

ASSAM GAS COMPANY LTD.
A Govt. of Assam Undertaking
P.O. Duliajan, Dist : Dibrugarh
Assam 786 602

Ref : HDD(DR)/PL/04/2010/ 1.

Date: 03.01.2011

NOTICE INVITING TENDER

FOR

GEO-TECHNICAL SURVEY OF DILLI RIVER NEAR NAMRUP, DIST. DIBRUGARH, ASSAM

- 1.1 Assam Gas Company Limited (AGCL), a Govt. of Assam undertaking, has a network of underground natural gas trunk and distribution pipelines and services for about 350 tea estates, 400 commercial establishments, about 20,000 domestic consumers and several bulk consumers such as power, fertilizer and petrochemical industries in the districts of Dibrugarh, Tinsukia, Sibsagar, Jorhat , Golaghat and Cachar in Assam. The company's headquarter is at Duliajan and presently transporting 6.0 MMSCMD of natural gas. Piped natural gas is supplied to domestic and commercial consumers in 9(nine) towns of upper Assam. A gas pipeline 16"(400 mm) NB diameter, is supplying gas at 150 psig towards Lakwa, LTPS and tea gardens crosses Dilli river through suspension bridge situated at Namrup, in between Dist Dibrugarh and Sibsagar of Assam. Now the company has proposed to convert the pipeline suspension system into a HDD (Horizontal Directional Drilling) one. Hence Geo-Technical investigation shall be carried out for Dilli river along the proposed pipeline route.
- 1.2 AGCL invites bid from reputed institutions / firms / consortium, (herein after known as contractor) possessing sound knowledge, financial resources and requisite expertise and successful previous experience for carrying out Geo Technical Investigation leading to submission of final report as per our requirement mentioned in tender giving a recommendation on the suitability of HDD / Open cut or any other underground system to avoid exposure of pipeline crossing on the river, Dilli, near Namrup, Dist. Dibrugarh, Assam which itself and its surroundings are full of cobbles mixed with gravels.

Geo-Technical Investigation with proper study of the soil layers, field and laboratory report, analyzed details based on which a final report including recommendation on the suitability of horizontal directional drilling / open cut for submerged crossing and tentative design elevation profile with respect to minimum scour level throughout the proposed alignment, shall be submitted.

- 1.3 Interested bidders with requisite credential may download the tenders from our website www.assamgas.org. Sealed TENDER under the two bid system shall be submitted on or before **2:00 pm (IST) of 17th January 2011** and Technical Bids likely to be opened at 2:30 PM. (IST) on the same day. The sealed Priced Bids shall be opened only for short listed bidders on a later date after evaluation of Technical Bids. **Earnest Money (EMD) of Rs. 20,000.00** (Indian Rupees Twenty Thousand only) in the form of Demand Draft from any Nationalised Bank in favour of Assam Gas Company Ltd. payable at Duliajan, Assam, India, 786 602 must be enclosed with the Technical Bid which will be retained by the company till offering the jobs.

- 1.4 Technical bid shall contain documents mentioned as per clause 1.5 of this NIT. Price bid shall be as per price schedule of the tender. All pages of the Technical and Price bid shall be signed and stamped by authorized signatory of bidder. Technical bid and Price bid shall be separately sealed in two separate envelopes and clearly marked as Technical bid and Price bid and put inside a sealed envelop. The envelop super scribing the Tender No and date will be addressed to: The Managing Director, Assam Gas Company Ltd., P.O. Duliajan, Dist : Dibrugarh, Assam 786 602 and sent to Senior Manager (Technical Services), Assam Gas Company Ltd., Duliajan so as to reach latest by **2:00 pm on 17th January 2011**. For any clarifications, the parties may contact **info@assamgas.org** or telephone at 0374-2800557. The company shall not be held responsible for postal delays / transit loss, etc.

1.5 Bid Qualification Criteria:-

Experience of having successfully completed similar works during last seven years reckoned from the bid closing date and should have either of the following:-

- i) One completed work of minimum value of Rs 13.00 Lakh.
- ii) Two completed works of minimum value of Rs 9.50 Lakh each
- ii) Three completed work of minimum Value of Rs 6.50 Lakh each.

Similar works means :- Drilling of boreholes & Geo –Technical Investigation, Submission Report with Drawing and Recommendation.

Bidders to submit Copy of Work Orders and Completion Certificates in support of the Bidders Qualification Criteria.

Along with bid qualification documents the bidders shall submit the following along with the technical bid:

- a) List of tools and tackles (equipments) and machineries required for the work.
- b) Latest Income Tax clearance certificate and PAN No.
- c) Latest Sales Tax clearance certificate.
- d) Audited Financial Statements of last 3 years, say 2006-07, 2007-08 and 2008-09.
- f) Earnest Money Deposit of Rs 20,000.00 (Rupees Twenty Thousand only) in the form of Demand Draft.
- g) Cost of tender paper of Rs 250/- in the form of bank draft.
- h) Sealed and stamped copy of tender and NIT.

The Company reserves the right to accept or reject any or all the Tenders without showing any reason thereof.

Tender paper submitted without cost of tender paper, documents mentioned above & the Earnest Money will be rejected outright.

MANAGING DIRECTOR

**ASSAM GAS COMPANY LIMITED
(A GOVT. OF ASSAM UNDERTAKING)
P.O. DULIAJAN. PIN- 786602
DIST. DIBRUGARH, ASSAM.**

TENDER FORM (NOT TRANSFERABLE)

NO. HDD(DR)/PL/04/2010/ 2

Date : 03.01.2011

SUB : Geo-Technical Survey of Dilli river and its surroundings at Namrup
Dist Dibrugarh, Assam in connection with proposed river Crossing by
Horizontal Drilling Method.

1. DUE DATE OF SUBMISSION : 17/01/2011 WITHIN 1400 HRS.
2. OPENING DATE : 17/01/2011 AT 1400 HRS.
3. COST OF TENDER: Rs 250 (non refundable) shall be submitted along with the technical bid in the form of BANK DRAFT DRAWN IN FAVOUR OF ASSAM GAS COMPANY LIMITED, DULIAJAN FROM ANY NATIONALISED BANK.
4. EARNEST MONEY : **Rs. 30,000.00** (RUPEES THIRTY THOUSAND) ONLY IN THE FORM OF BANK DRAFT DRAWN IN FAVOUR OF ASSAM GAS COMPANY LIMITED, DULIAJAN FROM ANY NATIONALISED BANK.
5. BID VALIDITY : 180 (ONE HUNDRED EIGHTY) DAYS from the last date of submission of tender.
6. **BRIEF DESCRIPTION OF WORK: Geo Technical Survey of Dilli river with its surroundings in connection with 400mmNB pipeline crossing the river with the help of HDD. The river and its surroundings are full of cobbles mixed with sand gravels and need to carry out complete geo-tech investigations for pipeline installation.**

- a) Contractual Obligation : All bidders who submit a Tender in response to this tender shall understand, acknowledge and agree that the AGCL is not obligated thereby to enter into an agreement or contract with any bidder and, further, has absolutely no financial obligation to any bidder.
- b) Contract Acceptance: A Tender submitted in response to this tender shall be considered a binding offer. Acknowledgement of this condition shall be indicated by signature of an officer of the bidder, who is legally authorized to execute contractual obligations and shall be conveyed by submitting a signed Form of Tender as per the enclosed format.
- c) All prices and any other significant factors contained in the Bid shall be valid for acceptance for a period of 180 calendar days from the Bid closing date. Notwithstanding above, Assam Gas Company Ltd may request the bidders to extend validity period of the offers.

7.0 COMPLETION SCHEDULE: The work shall be completed in all respects within 45 days from the date of issue of FOI/LOI.

8.0 PAYMENT TERMS

The Company will make payment to Contractor as provided hereunder; -

- a) No Mobilization Advance will be paid against the order.
- b) 70% payment for the work order amount will be released against completion of all bore holes.
- c) Remaining 30% amount of work order shall be released after 15 days of submission of detailed Geo Technical Survey report along with drawings and recommendation.
- d) All bills shall be submitted in triplicate.

9. Price Reduction Schedule:

In case of delay in completion of the work beyond scheduled date of completion, Price Reduction Schedule @ 0.5 % of order value for delay per week or part there of subjected to a maximum of 5% shall be applicable.

10 Price Variation: There will not be any price variation except due to variation of statutory taxes and duties during tenure of the contract.

11) Performance Bank Guarantee:The bidder shall provide Contract Performance Bank Guarantee, equivalent to Ten(10) Percent of Contract Value within 15 days of issuance of FOI/ LOI from the owner. The Performance Guarantee shall be in the form of either Demand Draft or Banker's Cheque or Bank Guarantee and shall be in the currency of Contract. The Guarantee shall be valid for 12 months beyond the actual date of completion.

12. Other Terms and Conditions:

- 12.1 Contractor will have to arrange its camp, accommodation, transportation, etc., at its own cost.
- 12.2 Bidders are advised to visit the site along with the Company's representative before quoting rates for which information to the Company has to be given at least 24 (Twenty Four) hours ahead.
- 12.3 Bid must be sealed before submitting and super scribing the envelope as "Geo-Technical Survey of Dilli river and its surroundings".
- 12.4 The Bidders must put his rubber stamp with signature at the bottom of each page of the tender paper.
- 12.5 AGCL reserves the right to accept or reject any or all the tenders without assigning any reason thereof.

13 .SCOPE OF WORK:-

The scope of work includes:-

13.1 The Complete River Profile Study.

13.2 Maximum discharge at HFL, LFL.

13.3 Information regarding existing hydraulic structure if any, within 10Km of the proposed crossing site.

13.4 Ascertain the velocity of the river on upstream & downstream (Approx 500M from the of crossing).

13.5 Finding out the cross connection of the river bed if any, indicating any river / canal stream connected to it within 10 km from the crossing point.

13.6 Shifting and setting up of the rig at each location in land and water

13.7 Carrying out 150mm dia Boreholes through all kinds of soils, cobbles, gravels and rocks up to 20 Mtr below the river bank / bank level.

13.8 Collection of cores, if encountered, using TC and Diamond Bits as per IS: 1892

13.9 To carry out Standard Penetration Test (SPT) and collection of disturbed & undisturbed soil samples (UDS) from boreholes alternatively at 1.5 m intervals as per IS 2131-1981 code.

13.10 Classification of samples (ASTM D 2487 and ASTM D 2488).

13.11 Grain size distribution of the portion retained on No 200 sieve by washing samples recovered from salt layer(ASTM D422)

13.12 Conducting Lab Test for determination of Silt Factor

13.13 Conducting Lab Test for determination of Liquid limit, Plastic limit and Plasticity Index of soil (ASTM 4318)

- 13.14 Conducting Lab Test for Determination of Natural Moisture Content (ASTM D 2216)
- 13.15 Conducting Lab Test for Determination of Bulk Density (ASTM D 2937) and Dry Density.
- 13.16 Conducting Lab Test for Determination of Specific Gravity of Soil (ASTM D 2216)
- 13.17 Conducting Direct Shear Test(ASTM D 3080)
- 13.18 Conducting Tri-axial-UU Test.
- 13.19 Specific Gravity of Rock.
- 13.20 Unit weight of rock.
- 13.21 Crushing weight of Rock
- 13.22 Carry out Chemical Analysis of River Water.
- 13.23 Collection of Hydrological Data of river from authentic source.

13. 24 Drawing and Reports

- a. The river bed profile and plan drawing incorporating all the aforesaid hydrological data, soil stratification results, location of bore hole etc along with Scouring depth profile are to be prepared and submitted.
- b. Detailed report shall be prepared and submitted to Assam Gas Company Limited in a draft form for review and comments. All the information as mentioned above shall be furnished in the draft copy of the report. After reviewing, contractor shall be informed of the comments / remarks, if any, the same shall be incorporated in the final reports.
- c. All drawings / reports shall be submitted along with all field book fulfilling the requirements mentioned in one set of soft copy and six set of hard copies along with reproducible after duly approved by the Company / agency if deputed by the Company.

13.25. Preparation of borehole Location Plan

The Bore hole location plan showing the position of the bore holes (at an average interval of 50 meter) in the proposed alignment of the selected pipeline route is to be prepared. The plan shall indicate the name of the river, chainage, proposed to be adopted and any other relevant information.

13.26. Co-ordinates of the Bore Holes

The co-ordinates of the boreholes in the duly approved bore holes plan should be found out and indicated using GPS

13.27. Boring

a. Boring shall be carried out in accordance with the provisions of IS:1892 and other applicable standards/BIS code of practice. The bore hole shall be 150mm dia and 20mtr depth in general from existing ground level.

b. The contractor shall use mechanical / hand operated 150mm dia shell & Auger / rotary equipment, Rotary core drilling machine with necessary drill bits etc. Casing shall be provided up to a required depth and bentonite shall be used to prevent side collapse of the hole if necessary.

C Contractor shall contain or control any drill fluid or cuttings that have the potential to enter any stream. The contractor shall take all precautions to prevent fuel lubricant and / or hydraulic fluid leaks from any equipment on site and to prevent those materials from entering any stream or water bodies.

d. Uncased holes shall be permitted only up to a depth where the sides of the hole can stand unsupported. In case side falls is noticed, step shall be taken immediately to stabilize the holes by using bentonite slurry or by casing pipes as directed by the Engineer-In-charge.

e. No water shall be added while boring through cohesive soils and cohesionless soils above water table. While boring through cohesionless soil below water table, water in the casing always be mentioned at or above the water table.

f. The cuttings brought up by the auger shall be carefully examined and soil descriptions duly recorded. Representative samples shall be preserved for laboratory testing.

g. Whenever in-situ tests are conducted and undisturbed samples are obtained at specified depth from borehole, care shall be taken to ensure that the borehole is properly cleaned and free from foreign matters at the time of conducting these operations.

h) Water table in the borehole shall be carefully recorded and reported. One of the following methods shall be adopted for measuring the water table. The water table in the borehole shall be allowed to stabilize after depressing the water level adequately by bailing. Stability of the borehole side and bottom shall be ensured at all times.

i) The borehole shall be filled with water and then bailed out to various depths. Observations shall be made at each depth to see if the water level is rising or falling. The depth at which neither a fall nor a rise is observed by three successive readings of water levels taken at intervals of 2 hours.

j) Immediately on completion of borehole, bore log shall be prepared in an approved format and submitted to the Engineer –in-Charge in triplicate.

13. 28 Backfilling of Boreholes:

On completion of boreholes, backfilling shall be carried out with an approved material as and when directed by the Engineer-in-Charge. Unless otherwise specified, the excavated soil shall be used for the purpose.

13.29. Termination Criteria:

If a very hard strata is met within the borehole at depths shallower than specified in tender documents, the borehole shall be advanced by chiseling. If in the opinion of the Engineer-in-Charge, The rate of advancement of borehole is still low, coring may be resorted to subsequently. Maximum length drilled in rock strata shall be limited to 10.00 m if rock is available at 2.0 m from bed /GL level.

13.30 Trial Pits

Trial Pits shall be of min 3m X 3 m size at base so as to permit easy access for a visual examination of the wall of the pit to facilitate sampling and in-situ testing operations. Precaution shall be taken to ensure the stability of pit walls, if necessary, even by the provision of shoring. Arrangement shall be made for dewatering, if the pit is extended below water table.

The trial pits as deemed necessary for establishing soil properties for geo-technical investigation have to be excavated up to required depth. The rate for bore hole shall be inclusive of such trial pits, whenever necessary. No separate payments shall be made for trial pits.

13.31 In-situ Testing:

In-situ tests shall be conducted and undisturbed samples obtained immediately on reaching the specified depths, so as to avoid substantial moisture change in the subsoil.

After completion of tests and examination, the pits shall be suitably backfilled as directed by the Engineer-in-Charge. Unless otherwise specified, the excavated soil shall be used for this purpose.

13.32. Standard Penetration Test (SPT)

The test shall be conducted at specified intervals or at a depth where the strata changes, whichever occurs earlier.

The test shall be carried out by driving a standard split spoon by means of 65kg hammer with a 75cm free fall. Detailed procedure of testing as specified in IS:2131, Method of Standard Penetration Test in Soils' shall be followed. The samples obtained in the split spoon shall be labeled and preserved for identification tests in the laboratory.

This shall be conducted in the boreholes at interval of 1.5m depth below existing level. The disturbed representative samples shall be visually classified labeled for identification and properly preserved for

laboratory testing. SPT at any depth shall be terminated When the number of blow exceeds 100 or the penetration is less than 25mm for 50 blows in three.

Collection of Disturbed(DS) and Undisturbed Samples.(UDS)

Both undisturbed and disturbed samples shall be collected. The undisturbed samples in soft and medium clay shall be obtained in steel tube and waxed at both end after duly leveled. Undisturbed samples of minimum 100mm dia shall be taken from bore holes and representative strata at intervals of 3.0m or change of strata whichever is less starting collection of first UDS at 1.75 for stiff clay area ratio of the sampling shall not exceed 20%. In soft deposits piston sample shall be used to collect UDS.

Disturbed samples from granular soil shall be obtained at suitable interval using SPT as mentioned above and shall be kept in transparent polythene bags duly labeled depth wise. Quoted rates shall include transport of samples to the laboratory.

13.33 Laboratory Test

a.) Grain Size Distribution

Whenever applicable both the sieve & hydrometer analysis shall be conducted to indicate complete range of grain sizes of soil samples tested. Grain size distribution curves to be mentioned.

b.) Atterberg Limit

Whenever applicable These test shall be carried out by the skilled personnel. The test result should include liquid and plastic limit, of the soil samples tested. These tests should be conducted as per IS-2720 part V

c.) Unconfined Compressive Strength.

The test shall be as per IS-2720(Part X) on selected soil sample

d.) Tri-axial Tests.

These test shall be done on specimen saturated by the application of back pressure. Only if the water table is at sufficient depth so that chances of this raising to the base of the footing are meagre or nil. The tri-axial tests shall be performed on specimens at a natural moisture content. Magnitude of the back pressure applied shall be indicated in the report.

All stress strain diagram as well as Mohr Circle envelopes shall be included in the Report

e.) Modulus OF Elasticity

E-value shall be determined from the tri-axial test relative correction applied to the computed 'E' shall be clearly illustrated in the report.

f.) Free Swell Index Tests

These tests shall be conducted on selected samples from expansive soil layers in conclusion with Engineer-in-Charge and are to be performed as per IS code 2720 XL

g.) Swelling Pressure Test

These tests shall be conducted on selected samples from expansive soil layers in consultation with Engineer-in-Charge and are to be performed as per IS 2720 of relevant part.

h) Shrinking Limit

These test shall be conducted on selected samples from expansive soil layers in consultation with Engineer-in-Charge and are to be performed as per IS 2720 part 6.

i) Uni-axial Compressive Strength & Specific Gravity Of Rock.

These test shall be done on selected samples recovered from cores. For rock compressive strength the samples shall be soaked in water for not less than 24 hours prior to testing. Water absorption shall also be indicated along with the test results.

ANNEXURE:1

PRICE SCHEDULE :

Sl. No.	Description	Unit	Quantity	Rate	Amount
1	Mobilization and demobilization of equipment for Geotechnical Investigation	Lump sum.	1		
2	Boring : Shifting & setting up of the rig at each location a) In Land b) In water	Per BH Per BH	2 7		
3	Drilling 150 mm diameter Boreholes through all kinds of soil complete with collection of undisturbed soil samples and conducting SPT at every 1.5 m intervals up to 20m depth below the bed / bank level.	No.	90		
4	Drilling 150 mm diameter Boreholes through cobbles, gravels and rocks complete with collection of undisturbed soil samples and conducting SPT at every 1.5 m intervals up to 20m depth below the bed / bank level.	No.	90		
5	Conducting Laboratory Tests on Soil / Rock samples as per IS code specifications a) Grain Size analysis b) Silt Factor. c) Atterberg Limits d) Natural Moisture Content	. Each Each Each Each	 90 45 25 25		

	e) Bulk & Dry Density	Each	25		
	f) Specific Gravity	Each	25		
	g) Direct Shear Test	Each	25		
	h)Tri axial-UU Test	Each	9		
	i) Specific Gravity of Rock.	Each	9		
	J) Unit weight of rock	Each	9		
	k) Crushing Strength of rock		15		
6	Chemical Analysis of River	Each	2		
7	Collection of Hydrological data of river from authentic source. Preparation and Submission of Investigation Report, the river bed profile, plan and scour depth profile drawings incorporating all the hydrological data, soil stratification results, location of boreholes, etc.	Lump sum	1		

N.B.Rate shall be inclusive of all applicable taxes and duties except service tax. Service tax shall be shown separately on total amount quoted. Rate of service tax as per prevailing norms is 10.3% including education tax.

Annexure-II

DECLARATION LIST

I/We, certify that all the above submitted data and information pertaining to this proposal are correct and are true representation of the offer covered by our formal Proposal No. dated

I/We, hereby certify that I/We am/are duly authorised representative/s of the Bidders whose name/s appears above. my/our Signature.

Bidder's Name

Authorised Representative's Signature/s

Authorised Representative's Name/s (Typed)

Bidders' Intent

The Bidder hereby agrees fully to comply with the requirements and intent of this specification.

Authorised Representative's Signature/s

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SEAL OF THE COMPANY

Signature/s :

Name/s :

Designation/s :