CLARIFICATION#1 AGAINST TENDER # PROC-SERVICES/CB/EXPL-4961/2021- HIRING OF SERVICES FOR 2D-3D STRUCTURAL GEOLOGICAL MODELING STUDY OF THE GURGALOT BLOCK

Following Clarifications have been made in the subject tender.

S. No.	Clarifications	OGDCL Reply
1	We will require some clarity on the 2D versus 3D structural restoration. 3D structural restoration has challenges especially in complex structural domains such as that in the study and also if there is salt. In this case, there is a 3D seismic survey over the block, and several hundreds of kilometers of 2D seismic data. The regional 2D seismic data will be best to constrain the interpretation and the restoration. The 3D seismic data may be too local to adequately define the structure. However, 3D seismic data can be used to construct a robust 3D structural model the deformation of which can be given by the restoration of regional lines. In the tender document it states as a required deliverable, 10 to 15 regional restored lines in 2D and 3D. • Can you please specify what is meant by the 3D restoration and the expected coverage? Is this limited to the 3D survey or across the 3D boundaries to the 2D regional lines?	**3D restoration may be limited to available 3D seismic dataset.**
2	Creating a 3D model from 2D lines is difficult because of the uncertainty in correlating a structure from one line to the other. In an area with such structural complexities a 2.5D approach is affordable. This involves the lateral correlation of the major structures in a strike direction to the major structures, lacking detail on minor structures.	**2D (STRIKE & DIP LINES)ARE AVAILABLE, HOWEVER 3D SEISMIC DATA WILL BE MAIN INPUT FOR 3D RESTORATION.**

	• Can you please state whether there are any 2D lines approximately East-West in a strike direction to the main structural trend that ties together the section? Note that even with strike sections a 3D regional model is likely untenable and only sequential 2D restorations may be possible (2.5D).	
3	• Is a 3D restoration required or will several 2D lines retrodeformed with a comparable and systematic structural interpretation and kinematics be adequate for the study? A clarification on the scale of the study (2D/3D regional vs. 3D block) would be useful.	**2D LINES MAY BE USED FOR PREPARATION OF TRANSECTS AND FURTHER UTILIZED FOR 2D RESTORATION & BALANCING. THESE CROSS SECTIONS MAY BE USED FOR CONSTRAINING 3D MODELING/ RESTORATION/ BALANCING.**
4	• Can you provide additional information as to the length of the 2D regional lines and where they cross the block?	**MAJOR 2D LINES INSIDE BLOCK AND ALSO SPIL OUTSIDE. LINES MAY BE JOINED TO PREPARE TRANSECTS.**
5	Section 3.1.10: Sealing potential of faults is mentioned as a task. • Calculating the sealing potential of any faults will require some modeling of the stratigraphy in the blocks. Is this the intent? This will add a greater scope in terms of time and cost to the project.	**OPERATOR QC TEAM WILL IDENTIFY TO WHICH FAULTS THIS TASK IS REQUIRED. JUXTAPOSITION ALONG SELECTED FAULTS PLANES MAY BE REQUIRED.**
6	Section 3.1.13 Dry Hole Analysis • Dry hole causes may be numerous and related to geological and drilling constraints. Is the intent here to evaluate the dry holes as relates to the complex	**DRY HOLE ANALYSIS MAY REQUIRE TO ANALYZE THE TRAP INTEGRITY, EFFECTS OF TECTONIC STRESSES ON DRILLING COMPLICATIONS, STRATIGRAPHIC**

	structure and the interpretation and restoration?	**SUCCESSION PREDICTION, SALT CREEPING etc.**
7	Section 3.1.1 mentions that, It is expected to perform advance seismic interpretation (Well to seismic tie, Horizon & Fault interpretation along with validation, QC & mapping), of the different vintages of available 2D/3D seismic data in Gurgalot block in time and depth domain, preparation of velocity models followed by time to depth conversions. • Will OGDC share existing interpretation?	**CONTRACTOR NEED TO COME WITH ITS OWN INTERPRETATION HOWEVER QC TEAM MAY DECIDE TO SHARE ANY INFO AT THAT TIME.**
8	• If not, how many horizons need to be picked?	**ALL PROMINENT HORIZONS NEED TO BE PICKED i.e. TOP EOCENE, TOP EOCENEEVAPORITES, TOP LOCKHART, TOP CRETACEOUS, JURASSIC AND DEEPER IF POSSIBLE INCLUDING BASEMENT**