Alaska Department of Natural Resources, Division of Oil & Gas Submittal of Well Data Required by DNR Lease June, 2013

In accordance with the permissions granted by the Alaska Department of Natural Resources (DNR) to conduct operations on State oil and gas leases, the lessee shall submit to DNR all geological, geophysical, and engineering data obtained from the lease within 30 days following completion, abandonment, or suspension of each well, pilot hole, and plugged back well bore. The lessee shall also submit to DNR data acquired subsequent to completion, abandonment, or suspension of each well, pilot hole, and plugged back well bore within 30 days following acquisition of those data. The Division of Oil & Gas (Division) may waive receipt of operational data from some development, service, or injection wells, and will inform the operator of the waiver in writing prior to data submittal.

This action does not eliminate the need to file all data normally filed with the Alaska Oil & Gas Conservation Commission (AOGCC) under their permit requirements and does not pertain to data submittal requirements for DOR tax credits under AS 43.55.

Data shall be submitted to the Division in a digital format, generally in PDF. For spreadsheets, include the original Excel document. For images such as maps or charts, include a high-resolution TIFF or JPEG. For logs, see formats specified below, but include a graphical image file of the logs as a PDF or TIFF in addition to the final merged data file of the log curves. Data may be submitted on CD, DVD or USB mass storage device (include any necessary cables). Required data shall include any and all of the following:

- 1. A copy of the well completion report (AOGCC Form 10-407) for each well bore.
- 2. Daily drilling reports or a summary report of daily drilling.
- 3. Latitudinal and longitudinal coordinates for each well, pilot hole, and plugged back well bore with completed surface and bottom hole locations. Coordinates can be based upon either the NAD 83 or NAD 27 geodetic datum as long as the datum used is clearly specified.
- 4. Directional survey for each well, pilot hole, and plugged back well bore.
- 5. A list of all logs run and the depth interval covered for each well, pilot hole, and plugged back well bore.
- 6. A list of formations and other geologic markers encountered and the measured depths (MD) and true vertical depths (TVD) of each, for each well, pilot hole, and plugged back well bore.
- 7. Summary of cored intervals (conventional and sidewall), including depth, formation name, lithology, presence of oil, gas, gas hydrates, and water, porosity, fractures and apparent dips; indicate "**none**" on completion report or in an attachment if no cores were taken.
- 8. Core reports including lab analyses of lithology, porosity, permeability (vertical and horizontal, air and liquid), density, capillary pressure, and fluid saturation, if available.
- 9. Conventional and sidewall core photos (plain light and ultraviolet), if applicable.
- 10. Identified formation names and corresponding depths for oil, gas, and gas hydrate shows. Indicate "**none**" on the completion report or in an attachment if no shows were observed.
- 11. Identified depth zones of abnormal pressure. Indicate "**none**" on the completion report or in an attachment if none were observed.
- 12. A synopsis or summary of testing and all fluid recovery efforts, including production tests (IP), drill stem tests (DST), wireline formation tests (i.e. repeat formation tests (RFT) and modular dynamics tests (MDT)), and any other production and formation testing data; the summary should include test date, time, depth, formation name, method of operation, recovered fluid type(s) and amount(s), fluid rate, gas-oil ratio (GOR), oil gravity, pressure, and choke size, when available. If no tests were undertaken, indicate "**none**" where appropriate on the completion report or in an attachment, if tests were undertaken but failed to recover fluids indicate "**no recovery**".
- 13. Pressure build-up and fluid PVT analyses, if applicable.
- 14. Open flow potential test reports and report attachments to AOGCC Forms 10-421.
- 15. Well test procedures, field chronologies, and field data; including details necessary for evaluation (intervals open to test; volumes of oil, gas, water, mud, and other borehole substances; API gravity; gas density; wellhead and down hole pressure; and formation and wellhead temperature).
- 16. Geochemical and formation fluid analyses and reports, if applicable.

- 17. Down hole and surface fluid sampling procedures, field chronologies, raw data, and laboratory test results for all water and hydrocarbon-bearing zones (oil, gas, gas hydrates) sampled; including details sufficient to fully evaluate quality of sample data.
- 18. Permit to drill (AOGCC form 10-401) and the survey as-built of the well location.
- 19. LAS Version 2, TAP, TIF, LIS and DLIS (if available) files of final merged open-and cased-hole log data, including specialty logs (such as Schlumberger's cyberlook, formation microscanners and dipmeter logs), measured-while-drilling (MWD) and logged-while-drilling (LWD) logs. Include a graphical image file of the 2-inch MD & TVD logs as a PDF or TIFF in addition to the log data file.
- 20. LAS Version 2 of final composite mudlog or lithology log curves. Include a graphical image file of the final 2-inch MD & TVD logs, with lithology display, oil, gas, and gas hydrate show indicators, mud properties, and cuttings descriptions and report as a PDF or TIFF in addition to the log data file.
- 21. Clear, legible files of all well data and reports including, but not limited to, paleontology, palynology, petrography (including point-count analyses), X-ray diffraction analyses, SEM micrographs, thermal maturity, vitrinite reflectance, total organic carbon, RockEval pyrolysis, geochronology, fission track analyses, fluid inclusion analyses, Mercury injection capillary pressure analyses, chemical analyses (EPMA, XRF, ICP, etc.), isotope analyses, water chemistry, burial and temperature history analyses, strain analyses, acoustic analyses, gas hydrate analyses and well pressure and temperature survey analyses.
- 22. Final reports of velocity, checkshot or VSP surveys (an ASCII format digital version of the above data shall also be submitted), including seismic profile data in SEG-Y format. Indicate "none" in your response to this request if no velocity, checkshot or VSP surveys were undertaken. Submission of velocity, checkshot, and VSP surveys is always required by DNR under the operator surface-use permit obligations.
- 23. All coalbed core, gas, and water quality reports including lab analyses of core lithology, coal rank, vitrinite reflectance, maceral composition, total organic carbon, ash, sulfur and BTU content, moisture content, cleating, adsorption/desorption data, residual gas measurements, porosity and permeability analyses, core photos, if available.
- 24. Any other geoscience- and engineering-related data sets from the well(s).

Please note: Physical samples of well cuttings or cores specified in 20 AAC 25.071(b)(2) and 20 AAC 25.071(b)(4) should be sent to AOGCC, not to the Division.

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 Email: <u>DOG.REdata@alaska.gov</u>

Any data submitted to the Division will be available at all times for use by the Division and its agents, and will be held 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 lessee must request confidentiality at the time of submission by indicating "CONFIDENTIAL" on all confidential items.