



# Resettlement Planning Document

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Project Number: 42266-023  
March 2017

## IND: Kolkata Environmental Improvement Investment Program - Tranche 1

Subproject : Micro Tunneling work on Pressure Main between Santoshpur MPS And Garden Reach STP – (TR-1/ SD 06)

Submitted by

The Kolkata Municipal Corporation (KMC)

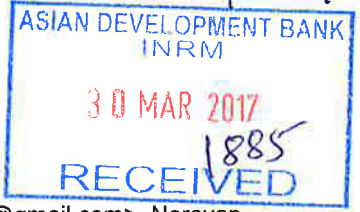
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**Asian Development Bank**

RUS

fw logging ps  
PKM/SM.



---- Forwarded by Sourav Majumder/INRM/ADB on 29/03/2017 04:48 PM ----

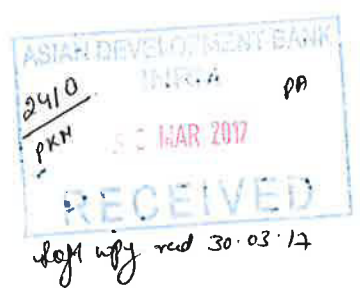
From: "Md. Ghulam Ali Ansari" <pdkeip@gmail.com>  
To: smajumder <smajumder@adb.org>  
Cc: Soumya Ganguly <soumya6@yahoo.com>, kali ghosh <kalisankarghosh@gmail.com>, Narayan chandra Mondal <ncmcs@yahoo.in>  
Date: 29/03/2017 04:44 PM  
Subject: Re: Fw: Land Acquisition and Resettlement Due Diligence Report For Tranche-1 packages

Dear Sourav,

As desired, kindly find the final DDR for the package SD06 and SD07 under Tranche-1, KEIP for your information and necessary action.

With best wishes,

Md. Ghulam Ali Ansari, IAS  
Project Director  
Kolkata Environment Improvement Investment Programme  
Kolkata Municipal Corporation  
Kolkata



## **CURRENCY EQUIVALENTS**

(as of 15 February 2016)

Currency unit	=	Rupee (INR)
INR 1.00	=	USD 0.01468
USD 1.00	=	INR 68.1092

## **ABBREVIATIONS**

ADB	-	Asian Development Bank
BPL	-	Below Poverty Line
DH	-	Diamond Harbour Road
DWF	-	dry weather flow
GAP	-	Ganga Action Plan
IR	-	Involuntary Resettlement
KEIP	-	Kolkata Environmental Improvement Project
KEIIP	-	Kolkata Environmental Improvement Investment Program
KMC	-	Kolkata Municipal Corporation
MFF	-	Multi-tranche Financing Facility
NOC	-	No Objection Certificate
ROW	-	Right of Way
SSE	-	South Suburban East
SWF	-	storm water flow

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## I. INTRODUCTION

### A. Background

1. The city of Kolkata is the seventh largest metropolis in India, and had 4.5 million residents in 2011. The continuous improvement in the city's urban environment is necessary to increase labor productivity through better health status of the urban population, especially when it has been experiencing lower population growth. There have been, however, geographical disparities in access and quality of the water supply and sewerage services, because the Kolkata Municipal Corporation (KMC), an urban local body with a mandate to provide these services under the KMC Act (1980), has an aging water supply system, and has inadequate sewer coverage in the city's peripheral areas.

2. The Asian Development Bank (ADB) loans have assisted KMC in the expansion of the sewerage coverage through the Kolkata Environmental Improvement Project<sup>1</sup> (KEIP) since 2000. The Kolkata Environmental Improvement Investment Program (KEIIP) will help KMC not only to continue sewer network expansion on a greater scale, but also to gradually improve efficiency in water supply operations, which will enable KMC to generate operating surplus for capital investment in water supply and sewerage.

3. KEIIP is a continuation of the KEIP. It is envisaged that KMC will implement the investment program in three projects, in phases. The first project under the investment program will be considered the second phase of the KEIP. Likewise, the second and the third projects under the investment program will be the third and fourth phases of the KEIP. The proposed investment activities under the investment program will include: (i) water supply, including pumping and transmission system, and (ii) sewerage and drainage (S&D), including dry weather flow (DWF) and storm water flow (SWF), pumping stations and sewage treatment plants (STPs). The investment program will be financed by a multitranche financing facility (MFF).

4. The proposed construction and operation of infrastructure will bring about improvement in environmental conditions in and around each project area under the investment program, but such improvement may be associated with some adverse impacts on the local inhabitants, including loss of land, (temporary) loss of livelihood, etc. The ADB requires the consideration of social safeguard issues in all aspects of its operations, and the requirements for involuntary resettlement are described in The ADB's Safeguard Policy Statement (SPS), 2009.

## **A. Scope of this Report**

5. This land acquisition and resettlement due diligence report is prepared for the proposed Micro tunneling work on Pressure Main between Santoshpur MPS and Garden Reach STP. Improvement of sewerage & drainage (S&D) system for portion of Garden Reach area (Borough XV) and contiguous Maheshtala Municipality was within the scope of this project. It is a historical fact that vast areas of Garden Reach and Maheshtala Municipality were prone to frequent and prolonged flooding. One of the prime objectives of The KEIP was to minimize water logging and flooding in the area and also to treat the dry weather flow (DWF) prior to disposal to natural water courses. Under KEIP, suitably designed sewerage & drainage (S&D) networks were developed to meet the above objectives.

6. A due diligence process was conducted to examine the land acquisition and resettlement issues in detail, in line with ADB SPS 2009. This report describes the findings and provides copies of relevant documents, resolutions, minutes of meetings and photographs. This land acquisition and resettlement due diligence report needs to be considered along with the Resettlement Framework prepared for KEIP.

7. This Due Diligence report is prepared post sub-project implementation, on the basis of the recommendation made by the Asian Development Bank Project Review Mission Sept 2016.

## **II. SUBPROJECT DESCRIPTION**

8. The pressure main between Santoshpur main pumping station and Garden Reach sewerage treatment plant was planned to be constructed as part of the KEIP project, but could not be taken up. It is the only missing link in a system that is otherwise completely operational after completion of KEIP. Construction of this sewer main will ensure that the S&D system constructed by the KEIP in this area will become fully operational, and all anticipated benefits will be achieved. In view of the difficult site conditions, the construction will be by micro-tunneling with only two entry pits.

9. One of the key components of the work was to lay a pumping main from the newly constructed Santoshpur Pumping Station (SPS) under KEIP to Garden Reach Sewage Treatment Plant (STP) for a length of about 1130m to convey the DWF generated from Garden Reach and Maheshtala area. This required crossing of the Sealdah - Budge Budge railway line and also Santoshpur Road, beneath which runs a number of large sized water supply mains, gravity sewers, and high tension power cables etc. and are hence difficult to relocate. Moreover, a large slum area exists adjacent to the railway line, which needs to be negotiated in order to lay the pumping main. Due to the presence of all such constraints, the work of pipe laying for the

initial 525m (from SPS) was found to be extremely challenging. Attempts were made to identify suitable routes for laying of the pipe from SPS to the STP by conventional open cut method for this portion. No such route could be identified and laying of the pipe using Trenchless Technology was found to be the only choice.

10. The route through which the pipeline has been laid passes underneath the low lands/ swampy areas, Santoshpur Road and railway lines. Due to access difficulty, it was hard to construct intermediate shafts required for pipe driving; hence the pipeline was laid adopting micro-tunneling method (trenchless technology). Considering the constrained accessibility, presence of roads, railway line, and ponds along the route of pipe laying (Government Land), a single long drive was the best choice with jacking/ reception shafts at the two ends. The pipeline laid under the low and swampy land belongs to Kolkata Metropolitan Development Authority (KMDA), which provided written permission to carry out the work as stated in the sub-project (TR1/ SD06); letter from KMDA is enclosed in **Appendix 1a** and **Appendix 1b** showing the mouza map through which the pressure main passes. The railway authority too provided permission for the same; letter provided in **Appendix 1c**.

**Table 1: Location of Subproject Components and Number of Beneficiaries**

Component	Description	Municipality and Ward No.	Location of Subproject Component
Pressure main between Santoshpur main pumping station and Garden Reach STP side (PackageSD06)	650 m length located within Maheshtala municipality. The pressure main is designed as an 800 mm-diameter HDPE sewer of 580 m length.  Construction of this sewer main will ensure that the S&D system constructed by KEIP in this area will become fully operational, and all anticipated benefits will be achieved.	Serves the population of KMC Borough XV in Hooghly and Garden Reach basins.	The largest section (525 m) is to be constructed by micro-tunneling in a casing pipe passing under a busy railway line and highly populated slum area.  In view of the difficult site conditions, the construction will be by micro-tunneling with only two entry pits, of which one will be within the premises of Santoshpur pumping station. The other will be located in a waterlogged area on Kolkata Metropolitan Development Authority land.

**Table 2: Package – TR-01/SD 06 - Laying of Sewage pressure main from Santoshpur MPS to Garden Reach STP by Micro-tunneling method**

<b>Major Project Component</b>	<b>Laying of Sewage pressure main from Santoshpur MPS to Garden Reach STP ( Length – 539 m)</b>
Coverage	Part of Borough XV & part of Mahestala Municipality
Purpose	To convey Wastewater to Garden Reach STP for treatment
Status	<b>Physical Progress - 100 %</b>
Completion date ( Tentative)	<b>Project completed on 21.05.2016</b>

### III. FIELD WORK AND PUBLIC CONSULTATION

#### A. Outline of Field Work

11. Field inspections were carried out at the proposed sub -project site location and its adjoining areas. Stakeholder consultations were also conducted. Inspections and transect walks were carried out along the entire stretch of Micro Tunneling activities and major pit locations of the sub project areas.

#### B. Public Consultations

12. Consultations were undertaken with key stakeholders in line with ADB’s requirements pertaining to environmental and social considerations. The key tool used for consultation was stakeholder meetings. As mentioned earlier in this report, this sub-project was planned under KEIP and subsequently consultations were undertaken during that phase. However a follow-up consultation was undertaken with the members of the adjacent community who will benefit due to the project implementation. These consultations helped to understand how much hopeful the people are regarding the sewerage line that may resolve the long standing problem of water logging in the area. Discussions were held with people residing adjacent and/or having businesses near the subproject locations. The communities willing cooperated during project implementation. List of participants is provided in **Appendix 2**.



**Table 3: Summary of Stakeholder Consultation**

Date	Location	No. of Participants				Status of Participants	Key Discussion
		Male	Female	Female %	Total		
14.01.2016	Solobigha	10	12	55%	22	<p>Male: daily labours, rickshaw pullers, vegetable vendors, small shopkeepers</p> <p>Females: housewives</p>	<ul style="list-style-type: none"> <li>➤ Representatives of KEIIP explained about the work to be undertaken and how it is to be implemented</li> <li>➤ Duration of the project implementation was shared and it was also told that their daily activities will not be affected.</li> <li>➤ Community people expressed their happiness about the project as they will be relieved from water logging problems especially during monsoon season.</li> <li>➤ They promised full co-operation in the implementation phase and said that the work that was undertaken is being properly carried out.</li> </ul>

#### **IV. LAND AVAILABILITY**

##### **A. Laying of Pressure Main**

13. The laying of Sewer Lines under the subproject TR1/SD 06 ,Santoshpur-Garden Reach Pumping Main, did not have any resettlement impacts.. As per the design, the HDPE transmission pipe (of 800 mm OD) is encased within an RCC casing pipe (1500- 1800mm ID) as per the requirements of the railway authority. This stretch is about 0.5 km long and is constructed by a single long drive of about 525 m with jacking / receiving shafts at both ends. One of the receiving shafts is within Santoshpur PS premises owned by KMC. The location of the other jacking shaft is in a swampy area on KMDA land; KMC received permission from KMDA to undertake sub-project work. The shaft area is low lying and water filled during most parts of the year and had to be adequately dewatered to serve the purpose.

14. The laying of the Sewer Lines by Micro Tunneling method has no structural impact due to the civil works related to pipe laying. Construction of Micro Tunneling Pits within the subproject area has been carefully planned to minimize disturbance.

15. The engineering designs have been adopted in such a way that it ensures routing of the sewer pipelines through government plots and public road RoWs, thereby having no impact on access and livelihood opportunity for the local community. Pressure main between Santoshpur main pumping station and Garden Reach STP is 650 m in length. One of the micro-tunneling pits is located within the Santoshpur STP, and the other jacking shaft is on KMDA land.

**Figure 1: Google Earth Map depicting laying of proposed Micro Tunneling work on Pressure Main between Santoshpur MPS and Garden Reach STP**



## V. CONCLUSION

### A. Summary and Conclusion

16. Based on the design optimization and adaptation of appropriate mitigation measure during laying of sewer pipelines, there were no involuntary resettlement impacts.

### B. Handed over

17. The project has been completed on 21<sup>st</sup> May, 2016 and handed over to the competent authority on 22<sup>nd</sup> May, 2016 . As per Handing / Taking over certificate (annexed) the defect liability period started from 22<sup>nd</sup> May, 2016 and will remain enforced till 21<sup>st</sup> May, 2017. Handing/Taking Over Certificate is enclosed in **Appendix 3**.

**Photographs depicting laying of Micro Tunneling work on Pressure Main  
between Santoshpur MPS and Garden Reach STP**



Reinforcement binding in curb in JackPush (Garden Reach)



First lift of JackPush Wall (Garden Reach)



Shuttering of curb in JackPush (Garden Reach)



Concreting of R.P. Wall (Santoshpur)



Inside view of well (Santoshpur)



Total JP area (Santoshpur)





Work in Progress in Garden Reach



Work in Progress in Santoshpur



Final Micro-tunneling pipeline



STP



Jacking Pit





Sewage main at Santoshpur P.S

**Photographs of Community Consultation at Solabigha on 14.01.16**



Appendix: 1a

SCANNED COPY OF NO OBJECTION LETTER ISSUED BY KMDA IN FAVOUR OF KEIP

**Kolkata Metropolitan Development Authority**  
Prasharan Bhawan, Plot No. DD-1, Sector - 1  
Bidhannagar, Kolkata - 700 004

No: 520 /KMDA/LAWS-20(A)      Dated: 16/03 /2012.

From: The Joint Secretary (L.A.),  
KMDA,

To : The Project Director,  
K. E. I. P.  
V/6, A.P.C. Dose Road,  
Kolkata-700017.

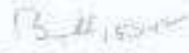
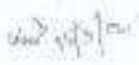
Sub: - Laying of underground pressure main between Garden Reach S.T.P. and  
Sainisapur M.P.S. micro-tunnelling technology under KEIP.


Ref: - Your letter No. PMU/997/2011-12 dated- 25/02/2012.

Sir,

With reference to above, I am directed to inform you that you are permitted to take up the above work in per your original alignment as shown in the enclosed drawing marked A to B in red wash.

Encl:- As stated.

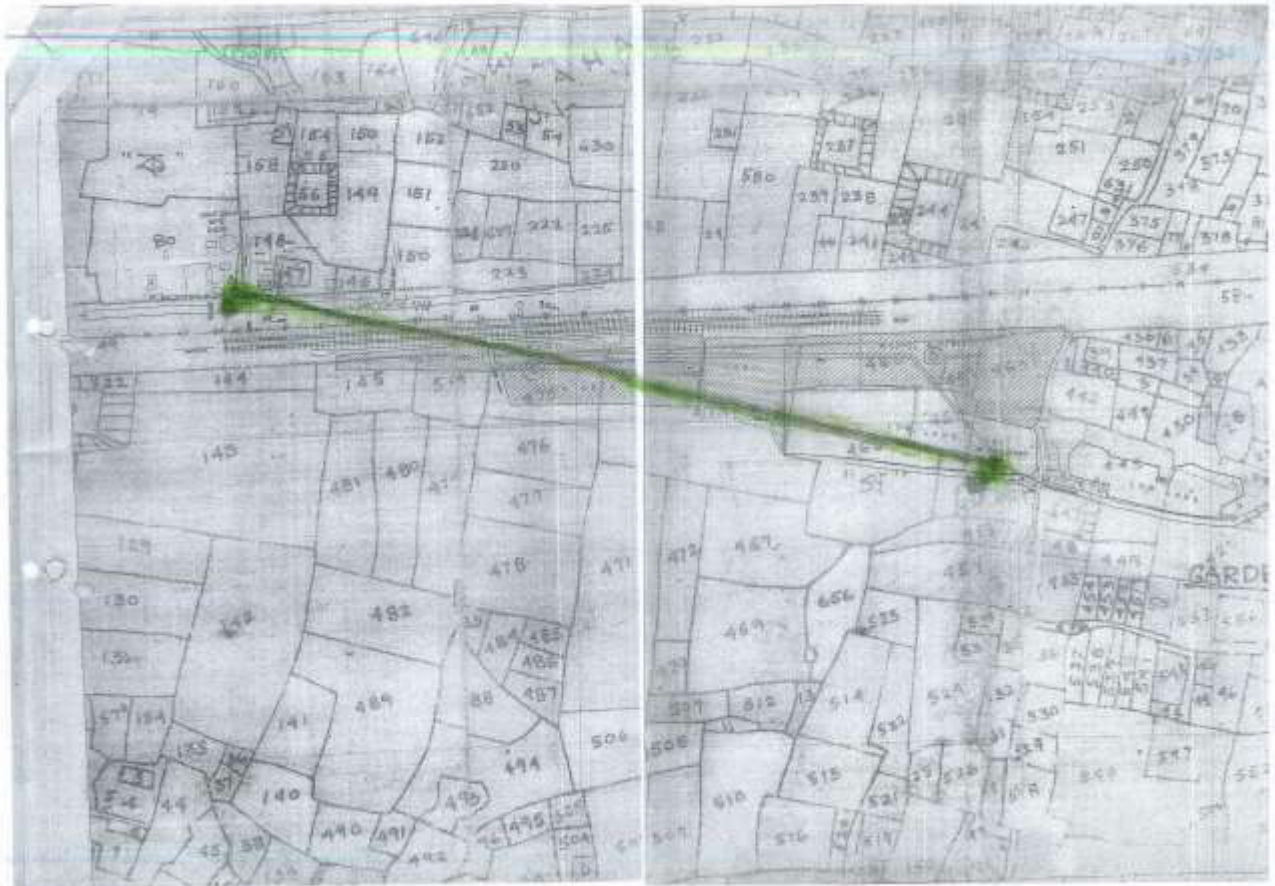
Yours faithfully,  
  
Joint Secretary (L.A.),  
KMDA.  






Appendix 1b

Pressure Main between Santoshpur MPS and Garden Reach STP laid on Mouza Map



**PERMISSION OF RAILWAY AUTHORITY FOR MICRO TUNNELLING WORK OF SD – 06**

**RITES**  
THE INFRASTRUCTURE PEOPLE  
AN ISO 9001 COMPANY

SD-06

(A Corp. of India Enterprise)  
**MITES LTD.**  
(A Corp. of India Enterprise)  
Ministry of Railways

No: RITES/RPO/KOL/KEIP-Santoshpi/Pipe Pushing/2013-14/237  
Date: 22.05.2015

396  
[Signature]  
[Stamp]

To  
The Director General (Projects)  
The Kolkata Environmental Improvement Investment Program  
204, P.J.C Bose Road  
Kolkata-700017

Dear Sir,

Sub: Execution of Micro Tunnelling Work under Railway Tracks in between GME Blast No. 15 to 16, 17th Floor, Station of Railway Station of Santoshpi Super Bypass under the West of KMP Colony (Railway) - Stage CRS Station.

Ref: DDA File No. 118/2010/12-14 dated June 14, 2012

In connection with the sanctioned ground work, which has been attached herewith, one copy of sanctioned plan from the Commissioner of Railway Safety, Eastern Circle, Kolkata, for your kind information please.

Thanking you,

Yours faithfully,

[Handwritten notes and signatures]

[Signature]  
M. Halder  
Jt. General Manager (C)

DA: One sanctioned copy of CRS/Eastern Circle, Kolkata

D30/KEIP  
1261  
RECEIVED  
26/5/15

TL/DSC  
TLW  
D. G. (P)  
For information PL  
26/05/15 D. G. (P)  
[Signature]

वी.पी.ए. कॉन्सल्टिंग प्राइवेट लिमिटेड, कोलकाता, वेद - एन.ए.सी. बिल्डिंग (बिपीएम वॉर्क), 5C, सी. एन. रोड, कोलकाता-700 012  
REGIONAL PROJECT OFFICE, KOLKATA, INDIA RAILWAY SERVICE BUILDING (RPO) PL 204, P. J. C. BOSE AVENUE, KOLKATA-700 017  
CORPORATE OFFICE: RITES THRYWAN NO. 1, SECTOR-35, BURDWAN - 713001 (INDIA)  
ग्राम - टेलीफोन: 0332-251148, 249, फ़ोन: 033- 2871840  
वेबसाइट: www.rites.com


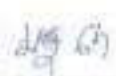



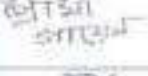
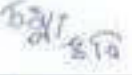

## Appendix 2 List of Participants

Participants' List

Date: 19.1.16.

At 2:00PM.

Name of place and Ward Number: Solabigha, Ward: 9 and 10

Serial No.	Names of participants	Contact No. (if any)	Signature
1.	Jolly Dutta	9830469312	
2.	Hanjan Dey	8337067070	
3.	Rakha Bose	9331952505	
4.	Seema Bose	9933778327	
5.	Ratan Das	—	
6.	Banu Mondal	9593774936	
7.	Prona Gayen	—	
8.	Swapna Palit		
9.	Champa Dholi		
10.	Ajay Mondal		

11.	Swati Mondal.		স্বাতি মন্ডল
12.	Pan Krishna Naskar.		পানকৃষ্ণ নাস্কর
13.	Swapan Pal.		স্বপন পাল
14.	Kausrayan Pal.		কাসুরয়ান পাল
15.	Haripada Sarda		হরিপদ সর্দা
16.	Bapan Pal.		বাপন পাল
17.	Puja Barui		পূজা বারুই
18.	Sandhya Naskar.		সন্ধ্যা নাস্কর
19.	Kalati Haldar.		কালতি হালদার
20.	Jumpa Sarda.		জম্পা সর্দা
21.	Protina Ray.		প্রতিনা রায়
22.	Khokan Das		খোকন দাস

**Appendix: 3**  
**HANDING / TAKING OVER CERTIFICATE OF SD – 06**

KOLKATA ENVIRONMENTAL IMPROVEMENT INVESTMENT PROGRAM

HANDING/TAKING OVER CERTIFICATE

Name of Work : Micro-tunnelling works on Sewage Pressure Main from Santoshpur Pumping Station to Garden Reach Sewage Treatment Plant (Kolkata Environmental Improvement Investment Program)

Package No. : SD-06

Contract No. : KEIIP/NCB/TR-1/SD-06/2013-14

Contract Price (Rs) : Rs. 223,111,250.00 (Rupees Two hundred Twenty Three Million, One Hundred Eleven Thousand, and Two Hundred Fifty Only)

Revised Contract Price : Rs. 256,545,185.00

Actual price of works completed (Rs) can be ascertained after settlement of Final Bill.

1. In accordance with Clause 10.1 General Condition of Contract no. KEIIP/NCB/TR-1/SD-06/2013-14, it is hereby certified that the works have been completed and passed the tests on completion. The completed works are listed in Annexure-4 with as built drawing attached with this certificate. The works were carried out by M/S Simplex Krita JV as contractor under Contract Agreement no. KEIIP/NCB/TR-1/SD-06/2013-14 and the works were accordingly taken over by the Employer with effect from ..... (taking over date).
2. As per conditions of the Contract the defect liability period started from 22.05.2016 and subjected to clause 11.1 of General Condition of Contract this period shall expire on 21.05.2017.....
3. The item/works which are to be corrected/rectified, the Contractor is instructed to complete or correct as per requirement as directed by Engineers/Employer. The Contractor shall rectify defects if any when called for within defects liability period.

Signed by Engineer : *[Signature]*  
 Date : *[Signature]*  
 Construction Manager  
 DSC-KEIIP

Signed by Contractor : *[Signature]*  
 For M/S Simplex Krita JV.  
 Date : *[Signature]*

Taken over on behalf of Employer (KEIIP)  
 Date : *[Signature]*

Taken over by KMC  
 (S/M Provision)  
*[Signature]*  
 01.06.17



- Appendices:
1. Test Certificate of DWF Pumps
  2. O&M manual of DWF Pumps
  3. SLD /Scheme for Junction Kiosk for DWF Pumps
  4. Handing over / taking over document

Executive Engineer (E)  
 BDPS / S&D, K.M.C.

- Annexure - 1
- Annexure - 2
- Annexure - 3
- Annexure - 4

To DSC  
 For info  
*[Signature]*  
 02/06/16

TLDSC  
 Thru  
 P. S. K. S.

For your information  
 & record pt.

*[Signature]*  
 02/06/16

*[Signature]*  
 02/06/16

*[Signature]*  
 02/06/16





## FINAL INSPECTION REPORT FOR SUBSTANTIAL COMPLETION OF WORK

1. Work Package No. : SD-06
2. Contractor : M/S Simplex Krita JV.  
Address : 27, Shakespeare Sarani,  
Kolkata-700017  
West Bengal
3. Description of Work Package : Kolkata Environmental Improvement Investment Program,  
Micro-tunnelling works on Sewage Pressure Main from  
Santoshpur Pumping Station to Garden Reach Sewage Treatment  
Plant.
4. Contract No. : KEIIP/NCB/TR-1/SD-06/2013-14
5. Dates of final Inspection : 28/04/2016
6. Inspection done by :

	Name	Designation
1.	Mr. S. Das	Dy. CE (P)-II, KEIIP/KMC
2.	Mr. A. Roy	Executive Engineer (C), KEIIP/KMC
3.	Mr. S. Das	Executive Engineer (E), BDPS/KMC
4.	Mr. D. N. Dolui	Assistant Engineer (C), KEIIP/KMC
5.	Mr. S. Paul	Assistant Engineer (E), BDPS/KMC
6.	A.B. Ray	Assistant Engineer (M), BDPS/KMC
7.	Mr. D. Sengupta	Construction Manager, DSC/KEIIP
8.	Mr. A. Chakraborty	Procurement Specialist, DSC/KEIIP
9.	Mr. S. Shaw	Dy. Manager, Simplex-Krita JV

7. Location :

Sl No.	Deliverables
i.	Sewage pumping main (MS-HSAW) 750 mm. ID. Inside 1800 mm. ID. RCC tunnel laid by Micro-tunnelling method. from Santoshpur Pumping Station to Garden Reach Sewage Treatment Plant alongwith allied works



KOLKATA ENVIRONMENTAL IMPROVEMENT INVESTMENT PROGRAM  
SD-08 (Contract No. KEIIP/NCB/TR-1/SD-06/2013-14)

Annexure - 4

Handing Over/ Taking Over Document for Micro-tunnelling works on Sewage Pressure Main from Santoshpur Pumping Station to Garden Reach Sewage Treatment Plant

Sl no	Item Description	Details/Remarks
<b>A. Documentation for Mechanical Installation</b>		
Sl no	Item Description	Details/Remarks
1	Pumps -> Capacity, Head, RPM, Type, Make, O&M manual, Test report.	Submersible motor sewage pump: 588 cum/hr at 19.1 m; KSB make; 1450 RPM; O&M manual and test report enclosed
2	Essential spare list of pumps ->	Lift of spares enclosed alongwith the O&M manual
3	Valve -> Inlet/Outlet Specification, Type, Make, O&M manual.	Rising spindle type gate valve, Kajriwal make; valve at delivery of pumps and common manifold at the STP manifold
4	Screening arrangement -> Specification, Type, Make, O&M manual.	Mechanical Screen -1 no-1250 mm width, Votas Ltd make; Manual screen -1 set (2 nos) 1250 mm fabricated locally with motorised lifting arrangement; Conveyor arrangement covering the width of the mechanical and manual screen
5	Gate -> Inlet/Outlet - Size, Make, Type.	600mm X 600 mm -4 nos; Madson make complete with thimble and headstock
6	Level Indicator -> Specification, Type, Make, O&M manual.	Manual Level indicator
7	Crane -> Detail specification, Mode of travel.	2.0 MT Chain Pulley Block with geared travelling trolley.
<b>B. Documentation for Electrical Installation</b>		
1	Motor -> Details of Motor, rated KW, rated current, starting current, rpm, O&M manual, type, make.	Submersible motor directly coupled with pump, 48 KW rating, Rated current - 92 Amps, Starting current - 194 Amps(star delta starting), Protection -IP65, Insulation class -Class F NA, Existing transformer
2	Transformer -> KVA rating, Input/Output current, Inlet/Output voltage, make, type, cooling type.	LT Panel floor mounted, non drawal type complete with microprocessor based MOCB 50 KA rating with O/L, S/C & E/R protection; make of Panel - Electro Alted Products; Drawing of LT Panel enclosed
3	Switchgear -> Low volt / High volt, Current rating, CT/PT Ratio, Voltage grade, Making and Breaking capacity, make, type, Protective-relay detail, O&M manual.	Panel enclosed Included in LT Panel
4	Starter -> Voltage grade, rated current, make, type, O&M manual.	

*[Handwritten Signature]*  


Sl no	Item Description	Details/Remarks
5	Capacitor bank :- Rating, make, type, O&M manual.	5 sets 15KVAR rating, GE make, square cap type type -dielectric MPP type complete with APFC relays ; O&M manual enclosed
6	Battery bank :- Rating, make, type of cell, type of electrolyte, no. of plates, detail of charger.	NA
7	Earthing :- Detail of drawing indicating location of earth pit and earthing distribution system. Earth resistance test report for each pit.	NA
8	Fire extinguisher :- Make, type, quantity.	5.0 kg capacity fire extinguisher (Dry chemical type) - 2 nos.
9	Insulating rubbermat :- Dielectric withstand ability.	As per I.E rules
10	Cable :- HT/LT - Rating, insulation grade, voltage grade, type, make.	1.1 KV Grade XLPEA Aluminium cable
11	Control and Power Circuit Diagram :-	Single Line drawing for Power and control circuit diagram of LT Panels and Junction Box Kiosks enclosed

As built drawing enclosed



Contractor : M/s Simplex Kios JV

Sample of Test Certificates enclosed

<p>Checked and Accepted by</p> <p><i>[Signature]</i></p> <p>Construction Manager DSC-KEIP</p>  <p><i>[Signature]</i></p> <p>CMU, KEIP</p> <p>Executive Engineer / K.M.C.</p>	<p>Received by</p> <p><i>[Signature]</i></p> <p>Executive Engineer</p>  <p><i>[Signature]</i></p> <p>Executive Engineer / BDPS / S&amp;D, K.M.C.</p> <p>BDPS, K.M.C.</p>
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