

CLARIFICATION#1 AGAINST TENDER # PROC-SERVICES/CB/EXPL-4641/2020 HIRING OF SERVICES FOR INTEGRATED STRUCTURAL GEOLOGICAL (2D&3D) MODELING, GEOMECHANICAL MODELING AND BASIN & PETROLEUM SYSTEM MODELING STUDY OF NASHPA

Following Clarification has been made in the subject tender.

S. No.	Clarifications	OGDCL Reply
1	<u>Structural Modelling:</u> All the 2d/3d seismic listed on Page 16 falls under Area of interest? if yes, All the seismic is already interpreted in terms of horizons and faults and Just Interpretation qc/validation needs to be performed on all the mentioned 2d & 3d seismic?	Seismic data falls inside area of interest and may extend in adjacent areas. Contractor will re-interpret all the data for independent models.
2	3d structural restoration is needed or 2d ?	2D & 3D restoration is required.
3	With reference to point 3.1.7 on page 4 (“... balanced geological structural models in 2D & 3D space along defined transects.”), please specify number of transects.	Contractor will propose the number of transects based on initial interpretations and OGDCL QC team will finalize total number of transects required for zones of interest.
4	VSP/checkshot available for how many wells?	12-15 wells (3-5 extra wells may be included from adjacent wells)
5	how many wells with image data; how many wells with core data? Are cores already described (description available?)	14-16 wells falling in area of interest have Image logs data. 8-10 wells have cores data available and laboratory reports available.
6	In 3.1.8, “the building field maps” means structure maps on key horizons?	Yes
7	What does it mean to constrain the complex fault geometry from core and image data?	Integrate Image logs with all other available data to construct and validate structural geometry.
8	<u>Geomechanical modeling & FSA:</u> Fault seal analysis needs to be performed on all major and minor faults? We need to know the approximate number of faults and prospects and fields that need assessment.	After interpretation of seismic data and structural models, QC team of OGDCL will direct the contractor about how many faults need to be analyzed as and when required.
9	Vshale available for all the wells? or it will be calculated by contractor?	Contractor will calculate all petrophysical and geomechanical properties.

10	Dry hole analysis on how many wells?	All dry wells
11	Facies & petrophysical analysis needs to be performed on all wells? If yes, How many wells? Or both facies & petrophysical Analyses' results will be shared with contractor for distribution?	OGDCL will provide raw data, Contractor will perform all interpretations, calculations and analysis.
12	With reference to point 3.1.26 on page 5 ("... and find out the effects of major and minor faults on production."), is production data available?	Depends on requirement during study.
13	With reference to point 4.1.1 on page 9 ("... acoustic impedance, VP/VS, density cubes in SEG-Y format."), is Post-stack/Pre-stack seismic inversion required?	Depending on the requirement of study, post stack data may be utilized for all calculations.
14	With reference to point # 3.1.29, Please confirm if 2D/3D Vp, Vs, cubes in depth domain will be available for this work?	Only VP volumes will be available. VS may be derived/ calibrated from well data.
15	With reference to point # 3.1.31, Will a reservoir model be available for this work. History matched pore pressure cubes, initial, present day and at selected time steps will be required for this work. Please confirm if it will be provided by OGDCL?	Contractor need to establish the fracture distribution so that future well designing may be optimized on selected structural models.
16	With reference to point # 3.1.32, Stress distribution at the time of fracturing refers to natural fractures, or, hydraulic fracture operation in future?	Natural fractures
17	With reference to point # 3.1.33, Please clarify the meaning of this statement. What is required?	Contractor need to provide the stress distribution keeping in view the regional tectonic setup.
18	With reference to point # 3.1.39, Reservoir model with the pre pressures at different time steps in future will be required for this. If it is not available, at least the pore pressure profiles in future will be required. Please confirm if these will be available?	This point refers to analyze the subsidence/ compaction history and its effect on geomechanical properties evolution.
19	PSM/Basin Modeling: Are we expected to identify prospects, or will these be provided by OGDCL?	OGDCL QC team will inform the contractor about possible prospects. However, contractor may also identify new possible prospects.

20	Are we expect to have all the elements of a working Petroleum system inside the block (Kitchen area, carrier bed, reservoir and seal)?	May or may not be. This study needs to confirm this.
21	Are we also to expect mud diapirism? (point 3.2.5)	May or may not be. This study needs to confirm this.
22	Please specify all the available for PSM ? VR, TOC, Heat flow maps, PWD Maps, GDE Maps etc.	Rock eval pyrolysis data on drill cutting samples is available. VR data may be acquired. HF, PWD, GDE maps not available. Contractor will prepare these maps.
23	Is all data for PSM available in digital format? Heat flow map, GDE Maps etc.?	Laboratory data is available.
24	Data As per SOW page # 16 of 16, OGDCL is stating that Image and conventional logs are available. It does not mention or clarify that any petrophysical analysis has been performed and results are available. Please confirm and clarify.	Results area available but contractor needs to perform the analysis for independent view.
25	General Clarification Does 'Numerical Simulation' as mentioned in tender document refers to dynamic modeling work (i.e. history matching/production forecasting) ? Please clarify	No. Item.3.1.23 refers to analyze the effects and behavior of rock mechanical properties on development of different structural styles.
26	Does 'Reservoir Simulation' mentioned in tender document refers to dynamic modeling work (i.e. history matching/production forecasting) ? Please clarify	Reservoir simulation refers to prepare geo-cellular models and identify the role of fractures/ faults on possible fluid flow paths & possible compartmentalization.
27	Does 'Work scope' shared in tender document includes any kind of 'Reservoir engineering/Dynamic Modeling' work? Please clarify	Scope of work doesn't cover specialized Dynamic reservoir modeling.