Form 5 - A : Experience Summary of the Key Personnel for the Project

Name of Applicant or Partner of a Joint Venture

Position		Candidate
Candidate information	1. Name of candidate	2. Date of Birth
	3. Professional qualifications	
Present Employment	4. Name of Client	
	Address of Client	
Telephone	Contact (Manager/Personnel Officer)	
Fax	Telex	
Job title of candidate	Years with present employer	

Summarize professional experience over the last 20 years in reverse chronological order. Indicate particular technical and managerial experience relevant to the Project.

From	To	Company/Project/Position Relevant Technical and Management experience

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Chief Executive Officer
Guwahati Metropolitan Dev. Authority

Form 6: Equipment Proposed for the Project

Name of Applicant or Partner of a Joint Venture

Submit the following information for equipment owned by the Applicant or partner.

Item of Equipment Equipment Information	1. Name of manufacturer 2. Model and power rating
	3. Capacity 4. Year of manufacture
Current Status	5. Current location
6. Details of current commitments	
Source	7. Indicate source of the equipment
	o Owned o Rented o Leased o Specially manufactured

Submit the following information for equipment hired/leased by the Applicant or partner.

Owner	8. Name of Owner
	9. Address of owner
	Telephone Contact name and title
	Fax Telex
Agreements	Details of rental/lease/manufacture agreement specific to the Project

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1. List the key equipment for construction, standby power, material handling, transport vehicles, etc., which the firm proposes to use for the proposed works.
2. The applicant should clearly demonstrate that he has access to all key equipment (mentioned in the Instruction to Applicants) which will be required for the successful completion of the works.
3. Provide an overall summary, and use separate sheets to describe each major equipment item.

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Guwahati Metropol itan Development Authority

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Guwahati Metropolitan Dev. Authority

Form 7: Financial Capability

Name of Applicant or Partner of a Joint Venture

Banker Name of Banker

Address of Banker

Telephone Contact Name and Title

Fax Telex

Financial information in equivalent Million Rs.	Actual: Previous three financial years 2005-06	2006-07	2007-08
1. Total assets			
2. Current assets			
3.Total liabilities			
4.External liabilities including Contingent liabilities provided for			
5. Current liabilities			
7. Profits before taxes			
8. Profits after taxes			
9. **Net worth**			
10. **Working Capital**			

(Specify the sources of credit line to meet the cash flow demands of the Project)

Source of financing Amount (Rs. equivalent.)

1.
2.

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1. Applicants, including each partner in a joint venture, should provide financial information to demonstrate that they have access to adequate financial resources to meet the cash flow requirements of the proposed works and other existing commitments.

2. Each applicant or partner of a joint venture must fill in the form. If necessary, use separate sheets to provide complete banker information.

3. Copies of the Audited Financial Statements, including Balance Sheets, for the last three years (for the individual applicant or each partner of a joint venture) are to be attached. Firms owned by individuals or partnerships may submit their balance sheets certified by a Registered Accountant and supported by copies of tax returns if audits are not required by the laws of their countries of origin.

4. The financial statement is to be certified by an independent auditor.

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Form 8: Litigation History

Name of Applicant or Partner of a Joint Venture

Year	Award FOR or AGAINST Applicant	Name of client, cause of litigation and matter of dispute	Disputed amount (current value in equivalent Rs.)	Actual awarded Amount (in equivalent Rs.

1. Applicants, including each of the partners in a joint venture, should provide information on any history of litigation or arbitration resulting from contracts executed in the last five years or currently under execution. A separate sheet should be used for each partner of a joint venture.

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Form 9: Worker's health & safety measures proposed at site (24 hours work at site)

1. Photo Identification cards:
2. Hours of working:
3. Shelter for workmen (closer to site) with drinking facility
4. Bathing and toilet facilities
5. Cheap -meal facilities
6. Worker's health insurance
7. weekly health check -up
8. Emergency treatment facility
9. Hospital transfer facility
10. Availab ility of first -aid kit
11. Safety dress materials like
    a. Helmet
    b. Jackets
    c. Gloves
    d. Gumboots where necessary
    e. Waterproofs, when necessary
    f. Florescent jackets
12. Safety Drill – every fortnight
13. Attendance check
14. Security arrangement at site

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Guwahati Metropolitan Development Authority

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Guwahati

SUMMARY SHEET

1. Name and address of Contractor/ Firm:

2. Average Annual turnover for contract works (billings for works in progress + completed) for the last three years (as per Form 2): equivalent Rs. _____ Million per year.

3. Net Worth (as per Sl. No. 9 of Form 7): equivalent Rs. _____ Million.

4. Contingent Liability (as per Sl. No. 4 of Form 7): equivalent Rs._____ Million.

5. Total Value of outstanding works of Current Contract Commitments (as per Form 4): equivalent Rs _____ Million.

6. Relevant experience in works for similar nature and complexity

Details of work	Year of Completion/ Commissioning	Value (in equivalent Rs. Million)

7. Completion/Commissioning Certificates of completed work and Satisfactory Progress Certificates of ongoing works enclosed: Yes / No

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(Signature of the authorized signatory with date and seal)

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ANNEXURE - I

TECHNICAL EVALUATION MARKING

(A) Special Technical Requirement..... Full marks -50

Sl No	Item	% of Total Marks	Marks
1	Technical Proposal – Detail specification and layout plan of Intake System, WTP System, Underground and Service Reservoirs	60	30
2	Design of Technical Format	10	5
3	Testing of Materials with Reference of Relevant Code	10	5
4	Design & Drawing of Formwork– (Refer to Section F Clause 3.9)	10	5
5	Principle of Design– Structural Design with Sketch Drawings	10	5
Total		**100 %**	**50 Marks**

(B) Other Requirement..... Full marks -50

Sl No	Item	% of Total Marks	Marks
1	Experiences in Similar Works	40	20
2	Staff Resources	25	12.5
3	Construction Machineries	15	7.5
4	Financial Criterion like Average Annual Turnover, Net-worth, 3years audited balance sheet & revolving credit facility	20	10
Total		**100 %**	**50 Marks**

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ANNEXURE 2

GENERAL FEATURES OF THE CITY, CLIMATE & HYDROGEOLOGY

Climate

The average temperature is 31.5 °C to 12.5 °C in winters. The monsoon brings heavy rains The city has four well-defined seasons - summer, monsoon, winter and spring. Winter season is from October to March and spring starts from April. Carrying silt with run off from hills is a problem during rainy season.

Topography

The study area is a part of the Brahmaputra basin, with the Himalayan Mountain range in the North and East and Naga-Patkai hill range in the South. The basin merged with the Indo-Gangetic plain in West. Depth of Brahmaputra in Guwahati is about 47m. Width of the basin, within Assam, is 70-80km; Bed slope is very gentle, varying from 4:66000 to 1:99000 and at places the river bed lies below the mean sea level The drainage pattern of the valley is antecedent type. Lateral erosion as well as changes in the faults due to earth-quake causes the river to change its course often,

Litho-strategic Unit	Area (Sq.Km)	%
Valley Fill Deposit	145.21	45.98
Younger Alluvial Deposit	76.39	24.19
Granite Gneiss	68.66	21.74
Older Alluvial Deposit	16.43	5.20
Bar Deposit	6.13	1.94
Flood Plain Deposit	3.00	0.95
Igneous Intrusive	Negligible	Negligible

Hydrogeology

Hydro geologically the area is underlain by two distinct types of formation belonging to Quaternary and Archaean age. The Quaternary formation constitutes the plains adjoining river Brahmaputra and its tributaries and comprises different grades of sand, gravel, clay and silt. These areas widen in the western part of the city.

The Archaean formations constitute the hilly terrain and comprise granite gneiss, schist, granite, amphibolite, pegmatite, aplite and quartz veins etc. as litho units. These hard rocks have undergone weathering up to considerable depths and cap the hillocks with thickness varying from less than a meter to more than 30m. Rest unaltered hard massive formations are fractured and fissured due to tectonic activities over the geological period. The pediments derived from those rocks cover the areas adjacent to hillocks.

Interested bidder may consult " **Technical Report Series: D** " of Central Ground water Board, Ministry of Water Resources, Govt. of India by their own arrangement.

Access to the site / Transportation and communication facilities.

All the sites in plain and most of the sites in hill have good accessibility, however intending bidders should inspect all the sites to have a good knowledge of the accessibility of the sites as well as transportation and communication facilities prior to submit their bid. Uphill and downhill will require pipe support structures and embankment protection.

Facilities and Services provided by the client

The Client will provide all the necessary basic data regarding the project, road network of the concerned areas, top levels of the roads etc.

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ANNEXURE - 3

BASELINE INFORMATION FOR PROPOSED WORK

1.0 **About the project area** : The command area of supply project is on the western part of the South Guwahati City. The project area is within seismic zone–V of India. The arbitrary dividing line of this area from the South Guwahati city is the Fatasil Ambari road from Garchuk to Kumarpara, then along the Mora Bharalu River and upto the River Brahmaputra at Bharalumukh. It covers the major localities like Jalukbari, Ganeshpara, Kamakhya, Azara, Mirjapur, Borjhar, parts of Rani area etc. Some major Educational Institutions located in this area are Guwahati University, Assam Engineering College, Auyurvedic College. The G N B International Airport is also situated in the project area. The approximate area of this west part is 100.95 sq.km. The present population is around 3.00 lacs. The projected population in 2025 and 2040 is 5.83 lacs and 8.96 lacs respectively. The water demand of the project area is 66 mld, 107 mld and 170 mld respectively in the year 2010, 2025 and 2040.

Important Average Ground Levels of certain locations of the city are tabulated below .

Important Locations	**Average Ground Levels (in meters)**
Intake(near Pandu)	
HFL	+ 50.0 m
LWL	+ 35.0 m
Water Treatment Plant (Sadilapur)	
NGL	+ 48.50 m
FGL	+ 50.50 m
Hill Top Reservoirs	
1. West Kamakhya Hill Top	+ 164.00 m
2. Kamakhya Hill Near Bhubaneswari Mandir	+ 270.00 m
3. Madhav Dev Nagar Hill Top	+ 136.00 m
4. Fatasil Ambari Hill	+ 140.00 m
5. Durga Sarovar Hill	+ 204.00 m
6. G U Hill Top	+ 130.00 m
Elevated Service Reservoir	
1. Mirjapur	+ 47.0 m
2. Borjhar	+ 47.0 m
General ground levels + 47.00 to 52.00	

2.0 Raw Water Intake Station: The raw water intake station shall be near the bank of River Brahmaputra (at the foot hill of Kamakhya hill near Pandu). The intake shall be suitable structure (Jack well type only). There shall be a provision of pump house and pumping arrangement. The length of raw water pumping main (from Intake station to Treatment Plant) is approximately 3.32 km.

Water Treatment Plant: The water treatment plant will be located in Sadilapur (near Saraighat Bridge ap proach). The capacity of the treatment plant is 107 mld with a provision of future expansion for 170 mld. The treatment plant shall be designed on modular concept. Besides the basic treatment plant components like Pre Settling tank, Aerator, Flash Mixer, Parshall Flume, Flocculator, Clarifier, Rapid Gravity Filter, Clear water reservoirs, pumping stations etc in the treatment plant site, it also includes Administrative Building, Chlorine House, Chemical House, Guard Room etc with all other components as given in schedule of works of financial bid document & in technical bid document.

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ANNEXURE – 4

1.0 DATA SHEETS

DATA SHEET FOR PUMPS

A. HORIZONTAL CENTRIFUGAL PUMP SETS (To be furnished by the Tenderer separately for each group of pumps)

Sl. No.	Description	Data to be filled in by Tenderer
1	Type	
2	Make and model of Pump	
3	Pump operating characteristics	
	a) Rated Capacity of each pump m³/h	
	b) Total dynamic head (TDH) at rated capacity mWC	
	c) Shut off head mWC	
	d) Speed rpm	
	e) Pump efficiency at rated conditions %	
	f) Pump shaft power at rated capacity kW	
	g) Required NPSH mWC	
	h) Type of gland sealing	
	i) Mode of connecting pump to motor	
	j) Directon of rotation	
	k) Impeller diameter (min, rated, max)	
	l) Type of end connection - Suction flange bore - Discharge flange bore - Drilling standard for flanges	
4	a) Type of shaft seal	
	b) In case of external water seal (required water pressure)	
5	Bearings	
	a) Type	
	b) Make	
	c) Quantity provided	
	d) Type of lubrication required	
6	Couplings	
	a) Type	
	b) Make	

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Sl. No.	Description	Data to be filled in by Tenderer
	c) Coupling guard provided or not	
7	Base plate with holding down boltsand nuts provided or not	
8	Companian flanges at suction and delivery o pump included or not	
9	Weight	
	a) Pump	
	b) Base plate/motor stool	
	c) Accessories	
10	Materials of construction of pump components (Indicate the applicable IS/BS/ASTM standard and grade)	
	a) Impeller	
	b) Casing	
	c) Casing ring	
	d) Impeller ring	
	e) Shaft	
	f) Shaft sleeve	
	g) Gland	
	h) Base frame	
	i) Companion flanges	
	j) Bearing	
	k) Suction strainer	
11	Drawing enclosed	
	a) GA drawing	
	b) Catalogue	
	c) Predicted performance curves	
	d) Speed vs torque curve for pump considering open valve operation	
	e) Speed vs torque curve for motor	

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Motor for Horizontal pumpset

Sl. No.	Description	Data to be filled in by Tenderer
1	Application standard	
2	Rated power supply	
3	Voltage variation	
4	Frequency variation	
5	Combined variation	
6	Amibent temp	
7	Relative humidity	
8	Rated kW	
9	Derating factor for rating at 50 ° C over standard continuous motor rating at 40 ° C	
10	Method of starting	
11	Max. permissible winding temp by resistance method	
12	Starting current	
13	Starting torque	
14	Pull out tarque	
15	Motor overload and over speed capabilities	
16	Motor frame size selection	
17	Bearing	
18	Degree of protection	
19	Terminal box	
20	Accessories	
21	Application	
22	Make	
23	Quantity	
24	RATED kW at 500C	
25	Rated spee	
26	Rated kW at 400C S1 duty (kW)	
27	Motor frame size selected	
28	Full load current	
29	Starting current	
30	Motor no load current	
31	Lst/Lr	
32	Tst/Tr	
33	Mounting	
34	Duty cycle	
35	Overload capacity	

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Sl. No.	Description	Data to be filled in by Tenderer
36	Class of insulation	
37	Max winding temperature by resistance method	
38	Direction of rotation	
39	Rated voltage & voltage/frequency variation	
40	Operation at 80% rated voltage for 5 minutes	
41	No. of cycles/hr (equally spread) permissible	
42	No. of cycles/hr (equally) spread permissible	
43	Motor starting torque	
44	Locked rotor torque	
45	Pull up torque	
46	Pull out torque	
47	Degree of protection of motor enclosure	
48	Motor Type & ref. standard	
49	Power factor at no load and full load	
50	Efficiency at no load and full load	
51	Design ambient temperature and relative humidity	
52	Double compression brass cable glands (Qty& Size) as part of motor supply	
53	Space healter	
54	Double shaft extension	
55	RTD's/ BTDs	
56	Weight of motor	
57	Power terminals	
58	Control terminals	
59	No./ cable (AVRY OR AYFY type) size considered for termination	
60	Stator resistance and inductance per phase	
61	Size of Terminal box	
62	Motor GA drg. for the frame selected (To be submitted for each type of motor)	
63	Motor speed torque characteristics curves (to be submitted for each type of motor)	
64	Motor performance characteristics curves (to be submitted for each of motor)	
65	Shear motor overload data/ other to be furnished based on details given by	

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C. VERTICAL TURBINE PUMP SETS

(To be furnished by the Tenderer separately for each group of pumps)

Sl. No.	Description	Data to be filled in by Tenderer
1	No. Of Pump	
2	Mump Make & Model No	
3	Pump operating Characteristics	
i	Rated capacity of each Pump (m ³/HR)	
ii	Total Dynamic Head (TDH) at rated capacity (MWC)	
iii	Range op Operation	
iv	Shut off head (mWC	
v	Speed (Nominal) RPM	
vi	Pump efficiency at Rated conditions (%)	
vii	Pump shaft power at rated capacity (KW)	
viii	Type of Gland sealing	
ix	Type of Connecting Pump to Motor	
x	Direction of Rotation	
xi	Impeller diameter (Min/ rated/ max) mm	
xii	Input at rated capacity and Head for Pump, KW	
xiii	Power input to Motor, KW	
xiv	Motor input Power at Shut off head , KW	
xv	Pump suitable for Parallel Operation YES/NO	
xvi	Motor power requirement due to overbading of pumps in the event of tripping of one Pump in Parallel operation , KW	
xvii	Designed Flow for reverse Flow through the Pump, Cu. m/h	
xviii	Run - away speed of Pump under reverse Rotation, KW	
xix	Thrust Bearing Losses, KW	
xx	Transmission Losses, KW	
xxi	Pump Column losses at design capacity	
xxii	Specific speed, metric Units	
xxiii	No of Stages	
xxiv	Minimum positive Head required	
xxv	Diameter and Thickness of Discharge Pipe	
xxvi	Total Flooded Length with Strainer, mm	
xxvii	Impeller Type and diameter	
xxviii	Impeller shaft diameter and type of Joint	
xxix	Reconnected crane hook height, mm	

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Sl. No.	Description	Data to be filled in by Tenderer
xxx	Max. length of single Piece of Column Pipe, mm	
xxxi	Average Velocity of water through Column Pipe, m/sec	
xxxii	Type of Lubrication	
xxxiii	Type of non-reverse Ratchet and its details	
xxxiv	Size of suction Bowl, mm	
4	Type of End Connection o Discharge Flange Bore mm o Drilling standard for Flanges	
5	Column Length, mm	
6	Type of Shaft seal	
7	Branches Type : Make :	
8	Quantity of Bearing Provided	
9	Type of Lubrication Required	
10	Couplings Type	
11	Base Frame with Holding Down Bolts and Nuts	
12	Companian Flanges	
13	Drawing enclosed	
	a) GA drawing	
	b) Catalogue	
	c) Predicted performance curves	
	d) Speed vs torque curve for pump considering open valve operation	
	e) Speed vs torque curve for motor	
14	Materials of Construction	
	Impeller	
	Casing	
	Casing ring	
	Line shaft	
	Shaft sleeve	
	Gland	
	Base frame	
	Companion flanges	
	Column pipe	
	Suction strainer	
	Impeller lock nut	

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Sl. No.	Description	Data to be filled in by Tenderer
	Wearing rings	
	Impller shaft	
	Line shaft bearings	
	Weight	
	a) Pump Assembly, Kg	
	b) Motor, Kg	
	c) Total Weight, Kg	
	Noise Limits, db at 1.6m distance	

MOTORS OF VERTICAL TURBINE PUMP SETS

Sl. No.	Description	Data to be filled in by Tenderer
1	Make	
2	Rated KW at 5(	°C
3	Rated KW at 4(	°C S1 Duty (KW)
4	Rated Vpltage & System Conditions	
5	Frame size	
6	Class of insulation	
7	Rated Speed & Direction of rotation	
8	FL Current	
9	Operation at 75% rated voltage for 5 minutes	
10	No. of Starts/HR (Equally Spread) Permisible	
11	Locked Rotor Torque	
12	Pull up Torque	
13	Pull Out Torque	
14	Max. winding Temparature by resistance method	
15	Degree of protection of enclosure	

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ANNEXURE – 5

MONITORING SITES WITH FULL BORE WATER METER& DATA LOGER UNIT FOR FLOW & PRESSURE METER

LOCATION OF FLOW METER (IN TRANSMISSION MAINS)

Sl No	Transmission Main Pipe From	To Junction	dia. (in mm)	Flow Meter Dia. (in mm)	No of flow meter Out	In
1	**Raw Water Pumping Main**					
	Intake WTP		1400	1000	1	1
2	**Clear Water Pumping Main**					
	Clear Water Pumping Station at WTP	Junction - 1 (Main Reservoir at Kamakhya Hill)	1400	1000	2	1
3	**Gravity / Boosting Main**					
(i)	Junction - 1 (Main Reservoir at Kamakhya Hill)	Junction - 3 (Distribution Reservoir at Kamakhya Hill)	500	400	1	1
(ii)	Junction - 3 (Distribution Reservoir at Kamakhya Hill)	Distribution	900	700	1	0
(iii)	Junction - 13 (Boosting station for Reservoir at Bhubaneswari Temple)	Junction - 14 (Distribution Reservoir at Bhubaneswari Temple)	250	200	1	1
(iv)	Junction - 14 (Distribution Reservoir at Bhubaneswari Temple)	Distribution	300	200	1	0
(v)	Junction - 1 (Main Reservoir at Kamakhya Hill)	Junction - 4	900	700	1	1
(vi)	Junction - 4	Junction - 5	900	700	1	1
(vii)	Junction - 5	Junction - 6 (Distribution Reservoir at Ganeshpara West)	600	500	1	1
(viii)	Junction - 6 (Distribution Reservoir at Ganeshpara West)	Distribution	500	400	1	0
(ix)	Junction - 5	Junction - 7 (Distribution Reservoir at Ganeshpara East)	750	500	1	1
(x)	Junction - 7 (Distribution Reservoir at	Distribution	500	400	1	0

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Sl No	Transmission Main Pipe From Junction	To Junction	dia. (in mm)	Flow Meter Dia. (in mm)	No of flow meter In	Out
	Ganeshpara East)					
(xi)	Junction - 15 (Boosting station for Reservoir at Ganeshpara Central)	Junction - 16 (Distribution Reservoir at Ganeshpara Central)	450	300	1	1
(xii)	Junction - 16 (Distribution Reservoir at Ganeshpara Central)	Distribution	450	300	1	0
(xiii)	Junction - 4	Junction -8	700	500	1	1
(xiv)	Junction -8	Junction - 9 (Distribution Reservoir at Jalukbari)	600	400	1	1
(xv)	Junction - 9 (Distribution Reservoir at Jalukbari)	Distribution	900	700	1	0
(xvi)	Junction -8	Junction - 10	400	300	1	1
(xvii)	Junction - 10	Junction - 11 (ESR at Mirjapur)	300	200	1	1
(xvii)	Junction - 11 (ESR at Mirjapur)	Distribution	600	400	1	0
(xix)	Junction -10	Junction - 12 (ESR at Borjhar)	350	200	1	0
			300	200	0	1
(xx)	Junction - 12 (ESR at Borjhar)	Distribution	600	400	1	0

Total no of Flow Meter 23 14 37

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