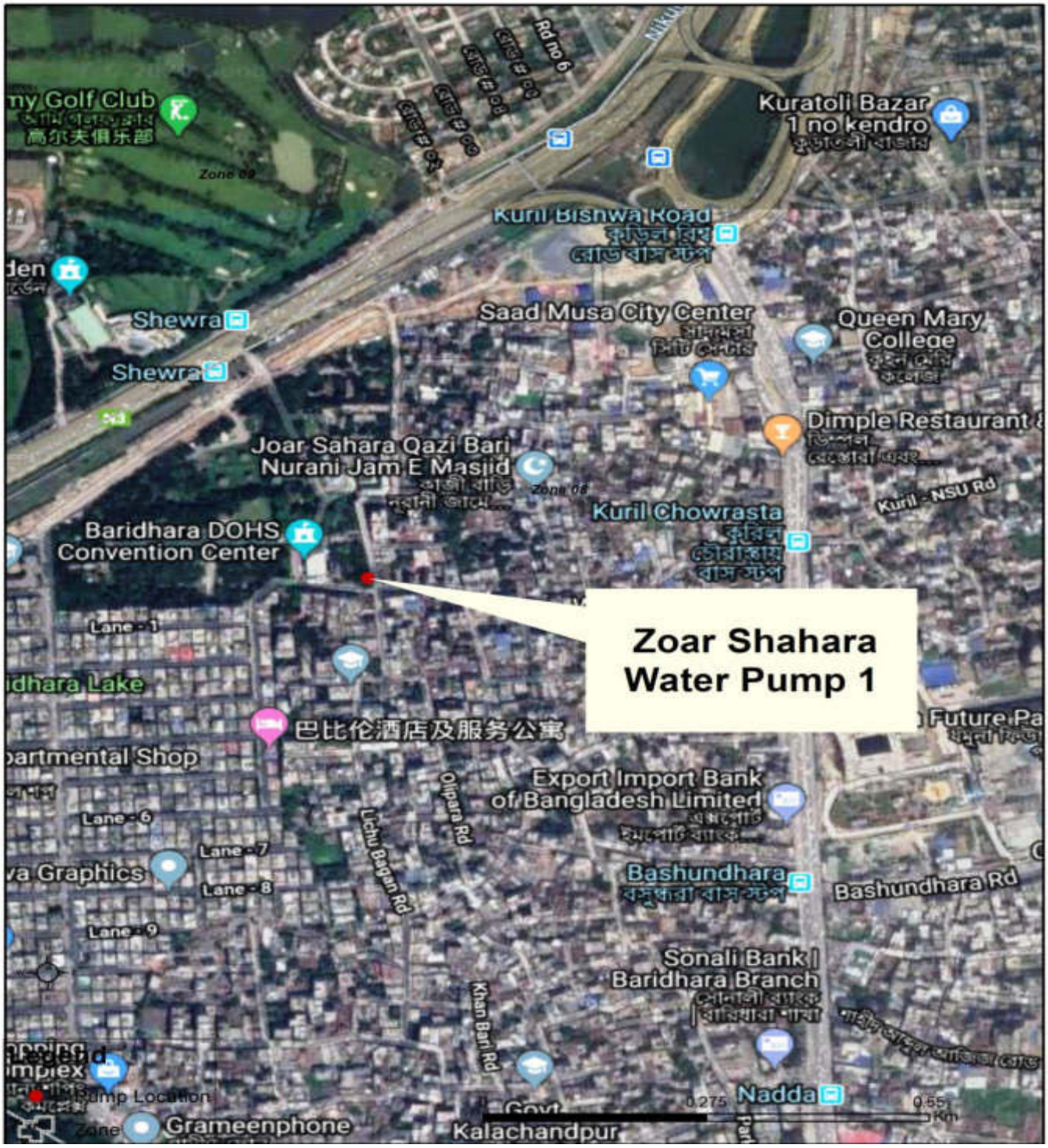



Shahariar Steel Mills Ltd.
Konapara Poli
Dutch-Bangla Bank Limited
Khalil Master Masjid
Matuail Medi Care Hospital &...
Salahuddin Ahmed Adorshi School...
Salauddin Ahamed Adorsho School Water Pump
Hussain Mosque
Jame Masjid
Rahmatpur Jame Masjid
Nimtoli Jame Moshjid
Legend
Pump Location
Zone

Rayerbag Water Pump Proposed Replacement (MODS Zone-7)



Zoyersahra Water Pump, Proposed Replacement (MODS Zone-8)



Mirpur 11-C (Avenue-5) Water Pump, Proposed Replacement (MODS Zone-10)

Mirpur 11-C (Avenue-5) Water Pump and Matikata 2no. Water Pump Proposed Replacement.

Matikata 2no. Water Pump Proposed Replacement (MODS Zone-10)

Appendix- 2: DTWs Co- ordinates

S.L	Deep Tube Well Name & Address	Comments	Co-ordinates	
			Point X	Point Y
1.	Goran 10 No. Watee Pump, Dhaka	DMA-606	90.43637094	23.74748694
2.	Mothertek Water Pump, Dhaka.	DMA-606	90.44157661	23.743996
3.	Moghbazar Wireless Gate, Water Pump, Dhaka.	DTW-611	90.4132072	23.7519267
4.	Modhubag Modhubagh Old Water Pump, Dhaka.	DTW-611		
5.	Khilgaon 04 No. Water Pump, Dhaka	DMA-612	90.41890589	23.75180795
6.	New Eskaton Water Pump, Ramna, Dhaka	DMA-614	90.3978946	23.74827174
7.	Eskaton Garden Water Pump, Ramna, Dhaka	DMA-614	90.39955607	23.74547699
8.	AGB Colony (Al-Helal Zone) Water Pump, Palton, Dhaka	DMA-615	90.4209501	23.73326268
9.	Fakirapul Water Pump, Palton, Dhaka	DMA-615	90.41550792	23.73188108
10.	Segunbagicha Water Pump, Palton, Dhaka	DMA-615	90.4062223	23.73335112
11.	Mouloveertek Water Pump, Mouloveertek, Dhaka	DMA-617	90.42156285	23.7578735
12.	Dhaka Uddan Water Pump, Mohammadpur, Dhaka	MODS Zone-3	90.3399301	23.76362437
13.	Salimullah Road WaterPump,Mohammadpur,Dhaka	MODS Zone-3	90.3631831	23.76064833
14.	Dhaka College Campus Water pump, Dhanmondi, Dhaka	MODS Zone-3	90.38120557	23.73581561
15.	Salauddin School Water Pump, Dhaka	MODS Zone-7	90.46752438	23.71073241
16.	Rayerbag Water Pump,Kadomtoli, Dhaka	MODS Zone-7	90.45765642	23.69766333
17.	Joyersahara 01 No. Water Pump, Kuril, Dhaka	MODS Zone-8	90.41632049	23.81585569
18.	Mirpur 11/C, (Avenue-5) Water Pump, Dhaka	MODS Zone-10	90.37501208	23.8151101
19.	Matikata 2No. Water Pump, Dhaka Cantonment, Dhaka	MODS Zone-10	90.39236169	23.82153391

Appendix- 3: Site Location Photograph

1. Goran 10 No. Water Pump

2. Mothertek Water Pump6

3. Moghbazar Wireless Gate Water Pump

4. Modhubagh Madrasa Water Pupm

5. Khilgaon 04 no. Watar Pump

6. New Eskaton Wate Pump

7. Eskaton Garden Water Pump

8. AGB Colony (Al-Helal Zone) Water Pump

9. Fakirapool Water Pump

10. Segunbagicha Water Pump

11. Moulovirtek Water Pum Proposed new

12. Dhaka Uddan Water Pump,

13. Salimullah Road Water Pump

14. Dhaka College Campus Water Pump

15.Salauddin School Water Pump

16. Rayerbag Water Pump

17. Joyersahara Water Pum

8. Mirpur 11-C (Ave:5) Water Pump

19.Matikata 2no. Water Pump

Appendix- 4: Certification from DWASA

DHAKA ENVIRONMENTALLY SUSTAINABLE WATER SUPPLY PROJECT
DHAKA WATER SUPPLY & SEWERAGE AUTHORITY
DESWSP, DHAKA WASA

Memo No. :

Date :

To Whom it May Concern

This is to certify that Dhaka Water Supply and Sewerage Authority, is in possession to the Deep Tube Well installation and other ancillary work mentioned below. I being law officer of Dhaka Water Supply and Sewerage Authority's Legal Cell has carried out due diligence of these sites and it is confirmed that there are no litigations associated with these sites.

These tube well locations include:

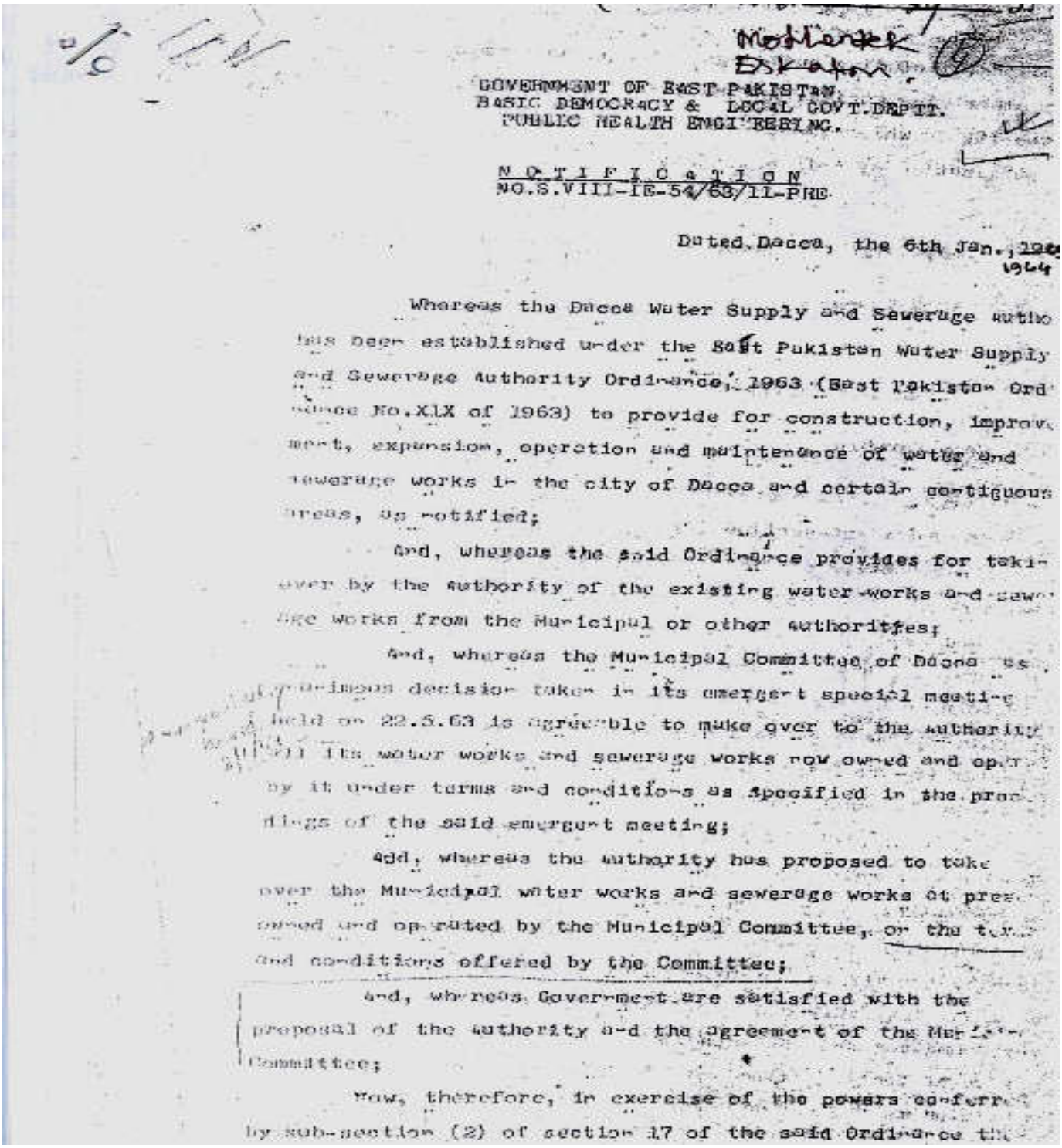
SL. No.	Deep Tube Well Name and Location	DMA No/MODS Zone	Area dimension (sqf)
1.	Goran 10 Water Pump	601	60'-0" x 34'-0"=2040 sqf
2.	Moghbazar Wireless Water Pump	611	48'-0" x 30'-0"=1440 sqf
3.	Modhubagh Old Water Pump	611	65'-0" x 45'-0"=2100 sqf
4.	Khilgaon 4 no Watr Pump	612	65'-0" x 33'-0"=2145sqf
5.	Eskaton Gerden Water Pump	614	30'-0" x 25'-0"=750 sqf
6.	AGB Colony (Al- Helal Zone Water Pump	615	35'-0" x 30'-0"=1050 sqf
7.	Mouloveerdek Water Pump	617	52'-0" x 47'-0"=2444 sqf
8.	Salimollah Road Water Pump	MODS Zone-3	60'-0" x 56'-0"=3660 sqf
9.	Salauddin School Water Pump	MODS Zone-7	65'-0" x 45'-0"=2100sqf
10.	Rayerbagh Water Pump	MODS Zone-7	65'-0" x 45'-0"=2100 sqf
11.	Joyersahara 1No. Water Pump	MODS Zone-8	55'-0" x 52'-0"=2860 sqf
12.	Mirpur 11-C (Ave-5) Water Pump	MODS Zone-10	35'-0" x 30'-0"=1050 sqf
13.	Matikata 2No. Water Pump	MODS Zone-10	30'-0" x 20'-0"=600 sqf

Md. Zahidul Islam
Law Officer
Dhaka Wasa

Appendix- 5: Contract Agreement for Replacement/New DTWs

Segunbagicha, Mothertek and New Eskon Water Pump

Contract Agreement



Mothertek
Eskaton

GOVERNMENT OF EAST PAKISTAN
BASIC DEMOCRACY & LOCAL GOVT. DEPTT.
PUBLIC HEALTH ENGINEERING.

NOTIFICATION
NO.S.VIII-IE-54/63/1L-PHE.

Dated Dacca, the 6th Jan., 1964

Whereas the Dacca Water Supply and Sewerage Authority has been established under the East Pakistan Water Supply and Sewerage Authority Ordinance, 1963 (East Pakistan Ordinance No.XLX of 1963) to provide for construction, improvement, expansion, operation and maintenance of water and sewerage works in the city of Dacca and certain contiguous areas, as notified;

And, whereas the said Ordinance provides for taking over by the authority of the existing water works and sewerage works from the Municipal or other authorities;

And, whereas the Municipal Committee of Dacca in its unanimous decision taken in its emergent special meeting held on 22.5.63 is agreeable to make over to the Authority (1) its water works and sewerage works now owned and operated by it under terms and conditions as specified in the proceedings of the said emergent meeting;

And, whereas the authority has proposed to take over the Municipal water works and sewerage works at present owned and operated by the Municipal Committee, on the terms and conditions offered by the Committee;

And, whereas Government are satisfied with the proposal of the authority and the agreement of the Municipal Committee;

Now, therefore, in exercise of the powers conferred by sub-section (2) of section 17 of the said Ordinance the

Sl No	Name of the properties	Area of compound.		Acre.	Remar
31.	Mohakhali Lab. P.S.	93'-0" x 41'-0"	= 3,813 Sft.	.087	
32.	P.S.I at Mirpur Sec.I.	182'-0" x 140'-0"	= 25480 "	.584	
33.	Mohakhali Lab.Tank.Comp.	28'-0" x 28'-0"	= 784 "	.017	
34.	P.S. III at Mirpur Sec. I,II.	75'-0" x 50'-0"	=3,750 "	.086	
35.	P.S. II at Mirpur Sec.II.	153'-0" x 109'-0"	=16677 "	.382	
36.	P.S. IV at Mirpur Sec.II.	50'-0" x 50'-0"	= 2,500 "	.057	
37.	P.S.(V) at Mirpur Sec.II.	26'-0" x 21'-0"	= 541 "	.012	
38.	P.S. VI + II at Mirpur.	25'-0" x 17'-0"	= 485 "	.009	
39.	P.S. VII at Mirpur.	135'-0" x 100'-0"	= 13,500 "	.309	
40.	P.S. VIII at Mirpur Sec. 12.	200'-0" x 100'-0"	=20,000 "	.459	
41.	P.S. IV, Rd.-I DRA.	74'-0" x 30'-0"	= 2,220 "	.050	
42.	Rd. No. 24, Tank Comp.D.R.A.	153'-0" x 102'-0" 60'-0" x 37'-0"	= 17820 "	.409	
43.	P.S.No.III,Rd.-I, D.R.A.	60'-0" x 60'-0"	= 3,600 "	.082	
44.	P.S.I. Rd-I, D.R.A.	42'-0" x 35'-6"	= 2008 "	.046	
45.	Tank No. I Rd.I,D.R.A.	82'-0" x 78'-0"	= 6396 "	.146	
46.	Q.Azam Rd. Mohd. Pur Tank Comp-	108'-0" x 104'-0"	=11232 "	.257	
47.	P.S. III Ayub Avenue.	106'-6" x 76'-6"	=8172 "	.187	
48.	Tank Com.II, Mohdpur.	180'-0" x 150'-0"	=27,000 "	.619	
49.	(a) P.S.No.II, Mohdpur Block-D.	180'-0" x 80'-0"	=12,000 "	-	
50.	M.P. Assembly P.S.Camp. only.	12'-0" x 8'-0"	= 96 "		
51.	Segun Bagicha P.S.	$\frac{50 + 29}{2}$ x 50	= 1975 "	.045	
52.	Lichubagan P.S. only.	30'-0" x 20'-0"	= 600 "	.015	
53.	High Court P.S.II.	$\frac{92 + 35}{2}$ x 92	= 5,842 "	.103	
54.	Kakrail W/P Comp.	$\frac{180 + 165}{2}$ x 180	= 23,050 "	.503	
55.	Eskaton W.P. Ramna	115'-0" x 70'-0"	= 8,050 "	.108	
56.	D.I.T.P.S. No. I,	$\frac{30 + 30}{2}$ x 30	= 900 "	.020	
57.	[illegible]	[illegible] x 40'-0"	= [illegible] "	.039	

No. S.VIII-1E-54/63/31/1(2)/7-PHE. dt.6.1.64.

Copy with a copy of the above endorsement forwarded for information to :-

1. Commissioner, Dacca Division,
2. Deputy Commissioner, Dacca,
3. Chief Engineer, Public Health Engineering, Dacca.
4. Accountant General, East Pakistan.
5. Planning Department.
6. Liaison Officer, Economic Affairs Division, Government of ~~East~~ Pakistan, Dacca.
7. Director, Public Relations.

(S. D. Khan)
Joint Secretary.

Fakirapool Water Pump

Contract Agreement

Memorandum of agreement this day 2nd. Oct. 1977 between the Secretary WASA, Dacca having its office at Motijheel Commercial Area, P.O. Motijheel, Dist. Dacca on the one part (hereinafter called the Secretary) and the president of the People's Republic of Bangladesh hereinafter called the President on the other part.

Whereas for the purpose of construction of Sewer lift station of the aforesaid Secretary at Mouza Purana Paltan Line P.S. No.295 the said Secy. has applied to the Govt.of Bangladesh for the requisition and acquisition under the provisions of- Bast Bengal (Emergency) Requisition of property Act, 1948 (No.XXIV of 1953) of the pieces of parcels of land containing 0.0275 or so more or thereabout, situate in Mouza Purana Paltan Line P.S.Motijheel,Dist. Dacca more particularly described in the schedule here to annexed.

And whereas the said Secretary deposited with the Deputy Commissioner of on 12-1-77 a sum of Rs Taka= 1,31,736/41 (Taka One lac thirty one thousand seven hundred thirty six and paisa forty one) only in advance on account of cost of requisition of the said land as estimated by the D.C.in anticipation of re-

And whereas the Govt. of Bangladesh being satisfied
that the land in quisition is needed for the construction of
[illegible] of the compound of over head tank to the aforesaid
[illegible] which is likely to prove useful to the development of
[illegible] and Industries of the Bangladesh has consented to-
the requisition of the aforesaid land under the aforesaid Act,
without prejudice to the question of acquisition of the land
[illegible] enquiry under section 5 of the aforesaid Act, is made..

And whereas the Govt. of Bangladesh has required the
aforesaid Secretary to enter into an agreement with the D.C.
[illegible] on behalf of the Bangladesh Govt. hereinafter contained.

Now this indenture withesseth that it is hereby agreed
and declared as follows :-

1) The compensation for the requisition & acquisition
of the land as may be fixed by Govt. or awarded by the Arbitra-
tor to whom a reference under section 7 of the Bangladesh ([illegible]
[illegible] Acquisition of property Act, 1948) may be made or by the
court or courts to which an appeal from the decision of the sa[illegible]
[illegible] may be preferred and all costs charges and expensed
of the proceedings for the determination of compensation by th[illegible]
aforesaid Arbitrator or by the aforesaid courts or otherwise
incidental to the proposed requisition and acquisition or [illegible]
[illegible] in respect thereof under the provision of the said Ac[illegible]
shall be paid out of the aforesaid deposit of Tk.=1,31,736/41
(Taka one lac thirty one thousand seven hundred thirty six &
paisa forty one) only.

2) On demand the proprietor shall deposit with the Deputy Commissioner, Dacca of such further sum or sums of money as may be required by the D.C.Dacca for the purpose or purposes mentio in the foregoing clause.

3) On requisition of the land and on taking over possessi thereof, under the aforesaid Act, D.C. Dacca on behalf on the G of Bangladesh shall make over possession of the said land to Se retary for the purpose of construction of extension of the comp or over head tank. But the said Secretary shall not change the character of the requisition property during the period of requ tion.

4) It is also hereby agreed and declared that nontechnic staff required for the working and management of the ~~xx~~ work sh be recruited from among the bonafide residents of Bangladesh.

5) The Bangladesh Govt. will examine the question of the requisition of the land for the aforesaid purpose and proceed w the requisition thereof if there is no objection but as a result of the examination if it is decided ~~in~~ that the land shall not acquired for the aforesaid purpose, the said Secretary shall surrender the land to the Govt. of Bangladesh for its release a restoration under section-8 of the aforesaid Act, and the propri shall bear all costs & compensation in connection with the rele and restoration of the land.

Contd.....P/4.

Dhaka College Campus Water Pump

Contract Agreement

Government of the People's Republic of Bangladesh
Office of the Principal
Dhaka College

To
Managing Director
Dhaka Wasa
Kawran Bazar, Dhaka

Memo No. Dh. Col./428/2020 Date: 29/06/2020

Subject: Application for installation a Water Pump for use of the residential students of hostels of Dhaka college and to supply adequate water for academic, administrative buildings and for the houses of teachers and staffs of Dhaka college

According to the reference of above mentioned subject this is for your kind information that presently due to inadequate water supply of Dhaka WASA at Dhaka Collegeoften a panic situation is observed at the students of the hostels of Dhaka College.
For this reason, for the use of the residential students of hostels of Dhaka college and to supply adequate water for academic, administrative buildings and for the houses of teachers and staffs of Dhaka collegeapproved to use a piece of land (adjacent to South Hostel) (25'x50'=1250sq.ft) for installation of 1 (one) Water Pump.

Principal
Dhaka College, Dhaka
Phone No. 02-9613559

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
অধ্যক্ষের কার্যালয়
ঢাকা কলেজ, ঢাকা
www.dhakacollege.edu.bd

স্মারক নং- ঢা: ক:/৪১৮/২০২০ তারিখ: ২৯/০৬/২০২০ খ্রি:

বিষয়: ঢাকা কলেজের ছাত্রাবাসমূহে অবস্থানকারী ছাত্রদের ব্যবহারের জন্য এবং একাডেমিক ও প্রশাসনিক ভবন এবং শিক্ষক কর্মচারীদের বাসভবনে পর্যাপ্ত পানি সরবরাহের জন্য ০১টি পানির পাম্প স্থাপন প্রসঙ্গে।

উপর্যুক্ত বিষয়ের প্রেক্ষিতে আপনার সদয় অবগতির জন্য জানানো যাচ্ছে যে, ঢাকা কলেজে বর্তমানে ওয়াসার সরবরাহকৃত পানি পর্যাপ্ত না থাকায় কলেজের ছাত্রাবাসসমূহে অবস্থানকারী ছাত্রদের মধ্যে প্রায়শই অস্থিরতা দেখা দেয়। এমতাবস্থায় ঢাকা কলেজের ছাত্রাবাসমূহে অবস্থানকারী ছাত্রদের ব্যবহারের জন্য এবং একাডেমিক ও প্রশাসনিক ভবন এবং শিক্ষক কর্মচারীদের বাসভবনে পানি সরবরাহে ০১টি পানির পাম্প স্থাপনের জন্য কলেজের অভ্যন্তরে (দক্ষিণ ছাত্রাবাস সংলগ্ন) (২৫'×৫০')=১২৫০ বর্গফুট (কম/বেশি) জায়গা অস্থায়ীভাবে ব্যবহারে অনুমতি প্রদান করা হলো।

২৯/৬/২০২০
(অধ্যাপক নেহাল আহমেদ)
অধ্যক্ষ
ঢাকা কলেজ, ঢাকা
ফোন: ০২-৯৬১৩৫৫৯
E-mail: dhakacollegeprincipal@gmail.com

২৯/৬/২০২০

ব্যবস্থাপনা পরিচালক
ঢাকা ওয়াসা
কাওরান বাজার, ঢাকা।

Dhaka Uddan Water Pump, Proposed new

Contract Agreement

Mr A.K.m Musa (General Secretary), Father Late: Nawab Ali, Address: House 10(3rd floor), Flat-3/A, Main Road, Naboday Housing Society, P.O-Mohammadpur, P.S- Adabor, Dhaka—1207, On behalf of Dhaka Uddan Multi Cooperative limited,.....1st Party

Deputy Secretary, Land Division, on behalf of Dhaka Water Supply and Sewerage Authority (DWASA), 98 KaziNazrul Islam Avenue, Dhaka-1215 ..... 2nd Party

Itis stated in the Record of Rights that, House 10(3rd floor), Flat-3/A, Main Road, Naboday Housing Society, P.O-Mohammadpur, P.S- Adabor, Dhaka—1207 (1st Party) is owner and occupier of the schedule specified land.

Today on 19.03.2017 B.C Year contract agreement has been signed to transfer and receive the occupied land, in attached `yellow' marked drawing on contract agreement's 3rd page mentioned in the schedule that 1.30 kata (more/Less) land which 1st Party has agreed to give to Dhaka Water Supply and Sewerage Authority (DWASA) for installation of Deep Tube Well (DTW) for providing regular water supply at Plot-22, Road-2, Block-C nearby areas of `Mohammadpur' Residential Areas of Dhaka District under following conditions:

1. This contract was signed after concurrence of second party regarding the first party's proposal of providing scheduled land free of cost for installation of Deep Tube Well (DTW) and both parties obliged to follow the conditions of the agreement.

2. Dhaka Water Supply and Sewerage Authority (DWASA) to use the attached `yellow' marked drawing on contract agreement's 3rd page mentioned schedule, that 1st Party has agreed to give 1.30 kata (more/less) land in favor of Dhaka Water Supply and Sewerage Authority (DWASA) for installation of Deep Tube Well (DTW) for providing regular water supply at Plot-22, Road-2, Block-C and nearby areas of `Mohammadpur Residential Areas under Dhaka District.

3. If installation of Deep Tube Well is not possible or it is non-functional or there is no possibility of replacement then the second party will return the proposed land to 1st party within 90 days. The 2nd party will take their all materials, tools and equipment's by their

own cost within the given period after returning back the land and as early as possible will remove out the installed Deep Tube well.

4. The proposed land will not be used except installation of Deep Tube Well (DTW). The 2nd party can build wall, gate, install Deep Tube Well, pipe laying for water supply, pump house, electricity line, to install generator and to install latrine at this land at his own cost.

5. No work will be done at the site of the land of installed Deep Tube Well (DTW) which will cause environment pollution. In this matter, both parties will take necessary action at appropriate moment.

6. According to their requirement the 2nd party may bring their tools, equipment's and materials and their persons can move to the specified site. Roads can be used for the movement of concerned persons to the site and it can be used to construct the water pipeline.

7. As the ownership of the contract land would be the 1st party, so the land development duty of the assumed land will be paid by the 1st party.

8. A photo copy of this contract agreement wills kept by the 1st party which will be considered as well as original copy.

9. If there is any conflict over land ownership or possession of adjacent land owners or any other person's possession of land then the 1st party will lawfully resolve the conflict and will free the land from encumbrance and after that the transfer process will be completed in favor of 2nd party.

10. At the time of installation of Deep Tube Well (DTW) if the conflicts, obstacles, shut down situation of the installation work of Deep Tube Well (DTW) arise due to land ownership then the 1st party will be obliged to bear the cost of the preparatory work of the installation.

11. 2nd party positioned as a legalized owner and occupier of the schedule indicated site of the 1st party.

On the basis of consent of both parties by this contract agreement delivers authorization to 2nd party (Dhaka WASA Authority) for installation of Deep Tube Well (DTW) at the supposed place. The possession letter of Eastern Housing Limited which was sent to Dhaka Water Supply and Sewerage Authority (DWASA) will be treated as a part of the agreement and this contract agreement is signed in presence of the witnesses, on the date quoted at first page of the contracted agreement.

`Schedule'

District: Dhaka, Thana: Mohammadpur, Mouza: Ramchandrapur, C.S. dug No. 240,S.A-59, R.S-01. Dug-C.S & S.A-253 (Part) R.S dug-160,161, & 163 (Part), Mohanagar dug-5201 (Part) Khatiyan-C.S-452, S.A-243, M.S-1757. Land area-1.30 katha. Existing land Plot-22,Road-2, Block-C, Dhaka Uddan Residential area, Mohammadpur, Dhaka-1207. Area: At North-Road, East-Kamrul Ahsan and Abul Hossain's land, West- Kashaem's land and South-Rayhan's land.

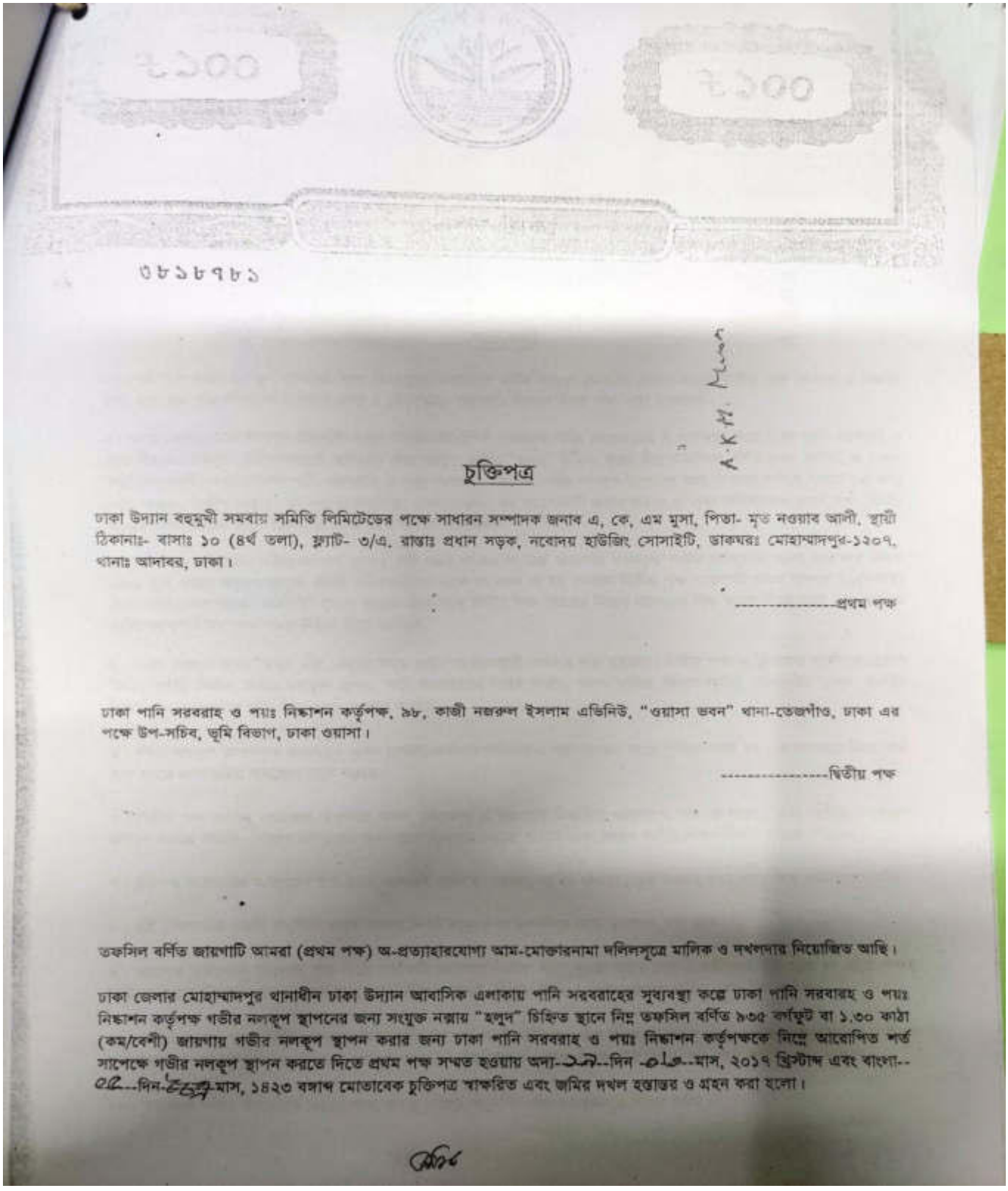
Witness

1).

1. Mr. A.K.m Musa,
General Secretary (Nabodoy Housing)
House 10(3rd floor), Flat-3/A, Main Road, NabodayHousing Mohammad pur, Dhaka.....1st Party

2).

2. ShamimNaziba,
Deputy Secretary,
Land Division, Dhaka Water Supply and Sewerage Authority (DWASA), 98 KaziNazrul Islam Avenue, Dhaka 1215 .....2nd Party



০৮১৮৭৮১

A.K.M. Musa

চুক্তিপত্র

ঢাকা উদ্যান বহুমুখী সমবায় সমিতি লিমিটেডের পক্ষে সাধারন সম্পাদক জনাব এ, কে, এম মুসা, পিতা- মৃত নওয়াব আলী, স্থায়ী ঠিকানাঃ- বাসাঃ ১০ (৪র্থ তলা), ফ্ল্যাট- ৩/এ, রাস্তাঃ প্রধান সড়ক, নবোদয় হাউজিং সোসাইটি, ডাকঘরঃ মোহাম্মদপুর-১২০৭, থানাঃ আদাবর, ঢাকা।

----------প্রথম পক্ষ

ঢাকা পানি সরবরাহ ও পয়ঃ নিষ্কাশন কর্তৃপক্ষ, ৯৮, কাজী নজরুল ইসলাম এভিনিউ, "ওয়াসা ভবন" থানা-তেজগাঁও, ঢাকা এর পক্ষে উপ-সচিব, ভূমি বিভাগ, ঢাকা ওয়াসা।

----------দ্বিতীয় পক্ষ

তফসিল বর্ণিত জায়গাটি আমরা (প্রথম পক্ষ) অ-প্রত্যাহারযোগ্য আম-মোক্তারনামা দলিলসূত্রে মালিক ও দখলদার নিয়োজিত আছি।

ঢাকা জেলার মোহাম্মদপুর থানাধীন ঢাকা উদ্যান আবাসিক এলাকায় পানি সরবরাহের সুব্যবস্থা কল্পে ঢাকা পানি সরবরাহ ও পয়ঃ নিষ্কাশন কর্তৃপক্ষ গভীর নলকূপ স্থাপনের জন্য সংযুক্ত নক্সায় "হলুদ" চিহ্নিত স্থানে নিম্ন তফসিল বর্ণিত ৯৩৫ বর্গফুট বা ১.৩০ কাঠা (কম/বেশী) জায়গায় গভীর নলকূপ স্থাপন করার জন্য ঢাকা পানি সরবরাহ ও পয়ঃ নিষ্কাশন কর্তৃপক্ষকে নিম্নে আরোপিত শর্ত সাপেক্ষে গভীর নলকূপ স্থাপন করতে দিতে প্রথম পক্ষ সম্মত হওয়ায় অদ্য-১৯--দিন -০১--মাস, ২০১৭ খ্রিস্টাব্দ এবং বাংলা--০৫--দিন-১৮--মাস, ১৪২৩ বঙ্গাব্দ মোতাবেক চুক্তিপত্র স্বাক্ষরিত এবং জমির দখল হস্তান্তর ও গ্রহন করা হলো।

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শর্তাবলী

১। প্রথম পক্ষ গভীর নলকূপ স্থাপনের জন্য বিনামূল্যে তফসিলে বর্ণিত জায়গা প্রদানের প্রস্তাব করলে দ্বিতীয় পক্ষ সানন্দে এ প্রস্তাবে রাজী হয়ে অত্র চুক্তি সম্পাদন করলেন এবং এ চুক্তিপত্রের শর্তাবলী পালনে উভয় পক্ষ বাধ্য থাকবেন।

২। ঢাকা জেলার মোহাম্মাদপুর থানাধীন ঢাকা উদ্যান আবাসিক এলাকায় পানি সরবরাহের সু-ব্যবসস্থা কল্পে ঢাকা পানি সরবারহ ও পয়ঃ নিষ্কাশন কর্তৃপক্ষ গভীর নলকূপ স্থাপনের জন্য সংযুক্ত নক্সায় "হলুদ" চিহ্নিত স্থানে নিম্ন তফসিলে বর্ণিত ৯৩৫ বর্গফুট বা ১.৩০ কাঠা (কম/বেশী) জায়গা ঢাকা পানি সরবরাহ ও পয়ঃ নিষ্কাশন কর্তৃপক্ষ গভীর নলকূপ স্থাপনের জন্য ব্যবহার করতে পারবে। এ জন্য প্রথম পক্ষকে, দ্বিতীয় পক্ষ (ঢাকা ওয়াসা কর্তৃপক্ষ) কোনো মূল্য, কর বা সেলামী প্রদান করবে না এবং ভবিষ্যতেও প্রথম পক্ষ, দ্বিতীয় পক্ষের নিকট কোনো টাকা পয়সা বা ভাড়া দাবি করতে পারবেনা।

৩। যদি উক্ত জায়গাতে গভীর নলকূপ স্থাপন করা সম্ভব না হয় বা উক্ত জায়গার খননকৃত গভীর নলকূপটি অচল হয়ে যায় কিংবা তথায় পুনঃ গভীর নলকূপ স্থাপন করার পরিকল্পনা না থাকে বা সম্ভব না হয় তাহলে দ্বিতীয় পক্ষ জায়গাটি প্রথম পক্ষকে ৯০(নব্বই) দিনের মধ্য ফেরৎ দিবে। জায়গাটি ফেরৎ দেয়ার সঙ্গে সঙ্গে দ্বিতীয় পক্ষ তাদের নিজস্ব মালামাল নিজ খরচে নিয়ে যাবে এবং স্থাপিত গভীর নলকূপটি যত দ্রুত সম্ভব উঠিয়ে নিয়ে আসবে।

৪। গভীর নলকূপ স্থাপন ছাড়া অন্য কোনো কাজে প্রস্তাবিত জায়গাটি ব্যবহার করা যাবেনা। দ্বিতীয় পক্ষ এ জায়গার চারদিকে দেয়াল নির্মান, গেইট নির্মান, গভীর নলকূপ স্থাপন, পানি সরবরাহের লাইন নির্মান, পাম্প হাউজ, বিদ্যুৎ লাইন, জেনরেটর স্থাপন, ল্যাট্রিন নির্মান সহ প্রয়োজনীয় কাজ নিজ খরচে করতে পারবে।

৫। গভীর নলকূপ স্থাপনকৃত জায়গাতে এমন কোনো কর্মকান্ড পরিচালনা করা যাবেনা যাতে পরিবেশ নষ্ট হয়। এ ব্যাপারে উভয় পক্ষ যথা সময়ে প্রয়োজনীয় পদক্ষেপ গ্রহন করবে।

৬। দ্বিতীয় পক্ষ তাদের প্রয়োজন অনুসারে সকল মালামাল ও যন্ত্রপাতি নির্ধারিত জায়গাতে আনতে পারবে এবং সংশ্লিষ্ট লোকজন চলাচল করতে পারবে। পাম্পে চলাচলের জন্য রাস্তা ব্যবহার করতে পারবে এবং রাস্তায় পানির লাইন নির্মান করতে পারবে।

৭। চুক্তিবদ্ধ জায়গাটির মালিকানা স্বত্ব প্রথম পক্ষেরই থাকবে। যেহেতু জমির খাজনা (ভূমি উন্নয়ন কর) প্রথম পক্ষ পরিশোধ করবে।

৮। এই চুক্তিপত্রের একটি অনুলিপি প্রথম পক্ষের নিকট থাকবে যা মূলকপির ন্যায় মূল্যায়ন করা হবে।

৯। জায়গার মালিকানা বা দখল স্বত্ব নিয়ে পার্শ্ববর্তী জায়গার মালিক অন্য কারো সাথে কোনো জটিলতা সৃষ্টি হলে তা প্রথম পক্ষই আইনগতভাবে নিরসন করে ঝামেলা মুক্ত হয়ে দ্বিতীয় পক্ষের নিকট জায়গার দখল হস্তান্তর প্রক্রিয়া সম্পাদন করবে।

১১। গভীর নলকূপ স্থাপনকালীন সময় জমির মালিকানা স্বত্ব নিয়ে জটিলতা দেখা দিলে, বাধাপ্রাপ্ত হলে, গভীর নলকূপ স্থাপন কার্যক্রম বন্ধ হয়ে গেলে বা স্থাপন করা না গেলে নলকূপ স্থাপনের প্রস্তুতিমূলক সকল প্রকার খরচ প্রথম পক্ষ বহন করতে বাধ্য থাকবে।

১০। তফসিলে বর্ণিত জায়গাতে দ্বিতীয় পক্ষ, প্রথম পক্ষের অনুমতি প্রাপ্ত ও দখলদার নিয়ত হলো।

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উভয় পক্ষের সম্মতিক্রমে উক্ত জায়গায় গভীর নলকূপ স্থাপনের জন্য দ্বিতীয় পক্ষকে (ঢাকা ওয়াসা কর্তৃপক্ষ) অত্র চুক্তিপত্র দ্বারা অনুমতি প্রদান করা হলো। জায়গাটির একটি সাইট নক্সা তৈরী পূর্বক 'হলুদ' চিহ্নিত করে চুক্তিপত্রের অংশ হিসেবে গন্য করে উভয় পক্ষ উপস্থিত স্বাক্ষীদের সম্মুখে এই চুক্তিপত্র প্রথম পৃষ্ঠায় উল্লেখিত তারিখে সম্পাদন করা হলো।

"তফসিল"

জেলাঃ- ঢাকা, থানাঃ-মোহাম্মাদপুর, ঢাকা কালেক্টরির তৌজিভূক্ত। মৌজা- রামচন্দ্রপুর। জে.এল নং-সি.এস-২৪০, এস.এ-৫৯, আর.এস-১,এম.এস-১। দাগ নং- সি.এস ও এস.এ-২৫৩(অংশ), আর.এস দাগ নং-১৬০,১৬১, ও ১৬৩(অংশ), মহানগর দাগ নং-৫২০১(অংশ)। খতিয়ান নং- সি.এস-৪৫২, এস.এ-২৪৩, আর.এস-৪৬, এম.এস-১৭৫৭। জমির পরিমান ১.৩০ কাঠা (কম/বেশী)। প্রস্তাবিত জমির অবস্থান- প্লট নং-২২, রোড নং-২, ব্লক-সি, ঢাকা উদ্যান আবাসিক এলাকা, মোহাম্মাদপুর, ঢাকা। প্রস্তাবিত জমির চৌহদ্দিঃ উত্তরে- রাস্তা, দক্ষিণে-রায়হান , পূর্বে- কামরুল আহসান ও আবুল হাসেম, পশ্চিমে- কাশেম।

স্বাক্ষীঃ

১। মো: ফজলুল করিম (রাহাত)
বাসা-২, রোড-৫, নবোদয় ৬৫/৫
ব্লক-এ আদাবর মোহাম্মদপুর ঢাকা

২। মো: নজরুল ইসলাম ভূঁইয়া
বাসা-৪৩ ব্লক বি প্রধান সড়ক
হাউজিং লি-মোহাম্মদপুর [illegible]
ঢাকা উদ্যান মোহাম্মদপুর ঢাকা১২০৭

৩। মো: [illegible]
[illegible]
[illegible] ঢাকা ওয়াসা।

১। এ, কে, এম মুসা
পিতা-মৃত নওয়াব আলী
বাসাঃ ১০ (৪র্থ তলা), ফ্ল্যাট-৩/এ,
প্রধান সড়ক, নবোদয় হাউজিং সোসাইটি
মোহাম্মাদপুর-১২০৭, থানাঃ আদাবর, ঢাকা।

আইডিনং-১৩১৪৫৮৩৯৮২৮১০।

প্রথম পক্ষ।

২। শামীম নাজিবা
উপ-সচিব, ভূমি বিভাগ, ঢাকা ওয়াসা
"ওয়াসা ভবন"
৯৮, কাজী নজরুল ইসলাম এভিনিউ, ঢাকা-১২১৫।

দ্বিতীয় পক্ষ।

Appendix- 6: Consultation Meeting Details

Dhaka Uddan, Mohammadpur, Dhaka, Proposed New Water Pump				
SL No.	Date and Venue	Participants Discussion	No. of Participants	Project Response
01	20/08/2020 Dhaka Uddan, Mohammadpur, Dhaka, Proposed New Water Pump	At the meeting the suggestions of the participant's for implementing deep tube well installation was taken. The participant's only demand was to get to get water. The participants expressed the need to install the tube wells within the schedule time. The participants suggested that safety fences/barricades should be put around the work site to prevent children from going to the construction site.	25	WASA Representative informed: - The waste soil will be removed from the narrow roads immediately and from the wider road within 24 hours. - measures will be taken to reduce sound pollution. - adequate measures will be taken to reduce pollution. - barricades will be put up around the work site during construction work. - planks will be used for as bridge entering houses. - ensuring sufficient water supply.- Enclosure will be ensured during construction work.

Focus Group Discussion (FGD)/Consultation Meeting

Attendance Sheet

Venue : Dhaka Uttan, Mohammadpur, Dhaka.
Proposed new water pump.
Date : 20.08.2020

SL No	Name	M - F	Contract No/Address	Signature
01.	Md. Enamul Haq	Male	01798682893 PMU, DWASA	
02.	Md. Mokbul Hossain	M	Dhaka Uttan C. block, Rd-2	
03.	Alamin	m	"	
04.	[illegible]	m	"	
05.	[illegible]	m	"	Amzad -
06.	[illegible]	m	"	
07.	Mst. Amena Begum	F	"	
08.	[illegible]	F	"	
09.	[illegible]	F	"	
10.	[illegible]	F	"	
11.	[illegible]	F	"	
12.	[illegible]	F	"	
13.	[illegible]	F	"	
14.	[illegible]	M	"	
15.	[illegible]	M	"	
16.	[illegible]	M	"	
17	[illegible]	M	"	

Focus Group Discussion (FGD)/Consultation Meeting

Attendance Sheet

Venue : Dhaka Oddan, Mohammadpur, Dhaka.
Proposed New Daten pump.

Date : 20.08.2020

SL No	Name	M - F	Contract No/Address	Signature
18.	মোঃ কাদের	m	✓	কাদের
19	মোঃ ইমরান	m	✓	ইমরান
20	মোঃ রিয়াজুল	m	✓	রিয়াজুল
21	মোঃ কবীরুল	m	✓	কবীরুল
22	মোঃ রাজন	m	✓	রাজন
23	মোঃ আকবার	m	✓	আকবার
24	মোছাঃ রহিমা	f	✓	রহিমা
25	নাসির	F	✓	নাসির

Moghbazar Wireless Gate, Water Pump, Dhaka.				
SL No.	Date and Venue	Participants Discussion	No. of Participants	Project Response
02	23/08/2020 Moghbazar, Wareless Colony, Water Pump, Dhaka.	At the meeting the suggestionsofthe participant's for implementing deep tube well installation was taken. The participant's only demand was to get water. The participants suggested that safety fences/barricades should be put around the work site to prevent children from going to the construction site.	17	WASA Representative informed: - The waste soil will be removed from the narrow roads immediately and from the wider road within 24 hours. - measures will be taken to reduce sound pollution. - adequate measures will be taken to reduce pollution. - barricades will be put up around the work site during construction work. - planks will be used for as bridge entering houses. - ensuring sufficient water supply.

Focus Group Discussion (FGD)/Consultation Meeting

Attendance Sheet

Venue : Moghbazar Wareless Colony Water pum. Moghbazar, Dhaka-

Date : 23.08.2020

SL No	Name	M - F	Contract No/Address	Signature
১.	Md. ALAMGIR Hossain	M	PMU, DWASA	Alam
2.	Md. Arifuzzaman	M	01767053711	Azam
3.	Sanjith Das	M	moghbazar witeless Colony	Sanjith
4.	Zulfiqar Kabir	M	Baranaly-3 476-DIT Road	[illegible]
5	Md. sujan meah	M	Baranaly-(1) DIT Road	sujan
6	MD-Mostafa Kamal	M	Baranaly-	[illegible]
7	Khokon	M	478 E	Khokon
8	[illegible]	M	478 E	[illegible]
9	[illegible]	M		[illegible]
10	A. MATIN	M	40 Sonalibag	[illegible]
11	কবীর	M	58, Sonalibag	কবীর
12	Salam	M	DIT Road	Salam
13	মোঃ ফারুক	M		মোঃ ফারুক
14	[illegible]	M		[illegible]
15	মোঃ [illegible]	M	[illegible]	[illegible]
16	[illegible]	M	[illegible]	[illegible]
17	Tofazzal Hossen	M	Safeguard officer DESWSP, DWASA.	Hossen

Matikata (Pump No.2) Water pump, Cantonment Thana, Dhaka**.**				
SL No.	Date and Venue	Participants Discussion	No. of Participants	Project Response
03	27/08/2020 Matikata (Pump No.2) Water pump, Cantonment Thana, Dhaka**.**	At the meeting the suggestions of the participant's for implementing pipe line construction: -Mud / soil cannot be left around the construction site. -Public will get water regularly that they did not get before. --Water problem should not be made for the pipe line construction work. -It should not be problem of public movements/transport. -Where there is a risk for the construction work fence should be provided by contractors. - The participant's expects that they will not be harassed for the construction work. - The participant's thinks that the Government is doing this pipe line construction work for their benefit.	22	WASA Representative informed: - The waste soil will be removed from the narrow roads immediately and from the wider road within 24 hours. - Ensuring 24 hour water supply with sufficient pressure. - There should be put an enclosure covers the trenches - Barricades will be put up around the work site during construction work. - Planks will be used for as bridge entering houses. - Ensuring sufficient water supply.

Focus Group Discussion (FGD)/Consultation Meeting

Attendance Sheet

Venue : Mathkata (Pump No.2) Water Pump. Dhaka Cantonment. Dhaka. Replacement water pump.

Date : 27.08.2020

Sl. No	Name	M - F	Contract No/Address	Signature
1.	Md. Sridur Rahman	M	01715149604	
2.	Md. Sagor Dar	M	01718 930202	
3.	[illegible]	M	[illegible] Dhaka Cant. Dhaka	
4.	[illegible]	M	"	[illegible]
5	[illegible]	M	"	[illegible]
6	[illegible]	M	"	[illegible]
7	[illegible]	M	"	[illegible]
8	[illegible]	M	"	[illegible]
9	[illegible]	M	"	[illegible]
10	[illegible]	M	"	[illegible]
11	[illegible]	M	"	[illegible]
12	[illegible]	M	"	[illegible]
13	[illegible]	M	"	[illegible]
14	[illegible]	M	"	[illegible]
15	[illegible]	M	"	[illegible]
16	[illegible]	M	"	[illegible]
17	[illegible]	M	"	

Focus Group Discussion (FGD)/Consultation Meeting

Attendance Sheet

Venue :

Date : 27.08.2020

SL No	Name	M - F	Contract No/Address	Signature
18	মোঃ আব্দুল্লাহ	M	North Matikata Dhaka Cant. Dhaka	[signature]
19	মোঃ শাহীন	M	"	শাহীন
20	মোঃ মাসুম	M	"	মোঃ মাসুম
21	মোমেন হাসান	M	01622-975853	[signature]
22	Tofazzal Hossen	M	01745421948	[signature] 27.08.2020

Mirpur 11-C (Ave-5) Water Pump, Dhaka				
SL No.	Date and Venue	Participants Discussion	No. of Participants	Project Response
04	06/09/2020 Mirpur 11-C Water Pump, Dhaka	At the meeting the suggestionsofthe participant's for implementing deep tube well installation was taken. The participant's only demand was to get to get water. The participants expressed the need to install the tube wells within the schedule time. The participants suggested that safety fences/barricades should be put around the work site to prevent children from going to the construction site.	19	WASA Representative informed: - The waste soil will be removed from the narrow roads immediately and from the wider road within 24 hours. - old line will be disconnected after establishing new supply line - adequate measure will be taken to reduce sound pollution. - barricades will be put up during construction work. - planks will be used for as bridge entering houses. - project will ensure sufficient water supply

Focus Group Discussion (FGD)/Consultation Meeting

Attendance Sheet

Venue : Mirpur-11 C-ooaten Pump (Ave: 5), Dhaka.

Date : 06.09.2020

SL No	Name	M - F	Contract No/Address	Signature
01.	Md. Saidur Rahman	M	01715149604	
02.	Mst Rokeya Begum	F	01843642888	
03.	Rabey Khatun	F	01811812563	
04.	Rubel	M	11/e, Ave-5	
05.	Faruk	M	11/e-Ave-5	
06.		M	11/e. Ave-5	
07	Rana	M	11/e-Av-5	
08.	Alamgir	M	11/e -Av-5	
09	Sangita	F	11/e -A-5	
10	Mst Mafia	F	11/e -A-5	
11	Halima	F	11/e A-5	
12	Lutfor Rahman	F	11/e -A-5	
13	Rasel	M	11/e-Av-5	Rasel
14	Khademul	M	11/e-Av-5	
15	md. Saboj hossain	M	11/e Av-5	
16	Md. Ziyaul Haque	M	11/e AV-5	
17	Md. Rashedul Islam	M	11/e Av-5	Rashed

Focus Group Discussion (FGD)/Consultation Meeting

Attendance Sheet

Venue : Mirpur 11-C, water pump (Ave! 5), Dhaka.

Date : 06.09.2020

SL No	Name	M - F	Contract No/Address	Signature
18.	Mehedi Hasan	M	01558-662120	6-9-2020
19.	Tofazzel Hossen	M	Safeguard officer (S&H), DESWSP, DWASA.	06.09.2020