

Ref: 4320/024/1UH/01/0548

Date: October 25, 2021

CONSULTANCY SERVICES FOR DESIGN, TENDER DOCUMENTS AND SUPERVISION FOR SUB-PROJECTS OF SOP-I, KWSSIP**Invitation of Bids for Geotechnical Investigations (Field and Laboratory Works)**

Dear Sir,

Sealed bid (Technical and Financial in separate sealed envelopes) is invited in accordance with the attached BOQ and qualification criteria from drilling Contractors/Companies for carrying out the geotechnical investigations for the subject project.

The companies capable of carrying out subject work are requested to provide their Company's Profile and the following documents along with their sealed bids:

1. PEC Registration Certificate
2. FBR & PRA Registration Certificates
3. List of Similar Projects completed during last three years
4. Financial Capability
5. Equipment Capability
6. Personnel Capability
7. Litigation History
8. HSE Policies

The work comprises; execution of boreholes up to 20 m depth below natural surface level (NSL) in overburden soils by Straight Rotary/heavy percussion drilling rig, core drilling, excavation of test pits, performance of SPTs in boreholes, performance of field permeability test, performance of field density tests in test pits, collection of disturbed/undisturbed soil samples, collection of water samples and laboratory testing of selected soil/rock/water samples. The field and laboratory work shall have to be completed according to the following time schedule:

Sr No.	Minimum No. of Straight Rotary Rig Required	Time for Completion of Field Investigations	Time for Completion of Laboratory Testing	Total Time for Completion of Field & Laboratory Investigations
1	4	2.5 weeks	2 weeks	4.5 weeks

Your bid shall be valid for a time period of ninety (90) days after the bid opening. The work shall be executed under the instructions and full-time supervision of NESPAK engineers/geologists and the successful bidder shall mobilize to the site on two (02) days' notice after issuance of Letter of Award/Acceptance

The coordinates and ground elevations of all the investigation points by total station shall have to be provided to NESPAK before completion of investigation at site by the Contractor. The approved laboratory, where testing is to be carried out, shall be pursued by the successful bidder for timely completion of the assigned laboratory testing.

The successful bidder shall be responsible for providing the field borehole & test pit logs, summary of laboratory test results and detailed laboratory test results to NESPAK, within the contract period. A premium of up to 25 % will be admissible on the official rates of the soil laboratory, selected for testing

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of samples. This premium has been allowed as compensation to the Contractor for making advance payment to the laboratory and later following-up for obtaining test results in time. The name of the laboratory should be provided on page 2 of 2 (Annexure-1).

The bidders shall submit a bid security amounting to 3% of bid price at the time of submission of bids in the form of pay order or bank draft in favor of M/s NESPAK.

Please note that the quantities of items mentioned in BOQ are tentative and are may be reduced upto 15 % of total scope of work, based upon prevailing site conditions.

Your most competitive sealed bids (inclusive of all taxes) in accordance with the BOQ and qualification criteria, should reach the office of the undersigned by 1100 hours on or before November 10, 2021. Technical bids would be opened on the same day at 1200 hours after their receipt in the presence of those bidders who wish to be present.

Financial bids would be opened after evaluation of Technical bids, at a time, date and venue announced and communicated to the technically responsive bidders in advance. However, the final decision to accept/reject any or all the bids as per PPRA rules solely lies with the undersigned. The entire work shall be carried out in accordance with the requirements of the General Bidding Documents for Geotechnical Investigations available at NESPAK website (www.nespak.com.pk). Payment of the entire work shall be made by NESPAK after receipt of its fee from Client.

for National Engineering Services Pakistan (Pvt.) Limited



(IRFAN UL HAQ)

Vice-President/Head

Geotechnical & Geoenvironmental Engineering Division



CONSULTANCY SERVICES FOR DESIGN, TENDER DOCUMENTS AND SUPERVISION FOR SUB-PROJECTS OF SOP-I KWSSIP

GEOTECHNICAL INVESTIGATIONS
ESTIMATED BILL OF QUANTITIES

Sr. No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
A.	FIELD INVESTIGATIONS				
A1	Mobilization and demobilization of at least four (4) straight rotary / percussion drilling rigs alongwith allied accessories at site including setting up and shifting from one investigation point to another. The equipment should be sufficient enough to complete the work within scheduled time.	L.S.	Job		
A2	Execution of: i) Three (03) boreholes up to a maximum depth of 20 m at OIWT locations ii) Twenty five (25) boreholes up to a maximum depth of 12 m at Sewer network and allied structures location iii) Ten (10) boreholes up to a maximum depth of 15 m at waste water disposal station locations below NSL by straight rotary drilling method including backfilling of boreholes to their original position using cement sand bentonite mix.	L.M.	380		
A3	Continuous core drilling in bedrock (NX size in general) up to a maximum depth of 3 m below rock strike level, including preservation of core samples in core boxes, waxing of core samples, photography of rock cores and transportation of core samples to the laboratory.	L.M.	80		
A4	Performance of Standard Penetration Tests (SPTs) in boreholes along with collection of SPT samples at 1 m interval in general, or as necessary, including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	340		
A5	Collection of undisturbed soil samples from boreholes through Shelby/Denison/Pincher samplers, including their waxing, labelling, packing, storage & transportation to an approved testing laboratory.	No.	40		
A6	Performance of field permeability tests in boreholes at various depths using constant head or falling head methods for soil column/flush bottom conditions, as appropriate.	No.	10		
A7	Excavation of twenty (20) testpits up to a maximum depth of 1.5 m in overburden soils, including backfilling of pits to original condition.	L.M.	30		
A8	Excavation of three (03) testpits up to a maximum depth of 2 m in overburden soil in borrow area, including backfilling of pits to their original condition.	L.M.	6		
A9	Performance of field density tests by sand replacement method in testpits generally @ 1 tests/pit at selected horizons, including determination of in-situ bulk and dry density and collection of small disturbed samples in moisture tins for moisture content determination in laboratory by oven drying method as well as labelling, packing, storage & transportation to an approved testing laboratory.	No.	20		
A10	Collection of composite bulk soil samples from testpits (minimum weight 50-100 kg.) including their labelling, packing, storage & transportation to an approved laboratory.	No.	20		
A11	Collection of borrow area samples (minimum weight 50-100 kg.) including their labelling, packing, storage & transportation to an approved laboratory.	No.	3		
A12	Collection of water samples (if encountered) from boreholes/testpits including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	20		
	Sub-Total A	Rs.			
<p>Establishment of coordinates and ground elevations of all the boreholes using Total Station are included in the scope of work. The coordinates should be provided with reference to a permanent local bench mark.</p> <p>All soil samples must be labelled, stored and transported as per ASTM. The area ratio and clearance ratio of the thin walled tube, should be in strict compliance with relevant ASTM standard.</p> <p>Contractor will be responsible for arrangement of Personnel Protective Equipments (PPEs) such as safety helmets and jackets for NESPAK site supervisory / visiting staff.</p> <p>The preferred method of drilling is straight rotary. Percussion boring will be allowed only in case of presence of excessive cobbles/boulders or any other hard stratum.</p>					

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CONSULTANCY SERVICES FOR DESIGN, TENDER DOCUMENTS AND SUPERVISION FOR SUB-PROJECTS OF SOP-I KWSSIP

**GEOTECHNICAL INVESTIGATIONS
ESTIMATED BILL OF QUANTITIES**

Sr. No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
B.	LABORATORY TESTING				
B1	Sieve analysis	No.	135		
B2	Hydrometer analysis	No.	25		
B3	Liquid and plastic limits	No.	30		
B4	Bulk density/dry density & NMC	No.	40		
B5	Consolidation with Swell Potential Measurements	No.	10		
B6	Direct Shear	No.	20		
B7	Unconfined Compression	No.	15		
B8	Uniaxial Compression	No.	10		
B9	Point Load Index on Rock Samples	No.	10		
B10	Modified AASHTO Compaction	No.	23		
B11	3-point soaked CBR	No.	23		
B12	Sulphate content of soil	No.	15		
B13	Chloride content of soil	No.	15		
B14	Organic matter content of soil	No.	15		
B15	Complete chemical analysis of water samples i/c TDS, Cl, SO4 & pH	No.	20		
Sub- Total B				Rs.	

Name of Laboratory:

Total (A+B)=

Rs.	
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Signature

**CONSULTANCY SERVICES FOR DESIGN, TENDER DOCUMENTS AND
SUPERVISION FOR SUB-PROJECTS OF SOP-I, KWSSIP**

1. Qualification Criteria

Qualification will be based on the criteria given in the following paras regarding the Applicant's experience, personnel and equipment capabilities, financial position and litigation history, as demonstrated by the Applicant's responses in the Forms attached as Annex-A to this Document. The Employer reserves the right to waive minor deviations, if these do not materially affect the capability of an Applicant to perform the contract by the Applicant.

Experience and resources of the Company intended to be employed as sub-contractor shall not be taken into account in determining the Applicant's compliance with the qualifying criteria. However, for joint venture, collective experience, resources and financial soundness of all partners shall be considered.

1.1 General Information

The Applicant shall provide general information of his firm as per the format specified in the Application Form A-1 attached in Annex-A.

1.2 Experience of the Firm

The Applicant shall meet the following minimum criteria:

- 1) Successful experience as contractor in the execution of at least five (5) projects involving bulk of geotechnical investigations within the last three (03) years. This experience should specifically be of geotechnical investigations of similar nature. The Applicant will supply information as per the format specified in the Application Form A-2 attached in Annex-A.

1.3 Personnel Capabilities

The Applicant must have in his employment, suitably qualified and experience personnel to fulfill the positions tabulated below. The Applicant will supply information as per the format specified in the Application Form A-3 attached in Annex-A.

Sr. No.	Position	Qualification*	No.	Minimum Experience (Years)
1	Technical Manager	B.Sc. Civil Engg.	1	5
2	Site Geologist/ Supervisor / Engineer	M. Sc. Geology/ B.Sc. Civil Engg. / B.Sc. Geological Engg.	4	2
3	HSE Supervisor	HSE Certification course	1	1
4	Driller	Literate	4	3
5	Skilled Labor	-	As Required	-



1.4 Equipment Capabilities

The Applicant should own, or have assured access to the following key items of equipment in full working order, and must demonstrate that, based on known commitments, these will be available for deployment on the proposed works.

Sr. No.	Equipment Type & Characteristics	Minimum Number Required
1	Straight Rotary Drilling rig complete in all respects including drilling rods, bits, mud pumps etc. along with at least one stand-by rig. The equipment shall be capable to obtain core recovery more than 80 percent and to complete the investigations within the time schedule.	4
2	Percussion Boring Set (>250 mm diameter), complete in all respects including tripod, chisel / bit etc.	1
3	Casing set having various diameters for all types of boring at least 20 m in length with casing bits.	4
4	Standard penetration test equipment complete in all respects including all rods, split spoon sampler, hammer and containers etc.	4
5	Core barrels (double tube) including coring and casing bits.	As required
6	Shelby/Denison/Pitcher samplers	4
7	UDS tubes & Split Spoon Samplers	As Required
8	Hydraulic jacks with all accessories for the extraction of casings	2
9	Electrically operated sounder for groundwater level measurement	1
10	Testpit excavation equipment complete in all respect	As Required
11	Field density test apparatus (with 6 and 12 inches dia. cone) complete in all respect	1 each
12	Field Permeability test apparatus using Constant Head or Falling Head method	1
13	Wooden box for the preservation of undisturbed soil/rock samples	As required
14	Transport for mobilization of equipment	As required

The Applicant will supply information as per the format specified in the Application Form A-4 attached in Annex-A.

1.5 Financial Capabilities

The Applicant shall meet the following minimum criteria:

- 1) Average annual turnover which is also termed as income from contracting for procurement of geotechnical investigations and is defined as billing for works completed during the last three (3) years of at least Rs. 4 million or the said figure has been achieved in any year during the last three (3) years.

The Applicant shall also provide evidence of financial health such as bank account statements, available line of credits, etc., to show the soundness of the Applicant's financial position for

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procurement of geotechnical investigations works. The Applicant will provide annual turnover of the geotechnical investigation works carried out by him during the last three years. The Applicant will supply annual turnover information as per the format specified in the Application Form A-5 attached in Annex-A.

1.6 Litigation History

The Applicant should provide accurate information on any litigation or arbitration resulting from Contracts completed or under execution over the last three (03) years. The Applicant will supply information as per the format specified in the Application Form A-6 attached in Annex-A. A consistent/ overwhelming history of litigation against the Applicant may result in rejection of the application. In case an Applicant claims Nil litigation, he shall submit the same statement on the letter head of his company.

1.7 Application of Health, Safety and Environmental Standards

The Applicant should provide the HSE Policies and supporting documentary evidence for the following:

- i) First Aid Box
- ii) Personnel Protective Equipments (PPEs)
- iii) Standard Operating Procedures (SOPs)
- iv) Health, Safety and Environmental (HSE) Policies
- v) HSE staff

The Applicant will supply information as per the format specified in the Application Form A-7 attached in Annex-A.



Application Form A-1

General Information

All individual Applicants applying for qualification are requested to complete the information in this form. Nationality information (if applicable) is also to be provided for foreign owners as required under the PEC Bye-Laws as a Partnership.

1.	Name of Firm	
2.	Head Office Address	
3.	Telephone	Contact Person: Name: Title: Cell No.
4.	Fax	E-mail
5.	Place of Incorporation/Registration Certificates of the firm*	Year of incorporation/registration

* Registration certificates must include:

- Valid registration with Pakistan Engineering Council (PEC)
- Valid registration with Federal Board of Revenue (FBR)
- Valid registration with concerned Provincial Revenue Authority (PRA)
- Proof of active taxpayer of FBR & PRA



Experience of the Firm

Name of Applicant: _____

Sr. No.	Name of Project	Value of Geotech Contract* (Pak Rs.)	Contract Duration

**Attach copy of Letter of Awards / Project Completion Certificates for any five (5) latest projects involving bulk of geotechnical investigations within the last three (03) years.*



Personnel Capabilities

Name of Applicant: _____

Sr. No.	Name of Person	Qualification	Designation/ Position*	Total Experience

**Attach CVs of the Key Staff Members.*



Financial Capabilities*Name of Applicant:* _____

Year	Annual Turnover (in PKR)
2020 – 2021	
2019 – 2020	
2018 – 2019	

Note: Financial soundness certificate from the bank(s) as specified in section 1.5 must be provided by the Applicant

Application Form A-6

Litigation History

Name of Applicant: _____

Year	Award for or against Applicant	Name of Client, cause of litigation, and matter in dispute	Disputed amount (current value Pak Rs. or equivalent)

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