

CHAPTER 17
OIL, GAS, AND METALLIC MINERALS
[Prior to 5/8/19, Energy and Geological Resources Division[565] Ch 51]

561—17.1(458A) Definitions. For the purpose of this chapter the following terms shall have the meaning indicated in this chapter. The definitions set out in Iowa Code section 458A shall be considered to be incorporated verbatim in these rules.

“Artesian water” means underground water that is confined by impervious material under pressure sufficient to raise it above the upper level of the saturated material in which it lies if this is penetrated by wells or natural fissures.

“Barrel of oil” means 42 United States gallons of oil measured at 60 degrees Fahrenheit and atmospheric pressure at sea level, after deductions for the full amount of basic sediment, water, and other impurities present, ascertained by centrifugal or other recognized and customary test.

“Blowout” means a sudden or violent escape of oil or natural gas, as from a drilling well when high formational pressure is encountered.

“Blowout preventer” means a heavy casinghead control fitted with special gates or rams which can be closed around the drill pipe, or which completely closes the top of the casing.

“Casinghead gas” means any gas or vapor, or both gas and vapor, indigenous to an oil stratum and produced from such stratum with oil.

“Certificate of compliance and authorization to transport oil or gas from lease” means a form prescribed by the department, which, when executed by an operator or producer, certifies that the operation of the wells involved, and the production of oil or gas therefrom, has been in compliance with the orders and rules of the department. This certificate also authorizes a purchaser of oil or gas to transport same from the lease. Thereby, the department is informed of the purchaser, and the purchaser is informed that the oil or gas purchased has been produced legally. The certificate of clearance by the department is included on the bottom of the producer’s compliance form.

“Common source of supply” is synonymous with pool.

“Correlative rights” means each owner of a common reservoir is entitled to a fair share of the oil or gas beneath a property but is limited by an obligation to do so without affecting another property owner's right to do the same.

“Cubic foot of gas” means the volume of gas contained in one cubic foot of space at a standard pressure base and a standard temperature base. The standard pressure base shall be 14.65 pounds per square inch absolute, and the standard temperature base shall be 60 degrees Fahrenheit.

“Developed area” means a spacing unit on which a well has been completed that is capable of producing oil or gas, or the acreage that is otherwise attributed to a well by the department for allowable purposes.

“Development” means any work which actively looks toward bringing in production.

“Gas-oil ratio” means the ratio of the gas produced in cubic feet to the number of barrels of oil concurrently produced during any stated period.

“Lease” means a tract or tracts of land which, by virtue of an oil, gas, or metallic minerals lease, fee or mineral ownership, a drilling, pooling, or other agreement, a rule, or order of governmental authority, or otherwise, constitutes a single tract or leasehold estate for the purpose of the development or operation thereof for oil or gas or both, or for the exploration for or production of metallic minerals.

“Oil and gas” means oil or gas or both.

“Oil well” means any well capable of producing oil in paying quantities.

“Operator” means any person who, duly authorized, is in charge of the development of a lease, or the operation of a producing well.

“Purchaser” means any person who directly or indirectly purchases, transports, takes, or

otherwise removes production to the person's account from a well, wells, or pool.

"Storer" means every person as herein defined who stores, terminals, retains in custody under warehouse or storage agreements or contracts, oil which comes to rest in the person's tank or other receptacle under control of said storer, but excluding the ordinary lease stocks of producers.

"Transporter" means and includes any common carrier by pipeline, barge, boat, or other water conveyance or truck or other conveyance except railroads, and any other person transporting oil by pipeline, barge, boat or other water conveyance, or truck and other conveyance.

"Well log" means the written record progressively describing the strata, water, oil, gas or metallic minerals encountered in drilling a well with such additional information as to give volumes, pressures, rate of fill-up, water depths, casing record, etc., as is usually recorded in normal procedure of drilling. The well log includes any electrical or other geophysical logging, detail of all cores, and all drill-stem tests, including depth tested, cushion used, time pool open, flowing and shut-in pressures and recoveries.

561—17.2(458A) Application for a permit to drill, deepen or plug a well.

17.2(1) Production of oil, gas, or metallic minerals. Prior to commencement of operations, including the drilling of any well, an application on a form prescribed by the department shall be filed with the department for a permit to drill, deepen, or plug back any well for oil, or gas or metallic mineral production. The application for each well shall be accompanied by the following:

- a. a fee of \$50
- b. an organization report as described in 561-17.4
- c. bond as described in 458A.4.1d if one is not already on file with the department
- d. A map prepared by a licensed surveyor or engineer. The map shall be to scale and shall show the distance from:
 - (1) the two nearest lease lines
 - (2) the two nearest section lines
 - (3) the nearest completed or drilling wells on the same lease.
- e. Mathematical modeling of the area of influence of each well. The department shall use this information to establish spacing that meet the requirements of Iowa Code 458A.7.

17.2(2) denial of permit.

- a. The department shall not issue a permit to drill for the following reasons:
 - (1) the application is not properly completed
 - (2) proposed well would cause or tend to cause waste or violate correlative rights.
- b. The applicant may appeal the decision of the department to the environmental protection commission in accordance with 567—Chapter 7.
- c. Unless extended in writing by the department, the permit shall expire six months from the date of issue if the work for which the permit was issued is not being actively pursued.

17.2(3) Stratigraphic test wells. Before commencing exploratory drilling for geological information relating to oil, gas, or metallic mineral production, or the underground storage of natural gas, an application for a drilling permit as described in 561 – 17.2(1), shall be filed with the department. One application may be filed for a group or series of exploratory wells within a designated area. The application shall be accompanied by a plat of the general area to be covered by township and range listing the approximate number and depth of the holes, and outlining the parcels where drilling is contemplated. The plat shall indicate the nature of the applicant's property interest in each parcel where drilling is contemplated. The application shall be accompanied by a fee of \$200 in lieu of the fee in 561-17.2(1)a.

561—17.3(458A) Transfer of drilling permits. A permit holder shall not transfer the permit to

any other location or to any other person until the following requirements have been complied with and the transfer has been approved by the department.

17.3(1) *Transfer to another location.* If, prior to the drilling of a well, the permit holder desires to change the location, the permit holder shall submit a letter so stating and another application properly filled out showing the new location. No additional fee is necessary, but drilling shall not be started until the transfer has been approved and the new permit posted at the new location.

17.3(2) *Transfer to another person.* If, while a well is being drilled, or after it has been completed, the permit holder disposes of their interest in the well, the person shall submit a written statement to the department setting forth the facts and requesting that the permit be transferred to the person who has acquired the well.

17.3(3) *Statement of responsibility and bond.* Before the transfer of a drilling permit shall be approved, the person who has acquired the well must submit a written statement setting forth that the person has acquired such well and assumes the full responsibility for its operation and abandonment in conformity with the laws of Iowa and the rules and orders of the department. The bond required to guarantee compliance shall be furnished by the person acquiring such well.

561—17.4(458A) Organization reports.,

17.4(1) Every person acting as a principal or agent for another or independently engaged in the production, storage, transportation (except railroad), refining, reclaiming, treating, marketing, or processing of oil or gas, or engaged in the exploration for or production of metallic minerals, shall file the following with the department

- a. the name under which the business is being operated;
- b. the name and contact information of the person, business or businesses in which engaged;
- c. the plan of organization,
- d. in case of a corporation,
 - the law under which it is chartered;
 - the names and contact information for any persons acting as trustees
 - names of the manager, agent or executive
 - the names and contact information of officers
- e. If business is conducted under an assumed name, the report shall show the names and contact information of all owners in addition to the other information required.

17.4(2) Immediately after any change of facts stated in the report filed, a supplementary report shall be filed with the department with updated information.

561—17.5(458A) Drilling. The following rules shall apply to all wells drilled.

17.5(1) *Sealing off strata.* During the drilling of any well for production of or exploration for oil, gas, or metallic minerals, all oil, gas, and water strata above and below the producing horizon shall be sealed or separated where necessary in order to prevent their contents from passing into other strata.

a. All fresh waters and waters of present or probable value for domestic, public, commercial or livestock purposes shall be confined to their respective strata and shall be adequately protected by methods approved by the department. Special precautions shall be taken in drilling and abandoning wells to guard against any loss of artesian water from the strata in which it occurs, and the contamination of artesian water by objectionable water, oil, or gas.

b. All water shall be shut off and excluded from the various oil and gas bearing strata which are penetrated. Water shutoffs shall be made by cementing casing with or without the use of mud-laden fluid. Alternative methods shall be approved on a case – by- case basis by the department.

17.5(2) *Casing and tubing requirements.* All wells drilled for oil, gas or production of metallic minerals shall be completed with strings of casing which shall be properly cemented at sufficient depths to protect all water, oil, or gas bearing strata.

a. Sufficient cement shall be used on surface to fill the annular space back of the casing to the bottom of the cellar or to the surface of the ground.

b. All strings of casing shall stand cemented under pressure for at least 12 hours before drilling plug or initiating tests. The term “under pressure” as used in this sub-rule will be complied with if one float valve is used or if pressure is otherwise held.

c. Cementing shall be by the pump and plug method, or other method approved by the department.

d. All flowing wells shall be tubed. The tubing shall be set as near the bottom as practicable, but tubing perforations shall not be above the top of pay unless authorized by the department.

17.5(3) Defective casing or cementing. In any well that appears to have defective, faultily cemented, or corroded casing which will permit or may create underground waste, the operator shall use the appropriate method and means to eliminate underground waste. If waste cannot be eliminated, the well shall be properly plugged and abandoned.

17.5(4) Blowout prevention. In all drilling operations, proper and necessary precautions shall be taken for keeping the well under control, including the use of a blowout preventer and high-pressure fittings attached to properly cemented casing strings, where indicated by geologic conditions.

17.5(5) Pulling outside string of casing. In pulling outside strings of casing from any oil or gas well, the space outside the casing left in the hole shall be kept and left full of mud-laden fluid or cement of adequate specific gravity to seal off all fresh and salt water strata and any strata bearing oil or gas not producing. No casing shall be removed without the prior approval of the department.

17.5(6) Safety rules.

a. All oil wells shall be cleaned into a pit or tank, not less than 40 feet from the derrick floor and 150 feet from any fire hazard.

b. All flowing oil wells must be produced through an approved oil and gas separator or emulsion treater of ample capacity and in good working order.

c. No boiler or portable electric lighting generator shall be placed or remain nearer than 150 feet from any producing well or oil tank.

d. Any debris that might constitute a fire hazard shall be removed to a distance of at least 150 feet from the vicinity of wells and tanks. All waste shall be disposed of in such manner as to avoid creating a fire hazard and to comply with the rules of the environmental protection commission.

e. The drilling fluid level shall be maintained continuously at a height sufficient to control subsurface pressures.

f. During the course of drilling, blowout preventers shall be tested at least once each 24-hour period, and results of the test shall be noted in the driller’s record.

17.5(7) Preservation of cores and samples.

a. Sample cuttings shall be taken at 5-foot intervals and at each change of formation or member, if less than 5 feet thick, in all wells drilled for oil, gas, or metallic mineral exploration or production, or casinghead gas, in the state of Iowa, unless a geophysical log is to be taken for the entire depth of the well.

b. Where a geophysical log is to be taken for the entire depth of the well, sample cuttings shall be taken at 10-foot intervals and at each formation or member change if less than 10 feet thick. The department may grant a variance from the 10-foot sample interval under special conditions. Each sample shall be carefully identified as to well name and depth of sample, and all samples shall be shipped at the operator’s expense to the Iowa geological survey within six months of well completion.

c. The operator of any well drilled as provided in the previous paragraph shall, during the drilling of, or immediately following the completion of, any given well, advise the department of all intervals that are to be cored, or have been cored. The cores shall be preserved and forwarded

to the Iowa geological survey at the operator's expense.

d. This rule shall not be construed as prohibiting the operator from taking samples of the core for identification and tests pertaining to oil and gas or metallic minerals. In the event that it is necessary for the operator to utilize all or any portion of the core to the extent that representative samples, sufficiently large to analyze, are not available for the state, the operator shall furnish the Iowa geological survey with the results of identification or testing procedures.

17.5(8) *Well completion or recompletion report and well log.* Within ten days after completion of a well drilled for oil or gas or production of metallic minerals, or casinghead gas, the operator or the operator's agent shall file with the department a complete log or record of the well, duly signed, on forms prescribed by the department. This record shall be filed even though samples of the drill cuttings have been taken and preserved for subsequent delivery to the Iowa geological survey. The logs of the wells shall be forwarded to the department and shall be confidential for a period of six months when so requested by the operator in writing.

A proper log for any well shall include all normally recorded information on the following:

a. Depth to and thickness of water-bearing beds, including, where measured, the static water level and volume of such water.

b. Lithology of formations penetrated, including color, hardness, and character of the rock, and particularly showing the position and thickness of coal beds and deposits of mineral materials of economic value.

c. Any caverns, large voids, losses of circulation, and sudden appreciable changes in water level.

d. A record of all oil, gas, and highly mineralized water encountered, including fill-up, volumes, and pressures.

e. A record of all casing and liner used, including the size, weight, amount, and depth set, the amount of cement used on each casing string, and the amount of casing stripped from the hole on completion or abandonment of the well.

f. Data on drill stem tests.

g. Generalized description of any core taken during drilling.

h. Data on perforating, acidizing, fracturing, shooting, and testing.

i. Data on bridge plugs set, make and type of plug, depth set, whether left in place or removed, and details of plug back operation below the bridge.

j. Electrical or other geophysical logging.

17.5(9) *Stratigraphic test wells.*

a. All stratigraphic test wells shall be plugged in accordance with the provisions of rule 561-17.13(458A).

b. Lithologic samples must be collected during the drilling of all stratigraphic test wells in accordance with the provisions of subrule 17.5(7).

c. All records, samples, and logs, including mechanical logs, required under this rule must be filed with the Iowa geological survey six months after completion of the program set forth in the original application. If the company so requests in writing, these records, samples, and logs shall be kept confidential for an additional year after filing.

17.5(10) *Wells for storage of liquid petroleum gas.* Only one fee shall be required for the drilling of wells for the development of each reservoir for the storage of liquid petroleum gas, but an application for a permit to drill shall be filed with the department and a permit issued prior to the drilling of each well. The application for a permit to drill a single well or the first in a series of wells for this purpose shall be accompanied by a complete set of plans for the development of the reservoir and by a plat of the reservoir area with all contemplated wells and the reservoir limits indicated.

561—17.6(458A) Identification of wells. Every well shall be identified by a sign, posted on the derrick or not more than 20 feet from the wellhead. Such signs shall be durable and legible. The

wells on each lease or property shall be numbered in nonrepetitive, logical, and distinctive sequence. Each sign shall show the number of the well, the name of the lease (which shall be different or distinctive for each lease), the name of the lessee, owner or operator, the permit number, and the location by quarter, section, township, and range. The signs shall be displayed for each drilling well. when so required by the department.

561—17.7(458A) Surface equipment.

17.7(1) Meter fittings. Meter fittings of adequate size to measure the gas efficiently for the purpose of obtaining gas-oil ratios shall be installed on the gas vent line of every separator or proper connections made for orifice well tester. Wellhead equipment shall be installed and maintained so that static bottom hole pressures may be obtained at any time by the department after notification of the operator. Valves shall be installed so that pressures can be readily obtained on both casing and tubing. This sub rule applies only to gas from hydrocarbon sources.

17.7(2) Chokes or beans. All flowing wells shall be equipped with adequate chokes or beans, to properly control the flow of the well.

17.7(3) Oil and gas separators. All flowing oil wells must be produced through an approved oil and gas separator. This sub rule applies only to wells that produce oil.

17.7(4) Dikes. When it is deemed necessary by the department to protect life, health, or property, the department may require any lease or oil storage tanks to be surrounded by an earthen dike with a capacity of one and one-half times the capacity of the tank or tanks it surrounds. The dike shall be continually maintained and the reservoir kept free from vegetation, water, or oil.

561—17.8(458A) Deviation. No well shall be intentionally deviated from the plans in the approved permit without written approval. Directional surveys may be required by the department whenever the location of the bottom of the well is in doubt. When necessary to protect correlative rights, the department shall require that the well be modified.

561—17.9(458A) Notification of fire, breaks, leaks, or blowouts. All persons controlling or operating any oil and gas wells or pipelines, or receiving tanks, storage tanks, or receiving and storage receptacles into which crude oil is produced, received, or stored, or through which oil or gas is piped or transported, shall notify the department of fire, breaks, leaks or blowouts in accordance with Iowa Code section 455B.386. A written report, giving full details concerning all fires which occur at such oil or gas wells or tanks or receptacles on their property, all tanks or receptacles struck by lightning and any other fire which destroys oil or gas, and any breaks or leaks in or from tanks or receptacles and pipelines from which oil or gas is escaping or has escaped shall be submitted to the department within 30 days. In all reports of fires, breaks, leaks, or escapes, or other accidents of this nature, the location of the well, tank, receptacle, or line break shall be given by section, township, range, and property so that the exact location thereof can be readily located on the ground. The report shall likewise specify what steps have been taken or are in progress to remedy the situation reported, and shall detail the quantity of oil or gas lost, destroyed, or permitted to escape. In case any tank or receptacle is permitted to run over, the escape thus occurring shall be reported as in the case of a leak.

561—17.10(458A) Producing from different pools through the same casing string or multiple completion of wells. No well shall be permitted to produce either oil or gas from different pools through the same string of casing. The multiple-zone completion of any well may be authorized only by special order of the department upon notice and hearing.

561—17.11(458A) Commingling of production prohibited. The production from one pool shall not be commingled with that from another pool in the same field before delivery to a purchaser, unless otherwise ordered by the department.

561—17.12(458A) Reports by producers, transporters or storers.

17.12(1) *Producers.* The producer or operator of each and every lease shall on or before the fifteenth day of each month succeeding the month in which the production occurs, submit to the department a statement showing the amount of production made by each such lease during the preceding month.

17.12(2) *Transporters or storers.* Each transporter or storer of any oil or gas from any well, lease, pool, or developed unit shall, on or before the fifteenth day of each month succeeding the month in which the purchasing or taking occurs, file with the department, a statement of oil or gas purchased or taken from any such well, lease, pool, or developed unit during the preceding month.

561—17.13(458A) Abandonment and plugging of wells. Any well drilled in connection with oil or gas operations or metallic mineral exploration or production shall be properly plugged when the well is no longer used for the purpose for which it was drilled. In instances where no completion or recompletion reports are filed, the well(s) in question must be properly abandoned and plugged within 30 days after the permit authorizing the drilling expires.

17.13(1) *Notice of intent to abandon and plug.* Notice of the proposed method of abandoning and plugging any well drilled in connection with oil or gas operations or metallic mineral exploration or production must be filed with the department. Approval must be obtained from the director prior to commencing operations. Time must be allowed for a department representative to be present at the plugging operations, if so desired by the department. Where the time required to file notice and obtain approval in writing would constitute an undue hardship, verbal permission to proceed may be granted, but in any case the form must be filed.

17.13(2) *Method of plugging.* Before any well is abandoned, it shall be plugged in a manner which will permanently confine all oil, gas, and water in the separate strata in which they occur. This operation shall be accomplished by the use of mud-laden fluid, cement, and plugs, used singly or in combination as approved by the department. In the event that no log or an unsatisfactory log of the well is supplied, the well shall be completely plugged with cement from bottom to top. Casing shall be cut off below plow depth. Seismic, core, or other exploratory holes drilled to or below strata containing fresh water shall be plugged and abandoned in accordance with the applicable provisions in this sub-rule.

17.13(3) *Extension of time to plug well.* Upon written application to defer the abandonment and plugging of any unplugged well, the department may grant an extension for a reasonable period of time when good cause is shown and providing all of the casing is left in the well and is in sound condition. The bond covering such well shall remain in full force and effect until the well is plugged and the other requirements of final abandonment have been completed.

These rules are intended to implement Iowa Code chapter 458A.