Annexure-A

# **TERMS OF REFERENCE (TOR)**

FOR

# HIRING OF COIL TUBING, NITROGEN PUMPING, NITROGEN, STIMULATION, THRU TUBING, SMART COIL, INFLATEABLE BRIDGE PLUG (PERMANENT/RETRIEVABLE) & ASSOCIATED SERVICES



# TENDER ENQUIRY # PROC-SERVICES/CB/PROD-5158/2021

### TERMS OF REFERENCE / SCOPE OF WORK

#### 1. <u>SCOPE OF WORK:</u>

**<u>GROUP</u> 'A":** Hiring Coil tubing, Nitrogen pumping, Nitrogen, Stimulation/Pumping, Thru tubing & associated services for wells/fields/plants located in province of Punjab and KPK on rate running and call out basis over a period of three (03) years for estimated 130 Jobs.

**<u>GROUP "B"</u>:** Hiring Coil tubing, Nitrogen pumping, Nitrogen, Stimulation/Pumping, Thru tubing & associated services for wells/fields/plants located in province of Sindh and Baluchistan on rate running and call out basis over a period of three (03) years for estimated 150 Jobs.

**<u>GROUP "C"</u>**: Acquiring Smart coil and Inflatable bridge plug services (Retrievable/Permanent) for wells located all over Pakistan on rate running and call out basis over a period of three (03) years for estimated 15 jobs.

#### 2. <u>CRITERIA FOR PARTICIPATING IN BIDDING PROCESS:</u>

- 2.1 **GROUP "A"**: To meet the equipment and crew requirement set forth in the technical evaluation criteria for Group "A".
- 2.2 **<u>GROUP "B"</u>**: To meet the equipment and crew requirement set forth in the technical evaluation criteria for Group "B".
- 2.3 **<u>GROUP "C"</u>**: To meet the equipment and crew requirement set forth in the technical evaluation criteria for Group "C".
- 2.4 **<u>GROUP "A" & GROUP "C":</u>** To meet the equipment and crew requirement set forth in the technical evaluation criteria for Group "A" Plus Group "C".
- 2.5 **<u>GROUP "B & GROUP "C"</u>**: To meet the equipment and crew requirement set forth in the technical evaluation criteria for Group "B" Plus Group "C".
- 2.6 **<u>GROUP "A" & GROUP "B"</u>**: To meet the equipment and crew requirement set forth in the technical evaluation criteria for Group "A" Plus Group "B".
- 2.7 **GROUP "A", GROUP "B" & GROUP "C":** To meet the equipment and crew requirement set forth in the technical evaluation criteria for Group "A" Plus Group "B" Plus Group "C".

#### 3. <u>General Terms and Conditions for All Groups:</u>

- 3.1 Bidders quoting for multiple groups have to submit single technical bid along with soft copy clearly mentioning on front page the groups for which the bid is being submitted.
- 3.2 Financial proposal to be submitted separately for each group in separate envelopes. Combined financial bids for multiple groups will not be accepted.
- 3.3 The bidders will be evaluated separately for each group. Contract will be awarded to lowest evaluated bidder separately for each group.
- 3.4 If bidder participates for group A & B and is unable to justify and prove availability of crew and equipment as per requirement of each group independently, however, have enough crew to fulfil requirement of any one of the group only, OGDCL reserves the right to choose the group of the bidder. In this scenario, any grievance regarding opting of the group on behalf of the bidder will not be entertained.
- 3.5 All certificates, documents, proof of work etc. should be in English language; if not then they shall be accompanied with certified translation to English language.

- 3.6 Coil tubing should have coil life suitable for the subject application(s).
- 3.7 Coil tubing size requirement for all groups
  - i) 1.5" Coil size up to 5,500 M length along with each coil tubing unit and 01 additional 1.5" coil for backup.
  - ii) One set each for 1.75" (4,300 M) and 2" (4,000 M) coil sizes additionally required for utilization as per OGDCL requirement.
- 3.8 All HSEQ responsibility shall rest with the contractor for any third party equipment and personnel supplied by the contractor.
- 3.9 All the equipment should be in good working condition for the performance of the services, valid calibration certification and third party inspection certificates should be available with the bidder and may be checked any time during the contract period.
- 3.10 OGDCL shall not be liable to pay mobilization/demobilization charges, of any tools/equipment for bringing them to Pakistan that may be located elsewhere.
- 3.11 Contractor to provide check list of equipment, tools and other accessories wherever required by OGDCL before mobilizing to wellsite.
- 3.12 HSE / safety related equipment in working condition should be available during all jobs.
- 3.13 Bidder to arrange all safety equipment/services at their own for their personnel's whichever is required by them for working in extreme H<sub>2</sub>S environment with no additional cost to OGDCL.
- 3.14 OGDCL shall not be accountable for any personnel injury during Mob/De-mob, loading, offloading and during the course of operations at well site. Health/accidental insurance of deployed crew will be the responsibility of the bidder.
- 3.15 Adequate back-up services / equipment should be available at well site. However, OGDCL will not pay for backup equipment.
- 3.16 All technical details for items specified in Section "Technical Evaluation Criteria" must be covered in the technical bid.
- 3.17 Any type of fluid including but not limited to mud, brine, stimulation slurry, sand plug slurry, cement plug slurry, gel, crude oil, diesel etc. can be pumped using service company coil tubing, stimulation/pumping package or pump unit.
- 3.18 Contractor may provide standard price list for additional material, equipment, consumables and tools required for the performance of the job. The same will be used as reference for obtaining Management approvals when required. No terms and conditions specified in contractor price list will be applicable unless agreed by the OGDCL.
- 3.19 The terms and conditions, if any, in the standard price list are to be superseded by the contract terms and conditions.
- 3.20 OGDCL reserves the right to procure or hire and contractor hereby agrees to provide any of the material, equipment, consumables and tools listed in the main contract or attached standard price list during the entire duration of the contract.
- 3.21 The equipment and crew have to work round the clock as per operational activities.
- 3.22 Bidders to attach unpriced financial bids in their technical bids.
- 3.23 Stimulation job will be performed either through bull heading or through coil tubing.
- 3.24 All equipment must be  $H_2S/CO_2$  compliant.
- 3.25 Maximum notice period for each call-out is 3 days and transit time from company base to OGDCL location is 2 days.
- 3.26 Successful bidder will provide the same personnel mentioned in their bid to carryout jobs. In case the service company engages the personnel other than those mentioned in their bid, the educational and experience certificate must be provided before mobilization. In

case company fails to provide the necessary documentation, OGDCL reserves the right to cancel the personnel operation and standby charges for that particular job.

- 3.27 If required by OGDCL, the bidder will provide complete list of personnel to be deployed for the jobs along with CV's highlighting the details of the completed jobs, level of competence of key personnel that will be involved in design, supervision and implementation, and provide necessary support during the projects.
- 3.28 OGDCL reserves the right to ask bidder for the replacement of any of their personnel due to incompetence or misbehavior at contractor's expense.
- 3.29 If during job, it is ascertained that the service company is unable to perform / accomplish the job satisfactorily, OGDCL reserves the right to demobilize the service company.
- 3.30 Invoice for unsuccessful jobs i.e. due to mechanical failure of contractor's equipment or inefficiency of well site crew will not be paid.
- 3.31 Standard coil tubing BHA for Nitrogen kick Off, stimulation and other relevant jobs must include but not limited to Connector, DFCV, Hydraulic Disconnect, knuckle joint, Circulating Sub, MHA, Nozzle Various Types, Weight Bars, Riser, etc.
- 3.32 Pressure testing of all service company equipment is mandatory and should be carried out as per standard procedures before execution of any job including but not limited to Kick Off, stimulation, thru tubing etc. No additional cost for pressure testing of service company equipment is applicable.
- 3.33 Pump unit services includes 10K/15K pumper and surface piping.
- 3.34 Stimulation/Pumping equipment package includes 10K/15K pumpers, chemical transfer pump, centrifugal pumps, RMX/batch mixer/blender, Poly tank(s) for raw acid storage, 500 BBL storage tank(s), chemical truck/tanker, surface piping etc. and all other necessary equipment which ever required for successful stimulation/pumping job.
- 3.35 OGDCL has the sole discretion to utilize the services as whole or partial and service company have to provide the complete or partial services against each group as per OGDCL requirement.
- 3.36 Stimulation/Pumping package and pump unit services of Group "A" and "B" will be utilized along with smart coil services for respective zones.
- 3.37 Smart coil tubing services are being hired for jobs to be carried out all over Pakistan, therefore any third party/OGDCL services for stimulation, cementing and other services may be utilized along with smart coil.
- 3.38 Bidder must quote the cost of every item of financial bid format otherwise incomplete bid will not be entertained.
- 3.39 Evaluation tables are for evaluation purpose only, job design and acid recipes may change as per actual well conditions.
- 3.40 The number of jobs mentioned against each job model are estimated and for evaluation purpose only. Number of jobs against each model may vary as per actual requirement.
- 3.41 Chemical quantities, millage, number of days for operating and standby are for evaluation purpose only, payment will be made as per actual.
- 3.42 The number of jobs and cost/job as per financial bid is tentative, number of jobs, cost/job may increase or decrease as per actual operation. The approved amount against the contract will be collectively used for any number of jobs/wells.
- 3.43 Fuel, oil and lubricants/transport that may be required by service company for operational purpose will be charged to service company as per actual and the cost will be deducted from the invoice.
- 3.44 Rig up/Rig down and chemical mixing period before start of job will be paid as standby for both equipment and crew.

- 3.45 There will be no standby charges on the day of mobilization and demobilization for both equipment and crew including Nitrogen supply tanker and Acid supply tanker.
- 3.46 Standby charges for nitrogen supply tanker on the day of shifting of nitrogen to Nitrogen pumping unit are not admissible.
- 3.47 Standby charges for acid supply tanker on the day of shifting of acid to stimulation equipment are not admissible.
- 3.48 Daily operating and standby Rates shall be charged for full day and cannot be prorated.
- 3.49 OGDCL shall not be liable to pay for any leftover chemicals. Handling of all chemicals before and after the job will be the responsibility of the contractor.
- 3.50 Most of the stimulation jobs are carried out using OGDCL standard recipes based on solubility test (Solubility test to be provided free of cost by the contractor). For wells where standard recipes does not work, contractor will provide stimulation design based on XRD test results using industry reputed software. The price for additional chemicals (which are not covered in the contract) if required will be used from contractor's standard price list with 50% discount after approval from OGDCL management.
- 3.51 Lighting arrangement if required at well site is to be arranged by the bidder.
- 3.52 Daily operating charges for coil tubing equipment and crew if applicable would commence from the date / time coil tubing is lowered into the well bore and would cease when coil tubing is out of hole.
- 3.53 The coil tubing cumulative depth is defined as the accumulated downward movement of the coil tubing.
- 3.54 Partial availability of crew or equipment will not attract any charges. During traveling (mobilization/de-mobilization) phase, no operating/stand-by/rental charges will be admissible and only Mob/De-mob will be payable (if not mobilized by OGDCL).
- 3.55 Daily operating charges for Nitrogen pumping equipment/crew if applicable would commence when the Nitrogen cool down/pumping is started and would cease when nitrogen pumping is finished.
- 3.56 Daily operating charges for Pumping/Stimulation package, pump unit and respective crew would commence when pumping is started and would cease when the job is accomplished and pumping unit is switched off.
- 3.57 If, after mobilization / reporting at site, job is cancelled then only mobilization / demobilization charges for crew / equipment will be paid. No job cancellation charges are admissible. However, OGDCL will pay standby charges for both equipment and crew after 24 hrs. standby period at location i.e. no standby charges for first 24 hrs. of standby after reporting at well site for the case where job is not performed.
- 3.58 The standby rates of equipment and personnel must not exceed 50% of operating charges for equipment and crew.
- 3.59 Mob/De-mob. charges for equipment and crew shall not be applicable for well to well movement within the same field.
- 3.60 Mob/De-mob charges for equipment & crew will be calculated as per OGDCL distance chart for the locations covered in the chart and as per actual for the locations which are not covered in OGDCL location distance chart.
- 3.61 Mob/De-mob charges for equipment/crew will be as per actual i.e. the point from where the equipment/crew is mobilized or from respective base as per each group, whichever is lowest.
- 3.62 Boarding / lodging and laundry services would be provided free of cost by OGDCL to the service company crew while working in the field/Rig site.

- 3.63 During coil tubing operation, environment would be treated as corrosive if respective recorded values of CO<sub>2</sub> exceeds 5 % or H<sub>2</sub>S exceeds 10 PPM by volume. Extra charges for corrosive environment to be incorporated including adjusted additional dosage of chemicals e.g. corrosion inhibitor, inhibitor aid, H<sub>2</sub>S scavenger, H<sub>2</sub>S-CO<sub>2</sub> Inhibitor etc. Extra charges for chemicals to combat corrosive environment is not to be paid by OGDCL in case of corrosive environment.
- 3.64 Cost of liquid nitrogen would be only paid for the volume shifted to nitrogen pumper. If available, OGDCL will provide nitrogen and contractor have no objection on using OGDCL provided nitrogen.
- 3.65 The lost in hole (LIH)/DBR charges for bottom hole tools (BHA) and actual damaged/LIH coil tubing length will be paid by OGDCL as per following criteria subject to the condition that there is no malfunctioning of service company equipment and loss/DBR is due to abnormal well conditions.
  - > 40 % of landed cost of equipment/tools which are less than three years old.
  - > 30% of landed cost of equipment/tools which are equal to or more than three years old.
- 3.66 If required third party inspection/evaluation will be carried out as per predefined scope with mutual consent. Any additional cost for third party evaluation will be on bidders account.
- 3.67 Bidder must give "Clean acceptance certificate" of OGDCL terms and conditions and if exceptions are found, the bidder will withdraw all exceptions.
- 3.68 The scope of work for each group is tentative. OGDCL may increase or decrease the scope of work without any change in rates and terms & conditions.
- 3.69 OGDCL reserves the right to accept or reject any/all bid(s) or annul the entire bidding process at any time prior to award of contract without taking any responsibility of the affected bidder(s) and is not bound to justify the reasons to the affected bidder(s).
- 3.70 The existing contract for provision of same services will discontinue the day new contract is being signed against this tender. However, for jobs where service company was mobilized before signing of this contract will be paid as per previous contract.
- 3.71 Bidder to comply with OGDCL's HSEQ policy.

#### 4. <u>Duration of Contract:</u>

- 4.1 The duration of the contract for each group will be three (03) years starting from date of signing of contract.
- 4.2 The bid proposal/rates should remain valid unconditionally during the term of contract.
- 4.3 The **Rate Running Contract** (as and when required basis) will remain intact till the completion of jobs on wells where contractor is mobilized for the job during the contract period, however, any extension in term of contract will be subject to mutual consent of both the parties in writing.

#### 5. <u>Payment Terms:</u>

- 5.1 The prices quoted by bidder in financial bid should be in US\$. The quoted price should be fixed/firm and are inclusive of all applicable taxes, duties and levies etc. except Provincial Sales Tax/ICT Tax on services.
- 5.2 The payment will be made in 100% Pak rupees against verified invoices at official exchange rate prevalent on the date of payment.

(This clause will prevail instead of Master Tender document "ITB" clause # 07 'PAYMENT').

#### 6. Bid Bond:

For each Group, following amount of Bid bond/Bid security is required to be attached/provided with technical bid.

Group-A: USD 63,000/- (US Dollars Sixty Three Thousand only) Group-B: USD 63,000/- (US Dollars Sixty Three Thousand only) Group-C: USD 13,000/- (US Dollars Thirteen thousand only)

#### 7. Bidding Method:

- 7.1 Bids against this tender are invited on "Single Stage Two Envelope Bidding Procedure" through press tendering.
- 7.2 The bidders shall submit one original technical and one original financial bid along with soft copies of technical bids sealed in their respective envelopes.
  - Note: The Master Set of tender documents for services uploaded on OGDCL website (www.ogdcl.com) is the integral part of this TOR.

### **TECHNICAL EVALUATION**

- 1. Only technically qualified bidder(s) will be considered for financial evaluation.
- 2. OGDCL reserves the right to visit bidder's operational base, check inventory and verify the information provided in the bid at any stage during the evaluation of the bids.
- 3. All the bidders must fulfill the below mentioned technical requirements for technical qualification. In case they do not fulfill any of the below mentioned technical criteria their bid will not be acceptable. Even single "No" in below mentioned tables for technical evaluation of Group "A", "B" and Group "C" lead to disqualification for particular group. All the bidders are required to submit the below tables as per the given pattern. Also mention the current location of items where applicable.
- 4. For bidders who have not provided similar services to OGDCL/PPEPCA in the past must fulfill the following criteria for the evaluation/confirmation of their technical capabilities.
  - i) Minimum 05 years' international experience of providing coil tubing, stimulation, smart coil, thru tubing and allied services along with documentary evidence.
  - ii) Establish complete equipment base setup, shift all equipment and crew as mentioned in technical evaluation criteria for each group to Pakistan and start providing services within 45 days after signing of contract with OGDCL. Failing to do so will result in termination of contract and confiscation of bank guarantee.
- 5. For the bidders who have provided/are providing similar services to OGDCL/PPEPCA (Petroleum Exploration and Production Companies Association) must full fill the following criteria to become eligible for technical evaluation.
  - i) Provide documentary evidence of satisfactory performance/experience.
  - ii) All equipment and crew to be available in Pakistan at the time of bidding except those mentioned otherwise.
  - iii) The bidder to provide commitment to arrange third package within 45 days after signing of contract for nitrogen kick off and stimulation jobs on as and when required basis against group "A" and group "B".

#### **GROUP** "A": PROVISION OF COIL TUBING, NITROGEN PUMPING, NITROGEN, STIMULATION/PUMPING, THRU TUBING & ASSOCIATED SERVICES FOR PUNJAB & KPK:

#### 1. EQUIPMENT

Sr.	DESCRIPTION	AVAILABILITY
COIL	TUBING SERVICES	
1	COIL TUBING UNIT/ REEL/INJECTOR HEAD	
i	Availability of minimum two (2) coil tubing units with capacity for coil sizes 1.5" (5,500 M), 1.75" (4,300 M) and 2" (+4,000 M) complete with all valid certificates.	Yes/No
ii	Commitment to arrange and provide 3 <sup>rd</sup> coil tubing unit whenever required by OGDCL within 45 days of signing of contract.	Yes/No
iii	The coil tubing units must be equipped with latest real time monitoring software (fatigue computation and data acquisition), with self-aligning sliding goose neck, separate power pack drive mechanism and injector heads.	Yes/No
iv	Availability of injector heads with pulling capacity of 60K lbs.	Yes/No
v	Availability of injector heads with pulling capacity of 80K lbs.	Yes/No
2	PRESSURE CONTROL EQUIPMENT (MINIMUM 02 BOPS WITH EACH UNIT)	
i	WCE remote control panel (To be operated from control cabin).	Yes/No
ii	10K Psi rating WCE (CAT-I), compatible to H <sub>2</sub> S environment.	Yes/No
iii	10K Psi rating WCE (CAT-II), compatible to H <sub>2</sub> S environment.	Yes/No
iv	15K Psi rating WCE (CAT-III), compatible to H <sub>2</sub> S environment.	Yes/No
3	Adapters/X-overs for coil tubing rig-up as per standard tree top/drill pipe connections without any financial impact.	Yes/No
4	Availability of minimum following Thru tubing milling/fishing tools with backup for completion sizes 2-3/8" to 7". (Can be arranged and made available in Pakistan within 45 Days after signing of contract either OWN or through third Party contracting).	Yes/No
i	Dimple Connector both internal and external	Yes/No
ii	Up to 2-1/8" Size Down hole filter	Yes/No
iii	Up to 2-1/8" Size Thru tubing motor	Yes/No
iv	Hydraulic tubing cutting tool	Yes/No
v	Up to 2-1/8" Size Thru tubing weight bar	Yes/No
vi	Up to 2-1/8" Flat bottom mill	Yes/No
vii	Up to 2-1/8" Tapered mill	Yes/No
viii	Up to 2-1/8" Junk mill	Yes/No
ix	Up to 2-1/8" Impact hammer	Yes/No
Х	Up to 2-1/8" Accelerator	Yes/No
xi	Up to 2-1/8" Jar	Yes/No
xii	Centralizer	Yes/No
xiii	Pull test sub	Yes/No
xiv	Surface filter	Yes/No
xv	Debris Filter	Yes/No
xvi	Thru Tubing Screen Filter	Yes/No
5	High speed rotating & jetting tools at least 02 Nos.	Yes/No

6	Data acquisition system at least 02 Nos.	Yes/No
7	Abbrasi/Abbrasive or equivalent tubing cutting/perforation tool.	
	(Can be arranged and made available in Pakistan within 45 Days after	
	signing of contract either OWN or through third Party contracting)	
STIN	IULATION/PUMPING SERVICES	
1	PUMPING UNITS 10 K/15 K PSI WP SINGLE/TWIN PUMPING UNIT	
i	Minimum 02 pumping units having minimum 350 hp -500 hp.	Yes/No
ii	Hook up piping 15,000 Psi rating for performing jobs simultaneously at 02 OGDCL wells immediately after signing of contract	Yes/No
iii	Commitment to arrange and provide 3 <sup>rd</sup> complete stimulation/pumping package along with crew within 45 Days after signing of contract with OGDCL.	Yes/No
2	MIXING/TANKS WITH HOOK UP PIPING	
i	50 bbl batch mixer at least 03 Nos.	Yes/No
ii	100 bbl Paddle batch mixer at least 02 Nos.	Yes/No
iii	500 bbl storage tanks at least 03 Nos.	Yes/No
iv	250-300 bbl storage tanks at least 02 Nos.	Yes/No
3	STIMULATION RECIPES AND STIMULATION SOFTWARE	
i	Stimulation recipes in line with ITB	Yes/No
ii	Stimulation software	Yes/No
	(To be arranged within 45 days after signing of contract with OGDCL and	
	commitment for availability in Pakistan throughout the contract validity)	
NITR	OGEN PUMPING SERVICES	
1	Minimum 02 nitrogen pumping units with hook up.	Yes/No
2	Minimum 02 liquid nitrogen cryogenic storage tank. Minimum 2,000 gals capacity.	Yes/No
3	Commitment to arrange and provide 3 <sup>rd</sup> complete nitrogen pumping package along with crew within 45 days after signing of contract.	Yes/No
ZON	E-II CERTIFICATION	
1	At least one coil tubing unit, pumping and nitrogen equipment are Zone II certified. The bidder to arrange Zone II certification of the remaining units within 45 days of signing of contract failing to do so will result in termination of contract and confiscation of PBG.	Yes/No
BASE	SETUP	
1	Equipment base setup in Punjab/Islamabad to be established within 45 days after issuance of LOI. Equipment base set up must have maintenance shops, compliant pressure	Yes/No
	test bay, pressure control equipment workshop, chemical storage, spares storage warehouse, temperature control room for oxidizers etc.	

#### 2. <u>CREW</u>

Sr.	QUALIFICATION/EXPERIENCE OF CREW MEMBERS	AVAILABILITY
1	CTU ENGINEERS / SPECIALIST (AT LEAST 01 ENGINEER FOR EACH JOB)Graduate Engineer with minimum five (5) years of exclusive experience of planning, designing and executing coil tubing operations along with relevant training(s) and certified courses etc.Must have designed and performed following jobs.• Nitrogen Kick Off = 100 Jobs• Stimulation = 100 Jobs• Thru tubing jobs = 50 Jobs.	Yes/No
2	<ul> <li>THRU TUBING ENGINEERS (AT LEAST 2 ENGINEER FOR EACH JOB)</li> <li>Graduate Engineer with minimum five (5) years of exclusive experience of performing thru tubing jobs with CTU along with relevant training(s) and certified courses etc.</li> <li>Must have designed and performed 50 thru tubing jobs.</li> </ul>	Yes/No
3	<ul> <li>STIMULATION ENGINEERS / SPECIALIST (AT LEAST 01 ENGINEER FOR EACH JOB)</li> <li>Graduate Engineer with minimum five (5) years of exclusive experience of planning, designing and executing stimulation Jobs along with relevant training(s) and certified courses etc.</li> <li>Must have designed and Performed following jobs</li> <li>Sand Stone Stimulation =100 Jobs</li> <li>Lime Stone Stimulation =100 Jobs.</li> </ul>	Yes/No
4	SUPERVISOR (AT LEAST 1 SUPERVISORS FOR EACH CATEGORY/JOB)Technical diploma holder (3 Years) with minimum five (05) years ofexclusive experience of planning, designing and executing jobs along withrelevant training(s) and certified courses etc.CTU supervisors must have performed following jobs.• Nitrogen Kick Off = 100 Jobs• Stimulation = 100 Jobs• Thru tubing jobs= 50 Jobs.Stimulation supervisors must have performed following jobs.• Sand Stone Stimulation = 100 Jobs• Lime Stone Stimulation = 100 Jobs• HPHT Stimulation = 20 Jobs.	
5	OPERATOR (AT LEAST 02 OERATORS FOR EACH CATEGORY/JOB) Technical diploma holder/ matric with at least five (05) years of relevant experience of executing jobs along with relevant certification and training courses etc. CTU Operators must have performed following jobs. • Nitrogen Kick Off = 100 Jobs • Stimulation = 100 Jobs • Thru tubing jobs= 50 Jobs. Stimulation Operators must have performed following jobs • Sand Stone Stimulation =100 Jobs • Lime Stone Stimulation =100 Jobs • HPHT Stimulation = 20 Jobs.	Yes/No
6	Commitment to provide additional manpower along with additional equipment for carrying out acid stimulation, nitrogen kick off and thru tubing jobs simultaneously on Three(03) OGDCL wells within 45 days after signing of contract.	Yes/No

#### 3. <u>COMPANY PROFILE</u>

Sr.	DESCRIPTION	AVAILABILITY
1	BIDDER'S HISTORY (ATTACH PROOF)	
	Registered company in Pakistan or elsewhere for providing coil tubing and	Yes/No
	stimulation services. Minimum registration period = 03 Years.	
2	BIDDER'S CAPABILITIES	
i	Capability in terms of equipment and crew to perform job on deep wells	Yes/No
	(+5,200 meters) with $H_2S$ environment simultaneously on 02 OGDCL wells	
	with commitment to enhance capabilities to perform jobs simultaneously	
	on three(03) OGDCL wells within 45 days of signing of contract.	
ii	Capability in terms of equipment and crew to provide stimulation	Yes/No
	solutions for sandstone & limestone.	
iii	Capability to handle job volumes up to 2,000 bbl	Yes/No
iv	Providing Lab & XRD facilities, or commitment thereof for provision of	Yes/No
	required tests from reputed Laboratory anywhere around the globe.	
v	Placing sand plug, cement plug thru coil tubing.	Yes/No
vi	Thru tubing services	Yes/No
vii	Pumping & handling more than 20,000 gallons liquid nitrogen	Yes/No
viii	Bidder, to provide standard operating procedure (SOPs) for coil tubing,	Yes/No
	nitrogen kickoff, well clean out, thru tubing jobs along with technical	
	manual of pressure control equipment (PCE), coil tubing unit and all types	
	of thru tubing tools are also to be provided by the bidder.	
ix	Bidder, to provide published pressure control manual for standard coil	Yes/No
	tubing operations & stimulation services.	
x	Bidder, to provide free of cost at least 06 days basic and advanced coil	Yes/No
	tubing and stimulation training to two (02) OGDCL Engineers every year.	
	Share a structured training program c/w list of courses and location	
	where training will be performed.	
3	BIDDER'S FINANCIAL STATUS	
	Bidder must be financially sound enough to execute the contract with	Yes/No
	OGDCL. Provide audited financial statement for last three years to confirm	
	financial status.	

#### **GROUP "B":** PROVISION OF COIL TUBING, NITROGEN PUMPING, NITROGEN, STIMULATION/PUMPING, THRU TUBING & ASSOCIATED SERVICES FOR SINDH & BALUCHISTAN PROVINCE:

#### 1. EQUIPMENT

Sr.	DESCRIPTION	AVAILABILITY	
COIL	COIL TUBING SERVICES		
1	COIL TUBING UNIT/ REEL/INJECTOR HEAD		
i	Availability of minimum two (2) coil tubing units with capacity for coil sizes 1.5" (5,500 M), 1.75" (4,300 M) and 2" ( <u>+</u> 4,000 M) complete with all valid certificates.	Yes/No	

ii	Commitment to arrange and provide 3 <sup>rd</sup> coil tubing unit whenever required by OGDCL within 45 days of signing of contract.	Yes/No
iii	The coil tubing units must be equipped with latest real time monitoring software (fatigue computation and data acquisition), with self-aligning sliding goose neck, separate power pack drive mechanism and injector heads.	Yes/No
iv	Availability of injector heads with pulling capacity of 60K lbs.	Yes/No
v	Availability of injector heads with pulling capacity of 80K lbs.	Yes/No
2	PRESSURE CONTROL EQUIPMENT (MINIMUM 02 BOPS WITH EACH UNIT)	
i	WCE remote control panel (To be operated from control cabin).	Yes/No
ii	10K Psi rating WCE (CAT-I), compatible to H <sub>2</sub> S environment.	Yes/No
iii	10K Psi rating WCE (CAT-II), compatible to H <sub>2</sub> S environment.	Yes/No
iv	15K Psi rating WCE (CAT-III), compatible to H <sub>2</sub> S environment.	Yes/No
3	Adapters/X-overs for coil tubing rig-up as per standard tree top/drill pipe	Yes/No
	connections without any financial impact.	
4	Availability of minimum following Thru tubing milling/fishing tools with	Yes/No
	backup for completion sizes 2-3/8" to 7".	-
	(Can be arranged and made available in Pakistan within 45 Days after	
	signing of contract either OWN or through third Party contracting).	
i	Dimple Connector both internal and external	Yes/No
ii	Up to 2-1/8" Size Down hole filter	Yes/No
iii	Up to 2-1/8" Size Thru tubing motor	Yes/No
iv	Hydraulic tubing cutting tool	Yes/No
<u>v</u>	High Pressure Jetting / Rotating tool	Yes/No
vi	Up to 2-1/8" Size Thru tubing weight bar Up to 2-1/8" Flat bottom mill	Yes/No Yes/No
vii viii	Up to 2-1/8" Tapered mill	Yes/No
ix	Up to 2-1/8" Junk mill	Yes/No
X	Up to 2-1/8" Impact hammer	Yes/No
xi	Up to 2-1/8" Accelerator	Yes/No
xii	Up to 2-1/8" Jar	Yes/No
xiii	Centralizer	Yes/No
xiv	Pull test sub	Yes/No
<u> </u>	Surface filter	Yes/No
xvi	Debris Filter	Yes/No
xvii 5	Thru Tubing Screen Filter High speed rotating & jetting tools at least 02 Nos.	Yes/No Yes/No
6	Data acquisition system at least 02 Nos.	Yes/No
		162/100
7	Abbrasi/Abbrasive or equivalent tubing cutting/perforation tool. (Can be arranged and made available in Pakistan within 45 Days after	
	signing of contract either OWN or through third Party contracting)	
TIM	ULATION/PUMPING SERVICES	
1	PUMPING UNITS 10 K/15 K PSI WP SINGLE/TWIN PUMPING UNIT	
i	Minimum 02 pumping units having minimum 350 hp -500 hp.	Yes/No

ii	Hook up piping 15,000 Psi rating for performing jobs simultaneously at 02 OGDCL wells immediately after signing of contract	Yes/No
iii	Commitment to arrange and provide 3 <sup>rd</sup> complete stimulation/pumping package along with crew within 45 Days after signing of contract with OGDCL.	Yes/No
2	MIXING/TANKS WITH HOOK UP PIPING	
i	50 bbl batch mixer at least 03 Nos.	Yes/No
ii	100 bbl Paddle batch mixer at least 02 Nos.	Yes/No
iii	500 bbl storage tanks at least 03 Nos.	Yes/No
iv	250-300 bbl storage tanks at least 02 Nos.	Yes/No
3	STIMULATION RECIPES AND STIMULATION SOFTWARE	
i	Stimulation recipes in line with ITB	Yes/No
ii	Stimulation software	Yes/No
	(To be arranged within 45 days after signing of contract with OGDCL and	
	commitment for availability in Pakistan throughout the contract validity)	
NITRO	DGEN PUMPING SERVICES	
1	Minimum 02 nitrogen pumping units with hook up.	Yes/No
2	Minimum 02 liquid nitrogen cryogenic storage tank. Minimum 2,000 gals capacity.	Yes/No
3	Commitment to arrange and provide 3 <sup>rd</sup> complete nitrogen pumping package along with crew within 45 days after signing of contract.	Yes/No
ZONE	-II CERTIFICATION	
1	At least one coil tubing unit, pumping and nitrogen equipment are Zone II certified. The bidder to arrange Zone II certification of the remaining units within 45 days of signing of contract failing to do so will result in termination of contract and confiscation of PBG.	Yes/No
BASE	SETUP	
1	Equipment base setup in Sindh to be established within 45 days after issuance of LOI.	Yes/No
	Equipment base set up must have maintenance shops, compliant pressure test bay, pressure control equipment workshop, chemical storage, spares storage warehouse, temperature control room for oxidizers etc.	

# 2. <u>CREW</u>

Sr.	QUALIFICATION/EXPERIENCE OF CREW MEMB	ERS	AVAILABILITY
1	CTU ENGINEERS / SPECIALIST (AT LEAST 01 EN	GINEER FOR EACH JOB)	Yes/No
	Graduate Engineer with minimum five (5) years of exclusive experience of planning, designing and executing coil tubing operations along with relevant training(s) and certified courses etc. <b>Must have designed and performed following jobs.</b>		
	• Nitrogen Kick Off = 100 Jobs • Stimula	tion = 100 Jobs	
	<ul> <li>Thru tubing jobs = 50 Jobs.</li> </ul>		

2	THRU TUBING ENGINEERS (AT LEAST 2 ENGINEER FOR EACH JOB)	Yes/No
	Graduate Engineer with minimum five (5) years of exclusive experience of	
	performing thru tubing jobs with CTU along with relevant training(s) and	
	certified courses etc.	
	<ul> <li>Must have designed and performed 50 thru tubing jobs.</li> </ul>	
3	<b>STIMULATION ENGINEERS / SPECIALIST (AT LEAST 01 ENGINEER FOR EACH JOB)</b> Graduate Engineer with minimum five (5) years of exclusive experience of planning, designing and executing stimulation Jobs along with relevant training(s) and certified courses etc. <b>Must have designed and Performed following jobs</b>	Yes/No
	• Sand Stone Stimulation =100 Jobs • Lime Stone Stimulation =100 Jobs	
	• HPHT Stimulation = 20 Jobs.	
4	SUPERVISOR (AT LEAST 1 SUPERVISORS FOR EACH CATEGORY/JOB) Technical diploma holder (3 Years) with minimum of five (05) years of exclusive experience of planning, designing and executing jobs along with relevant training(s) and certified courses etc. CTU supervisors must have performed following jobs.	Yes/No
	• Nitrogen Kick Off = 100 Jobs • Stimulation = 100 Jobs	
	• Thru tubing jobs= 50 Jobs.	
	Stimulation supervisors must have performed following jobs.	
	• Sand Stone Stimulation =100 Jobs • Lime Stone Stimulation =100 Jobs	
	• HPHT Stimulation = 20 Jobs.	
5	OPERATOR (AT LEAST 02 OERATORS FOR EACH CATEGORY/JOB)	Yes/No
	Technical diploma holder/ matric with at least five (05) years of relevant experience of executing jobs along with relevant certification and training courses etc.	103/110
	CTU Operators must have performed following jobs.	
	• Nitrogen Kick Off = 100 Jobs • Stimulation = 100 Jobs	
	• Thru tubing jobs= 50 Jobs.	
	Stimulation Operators must have performed following jobs	
	<ul> <li>Sand Stone Stimulation =100 Jobs</li> <li>Lime Stone Stimulation =100 Jobs</li> <li>HPHT Stimulation = 20 Jobs.</li> </ul>	
6	Commitment to provide additional manpower with additional equipment for carrying out acid stimulation, nitrogen kick off and thru tubing jobs simultaneously on Three(03) OGDCL wells within 45 days after signing of contract.	Yes/No

## 3. COMPANY PROFILE

Sr.	DESCRIPTION	AVAILABILITY
1	BIDDER'S HISTORY (ATTACH PROOF)	
	Registered company in Pakistan or elsewhere for providing coil tubing and stimulation services. Minimum registration period = 03 Years.	Yes/No
2	BIDDER'S CAPABILITIES	
i	Capability in terms of equipment and crew to perform job on deep wells (+5,200 meters) with H2S environment simultaneously on 02 OGDCL wells	Yes/No

	with commitment to enhance capabilities to perform jobs simultaneously on three(03) OGDCL wells within 45 days of signing of contract.	
ii	Capability in terms of equipment and crew to provide stimulation solutions for sandstone & limestone.	Yes/No
iii	Capability to handle job volumes up to 2,000 bbl	Yes/No
iv	Providing Lab & XRD facilities, or commitment thereof for provision of required tests from reputed Laboratory anywhere around the globe.	Yes/No
v	Placing sand Plug, cement plug thru coil tubing.	Yes/No
vi	Thru tubing services	Yes/No
vii	Pumping & handling more than 20,000 gallons liquid nitrogen.	Yes/No
viii	Bidder, to provide standard operating procedure (SOPs) for standard coil tubing, nitrogen kickoff, well clean out, thru tubing jobs along with technical manual of pressure control equipment (PCE), coil tubing unit and all types of thru tubing tools are also to be provided by the bidder.	Yes/No
іх	Bidder, to provide published pressure control manual for standard coil tubing operations & stimulation services.	Yes/No
x	Bidder, to provide free of cost at least 06 days basic and advanced coil tubing and stimulation training to two (02) OGDCL Engineers every year. Share a structured training program c/w list of courses and location where training will be performed.	Yes/No
3	BIDDER'S FINANCIAL STATUS	
	Bidder must be financially sound enough to execute the contract with OGDCL. Provide audited financial statement for last three years to confirm financial status.	Yes/No

# **GROUP "C":** PROVISION OF SMART COIL AND INFLATABLE BRIDGE PLUG SERVICES (RETRIEVABLE/PERMANENT) ALL OVER PAKISTAN

#### 1. EQUIPMENT

Sr.	DESCRIPTION	AVAILABILITY
COIL	TUBING SERVICES	
1	SMART COIL TUBING UNIT/ REEL/INJECTOR HEAD	
i	Availability of at least one (01) coil tubing unit with capacity for coil sizes 1.5"(5,500 M), 1.75"(4,300 M) and 2" (4,000 M) complete with all valid certificates available anywhere around the globe at the time of bidding.	-
ii	Commitment to arrange smart coil services in Pakistan within 45 Days after signing of contract.	Yes/No
iii	The coil tubing units must be equipped with latest real time monitoring software (fatigue computation and data acquisition), with self-aligning sliding Goose neck, separate power pack drive mechanism and injector heads.	Yes/No
APPL	ICATIONS OF SMART COIL	
	OGDCL require following jobs to be performed through Smart coil, therefore, contractor to provide necessary connection including but not limited to logging head to perform jobs along with OGDCL/third party	

	services. Bidder to confirm that Smart coil provided to OGDCL is capable of performing below mentioned jobs in true letter and spirit.	
i	Wireline logging e.g CBL/CCL, Gamma Ray/Neutron logs, caliper etc.	Yes/No
ii	Temperature log	Yes/No
iii	Perforations	Yes/No
iv	Casing/tubing cutting	Yes/No
v	Packer/bridge plug setting	Yes/No
vi	Cement retainer setting	Yes/No
vii	Convey any tool through coil tubing and operate via wire line	Yes/No
viii	Fishing	Yes/No
ix	Plugs setting and retrieval	Yes/No
х	Well logging (Real time & memory)	Yes/No
xi	Production logging both qualitative & quantitate	Yes/No
xii	Leak identification	Yes/No
xiii	Flow path identification	Yes/No
xiv	Real time bottom hole parameters	Yes/No
xv	Bottom hole pressure and temperature survey during kick off	Yes/No
xvi	Setting and retrieving tubing patch	Yes/No
2	ADDITIONAL OPTIONAL FEATURES OF SMART COIL	
	ADDITIONAL OPTIONAL FEATURES OF SMART COIL CL may utilize the following additional optional features of smart coil if availa	ble with
OGD	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder.	
OGD	CL may utilize the following additional optional features of smart coil if availa	Temperature,
OGD provi	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including	Temperature, temperature
OGD provi	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling.	Temperature, temperature and cleanout
OGD provi	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash	Temperature, temperature and cleanout ess.
OGD provi i	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash services and provide real time stimulation/diversion analysis and effectivene Ability to pump aromatic solvents to conduct cleanout services and prov	Temperature, temperature and cleanout ess.
OGD provi i ii	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash services and provide real time stimulation/diversion analysis and effectivene Ability to pump aromatic solvents to conduct cleanout services and prov analysis	Temperature, temperature and cleanout ess.
OGD provi i ii iii	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash services and provide real time stimulation/diversion analysis and effectivene Ability to pump aromatic solvents to conduct cleanout services and prov analysis <b>PRESSURE CONTROL EQUIPMENT</b>	Temperature, temperature and cleanout ess. vide real time
OGD provi i ii iii <b>3</b>	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash services and provide real time stimulation/diversion analysis and effectivene Ability to pump aromatic solvents to conduct cleanout services and prov analysis <b>PRESSURE CONTROL EQUIPMENT</b> WCE Remote control panel (To be operated from control cabin)	Temperature, temperature and cleanout ess. vide real time Yes/No
OGD provi i ii iii <b>3</b> ii	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash services and provide real time stimulation/diversion analysis and effectivene Ability to pump aromatic solvents to conduct cleanout services and prov analysis <b>PRESSURE CONTROL EQUIPMENT</b> WCE Remote control panel (To be operated from control cabin) 10K Psi rating WCE (CAT-I), compatible to H <sub>2</sub> S environment	Temperature, temperature and cleanout ess. /ide real time Yes/No Yes/No
OGD provi	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash services and provide real time stimulation/diversion analysis and effectivene Ability to pump aromatic solvents to conduct cleanout services and prov analysis <b>PRESSURE CONTROL EQUIPMENT</b> WCE Remote control panel (To be operated from control cabin) 10K Psi rating WCE (CAT-II), compatible to H <sub>2</sub> S environment 15K Psi rating WCE (CAT-III), compatible to H <sub>2</sub> S environment Adapters/X-overs for coil tubing rig-up as per standard tree top/drill pipe	Temperature, temperature and cleanout ess. ride real time Yes/No Yes/No Yes/No
OGD provi i ii iii iii iii iii iv	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash services and provide real time stimulation/diversion analysis and effectivene Ability to pump aromatic solvents to conduct cleanout services and prov analysis <b>PRESSURE CONTROL EQUIPMENT</b> WCE Remote control panel (To be operated from control cabin) 10K Psi rating WCE (CAT-I), compatible to H <sub>2</sub> S environment 10K Psi rating WCE (CAT-II), compatible to H <sub>2</sub> S environment	Temperature, temperature and cleanout ess. ride real time Yes/No Yes/No Yes/No Yes/No
OGD provi i ii iii iii iii iv <b>3</b>	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash services and provide real time stimulation/diversion analysis and effectivened Ability to pump aromatic solvents to conduct cleanout services and provide analysis <b>PRESSURE CONTROL EQUIPMENT</b> WCE Remote control panel (To be operated from control cabin) 10K Psi rating WCE (CAT-II), compatible to H <sub>2</sub> S environment 10K Psi rating WCE (CAT-III), compatible to H <sub>2</sub> S environment 15K Psi rating WCE (CAT-III), compatible to H <sub>2</sub> S environment Adapters/X-overs for coil tubing rig-up as per standard tree top/drill pipe connections without any financial impact Provision of inflatable retrievable/permanent Bridge plugs.	Temperature, temperature and cleanout ess. /ide real time Yes/No Yes/No Yes/No Yes/No Yes/No
OGD provi i ii iii iii iii iv 3 4 5	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash services and provide real time stimulation/diversion analysis and effectivened Ability to pump aromatic solvents to conduct cleanout services and prov analysis <b>PRESSURE CONTROL EQUIPMENT</b> WCE Remote control panel (To be operated from control cabin) 10K Psi rating WCE (CAT-I), compatible to H <sub>2</sub> S environment 10K Psi rating WCE (CAT-II), compatible to H <sub>2</sub> S environment 15K Psi rating WCE (CAT-III), compatible to H <sub>2</sub> S environment Adapters/X-overs for coil tubing rig-up as per standard tree top/drill pipe connections without any financial impact Provision of inflatable retrievable/permanent Bridge plugs. <b>(Commitment to Provide within 15 Days of mobilization notice at well site)</b>	Temperature, temperature and cleanout ess. /ide real time Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No
OGD provi i ii iii iii iii iv 3 4 5	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash services and provide real time stimulation/diversion analysis and effectivened Ability to pump aromatic solvents to conduct cleanout services and prov analysis <b>PRESSURE CONTROL EQUIPMENT</b> WCE Remote control panel (To be operated from control cabin) 10K Psi rating WCE (CAT-I), compatible to H <sub>2</sub> S environment 10K Psi rating WCE (CAT-II), compatible to H <sub>2</sub> S environment 15K Psi rating WCE (CAT-III), compatible to H <sub>2</sub> S environment Adapters/X-overs for coil tubing rig-up as per standard tree top/drill pipe connections without any financial impact Provision of inflatable retrievable/permanent Bridge plugs. <b>(Commitment to Provide within 15 Days of mobilization notice at well site)</b>	Temperature, temperature and cleanout ess. /ide real time Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No
OGD provi i ii iii iii iii iv 3 3 4 5 PUW	CL may utilize the following additional optional features of smart coil if availa ided smart coil of the bidder. Capability of delivering live downhole data (differential pressures across CT, Depth Correlation) during Nitrogen Kick-off and Stimulation including profiling. Ability to pump HCl up to 15% to conduct matrix stimulation, acid wash services and provide real time stimulation/diversion analysis and effectivened Ability to pump aromatic solvents to conduct cleanout services and provi analysis <b>PRESSURE CONTROL EQUIPMENT</b> WCE Remote control panel (To be operated from control cabin) 10K Psi rating WCE (CAT-I), compatible to H <sub>2</sub> S environment 15K Psi rating WCE (CAT-II), compatible to H <sub>2</sub> S environment Adapters/X-overs for coil tubing rig-up as per standard tree top/drill pipe connections without any financial impact Provision of inflatable retrievable/permanent Bridge plugs. <b>(Commitment to Provide within 15 Days of mobilization notice at well site)</b> Data acquisition system <b>IP UNIT SERVICES</b>	Temperature, temperature and cleanout ess. ride real time Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No

2	ZONE-II CERTIFICATION	
	Coil tubing unit and pump unit are Zone-II certified.	Yes/No
3	Fully operational workshop and equipment base set up anywhere in Pakistan with redressing facility and should have adequate backup tools.	Yes/No

# 2. <u>CREW</u>

Sr.	QUALIFICATION/EXPERIENCE OF CREW MEMBERS	AVAILABILITY
1	CTU ENGINEERS / SPECIALIST (AT LEAST 1 ENGINEER)	Yes/No
	Petroleum or Mechanical Engineer with minimum five (5) years of exclusive experience of planning, designing and executing Coil Tubing operations along with relevant training(s) and certified courses etc. <b>Must have designed and performed 100 coil tubing jobs.</b>	
2	SMART COIL OPERATOR (AT LEAST 02)	Yes/No
	Technical diploma holder with minimum of five (05) years' experience of	
	Smart coil operations. Must have performed 10 jobs with smart coil.	
3	OPERATOR (AT LEAST 02 OPERATORS FOR EACH CATEGORY)	Yes/No
	Technical diploma holder/ matric with at least five (05) years relevant	
	experience of executing coil tubing and stimulation jobs, along with	
	relevant certification and training courses etc.	
	CTU Operator must have Performed 100 jobs with CTU.	
	• Pumping Operator must have Performed 100 Jobs with pumping equipment.	

# 3. <u>COMPANY PROFILE</u>

Sr.	DESCRIPTION	AVAILABILITY
1	BIDDER'S HISTORY (ATTACH PROOF)	
	Company registered in Pakistan or elsewhere for providing coil tubing and stimulation services. Minimum registration period = 03 Years.	Yes/No
2	BIDDER'S CAPABILITIES	
i	Bidder have performed at least 10 job with smart coil around the globe.	Yes/No
ii	Have pump unit with hook up connection.	Yes/No
iii	Bidder, to provide standard operating procedure (SOPs) for coil tubing, Smart coil jobs along with Technical manual of pressure control equipment (PCE).	Yes/No
iv	Bidder, to provide published pressure control manual for standard coil tubing operations.	Yes/No
v	Bidder, to provide free of cost at least 06 days basic and advanced coil tubing and stimulation training to two (02) OGDCL Engineers every year. Share a structured training program c/w list of courses and location where training will be performed.	Yes/No
3	BIDDER'S FINANCIAL STATUS	
	Bidder must be financially sound enough to execute the contract with OGDCL. Provide audited financial statement for last three years to confirm financial status.	Yes/No

#### Format for Standard Acid Recipes

**Note:** Companies to formulate Acid recipes as per their chemical concentration required for preparation of 1,000 Gals recipe in true letter and spirit. It is mandatory to use all chemicals in below mentioned tables for preparation of 1,000 Gal recipes. Exclusion of any chemical from the recipes as mentioned in acid recipes table by any company will result in rejection of bid.

7.5% Acid Solution complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe upto 250 °F Sr. Product Name Product UOM Unit Rate Qty. **Total Rate** US\$/UOM USŚ Code 1 32% HCI Gal 2 **Chelating Agent** lbs 3 **Corrosion Inhibitor** Gal 4 **Corrosion Inhibitor Aid** Gal 5 Surfactant Gal 6 Water Gal Recipe cost(US\$)/1,000 Gals Recipe cost(US\$)/Gal

7.5% Acid Solution complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe above 250 °F upto 350 °F

Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$
1	32% HCl		Gal			
2	Chelating Agent		lbs			
3	Corrosion Inhibitor		Gal			
4	Corrosion Inhibitor Aid		Gal			
5	Surfactant		Gal			
6	Water		Gal			
	Recipe cost(US\$)/1,000 Gals					
	Recipe cost(US\$)/Gal					

7.5% Acid Solution complete with 2,000 ppm iron control with chelating agent, 8 hrs. inhibition time

Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$	
1	32% HCl		Gal				
2	Chelating Agent		lbs				
3	Corrosion Inhibitor		Gal				
4	Corrosion Inhibitor Aid		Gal				
5	Surfactant		Gal				
6	Water		Gal				
	Recipe cost(US\$)/1,000 Gals						
	Recipe cost(US\$)/Gal						

15% ungelled acid solution complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe upto 250 °F

Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$
1	32% HCl		Gal			
2	Chelating Agent		lbs			
3	Corrosion Inhibitor		Gal			
4	Corrosion Inhibitor Aid		Gal			
5	Diverting Agent		Gal			
6	Surfactant		Gal			
7	Water		Gal			
			Re	cipe cost(US\$)/:	1,000 Gals	
				Pacina cost	(1166)/Cal	

Recipe cost(US\$)/Gal

15% ungelled acid solution complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe above 250 °F upto 350 °F

Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$	
1	32% HCl		Gal				
2	Chelating Agent		lbs				
3	Corrosion Inhibitor		Gal				
4	Corrosion Inhibitor Aid		Gal				
5	Diverting Agent		Gal				
6	Surfactant		Gal				
7	Water		Gal				
	Recipe cost(US\$)/1,000 Gals						
	Recipe cost(US\$)/Gal						

15% ungelled acid solution complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe above 350 °F

Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$
1	32% HCl		Gal			
2	Chelating Agent		lbs			
3	Corrosion Inhibitor		Gal			
4	Corrosion Inhibitor Aid		Gal			
5	Diverting Agent		Gal			
6	Surfactant		Gal			
7	Water		Gal			
	Recipe cost(US\$)/1,000 Gals					
	Recipe cost(US\$)/Gal					

15% gelled acid solution complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition
time for product concentration/1,000 Gals of Acid recipe upto 250 <sup>o</sup> F

•								
Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$		
1	32% HCl		Gal					
2	Chelating Agent		lbs					
3	Corrosion Inhibitor		Gal					
4	Corrosion Inhibitor Aid		Gal					
5	Gelling Agent		Gal					
6	Surfactant		Gal					
7	Water		Gal					
	Recipe cost(US\$)/1,000 Gals							
	Recipe cost(US\$)/Gal							

15% gelled acid solution complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe above 250 °F upto 350 °F

Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$	
1	32% HCl		Gal				
2	Chelating Agent		lbs				
3	Corrosion Inhibitor		Gal				
4	Corrosion Inhibitor Aid		Gal				
5	Gelling Agent		Gal				
6	Surfactant		Gal				
7	Water		Gal				
			Rec	ipe cost(US\$)/1	,000 Gals		
	Recipe cost(US\$)/Gal						

15% gelled acid solution complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe above 350 <sup>0</sup>F

Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$		
1	32% HCl		Gal					
2	Chelating Agent		lbs					
3	Corrosion Inhibitor		Gal					
4	Corrosion Inhibitor Aid		Gal					
5	Gelling Agent		Gal					
6	Surfactant		Gal					
7	Water		Gal					
			Rec	ipe cost(US\$)/1	,000 Gals			
	Recipe cost(US\$)/Gal							

Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$
1	32% HCl		Gal			
2	HF Intensifier		lbs			
3	Chelating Agent		lbs			
4	Corrosion Inhibitor		Gal			
5	Corrosion Inhibitor Aid		Gal			
6	Surfactant		Gal			
7	Mutual Solvent		Gal			
8	Water		Gal			

Regular Mud Acid: (12% HCl + 3% HF) c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe above 250 °F upto 350 °F

Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$
1	32% HCl		Gal			
2	HF Intensifier		lbs			
3	Chelating Agent		lbs			
4	Corrosion Inhibitor		Gal			
5	Corrosion Inhibitor Aid		Gal			
6	Surfactant		Gal			
7	Mutual Solvent		Gal			
8	Water		Gal			
			Recip	e cost(US\$)/1	,000 Gals	
Recipe cost(US\$)/Gal						

Regular Mud Acid: (12% HCl + 3% HF) c/w 2,000 ppm iron control with chelating agent, 8 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe Above 350 °F

Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$	
1	32% HCl		Gal				
2	HF Intensifier		lbs				
3	Chelating Agent		lbs				
4	Corrosion Inhibitor		Gal				
5	Corrosion Inhibitor Aid		Gal				
6	Surfactant		Gal				
7	Mutual Solvent		Gal				
8	Water		Gal				
			Reci	ipe cost(US\$)/1,	,000 Gals		
	Recipe cost(US\$)/Gal						

	10% Acetic Acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe upto 250 °F							
Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$		
1	Acetic Acid		Gal					
2	Chelating Agent		lbs.					
3	Organic Corrosion Inhibitor		Gal					
4	Surfactant		Gal					
5	Water		Gal					
			Rec	ipe cost(US\$)/1	L,000 Gals			
	Recipe cost(US\$)/Gal							

	10% Acetic Acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe above 250 °F upto 350 °F							
Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$		
1	Acetic Acid		Gal					
2	Chelating Agent		lbs.					
3	Organic Corrosion Inhibitor		Gal					
4	Surfactant		Gal					
5	Water		Gal					
			Recip	e cost(US\$)/1,	,000 Gals			
	Recipe cost(US\$)/Gal							

10% Acetic Acid complete with 2,000 ppm iron control with chelating agent, 08 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe above 350 °F

		-	r				
Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$	
1	Acetic Acid		Gal				
2	Chelating Agent		lbs.				
3	Organic Corrosion Inhibitor		Gal				
4	Surfactant		Gal				
5	Water		Gal				
	Recipe cost(US\$)/1,000 Gals						
	Recipe cost(US\$)/Gal						

9% Formic Acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe upto 250 °F

•								
Sr.	Product Name	Product	UOM	Unit Rate	Qty.	Total Rate US\$		
1	Formic Acid		Gal					
2	Chelating Agent		lbs.					
3	Organic Corrosion Inhibitor		Gal					
4	Surfactant		Gal					
5	Water		Gal					
			Reci	ipe cost(US\$)/	1,000 Gals			
	Recipe cost(US\$)/Gal							

	9% Formic Acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe above 250 °F upto 350 °F							
Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$		
1	Formic Acid		Gal					
2	Chelating Agent		lbs.					
3	Organic Corrosion Inhibitor		Gal					
4	Surfactant		Gal					
5	Water		Gal					
			Rec	cipe cost(US\$)/1	,000 Gals			
	Recipe cost(US\$)/Gal							

9% Formic Acid complete with 2,000 ppm iron control with chelating agent, 08 hrs. inhibition time for product concentration/1,000 Gals of Acid recipe above 350 °F

Sr.	Product Name	Product Code	UOM	Unit Rate US\$/UOM	Qty.	Total Rate US\$		
1	Formic Acid		Gal					
2	Chelating Agent		lbs.					
3	Organic Corrosion Inhibitor		Gal					
4	Surfactant		Gal					
5	Water		Gal					
			Rec	ipe cost(US\$)/1	,000 Gals			
	Recipe cost(US\$)/Gal							

# FINANCIAL EVALUATION MODEL GROUP "A" (PUNJAB & KPK)

(A) C	oil Tubing Services with 1.5" /1.75" /2" coil sizes (Cor	<mark>nplete se</mark>	tup/crev	w)	
Sr.	Services	Qty. (Q)	UOM (U)	Unit Cost (P) <sup>Us\$/ UOM</sup>	Total Cost =P x Q Uss
1	Coil Tubing Unit with standard BHA up to Category 3 PCE Operating Charges.	3	Days	033/ 00101	033
2	Coil Tubing Unit with standard BHA up to Category 3 PCE Standby Charges.	2	Days		
3	Coil Tubing Crew Operating Charges.	3	Days		
4	Coil Tubing Crew Standby Charges.	2	Days		
5	Coil Tubing Cumulative Depth Charges for Non-Corrosive Environment.	7,000	Meters		
6	Coil Tubing Services (Corrosive Environment CO2 ≥ 5 % or H2S ≥ 10 PPM)	3,000	Meters		
7	High Pressure Jetting / Rotating Tool Operating Charges.	3	Days		
8	High Pressure Jetting / Rotating Tool Standby Charges.	2	Days		
9	Coil Tubing Unit Mob/De-mob.	1,000	КМ		
10	Coil Tubing Crew Mob/De-mob.	1,000	КМ		
	Total	for estima		Job (US\$) obs (US\$)	

Sr.	Services	Qty. (Q)	UOM (U)	Unit Cost (P)	Total Cost =P x Q		
				US\$/ UOM	US\$		
1	Nitrogen Pumping Equipment Operating Charges.	3	Days				
2	Nitrogen Pumping Equipment Standby Charges.	2	Days				
3	Nitrogen Pumping Crew Operating Charges.	3	Days				
4	Nitrogen Pumping Crew Standby Charges.	2	Days				
5	Liquid Nitrogen volume Pumping Charges.	7,200	Gals				
6	Liquid Nitrogen Charges.	8,000	Gals				
7	Liquid Nitrogen Supply Tanker Standby Charges.	2	Days				
8	Liquid Nitrogen Supply Tanker Mob/De-mob.	1,000	КМ				
9	Nitrogen Pumping Equipment Mob/De-mob.	1,000	КМ				
10	Nitrogen Pumping Crew Mob/De-mob.	1,000	KM				
			Total	/Job (US\$)			
	Tot	al for estima	ted 130 .	lobs (US\$)			
<mark>(C) C</mark>	rane with operator services(Complete setup/crew)	)					
Sr.	Services	Qty.	UOM	Unit	Total		
		(Q)	(U)	Cost	Cost		
				(P)	=P x Q		
				US\$/ UOM	US\$		
1	40-50 ton Hydraulic Crane Operating.	3	Days				
2	40-50 ton Hydraulic Crane Standby.	2	Days				
3	Crane with operator Mob/De-mob.	1,000	КМ				
Total/Job (US\$)							
	Total for Estimated 130 Jobs (US\$)						
	Tot	al for Estima	ted 130 L	Iobs (USS)			
(D) p		al for Estima	ited 130 .	lobs (US\$)			
<mark>(D) P</mark> Sr.	Tot Pump unit services(Complete setup/crew) Services	al for Estima	UOM	Unit	Total		

		(Q)	(U)	Cost	Cost	
				(P)	=P x Q	
				US\$/ UOM	US\$	
1	Pump unit Crew Operating Charges.	3	Days			
2	Pump unit Crew Standby Charges.	2	Days			
3	Pump unit Equipment Operating Charges.	3	Days			
4	Pump unit Equipment Standby Charges.	2	Days			
5	Volume Pumping Charges using pump unit.	1,500	Gals			
6	Pump unit Equipment Mob/De-mob.	1,000	КМ			
7	Pump unit crew Mob/De-mob.	1,000	КМ			
	Total/Job (US\$)					
	Total for estimated 20 Jobs (US\$)					

Sr.	Services	Qty.	UOM	Unit	Total
		(Q)	(U)	Cost	Cost
				(P)	=P x Q
				US\$/ UOM	US\$
1	Stimulation/Pumping Package Crew Operating Charges.	3	Days		
2	Stimulation/Pumping Package Crew Standby Charges.	2	Days		
3	Stimulation/Pumping Package Equipment Standby Charges.	2	Days		
4	Volume Pumping Charges using stimulation/Pumping Package.	50,000	Gal		
5	Supply Truck for Acid Standby Charges.	2	Days		
6	Stimulation/Pumping package Equipment Mob/De-mob.	1,000	КМ		
7	Stimulation/Pumping Package Crew Mob/De-mob.	1,000	КМ		
8	Supply Truck for Acid Mob/De-mob.	1,000	КМ		
			Total/	Job (US\$)	
Total for estimated 100 Jobs (US\$)					

(F) Tubing Puncture/Perforation tool including Mob/De-mob						
Sr.	Services	Qty. (Q)	UOM (U)	Unit Cost (P) <sup>Us\$/ UOM</sup>	Total Cost =P x Q US\$	
1	Abbrasive/Abbrasi Jet tubing puncture/perforation tool- Operating charges.	3	Days			
2	Abbrasive/Abbrasi Jet tubing puncture/perforation tool- standby charges.	2	Days			
3	Tubular Anchors- Operating charges.	3	Days			
4	Tubular Anchors- Standby charges.	2	Days			
			Total	/Job (US\$)		
Total for Estimated 03 Jobs (US\$)						

(G)	Thru Tubing Services with Back up Tools				
Sr.	Services	Qty. (Q)	UOM (U)	Unit Cost (P) Us\$/UOM	Total Cost =P x Q US\$
1	Dimple Connector – Operating.	3	Days		
2	Dimple Connector - Stand by.	2	Days		
3	Up to 2-1/8" Size Down hole filter – Operating.	3	Days		
4	Up to 2-1/8" Size Down hole filter -Stand By.	2	Days		
5	Up to 2-1/8" Size Thru Tubing Motor - Operating.	3	Days		
6	Up to 2-1/8" Size Thru Tubing Motor - Stand By.	2	Days		
7	Hydraulic tubing cutting tool-Operating.	3	Days		
8	Hydraulic tubing cutting tool-Standby.	2	Days		
9	High Pressure Jetting / Rotating Tool Operating Charges.	3	Days		
10	High Pressure Jetting / Rotating Tool Standby Charges.	2	Days		
11	Up to 2-1/8" Size Thru Tubing weight bar – Operating.	3	Days		
12	Up to 2-1/8" Thru Tubing weight bar – Standby.	2	Days		
13	Up to 2-1/8" Flat Bottom Mill – Operating.	3	Days		

14	Up to 2-1/8" Flat bottom mill - Standby.	2	Days		
15	Up to 2-1/8" Tapered mill –Operating.	3	Days		
16	Up to 2-1/8" Tapered mill - Standby.	2	Days		
17	Up to 2-1/8" Junk mill – Operating.	3	Days		
18	Up to 2-1/8" Junk mill - Standby.	2	Days		
19	Up to 2-1/8" Impact hammer – Operating.	3	Days		
20	Up to 2-1/8" Impact hammer – Standby.	2	Days		
21	Up to 2-1/8" Accelerator – Operating.	3	Days		
22	Up to 2-1/8" Accelerator - Standby.	2	Days		
23	Up to 2-1/8" Jar – Operating.	3	Days		
24	Up to 2-1/8" Jar - Standby.	2	Days		
25	Centralizer – Operating.	3	Days		
26	Centralizer - Standby.	2	Days		
27	Pull test sub – Operating.	3	Days		
28	Pull test sub - Standby.	2	Days		
29	Surface filter – Operating.	3	Days		
30	Surface filter – Standby.	2	Days		
31	Debris filter charges.	10	Nos.		
32	Thru tubing screen filter charges.	20	Nos.		
33	Thru tubing crew – operating.	3	Days		
34	Thru tubing crew – standby.	2	Days		
35	Thru tubing tools Mob/De-mob.	1,000	КМ		
36	Thru tubing crew Mob/De-mob.	1,000	КМ		
			Total/	Job (US\$)	
		Total for Estin	mated 8 J	obs (US\$)	

(H)	Lab Analysis				
Sr.	Services	Qty. (Q)	UOM (U)	Unit Cost (P)	Total Cost =P x Q
		(Ŷ	(0)	US\$/UOM	US\$
1	Thin bed XRD analysis with minerals identification	10	Test		
	upto 1% concentration including mob/de-mob				
	charges inside and outside Pakistan.				

Sr.	Description	UOM (U)	Qty. /Job	Estimated jobs	Total Estimated Quantity Required	Unit Cost (P) US\$/UOM	Total Cost =P x Q US\$
1	7.5% HCl solution up to 250 $^{\circ}$ F c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	5,000	1	5,000		
2	7.5% HCl solution above 250 °F upto 350 °F c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	5,000	3	15,000		
3	7.5% HCl solution above 350 $^{\circ}$ F c/w 2,000 ppm iron control with chelating agent, 08 hrs. inhibition time.	Gal	5,000	1	5,000		
4	15% Gelled HCl solution upto 250 <sup>o</sup> F c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	5,000	7	35,000		
5	15% Gelled HCl solution above 250 °F upto 350 °F c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	5,000	16	80,000		
6	15% Gelled HCl solution above 350 °F c/w 2,000 ppm iron control with chelating agent, 8 hrs. inhibition time.	Gal	5,000	1	5,000		
7	15% ungelled HCl solution upto 250 °F c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	5,000	8	40,000		
8	15% ungelled HCl solution above 250 °F upto 350 °F c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	5,000	16	80,000		
9	15% ungelled HCl solution above 350 <sup>o</sup> F c/w 2,000 ppm iron control with chelating agent, 8 hrs. inhibition time.	Gal	5,000	1	5,000		
10	Regular mud acid solution upto 250 °F: (12% HCl + 3%HF) c/w 2,000ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	5,000	16	80,000		
11	Regular mud acid solution above 250 °F upto 350 °F: (12% HCl + 3%HF) c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	5,000	10	50,000		
12	Regular mud acid solution above 350 <sup>o</sup> F: (12% HCl + 3%HF) c/w 2,000ppm iron control with chelating agent, 08 hrs. inhibition time.	Gal	5,000	1	5,000		
13	10% Acetic acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time upto 250 °F.	Gal	5,000	1	5,000		
14	10% Acetic acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time above 250 °F upto 350 °F.	Gal	5,000	2	10,000		

15	10% Acetic acid complete with 2,000 ppm iron control with chelating agent, 8 hrs. inhibition time above 350 $^{\rm 0}F.$	Gal	5,000	1	5,000		
16	9% Formic acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time upto 250 °F.	Gal	5,000	1	5,000		
17	9% Formic acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time above 250 °F upto 350 °F.	Gal	5,000	2	10,000		
18	9% Formic acid complete with 2,000 ppm iron control with chelating agent, 8 hrs. inhibition time above 350 $^{0}$ F.	Gal	5,000	1	5,000		
				То	tal for Estimated 8	89 Jobs (US\$)	
(J) Ac	dditional Chemicals (Upto 400 °F temperature rating)						
1	Corrosion inhibitor up to 250 <sup>0</sup> F.	Gal	100	20	2,000		
2	Mutual solvent.	Gal	700	50	35,000		
3	Gelling agent.	Gal	200	20	4,000		
4	Alcohol.	Gal	1,000	20	20,000		
5	Ammonium chloride.	Lbs	6,000	50	300,000		
6	Potassium chloride.	Lbs	6,000	50	300,000		
7	Soda ash.	Lbs	1,000	20	20,000		
8	Caustic soda.	Lbs	1,000	20	20,000		
9	Viscoelastic or equivalent diverter.	Gal	100	30	3,000		
10	Xylene.	Gal	600	20	12,000		
11	Calcium carbonate.	Lbs	10,000	5	50,000		
12	Silica sand.	Lbs	3,000	5	15,000		
13	Mesh sand (30/60).	Lbs	3,000	5	15,000		
14	Mesh sand (20/40).	Lbs	3,000	5	15,000		
15	Non-damaging clean out fluid (Gel).	Gal	1,000	8	8,000		
16	H2S/CO2 inhibitor	Gal	100	10	1,000		
17	Foaming agent	Gal	50	10	500		
18	Demulsifier	Gal	50	10	500		
19	Anti-sludge agent	Gal	100	10	1,000		
20	Citric Acid	Gal	100	2	200		
21	H2S scavenger	Gal	100	10	1,000		
22	Methanol	Gal	5,000	5	25,000		

23 To	oulene	Gal	100	5	500	
24 Ca	lcium chloride	Lbs	5,000	5	25,000	
25 So	dium chloride	Lbs	5,000	5	25,000	
26 Ac	id Fiber	Lbs	200	5	1,000	
27 Or	rganic acid intensifier	Lbs	200	5	1,000	
28 Cla	ay stabilizer	gal	150	5	750	
29 Cla	ay acid agent	Lbs	250	5	1,250	
30 St	abilizing agent	Gal	400	10	4000	
31 Fr	iction reducer(Metal to Metal)	Gal	30	8	240	
32 Hi	-Vis Pill	bbl	50	8	400	
					Total Cost (US\$	5)
Table to	otalizer Group "A"					
Table	Description					Value (US\$)
Table A	Coil tubing services					
Table B	Nitrogen and Nitrogen pumping equipment services (Complete setup/cre	ew)				
Table C	Crane with operator services(Complete setup/crew)					
Table D	Pump unit services(Complete setup/crew)					
Table E	Stimulation/pumping package services (Complete setup/crew)					
Table F	Tubing puncture/Perforation tool including Mob/De-mob					
Table G	Thru tubing services					
Table H	Lab analysis.					
Table I	Stimulation recipes.					
Table J	Additional chemicals (Upto 400 <sup>o</sup> F temperature rating)					
					GRAND TOTAL GROUP "A'	,

# FINANCIAL EVALUATION MODEL GROUP "B" (SINDH & BALUCHISTAN)

(A) Coil tubing services with 1.5" /1.75" /2" coil sizes (Complete setup/crew)								
Sr.	Services	Qty.	UOM	Unit Cost	<b>Total Cost</b>			
		(Q)	(U)	(P)	=P x Q			
				US\$/ UOM	US\$			
1	Coil Tubing Unit with standard BHA up to Category 3 PCE Operating Charges.	3	Days					
2	Coil Tubing Unit with standard BHA up to Category 3 PCE Standby Charges.	2	Days					
3	Coil Tubing Crew Operating Charges.	3	Days					
4	Coil Tubing Crew Standby Charges.	2	Days					
5	Coil Tubing Cumulative Depth Charges for Non- Corrosive Environment.	5,000	Meters					
6	Coil Tubing Services (Corrosive Environment CO2 ≥ 5 % or H2S ≥ 10 PPM)	5,000	Meters					
7	Coil Tubing Unit Mob/De-mob.	1,000	KM					
8	Coil Tubing Crew Mob/De-mob.	1,000	KM					
			Tota	al/Job (US\$)				
	Total for estimated 150 Jobs (US\$)							

(B) Nitrogen and nitrogen pumping equipment services(Complete setup/crew)							
Sr.	Services	Qty.	UOM	Unit Cost	<b>Total Cost</b>		
		(Q)	(U)	(P)	=P x Q		
				US\$/ UOM	US\$		
1	Nitrogen Pumping Equipment Operating Charges.	3	Days				
2	Nitrogen Pumping Equipment Standby Charges.	2	Days				
3	Nitrogen Pumping Crew Operating Charges.	3	Days				
4	Nitrogen Pumping Crew Standby Charges.	2	Days				
5	Liquid Nitrogen volume Pumping Charges.	4,500	Gals				
6	Liquid Nitrogen Charges.	5,000	Gals				
7	Liquid Nitrogen Supply Tanker Standby Charges.	2	Days				
8	Liquid Nitrogen Supply Tanker Mob/De-mob.	1,000	КМ				
9	Nitrogen Pumping Equipment Mob/De-mob.	1,000	КМ				
10	Nitrogen Pumping Crew Mob/De-mob.	1,000	КМ				
	Total/Job (US\$)						
	Tot	al for esti	mated 15	0 Jobs (US\$)			

(C) C	rane with operator services(Complete setup/cro	ew)				
Sr.	Services	Qty. (Q)	UOM (U)	Unit Cost (P)	Total Cost =P x Q	
				US\$/ UOM	US\$	
1	40-50 ton Hydraulic Crane Operating.	3	Days			
2	40-50 ton Hydraulic Crane Standby.	2	Days			
3	Crane with operator Mob/De-mob.	1,000	КМ			
			Tota	al/Job (US\$)		
	Total for Estimated 150 Jobs (US\$)					

(D) F	Pump unit services(Complete setup/crew)				
Sr.	Services	Qty. (Q)	UOM (U)	Unit Cost (Р) Us\$/ UOM	Total Cost =P x Q USS
1	Pump unit Crew Operating Charges.	3	Days		
2	Pump unit Crew Standby Charges.	2	Days		
3	Pump unit Equipment Operating Charges.	3	Days		
4	Pump unit Equipment Standby Charges.	2	Days		
5	Volume Pumping Charges using pump unit.	1,500	Gals		
6	Pump unit Equipment Mob/De-mob.	1,000	КМ		
7	Pump unit crew Mob/De-mob.	1,000	КМ		
Total/Job (US\$)					
Total for estimated 20 Jobs (US\$)					

Sr.	Services	Qty.	UOM	Unit	Total
		(Q)	(U)	Cost	Cost
				(P)	=P x Q
				US\$/ UOM	US\$
1	Stimulation/Pumping Package Crew Operating Charges.	3	Days		
2	Stimulation/Pumping Package Crew Standby Charges.	2	Days		
3	Stimulation/Pumping Package Equipment Standby Charges.	2	Days		
4	Volume Pumping Charges using stimulation/Pumping Package.	30,000	Gal		
5	Supply Truck for Acid Standby Charges.	2	Days		
6	Stimulation/Pumping package Equipment Mob/De-mob.	1,000	КМ		
7	Stimulation/Pumping Package Crew Mob/De-mob.	1,000	КМ		
8	Supply Truck for Acid Mob/De-mob.	1,000	КМ		
Total/Job (US\$)					
	Total f	or estima	ated 117 Jo	obs (US\$)	

Sr.	Services	Qty. (Q)	UOM (U)	Unit Cost (P)	Total Cost =P x Q
				US\$/ UOM	US\$
1	Abbrasive/Abbrasi Jet tubing puncture/perforation tool-Operating charges.	3	Days		
2	Abbrasive/Abbrasi Jet tubing puncture/perforation tool- standby charges.	2	Days		
3	Tubular Anchors- Operating charges.	3	Days		
4	Tubular Anchors- Standby charges.	2	Days		
			Tot	al/Job (US\$)	
Total for Estimated 03 Jobs (US\$)					

(G)	Thru tubing services with back up tools				
Sr.	Services	Qty.	UOM	Unit	Total
		(Q)	(U)	Cost	Cost
				(P)	=P x Q
				US\$/UOM	US\$

2Dimple Connector - Stand by.2Days3Up to 2-1/8" Size Down hole filter - Operating.3Days4Up to 2-1/8" Size Down hole filter - Stand By.2Days5Up to 2-1/8" Size Thru Tubing Motor - Operating.3Days6Up to 2-1/8" Size Thru Tubing Motor - Operating.3Days7Hydraulic tubing cutting tool-Operating.3Days8Hydraulic tubing cutting tool-Operating.3Days9High Pressure Jetting / Rotating Tool Operating Charges.3Days10High Pressure Jetting / Rotating Tool Standby Charges.2Days11Up to 2-1/8" Size Thru Tubing weight bar - Operating.3Days12Up to 2-1/8" Filat Bottom Mill - Operating.3Days13Up to 2-1/8" Filat bottom Mill - Operating.3Days14Up to 2-1/8" Tapered mill - Standby.2Days15Up to 2-1/8" Tapered mill - Operating.3Days16Up to 2-1/8" Inw mill - Operating.3Days17Up to 2-1/8" Impact hammer - Operating.3Days18Up to 2-1/8" Impact hammer - Operating.3Days19Up to 2-1/8" Ind Tammer - Operating.3Days20Up to 2-1/8" Ind Tammer - Operating.3Days21Up to 2-1/8" Ind Tammer - Operating.3Days22Up to 2-1/8" Ind Tammer - Operating.3Days23Up to 2-1/8" Ind Coelerator - Operating.3	1	Dimple Connector – Operating.	3	Days		
3Up to 2-1/8" Size Down hole filter - Operating.3Days4Up to 2-1/8" Size Down hole filter -Stand By.2Days5Up to 2-1/8" Size Thru Tubing Motor - Operating.3Days6Up to 2-1/8" Size Thru Tubing Motor - Stand By.2Days7Hydraulic tubing cutting tool-Operating.3Days8Hydraulic tubing cutting tool-Standby.2Days9High Pressure Jetting / Rotating Tool Operating Charges.3Days10High Pressure Jetting / Rotating Tool Standby Charges.2Days11Up to 2-1/8" Size Thru Tubing weight bar - Operating.3Days12Up to 2-1/8" Thru Tubing weight bar - Standby.2Days13Up to 2-1/8" Tab ottom Mill - Operating.3Days14Up to 2-1/8" Tapered mill - Operating.3Days15Up to 2-1/8" Tapered mill - Operating.3Days16Up to 2-1/8" Tapered mill - Operating.3Days17Up to 2-1/8" Inpact hammer - Operating.3Days18Up to 2-1/8" Junk mill - Standby.2Days20Up to 2-1/8" Junk mill - Standby.2Days21Up to 2-1/8" Tapered mill - Operating.3Days22Up to 2-1/8" Junk mill - Operating.3Days23Up to 2-1/8" Junk mill - Operating.3Days24Up to 2-1/8" Impact hammer - Operating.3Days25Centralizer - Operating.3Days </td <td>2</td> <td>Dimple Connector - Stand by.</td> <td>2</td> <td>Days</td> <td></td> <td></td>	2	Dimple Connector - Stand by.	2	Days		
5       Up to 2-1/8" Size Thru Tubing Motor - Operating.       3       Days         6       Up to 2-1/8" Size Thru Tubing Motor - Stand By.       2       Days         7       Hydraulic tubing cutting tool-Operating.       3       Days         8       Hydraulic tubing cutting tool-Standby.       2       Days         9       High Pressure Jetting / Rotating Tool Operating Charges.       3       Days         10       High Pressure Jetting / Rotating Tool Standby Charges.       2       Days         11       Up to 2-1/8" Size Thru Tubing weight bar – Operating.       3       Days         12       Up to 2-1/8" Thru Tubing weight bar – Operating.       3       Days         13       Up to 2-1/8" Thru Tubing weight bar – Standby.       2       Days         14       Up to 2-1/8" Thru Tubing weight bar – Standby.       2       Days         15       Up to 2-1/8" Flat bottom mill – Standby.       2       Days         16       Up to 2-1/8" Tapered mill – Operating.       3       Days         17       Up to 2-1/8" Junk mill – Operating.       3       Days         18       Up to 2-1/8" Junk mill – Standby.       2       Days         20       Up to 2-1/8" Accelerator – Operating.       3       Days         21	3	Up to 2-1/8" Size Down hole filter – Operating.	3			
6Up to 2-1/8" Size Thru Tubing Motor - Stand By.2Days7Hydraulic tubing cutting tool-Operating.3Days8Hydraulic tubing cutting tool-Standby.2Days9High Pressure Jetting / Rotating Tool Operating Charges.3Days10High Pressure Jetting / Rotating Tool Standby Charges.2Days11Up to 2-1/8" Size Thru Tubing weight bar - Operating.3Days12Up to 2-1/8" Thru Tubing weight bar - Standby.2Days13Up to 2-1/8" Flat Bottom Mill - Operating.3Days14Up to 2-1/8" Flat bottom mill - Standby.2Days15Up to 2-1/8" Tapered mill -Operating.3Days16Up to 2-1/8" Tapered mill -Operating.3Days17Up to 2-1/8" Mark mill - Operating.3Days18Up to 2-1/8" Junk mill - Operating.3Days19Up to 2-1/8" Impact hammer - Operating.3Days20Up to 2-1/8" Junk mill - Operating.3Days21Up to 2-1/8" Impact hammer - Standby.2Days22Up to 2-1/8" Junk mill - Operating.3Days23Up to 2-1/8" Accelerator - Operating.3Days24Up to 2-1/8" Accelerator - Operating.3Days25Centralizer - Operating.3Days24Up to 2-1/8" Jar - Standby.2Days25Centralizer - Standby.2Days26Centralizer - Standby. <td>4</td> <td>Up to 2-1/8" Size Down hole filter -Stand By.</td> <td>2</td> <td>Days</td> <td></td> <td></td>	4	Up to 2-1/8" Size Down hole filter -Stand By.	2	Days		
7Hydraulic tubing cutting tool-Operating.3Days8Hydraulic tubing cutting tool-Standby.2Days9High Pressure Jetting / Rotating Tool Operating Charges.3Days10High Pressure Jetting / Rotating Tool Standby Charges.2Days11Up to 2-1/8" Size Thru Tubing weight bar – Operating.3Days12Up to 2-1/8" Thru Tubing weight bar – Standby.2Days13Up to 2-1/8" Flat Bottom Mill – Operating.3Days14Up to 2-1/8" Flat bottom mill - Standby.2Days15Up to 2-1/8" Tapered mill – Operating.3Days16Up to 2-1/8" Tapered mill – Operating.3Days17Up to 2-1/8" Tapered mill – Operating.3Days18Up to 2-1/8" Junk mill – Standby.2Days20Up to 2-1/8" Impact hammer – Operating.3Days21Up to 2-1/8" Impact hammer – Standby.2Days22Up to 2-1/8" Accelerator – Operating.3Days23Up to 2-1/8" Accelerator – Standby.2Days24Up to 2-1/8" Jar – Operating.3Days25Centralizer – Operating.3Days26Centralizer – Operating.3Days27Pull test sub – Operating.3Days28Up to 2-1/8" Jar – Standby.2Days29Surface filter – Standby.2Days29Surface filter – Standby.2Days<	5	Up to 2-1/8" Size Thru Tubing Motor - Operating.	3	Days		
8Hydraulic tubing cutting tool-Standby.2Days9High Pressure Jetting / Rotating Tool Operating Charges.3Days10High Pressure Jetting / Rotating Tool Standby Charges.2Days11Up to 2-1/8" Size Thru Tubing weight bar – Operating.3Days12Up to 2-1/8" Size Thru Tubing weight bar – Operating.3Days13Up to 2-1/8" Flat Bottom Mill – Operating.3Days14Up to 2-1/8" Flat Bottom Mill – Operating.3Days15Up to 2-1/8" Tapered mill – Standby.2Days16Up to 2-1/8" Tapered mill – Operating.3Days17Up to 2-1/8" Inpact hammer – Operating.3Days18Up to 2-1/8" Junk mill – Standby.2Days19Up to 2-1/8" Impact hammer – Operating.3Days20Up to 2-1/8" Impact hammer – Operating.3Days21Up to 2-1/8" Accelerator – Operating.3Days22Up to 2-1/8" Jar – Operating.3Days23Up to 2-1/8" Jar – Operating.3Days24Up to 2-1/8" Jar – Operating.3Days25Centralizer – Operating.3Days26Centralizer – Operating.3Days27Pull test sub – Operating.3Days28Pull test sub – Operating.3Days29Stradegline – Operating.3Days29Surface filter – Operating.3Days <td< td=""><td>6</td><td>Up to 2-1/8" Size Thru Tubing Motor - Stand By.</td><td>2</td><td>Days</td><td></td><td></td></td<>	6	Up to 2-1/8" Size Thru Tubing Motor - Stand By.	2	Days		
9High Pressure Jetting / Rotating Tool Operating Charges.3Days10High Pressure Jetting / Rotating Tool Standby Charges.2Days11Up to 2-1/8" Size Thru Tubing weight bar – Operating.3Days12Up to 2-1/8" Thru Tubing weight bar – Standby.2Days13Up to 2-1/8" Thru Tubing weight bar – Standby.2Days14Up to 2-1/8" Flat Bottom Mill – Operating.3Days15Up to 2-1/8" Tapered mill – Operating.3Days16Up to 2-1/8" Tapered mill – Standby.2Days17Up to 2-1/8" Tapered mill – Operating.3Days18Up to 2-1/8" Inna mill – Operating.3Days19Up to 2-1/8" Inna mill – Standby.2Days20Up to 2-1/8" Inna mill – Standby.2Days21Up to 2-1/8" Innact hammer – Operating.3Days22Up to 2-1/8" Innact hammer – Operating.3Days23Up to 2-1/8" Innact hammer – Operating.3Days24Up to 2-1/8" Accelerator – Operating.3Days25Up to 2-1/8" Accelerator – Standby.2Days26Centralizer – Operating.3Days27Pull test sub – Operating.3Days28Pull test sub – Operating.3Days29Surface filter – Operating.3Days29Surface filter – Operating.3Days30Surface filter – Operating.3D	7	Hydraulic tubing cutting tool-Operating.	3	Days		
Image: Constraint of the system of the sys	8	Hydraulic tubing cutting tool-Standby.	2	Days		
11Up to 2-1/8" Size Thru Tubing weight bar – Operating.3Days12Up to 2-1/8" Thru Tubing weight bar – Standby.2Days13Up to 2-1/8" Flat Bottom Mill – Operating.3Days14Up to 2-1/8" Flat bottom mill - Standby.2Days15Up to 2-1/8" Tapered mill – Operating.3Days16Up to 2-1/8" Tapered mill – Operating.3Days17Up to 2-1/8" Tapered mill – Operating.3Days18Up to 2-1/8" Junk mill – Operating.3Days19Up to 2-1/8" Junk mill - Standby.2Days20Up to 2-1/8" Impact hammer – Operating.3Days21Up to 2-1/8" Accelerator – Operating.3Days22Up to 2-1/8" Accelerator – Operating.3Days23Up to 2-1/8" Jar – Operating.3Days24Up to 2-1/8" Jar – Operating.3Days25Centralizer – Operating.3Days26Centralizer – Standby.2Days27Pull test sub – Operating.3Days28Pull test sub – Operating.3Days29Surface filter – Operating.3Days30Surface filter – Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days </td <td>9</td> <td>High Pressure Jetting / Rotating Tool Operating Charges.</td> <td>3</td> <td>Days</td> <td></td> <td></td>	9	High Pressure Jetting / Rotating Tool Operating Charges.	3	Days		
12Up to 2-1/8" Thru Tubing weight bar – Standby.2Days13Up to 2-1/8" Flat Bottom Mill – Operating.3Days14Up to 2-1/8" Flat bottom mill - Standby.2Days15Up to 2-1/8" Tapered mill –Operating.3Days16Up to 2-1/8" Tapered mill –Operating.3Days17Up to 2-1/8" Tapered mill – Operating.3Days18Up to 2-1/8" Junk mill – Operating.3Days19Up to 2-1/8" Junk mill – Standby.2Days20Up to 2-1/8" Impact hammer – Operating.3Days21Up to 2-1/8" Impact hammer – Operating.3Days22Up to 2-1/8" Accelerator – Operating.3Days23Up to 2-1/8" Accelerator – Standby.2Days24Up to 2-1/8" Jar – Operating.3Days25Centralizer – Operating.3Days26Centralizer – Standby.2Days27Pull test sub – Operating.3Days28Pull test sub – Standby.2Days29Surface filter – Operating.3Days30Surface filter – Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days33Thru tubing crew – standby.2Days34Thru tubing tools Mob/De-mob.1,000KM <td>10</td> <td>High Pressure Jetting / Rotating Tool Standby Charges.</td> <td>2</td> <td>Days</td> <td></td> <td></td>	10	High Pressure Jetting / Rotating Tool Standby Charges.	2	Days		
13       Up to 2-1/8" Flat Bottom Mill – Operating.       3       Days         14       Up to 2-1/8" Flat bottom mill - Standby.       2       Days         15       Up to 2-1/8" Tapered mill – Operating.       3       Days         16       Up to 2-1/8" Tapered mill – Operating.       3       Days         17       Up to 2-1/8" Tapered mill – Standby.       2       Days         18       Up to 2-1/8" Junk mill – Operating.       3       Days         19       Up to 2-1/8" Impact hammer – Operating.       3       Days         20       Up to 2-1/8" Impact hammer – Operating.       3       Days         21       Up to 2-1/8" Accelerator – Operating.       3       Days         22       Up to 2-1/8" Accelerator – Operating.       3       Days         23       Up to 2-1/8" Accelerator – Standby.       2       Days         24       Up to 2-1/8" Jar – Operating.       3       Days         25       Centralizer – Operating.       3       Days         26       Centralizer – Standby.       2       Days         27       Pull test sub – Operating.       3       Days         28       Pull test sub – Standby.       2       Days         29       Surface filter –	11	Up to 2-1/8" Size Thru Tubing weight bar – Operating.	3	Days		
14Up to 2-1/8" Flat bottom mill - Standby.2Days15Up to 2-1/8" Tapered mill -Operating.3Days16Up to 2-1/8" Tapered mill - Standby.2Days17Up to 2-1/8" Junk mill - Operating.3Days18Up to 2-1/8" Junk mill - Standby.2Days19Up to 2-1/8" Impact hammer - Operating.3Days20Up to 2-1/8" Impact hammer - Operating.3Days21Up to 2-1/8" Accelerator - Operating.3Days22Up to 2-1/8" Accelerator - Operating.3Days23Up to 2-1/8" Jar - Operating.3Days24Up to 2-1/8" Jar - Operating.3Days25Centralizer - Operating.3Days26Centralizer - Operating.3Days27Pull test sub - Operating.3Days28Pull test sub - Operating.3Days29Surface filter - Operating.3Days30Surface filter - Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew - operating.3Days34Thru tubing crew - standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	12	Up to 2-1/8" Thru Tubing weight bar – Standby.	2	Days		
15Up to 2-1/8" Tapered mill -Operating.3Days16Up to 2-1/8" Tapered mill - Standby.2Days17Up to 2-1/8" Junk mill - Operating.3Days18Up to 2-1/8" Junk mill - Standby.2Days19Up to 2-1/8" Impact hammer - Operating.3Days20Up to 2-1/8" Impact hammer - Standby.2Days21Up to 2-1/8" Accelerator - Operating.3Days22Up to 2-1/8" Accelerator - Operating.3Days23Up to 2-1/8" Accelerator - Standby.2Days24Up to 2-1/8" Jar - Operating.3Days25Centralizer - Operating.3Days26Centralizer - Operating.3Days27Pull test sub - Operating.3Days28Pull test sub - Operating.3Days29Surface filter - Operating.3Days30Surface filter - Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew - operating.3Days34Thru tubing crew - standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	13	Up to 2-1/8" Flat Bottom Mill – Operating.	3	Days		
16Up to 2-1/8" Tapered mill - Standby.2Days17Up to 2-1/8" Junk mill – Operating.3Days18Up to 2-1/8" Junk mill - Standby.2Days19Up to 2-1/8" Impact hammer – Operating.3Days20Up to 2-1/8" Impact hammer – Standby.2Days21Up to 2-1/8" Accelerator – Operating.3Days22Up to 2-1/8" Accelerator – Operating.3Days23Up to 2-1/8" Accelerator - Standby.2Days24Up to 2-1/8" Jar – Operating.3Days25Centralizer – Operating.3Days26Centralizer – Operating.3Days27Pull test sub – Operating.3Days28Pull test sub – Operating.3Days29Surface filter – Operating.3Days30Surface filter – Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	14	Up to 2-1/8" Flat bottom mill - Standby.	2	Days		
17Up to 2-1/8" Junk mill – Operating.3Days18Up to 2-1/8" Junk mill - Standby.2Days19Up to 2-1/8" Impact hammer – Operating.3Days20Up to 2-1/8" Impact hammer – Standby.2Days21Up to 2-1/8" Accelerator – Operating.3Days22Up to 2-1/8" Accelerator – Operating.3Days23Up to 2-1/8" Accelerator - Standby.2Days24Up to 2-1/8" Jar – Operating.3Days25Centralizer – Operating.3Days26Centralizer – Operating.3Days27Pull test sub – Operating.3Days26Centralizer – Standby.2Days27Pull test sub – Operating.3Days28Pull test sub – Operating.3Days29Surface filter – Operating.3Days30Surface filter – Operating.3Days31Debris filter charges.10Nos.31Debris filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	15	Up to 2-1/8" Tapered mill –Operating.	3	Days		
18Up to 2-1/8" Junk mill - Standby.2Days19Up to 2-1/8" Impact hammer – Operating.3Days20Up to 2-1/8" Impact hammer – Standby.2Days21Up to 2-1/8" Accelerator – Operating.3Days22Up to 2-1/8" Accelerator – Operating.3Days23Up to 2-1/8" Accelerator - Standby.2Days24Up to 2-1/8" Jar – Operating.3Days25Centralizer – Operating.3Days26Centralizer – Operating.3Days27Pull test sub – Operating.3Days28Pull test sub – Operating.3Days29Surface filter – Operating.3Days30Surface filter – Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	16	Up to 2-1/8" Tapered mill - Standby.	2	Days		
19Up to 2-1/8" Impact hammer – Operating.3Days20Up to 2-1/8" Impact hammer – Standby.2Days21Up to 2-1/8" Accelerator – Operating.3Days22Up to 2-1/8" Accelerator - Standby.2Days23Up to 2-1/8" Accelerator - Standby.2Days24Up to 2-1/8" Jar – Operating.3Days25Centralizer – Operating.3Days26Centralizer – Operating.3Days27Pull test sub – Operating.3Days28Pull test sub – Operating.3Days29Surface filter – Operating.3Days30Surface filter – Operating.3Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing tools Mob/De-mob.1,000KM	17	Up to 2-1/8" Junk mill – Operating.	3	Days		
20Up to 2-1/8" Impact hammer – Standby.2Days21Up to 2-1/8" Accelerator – Operating.3Days22Up to 2-1/8" Accelerator - Standby.2Days23Up to 2-1/8" Jar – Operating.3Days24Up to 2-1/8" Jar – Operating.2Days25Centralizer – Operating.3Days26Centralizer - Operating.2Days27Pull test sub – Operating.3Days28Pull test sub – Operating.3Days29Surface filter – Operating.3Days30Surface filter – Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	18	Up to 2-1/8" Junk mill - Standby.	2	Days		
21Up to 2-1/8" Accelerator – Operating.3Days22Up to 2-1/8" Accelerator - Standby.2Days23Up to 2-1/8" Jar – Operating.3Days24Up to 2-1/8" Jar – Operating.2Days25Centralizer – Operating.3Days26Centralizer - Standby.2Days27Pull test sub – Operating.3Days28Pull test sub – Operating.3Days29Surface filter – Operating.3Days30Surface filter – Operating.3Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	19	Up to 2-1/8" Impact hammer – Operating.	3	Days		
22Up to 2-1/8" Accelerator - Standby.2Days23Up to 2-1/8" Jar - Operating.3Days24Up to 2-1/8" Jar - Standby.2Days25Centralizer - Operating.3Days26Centralizer - Standby.2Days27Pull test sub - Operating.3Days28Pull test sub - Operating.3Days29Surface filter - Operating.3Days30Surface filter - Operating.3Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew - operating.3Days34Thru tubing tools Mob/De-mob.1,000KM	20	Up to 2-1/8" Impact hammer – Standby.	2	Days		
23Up to 2-1/8" Jar - Operating.3Days24Up to 2-1/8" Jar - Standby.2Days25Centralizer - Operating.3Days26Centralizer - Standby.2Days27Pull test sub - Operating.3Days28Pull test sub - Operating.2Days29Surface filter - Operating.3Days30Surface filter - Operating.3Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew - operating.3Days34Thru tubing tools Mob/De-mob.1,000KM	21	Up to 2-1/8" Accelerator – Operating.	3	Days		
24Up to 2-1/8" Jar - Standby.2Days25Centralizer – Operating.3Days26Centralizer - Standby.2Days27Pull test sub – Operating.3Days28Pull test sub - Standby.2Days29Surface filter – Operating.3Days30Surface filter – Operating.3Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	22	Up to 2-1/8" Accelerator - Standby.	2	Days		
25Centralizer – Operating.3Days26Centralizer - Standby.2Days27Pull test sub – Operating.3Days28Pull test sub - Standby.2Days29Surface filter – Operating.3Days30Surface filter – Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	23	Up to 2-1/8" Jar – Operating.	3	Days		
26Centralizer - Standby.2Days27Pull test sub – Operating.3Days28Pull test sub - Standby.2Days29Surface filter – Operating.3Days30Surface filter – Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	24	Up to 2-1/8" Jar - Standby.	2	Days		
27Pull test sub – Operating.3Days28Pull test sub - Standby.2Days29Surface filter – Operating.3Days30Surface filter – Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	25	Centralizer – Operating.	3	Days		
28Pull test sub - Standby.2Days29Surface filter – Operating.3Days30Surface filter – Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	26	Centralizer - Standby.	2	Days		
29Surface filter – Operating.3Days30Surface filter – Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	27	Pull test sub – Operating.	3	Days		
30Surface filter – Standby.2Days31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	28	Pull test sub - Standby.	2	Days		
31Debris filter charges.10Nos.32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	29	Surface filter – Operating.	3	Days		
32Thru tubing screen filter charges.20Nos.33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	30	Surface filter – Standby.	2	Days		
33Thru tubing crew – operating.3Days34Thru tubing crew – standby.2Days35Thru tubing tools Mob/De-mob.1,000KM	31	Debris filter charges.	10	Nos.		
34     Thru tubing crew – standby.     2     Days       35     Thru tubing tools Mob/De-mob.     1,000     KM	32	Thru tubing screen filter charges.	20	Nos.		
35   Thru tubing tools Mob/De-mob.   1,000   KM	33	Thru tubing crew – operating.	3	Days		
	34	Thru tubing crew – standby.	2	Days		
	35	Thru tubing tools Mob/De-mob.	1,000	КМ		
36   Thru tubing crew Mob/De-mob.   1,000   KM	36	Thru tubing crew Mob/De-mob.	1,000	KM		
Total/Job (US\$)				Total/	Job (US\$)	
Total for Estimated 8 Jobs (US\$)		Tota	l for Estir	nated 8 J	obs (US\$)	

(H)	Lab Analysis				
Sr.	Services	Qty. (Q)	UOM (U)	Unit Cost (P)	Total Cost =P x Q
			(0)	US\$/UOM	US\$
1	Thin bed XRD analysis with minerals identification up to 1% concentration including mob/de-mob charges inside and outside Pakistan.		Test		

(I) St	imulation Recipes						
Sr.	Description	UOM (U)	Qty. /Job	Estimated jobs	Total Estimated Quantity Required	Unit Cost (P) US\$/UOM	Total Cost =P x Q US\$
1	7.5% HCl solution upto 250 $^{\circ}$ F c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	4,500	5	22,500		
2	7.5% HCl solution above 250 <sup>o</sup> F upto 350 <sup>o</sup> F c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	4,500	2	9,000		
3	7.5% HCl solution above 350 $^{\rm 0}{\rm F}$ c/w 2,000 ppm iron control with chelating agent, 08 hrs. inhibition time.	Gal	4,500	1	4,500		
4	15% Gelled HCl solution upto 250 °F c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	4,500	18	81,000		
5	15% Gelled HCl solution above 250 <sup>o</sup> F upto 350 <sup>o</sup> F c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	4,500	8	36,000		
6	15% Gelled HCl solution above 350 °F c/w 2,000 ppm iron control with chelating agent, 8 hrs. inhibition time.	Gal	4,500	2	9,000		
7	15% ungelled HCl solution upto 250 °F c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	4,500	18	81,000		
8	15% ungelled HCl solution above 250 $^{\rm 0}{\rm F}$ upto 350 $^{\rm 0}{\rm F}$ c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	4,500	8	36,000		
9	15% ungelled HCl solution above 350 °F c/w 2,000 ppm iron control with chelating agent, 8 hrs. inhibition time.	Gal	4,500	2	9,000		
10	Regular mud acid solution upto 250 <sup>o</sup> F: (12% HCl + 3%HF) c/w 2,000ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	4,500	20	90,000		
11	Regular mud acid solution above 250 °F upto 350 °F: (12% HCl + 3%HF) c/w 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time.	Gal	4,500	10	45,000		
12	Regular mud acid solution above 350 <sup>o</sup> F: (12% HCl + 3%HF) c/w 2,000ppm iron control with chelating agent, 08 hrs. inhibition time.	Gal	4,500	2	9,000		
13	10% Acetic acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time upto 250 <sup>o</sup> F.	Gal	4,500	2	9,000		

				Tota	al for Estimated 10	06 Jobs (US\$)	
18	9% Formic acid complete with 2,000 ppm iron control with chelating agent, 8 hrs. inhibition time above 350 $^{\rm 0}F.$	Gal	4,500	1	4,500		
17	9% Formic acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time above 250 °F upto 350 °F.	Gal	4,500	2	9,000		
16	9% Formic acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time upto 250 $^{\rm 0}F.$	Gal	4,500	2	9,000		
15	10% Acetic Acid complete with 2,000 ppm iron control with chelating agent, 8 hrs. inhibition time above 350 $^{\rm 0}F.$	Gal	4,500	1	4,500		
14	10% Acetic acid complete with 2,000 ppm iron control with chelating agent, 12 hrs. inhibition time above 250 °F upto 350 °F.	Gal	4,500	2	9,000		

1	Corrosion inhibitor up to 250 <sup>o</sup> F.	Gal	100	20	2,000	
2	Mutual solvent.	Gal	700	50	35,000	
3	Gelling agent.	Gal	200	20	4,000	
4	Alcohol.	Gal	1,000	20	20,000	
5	Ammonium chloride.	Lbs	6,000	50	300,000	
6	Potassium chloride.	Lbs	6,000	50	300,000	
7	Soda ash.	Lbs	1,000	20	20,000	
8	Caustic soda.	Lbs	1,000	20	20,000	
9	Viscoelastic or equivalent diverter.	Gal	100	30	3,000	
10	Xylene.	Gal	600	20	12,000	
11	Calcium carbonate.	Lbs	10,000	5	50,000	
12	Silica sand.	Lbs	3,000	5	15,000	
13	Mesh sand (30/60).	Lbs	3,000	5	15,000	
14	Mesh sand (20/40).	Lbs	3,000	5	15,000	
15	Non-damaging clean out fluid (Gel).	Gal	1,000	8	8,000	
16	H2S/CO2 inhibitor	Gal	100	10	1,000	
17	Foaming agent	Gal	50	10	500	
18	Demulsifier	Gal	50	10	500	
19	Anti-sludge agent	Gal	100	10	1,000	

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20	Citric Acid	Gal	100	2	200		
21	H2S scavenger	Gal	100	10	1,000		
22	Methanol	Gal	5,000	5	25,000		
23	Toulene	Gal	100	5	500		
24	Calcium chloride	Lbs	5,000	5	25,000		
25	Sodium chloride	Lbs	5,000	5	25,000		
26	Acid Fiber	Lbs	200	5	1,000		
27	Organic acid intensifier	Lbs	200	5	1,000		
28	Clay stabilizer	gal	150	5	750		
29	Clay acid agent	Lbs	250	5	1,250		
30	Stabilizing agent	Gal	400	10	4000		
31	Friction reducer(Metal to Metal)	Gal	30	8	240		
32	Hi-Vis Pill	bbl	50	8	400		
Total Cost (US\$)							

Table To	otalizer Group "B"	
Table	Description	Value (US\$)
Table A	Coil tubing services	
Table B	Nitrogen and Nitrogen pumping equipment services (Complete setup/crew)	
Table C	Crane with operator services(Complete setup/crew)	
Table D	Pump unit services(Complete setup/crew)	
Table E	Stimulation/pumping package services (Complete setup/crew)	
Table F	Tubing puncture/Perforation tool including Mob/De-mob	
Table G	Thru tubing services	
Table H	Lab analysis.	
Table I	Stimulation recipes.	
Table J	Additional chemicals (Upto 400 <sup>o</sup> F temperature rating)	
	GRAND TOTAL GROUP "B"	

# FINANCIAL EVALUATION MODEL GROUP "C" (ALL OVER PAKISTAN)

(A)	Smart Coil Services							
Sr.	Services	Qty. (Q)	UOM (U)	Unit Cost (P)	Total Cost =P x Q			
				US\$/UOM	US\$			
1.5"/1.75"/2" Smart Coil Services (for all Categories PCE)								
1	Smart coil tubing unit with necessary BHA upto category 3 PCE- Operating charges.	3	Day					
2	Smart coil tubing unit with necessary BHA upto category 3 PCE - Standby charges.	3	Day					
3	Smart coil Cumulative Depth Charges for Non-corrosive Environment.	5,000	Meter					
4	Smart coil Cumulative Depth Charges for corrosive Environment CO2 $\geq$ 5 % or H2S $\geq$ 10 PPM.	3,000	Meter					
5	Smart coil tubing Crew Operating.	3	Day					
6	Smart coil tubing Crew Standby.	3	Day					
7	Smart coil tubing unit Mob/De-mob.	1,600	КМ					
8	Smart coil tubing unit crew Mob/De-mob.	1,600	KM					
Cra	ne Services Inclusive of Operator							
9	40-50 ton Hydraulic Crane Operating Charges.	3	Days					
10	40-50 ton Hydraulic Crane Standby Charges.	3	Days					
11	Crane with operator Mob/De-mob.	1,600	KM					
			Total/	/Job (US\$)				
Total for 15 Jobs (US\$)								

(B) Inflatable Permanent/Retrievable Bridge Plugs:							
Sr.	Description	Qty.	UOM	Unit Rate	(US\$/UOM)	Total Cost (US\$)	
				Retrieved	Left in hole	Retrieved	Left in hole
1	Inflatable bridge plugs (2-7/8" tubing to 5"-7" Liner/casing) on location charges.	2	Nos.				
2	Inflatable Bridge plugs (3-1/2" tubing to 5"-7" Liner/casing) on location charges.	2	Nos.				
3	Inflatable Bridge plugs (4-1/2" tubing to 5"-7" Liner/casing) on location charges.	2	Nos.				
4	Inflatable Bridge plugs (5-1/2" tubing to 7" to 9-5/8" Liner/casing).	2	Nos.				
	Total Cost(US\$)						

Sr.	Description	Qty. (Q)	UOM (U)	Unit Cost (P)	Total Cost =P x Q
				US\$/UOM	US\$
1	Inflatable Bridge plugs crew with setting kit Operating Charges.	3	Day		
2	Inflatable Bridge plugs crew with setting kit Standby Charges.	3	Day		
3	Inflatable Bridge plugs crew including setting kit Mob/De-mob.	1,600	KM		
Total for 7 Jobs (US\$)					

Table Totalizer Group "C"						
Table	Description	Value (US\$)				
Table A	Smart coil services.					
Table B	Inflatable Bridge Plugs (Permanent/Retrievable), (Left In Hole Cost to be used).					
Table C	Inflatable Permanent/Retrievable Bridge Plug services.					

#### Note for all Groups (GROUP A, B & C):

- Financial Evaluation shall be carried out on Group wise/Grand Total of each Group and contract shall be awarded to lowest evaluated bidder for each Group.
- Same unit rates to be quoted for same item in all tables for specific group.
- Any additional items not covered in the table may be utilized as per published price book, if required, subject to approval of OGDCL Management.