

20 AAC 25.283. Hydraulic Fracturing. (a) Prior to hydraulic fracturing, the operator must submit an Application For Sundry Approvals (Form 10-403) under 20 AAC 25.280. Unless modified or altered by pool rules established under 20 AAC 25.520, the application shall include;

(1) an affidavit showing that all owners, landowners, surface owners, and operators within a one-half mile radius of the current or proposed wellbore trajectory have been provided notice of operations. The notification will state that upon request, a complete copy of the application is available from the operator, and will include the operator contact information;

(2) a plat showing the well location and identifying any water wells located within a one-half mile radius of the well's surface location and further identifying any well penetrations (all well types) within one-half mile of the current or proposed wellbore trajectory and fracturing interval and the sources of the information used in identifying such wells;

(3) identification of freshwater aquifers and the geologic name and depth (MD and TVD) to the bottom of all freshwater aquifers within the one-half mile radius;

(4) a plan for baseline water sampling of water wells prior to hydraulic fracturing. Water sampling consists of collection of baseline water data pre-fracture, within a one-half mile radius of the current or proposed wellbore trajectory. The operator shall detail the well selection process for identifying wells to sample. If surface owners do not grant permission for baseline sampling or disclosure of results, the operator shall document the reasonable and good faith efforts taken to secure such permission. Surface owners that deny permission for pre-fracture sampling or disclosure of results are not required to be included in post fracture water sampling as required by subsection (j). The sample parameters shall include pH; Alkalinity (total bicarbonate and carbonate as CaCO₃); specific conductance; bacteria presence (iron related, sulfate reducing, slime forming); arsenic; barium; bicarbonate; boron; bromide; cadmium; calcium; chloride; chromium; fluoride; hydroxide; iodide; iron; lithium; magnesium; manganese; nitrate and nitrite as N; phosphorus; potassium; radium (measured by radium 226 and 228); selenium; silicon; sodium; strontium; sulfate; Total Dissolved Solids; BTEX/GRO/DRO (Benzene, Toluene, Ethylbenzene, Xylene – by method EPA 5035/ SW 846 8260B) (Gasoline Range Organics – by method EPA 5035/8015D) (Diesel Range Organics – by method EPA 8015D with silica gel cleanup); PAH's (Polynuclear Aromatic Hydrocarbons including benzo(a)pyrene); Dissolved Methane, Dissolved Ethane, and Dissolved Propane. Field observations such as odor, water color, sediment, bubbles, and effervescence shall also be documented. If free gas or a dissolved methane concentration greater than 1.0 milligram per liter (mg/l) is detected in a water sample, gas compositional analysis and stable isotope analysis of the methane (carbon and hydrogen – 12C, 13C, 1H, and 2H) shall be performed to determine gas type. The operator shall notify the commission and the surface owner within 24 hours if;

(A) the test results indicate thermogenic or a mixture of thermogenic and biogenic gas;

(B) the methane concentration increases by more than 5.0 mg/l between sampling periods;

(C) the methane concentration is detected at or above 10 mg/l; or

(D) BTEX compounds, GRO, or DRO is detected.

Current applicable EPA-approved sample custody and collection protocols and analytical methods for drinking water must be used and analyses must be performed by laboratories that maintain nationally accredited programs. Copies of all test results, analytical results and sample locations shall be provided to the commission and to the Alaska Department of Environmental

Conservation in printed form and in an electronic data deliverable format that is acceptable to the commission within 90 days of collecting the samples;

(5) detailed casing and cementing information;

(6) an assessment of each casing and cementing operation performed to construct or repair the well with sufficient supporting information, including cement evaluation logs and other evaluation logs approved by the commission, to demonstrate that casing is cemented below the base of the lowermost freshwater aquifer and according to 20 AAC 25.030 and that all hydrocarbon zones penetrated by the well are isolated;

(7) pressure test information if available and plans to pressure test the casings and tubing installed in the well;

(8) accurate pressure ratings and schematics for the wellbore, wellhead, BOPE, and treating head;

(9) data for the fracturing zone and confining zones including lithologic description, geological name, measured depth (MD) and true vertical depth (TVD), measured and true vertical thickness, and estimated fracture pressures for the fracturing zone and confining zones;

(10) the location, orientation, and a report on the mechanical condition of each well that may transect the confining zones and information sufficient to support a determination that such wells will not interfere with containment of the hydraulic fracturing fluid within the one-half mile radius of the proposed wellbore trajectory;

(11) the location, orientation, and geological data of known or suspected faults and fractures that may transect the confining zones, and information sufficient to support a determination that any such faults and fractures will not interfere with containment of the hydraulic fracturing fluid within the one-half mile radius of the proposed wellbore trajectory;

(12) a detailed copy of the proposed hydraulic fracturing program including, but not limited to, the pumping procedure by stage where applicable, with a chemical disclosure based on the total amounts and volumes per well including;

(A) the estimated total volumes planned;

(B) the trade name, generic name, and purpose of all base fluid(s) and additives to be used. The estimated or maximum rate or concentration of each additive shall be provided in appropriate measurement units;

(C) the chemical ingredient name and the Chemical Abstracts Service (CAS) Registry number, as published by the Chemical Abstracts Service (a division of the American Chemical Society, see www.cas.org), for each base fluid and each additive used. The actual or maximum concentration of each chemical ingredient in each base fluid and additive used shall be provided in percent by mass. In addition, the actual or maximum concentration of each chemical ingredient in the hydraulic fracturing fluid shall be provided in percent by mass. Freeze-protect fluids pumped before and/or after hydraulic fracturing should not be included;

(D) the estimated weight or volume of inert substances, including proppants and other substances injected;

(E) the maximum anticipated treating pressure and information sufficient to support a determination that the well is appropriately constructed for the proposed hydraulic fracturing program; and

(F) the designed height and length of the proposed fracture(s), including the calculated MD and TVD of the top of the fracture(s) accompanied by a description of the methods and assumptions used to determine designed fracture height and length.

(13) a detailed description of the plan for post fracture wellbore cleanup and fluid recovery through to production operations.

(b) When hydraulic fracturing through production casing or through intermediate casing, the casing must be tested to 110% of the maximum anticipated pressure differential to which the casing may be subjected. If the casing fails the pressure test it must be repaired or the operator must use a temporary casing string (fracturing string).

(c) When hydraulic fracturing through a fracturing string, the fracturing string must be stung into a liner or run on a packer set not less than 100 ft MD below the cement top of the production or intermediate casing and tested to not less than 110% of the maximum anticipated pressure differential to which the fracturing string may be subjected.

(d) A pressure relief valve(s) must be installed on the treating lines between pumps and wellhead to limit the line pressure to the test pressure determined in (a)12 (E) of this section; the well must be equipped with a remotely controlled shut-in device unless the operator requests and obtains a waiver from the commission.

(e) The placement of all hydraulic fracturing fluids shall be confined to the approved formations during hydraulic fracturing.

(f) If the surface casing annulus is not open to atmospheric pressure, then the surface casing pressures shall be monitored with a gauge and pressure relief device while hydraulic fracturing operations are in progress; the annular space between the fracturing string and the intermediate or production casing must be continuously monitored; the pressure in such annular space may not exceed the pressure rating of the lowest rated component that would be exposed to pressure should the fracturing string fail.

(g) During hydraulic fracturing operations, all annulus pressures must be continuously monitored and recorded. If at any time during hydraulic fracturing operations the annulus pressure increases more than 500 psig above those anticipated increases caused by pressure or thermal transfer, the operator must notify the commission as soon as practicable, but no later than twenty-four (24) hours following the incident and shall implement corrective action or increased surveillance as the commission requires. Within fifteen (15) days after the occurrence, the operator shall submit a Report of Sundry Well Operations Form 10-404 giving all details, including corrective actions taken.

(h) The operator shall file with the commission, within 30 days after completion of hydraulic fracturing operations, on a Report of Sundry Well Operations (Form 10-404), a complete record of the work performed and the tests conducted, and a summary of daily well operations as described in 20 AAC 25.070(3). The operator shall also file with the commission a copy of the daily record required by 20 AAC 25.070(1).

(1) For each hydraulic fracturing interval, the information will include;

(A) measured and true vertical depth of the perforations/sleeves for the actual treated interval;

(B) the amount and type(s) of base fluid(s) and additives pumped during each stage;

(2) For all hydraulic fracturing treatments contained within the Sundry Report, the information will include the total amount and type(s) of base fluid(s) and additives pumped including;

(A) a description of the hydraulic fracturing fluid pumped identified by base fluid(s) and additives including trade name, supplier, and a brief description of the purpose (*e.g.*, acid, biocide, breaker, brine, corrosion inhibitor, crosslinker, de-emulsifier,

friction reducer, gel, iron control, oxygen scavenger, pH adjusting agent, proppant, scale inhibitor, surfactant); and

(B) the chemical ingredient name and the CAS registry number, as published by the Chemical Abstracts Service (a division of the American Chemical Society, see www.cas.org), for each base fluid and each additive used. The actual or maximum concentration of each chemical ingredient in each base fluid and additive used shall be provided in percent by mass. In addition, the actual or maximum concentration of each chemical ingredient in the hydraulic fracturing fluid shall be provided in percent by mass. Freeze-protect fluids pumped before and/or after hydraulic fracturing should not be included;

(i) Prior to the submission of Form 10-404 under subsection (h), the operator must post the information required by the Interstate Oil and Gas Compact Commission/Groundwater Protection Council hydraulic fracturing web site (www.fracfocus.org). A printed copy and electronic copy of this information in a format acceptable to the commission shall be filed as an attachment with the Form 10-404.

(j) the commission may require water sampling of water wells post hydraulic fracturing. If required, water sampling may consist of collection of water data post-fracture, in accordance with a sampling and monitoring plan approved by the commission, within a one-half mile radius of the wellbore trajectory. The operator shall detail the well selection process for identifying wells to sample. Methods, parameters, and analysis are to be similar to subsection (a)(4) as required by the commission.

(k) Any information required to be filed under 20 AAC 25.283 which the filing party claims constitutes trade secrets shall be separately filed in an envelope clearly marked confidential along with the legal bases for the claim of confidentiality. The commission will maintain such information as confidential. Upon receipt of a request for disclosure of such information under Alaska's Public Records Act, AS 40.25.100, *et seq.*, the commission will promptly forward the request to the party claiming confidentiality. Within the time allowed to respond under the Public Records Act, the party claiming confidentiality shall forward to the commission a privilege log meeting the requirements of the public records act for inclusion with the commission's response to the request. Should the claim of privilege be challenged in Superior Court, the commission will file the privilege log and promptly notify the party claiming confidentiality of the Superior Court action.

(l) Upon written request of the operator, the commission may modify a deadline in this section upon a showing of good cause, approve a variance from any other requirement of this section if the variance provides at least an equally effective means of complying with the requirement, or approve a waiver of a requirement of this section if the waiver will not promote waste, is based on sound engineering and geoscience principles, will not jeopardize the ultimate recovery of hydrocarbons, will not jeopardize correlative rights, and will not result in an increased risk to health, safety, or the environment, including freshwater.

(Eff. __/__/__, Register __)

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20 AAC 25.990. Definitions.

(3) "Additive" means any chemical substance or combination of substances, including a proppant, contained in a hydraulic fracturing fluid that is intentionally added to a base fluid for a specific purpose whether or not the purpose of any such substance or combination of substances is to create fractures in a formation.

(14) "Chemical Ingredient" means a discrete chemical constituent with its own specific name or identity, such as a CAS registry number, that is contained in an additive.

(34) "Hydraulic fracturing" means the treatment of a well by the application of hydraulic fracturing fluid under pressure for the express purpose of initiating or propagating fractures in a target geologic formation to enhance production of oil and/or natural gas.

(35) "Hydraulic fracturing fluid" means the fluid, including the applicable base fluid and all additives, used to perform a particular hydraulic fracturing treatment.

(--)"Hydraulic fracturing treatment" means all stages of the treatment of a well by the application of hydraulic fracturing.

(73) "Surface owner" means any person who holds record title to the surface of the land as an owner.

(--)"Stage" means any separate interval treatment that initiates a new fracture within the wellbore.

(--)"Water well" means a well producing freshwater that serves as a source of drinking water for human consumption or agricultural purposes.