



# हाईड्रोकार्बन महानिदेशालय

पेट्रोलियम एवं प्राकृतिक गैस मंत्रालय  
भारत सरकार

## DIRECTORATE GENERAL OF HYDROCARBONS

Ministry of Petroleum & Natural Gas  
Government of India

DGH/DDG/NDR/Data-Submission/2019/01

Date: 20.03.2019

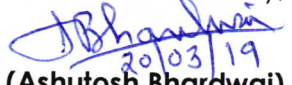
**Sub: Guidelines for submission of E&P data of Nomination Fields by National Oil Companies (NOCs) to National Data Repository (NDR)**

Pursuant to Cabinet decision dated 19<sup>th</sup> Feb 2019 on Reforms in Exploration and Licensing Policy for enhancing domestic exploration and production of oil and gas, Directorate General of Hydrocarbons (DGH) has formulated guidelines for E&P data submission of nomination fields by National Oil Companies (NOC) to National Data Repository (NDR).

It is requested that submission of E&P data of nomination fields being operated by the respective NOC, that is, ONGC and OIL may be taken up with utmost priority as per the enclosed guideline document.

This issues with the approval of competent authority.

Yours sincerely,

  
20/03/19  
(Ashutosh Bhardwaj)  
Dy. Director General

Copy to:

1. CMD, ONGC
2. CMD, OIL
3. JS (Exploration), MoPNG
4. DGH (website)
5. CTO to DG, DGH

Enclosure: Guidelines for submission of E&P data of Nomination Fields by National Oil Companies (NOCs) to National Data Repository (NDR)



# **Guidelines for submission of E&P data of Nomination Fields by National Oil Companies (NOCs) to National Data Repository (NDR)**

## **Introduction**

This guideline for E&P data submission by NOC to NDR, DGH has been formulated in pursuance of implementation of Cabinet decision dated 19<sup>th</sup> Feb 2019 on Reforms in Exploration and Licensing Policy for enhancing domestic exploration and production of oil and gas.

The guideline draws provisions from various rules, notifications, policies and directions issued by the government from time to time: Under Government of India (Ministry of Petroleum and Natural Gas) notification No.S.O.1391(E) dated 1st September, 2006, issued in exercise of powers under section 8 of the Oilfields (Regulation and Development) Act, 1948 (53 of 1948) read with rule 32 of the Petroleum and Natural Gas Rules, 1959 - Submission of data to DGH by National Oil Companies (NOCs) in respect of Nomination Fields, Guidelines for management of Oil and Gas Resources and Policy for E&P Data Assimilation, Disclosure, Sharing, Accessibility and Dissemination through NDR at DGH dated 17 May 2017.

This document provides form and manner of submission of all data of nomination fields to NDR as per the enclosed formats.

The Directorate General of Hydrocarbons (DGH) hereby notifies that the National Oil Companies (NOCs) shall, with effect from the date of issuance of these guidelines, submit all data including historical data of nomination fields to NDR, DGH in accordance with the formats provided in Annexures-I to VI. These formats have been designed to facilitate submission of data and does not restrict submission of any relevant data/information not covered therein.

Notwithstanding the above, the submission of all data pertaining to 59 nomination fields of NOC as listed in Annexure-VI must be completed by second week of July 2019 in compliance with the timelines for implementation of Cabinet decisions were finalized in a meeting chaired by Secretary, Petroleum & Natural gas on 7<sup>th</sup> March 2019.

## **Definition of Data for submission to NDR, DGH:**

- a. For the purpose of this guideline, data means all information obtained as a result of Petroleum Operations under any contract, license, lease, agreement, permit, any other arrangement and/or acquired by DGH/Govt. including but not limited to Geological, Geophysical data with navigation, geochemical, petro physical, well logs, maps, magnetic tapes, cores, cuttings, reservoir and production data as well as all interpretative and derivative data including reports, analysis, interpretations and evaluation prepared in respect of petroleum operations. Additionally, other E&P Data i.e. Gravity (including Aero

Gravity), Magnetic, Magnetic Telluric/CSEM, CBM related Data, Gas Hydrate Data or any other data (all data elements pertaining to the entire E&P value chain).

- b. **Media and Formats of Data submission:** The data must be submitted in latest media such as 3592 cartridges or LTO-4, LTO-5, and LTO-6 or hard disk or any other higher media as may be mutually decided by DGH. Data must be submitted in the international standard format along with the data submission format of NDR as per **Annexure-1**. The data header should be in compliance with latest SEG or similar industry standards. Data must be QC checked before submission to NDR.

### **Detailed List of Data to be submitted and Performa thereof:**

Annexure-I: General Undertaking

Annexure-II: General Description of the Field

Annexure-III: Data Check-List

Annexure-IVA to IVD: Reservoir Data Format

Annexure-VA to VD: Production Data Format

Annexure-VI: List of 66 fields contributing ~95% of production including 59 nomination fields of NOCs

**Annexure-I**

Date: .....

**UNDERTAKING**

**For The Data Submitted to DGH by Operator**

**(To be submitted by Operator on Letter Head with full name, signature and seal of an authorized signatory without any additional note)**

The E&P data as detailed below is submitted to DGH by Operator.....for the block/field name .....

This data set is complete including all the related data in respect of carried out activities as detailed in Annexure-III.

S.No	Type of Data (Raw/ Processed/ Interpreted)	Format	Volume (LKM/ SKM /Nos./Size)	No. of Lines Or, Details of data	Type of Media	Quantity

This is certified that all the data is checked and verified by us as per the list enclosed (in Annexure-II) and all the tapes (including Cartridges, USB Hard Disc, DVD etc.) are readable and write protected.

(Signature)  
Operator Name: .....

Seal: .....

## Annexure-II

<b>NAME OF THE FIELD</b>	
1	Introduction
a	Name of the Basin
b	Area/ Structure/Field (Maps and description with relevant information)
c	Acreege related data PML/ML (Area, Co-ordinates with CRS, Map of PML/PEL, validity of ML)
(A write-up in pdf, combining the above )	
2	Exploration and Development History (A write-up in pdf incorporating following elements)
	General Geology, Geophysical, Petrophysical and Reservoir Information studies/analyses
a	Structure
b	Stratigraphy
C	Seismic Data info (Surveys available, their vintage etc)
d	Wells in the field and Type and Status (Expl/Dev/Producing/WI)
e	Wells log Data info (RHOB, GR, DT, RT/DSI..)
f	Reservoir Characteristics and
g	Oil and Gas Initially in place
h	Fluid Properties
3	Field production History Since Inception ( A write-up with field production profile and other relevant graphs/figures)
All Data in Electronic/Digital form	

**Details of Data Submitted for the Block/Field-----**

**(Data to be submitted in LTO-IV, V, VI / USB Hard Disk/3592)**

**1. NAV Data:**

<b>S. No</b>	<b>Data Types</b>	<b>(YES/NO)</b>
1.1	For Land : SPS version 1.1or 2.1( Must contain Elevation & statics corrections & uphole time)	
1.2	For Marine : UKOOA in P1/90 or P2 /94	
1.3	Line Information/ Swath Info as per the given format	
1.4	Tape Logs	
1.5	The location map with proper annotations on paper/soft copy	
1.6	Source signature (Marine data)	

**2. Raw Data (2D or 3D):**

<b>S. No</b>	<b>Data Types</b>	<b>(YES/NO)</b>
2.1	Field /Raw Gathers (In Original format)	
2.2	VSP data ( original format)	
2.3	Acquisition/Operation Report	
2.4	Field observer Report	

**3. Pre Stack Data (2D or 3D):**

<b>S. No</b>	<b>Data Types</b>	<b>(YES/NO)</b>
3.1	Nav Merge Gathers ( in SEG Y)	
3.2	Conditioned Gathers ( in SEG Y)	
3.3	PSTM/PSDM Gathers (in SEG Y)	
3.4	AVO Angle Gather (in SEG Y)	

**4. GM and other data:**

<b>S. No</b>	<b>Data Types</b>	<b>(YES/NO)</b>
4.1	Gravity Magnetic data	
4.2	Magneto Telluric data	
4.3	Geochemical data / Geological data	
4.4	Gravity Magnetic Report	
4.5	Geochemical Report	

**5. Processed / Reprocessed data in SEG Y format (2D or 3D):**

<b>S. No</b>	<b>Data Types</b>	<b>(YES/NO)</b>
5.1	Final PSTM Gathers (un-muted)	
5.2	Final PSDM Gathers (un-muted)	
5.3	Pre Stack Time Migration Stack	
5.4	Pre Stack Depth Migration Stack	
5.5	Pre Stack Depth Migration scaled Stack	
5.6	AVO Angle Stack	
	AVO Attributes Volume (Intercept, Gradient, Product or any other attribute Volume)	
5.7	Velocity data included in ASCII/ SEG	
5.8	Process VSP Data (if any in SEG Y)	
5.9	Post processed Navigation Data in UKOOA format	
5.10	Processing Report	
5.11	Interpretation Report	
5.12	VSP Report	
5.13	Special Study (Attribute, Inversion/AVO volumes)	

**6. Drilling data:**

<b>S. No</b>	<b>Data Types</b>	<b>(YES/NO)</b>
6.1	Well Completion Report (WCR) Consisting of GTO, Bit records (standard format), Casing Policy, Mud Policy, Well Diary.	
6.2	Well Specific Documents	
6.3	Well Proposal- Geological Prognosis with pore pressure and fracture pressure data	
6.4	Well drilling design document	
6.5	Daily Drilling Report/IADC report (International Association of Drilling Contractors)	
6.6	Copy of Well Cost estimates	
6.7	Directional Survey Data	
6.8	End of Well Report	
6.9	Details of Mud Line Suspension (MLS data - if used)	
6.10	Report of any Special Study done for the well - well bore study, mud selection	
6.11	Well test report	
Rig Deployment Related Documents:		
6.12	Location Soil Boring report	
6.13	Sparker Survey (shallow Seismic) report for detection of shallow gas	
6.14	Weather data used for location approval	
6.15	Bathymetry survey data	

6.16	Certificate of approval of location	
6.17	Rig Move Reports	

### 7. Petrophysical Data:

S. No	Data Types	(YES/NO)
7.1	Log Data (open hole/cased hole) all basic suite recorded (DLIS/LIS & LAS format) and PDS/PDF format for different sections with header info.	
7.2	Merged & depth matched log data of different runs in LAS format comprising of standard log curves.	
7.3	Hi-Tech Log data (raw and processed) in DLIS, LAS & PDF/PDS along with analysis reports.	
7.4	Formation Evaluation / Petrophysical Analysis Reports elucidating Rw, a, m, n values and mud parameters Fluid contacts/limits Petrophysical model used Cut off values for Vcl, PHIE, Sw Pay summary table with zone top & bottom (MD & TVDSS), gross thickness & net pay thickness in TVD, average effective porosity and average water saturation.	
7.5	Processed Petrophysics Model output in LAS format	
7.6	Wireline Formation Tester (WFT) Data & Analysis Reports	
7.7	Core Info (Sidewall core / Conventional core) RCA /SCAL Reports	
7.8	Litho / Master / Mud Log data and reports	

### 8. G & G Data:

S. No	Data Types	(YES/NO)
8.1	Location/base map with all license boundaries and drilled wells, along with one such map integrated with GIS detailing	
8.2	Seismic coverage map (2D/3D)	
8.3	Seismic area of interest for processing/re-processing/inversion work	
8.4	Velocity model and depth conversion along with reports	
8.5	Seismic datasets used for interpretations: full stack/angle stacks and gathers/ inversion	
8.6	Well log correlation profile along nearby wells (both structural and stratigraphic, suitably scaled and readable) and one with corresponding seismic/seismo-geological section	
8.7	Geological summary reports of:	
	♦ Tectonics and structure, sedimentation and stratigraphy	
	♦ Depositional environment model used for reservoir	



	description	
8.8	Geoscientific reports (2D/3D seismic and non-seismic) of:	
	<ul style="list-style-type: none"> <li>◆ Gravity, magnetic, electromagnetic, magneto-telluric and geochemical</li> <li>◆ All relevant acquisition and processing</li> <li>◆ Seismic interpretations</li> <li>◆ Seismic inversions</li> </ul>	
8.9	Seismic (2D/3D) datasets in ASCII formats:	
	<ul style="list-style-type: none"> <li>◆ All horizons used for G&amp;G framework build and reservoir description</li> <li>◆ fault data (sticks/polygons/planes)</li> <li>◆ Reservoir tops/bottoms</li> <li>◆ Synthetic correlation data</li> <li>◆ Seismic attributes data, used for reservoir description</li> </ul>	
8.10	Maps at reservoir/pay sand level:	
	<ul style="list-style-type: none"> <li>◆ Depth structure map</li> <li>◆ Seismic attribute map describing the reservoir</li> <li>◆ Gross and effective reservoir thickness map</li> <li>◆ Net pay map along with one draped over top structure map</li> </ul>	
8.11	3D geological/ static reservoir models/maps/tables:	
	<ul style="list-style-type: none"> <li>◆ Static reservoir models (industry-standard formats) along with reports on the latest field development scheme/plan</li> <li>◆ Well log correlation profile</li> <li>◆ Relevant HCPV maps along with ASCII</li> <li>◆ Inplace uncertainty and sensitivity analysis</li> <li>◆ Volumetric tables for all assessed reservoirs</li> <li>◆ Inplace in terms of 3 uncertainty polygons (P90, P50/Best, P10) with corresponding maps for all reservoir assessed</li> </ul>	

### 9. Reservoir Data:

S. No	Data Types	(YES/NO)
9.1	Information on reservoir performance <b>(As per Annexure-IVA)</b>	
	<ul style="list-style-type: none"> <li>◆ OIL</li> <li>◆ GAS</li> </ul>	
9.2	Submission of OIL/ Gas Inplace and Reserve/Resources <b>(As per Annexure-IVB)</b>	
	Inplace	
	<ul style="list-style-type: none"> <li>◆ OIL</li> <li>◆ GAS</li> </ul>	
	Reserve/Resources	
	<ul style="list-style-type: none"> <li>◆ OIL</li> <li>◆ GAS</li> </ul>	
9.3	Reservoir engineering work/analytical/numerical simulation <b>(As per Annexure-IVC)</b>	

	◆ 1A	
	◆ 1B	
	◆ 2	
	◆ 3	
	◆ 4	
9.4	Reservoir Study Report(As per Annexure-IVD)	
	1. 2. 3. 4.	
9.5	Soft copy of all reservoir modeling study report	
9.6	Soft copy of all models (Static/dynamic/material balance/decline curve analysis)	
9.7	Production and injection data base well/sand month wise	
9.8	Third party reserve audit report	

### **10. Production Data: \***

S. No	Data Type	YES/No.
10.1	Field infrastructure at a glance as per Annexure- VA	
10.2	Installation Details as per Annexure- VB (Offshore)	
10.3	Installation Details as per Annexure- VC (Onshore)	
10.4	Well Report Data as per Annexure-VD	

\*In addition to above data NOCs will continue submitting field wise production data in PDMS as per the template mapped in PDMS.

### **11. Other Reports:**

S. No	Data Types	(YES/NO)
11.1	Any Regional Integrated Study Report	
11.2	Any other Reports / data relevant to E&P activities such as Experimental Data, Refraction & uphole plots, Low velocity layer /model & topographic documents etc.	

### **Note:**

#### 1. Line Information format

Line No/ Swath No	First SP (FSP)	Last SP (LSP)	First File NO( FFID)	Last File No (LFID)	Useful File	NTBC file

2. In case Stack Data is being submitted in TAR format the same must be mentioned specifically.

3. All Log data must contain header information such as well name, Field

Name, Date of recording, **Mud Data (RM, RMF, Specific Gravity of Mud, Borehole Temp, Mud type)**, Well coordinates etc.

4. **Byte location in stack section should be as per international norm.**
5. Trace header must contain information such as Trace Seq No, SP no, CDP no, In Line no, Cross line no, CDPX, CDPY, SPX, SPY, RECVX, RECVY etc.
6. The data may be submitted in media as mentioned above. Hard disk is the most preferred media for data copying. **If the raw data is copied in hard disk, it should be in RODE/TIFF format.**
7. **CRS (including datum and datum transformation parameters, if used) of raw data and processed/reprocessed data should invariably be mentioned.**
8. **Data transmittal and description**, The data parcel must be accompanied by: Data Transmittal (data listing) with summary/detailed description of contents with proper labeling of tapes or other media. All media shall be securely packed using protective packing materials.

(Signature)  
Operator Name  
Seal: .....

**Annexure-IVA**

**Information on Reservoir Performance**

**Asset:**

**Field:**

**Reservoir:**

**Date:**

**a) For Oil Reservoir**

<b>Sr. No.</b>	<b>Parameters</b>	<b>Remarks</b>
1	Year of start of production/ Water Injection/ Gas Injection	
2	Avg. Actual/Plan Oil Rate (bopd)	
3	Avg. Gas Rate (MMscmd)	
4	Cumulative Oil Recovered (%) till date/ Estimated Ultimate Recovery (%)	
5	Cumulative Gas Recovered (%) till date	
6	Avg. Exploitation Index (Annual Oil Production/STOIIP) till date	
7	Current Exploitation Index (Annual Oil Production/STOIIP)	
8	Initial Reservoir Pressure (psia)	
9	Current Reservoir Pressure (psia)	
10	Annual decline rate (%)	
11	Current avg. GOR (V/V)	
12	Current avg. Water Cut (%)	
13	Avg. Actual/Plan Water Injection Rate (bwpd)	
14	Avg. Actual/Plan Gas Injection Rate (MMscmd)	
15	Instantaneous Voidage Replacement Ratio (fraction) Actual/Plan	
16	Cumulative Voidage Replacement Ratio (fraction) Actual/Plan	
17	Cumulative Water Injection/ Pore Volume of the Reservoir	
18	Total no. of wells drilled in the field	
19	No. of wells on production	
20	No. of wells on artificial lift	
21	No. of wells on water & gas injection	
22	No. of wells flowing above GOR 2000 (V/V)	
23	No. of non-flowing oil wells for any specific reason	
24	No. of observation wells	
25	No. of sick wells	
26	No. of abandoned wells	

**b) For Gas Reservoir**

<b>Sr. No.</b>	<b>Parameters</b>	<b>Remarks</b>
1	Year of start of production	
2	Avg. Gas Rate Actual/Plan (MMscmd/MMscfd)	
3	Avg. Condensate Rate Actual/Plan (bcpd)	
4	Cumulative Gas Recovered (%) till date/ Estimated Ultimate Recovery (%)	
5	Cumulative Condensate Recovered (%) till date/ Estimated Ultimate Recovery (%)	
6	Avg. Exploitation Index (Annual Production/GIIP) till date	
7	Current Exploitation Index (Annual Production/GIIP)	
8	Initial Reservoir Pressure (psia)	
9	Current Reservoir Pressure (psia)	
10	Current water production (bbl/MMscf)	
11	Total no. of wells drilled in the field	
12	No. of wells on production	
13	No. of non-flowing gas wells for any specific reason	
14	No. of observation wells	
15	No. of sick wells	
16	No. of abandoned wells	

**Annexure-IVB**

**Oil/Gas Inplace and Reserves/Resources**

**Asset:**

**Field:**

**Reservoir:**

**Date:**

Units: Oil: MMbbl (One cubic meter = 6.2898 bbl)

Gas: Bscm/MMscm or Bscf/MMscf(One cubic meter=35.3147 cubic ft)

P1	: Proved	1C	: Low
P2	: Probable	2C	: Best Estimate
P3	: Possible	3C	: High
1P	: Proved (P1)		
2P	: Proved (P1) + Probable (P2)		
3P	: Proved (P1) + Probable (P2) + Possible (P3)		

**Cumulative Production: ----- MMbbl    2P Ultimate Reserves: ----- MMbbl**

<b>Total Recoverable Reserves/Resources</b>	<b>Discovered</b>	<b>Commercial</b>	<b>RESERVES/RESOURCE CATEGORY</b>			Project Category	Comments
			PRODUCED TO DATE				
			DEVELOPED RESERVES			On Production	
			1P	2P	3P		
		UNDEVELOPED RESERVES			FDP Status Under Development	Planned for Development	
		1P	2P	3P			
		<b>Constraints/Su b-commercial</b>	CONTINGENT RESOURCES			Development Pending	
			Low	Best Estimate	High		
					Development on Hold		
				Development not Viable			
	<b>Undiscover ed</b>	PROSPECTIVE RESOURCES					
Low		Best Estimate	High				
	Range of Uncertainty--**						

<b>Total Inplace</b>	<b>Discovered</b>	<b>Commercial</b>	<b>OIIP (STOIIP) &amp; GIIP CATEGORY</b>			<b>Project Category</b>	<b>Comments</b>
			DEVELOPED INPLACE				
			1P	2P	3P		
		UNDEVELOPED INPLACE					
		1P	2P	3P			
	<b>Constraints/Sub-commercial</b>	CONTINGENT INPLACE					
		Low	Best Estimate	High			
	<b>Undiscovered</b>	PROSPECTIVE INPLACE					
		Low	Best Estimate	High			
Range of Uncertainty--**							

**Note:**

- i. Associated Gas (solution gas) and Gas Cap gas & Free Gas (both non-associated gas) volumes should be mentioned categorically.
- ii. For presentation/comparison/reference, 2P Inplace and 2P Reserves can be considered.
- iii. Data not applicable to any of these categories should be left blank.

**Reservoir Engineering Work**

Sr. No.	Description	2P/OIIP/STOIIP (MMbbl) /GIIP (Bscm) Field/ Reservoir	2P Reserves MMBbl (O+ OEG)	Required/ Preferred
1.	<p>a. Decline Curve Analysis (DCA): Well wise reserves estimate of existing wells &amp; total reservoir based on past sustained performance and extending the DCA parameters on new development wells in 2P STOIIP area.  <b><u>(Not applicable in case of 1<sup>st</sup> time/Initial development)</u></b></p> <p>b. Material Balance Studies (using well model preferred) and FORGAS &amp; P/Z vs. Gp (for gas reservoirs) is to be performed in conjunction with DCA.</p> <p>The above studies need to be supported by Bubble Maps. <b>Maximum three new development wells per reservoir/hydro-dynamically connected reservoirs in the field can be considered based on the these studies provided there is an improvement in Exploitation Index &amp; Recovery Factor; otherwise Sr. No. 3 is to be followed.</b></p>	Oil: <80 Gas: <5		<p>Required/ (Sr. No. 2&amp;3 Preferred but not Binding)</p> <p>(1a. is not applicable for Initial Development Case)</p>
2.	2D Geological Maps based 3D-3Phase Reservoir Model, History Matched (in new reservoir there will be no history) 3D-3Phase Numerical Simulation Study & Forecast for reservoir/ hydro-dynamically connected reservoirs.	Oil: 80 to 120 Gas: 5 to 7.5		Required / (Sr. No. 3 Preferred but not Binding)
3.	Full Field Geo-Cellular Model (FFGM), Full Field Reservoir Model (FFRM), History Matched (in new reservoir there will be no history) 3D-3Phase Numerical Simulation Study & Forecast for reservoir/ hydro-dynamically connected reservoirs.	Oil : >120 Gas :>7.5		Required



	<p>The above statements assumes that:</p> <ul style="list-style-type: none"> <li>◆ FFRM scale-up is valid and preserves the pore volume, internal architecture, and the effects of heterogeneity.</li> <li>◆ Aquifer influx and gas cap size are modeled correctly.</li> <li>◆ PVT properties are characterized and represented correctly.</li> <li>◆ SCAL data is used to enhance and validate model predictions, where applicable.</li> <li>◆ There are no errors in reported production history.</li> </ul>			
4.	<p>For offshore semi-deep, deep &amp; ultra-deep-water fields, new and redevelopment of the reservoir will be strictly based:</p> <p>Full Field Geo-Cellular Model (FFGM), Full Field Reservoir Model (FFRM), History Matched (in new reservoir there will be no history) 3D-3Phase Numerical Simulation Study &amp; Forecast for reservoir/ hydro-dynamically connected reservoirs.</p>	--	--	Required

**Note:**

- i. Industry standard softwares commonly used namely, Petrel/ Petrel RE, Eclipse, CMG, VIP, MBal, FORGAS, OFM, Kappa, PanSystem, Prosper, PipeSim etc. are recommended for Reservoir Engineering & Petroleum Engineering Studies.
- ii. All input data relating to above studies including for FFGM and FFRM, History Matched & Forecast models should be made available to DGH.
- iii. All Reservoir Engineering Works performed for respective field are required to be submitted to DGH.

## Annexure-IVD

### Reservoir Engineering Studies, Models & Reports

- i. Annual/Half Yearly Reservoir Performance Report (ARPR)/ Reservoir Performance Review Report (as & when done) that should include inter alia:
  - ◆ Production & water injection/flood, gas injection, pressure, water cut & GOR performances (Plan Vs Actual), Voidage Replacement Ratio (VRR), Isobar Maps & P/Z Plots, Bubble Maps, Halls Plot and any other analysis reservoir wise.
  - ◆ Performance of new development wells, Reservoir depletion plan, IOR-EOR status/ future plan, complete well status, sick wells analysis, workovers and activation plan
  - ◆ Reservoir Monitoring Plan (RMP): Pressure Transient Analysis (PTA) & Reports, Fluid sampling, Cased hole logs for reservoir monitoring; PLT, Pulsed Neutron Logs (Sigma, RST)
  - ◆ Any new technology envisaged to enhance production in areas of advance stimulation, fracking, well construction/design/completion& artificial lift

The above elements/activities may vary to type of reservoirs (oil & gas), fields, stage of production and current project status IOR-EOR etc. (Primary, Secondary or Tertiary).

- ii. Reservoir Engineering Studies: Reservoir Modeling & Simulation Studies (Static and Dynamic models) performed & results, Material Balance Studies, Decline Curve Analysis, future redevelopment plan, PVT Lab Studies & EOS (for compositional & EOR), Routine & Special Core Analysis (SCA), Reservoir Rock Typing, Digital Rock Physics Studies & their Reports, Annual/ Half yearly Reserves estimates as per Reservoir Modeling & Simulation studies.
- iii. Third Party Reserves Audit Report:

Third Party 2P Reserves Audit Report by Consultant of international repute in case of 2P Reserves O+OEG >5 MMbb, for O+OEG <5 MMbb, Consultant of international repute is not mandatory.
- iv. Competent Person Report (CPR) prepared on Reservoir Characterization, Reservoir Performance, Reserves, EOR/EGR and any special study time to time.
- v. Production, Water Injection, Gas Injection (Production & Injection database) data for well /sand month wise.
- vi. All presentations on Reservoir/Field performance review presented to DGH time to time.

**Soft copies of all the Reports, Models (Static, Dynamic & Material Balance), Decline Curve Analysis and lab reports are to be provided to DGH.**

**ANNEXURE-VA**

**Format For Production Management data  
Field Infrastructure at a Glance.**

Field/ Block Name: _____			
Sl. No.	Particulars	Data	Remarks
<b>1</b>	<b>Total No. of Installations</b>		
a	No. of Well Head Installations/Platforms		
b	No. of Early Production System		
c	No. of GGS		
d	No. of CTF		
e	No. of CPP		
f	No. of GCP		
g	No. OF WIP		
h	No. of GCS		
i	No. of Process Platform		
j	No. of FPSO		
k	No. of Living Quarter Platform		
l	No. of Control Riser Platform		
m	No. of Flares		
n	No. of SBM		
o	No. of Tanker Offloading Stations		
p	No. of Onshore Terminal Complex		
q	Any Type of installation other than above.		
<b>2</b>	<b>Total No. of Servicing Equipment</b>		
a	No. of Work-over Rigs		
b	No. of Testing Rigs		
c	No. of Nitrogen Pumping Units/ Vessel		
d	No. of Coil Tubing Units		
e	No. of Wire Line Units		
f	No. of Acid Puming Unit		
g	No. of High Pressure Pumping Unit		
h	Any other type of Servicing Equipments		
<b>3</b>	<b>To No. of Pipelines (in KMs)</b>		
a	Trunline in Kms		
b	Flowlines in Kms		
c	Other lines in KMs		

**ANNEXURE-VB****Format for Production Management Data for Offshore  
(Individual Installation Details: Offshore)**

<b>I. Facility/Processing Platform Name -----</b>		
<b>II. Name of the Block/field:-----</b>		
<b>Sl.No.</b>	<b>Particulars</b>	<b>Details</b>
<b>1</b>	<b>Facility Information</b>	
<b>a</b>	<b>Year of installation/commissioning</b>	
<b>b.</b>	<b>Co ordinates of Platform</b>	
<b>2</b>	<b>Production Facilities</b>	
<b>a</b>	Capacity( Oil in BOPD, Water in BWPD and Gas in MMSCMD)	
<b>b</b>	No. of oil & gas wells Connected	
<b>c</b>	Process facility description alongwith P&ID for Oil,Gas & Produced water:	
<b>d</b>	Water Injection facility alongwith P&ID:	
<b>e</b>	Total No. of Well Platforms:	
<b>f</b>	Total No. of water injection Platforms:	
<b>3</b>	<b>Oil Storage Capacity</b>	
<b>a</b>	Storage Capacity (m3/Barrels) :	
<b>4</b>	<b>Evacuation of Hydrocarbons</b>	
<b>a</b>	Mode of Evacuation for Crude Oil (Pipeline/Road Tanker/Marine Tanker/Mixed (if the transportation is combination, pls provide the point to point transportation mode) :	
<b>b</b>	Condensate: Whether mixed with crude oil: Yes/No (If No, mode of evacuation)	
<b>c</b>	Pumping capacity (m3/hr/BOPD)	
<b>5</b>	<b>Gas compression:</b>	
<b>a</b>	No. of Compressors:	
<b>b</b>	Design Suction & Discharge pressure (in Kg/cm2 g):	
<b>c</b>	Design Capacity (sm3/hr)/(MMSCMD):	
<b>d</b>	Delivery pressure at the customer end (Kg/cm2 g):	
<b>6</b>	<b>Custody Transfer Metering Systems (Instrument Types)</b>	Oil:
		Gas:
		Condensate:
<b>7</b>	<b>Delivery point location</b>	Oil:
		Gas:
		Condensate:
<b>8</b>	<b>Delivery point Storage Capacity</b>	Oil:
		Condensate:
<b>9</b>	<b>Crude Oil Specification (SP.Gravity gm/cc; °API, Viscosity, Pour Point, Salinity)</b>	
<b>10</b>	<b>Gas Specification (Composition, GCV, NCV)</b>	

**ANNEXURE-VC****Format for Production Management data for ONSHORE  
(Individual Installation Details: Onshore)**

<b>I. Facility/Installation Name (GGS/GCP/CTF/EPS/WHI) -----</b>		
<b>II. Name of the Block/field:-----</b>		
<b>Sl.No.</b>	<b>Particulars</b>	<b>Details</b>
<b>1</b>	<b>Facility Information</b>	
<b>a</b>	<b>Year of installation/commissioning</b>	
<b>b</b>	<b>Co ordinates of Platform</b>	
<b>2</b>	<b>Production Facilities</b>	
<b>a</b>	Capacity( Oil in BOPD, Water in BWPD and Gas in MMSCMD)	
<b>b</b>	No. of oil & gas wells Connected	
<b>c</b>	Process facility description along with P&ID for Oil, Gas & Produced water:	
<b>d</b>	Water Injection facility along with P&ID:	
<b>3</b>	<b>Oil Storage Capacity</b>	
<b>a</b>	Storage Capacity (m3/Barrels)	
<b>4</b>	<b>Evacuation of Hydrocarbons</b>	
<b>a</b>	Crude Oil (Pipeline/Road Tanker/Marine Tanker/Mixed (if the transportation is combination, pls provide the point to point transportation mode) :	
<b>b</b>	Condensate: Whether mixed with crude oil: Yes/No (If No, mode of evacuation:)	
<b>c</b>	Pumping capacity (m3/hr/BOPD)	
<b>5</b>	<b>Gas compression:</b>	
<b>a</b>	No. of Compressors:	
<b>b</b>	Design Suction & Discharge pressure (in Kg/cm <sup>2</sup> g):	
<b>c</b>	Design Capacity (sm <sup>3</sup> /hr)/(MMSCMD):	
<b>d</b>	Delivery pressure at the customer end (Kg/cm <sup>2</sup> g):	
<b>6</b>	<b>Custody Transfer Metering Systems (Instrument Types)</b>	Oil:
		Gas:
		Condensate:
<b>7</b>	<b>Delivery point location</b>	Oil:
		Gas:
		Condensate:
<b>8</b>	<b>Delivery point Storage Capacity</b>	Oil:
		Condensate:
<b>9</b>	<b>Crude Oil Specification (SP.Gravity gm/cc; °API, Viscosity, Pour Point, Salinity)</b>	
<b>10</b>	<b>Gas Specification (Composition, GCV, NCV)</b>	

**ANNEXURE-VD**

**Well Reports for Production Management**

<b>I. Name of the Block/field:-----</b>		
1	Well Intervention Data for individual well.	As per Format A below.
2	Work over History for individual well.	

Field Name	Platform/Installation	Well Name	Job Objective	Job Type	Job Start Date	Job End Date

## ANNEXURE-VI

Cabinet decision on enhancing domestic exploration and production of oil and gas has stipulated the end date of 2<sup>nd</sup> week of July 2019 for collating submission of all data for 59 nomination fields of NOCs (out of 66 fields contributing ~95% production)

Sr No.	Field name / Block Name	Operator
1	BOMBAY HIGH	ONGC
2	Bassein & SB 11	ONGC
3	Heera & South Heera	ONGC
4	Vasai East	ONGC
5	Daman/ Tapti Block	ONGC
6	Gandhar	ONGC
7	N B PRASAD (D-1)	ONGC
8	B-193 Cluster	ONGC
9	Neelam	ONGC
10	Agartala Dome	ONGC
11	B-55 & B 55 South	ONGC
12	North Kadi	ONGC
13	Geleki	ONGC
14	Cluster-7	ONGC
15	Konaban	ONGC
16	North-Tapti	ONGC
17	Santhal	ONGC
18	Kanjirangudi	ONGC
19	B-22 Cluster	ONGC
20	B-Series	ONGC
21	Kesanapalli West	ONGC
22	Kalol	ONGC
23	SB-14	ONGC
24	B-173A	ONGC
25	G-1	ONGC
26	Sobhasan	ONGC
27	Lakwa + Lakhmani + Kuargaon	ONGC
28	Periyapattinam	ONGC
29	KG-DW-S	ONGC
30	Linch	ONGC
31	Nandasan	ONGC
32	Kesavadasapalem	ONGC
33	Pasarlapudi	ONGC
34	Jotana	ONGC
35	Limbodra	ONGC

36	Laiplingaon + Tiphuk	ONGC
37	Gamij	ONGC
38	Manikyanagar/ Rokhia	ONGC
39	Jhalora	ONGC
40	Jambusar	ONGC
41	Mandapeta	ONGC
42	Kuthalam	ONGC
43	Tiruvarur	ONGC
44	Wadu-Paliyad	ONGC
45	Ankleshwar	ONGC
46	Rudrasagar	ONGC
47	Nawagam	ONGC
48	Greater Hapjan	OIL
49	Greater Chandmari	OIL
50	Central Small Fields	OIL
51	Greater Jorajan	OIL
52	Greater Nahorkatiya	OIL
53	Greater Dikom	OIL
54	Dandewala	OIL
55	Greater Shalmari	OIL
56	Bhogpara	OIL
57	Kathaloni	OIL
58	Moran	OIL
59	Tengakhat	OIL
60	RJ-ON-90/1	PSC
61	PANNA-MUKTA	PSC
62	KG-DWN-98/3	PSC
63	RAVVA	PSC
64	CB-OS/2	PSC
65	RJ-ON/6	PSC
66	KG-OSN-2001/3	PSC