

**KHYBER PAKHTUNKHWA OIL AND GAS COMPANY LIMITED
(KPOGCL)**

(KP Government Fully Owned & Provincial Holding Company)
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Web: www.kpogcl.com.pk



**KHYBER PAKHTUNKHWA OIL AND GAS COMPANY
LIMITED (KPOGCL)**



TENDER No. KPOGCL/Tender/540/2018

**HIRING SERVICES FOR PROCESSING/REPROCESSING AND
INTERPRETATION OF 2D/3D SEISMIC FIELD DATA (LAND
SEISMIC) RATE RUNNING CONTRACT FOR KPOGCL
BLOCKS**

KHYBER PAKHTUNKHWA-PAKISTAN

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1 INTRODUCTION

1.1 Objective of RFP

The purpose of this Request for Proposal (RFP) is to select suitable Contractors of good repute on rate running contract to conduct Processing/Reprocessing, Interpretation and studies of 2D/3D Seismic Field data for KPOGCL's Blocks Khyber Pakhtunkhwa-Pakistan.

1.2 About KPOGCL

Khyber Pakhtunkhwa Government (KPK), being cognizant of Oil & Gas reserves established Khyber Pakhtunkhwa Oil and Gas Company Limited (KPOGCL) - A land mark achievement of the present Government. KPOGCL is not only entrusted with the responsibility of carrying out Exploration and Production (E&P) activities, itself, but as well, entrusted the responsibility to allure more E&P Companies to do so by ensuring them with the requisite security and the first hand sharing of technological data thus literally acting as a Fast Track implementation of E&P. KPOGCL, while being actually KP Government sponsored / patronized, thus can very conveniently act as an Interface between the E&P Companies and all the other Government Related Agencies thereby actually performing the role of 'One Window of Operations'. It is also the Provincial Holding Company (PHC) under the Petroleum Policy – 2012. KPOGCL is in fact a facilitator to E&P companies.

The Company promotes all E&P activities throughout KP by investing in Producing and Exploration Blocks and procurement of heavy equipment (i.e. Rig and Seismic Data Acquisition Recorder) - all ultimately aimed at generating revenue and of course fulfilling the dire needed energy requirements of not only KP Province but the whole Country.

The Company is also member of Pakistan Petroleum Exploration & Production Companies Association (PPEPCA). It is run by an independent Board of Directors, who mostly is Experts from the private Sector with Mr. Raziuddin (Razi) as its CEO. Though, being newly established, the Company is in its embryonic stage of development but owing to the strong support and patronization it has, from the KP Government, it has very rapidly developed it's



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paraphernalia not only to engage itself, on war footing, in all E&P activities but also arrange with the KP Government to ensure a fool proof security to all the rest of the E&P Companies from abroad and within the country.

With KP Government, determined to boost the province's economy, has already taken a step forward by improving Communication Infrastructure, unearthing the province's hidden treasure of huge reserves of Oil and Gas initially through the province's indigenous Institutions, in which KPOGCL has taken the lead and later on through other multinational E&P Companies while KPOGCL continue to pay its role of 'One Window of Operation' for them.

2 Objectives and Scope of Work

The objective of this effort is to process land seismic reflection records using modern processing software and techniques. By employing modern processing approaches and the considerable effort to decode and reformat the data, the goal is to improve the existing image quality of 2000+ line km of seismic data for use in the evaluation of geological/tectonic models adjacent to/in Lakki Block on rate running contract basis. The resultant reprocessed seismic images can then be used to:

1. Update and potentially modify geological/tectonic models of the block.
2. Assist in the planning of future seismic surveys, including their location and acquisition Parameters.
3. To map subsurface hydrocarbon traps for drilling targets.



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3 Program Description:

a. Vintage Data Reprocessing:

In order to perform the reprocessing, the vintage data includes +600 line km from Lakki and 1500 Lkm of 2D seismic data from other blocks. The details are given below:

Vintage Data Details

S.No	Line Name	Group Interval	LKm	Obs.	Survey	Statics	Remarks
1	O-794-BU-13	100	24.7	Yes	Yes	No	99% data ok
2	O-814-LK-43	100	9.6	Yes	Yes	Yes	99% data ok
3	O-814-LK-44	100	10.4	Yes	Yes	Yes	99% data ok
4	O-814-LK-45	100	8.6	Yes	Yes	Yes	99% data ok
5	PPL12-ZDN-01	20	21.58	Yes	Yes	No	94% data ok
6	PPL12-ZDN-03	20	25.12	Yes	Yes	No	
7	PPL12-ZDN-05	20	35.1	Yes	Yes	No	
8	PPL12-ZDN-06	20	30.05	Yes	Yes	No	
9	PPL12-ZDN-07	20	41.58	Yes	Yes	No	
10	PPL12-ZDN-08	20	32.38	Yes	Yes	No	
11	PPL12-ZDN-09	20	17.85	Yes	Yes	No	
12	PPL12-ZDN-10	20	79.1	Yes	Yes	No	
13	PPL12-ZDN-11	20	37.34	Yes	Yes	No	94% data ok
14	PPL12-ZDN-12	20	37.6	Yes	Yes	No	
15	PPL12-ZDN-13	20	32.9	Yes	Yes	No	90% data ok
16	PPL12-ZDN-14	20	23.98	Yes	Yes	No	
17	PPL12-ZDN-15	20	24	Yes	Yes	No	
18	PPL12-ZDN-16	20	35.42	Yes	Yes	No	
19	PPL12-ZDN-18	20	20.8	Yes	Yes	No	



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20	PPL12-ZDN-20	20	22.6	Yes	Yes	No	84% data ok
21	PPL-924-B35-24	50	23.25	Yes	Yes	Yes	
22	PPL-924-B35-25	50	10	Yes	Yes	Yes	
23	PPL-914-B35-06B	50	18.13	Yes	Yes	No	
24	PPL-924-B35-27	50	8.1	Yes	Yes	No	
25	O-794-BU-21	100	19.8	Yes	Yes	No	
26	O-915-MWI-83	50	19	Yes	Yes	Yes	99% data ok
Total LKm			668.98				

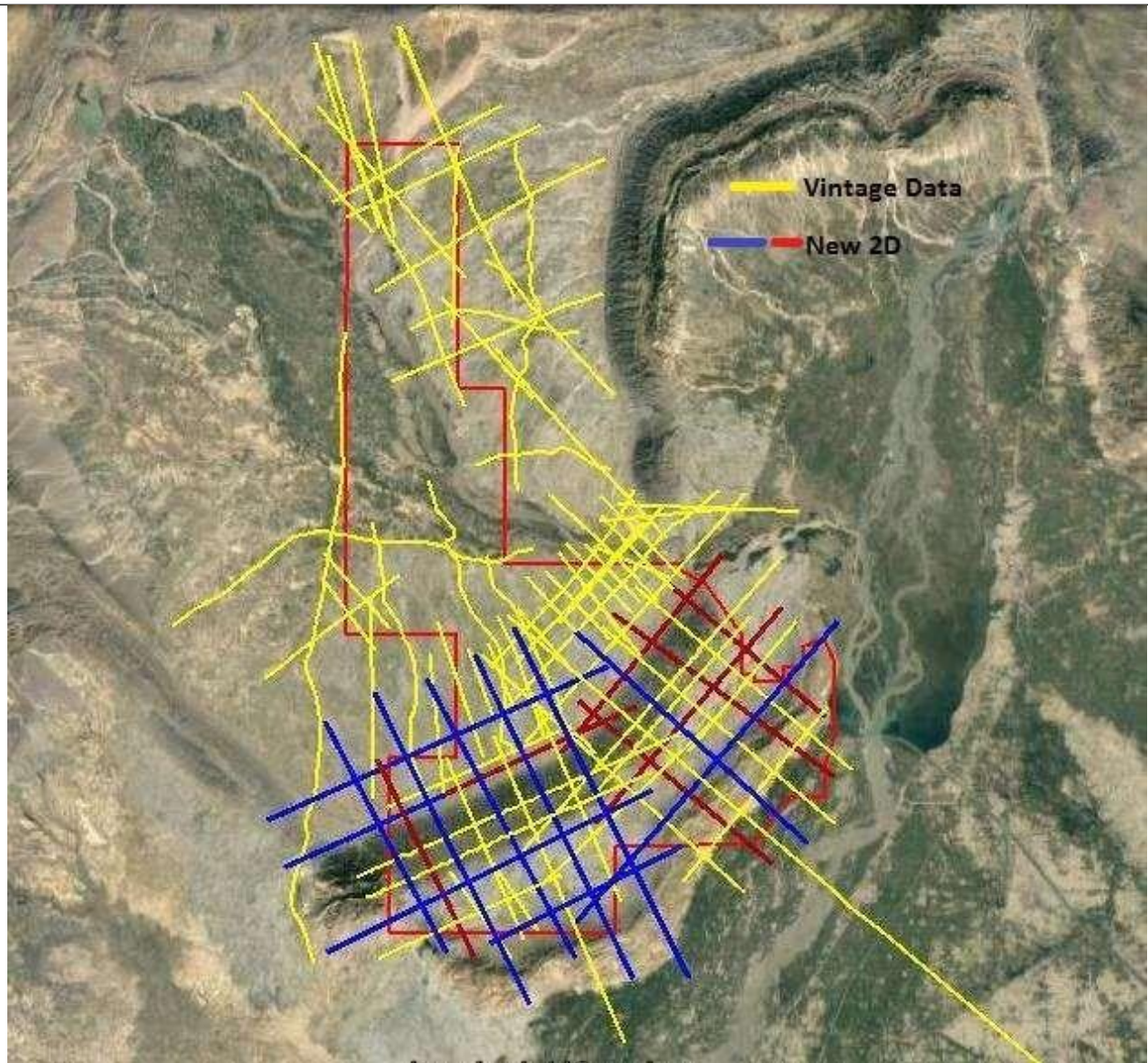
Nominal Fold: 120 Far Offset: 5000m Mix Source: Dyn/Vib



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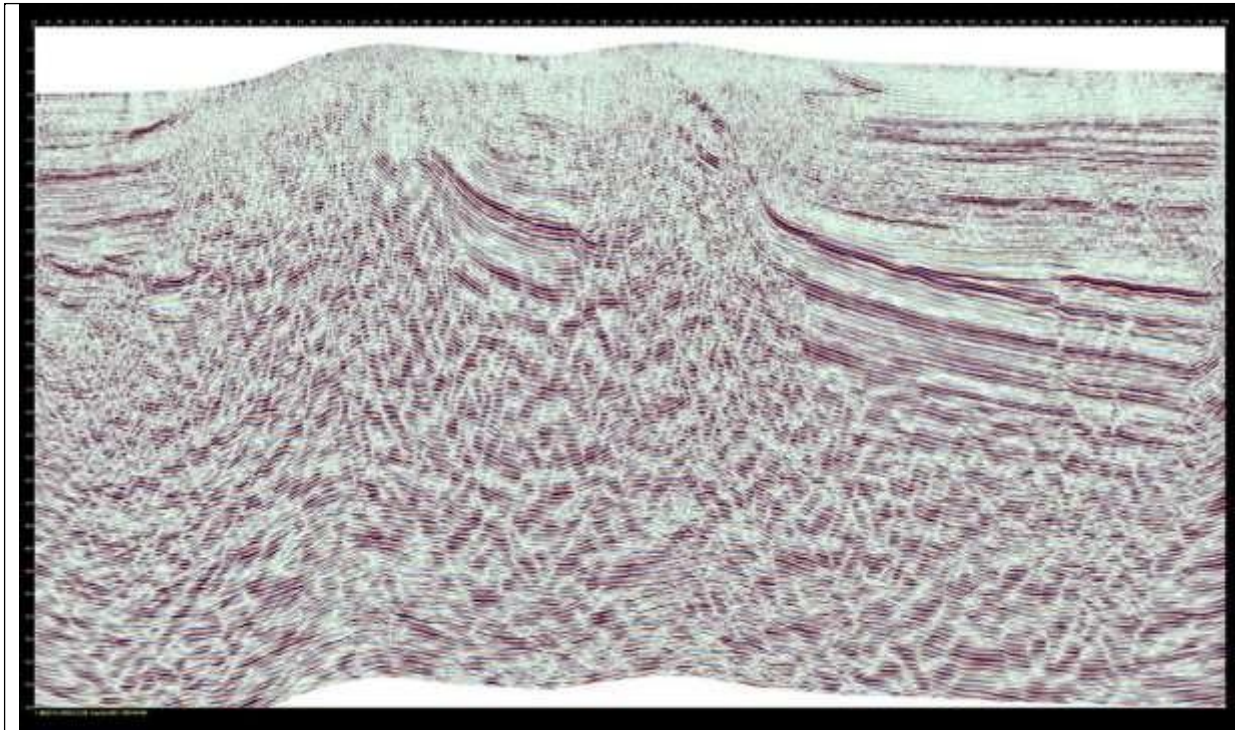


Basemap showing old and new seismic lines location

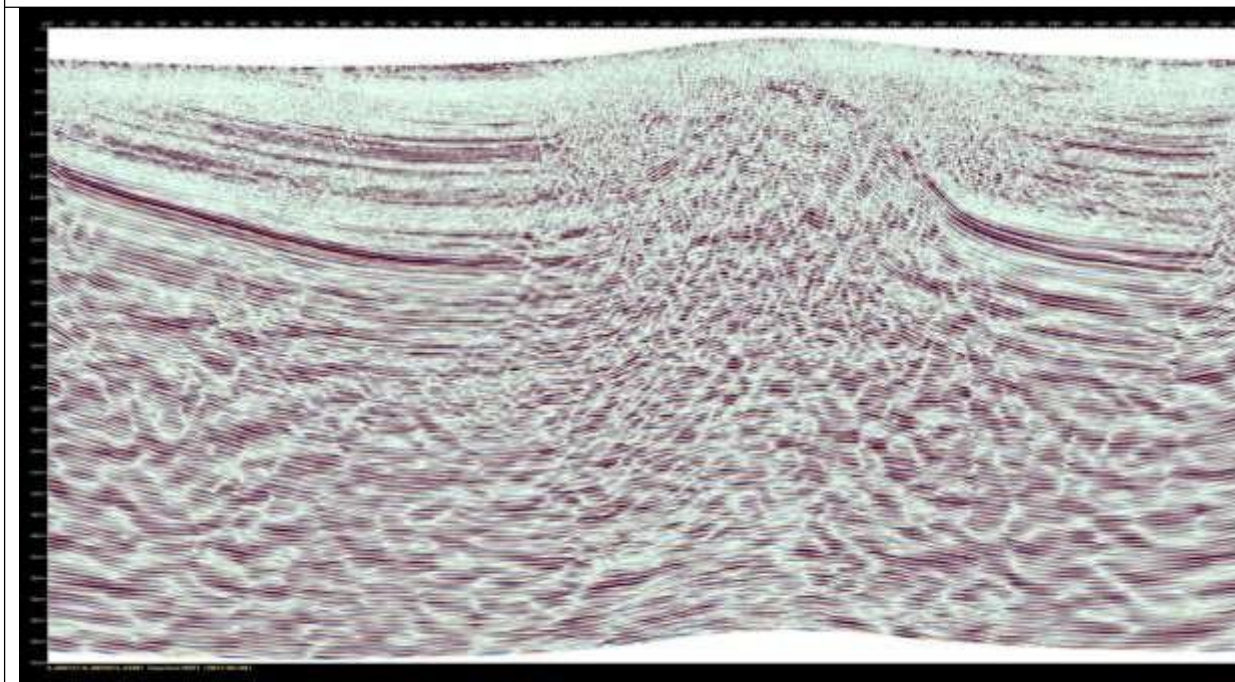


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Project Area Data Dip Line-1

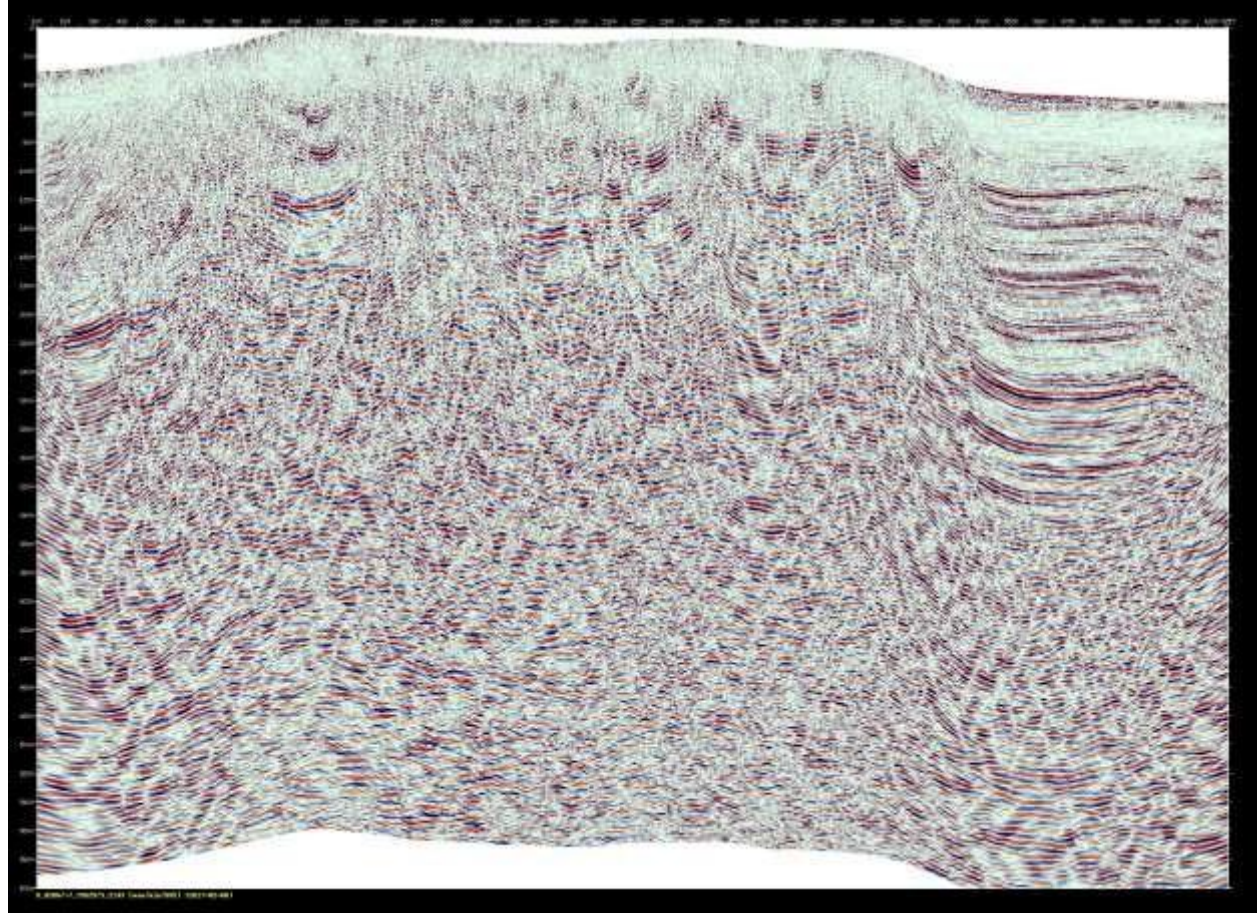


Project Area Data Dip Line -2



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Project Area Data Strike Line -1



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Available well data is as under

S.NO	Well Name	Reports	LAS
1	W-1	EOWR, Biostratigraphy, Petrophysical	CALI, CALS, DRHO, DT, DTLF, DTLN, GR, ILD, ILM, LLD, LLS, MSFL, NPHI, PEF, RHOB, SFLU, SP, VSP DATA
2	W-2	EOWR, Core analysis	CALS, DRHO, DT, GR, LLD, LLS, MSFL, NPHI, PEF, RHOB, SP
3	W-3	EOWR, Biostratigraphy, Checkshot, Petrophysical, VSP	CALS, DRHO, DT, GR, ILD, ILM, NPHI, PEF, RHOB, SFLU, SP
4	W-4	EOWR	RLA1,2,3,4,5, RXO, NPHI, RHOZ, CALI, HDRA, PEFZ, GR, DT
5	W-5	EOWR	CALI, DT, LAT, LN, SN, SP
6	W-6	EOWR	ASN, CILD, DT, ILD, LAT, LN, SN, SP



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b. New Data Processing

KPOGCL will acquire about 1800+ L.KM new 2D seismic data and +300 Sq KM 3D seismic data Ten tative in coming three (3) years.

S. No	KPOGCL Blocks	Area Sq.Km	2D Firm (L.km)	2D Contingent (L.km)	3D Sq Km
1	Lakki Block	2028	350	200	300
2	Nowshera Block	2136	550	250	
3	Miran Block	1064	300	200	
4	D I Khan East Block	446	200	100	
5	D I Khan West	300	200	100	
7	Charsadda Block	2436	200	100	
Total	2D Firm = 1830 L.km, Contingent = +900 L.km 3D Firm = about 300 Sq km, Contingent 150 Sq Km				

Table-I: Lakki Block 2D Seismic Data Acquisition General Parameters			
Source Parameters	Option-1	Option-2	Option-3
SP interval:	50m	40m	40m
Source Type:	Explosive /	Explosive / Vibroseis	Explosive / Vibroseis
Receiver Parameters			
RP interval:	25m	20m	40m
No. of Geophones per	24	24	24
Geophone Array	Areal/Linear	Areal/Linear	Areal/Linear
Spread Geometry	1-240-*-241-480	1-300-*-301-600	1-150-*-151-300
Spread Type:	Symmetric Split	Symmetric spread	Symmetric
Active channels/SP:	480	600	300
Near Offset:	+/- 12.5m	+/- 10m	+/- 20m
Far Offset:	5987.5m	5990m	5980m
Fold:	120	150	150
Recording Parameters			
Record Length:	7 sec	7 sec	7 sec
Sample Rate:	2 milli sec	2 milli sec	2 milli sec



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Table-2: Lakki Block 3D Seismic Data Acquisition General Parameters	
Source Parameters	
Source Type:	Explosive / Vibroseis
SP interval:	40m
Source line interval	320m
Receiver Parameters	
RP interval:	40m
Receiver line interval	320m
No. of Geophones per RP	24
Geophone Array	Areal/Linear
Spread Geometry	
Spread Type:	Orthogonal
Active Lines/SP:	20
Active channels/Line:	320
Inline Max Offset	6400
Large Offset	7155
Fold:	200
Recording Parameters	
Record Length:	7 sec
Sample Rate:	2 milli sec
Note: Final parameters subject to reprocessing & interpretation of vintage data.	



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4 Technical requirements

a) 2D Lines details

Mentioned in program description.

b) Navigation data

Navigation data will be supplied in the form of UKOOA format/ text file/Ob Logs.

c) Basic processing sequence

The following sequence is to be considered the required processing flow. However, KPOGCL reserves the right to alter the sequence as necessary to provide improvement in data quality.

1. Demultiplex if needed and reformat of seismic and positioning data
2. Editing and polarity reversal of bad (portions of) records and traces
3. Designature and phase matching
4. Corrections for spherical divergence and inelastic attenuation
5. Produce geometry QC displays: as Near trace plots
6. Static corrections on floating datum, refraction statics, tomo statics as required.
Final Datum elevation and replacement velocity to be tested.
7. Display of single average velocity stacks with/without refraction statics
8. Low cut filter (as required)
9. Optional Random or Coherent noise attenuation (with removable AGC)
10. Pre-stack Deconvolution (application method to be determined from testing) e.g.
Source signature, Predictive Distance, Operator Length and Surface consistent options
11. Display of single average velocity stacks with/without Decons
12. First velocity analysis: 1 km interval, velocities to be horizon consistent, iso-velocity plots produced/with stacks overlay.
13. Preliminary NMO correction for mute parameter testing
14. Display of first velocity stack
15. Multiple attenuation (as required)



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16. Surface Consistent Residual Statics 1st pass
17. Display of stack with/without residual statics
18. 2nd velocity analysis: 0.5 km interval, velocities to be horizon consistent, iso-velocity plots produced/with stacks overlay.
19. Display of 2nd velocity stack
20. Surface Consistent Residual Statics 2nd pass (Optional)
21. Display of stack with/without 2nd pass residual statics
22. DMO and DMO gathers, Offset regularization before DMO
23. Display of DMO stack
24. Final velocity analysis (post-DMO) 0.5 m interval, velocities to be horizon consistent, iso-velocity plots produced/with stacks overlay.
25. DMO/DMO Gathers with Final velocities after DMO
26. Pre-stack mute
27. Time variant scaling
28. Final stack, Datum correction to final/processing datum
29. Deconvolution, single or multiple operator (Optional)
30. Optional F-X Deconvolution (Random Noise Attenuation)
31. Filtering and scaling (as required)
32. Migration algorithm testing, selection and application.
33. Time variant filtering and scaling
34. Produce final tapes on IBM 3590 cartridges/DVDs from raw stack to final stack and migrated stack data (Filtered/scaled and unfiltered/un-scaled) in SEG-Y format, stacking and migration velocities in ESSO V2 format, support data, statics, elevations etc.

d) PSTM Processing Sequence

The following sequence is to be considered the required PSTM processing flow. However, KPOGCL reserves the right to alter the sequence as necessary to provide improvement in data quality.



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1. Demultiplex if needed and reformat of seismic and positioning data
2. Editing and polarity reversal of bad (portions of) records and traces
3. Designature and phase matching
4. Corrections for spherical divergence and inelastic attenuation
5. Produce geometry QC displays: as Near trace plots
6. Static corrections on floating datum, refraction statics, tomo statics as required.
Final Datum elevation and replacement velocity to tested.
7. Display of single average velocity stack stacks with/without refraction statics
8. Low cut filter (as required)
9. Optional Random or Coherent noise attenuation (with removable AGC)
10. Pre-stack Deconvolution (application method to be determined from testing) e.g.
 - i. Source signature
 - ii. Predictive Distance, Operator Length
 - iii. Surface consistent options
11. Display of single average velocity stack stacks with/without Decons
12. First velocity analysis: 1 km interval, velocities to be horizon consistent, iso-velocity plots produced/with stacks overlay.
13. Preliminary NMO correction for mute parameter testing
14. Display of first velocity stack
15. Multiple attenuation (as required)
16. Surface Consistent Residual Statics 1st pass
17. Display of stack with/without residual statics
18. 2nd velocity analysis: 0.5 km interval, velocities to be horizon consistent, iso- velocity plots produced/with stacks overlay.
19. Display of 2nd velocity stack
20. Surface Consistent Residual Statics 2nd pass (Optional)
21. Display of stack with/without 2nd pass residual statics
22. Kirchhoff PSTM and PSTM gathers, Offset regularization before PSTM using Best DMO velocities



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23. Display of PSTM stack
24. Final velocity analysis (post-PSTM) 0.5Km intervals, velocities to be horizon consistent, iso-velocity plots produced/with stacks overlay.
25. PSTM revisions with Final PSTM Velocities
26. Pre-stack mute
27. Time variant scaling
28. Final PSTM stack, Datum correction to final/processing datum
29. Deconvolution, single or multiple operator (Optional)
30. Optional F-X Deconvolution (Random Noise Attenuation)
31. Filtering and scaling (as required)
32. Migration algorithm testing, selection and application.
33. Time variant filtering and scaling
34. Produce final tapes on IBM 3590 cartridges/DVDs from raw stack to final PSTM stack data in SEG-Y format (Filtered/scaled and unfiltered/un-scaled), stacking and migration velocities in ESSO V2 format. Support data, statics, elevations etc.

e) Advance Processing

1. Interpolation to density survey geometry and Regularization
2. PSTM Velocity Analysis
3. PSTM IN OVT
4. Azimuthally RMO Correction
5. PSTM volume stack
6. Post-stack processing
7. Filter & Gain
8. Horizon Interpretation
9. Initial Modeling of PSDM
10. Horizon Modeling iteration
11. Tomography modeling iteration
12. Anisotropic parameter modeling (TTI)
13. TTI Kirchhoff PSDM
14. RTM (Optional)
15. Post-stack processing



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f) Alternative migration algorithms

Contractor shall provide alternative migration algorithms:

- a) Kirchhoff
- b) FK
- c) FD
- d) Wave equation

g) Variations to basic processing sequence

KPOGCL may require the following changes, which will affect basic and optional processes:

- i) Record length decrease or increase, per second
- ii) Pre-stack processing at decreased or increased sampling intervals
- iii) Post-stack processing at decreased or increased sampling intervals

h) Optional processing routines

With the tender CONTRACTOR shall provide details of optional processes and support services:

1 Pre-Stack Processes

- a) Noise Attenuation
- b) Multiple Attenuation
- c) Wavelet Processing
- d) Inversion
- e) Additional Velocity Analysis

2 Post-Stack Processes

- a) Noise Attenuation
- b) Wavelet Processing
- c) Migration
- d) Inversion
- e) Additional Velocity Analysis

a) Pre-stack Time Migration

An amplitude-preserving (Kirchhoff) Pre-STM routine that is capable for imaging moderately complex geologic conditions or velocity fields.

- a) Benefits of Pre-STM



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- b) The results include:
- c) Better event coherency
- d) Improved lateral resolution
- e) Gathers that are ideally suited as inputs into AVO analysis, especially in areas of moderately complex geology

b) Pre-stack Depth Migration

Pre-stack depth migration (Pre-SDM) is critical in areas where there are significant and rapid lateral or vertical changes in the velocity that would unacceptably distort Pre-STM images, including areas characterized by subsalt structures.

c) Reverse Time Migration (RTM)

Traps against steeply dipping geology can be extremely prolific and capable of being drained with relatively few high-rate wells. However, current migration methods face limitations in the presence of complex, steeply dipping reflectors such as those found on salt flanks. Reverse time migration (RTM) overcomes these constraints, enabling structures with dips greater than 90 degrees to be properly imaged.

d) Velocity Model Building

Velocity modeling is a key part of those imaging projects, in which seismic data will be migrated into the depth domain (Pre-SDM).

e) Advanced Tomography

Seismic tomography is a technique used to measure and display the 3D distribution of velocities in the Earth using multiple sources and receivers. Thus, allowing for more precise velocity determination in complex geology.

Advance Tomography capable of multiple isotropic and anisotropic tomography solutions depending on geologic challenge: narrow azimuth (NAZ), wide azimuth (WAZ), multi-azimuth (MAZ), parametric and general move out tomography.

- a) Parametric APK – Produces a smooth background model, improves ray illumination, and produces robust picks in low signal-to-noise ratio areas



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- b) General Move Out (GMO) APK – Produces more accurate picks in complex residual move outs caused by small-scale velocity anomalies or sharp lateral velocity variations
- c) The most accurate and representative velocity model possible
- d) More accurate Earth models
- e) Helps resolve complex geologies

f) AVO and Inversion

This technology enhances the ability to identify and evaluate AVO anomalies to more accurately predict lithology and fluid changes.

AVO is a comprehensive module for pre-stack data conditioning, attribute computation and analysis. This module has the tools for conditioning pre-stack seismic data to produce optimum attribute volumes, cross-plotting and interpretation functions for locating AVO anomalies, and AVO modeling tools for calibration.

g) Benefits of the AVO Module include:

- a) Provides a single comprehensive module for data conditioning, attribute calculation and analysis
- b) High-grades pre-stack seismic data for inversions
- c) Calibrates seismic data with model data
- d) Enables simple navigation and comparison of multiple attribute volumes with seismic gathers

h) Seismic Data Conditioning

The fundamental assumption made in AVO studies is that the pre-stack data has been optimally processed. This means that the data is noise-free, with preserved amplitudes and correct time positioning for the angle range being studied. The AVO module in HampsonRussell offers data conditioning tools needed to prepare data for attribute analysis.



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i) AVO Attribute Volume Calculation

Once the amplitudes observed in the pre-stack data are stable and robust, AVO attributes can be calculated as volumes and maps.

j) AVO Attribute Options

- a) Two Term Aki-Richards A/B
- b) Three Term Aki-Richards A/B/C
- c) Two Term Fatti Rp/Rs
- d) Three Term Fatti Rp/Rs/Rd
- e) Intercept* Gradient volume
- f) Scaled Poisson's Ratio Change $aA+bB$
- g) Fluid Factor Volume
- h) Cross-Plotting
- i) Angle Gather
- j) Super Gather
- k) Offset Mute
- l) Angle Mute
- m) Inverse Q
- n) Trim Statics
- o) Parabolic Radon (INVEST)
- p) RNMO & NMO Correction
- q) CDP Stack
- r) Angle Stack
- s) Range Limited Stack
- t) AVO synthetic modeling
- u) AVO Attribute Volumes
- v) Gradient Analysis
- w) AVO Offset Scaling



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3 Support Services

- a) Additional/Copy Tapes
 - IBM 3590 cartridge
 - 8mm Exabyte
- b) Displays 1:25,000: 48 traces/inch and 5 cm /sec
 - Film/DVD
 - Paper
- c) Additional Final Reports

i) Testing of Processing Parameters

Contractor shall select and KPOGCL shall agree to test parameters using segments of at least 01-02 seismic line in each area. The testing includes all tests necessary to perform the processing to a standard acceptable to KPOGCL, both the basic processing sequence and any chosen optional processes, including but not be limited to tests on:

Initial testing, as soon as possible after receipt of data for the first line

1. Select 5 shots for each of the areas, representing the range of signal to noise ratios and specific noise problems.
2. Amplitude recovery tests on selected shots
3. Exclusive filter trial on shots (10 Hz bands)
4. Low cut filters trial on shots (2 Hz steps)
5. All necessary testing for Deconvolution
6. Preliminary DBS on shots
7. NMO and mute tests
8. Noise suppression tests pre and post stack
9. Testing of stacking method

Pre stack testing, where relevant a control/difference stack shall be included in displays

1. Noise attenuation
2. Deconvolution



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3. Scaling
4. Mute
5. Multiple attenuation
6. DMO

Post stack parameter testing

1. Deconvolution
2. Noise suppression
3. Filter testing
4. Spectral whitening
5. Scaling

Migration parameter testing

Trials shall investigate various algorithms and determine the migration velocity field once the optimum algorithm has been selected.

In processing duration, weekly report must be submitted to KPOGCL by e-mail. Weekly report must include the below.

- Processing status, with statistical summary to evaluate progress
- Parameter tests and their results
- Comments and request for the KPOGCL's decision

j) Integrated interpretation study

KPOGCL also interested for integrated interpretation study using surrounding area wells (06- Wells), on required key horizons, current available processed data (1100 LKM), after reprocessing and collaboration of interpretation study using newly acquired 2D & 3D Data

a. Seismic Interpretation:

- Horizon interpretation (Calibrated with synthetic seismogram).
- Faults interpretation
- Mapping/surfaces (Time & Depth)



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- Seismic Attribute analysis (structural & Stratigraphic)
- Fault seal analysis
- AVO analysis (for reservoir characterization)
- Seismic inversion (for reservoir characterization)

b. Petrophysical Interpretation:

- Fluid contacts establish
- Porosity permeability relationships establish
- Saturation modeling
- Cut off parameters and criteria determination
- Petrophysical summation

k) 3D Planning and Design Study (optional)

Bidders may submit rates for planning & design services, considering above integrated, interpretation study scope on 2D (new + vintage data) for KPOGCL selected area/portion of the block.

5 Final Deliverables and Reports

(04-copies: each on 3590/DLT/LTO/Equivalent Media)

- | | | |
|-------|---|----------|
| i. | SEGY media of final 2D/3D unmigrated gathers | 4 copies |
| ii. | SEGY media of final 2D/3D PSTM gathers | 4 copies |
| iii. | SEGY media of final 2D/3D PSDM gathers | 4 copies |
| iv. | SEGY media of final 2D/3D velocity model | 4 copies |
| v. | SEGY media of final 2D/3D, intermediate stack/
Final Stack/Post Migrated Stack/PSTM/PSDM | 4 copies |
| vi. | SEGY media of final 2D/3D PSTM/PSDM
stack data | 4 copies |
| vii. | SEGY media of final 2D/3D PSDM stack data | 4 copies |
| viii. | CD or DVD of P1/90 final navigation data | 4 copies |
| ix. | Final Processing Report CD or DVD | 4 copies |
| x. | Final Processing Report Paper version | 2 copies |
| xi. | PPTs for all intermediate stacks/results/tests | |



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- xii. Interpreted Horizons in ASCII, GeoQuest Card 7, Chrisma 2D Interpretation lines (ASII), IESX 2D Interpretation line (ASCII), Seisworks and Landmark format
- xiii. Interpreted Faults in SeisWorks, GeoQuest Card 7, IESX Fault (ASCII), Chrisma 2D Fault Stick and Landmark format
- xiv. Surfaces in Landmark, GGeoQuest Card 7, ZMap+Grid (ASCII), Irap Classic Grid (ASCII)
- xv. Seismic Interpretation Results and Reports.

Two (2) copies: of report in appropriate digital format which describes the below items at least.

- I. Methodology
- II. Summary on each processing sequence
- III. Parameter test results and decisions
- IV. Conclusions of the processing

6 Time Schedule

The 2D seismic data reprocessing about 600 LKM job would be started from 2nd week of August, 2018 whereas new 2D/3D Seismic data acquisition will start from September 2018. The CONTRACTOR's will receive data on line by line basis form field.

- | | |
|--|--|
| a) Reprocessing: | 4 – Months |
| b) 2D/3D Seismic Planning & Designing: | 1-Month (inclusive of Reprocessing/Interpretation) |
| c) New Data 2D/3D processing: | 3-Months (on receipt of last line data/volume from field). |
| d) Advance Processing/ Interpretation: | 2-Months |

(Turnaround time for selected seismic lines for PSDM Processing, Interpretation Studies and Well Planning will be adjusted with mutual consent)

- | | |
|-------------------|-----------------------------|
| e) Well Planning: | Inclusive in Serial No.6.d. |
|-------------------|-----------------------------|

7 Representative/local setup

KPOGCL shall send its representative(s) to CONTRACTOR's processing/interpretation centre during the work for start-up meeting and checking processing flow and processing



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parameters as well as quality control. CONTRACTOR shall provide KPOGCL's representative(s) with adequate office facilities and all necessary assistance, including but not limited to workstation hardware and software, digital access to CONTRACTOR's processing system required for quality control, Internet access, and other facilities required for communications with KPOGCL's offices.

Preference will be given to the contractor having local facility setup, processing/interpretation Centre in Pakistan especially in KPK. Or Contractor who can set up a local processing and interpretation system at KPOGCL office, with full project backup from the start of the project till the successful completion of work. The Contractor will depute one or more experienced professionals with local system for necessary parameter selection, QC of processing parameters, statics modeling, velocities, overall processing and interpretation results.

KPOGCL owns the following technical hardware's and licensed software's which can be provided upon request of the contractor regarding the task/job to be achieved.

S.No	Software	H/W Specifications	Qty
1	DSG (G&G Suite)	Fujitsu CELSIUS M740 Workstations (2) 3.2 GHz (8 cores), 64 GB RAM, 27-inch dual display, Nvidia Graphics. (2*PC/1*Laptop with Dual screen-32 GB RAM)	5
2	Petrel (G&G Suite)	HP Z840 Workstation (5) Intel Xeon E5-2630 v2 @ 2.60GHz (2x6 cores), 32 GB RAM, 24-inch dual display, Nvidia Graphics. (2*PC/1*Laptop with Dual screen-32 GB RAM)	5
3	Geo Graphix (G&G Suite)	HP Server (Desktop with Dual screen-32 GB RAM (1*Laptop with Dual screen-32 GB RAM)	5
4	SeisSpace 2D & 3D	Fujitsu CELSIUS R940 Workstations (4) 3.2 GHz (2x12=24 cores), 128 GB RAM, 27-inch dual display, Nvidia Graphics (4*PC/3*Laptop with Dual screen-32 GB RAM)	11



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6	User Terminals	Laptops/Desktop Terminal with (40 inch LED)	10
7	Plotter	36-Inch Cannon iPF 815 plotter	1

8 Technical Proposal

The Bidders are requested to clearly indicate:

1. Main hardware and software to be used for Seismic survey planning and designing, Tomo statics modelling, PSTM processing and advance processing(AVO, inversion, attributes, PSDM processing and velocity modelling), interpretation studies (geological, geophysical and petrophysical) & well planning. Please give details (computer power, number of CPU'S (nodes), capacity of disk and memory and so on).
2. Additional optional processes.
3. Turn-around time on bar-chart with break down for each processing/interpretation module/job.
4. Contractor's personnel resume. Processing/interpretation team for this project.
5. Center Experience of processing/interpretation projects of onshore data.
6. Processing setup details, location, address, online setup facility

9 Conflict of interest:

KPOGCL policy requires that Bidders provide professional, objective, and impartial advice and at all times hold KPOGCL's interest paramount, strictly avoid conflicts with other assignments or their own corporate interests and act without any consideration for future work. Bidders have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of KPOGCL. Failure to disclose said situations may lead to the disqualification of the Bidder or the termination of its Contract. A Bidder (including its Personnel and Sub-Bidders) that has a business or family relationship with a member of the KPOGCL staff who is directly or indirectly involved in any part of the preparation of this Tender document, the selection criteria and the Contract, may not be awarded the Contract for this



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assignment, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the appropriate authority within KPOGCL.

10 Fraud & Corruption:

It's KPOGCL's policy to require that Bidders, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuit of this policy, KPOGCL follows the instructions contained in Khyber Pakhtunkhwa Public Procurement Regulatory Authority (KPPRA) Rules, 2014.

11 Proposal validity:

The proposals shall remain valid for one twenty (120) days after the deadline for submission of Proposals. During this period, Bidder shall maintain the availability of Professional staff nominated in the Proposal. The Client will make its best effort to complete negotiations, if any within this period. If the need arise; however, the Client may request Bidders to extend the validity period of their proposals. Bidders who agree to such extension shall confirm in writing that they maintain the availability of the Professional staff nominated in the Proposal, or in their confirmation of extension of validity of the Proposal. Bidders could submit new staff in replacement, which would be considered in the final evaluation for contract award. If the negotiations process is extended between service provider and KPOGCL till the expiry of the bid validity the contractor is bound to extend the validity to avoid wastage of time of both the parties.

12 Process of Hiring and Proposal instruction:

- a) The interested Bidders should be engaged following a Single Stage Two-Envelop Procedure for hiring method. The submittals shall be evaluated through a separate technical and financial appraisal with 70% and 30% weight age, respectively.



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- b) Financial bids of only the Technically Qualified Bidders shall be opened in the presence of their representatives within 15 calendar days of bid submission or extended date as deemed necessary by KPOGCL.
- c) Selection of the firms will strictly be made in accordance with the procedure of **Quality and Cost Based Selection (QCBS)** method.
- d) Fax, email and non-registered delivery by post mail proposal shall not be considered.
- e) Bids submitted must include bidder's covering letter on its letterhead containing
 - a. Project title/ subject: _____
 - b. Bidder's name: _____
 - c. Name of authorized person: _____
 - d. Bidder E mail/Cell No. (phone, fax): _____
 - e. Name and address of bidder and authorized person
- f) One original and two copies of the technical proposal are to be submitted in a sealed brown envelope marked (technical bid) with the bidder name and address clearly written on the outside left hand top corner.
- g) Fixed price fee based financial proposal must be submitted in sealed envelope. Bidder must clearly mark outside the envelope as "FINANCIAL BID with the Tender Number and Date along with Bidder Name and Address written beneath on the left hand top corner of the envelope. All the envelopes received must be properly sealed with no signs of being tampered with, if so the submitted bids will not be opened and will be returned in the same shape.
- h) 2% bid bond shall be placed in the Financial Proposal envelope and NOT in the Technical Proposal sealed Envelope. Including 2% bid bond in the Technical Proposal shall cause rejection of the Bid. An affidavit from the Vendor must accompany the Technical Proposal that a 2% Bid Bond of total project cost has been attached with the Technical Proposal.
- i) The 2% Bid Bond, CDR or PO/DD from authorized bank shall accompany the Financial Proposal valuing of First Project only (600 LKM 2D Seismic Data Processing) and remain valid for 120 days of bid opening date. The Bank Guarantee will be issued by



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Bank in accordance with the format, which will become effective automatically on expiry of date of Bid Bond as per **Annexure-B** of the Tender Documents.

- j) Within fifteen (15) days of receipt of the notification of contract award, the successful bidder shall furnish to KPOGCL, the Bank Guarantee / Performance Bond for an amount equivalent to 10% of contract value(**Annexure-C**)
- k) The Bank Guarantee / Performance Bond shall remain valid and in full force and effect during validity of the contract.
- l) The validity of Bank Guarantee / Performance Bond shall be extended at any cost by the Bidder if the completion of contract is delayed, whether in whole or in part.
- m) The cost incurred for establishing the Bank Guarantee / Performance Bond or any extension there of shall be to the account of the Bidder.
- n) The Bank Guarantee / Performance Bond will be discharged after completion of the contract.
- o) The firm should be registered with Tax Department having Income Tax and Sales Tax certificates. The firm should be on active tax payer list.
- p) KPOGCL Reserves the rights to Reject or Cancel all bids before opening as per KPPRA Rule 47(1).
- q) Any proposal received at KPOGCL Head Office after the deadline for submission shall be returned unopened and not be part of the competitive bid.
- r) KPOGCL does not take any responsibility for delayed arrival of the bid.
- s) The DECLARATION BY AN AUTHORIZED SIGNATORY OF THE CONSULTANCY FIRM (ANNEXURE-A) of this Bid should be duly signed and attached with the Technical Proposal Forms.
- t) Any proposal received at KPOGCL Head Office after the deadline for submission shall be returned unopened and not be part of the competitive bid.
- u) From the time the Bid is opened to the time the Contract is awarded, the Bidders should not contact the KPOGCL on any matter related to its Technical and/or Financial Proposal. Any effort by Bidders to influence KPOGCL in the examination, evaluation, ranking of Bid, and recommendation for award of Contract may result in the rejection of the Bidders' Proposal.



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- v) Technical Committee of Technical Bid shall have no access to the Financial Bid until the Technical evaluation is concluded
- w) Technical Bid will be opened and result will be announced later.
- x) The firm should be registered with Khyber Pakhtunkhwa Revenue Authority (KPRA).
- y) Government taxes will be deducted at the time of payment as per Government prescribed rates.

13 General Requirement:

1. Proposal content: By submission of the bid, the bidder warrants that the information provided is true, correct and reliable for purpose of evaluation for potential contract award. The submission of inaccurate or misleading information may be grounds for disqualification from the award, as well as subject the bidder to suspension or black listing proceeding as well as other remedies available by law.
2. Department reserve the right to refrain from responding to question submitted after the deadlines.



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3. Instruction to bidders: This project shall be on lump sum basis contract. The bidder shall calculate all its sub cost (including staff remuneration, administrative, travelling etc.).
4. Questions/ queries regarding this Tender Documents may be sent to the CEO by email to the following address:

razi.ceo@kpogcl.com.pk , shahan.bacha@kpogcl.com.pk, tariq.scm@kpogcl.com.pk

Cell #: +92 300 5001038, +92-333 5380240, +92-333 9851785, +92-3331518390

Phone: +92 91-9216283, +92 91-9216023, Fax: +92 91-9216295

14 No obligation

This request for proposal does not obligate the Client to award a contract or complete the process, and the Department reserves the right to cancel the solicitation if it is considered to be in its best interest. The Client further reserves right to reject one or all proposals before opening of bids, extend any deadlines or require for additional information without assigning any reason whatsoever.

15 Check List for Firm

A	B	C	D
Sr. No.	REQUIRED DOCUMENTS WITH TECHNICAL PROPOSAL	Yes	No
1	Company Profile		
2	Certificate of Incorporation with SECP		
3	STRN/NTN/KPST Registration certificate (Must be Filer/Registered)		
4	Last 3 Years Audit Reports		

16 Technical Evaluation Criteria/ (TEC)

The technical proposal must contain experience of the Bidder and professionals in industry. Bidders fulfilling the technical criteria with at least 70% marks shall be selected for opening of their financial bids. Bidders scoring under 70% will get their unopened financial Bid envelopes back after signing of contract with successful bidders. Table showing Technical Evaluation Criteria (TEC):



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Table-1. Technical Evaluation Criteria (TEC)

S.NO	Description	Marks	Obtain Marks
1 Methodology	Working methodology, availability of due software, hardware, for Basic, PSTM, Tomo Statics modeling and other optional 2D/3D Data Processing.	10	
2 Setup	Local Setup Pakistan, especially at KPK =10 Outside Pakistan with Online/local setup with KPOGCL office= 5 Outside Pakistan setup, no online setup with KPOGCL office= 0	10	
3 Capabilities	Relevant 2D/3D PSDM/RTM/MVA Processing = 10 Relevant 2D/3D AVO/Inversion Processing = 5 Relevant 2D/3D Interpretation Studies= 10	25	
4 Center Experience	No. of 2D/3D Projects since last five years: Advance Processing & Interpretation +5 = 10 PSTM Processing Projects +5 = 5	15	
5 Team Experience	2D/3D Project Processing Team Experience +15 Year =20 2D/3D Project Processing Team Experience +10 Year =10 2D/3D Project Processing Team Experience +5 Year =5	20	
6 Turnaround Time	Turnaround Time as per KPOGCL requirements or earlier =20 If Turnaround Time exceeds by 01-week to KPOGCL requirements, 05-marks will be deducted for each week delay on required time schedule	20	
Total		100	

17 Financial Evaluation Criteria/ (FEC)

Prices/Fees for each of the technical component covering the TORs should be given in the financial proposal. The prices should be inclusive of all taxes and in Pak Rupees. If firm quotes in Dollar, KPOGCL will convert 1\$ equal to 100 PKR.



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Table 2 Pricing Schedule

PAYMENT ITEMS (Amount PKR)

S. No	Description	Rates per L km Rates per Sq.km	Total Price 1100 L km.2D	300 Sq. km.3D
1	2D data processing up to PSTM level per L. Km (including full processing sequence, tests, options, all services, deliverables)			
2	3D data processing up to PSTM level per Sq. Km (including full processing sequence, tests, options, all services, deliverables)			
3	2D PSDM processing per L. Km (including all services, deliverables)			
4	3D PSDM processing per Sq. Km (including all services, deliverables)			
5	2D Prestack Inversion Processing per L. Km (including all services, deliverables)			
6	3D Prestack Inversion Processing per Sq. Km (including all services, Deliverables)			
7	2D Poststack Inversion Processing per L. Km (including all services, deliverables)			
8	3D Poststack Inversion Processing per Sq. Km (including all services, deliverables)			
9	2DAVO/attribute analysis per L. Km (including all services, deliverables)			
10	3D AVO/attribute analysis per Sq. Km (including all services, deliverables)			
	Subtotal A			
11	Integrated interpretation study (inclusive to PSTM/PSDM Processing. Vintage + New 2D data about 1100 LKM, Well planning Quote separate price if any). Lump sum Price			
12	Integrated interpretation study (inclusive to PSTM/PSDM Processing. New 3D data about 300 SQ.KM, Well planning Quote separate price if any). Lump sum Price			
	Subtotal B			
13	3D Seismic Planning and Design Study (inclusive to PSTM/PSDM Processing, Quote separate price if any). Lump sum Price			



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14	Subtotal C			
15	Subtotal D = A+B+C			
16	Provincial Sales Tax PST notional 15% (For evaluation and payment purposes KPOGCL figures shall prevail) on subtotal D			
17	Total (D+PST)			

1. All the taxes applicable at the time of payment will be deducted from payment as per prevailing applicable laws. Requests for Currency fluctuation adjustments shall not be given.
2. The lowest evaluated Financial Proposal (FL) will be given the maximum financial score of 100 %. The financial bids will be evaluated as follows for respective bidders.

$$FM = 100 \times FL / F$$

Where:

FM = Financial Marks

FL = Lowest financial bid

F = Cost of the proposal under consideration

18 Selection for award

Bidder should be aware that the KPOGCL shall perform a “best value analysis” and the selection for award shall be made to the bidder whose proposal is most advantageous to the KPOGCL, taking into consideration the Technical factors listed above and the total proposed price across all contract periods.

1. Final Evaluation Criteria:

$$TM \times 0.7 = TTM$$

$$FM \times 0.3 = TFM$$

$$GT = TTM + TFM$$

Where:



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TM: Technical Marks

FM: Financial Marks

TTM: Total Technical Marks

TFM: Total Financial Marks

GT: Grand Total

2. The bidder scoring the highest Grand total will be offered the contract.
3. Bid Submission or extended date as deemed necessary by the Client.



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Note: Contractor will submit professionals list, related working experience and completed projects list/details.

19 Proposals Instructions:

All proposals must be sent to:

Mr. Raziuddin (Razi)

Chief Executive Officer (CEO), Khyber Pakhtunkhwa Oil & Gas Company Limited (KPOGCL). 3rd Floor, Ali Towers, Opposite Custom House Main University Road Peshawar, Khyber Pakhtunkhwa, Pakistan.

E-mail: razi.ceo@kpogcl.com.pk, cc: shahan.bacha@kpogcl.com.pk, tariq.scm@kpogcl.com.pk

Tel: +92-333-5380240, +92 300-5001038, +92 91-9216283, +92 91-9216023 **Fax:** +92 91-9216295

Alternate: +92 3339851785, +92-3331518390

Proposals are due at above Address no Later Than. **12-July-18, 11:00 am**

Pre-Bid Meetings: Pre-Bid Meeting will be held at **KPOGCL HO Peshawar 29 May 2018 at 11:00 am**

20 Language, Preparation of Proposal

- The Proposal and correspondence exchanged by the Bidder/Contractor and the Client shall be written in English language.
- In preparing their Proposal, Bidder/Contractor are expected to examine in detail the documents comprising the RFP. Material deficiencies in providing the information requested may result in rejection of a Proposal.

21 Project Administration:

Coordinator: KPOGCL designates Mr. _____ as Client's Coordinator; the Coordinator shall be responsible for the coordination of activities under the Contract, for



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receiving and approving invoices for payment, and for acceptance of the deliverables by the Client.

22 Confidentiality:

1. Any data provided by the Client or which the Bidder/Contractor or its employees have access to, or which they acquire directly or indirectly under this Tender or during the performance of this Tender, shall be deemed Confidential Information. Duplication or disclosure of such Confidential Information by Bidder/Contractor or any one claiming through it without the prior written consent of the Client is strictly prohibited. All Confidential Information shall be the sole property of the Client. The Bidder/Contractor hereby agrees not to disclose said data, information, and any interpretations thereof, or data derivative there from or any information relating to Client's facilities, installations and operations etc to unauthorized parties or person. The obligations under these provisions shall survive the termination or expiry of the Contract.
2. Neither the Bidder/Contractor nor any of its employees shall, except with the prior written consent of the Client, take ground or aerial photographs of the site, rig, installation or existing facilities of the Client.
3. The Bidder/Contractor further undertakes that it shall not, except with the prior written consent of the Client:
 - a) Make any reference publicly, whether to the press or in books, brochures, internal publications, publicity material, magazines and periodicals or by advertisement through radio, television or films or by any other medium relating to:
 - i. The Contract or its terms and conditions,
 - ii. The nature or extent of Services carried out by the Contractor,
 - iii. The method, materials, or equipment used and personnel employed, or
 - iv. Any other Client information in the possession of the Contractor.



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- b) Disclose or convey any of the matters or information referred to in (i) above to any employees of the Bidder/Contractor not directly concerned with the Contract.

23 Dispute Resolution:

- a) Any and every dispute, difference or question which may arise between the parties out of this agreement or relating to means, operation of this agreement or the breach thereof shall be first settled by the parties by an attempt at amicably settling the dispute through mutual negotiations. In case the disputes, differences or questions cannot be settled amicably or satisfactorily by correspondence or by mutual discussion within 15 days after receipt by one party of the other party's request for amicable settlement, it shall be referred to a CEDR (Centre for Dispute Resolution) or any other accredited/trained Mediator.
- b) In case the mediation fails the dispute shall be referred to Arbitration in accordance with the Arbitration Act 1940. Arbitration proceedings shall be held at Peshawar and arbitration award shall be final and binding on the parties.
- c) In case court proceedings are to be commenced over any issue/dispute arising out of or in relation with this contract, courts at Peshawar, Khyber Pakhtunkhwa have the exclusive jurisdiction.



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Annexure- A

Declaration by an authorized signatory of the Bidder/firm

I, (Name) _____

(Designation) _____ Of

(Firm's Name) _____

I am an authorized signatory of the Bidding Firm, mentioned in the Technical and Financial proposal and above, I attest that I am competent to sign this declaration and execute this Tender document;

2. I have carefully read and understood all the terms and conditions of the Tender document and undertake to abide to them;

3. The information/ documents furnished along with the Technical & Financial Proposals are true and authentic to the best of my knowledge and belief. I/we, am/ are well aware of the fact that furnishing of any false information/ fabricated document would lead to rejection of this bid at any stage besides liabilities towards prosecution under appropriate law.

4. I/we understand that Khyber Pakhtunkhwa Oil & Gas Company Limited (KPOGCL) may require further information and we will duly provide that information in the time stipulated by KPOGCL, and that any non-supply of such information would lead to rejection of this bid at any stage besides liabilities towards prosecution under appropriate law.

Signature of authorized person

Full name: _____

Date: _____

Seal: _____

NOTE: Please attach the above DECLARATION BY AN AUTHORIZED SIGNATORY OF THE FIRM to the Technical Proposal of this Tender document.



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Annexure B

Bid bond

KHYBER PAKHTUNKHWA OIL & GAS COMPANY LIMITED

(KPOGCL) 3rd Floor, Ali Towers, Opposite Custom House Main University Road
Peshawar Pakistan

Guarantee No.....
Date of expiry
Amount.....

Dear Sir,

In consideration of M/s.....

herein after called "THE BIDDER" having submitted the accompanying Bid with reference to Tender number 540 and in consideration of value received from (the Bidder above), we hereby agree to undertake as follows:-

To make unconditional, immediate and forthwith payment of the sum ofupon your FIRST and SIMPLE written demand without further recourse, question, query, deferment, contestation or reference to the bidder, account party or any other person in the event of the withdrawal of the aforesaid bid by the BIDDER before the end of the period specified in the Bid after the opening of the same for the validity thereof or if no such period be specified, within 120 days after the said opening or if the Bidder, having been notified of the acceptance of his bid by the Company during the period of bid validity:

Fails, refuses or delays to execute the Contract in accordance with the instruction to Bidders, or
Fails, refuses or delays to furnish Performance Bond in accordance with the instruction to Bidders.

To accept written demand from you as conclusive, sufficient and final evidence of the existence of a default of non-compliance, breach or default as aforesaid on the part of the BIDDER and to make payment immediately and forthwith upon receipt of your FIRST and SIMPLE written demand.

No grant of time or other indulgence to, or composition or arrangement with the BIDDER in



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respect of the aforesaid Bid with or without notice to us shall affect this Guarantee and our liabilities and commitments hereunder.

This is an independent and direct obligations guarantee and shall be binding on us and our successor in-interest and shall be irrevocable.

The Guarantor Bank warrants and represents that it is fully authorized, empowered and competent to issue this guarantee.

Yours faithfully,
(BANKERS)



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Annexure C

PERFORMANCE BOND/BANK GUARANTEE

KP Oil & Gas Company Limited,
KPOGCL House, Ali Tower,
University Road, Peshawar.

Guarantee No.....
Date of issue
Date of expiry
Amount.....

Dear Sir,

Ref: our Bank Guarantee No. _____ in the sum of _____ on Account of _____ Amount of contract/job In consideration of you having entered into contract no. _____ Dated _____ with _____ called Contractor and _____ in consideration of value received from CONTRACTOR, we hereby agree and undertake as follows:

To make unconditional, immediate and forthwith payment to you as called upon of an amount (equivalent to 10% of total contract value in Pak Rupees) on your written FIRST and SIMPLE demand without further recourse, question, query, deferment, contestation or reference to CONTRACTOR or any other person, in

the event of default, non-performance or non-fulfillment by CONTRACTOR of his obligations liabilities, responsibilities under the said Contract of which you shall be the sole and absolute judge.

1. To accept written demand from you as conclusive, sufficient and final evidence of the existence of a default or breach as aforesaid on the part of CONTRACTOR and to make payment immediately and forthwith upon receipt of your FIRST and SIMPLE written demand.
2. To keep this Guarantee in full force and effect from the date hereof until..... from the date of contract execution / mobilization Notice.
3. That no grant of time or other indulgence to, amendment in the terms of the contract by Agreement between the parties, or imposition of Agreement with contractor in respect of the performance of his obligation under and in pursuance of the said Agreement with or without notice to us, shall in any manner discharge of otherwise however affect this Guarantee and our liabilities



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and commitments there under.

4. This is an independent and direct obligations guarantee and shall be binding on us and our successor in-interest and shall be irrevocable.
5. This Guarantee shall not be affected by any change in the constitution of the Guarantor Bank or the constitution of the Contractor.
6. The Guarantor Bank warrants and represents that it is fully authorized empowered and competent to issue this guarantee.

Authorized Sign for Issuing Bank

Seal of the Bank



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