

Alaska Department of Natural Resources
Division of Oil and Gas

Geologic and Engineering Data Submittal Requirement for Unit Actions

Submittal requirement for data from Operators in support of Unit approval or modification of existing Units, including Unit Plan of Exploration (POE), Plan of Development (POD), and formation or modification of Unit Participating Areas (PA).

Data shall include the following:

1. Depth Structure Maps and **digital grids** (including faults) for each producing horizon.
2. Gross Isochore Maps and **digital grids** for each producing horizon
3. Hydrocarbon Net Pay Maps and **digital grids** for each producing horizon. Also include any fluid contact maps and digital grids used in creation of the hydrocarbon net pay maps.
4. Average Porosity and Hydrocarbon Saturation Maps and **digital grids** for each producing horizon.
5. Hydrocarbon Pore Feet Maps and **digital grids** for each producing horizon.
6. Paper and **digital** copies of representative seismic lines to support the applied for action. Data submitted should include both strike and dip oriented lines, include picked horizons for all mapped surfaces, mapped faults, and wells demonstrating time-depth ties to well log formation picks. Lines should be clearly annotated with seismic survey ID, seismic volume, line number, picked horizon and well names. Map clearly showing location of all seismic and well sections provided.
7. Paper and **digital** copies of representative stratigraphic and structural well-log cross-sections. Cross-sections should include, log correlations for all mapped horizons, mapped faults, identified fluid contacts and deepest “oil down to” (ODT) and shallowest “water up to” (WUT) picks. Cross-sections should be of an appropriate scale that all annotations, picks, log curves and scales are clearly legible.
8. Hydrocarbon formation volume factors (B_o , B_g) applied to each reservoir.
9. Oil Gravity and/or Viscosity Maps and **digital grids** for each producing horizon.
10. **Digital file** (ASCII or Excel spreadsheet) of formation picks in measured depth (MD) and sub-sea true vertical depth (SSTVD) for each well, including all plug backs and pilot holes. Picks should include top and base of each producing interval, all known fluid contacts and deepest “oil down to” (ODT) and shallowest “water up to” (WUT) picks.
11. **Digital files** of calculated curve data from log analysis used in determining reservoir properties and in-place hydrocarbon volumes. Curve data should include total and/or effective porosity, water saturation, permeability, clay volume, and bulk volume water.
12. Criteria/cutoffs (i.e. porosity, saturation, volume shale, permeability, etc.) used to determine net pay in each producing horizon.
13. **Digital file** (ASCII or Excel spreadsheet) of calculated rock properties of each producing interval for every well. Data to include, top and base depth of interval in measured depth and SSTVD, gross interval thickness (tvt), net sand thickness, net hydrocarbon pay thickness, net to gross ratio, average reservoir porosity, average reservoir water saturation (Sw), average permeability, permeability height (kh), and hydrocarbon pore feet
14. Location Map clearly showing all existing production, injection and planned wells in yearly POD. Horizontal wells should be shown as a line highlighting the existing and planned productive interval length. In addition, a **digital file** (ASCII or Excel spreadsheet) provided with target x-y coordinates for planned wells. For horizontal wells, x-y coordinates for heel and toe locations should be provided for both existing and planned wells.

15. Summary of all oil and gas (including non-hydrocarbon constituents) compositional analyses, including gravity and viscosity data.
16. Paper and **digital** copies of all pressure build-up PTA and fluid PVT analyses.
17. Relative permeability curves for oil/water, gas/oil, and gas/water.
18. Paper and **digital** copies of all capillary pressure analyses, where available.
19. Calculated original oil and/or gas in place (OOIP and/or OGIP) volumes.
20. Estimated ultimate recovery (EUR).
21. Proposed reservoir depletion plan.
22. Production forecast.

Items 20-22 shall be provided within the context of the area affected by the requested action

Computer applications have become the standard tool for evaluation, mapping and modeling of geologic data for the industry. Submittal of **digital data** is required to allow the State to apply the same level of tools to effectively query and evaluate the pertinent geological, geophysical, engineering, and well data, and interpretation of those data supplied by the operator.

All material should be either hand-carried by bonded courier or mailed by registered mail to:

Resource Evaluation Section
Alaska Department of Natural Resources, Division of Oil & Gas
550 West 7th Avenue, Suite 1100
Anchorage, AK 99501-3510
Telephone: (907) 269-8800
Email: DOG.REdata@alaska.gov

The state may also require the operator to submit additional data in support of the requested action in accordance with the applicable statutes and regulations in effect at the time of application.

Any data submitted to the state in connection with this application will be available at all times for use by the state and its agents. The state will keep information confidential as provided in AS 38.05.035(a)(8) and its applicable regulations. In accordance with AS 38.05.035(a)(8)(C), in order for geological, geophysical and engineering data to be held confidential, the operator submitting the information must request confidentiality at the time the data is submitted by indicating "CONFIDENTIAL" on all confidential data items.

This action does not eliminate the need to file all data normally filed with the Alaska Oil and Gas Conservation Commission (AOGCC) under their permit requirements.