Final

RULE G-1 - ABANDONED OR LEAKING WELL AND WELL SITE REMEDIATION

a) This rule is applicable for the following types of wells:

1) oil and gas production wells,

2) water supply wells used in enhanced oil and gas recovery projects,

3) UIC Class II Disposal and Class II Commercial Disposal wells, and

4) UIC Class II water injection wells used in enhanced oil and gas recovery projects.

b) Definitions

1) "Abandoned Well" means:

A) an oil and gas production well which has not produced for over 2 years; or

B) a UIC Class II saltwater disposal or UIC Class II water injection well which is no longer used due to the plugging of all the wells on the lease or unit or for which and agreement to continue use of the well has not been granted by the lease holder, or

C) a well for which the underlying lease has been released in writing by the lessee or has been declared forfeited or invalid by a court order, and such order is final and the appeal period has lapsed; and the lessor states in writing that the lessor has not leased out the oil and gas working interest to any other person and does not intend to so lease, and that the lessor does not intend to operate the well, and that the lessor desires that the well be plugged; or

D) a well owned or operated by a Permit Holder who has made no payment by March 1 of a current annual well fee assessment in accordance with Ark Code Ann. §15-71-116; or

E) a well that has been ordered to be plugged by the Commission and the Permit Holder has failed to do so within the time frame specified in the Commission Order; or

F) a well site which has not been properly restored following the completion of well plugging activities.

2) "Well Site Equipment" means the equipment, including but not limited to an associated tank battery, production and injection facility equipment,

hydrocarbons from the well that are stored in tanks located on the lease, and hydrocarbons recovered during the plugging operation.

3) "Well Site" means the area around and near the well, including any associated pits, crude oil or produced water storage tanks or other related production facility equipment, such as injection pumps, compressors or gas processing equipment.

4) "Director" means the Oil and Gas Commission Director of Production and Conservation.

5) "Leaking Well" means a well drilled for the exploration, development, storage or production of oil or gas, or for injection, saltwater disposal, saltwater source, observation, and geological or structure test which is leaking salt water, oil, gas, or other deleterious substance into any fresh water formation or onto the surface of the land in the vicinity of the well.

6) "Well Site Restoration" means remediation of a well site, including but not limited to the following activities: an emergency clean-up of spilled crude oil or saltwater; remediation of conditions endangering the public health or safety, or contaminating or potentially contaminating surface waters, groundwater, or the surface of the land; work to repair or contain leaks of produced fluids from wells, production or injection equipment, pits or other containment structures, which are contaminating or potentially contaminating surface waters, groundwaters or the surface of the land; or a repairing a well leaking natural gas or hydrogen sulfide gas endangering or potentially endangering public safety or creating a potential a fire hazard.

c) If the Director finds, upon inspection and/or review of Commission records, that a well drilled for the exploration, development, storage or production of oil or gas, or for injection, saltwater disposal, saltwater source, observation, and geological or structure test, may be abandoned; well site restoration has not been completed; is a leaking well; or the well or well site creates an imminent danger to the health or safety of the public, the Director may schedule a hearing, in accordance with established procedures.

d) If after notice and a hearing, the Commission finds that a well drilled for the exploration, development, storage or production of oil or gas, or for injection, saltwater disposal, saltwater source, observation, a geological or structure test, may be abandoned; well site restoration has not completed; is a leaking well; or the well or well site creates an imminent danger to the health or safety of the public; the Commission shall issue an order requiring the Permit Holder to properly plug, re-plug, repair, or restore so as to remedy the situation.

e) If the Permit Holder fails to properly plug, re-plug, repair, or restore so as to remedy the situation within 30 days from the time frame prescribed by the Commission order, the abandoned well or well site; leaking well; a well or well site that creates an imminent danger to the health or safety of the public; or a well site restoration has not been completed, the well or well site shall be subject to the provisions of this Rule.

f) The Director may then authorize any person to enter upon the land and properly plug, re-plug, repair, or restore so as to remedy the situation. The Director may dispose of all well site equipment and hydrocarbons, to offset the costs of properly plugging, re-plugging,

repairing, or restoring so as to remedy the situation. Proceeds from any public sale, auction or private sale of all well site equipment or hydrocarbons shall be deposited into the Plugging Fund or used to offset plugging costs. All work completed under this rule shall be paid with funds from the Abandoned and Orphan Well Plugging Fund.

g) The Permit Holder shall reimburse the Commission for all costs expended to remedy the situation. All payments shall be by cashier's checks or money order, and shall be deposited in the Abandoned and Orphaned Well Plugging Fund. Failure to reimburse the Commission will result in the initiation of Commission enforcement action to recover the expended funds. Prior to repayment of all expended funds, the Permit Holder shall not be permitted to operate any other existing wells in the Permit Holder's name. Upon repayment and prior to being permitted to operate any wells, the Permit Holder may be required to post additional bond, as determined by the Director in accordance with General Rule B-2, to insure against the plugging of future abandoned wells not plugged by the Permit Holder.

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RULE H-1 - CLASS II DISPOSAL AND CLASS II COMMERCIAL DISPOSAL WELL PERMIT APPLICATION PROCEDURES

a) Definitions:

1) "Class II Disposal Well"--means:

A) A permitted Class II well in which Class II Fluids are injected into zones not productive of oil and gas, and brine used to produce bromine, within the field boundary established by an order of the Commission for the production of liquid hydrocarbons or brine used to produce bromine, where the well is located or will be located, for the purpose of disposal of those fluids; or

B) A permitted Class II well in which Class II Fluids are injected into a zone or zones, which are not commercially productive of dry gas, within the same common source of supply, where the well is located or will be located, for the purpose of disposal of those fluids.

2) “Class II Commercial Disposal Well"--means a permitted Class II well in which Class II Fluids are injected, for which the Permit Holder receives deliveries of Class II Fluids by tank truck from multiple oil and gas well operators, and either charges a fee at the disposal well facility or purchases the Class II Fluids at the source for subsequent transport to the disposal well facility for the specific purpose of disposal of the delivered Class II Fluids.

3) "Class II Fluids" means:

A) Produced water and/or other fluids brought to the surface in connection with drilling, completion, or fracture treatments, workover or recompletion and plugging of oil and natural gas wells, Class II or wells that are required to be permitted as water supply wells by the Commission; enhanced recovery operations; or natural gas storage operations; or

B) Produced water and/or other fluids from (A) above, which prior to re-injection have been used on site for purposes integrally associated to oil and natural gas well drilling, completion, or fracture treatments, workover or recompletion and plugging of oil and natural gas wells, Class II or wells that are required to be permitted as water supply wells by the Commission; enhanced recovery operations; or natural gas storage operations, or chemically treated or altered to the extent necessary to make them usable for purposes integrally related to oil and natural gas well drilling, completion, workover and plugging, oil and gas production, enhanced recovery operations, or natural gas storage operations, or commingled with fluid wastes resulting from fluid treatments outlined above, and including any other exempted oil and gas related fluids under the Resource Conservation and Recovery Act, provided the commingled

fluid wastes do not constitute a hazardous waste under the Resource Conservation and Recovery Act; or

C) Waste fluids from gas plants (including filter backwash, precipitated sludge, iron sponge, hydrogen sulfide and scrubber liquid) which are an integral part of oil and gas production operations; and waste fluids from gas dehydration plants (including glycol-based compounds and filter backwash), unless the gas plant or gas dehydration plant wastes are classified as hazardous under the federal Resource Conservation and Recovery Act.

4) "Confining layer" means a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement above an injection zone. It is composed of rock layers that are impermeable or distinctly less permeable than the injection zone beneath it. There may be multiple confining layers above an injection zone.

5) "USDW" means Underground Source of Drinking Water which is defined in Title 40, Code of Federal Regulations (40 CFR) Section 144.3, as an aquifer or its portion which:

A) Supplies any public water system (see 40 CFR); or

B) Contains a sufficient quantity of groundwater to supply a public water system (see 40 CFR) and currently supplies drinking water for human consumption; or

C) Contains fewer than 10,000 mg/l total dissolved solids (see 40 CFR); and

D) Which is not an exempted aquifer (see 40 CFR)

b) No person shall drill, recomplete or operate any well for use as a Class II Disposal or Class II Commercial Disposal Well or inject into any well, without a permit from the Commission, application for which shall be made on forms prescribed by the Director. Permits shall remain valid only with ongoing compliance with established operating requirements specified in General Rule H-2. Failure to comply with the operating requirements in General Rule H-2 may result in revocation of the Class II Disposal Well or Class II Commercial Disposal Well permit. Authority to conduct an injectivity test, step rate test or trial injection test prior to issuance of a permit may be approved as follows:

1) An injectivity test, step rate test or trial injection test of less than twelve (12) hours duration may be approved by the Director upon review of the well construction to determine well mechanical integrity for the protection of the USDW's and oil and gas resources during the test. The Director shall establish the protective parameters of the test, require the submittal of any information or test data deemed necessary and may require the witnessing by Commission staff of the test.

2) An Applicant may request approval from the Commission, by filing an application in accordance with General A-2 and A-3 and other applicable hearing

procedures, of an injectivity test, step rate test or trial injection test of twelve (12) hours or more in duration.

c) The application to drill, recomplete or operate a Class II Disposal or Class II Commercial Disposal Well shall include at a minimum:

1) The information required by subparagraph (h) below, for the existing or proposed well and any additional information deemed necessary by the Director for the protection of USDWs; and

2) Accompanied by any applicable fee as described in General Rule B-1, and a non-refundable fee of $100.00 for a Class II Disposal Well or $500.00 for a Class II Commercial Disposal Well; and

3) Accompanied by the required financial assurance in accordance with General Rule B-2; and

4) Accompanied by a Form 1 Organizational Report in accordance with General Rule B-13; and

5) Be executed under penalties of perjury

d) No person shall inject into USDWs or be issued a permit to inject into USDWs unless an aquifer exemption has been granted in accordance with US Environmental Protection Agency procedures.

e) Unless otherwise approved by the Commission, no person shall inject into a well which does not have at a minimum, five hundred (500) feet for a Class II Disposal Well or seven hundred-fifty (750) feet for a Class II Commercial Disposal Well, of confining layers between the base of the lowermost USDWs and the top of the injection interval~~.~~, with no individual confining layer being less than 50 feet in thickness. A lesser amount of confining layer(s) may be approved, provided the Applicant provides substantial information as to the integrity of the confining layers to inhibit the upward migration of the injection fluids so as not to endanger the lowermost USDW in the area of the well.

f) If the application does not contain all of the required information or documents, the Director shall notify the Applicant in writing. The notification shall specify the additional information or documents necessary for an evaluation of the application and shall advise the Applicant that the application will be deemed denied unless the information or documents are submitted within sixty (60) days following the date of notification.

g) Applications for a Class II Disposal Well shall contain the names of all permit holders who are to utilize the proposed disposal well.

h) Contents of Application

1) A specification as to the type of Class II well being permitted as a Class II Disposal Well or a Class II Commercial Disposal Well.

2) The Applicant shall provide the name, address, phone, fax and e-mail (if available) of the local or on-site supervisory or field personnel responsible for the disposal well.

3) If the well is not located within the boundaries of an operating oil and gas leasehold or drilling unit, the Applicant shall provide documentation, in the form of a surface use agreement or an affidavit of a surface use agreement, indicating the Applicant's right to drill and to operate the proposed disposal well. If the well is located within the boundaries of an operating oil and gas leasehold or drilling unit, and the Applicant is someone other than the operator of the leasehold or drilling unit, the Applicant shall provide documentation, in the form of a surface use agreement, or an affidavit of a surface use agreement, indicating the Applicant's right to drill and to operate the proposed disposal well.

4) A survey plat of the location and ground elevation of the proposed disposal well or if the application is for an existing well, the well name and permit number of the existing well. A new survey is not required for a well to be converted or deepened well or a plugged well to be re-entered, if the original well location was surveyed, a copy of which shall be submitted with the application.

5) The name, geologic description and top and bottom elevation, from sub-sea, of the formation (indicating the perforated or open hole interval) into which fluid will be injected and the geologic description and top and bottom elevation, from sub-sea, of the above confining layers, in the proposed or existing disposal well. If an existing well is to be converted, a geophysical log of the well shall be submitted showing the above information. If for a proposed well, an induction log from a well in the immediate vicinity of the proposed disposal well shall be submitted. If the geologic name of the interval is unclear include any additional geological evidence such as a cross section, structure or isopach map that may be necessary to adequately define the proposed injection interval.

6) A well bore diagram of the proposed or existing well showing casing for the injection well, indicating from the well head to total depth of the well, all casings and cementing of casings, any obstructions within well, all plugs set, tubing and packer setting depth, and all perforations and or open hole intervals. If application is for an existing well, a cement bond log (CBL) shall be submitted with the application, or if submitted after the application is filed, the CBL shall be submitted prior to commencement of operations as a condition of the permit.

7) The proposed daily amounts to be injected, the source and the type of fluid to be injected, including a standard laboratory analysis representative of the various types of proposed disposal fluids, indicating chloride, pH, specific gravity, total dissolved solids (TDS) and total percent hydrocarbon (TPH). The sample shall be obtained and analyzed no earlier than one (180) days prior to the date of filing of the application.

8) The maximum injection pressure.

   A) The Director shall determine the maximum permitted injected pressure, measured at the wellhead, by multiplying the results of the formula below by ninety percent (90%):

i) A maximum fracture gradient not to exceed 1.0 psi/ft **(x)** depth to injection formation **(-)** weight of fluid column (specific gravity of injection fluid) **(+)** injection tubing friction loss in Ashley, Bradley, Calhoun, Columbia, Hempstead, Lafayette Miller, Nevada, Ouachita, and Union counties for injection into formations below the Midway Shale Formation; or

ii) A maximum fracture gradient not to exceed 1.0 psi/ft **(x)** depth to injection formation **(-)** weight of fluid column (specific gravity of injection fluid) **(+)** injection tubing friction loss in all other counties for injection into formations below the Fayetteville Shale Formation in the areas covered by General Rule B-43 (c) and (d), General Rule B-44, and the portions of Franklin, Logan, Scott, Sebastian, and Yell Counties not covered by General Rule B-44; or

iii) A maximum fracture gradient not to exceed 0.73 psi/ft **(x)** depth to injection formation **(-)** weight of fluid column (specific gravity of injection fluid) **(+)** injection tubing friction loss for all other formations and/or counties.

B) An Applicant may request an increase in the maximum injection pressure specified in subparagraph h) 8) A) above, or appeal a Director's decision to issue a permit utilizing a fracture gradient less than the maximum fracture gradient specified in subparagraph h) 8) A) above, by filing an application in accordance with General A-2, A-3 and other applicable hearing procedures. Any increase in the maximum injection pressure may be granted if the Applicant presents sufficient evidence to justify the requested increased injection pressure will not initiate or propagate fractures in the overlying confining layer(s) that could enable the injection fluid or the fluid in the injection interval to leave the permitted injection intervals or cause movement of the injection fluid or formation fluids into USDWs.

9) A map showing:

A) The surveyed location of the well proposed to be drilled, deepened or converted, showing distances to the nearest property or lease lines; and

B) The location of all plugged and unplugged wells, which penetrate the proposed injection interval, within the 1/2 mile radius from the proposed disposal well, and showing the status of each well as producing, shut-in, disposal, enhanced recovery, plugged and abandoned, or other status.

10) The Applicant shall submit evidence, where available, that all plugged and unplugged wells which penetrate the injection formation, within the ½ mile radius shown on the above plat in subparagraph h) 9) C), contain an adequate amount of cement and are constructed or plugged in a manner which will prevent the injection fluid and the fluid in the injection formation from entering USDWs. The types of evidence that will be considered acceptable include, but are not

limited to: well completion reports, cementing records, well construction records, cement bond logs, tracer surveys, oxygen activation logs, and plugging records.

11) The Applicant shall submit evidence and/or information showing that the proposed injection interval or formation is not a USDW.

12) The Applicant shall submit information as to the depth (subsea) of the fresh water supply in the nearest known private water well and in the nearest known public water system water well.

i) Notice of the application shall be given by the Applicant by one (1) publication in a legal newspaper having a general circulation in the county, or in each county, if there shall be more than one, in which the one-half mile radius from the proposed disposal well is situated, and by mailing via certified mail, a copy of the application to each permit holder of all permitted, drilling or producing wells within a one-half mile radius of the proposed disposal well. Such notice shall be published or mailed no more than thirty (30) days, prior to the date on which the application is filed with the Commission. The cost of such notice and mailing of the application shall be paid for by the Applicant. Attached to the application shall be copies of the return mail receipts and a proof of publication of the application from the newspaper.

j) If notice is for a commercial disposal well, in addition to compliance with subparagraph i) above, the commercial disposal well application shall also be sent via certified mail, to the County Judge of the county where the well is located and to the landowner (surface owner) where the well is located. In addition, the public notice should be large font and surrounded by a printed border to highlight the published notice.

k) Objections received by the Director, must be received by the Director within fifteen (15) days after the publication date of the notice and the date of mailing to all parties specified in subparagraphs i) and j) above.

l) If an objection is received or if the application does not satisfy the requirements of this Rule, the application shall be denied. If the application is denied under this section, the Applicant may request to have the application referred to the Commission for determination, in accordance with General Rules A-2 and A-3, and other applicable hearing procedures, except that no additional filing fee is required.

m) If an objection is not received by the Director and the application is deemed complete, the permit shall be issued following the required notice period specified in subparagraph i) above, unless the Director deems it necessary, for the purpose of protecting USDWs or oil and gas resources, that the application may be referred to the Commission for determination.

n) The Commission retains jurisdiction to determine zones suitable for disposal injection based on the porosity, permeability, fluid capacity, structure, geology and overall suitability of the zone as a disposal injection interval with respect to protection of USDWs and oil and gas resources.