CHAPTER 78a. UNCONVENTIONAL OIL AND GAS WELLS

Subchapter A. GENERAL PROVISIONS

§ 78a.1. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise, or as otherwise provided in this chapter:

Act—**[The Oil and Gas Act (58 P.S. §§ 601.101—601.605)] 58 Pa.C.S. §§ 3201—3274 (relating to developments).**

***Act 2*— The Land Recycling and Environmental Remediation Standards Act (35 P.S. §§ 6026.101—6026.908).**

[~~*Anti-icing*—Brine applied directly to a paved road prior to a precipitation event.~~]

***Approximate original conditions*—Reclamation of the land affected to preconstruction contours so that it closely resembles the general surface configuration of the land prior to construction activities and blends into and complements the drainage pattern of the surrounding terrain, and can support the land uses that existed prior to oil and gas activities to the extent practicable.**

Attainable bottom—The depth, approved by the Department, which can be achieved after a reasonable effort is expended to clean out to the total depth.

***Body of water*—The term as defined in § 105.1 (relating to definitions).**

***Borrow pit*—An area of earth disturbance activity where rock, stone, gravel, sand, soil or similar material is excavated for construction of well sites, access roads or facilities that are related to oil and gas development.**

Casing seat—The depth to which casing is set.

Cement—A mixture of materials for bonding or sealing that attains a 7-day maximum permeability of 0.01 millidarcies and a 24-hour compressive strength of at least 500 psi in accordance with applicable standards and specifications.

Cement job log—A written record that documents the actual procedures and specifications of the cementing operation.

***Centralized impoundment*—A facility that is:**

(i) A natural topographic depression, manmade excavation or diked area formed primarily of earthen materials.

(ii) Designed to hold fluids or semifluids associated with oil and gas activities, including wastewater, flowback and mine influenced water, the escape of which may result in air, water or land pollution or endanger persons or property.

(iii) Constructed solely for the purpose of servicing multiple well sites.

Certified laboratory—A laboratory accredited by the Department under Chapter 252 (relating to laboratory accreditation).

Coal area—An area that is underlain by a workable coal seam.

Coal protective casing—A string of pipe which is installed in the well for the purpose of coal segregation and protection. In some instances the coal protective casing and the surface casing may be the same.

***Condensate*—A low-density, high-API gravity liquid hydrocarbon phase that generally occurs in association with natural gas. For the purposes of this definition, high-API gravity is a specific gravity scale developed by the American Petroleum Institute for measuring the relative density of various petroleum liquids, expressed in degrees.**

Conductor pipe—A short string of large-diameter casing used to stabilize the top of the wellbore in shallow unconsolidated formations.

***Containment system*—Synthetic liners, coatings, storage structures or other materials used in conjunction with a primary container that prevent spills to the ground surface or off the well site.**

[*~~Conventional formation~~*—A formation that is not an unconventional formation.

***~~Conventional well~~*—**

(i) A bore hole drilled or being drilled for the purpose of or to be used for construction of a well regulated under 58 Pa.C.S. §§ 3201—3274 (relating to development) that is not an unconventional well, irrespective of technology or design.

(ii) The term includes, but is not limited to:

(A) Wells drilled to produce oil.

(B) Wells drilled to produce natural gas from formations other than shale formations.

(C) Wells drilled to produce natural gas from shale formations located above the base of the Elk Group or its stratigraphic equivalent.

(D) Wells drilled to produce natural gas from shale formations located below the base of the Elk Group where natural gas can be produced at economic flow rates or in economic

~~**volumes without the use of vertical or nonvertical well bores stimulated by hydraulic fracture treatments or multilateral well bores or other techniques to expose more of the formation to the well bore.**~~

~~**(E) Irrespective of formation, wells drilled for collateral purposes, such as monitoring, geologic logging, secondary and tertiary recovery or disposal injection.**~~**]**

[~~***Conventional formation*** **— A formation that is not an unconventional formation.~~

~~***Conventional well*** **— A bore hole drilled or being drilled for the purpose of or to be used for the production of oil or gas from a conventional formation.~~

~~***De-icing*** **— Brine applied to a paved road after a precipitation event~~**.]**

Deepest fresh groundwater—The deepest fresh groundwater bearing formation penetrated by the wellbore as determined from drillers logs from the well or from other wells in the area surrounding the well or from historical records of the normal surface casing seat depths in the area surrounding the well, whichever is deeper.

Drill cuttings—Rock cuttings and related mineral residues generated during the drilling of an oil or gas well.

***Freeboard*—The vertical distance between the surface of an impounded or contained fluid and the lowest point or opening on a lined pit edge or open top storage structure.**

Fresh groundwater—Water in that portion of the generally recognized hydrologic cycle which occupies the pore spaces and fractures of saturated subsurface materials.

***Freshwater impoundment*—A facility that is:**

(i) Not regulated under § 105.3 (relating to scope).

(ii) A natural topographic depression, manmade excavation or diked area formed primarily of earthen materials although lined with synthetic materials.

(iii) Designed to hold fluids, including surface water, groundwater, and other Department-approved sources.

(iv) Constructed for the purpose of servicing multiple well sites.

Gas storage field—A gas storage reservoir and all of the gas storage wells connected to the gas storage reservoir.

Gas storage reservoir—The portion of a subsurface geologic formation or rock strata used for or being tested for storage of natural gas that:

(i) Has sufficient porosity and permeability to allow gas to be injected or withdrawn, or both.

(ii) Is bounded by strata of insufficient porosity or permeability, or both, to allow gas movement out of the reservoir.

(iii) Contains or will contain injected gas geologically or by pressure control.

Gas storage well—A well located and used in a gas storage reservoir for injection or withdrawal purposes, or an observation well.

***Gathering pipeline*—A pipeline that transports oil, liquid hydrocarbons or natural gas from individual wells to an intrastate or interstate transmission pipeline.**

Gel—A slurry of clay or other equivalent material and water at a ratio of not more than 7 barrels of water to each 100 pounds of clay or other equivalent matter.

Intermediate casing—A string of casing set after the surface casing and before production casing, not to include coal protection casing, that is used in the wellbore to isolate, stabilize or provide well control.

L.E.L.—Lower explosive limit.

***Mine influenced water*—Water in a mine pool or a surface discharge of water caused by mining activities that pollutes, or may create a threat of pollution to, waters of the Commonwealth. The term may also include surface waters that have been impaired by pollutional mine drainage as determined by the Department.**

Noncementing material—A mixture of very fine to coarse grained nonbonding materials, including unwashed crushed rock, drill cuttings, earthen mud or other equivalent material approved by the Department.

Noncoal area—An area that is not underlain by a workable coal seam.

Nonporous material—Nontoxic earthen mud, drill cuttings, fire clay, gel, cement or equivalent materials approved by the Department that will equally retard the movement of fluids.

Nonvertical unconventional well—

(i) An unconventional well drilled intentionally to deviate from a vertical axis.

(ii) The term includes wells drilled diagonally and wells that have horizontal bore holes.

Observation well—A well used to monitor the operational integrity and conditions in a gas storage reservoir, the reservoir protective area or strata above or below the gas storage horizon.

***Oil and gas operations*—The term includes the following:**

(i) Well location assessment, seismic operations, well site preparation, construction, drilling, hydraulic fracturing, completion, production, operation, alteration, plugging and site restoration associated with an oil or gas well.

(ii) Water withdrawals, residual waste processing, water and other fluid management and storage used exclusively for the development of oil and gas wells.

(iii) Construction, installation, use, maintenance and repair of:

(A) Oil and gas pipelines.

(B) Natural gas compressor stations.

(C) Natural gas processing plants or facilities performing equivalent functions.

(iv) Construction, installation, use, maintenance and repair of all equipment directly associated with activities in subparagraphs (i)—(iii) to the extent that the equipment is necessarily located at or immediately adjacent to a well site, impoundment area, oil and gas pipeline, natural gas compressor station or natural gas processing plant.

(v) Earth disturbance associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities.

Owner—A person who owns, manages, leases, controls or possesses a well or coal property. **[For purposes of sections 203(a)(4) and (5) and 210 of the act (58 P.S. § § 601.203(a)(4) and (5) and 601.210), the term does not include those owners or possessors of surface real property on which the abandoned well is located who did not participate or incur costs in the drilling or extraction operation of the abandoned well and had no right of control over the drilling or extraction operation of the abandoned well.]** The term does not apply to orphan wells**,** except **[where] when** the Department determines a prior owner or operator benefited from the well as provided in section **[210(a)] 3220(a)** of the act **(relating to plugging requirements)**.

***PCSM plan—Post-construction stormwater management plan*—The term as defined in § 102.1 (relating to definitions).**

***PPC plan—Preparedness, Prevention and Contingency plan*—A written preparedness, prevention and contingency plan.**

Perimeter area—An area that begins at the outside coal boundaries of an operating coal mine and extends within 1000 feet beyond those boundaries or an area within 1000 feet beyond the mine permit boundaries of a coal mine already projected and permitted but not yet being operated.

Permanently cemented—Surface casing or coal protective casing that is cemented until cement is circulated to the surface or is cemented with a calculated volume of cement necessary to fill the theoretical annular space plus 20% excess.

***Pit*—A natural topographic depression, manmade excavation or diked area formed primarily of earthen materials designed to hold fluids, semifluids or solids associated with oil and gas activities, including, but not limited to, fresh water, wastewater, flowback, mine influenced water, drilling mud and drill cuttings, that services a single well site.**

***Pre-wetting*—Mixing brine with antiskid material prior to roadway application.**

Private water supply—A water supply that is not a public water supply.

***Process* or *processing*—The term has the same meaning as "processing" as defined in section 103 of the Solid Waste Management Act (35 P.S. § 6018.103).**

Production casing—A string of pipe other than surface casing and coal protective casing which is run for the purpose of confining or conducting hydrocarbons and associated fluids from one or more producing horizons to the surface.

Public water supply—**[A water system that is subject to the Pennsylvania Safe Drinking Water Act (35 P.S. §§ 721.1—721.17).]** **A source of water used by a water purveyor.**

***Regional groundwater table*—**

(i) The fluctuating upper water level surface of an unconfined or confined aquifer where the hydrostatic pressure is equal to the ambient atmospheric pressure.

(ii) The term does not include the perched water table or the seasonal high water table.

***Regulated substance*—Any substance defined as a regulated substance in section 103 of ACT 2 (35 P.S. § 6026.103).**

[*Reportable release of brine*—Spilling, leaking, emitting, discharging, escaping or disposing of one of the following:

(i) More than 5 gallons of brine within a 24-hour period on or into the ground at the well site where the total dissolved solids concentration of the brine is equal or greater than 10,000 mg/l.

(ii) More than 15 gallons of brine within a 24-hour period on or into the ground at the well site where the total dissolved solids concentration of the brine is less than 10,000 mg/l.]
[*Reportable release of brine*—Spilling, leaking, emitting, discharging, escaping or disposing of one of the following:

(i) More than 5 gallons of brine within a 24-hour period on or into the ground at the well site where the total dissolved solids concentration of the brine is equal or greater than 10,000 mg/l.

(ii) More than 15 gallons of brine within a 24-hour period on or into the ground at the well site where the total dissolved solids concentration of the brine is less than 10,000 mg/l.]

Retrievable—When used in conjunction with surface casing, coal protective casing or production casing, the casing that can be removed after exerting a prudent effort to pull the casing while applying a pulling force at least equal to the casing weight plus 5000 pounds or 120% of the casing weight, whichever is greater.

Seasonal high groundwater table—The saturated condition in the soil profile during certain periods of the year. The condition can be caused by a slowly permeable layer within the soil profile and is commonly indicated by the presence of soil mottling.

Sheen—An iridescent appearance on the surface of the water.

Soil mottling—Irregular marked spots in the soil profile that vary in color, size and number.

***Stormwater*—Runoff from precipitation, snowmelt, surface runoff and drainage.**

Surface casing—A string or strings of casing used to isolate the wellbore from fresh groundwater and to prevent the escape or migration of gas, oil or other fluids from the wellbore into fresh groundwater. The surface casing is also commonly referred to as the water string or water casing.

***Temporary pipelines*—Pipelines used for oil and gas operations that:**

(i) Transport materials used for the drilling or hydraulic fracture stimulation, or both, of a well and the residual waste generated as a result of the activities.

(ii) Lose functionality after the well site it serviced has been restored under § 78a.65 (related to site restoration).

Tophole water—Water that is brought to the surface while drilling through the strata containing fresh groundwater and water that is fresh groundwater or water that is from a body of surface water. Tophole water may contain drill cuttings typical of the formation being penetrated but may not be polluted or contaminated by additives, brine, oil or man induced conditions.

Total depth—The depth to which the well was originally drilled, subsequently drilled or the depth to which it was plugged back in a manner approved by the Department.

Tour—A workshift in drilling of a well.

Unconventional formation—A geological shale formation existing below the base of the Elk Sandstone or its geologic equivalent stratigraphic interval where natural gas generally cannot be

produced at economic flow rates or in economic volumes except by vertical or horizontal well bores stimulated by hydraulic fracture treatments or by using multilateral well bores or other techniques to expose more of the formation to the well bore.

Unconventional well—A bore hole drilled or being drilled for the purpose of or to be used for the production of natural gas from an unconventional formation.

Vertical unconventional well—An unconventional well with a single vertical well bore.

***WMP—Water Management Plan*—A plan associated with drilling or completing a well in an unconventional formation that demonstrates that the withdrawal and use of water sources protects those sources, as required under law, and protects public health, safety and welfare.**

Water protection depth—The depth to a point 50 feet below the surface casing seat.

Water purveyor—**[The owner or operator of a public water supply.]Any of the following:**

(i) The owner or operator of a public water system as defined in section 3 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.3).

(ii) Any person subject to the act of June 24, 1939 (P.L. 842, No. 365), known as the Water Rights Law.

Water source—

(i) Any of the following:

(A) Water of the Commonwealth.

(B) A source of water supply used by a water purveyor.

(C) Mine pools and discharges.

(D) Any other waters that are used for drilling or completing a well in an unconventional formation.

(ii) The term does not include flowback or production waters or other fluids:

(A) Which are used for drilling or completing a well in an unconventional formation.

(B) Which do not discharge into waters of the Commonwealth.

Water supply—A supply of water for human consumption or use, or for agricultural, commercial, industrial or other legitimate beneficial uses.

***Watercourse*—The term as defined in § 105.1.**

Well operator or *operator*—**Any of the following:**

(i) The person designated as the **[well operator or]** operator **or well operator** on the permit application or well registration.

(ii) If a permit or registration was not issued, **[the term means]** a person who locates, drills, operates, alters or plugs a well or reconditions a well with the purpose of production **[therefrom] from the well**.

[In cases where] (iii) If a well is used in connection with the underground storage of gas, **[the term also means]** a storage operator.

Well site—The area occupied by the equipment or facilities necessary for or incidental to the drilling, production or plugging of a well.

***Wetland*—The term as defined in § 105.1.**

Workable coal seam—One of the following:

(i) A coal seam in fact being mined in the area in question under the act and this chapter by underground methods.

(ii) A coal seam which, in the judgment of the Department, reasonably can be expected to be mined by underground methods.

§ 78**a**.2. **[Scope] (Reserved).**

[This chapter specifies procedures and rules for the drilling, alteration, operation and plugging of oil and gas wells, and for the operation of a coal mine in the vicinity of an oil or gas well.]

§ 78a.3. [Reserved].

§ 78a.4. [Reserved].

§ 78a.5. [Reserved].

§ 78a.6. [Reserved].

Subchapter B. PERMITS, TRANSFERS AND OBJECTIONS

PERMITS AND TRANSFERS

§ 78a.11. Permit requirements.

(a) No person may drill or alter a well unless that person has first obtained a permit from the Department.

(b) No person may operate a well unless one of the following conditions has been met:

(1) The person has obtained a permit under the act.

(2) The person has registered the well under the act.

(3) The well was in operation on April 18, 1985, under a permit that was obtained under the Gas Operations Well-Drilling Petroleum and Coal Mining Act (52 P. S. §§ 2104, 2208, 2601 and 2602) (Repealed).

§ 78a.12. Compliance with permit.

A person may not drill, alter or operate an oil or gas well except in accordance with a permit or registration issued under the act and in compliance with the terms and conditions of the permit, this chapter and the statutes under which it was promulgated. A copy of the permit shall be kept at the well site during drilling or alteration of a well.

§ 78a.13. Permit transfers.

(a) No transfer, assignment or sale of rights granted under a permit or registration may be made without prior written approval of the Department. Permit transfers may be denied for the reasons set forth in section **[201(e)(4) and (5) of the act (58 P.S. § 601.201(e)(4) and (5))]** **3211(e.1), (4) and (5) of the act (relating to well permits).**

(b) The Department may require the transferee to fulfill the drilling, plugging, well site restoration, water supply replacement and other requirements of the act, regardless of whether the transferor commenced the activity and regardless of whether the transferor failed to properly perform the transferor's obligations under the act.

§ 78a.14. Transfer of well ownership or change of address.

(a) Within 30 days after the sale, assignment, transfer, conveyance or exchange of a well, the new owner or operator shall notify the Department, in writing, of the transfer of ownership.

(b) The notice shall include the following information:

(1) The names, addresses and telephone numbers of the former and new owner, and the agent if applicable.

(2) The well permit or registration number.

(3) The effective date of the transfer of ownership.

(4) An application for a well permit transfer if there is a change in the well operator.

(c) The permittee shall notify the Department of a change in address or name within 30 days of the change.

§ 78a.15. Application requirements.

(a) An application for a well permit shall be submitted **[on forms furnished by the] electronically to the** Department **through its web site** and contain the information required by the Department to evaluate the application.

(b) The permit application will not be considered complete until the applicant submits a complete and accurate plat, an approvable bond or other means of complying with section **[215 of the act (58 P.S. § 601.215)] 3225 of the act (relating to bonding)**, the fee in compliance with § 78a.19 (relating to permit application fee schedule), proof of **the** notifications **required under section 3211(b.1) of the act (relating to well permits)**, necessary requests for variance or waivers or other documents required to be furnished by law or the Department, **and the information in subsection (c)–(e)**. The person named in the permit shall be the same person named in the bond or other security.

(c) The applicant shall submit information identifying parent and subsidiary business entities operating in this Commonwealth with the first application submitted after _____, (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking.) **and provide any changes to its business relationships with each subsequent application.**

(d) The applicant shall provide proof of consultation with the Pennsylvania Natural Heritage Program (PNHP) regarding the presence of a State or Federal threatened or endangered species where the proposed well site or access road is located. If the Department determines, based on PNHP data or other sources, that the proposed well site or access road may adversely impact the species or critical habitat, the applicant shall consult with the Department to avoid or prevent the impact. If the impact cannot be avoided or prevented, the applicant shall demonstrate how the impacts will be minimized in accordance with State and Federal laws pertaining to the protection of threatened or endangered flora and fauna and their habitat.

(e) If an applicant seeks to locate a well on a well site where the applicant has obtained a permit under § 102.5 (relating to permit requirements) and complied with § 102.6(a)(2) (relating to permit applications and fees), the applicant is deemed to comply with subsection (d).

(f) An applicant proposing to drill a well at a location listed in paragraph (1) shall notify the applicable resource agency, if any, in accordance with paragraph (2) and provide the information in paragraph (3) to the Department in the well permit application.

(1) This subsection applies if the proposed surface location of the well is located:

(i) In or within 200 feet of a publicly owned park, forest, game land or wildlife area.

(ii) In or within the corridor of a State or National scenic river.

(iii) Within 200 feet of a National natural landmark.

(iv) In a location that will impact other critical communities. For the purposes of this section, other critical communities means special concern species.

(v) Within 200 feet of a historical or archeological site listed on the Federal or State list of historic places.

(vi) In the case of an unconventional well, within 1,000 feet of a water well, surface water intake, reservoir or other water supply extraction point used by a water purveyor.

(2) The applicant shall notify the public resource agency responsible for managing the public resource identified in paragraph (1), if any. The applicant shall forward by certified mail a copy of the plat identifying the proposed location of the well, well site and access road and information in paragraph (3) to the public resource agency at least 15 days prior to submitting its well permit application to the Department. The applicant shall submit proof of notification with the well permit application. From the date of notification, the public resource agency has 15 days to provide written comments to the Department and the applicant on the functions and uses of the public resource and the measures, if any, that the public resource agency recommends the Department consider to avoid or minimize probable harmful impacts to the public resource where the well, well site and access road is located. The applicant may provide a response to the Department to the comments.

(3) The applicant shall include the following information in the well permit application on forms provided by the Department:

(i) An identification of the public resource.

(ii) A description of the functions and uses of the public resource.

(iii) A description of the measures proposed to be taken to avoid or mitigate impacts, if any.

(4) The information required in paragraph (3) shall be limited to the discrete area of the public resource that may be affected by the well, well site and access road.

(g) If the proposed well, well site or access road poses a probable harmful impact to a public resource, the Department may include conditions in the well permit to avoid or mitigate those impacts to the public resource's current functions and uses. The Department will consider the impact of any potential permit condition on the applicant's ability to exercise its property rights with regard to the development of oil and gas resources and the degree to which any potential condition may impact or impede the optimal development of the oil and gas resources. The issuance of a permit containing conditions imposed by the Department under this subsection is an action that is appealable to the Environmental Hearing Board. The Department has the burden of proving that the conditions were necessary to protect against a probable harmful impact of the public resource.

§ 78a.16. Accelerated permit review.

In cases of hardship, an operator may request an accelerated review of a well permit application. For the purposes of this section, hardship includes cases where immediate action is necessary to protect public health or safety, to control pollution or to effect other environmental or safety measures, and extraordinary circumstances beyond the control of the operator. Permits issued shall be consistent with the requirements of the act.

§ 78a.17. Permit renewal.

An operator may request a 1-year renewal of a well permit. The request shall be accompanied by a permit fee, the surcharge required **[in section 601 of the act (58 P.S. § 601.601),] under section 3271 of the act (relating to well plugging funds)** and an affidavit affirming that the information on the original application is still accurate and complete, that the well location restrictions are still met and that the **[surface owners, coal owners and operators, gas storage operators, where the permit renewal is for a proposed well location within an underground gas storage reservoir or the reservoir protective area, and water supply owners within 1,000 feet,] entities required to be notified under section 3211(b)(2) of the act (relating to well permits)** have been notified of this request for renewal. The request shall be received by the Department at least 15 calendar days prior to the expiration of the original permit.

~~[§ 78a.18. Disposal and enhanced recovery well permits.~~

~~(a) A person may not drill a disposal or enhanced recovery well or alter an existing well to be a disposal or enhanced recovery well unless the person:~~

~~(1) Obtains a well permit under § 78a.11 (relating to permit requirements).~~

~~(2) Submits with the well permit application a copy of the well permit, approved permit application and required related documentation submitted for the disposal or enhanced recovery well to the EPA under 40 CFR Part 146 (relating to underground injection control program).~~

~~(3) Submits a copy of a control and disposal plan for the disposal or enhanced recovery well and related facilities that meets the requirements of § 91.34 (relating to activities utilizing pollutants).~~

~~(4) Submits a copy of an erosion and sedimentation plan for the disposal or enhanced recovery well site that meets the requirements of Chapter 102 and § 78a.53 (relating to erosion and sediment control; and erosion and sedimentation control).~~

~~(b) By December 18, 1995, an operator of disposal or enhanced recovery wells which were operating before December 18, 1995, shall submit to the Department a list of the operator's disposal or enhanced recovery wells including:~~

~~(1) The Department's permit or registration number for each well on this list.~~

~~(2) The corresponding permit number issued to each well on this list by the EPA.~~

~~(c) A person who operates multiple well projects may submit one copy of the documents required under subsection (a) if the documents are applicable to the entire project.~~

~~(d) All containment practices and onsite processing associated with disposal and enhanced recovery wells shall comply with this chapter.]~~

§ 78a.19. Permit application fee schedule.

~~[(a) An applicant for a conventional well shall pay a permit application fee according to the following schedule:~~

~~*Conventional Wells*~~	
~~*Total Well Bore Length in Feet*~~	~~*Total Fee*~~
~~0 to 2,000~~	~~$250~~
~~2,001 to 2,500~~	~~$300~~
~~2,501 to 3,000~~	~~$350~~
~~3,001 to 3,500~~	~~$400~~
~~3,501 to 4,000~~	~~$450~~
~~4,001 to 4,500~~	~~$500~~
~~4,501 to 5,000~~	~~$550~~
~~5,001 to 5,500~~	~~$650~~
~~5,501 to 6,000~~	~~$750~~
~~6,001 to 6,500~~	~~$850~~
~~6,501 to 7,000~~	~~$950~~
~~7,001 to 7,500~~	~~$1,050~~
~~7,501 to 8,000~~	~~$1,150~~
~~8,001 to 8,500~~	~~$1,250~~

~~8,501 to 9,000~~	~~$1,350~~
~~9,001 to 9,500~~	~~$1,450~~
~~9,501 to 10,000~~	~~$1,550~~
~~10,001 to 10,500~~	~~$1,650~~
~~10,501 to 11,000~~	~~$1,750~~
~~11,001 to 11,500~~	~~$1,850~~
~~11,501 to 12,000~~	~~$1,950~~

~~**(b) An applicant for a conventional well exceeding 12,000 feet in total well bore length shall pay a permit application fee of $1,950 + $100 for every 500 feet the well bore extends over 12,000 feet. Fees shall be rounded to the nearest 500-foot interval under this subsection.]**~~

[(c)] **(a)** An applicant for an unconventional well shall pay a permit application fee according to the following:

(1) $4,200 for a vertical unconventional well.

(2) $5,000 for a nonvertical unconventional well.

~~**[(d) If, when drilled, the total well bore length of the conventional well exceeds the length specified in the permit application due to target formation being deeper than anticipated at the time of application submittal, the operator shall pay the difference between the amount paid as part of the permit application and the amount required under subsections (a) and (b).**~~

~~**(e) An applicant for a conventional well with a well bore length of 1,500 feet or less for home use shall pay a permit application fee of $200.]**~~

[(f)] **(b)** At least every 3 years, the Department will provide the EQB with an evaluation of the fees in this chapter and recommend regulatory changes to the EQB to address any disparity between the program income generated by the fees and the Department's cost of administering the program with the objective of ensuring fees meet all program costs and programs are self-sustaining.

OBJECTIONS

§ 78a.21. Opportunity for objections and conferences; surface landowners.

(a) The surface landowner of the tract on which the proposed well is located may object to the well location based on the assertion that the well location violates section **[205 of the act (58 P.S. § 601.205)]** **3215 of the act (relating to well location restrictions)** or on the basis that the information in the application is untrue in a material respect, and request a conference under section **[501 of the act (58 P.S. § 601.501)]** **3251 of the act (relating to conferences)**.

(b) The objection and request for a conference shall be filed in writing with the Department within 15 calendar days of receipt of the plat by the surface landowner. The objection shall contain the following:

(1) The name, address and telephone number of the person submitting the objection.

(2) The name of the well operator, and the name and number of the proposed well.

(3) A statement of the objection and a request for a conference if a conference is being requested.

§ 78a.22. Objections by owner or operator of coal mine.

The owner or operator of an operating coal mine or a coal mine already projected and platted, but not yet being operated, may file written objections to a proposed well location with the Department if the following apply:

(1) The well, when drilled, would penetrate within the outside coal boundaries of such a mine or within 1,000 feet beyond the boundaries.

(2) In the opinion of the owner or operator, the well will unduly interfere with or endanger the mine or persons working in the mine.

§ 78a.23. Time for filing objections by owner or operator of coal mine.

(a) A coal mine owner or operator who objects to a proposed gas well for financial considerations, and wishes to go before a panel with an objection over which the panel has jurisdiction, shall file objections to a proposed gas well within 10-calendar days of the receipt of the plat.

(b) A coal mine owner or operator who does not wish to go before a panel with an objection over which the panel has jurisdiction, or who is not raising financial objections to the proposed gas well, shall file objections to a proposed oil or gas well within 15 calendar days of the receipt of the plat.

§ 78a.24. Information to be provided with objections by owner or operator of coal mine.

(a) The objections shall be filed in writing and shall contain the following information, if applicable:

(1) The name, address and telephone number of the person filing the objection, and the date on which a copy of the plat was received.

(2) The name and address of the applicant for the well permit and the name and number of the well.

(3) The type of well—for example, oil, gas, injection and the like—that is the subject of the objections.

(4) The location of the well in relation to the coal owned or operated by the objecting party.

(5) The area through which the well will be drilled, specifically:

(i) Whether the well will be drilled through a mining area that is projected, platted or permitted, but not yet being operated.

(ii) Whether the well will be drilled through a perimeter area.

(iii) Whether the well will penetrate a workable coal seam.

(iv) Whether the well will be located above an active mine.

(v) Whether the well will penetrate an operating mine.

(6) A copy of the plans, maps or projections of the mining area underlying the proposed gas well showing the location of the proposed well.

(7) Whether the owner or operator believes that the well will pose undue interference or endangerment to the mine, and the nature of the threat.

(8) The financial impact posed by the well, to which objections may be heard by a panel under § 78**a**.30 (relating to jurisdiction of panel).

(9) Whether the well will violate the act, the Coal and Gas Resource Coordination Act (58 P.S. §§ 501—518) or another applicable law administered by the Department.

(b) The objections shall include an alternate location, if possible, on the tract of the well operator that would overcome the objections or at which the interference would be minimized. The Department is not bound to consider alternate locations that are proposed after the close of the first conference.

§ 78a.25. Conferences—general.

(a) If a timely objection to the location is filed by the coal owner or operator under §§ 78**a**.22—78**a**.24 (relating to objections by owner or operator of coal mine; time for filing objections by owner or operator of coal mine; and information to be provided with objections by owner or operator of coal mine), or if objections are made by the Department, the Department will fix a time and place for a conference within 10 calendar days from the date of service of the objections upon the well operator, unless all parties agree to an extension of time for the conference.

(b) The Department may decide not to hold a conference if it determines that the objections are not valid or if the objection is resolved.

(c) The Department will attempt to schedule the conference as late as possible in the 10-day period if the well is subject to the Coal and Gas Resource Coordination Act (58 P.S. §§ 501—518). The Department will not schedule a conference under section **[202 of the act (58 P.S. § 601.202)]** **section 3212 of the act (relating to permit objections)** if it receives written notice that the gas well operator or the coal mine owner or operator has made a written request to convene a panel to resolve objections to the location of a gas well over which a panel has jurisdiction in accordance with §§ 78**a**.29—78**a**.33.

(d) The conference shall be governed by §§ 78**a**.26—78**a**.28 (relating to agreement at conference; continuation of conference; and final action if objections do not proceed to panel).

(e) The Department or a person having a direct interest in the subject matter of the act may request a conference any time to attempt to resolve by mutual agreement a matter arising under the act.

§ 78a.26. Agreement at conference.

(a) If the parties reach an agreement at the conference, and if the Department approves the location, the Department will cause the agreement to be reduced to writing.

(b) If the Department does not reject the agreement within 10 calendar days after the agreement is reduced to writing, the agreement becomes effective.

(c) An agreement reached at the conference shall be consistent with the requirements of the act and applicable statutes. An agreement that is not in accordance with the act, the Coal and Gas Resource Coordination Act (58 P.S. §§ 501—518) and applicable law shall be deemed to be null and void.

§ 78a.27. Continuation of conference.

The Department may continue the conference for good cause. Good cause includes one or more of the following:

(1) The need for supplemental data, maps or surveys.

(2) The need to verify that the agreement or a proposed well location is consistent with the requirements of the act, the Coal and Gas Resource Coordination Act (58 P.S. §§ 501—518) and other applicable requirements.

(3) The need for the presence of essential witnesses whose unavailability is due to good cause.

(4) The need for further investigation into the allegations that are the basis for the objections.

(5) Agreement by all parties that a continuance is beneficial to the resolution of the objections.

§ 78a.28. Final action if objections do not proceed to panel.

If the panel does not have jurisdiction **[of]** **over** the objections, under § 78**a**.30 (relating to jurisdiction of panel), or if the panel has jurisdiction but the parties choose not to proceed to a panel, the Department may proceed to issue or deny the permit, under sections **[201 and 202 of the act (58 P.S. §§ 601.201 and 601.202)]** **3211 and 3212 of the act (relating to well permits; and permit objections)**. No permit will be issued for a well at a location that in the opinion of the Department would endanger the safety of persons working in a coal mine.

§ 78a.29. Composition of panel.

(a) If the gas well operator and the objecting coal owner or operator are unable to agree upon a drilling location, and the gas well is subject to the jurisdiction of a panel under § 78**a**.30 (relating to jurisdiction of panel), the well operator or a coal owner or operator may convene a panel.

(b) The panel shall consist of one person selected by the objecting coal owners or operators, a second person selected by the permit applicant and a third selected by these two.

(c) The parties shall submit their positions to the panel within such time as the panel prescribes, in accordance with section 12 of the Coal and Gas Resource Coordination Act (58 P.S. § 512).

§ 78a.30. Jurisdiction of panel.

(a) A panel shall hear objections by the owner or operator of the coal mining area only if the proposed gas well is not subject to the Oil and Gas Conservation Law (58 P.S. §§ 401—419) and one of the following applies:

(1) The well will be drilled through an area that is projected and permitted, but not yet being operated.

(2) The well will be drilled through a perimeter area.

(3) The well will penetrate a workable coal seam, and will be located above an active mine, but will not penetrate an operating mine.

(b) The panel shall hear only objections that were filed by the owner or operator of the mining areas set forth in subsection (a).

(c) If after a conference in accordance with § 78**a.**25 (relating to conferences—general), the Department has unresolved objections, the panel does not have jurisdiction to convene or to hear objections.

§ 78a.31. Scheduling of meeting by the panel.

The panel shall convene a meeting within 10-calendar days of the panel chairperson's receipt of a written request to do so by the permit applicant or by the objecting coal owner or operator.

§ 78a.32. Recommendation by the panel.

(a) The panel shall make its recommendation of where the proposed well should be located, based upon the financial considerations of the parties.

(b) The panel shall make its recommendation within 10-calendar days of the close of the meeting held under § 78**a.**31 (relating to scheduling of meeting by the panel).

(c) If the Department determines that the first recommended location endangers a mine or the public, it will reject the location and notify the panel to make another recommendation. The panel shall submit another recommended location to the Department within 10 calendar days of the Department's notification.

(d) If the Department determines that the second recommended location endangers a mine or the public, the Department may designate a location where it has determined that the well will not unduly interfere with or endanger the mine or the public and issue a permit for the well at that designated location. However, if the Department has not designated such a location, and if the Department determines that a well drilled at any proposed or panel-recommended alternate location will unduly interfere with or endanger the mine or the public, it will deny the permit.

(e) No permit will be issued for a well at a location that would, in the opinion of the Department, endanger the safety of persons working in a coal mine.

§ 78a.33. Effect of panel on time for permit issuance.

The period of time during which the objections are being considered by a full panel **[is not] will not be** included in the 45-day period for the issuance or denial of a permit under section **[201(e) of the act (58 P.S. § 601.201(e))] 3211(e) of the act (relating to well permits)**.

Subchapter C. ENVIRONMENTAL PROTECTION

PERFORMANCE STANDARDS

§ 78a.51. Protection of water supplies.

(a) A well operator who affects a public or private water supply by pollution or diminution shall restore or replace the affected supply with an alternate source of water adequate in quantity and quality for the purposes served by the supply as determined by the Department.

(b) A landowner, water purveyor or affected person suffering pollution or diminution of a water supply as a result of **well site construction, well** drilling, altering or operating **[an oil or gas well] activities** may so notify the Department and request that an investigation be conducted. **Notices shall be made to the appropriate Department regional office or by calling the**

Department's Statewide toll free number at (800) 541-2050. The notice and request must include the following:

(1) The name, address and telephone number of the person requesting the investigation.

(2) The type, location and use of the water supply.

(3) Available background quality and quantity data regarding the water supply, if known.

(4) Well depth, pump setting and water level, if known.

(5) A description of the pollution or diminution.

(c) Within 10 **calendar** days of the receipt of the investigation request, the Department will investigate the claim and will, within 45 **calendar** days of receipt of the request, make a determination. If the Department finds that pollution or diminution was caused by the **well site construction,** drilling, alteration or operation activities or if it presumes the well operator responsible for polluting the water supply of the landowner or water purveyor under section **[208(c) of the act (58 P.S. § 601.208(c))] 3218(c) of the act (relating to protection of water supplies)**, the Department will issue orders to the well operator necessary to assure compliance with this section. **The presumption established by section 3218(c) of the act is not applicable to pollution resulting from well site construction.**

(d) A restored or replaced water supply includes any well, spring, public water system or other water supply approved by the Department, which meets the criteria for adequacy as follows:

(1) *Reliability, cost, maintenance and control.* A restored or replaced water supply, at a minimum, must:

(i) Be as reliable as the previous water supply.

(ii) Be as permanent as the previous water supply.

(iii) Not require excessive maintenance.

(iv) Provide the water user with as much control and accessibility as exercised over the previous water supply.

(v) Not result in increased costs to operate and maintain. If the operating and maintenance costs of the restored or replaced water supply are increased, the operator shall provide for permanent payment of the increased operating and maintenance costs of the restored or replaced water supply.

(2) *Quality.* The quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P.S.

§ § 721.1—721.17), or is comparable to the quality of the water supply before it was affected by the operator if that water supply **[did not meet these]** **exceeded those** standards.

(3) *Adequate quantity.* A restored or replaced water supply will be deemed adequate in quantity if it meets one of the following as determined by the Department:

(i) It delivers the amount of water necessary to satisfy the water user's needs and the demands of any reasonably foreseeable uses.

(ii) It is established through a connection to a public water supply system that is capable of delivering the amount of water necessary to satisfy the water user's needs and the demands of any reasonably foreseeable uses.

(iii) For purposes of this paragraph and with respect to agricultural water supplies, the term reasonably foreseeable uses includes the reasonable expansion of use where the water supply available prior to drilling exceeded the actual use.

(4) *Water source serviceability.* Replacement of a water supply includes providing plumbing, conveyance, pumping or auxiliary equipment and facilities necessary for the water user to utilize the water supply.

(e) If the water supply is for uses other than human consumption, the operator shall demonstrate to the Department's satisfaction that the restored or replaced water supply is adequate for the purposes served by the supply.

(f) Tank trucks or bottled water are acceptable only as temporary water replacement for a period approved by the Department and do not relieve the operator of the obligation to provide a restored or replaced water supply.

(g) If the well operator and the water user are unable to reach agreement on the means for restoring or replacing the water supply, the Department or either party may request a conference under section **[501 of the act (58 P.S. § 601.501)]** **3251 of the act (relating to conferences)**.

(h) A well operator who receives notice from a landowner, water purveyor or affected person that a water supply has been affected by pollution or diminution, shall report receipt of notice from an affected person to the Department within 24 hours of receiving the notice. **Notice shall be provided electronically through the Department's web site.**

§ 78a.52. Predrilling or prealteration survey.

(a) A well operator who wishes to preserve its defense under section **[208(d)(1) of the act (58 P.S. § 601.208 (d)(1))]** **3218(d)[~~(1)(i) and~~] (2)(i) of the act (relating to protection of water supplies)** that the pollution of a water supply existed prior to the drilling or alteration of the well shall conduct a predrilling or prealteration survey in accordance with this section.

(b) A person who wishes to document the quality of a water supply to support a future claim that the drilling or alteration of the well affected the water supply by pollution may conduct a predrilling or prealteration survey in accordance with this section.

(c) The survey shall be conducted by an independent **[certified]** **Pennsylvania-accredited** laboratory. A person independent of the well owner or well operator, other than an employee of the **[certified]** **accredited** laboratory, may collect the sample and document the condition of the water supply, if the **[certified]** **accredited** laboratory affirms that the sampling and documentation is performed in accordance with the laboratory's approved sample collection, preservation and handling procedure and chain of custody.

(d) An operator electing to preserve its defenses under section **[208(d)(1) of the act]** **3218(d)[~~(1)(i) and~~](2)(i) of the act (relating to protection of water supplies)** shall provide a copy of **all** the **sample** results **taken as part** of the survey to the Department **[and]** **by electronic means in a format determined by the Department within 10 business days of receipt of all the sample results taken as part of the survey. The operator shall provide a copy of any sample results to** the landowner or water purveyor within 10-business days of receipt of the **sample** results. **[Test]** **Survey** results not received by the Department within 10 business days may not be used to preserve the operator's defenses under section **[208(d)(1) of the act]** **3218(d)[~~(1)(i) and~~] (2)(i) of the act**.

(e) The report describing the results of the survey must contain the following information:

(1) The location of the water supply and the name of the surface landowner or water purveyor.

2) The date of the survey, and the name of the **[certified]** **independent Pennsylvania-accredited** laboratory and the person who conducted the survey.

(3) A description of where and how the **[sample was]** **samples were** collected.

(4) A description of the type and age, if known, of the water supply, and treatment, if any.

(5) The name of the well operator, name and number of well to be drilled and permit number if known.

(6) The results of the laboratory analysis.

(f) A well operator who wishes to preserve the defense under section **[208(d)(2) of the act]** **3218[~~(d)(1)(ii) and~~] (2)(ii) of the act** that the landowner or water purveyor refused the operator access to conduct a survey shall confirm the desire to conduct this survey and that access was refused by issuing notice to the person by certified mail, or otherwise document that access was refused. The notice must include the following:

(1) The operator's intention to drill or alter a well.

(2) The desire to conduct a predrilling or prealteration survey.

(3) The name of the person who requested and was refused access to conduct the survey and the date of the request and refusal.

(4) The name and address of the well operator and the address of the Department, to which the water purveyor or landowner may respond.

(g) The operator of an unconventional well shall provide written notice to the landowner or water purveyor indicating that the presumption established under section 3218(c) of the act may be void if the landowner or water purveyor refused to allow the operator access to conduct a predrilling or prealteration survey. Proof of written notice to the landowner or water purveyor shall be provided to the Department for the operator to retain the protections under section 3218(d)(2)(ii) of the act. Proof of written notice will be presumed if provided in accordance with section 3212(a) of the act.

§ 78a.52a. Abandoned and orphaned well identification.

(a) Prior to hydraulically fracturing the well, the operator of a gas well or horizontal oil well shall identify the location of orphaned or abandoned wells within 1,000 feet measured horizontally from the vertical well bore and 1,000 feet measured from the surface above the entire length of a horizontal well bore in accordance with subsection (b). [~~Prior to hydraulically fracturing the well, the operator of a vertical oil well shall identify the location of orphaned or abandoned wells within 500 feet of the well bore in accordance with subsection (b).~~] For the purposes of this section, a gas well is a well which is producing or capable of producing marketable quantities of gas or of gas and oil with a gas-oil ratio of more than 100 MCF per bbl of oil.

(b) Identification shall be accomplished by conducting the following:

(1) A review the Department's orphaned and abandoned well database.

(2) A review of applicable farm line maps, where accessible.

(3) Submitting a questionnaire on forms provided by the Department to landowners whose property is within the area identified in subsection (a) regarding the precise location of orphaned and abandoned wells on their property.

(c) Prior to hydraulically fracturing a well, the operator shall submit a plat to the Department showing the location and GPS coordinates of orphaned and abandoned wells identified under subsection (b) and proof of notification that the operators submitted questionnaires under subsection (b)(3).

§ 78a.53. Erosion and sediment control.

[During and after earthmoving or soil disturbing activities, including the activities related to siting, drilling, completing, producing, servicing and plugging the well, constructing,

utilizing and restoring the access road and restoring the site, the operator shall design, implement and maintain best management practices in accordance with] **Any person proposing or conducting earth disturbance activities associated with oil and gas activities shall comply with** Chapter 102 (relating to erosion and sediment control) **[and an erosion and sediment control plan prepared under that chapter]**. Best management practices for **erosion and sediment control** for oil and gas well **[operations]** **activities** are listed in the **[*Oil And Gas Operators Manual,* Commonwealth of Pennsylvania, Department of Environmental Protection, Guidance No. 550-0300-001 (April 1997), as amended and updated]** **Erosion and Sediment Pollution Control Program Manual, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-2134-008, as amended and updated, and the Oil and Gas Operators Manual, Commonwealth of Pennsylvania, Department of Environmental Protection, Guidance No. 550-0300-001, as amended and updated**.

§ 78a.53. Erosion and sediment control.

During and after earthmoving or soil disturbing activities, including the activities related to siting, drilling, completing, producing, servicing and plugging the well, constructing, utilizing and restoring the access road and restoring the site, the operator shall design, implement and maintain best management practices in accordance with Chapter 102 (relating to erosion and sediment control) and an erosion and sediment control plan prepared under that chapter. Best management practices for oil and gas well operations are listed in the *Oil And Gas Operators Manual*, Commonwealth of Pennsylvania, Department of Environmental Protection, Guidance No. 550-0300-001 (April 1997), as amended and updated.

§ 78a.54. General requirements.

The well operator shall control and dispose of fluids, residual waste and drill cuttings, including tophole water, brines, drilling fluids, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids and drill cuttings in a manner that prevents pollution of the waters of this Commonwealth and in accordance with §§ **78a.**55—**78a.**58 and **78a.**60—**78a.**63 and with the statutes under which this chapter is promulgated.

§ 78a.55. Control and disposal planning; emergency response for unconventional wells.

(a) *Preparation and implementation of plan* ***for oil and gas operations***. **[Prior to generation of waste, the well operator shall prepare and implement a plan under § 91.34 (relating to activities utilizing pollutants) for the control and disposal of fluids, residual waste and drill cuttings, including tophole water, brines, drilling fluids, additives, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids and drill cuttings from the drilling, alteration, production, plugging or other activity associated with oil and gas wells.]** **Persons conducting oil and gas operations shall prepare and implement site specific PPC plans according to §§ 91.34 and 102.5(l) (relating to activities utilizing pollutants; and permit requirements).**

(b) *Preparation and implementation of plan for well sites.* In addition to the requirements in subsection (a), the well operator shall prepare and develop a site specific PPC plan prior to

storing, using, generating or transporting regulated substances to, on or from a well site from the drilling, alteration, production, plugging or other activity associated with oil and gas wells.

(c) *Containment practices.* The unconventional well operator's PPC plan must describe the containment practices to be utilized and the area of the well site where containment systems will be employed as required under § 78a.64a (relating to containment systems and practices at unconventional well sites). The PPC plan must include a description of the equipment to be kept onsite during drilling and hydraulic fracturing operations that can be utilized to prevent a spill from leaving the well site.

[(b)] (d) *Requirements.* The **well operator's PPC** plan must **also** identify the control and disposal methods and practices utilized by the well operator and be consistent with the act, The Clean Streams Law (35 P.S. §§ 691.1—691.1001), the Solid Waste Management Act (35 P.S. §§ 6018.101—6018.1003) and §§ **78a.**54, **78a.**56—**78a.**58 and **78a.**60—**78a.**63. The **PPC** plan must also include a pressure barrier policy **developed by the operator** that identifies barriers to be used during identified operations.

[(c)] (e) *Revisions*. The **well** operator shall revise the **PPC** plan prior to implementing a change to the practices identified in the **PPC** plan.

[(d)**] (f)** *Copies.* A copy of the **well operator's PPC** plan shall be provided to the Department**, the Fish and Boat Commission or the landowner** upon request and shall be available at the **[well]** site during drilling and completion activities for review.

(g) *Guidelines.* With the exception of the pressure barrier policy required under subsection (d), a PPC plan developed in conformance with the *Guidelines for the Development and Implementation of Environmental Emergency Response Plans*, Commonwealth of Pennsylvania, Department of Environmental Protection, No. 400-2200-001, as amended and updated, will be deemed to meet the requirements of this section.

[(e)] (h) *Emergency contacts.* A list of emergency contact phone numbers for the area in which the well site is located must be included in the plan and be prominently displayed at the well site during drilling, completion or alteration activities.

[(f)] (i) *Emergency response for unconventional well sites.*

(1) *Applicability.* This subsection applies to unconventional wells.

(2) *Definitions.* For the purposes of this subsection, the following definitions apply:

Access road—A road connecting a well site to the nearest public road, private named road, administrative road with a name and address range, or private unnamed road with an address range.

Address—A location, by reference to a road or a landmark, made by a county or municipality responsible for assigning addresses within its jurisdiction.

Administrative road—A road owned and maintained by the Commonwealth open to the public at the discretion of the Commonwealth that may or may not have a name and address range.

Emergency responder—Police, firefighters, emergency medical technicians, paramedics, emergency management personnel, public health personnel, State certified hazardous materials response teams, Department emergency personnel and other personnel authorized in the course of their occupations or duties, or as an authorized volunteer, to respond to an emergency.

Entrance—The point where the access road to a well site connects to the nearest public road, private named road, administrative road with a name and address range, or a private unnamed road with an address range.

GPS coordinates—The coordinates in latitude and longitude as expressed in degrees decimal to at least six digits after the decimal point based upon the World Geodetic System 1984 Datum or any other datum approved by the Department.

PEMA—The Pennsylvania Emergency Management Agency.

Private named road—A private road with a name and address range.

Private road—A road that is not a public road.

Private unnamed road—A private road that is not a private named road.

Public road—A road owned and maintained by the Commonwealth, a county within this Commonwealth, a municipality within the Commonwealth or any combination thereof that is open to the public.

Public safety answering point—An entity operating in cooperation with local municipalities and counties to receive 9-1-1 calls for a defined geographic area and process calls according to a specific operational policy.

Well site name—The name used to designate the well site by the operator on the well permit application submitted to the Department.

(3) *Registration of addresses.*

(i) Prior to construction of an access road to a well site, the operator of an unconventional well shall request a street address for the well site from the county or municipality responsible for assigning street addresses.

(ii) The operator shall determine the GPS coordinates for both the well site and the entrance to the well site. The GPS coordinates must have a horizontal accuracy of plus or minus 6.67 feet or

better. If there is more than one well on a well site, one set of GPS coordinates must be used for the well site.

(iii) The operator shall register the following with PEMA, the Department, the Public Safety Answering Point and the county emergency management organization within the county where the well site is located:

(A) The well site name.

(B) The well site address.

(C) The GPS coordinates for the entrance and the well site.

(iv) When there is a change of well site address, the operator shall register the new address as provided in subparagraph (iii).

(v) When there is a change of the entrance due to a change in the well site address or otherwise, the operator shall register the GPS coordinates for the entrance as provided in subparagraph (iii).

(vi) The following shall be retained at the well site for reference when contacting emergency responders:

(A) The well site name.

(B) The well site address.

(C) The GPS coordinates for the entrance and the well site.

(4) *Signage.*

(i) Prior to construction of the access road, the operator of an unconventional well shall display a reflective sign at the entrance.

(ii) The sign must meet the following requirements:

(A) The sign must be fabricated with approved retroreflective sheeting material meeting ASTM 4956 Type III.

(B) The sign must have a white background with a 2-inch red border and black numbers and letters. Signs for entrances on administrative roads may use other colors provided that the signs use contrasting colors between the background, border, numbers and letters.

(C) The sign must be of sufficient size to accommodate the required information described in this section. The minimum size of a sign must be 36 inches in height and 48 inches in width.

(D) The sign must follow the format of Figure 1 and contain:

(I) The address number for the well site displayed horizontally on the first line of the sign in text no smaller than 4 inches in height.

(II) The full address of the entrance, including the county and municipality in which the entrance is located.

(III) The well operator's company name.

(IV) The 24-hour contact telephone information for the operator of the well site.

(V) The GPS coordinates for the entrance.

(VI) The well site name.

(VII) The wording ''In Case of Emergency Call 9-1-1.''

(iii) The sign must be mounted independently from other signage.

(iv) The bottom of the sign must be positioned a minimum of 3 feet above ground level.

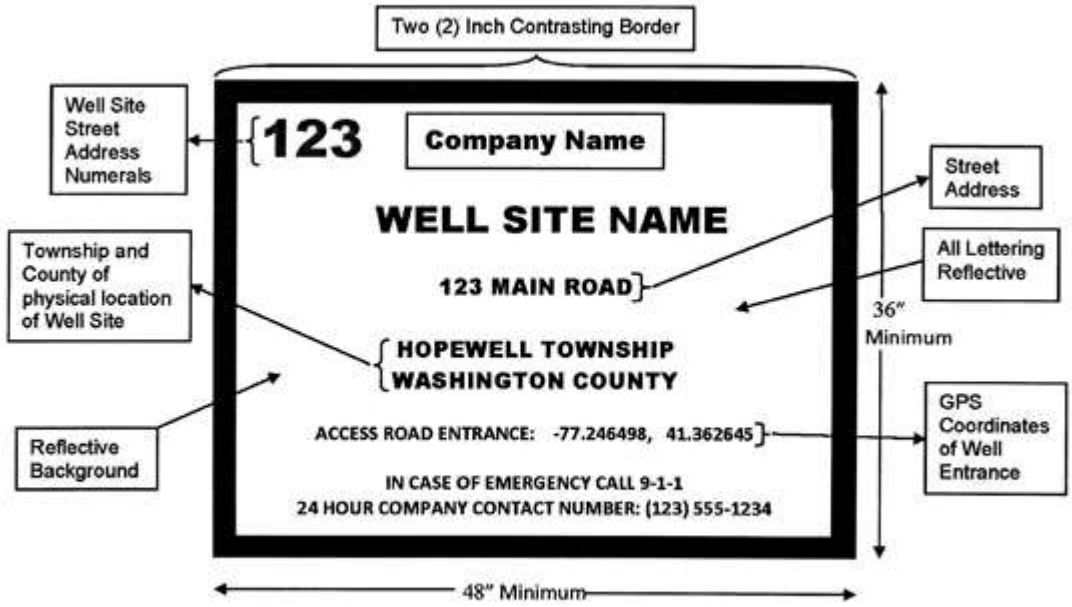
(v) The sign may not contain other markings.

(vi) A sign, as viewed from the applicable road, may not be obstructed from view by vegetation, equipment, vehicles or other obstruction.

(vii) During drilling operations, the American Petroleum Institute (API) permit numbers of the wells at the site may be posted on a nonreflective sign below the principal sign. The API sign may be removed after the well is completed, provided that it is not otherwise required to be posted.

Figure 1. Sample Site Entrance Signage

Figure 1. Sample Site Entrance Signage



(Not to scale)

(Not to scale)

(5) *Emergency response planning.*

(i) The operator of an unconventional well shall develop and implement an emergency response plan that provides for equipment, procedures, training and documentation to properly respond to emergencies that threaten human health and safety for each well site. The plan shall incorporate National Incident Management System planning standards, including the use of the Incident Command System, Incident Action Planning and Common Communications Plans. The plan must include:

(A) The emergency contact information, including phone numbers, for the well operator's local representative for the well site and the well operator's 24-hour emergency phone number.

(B) The emergency notification procedures that the operator shall utilize to contact emergency responders during an emergency.

(C) A description of the well site personnel's response to the following well site emergencies:

(I) Fire.

(II) Medical emergency.

(III) Explosion or similar event.

(IV) Spill.

(V) Security breach or other security event.

(VI) Any other incident that necessitates the presence of emergency responders.

(D) A description of the procedure to be used to provide the most current information to emergency responders in the event of an emergency, including the following:

(I) The current Material Safety Data Sheet (MSDS) required under law to be present at the well site.

(II) The location of the MSDSs at the well site.

(III) The name of the position in the operator's organization responsible for providing the information in subclauses (I) and (II).

(E) A list containing the location of any fire suppression and spill control equipment maintained by the well operator at the well site.

(F) A description of any emergency equipment available to the operator that is located off of the well site.

(G) A summary of the risks and hazards to the public within 1/2 mile of the well site and the associated planning assumptions.

(H) An outline of the emergency response training plan that the operator has established.

(ii) The emergency response plan in subparagraph (i) may consist of two parts:

(A) A base plan common to all of the operator's well sites containing some of the elements described in subparagraph (i).

(B) A site-specific plan containing the remaining elements described in subparagraph (i).

(iii) The operator shall submit a copy of the current emergency response plan for that well site unless the permit provides otherwise. For plans using the approach in subparagraph (ii), the operator may submit one base plan provided that the site-specific plans are submitted for each well site.

(iv) The operator shall review the plan and submit an update annually on or before March 1 each year. In the event that updates are not made to the plan for that review period, the operator shall submit a statement indicating the review was completed and updates to the plan were not necessary.

(v) The plan and subsequent updates shall be submitted to:

(A) PEMA.

(B) The Department.

(C) The county emergency management agency.

(D) The Public Safety Answering Point with jurisdiction over the well site.

(vi) A copy of the plan shall be available at the well site during all phases of operation.

(vii) The emergency response plan must address response actions for the following stages of operation at the well site:

(A) Preparation of the access road and well site.

(B) Drilling of the well.

(C) Hydraulic fracturing and stimulation of the well.

(D) Production.

(E) Well site restoration.

(F) Plugging of the well.

(viii) The requirements in subparagraphs (i)—(vii) may be met by implementing guidance issued by the Department in coordination with PEMA.

(6) *Transition.*

(i) This subsection is effective January 26, 2013, except as provided in subparagraph (ii).

(ii) For a well site containing a well that is being drilled or has been drilled as of January 26, 2013, or a well site for which a well permit has been issued but wells have not started drilling as of January 26, 2013, or a well site for which an administratively complete application is pending as of January 26, 2013, as provided in subparagraph (i), the following applies:

(A) Paragraph (3) is effective on February 25, 2013.

(B) Paragraph (4) is effective on July 25, 2013.

(C) Paragraph (5) is effective on April 26, 2013.

§ 78**a**.56. **[Pits and tanks for temporary containment] Temporary storage.**

(a) Except as provided in §§ 78**a**.60(b) and 78**a**.61(b) (relating to discharge requirements; and disposal of drill cuttings), the operator shall contain **[pollutional] regulated** substances from the drilling, altering, completing, recompleting, servicing and plugging the well, including brines, drill cuttings, drilling muds, oils, stimulation fluids, well treatment and servicing fluids, plugging and drilling fluids other than gases in a pit, tank or series of pits and tanks **or other approved storage structures**. The operator shall install or construct and maintain the pit, tank or series of pits and tanks **or other approved storage structures** in accordance with the following requirements:

(1) The pit, tank **[or],** series of pits and tanks**, or other approved storage structure** shall be constructed and maintained with sufficient capacity to contain all **[pollutional] regulated** substances which are used or produced during drilling, altering, completing**, recompleting, servicing** and plugging the well.

(2) Modular aboveground storage structures that are assembled onsite may not be utilized to store regulated substances without Department approval. The Department will maintain a list of approved modular storage structures on its web site. The owner or operator shall notify the Department at least 3 business days before the beginning of construction of these storage structures. The notice shall be submitted electronically to the Department through its web site and include the date the storage structure installation will begin. If the date of installation is extended, the operator shall renotify the Department with the date that the installation will , which does not need to be 3 business days in advance.

[(2)] (3) A pit shall be designed, constructed and maintained so that at least 2 feet of freeboard remain at all times. If open tanks **or open storage structures** are used, the tanks **and storage structures** shall be maintained so that at least 2 feet of freeboard remain at all times unless the tank **or storage structure** is provided with an overflow system to a standby tank or pit with sufficient volume to contain all excess fluid or **[waste] regulated substances**. If an open standby tank **or open storage structure** is used, it shall be maintained with 2 feet of freeboard. If this subsection is violated, the operator immediately shall take the necessary measures to ensure the structural stability of the pit**,** or tank **or other storage structure**, prevent spills and restore the 2 feet of freeboard.

[(3)] (4) Pits **[and],** tanks **and other approved storage structures** shall be designed, constructed and maintained to be structurally sound and reasonably protected from unauthorized acts of third parties.

(5) For unconventional well sites, unless an individual is continuously present at the well site, a fence must completely surround all pits to prevent unauthorized acts of third parties and damage caused by wildlife.

(6) Unless an individual is continuously present at the well site, operators shall equip all tank valves and access lids to regulated substances with reasonable measures to prevent

unauthorized access by third parties such as locks, open end plugs, removable handles, retractable ladders or other measures that prevent access by third parties. Tanks storing freshwater, fire prevention materials and spill response kits are excluded from the requirements of this paragraph.

(7) The operator of an unconventional well site shall display a sign on or near the tank or other approved storage structure identifying the contents and an appropriate warning of the contents such as flammable, corrosive or a similar warning.

[(4)] (8) A pit **[or],** tank **or other approved storage structure** that contains drill cuttings from below the casing seat, **[pollutional] regulated** substances**[, wastes]** or fluids other than tophole water, fresh water and uncontaminated drill cuttings shall be impermeable **[and comply with the following:].**

[(i) The pits] (9) Pits shall be constructed with a synthetic flexible liner **[with] that covers the bottom and sides of the pit. Liners used in a pit or other approved storage structures must comply with the following:**

(i) A liner must have a coefficient of permeability of no greater than 1 x **[10^{-7}] 10^{-10}** cm/sec **[and with sufficient strength and thickness to maintain the integrity of the liner]**.

(ii) A liner must be at least 30 mils thick unless otherwise approved by the Department. Approval may be granted if the manufacturer demonstrates that the alternative thickness is at least as protective as a 30 mil liner. A list of approved alternative liners shall be maintained on the Department's web site.

(iii) The liner shall be designed, constructed and maintained so that the physical and chemical characteristics of the liner are not adversely affected by the **[waste] regulated substance stored therein** and the liner is resistant to physical, chemical and other failure during transportation, handling, installation and use. **Liner compatibility must satisfy ASTM Method D5747, Compatibility Test for Wastes and Membrane Liners, or other compatibility test approved by the Department for the duration the pit or other temporary storage structure is used.**

(iv) Adjoining sections of liners shall be sealed together to prevent leakage in accordance with the manufacturer's directions. **[If the operator seeks to use a liner material other than a synthetic flexible liner, the operator shall submit a plan identifying the type and thickness of the material and the installation procedures to be used, and shall obtain approval of the plan by the Department before proceeding.] The integrity of all seams of the adjoining sections of liner shall be tested prior to use. Results of the tests shall be available upon request.**

[(ii)] (10) The pit shall be constructed so that the liner subbase is smooth, uniform and free from debris, rock and other material that may puncture, tear, cut or otherwise cause the liner to fail. **The pit must be structurally sound and the interior slopes of the pit must have a slope no steeper than 2 horizontal to 1 vertical.** The liner subbase and subgrade shall be capable of bearing the weight of the material above the liner without settling that may affect the integrity of

the liner. If the pit bottom or sides consist of rock, shale or other materials that may cause the liner to fail, a subbase of at least 6 inches of soil, sand or smooth gravel, or sufficient amount of an equivalent material, shall be installed over the area as the subbase for the liner.

[(iii)] **(11)** The bottom of the pit shall be at least 20 inches above the seasonal high groundwater table, unless the operator obtains approval under subsection (b) for a pit that exists only during dry times of the year and is located above groundwater. **The operator of an unconventional well shall determine that the pit bottom is at least 20 inches above the seasonal high groundwater table prior to using the pit. A soil scientist or other similarly trained person using accepted and documented scientific methods shall make the determination. The individual's determination must contain a statement certifying that the pit bottom is at least 20 inches above the seasonal high groundwater table according to observed field conditions. The name, qualifications and statement of the individual making the determination and the basis of the determination shall be provided to the Department upon request.**

(12) Stormwater must be diverted away from the pit.

(13) Prior to placing material in the pit, the liner shall be inspected for lack of uniformity, damage and other imperfections that may cause the liner to leak. The well operator shall correct damages or imperfections before placing the material in the pit and maintain the pit until closure of the pit.

[(iv)] **(14)** If a liner becomes torn or otherwise loses its integrity, the pit **or approved storage structure** shall be managed to prevent the **[pit]** contents from leaking **[from the pit]**. If repair of the liner or construction of another temporary pit **or approved storage structure** is not practical or possible, the **[pit]** contents shall be removed and disposed at an approved waste disposal facility or disposed on the well site in accordance with § 78**a**.61, § 78**a**.62 or § 78**a**.63 (relating to disposal of residual waste—pits; and disposal of residual waste—land application).

[(v)] **(15) The liner shall be secured around the perimeter of the pit in a manner that does not compromise the integrity of the liner.** If the liner drops below the 2 feet of freeboard, the pit shall be managed to prevent the pit contents from leaking from the pit and the 2 feet of lined freeboard shall be restored.

(16) The unconventional well operator shall notify the Department at least 3 business days before the installation of the pit liner. The notice shall be submitted electronically to the Department through its web site and include the date the liner will be installed. If the date of installation is extended, the operator shall renotify the Department with the date of installation, which does not need to be 3 business days in advance. Notice is not required if the licensed professional engineer or geologist that designed the well site submits a statement on forms provided by the Department certifying that the pit and the pit liner, as built, are compliant with this section. This certification shall be submitted within 10 business days of installation of the pit liner.

(17) Condensate, whether separated or mixed with other fluids, may not be stored in any open top structure or pit. Tanks used for storing or separating condensate during well completion shall be monitored and have controls to prevent vapors from exceeding the lower explosive limits of the condensate outside the tank. Tanks used for storing or separating condensate shall be grounded.

(b) The operator may request to use practices other than those specified in subsection (a) which provide equivalent or superior protection by submitting a request to the Department for approval. The request shall be made on forms provided by the Department.

(c) Disposal of uncontaminated drill cuttings in a pit or by land application shall comply with § 78a.61. A pit used for the disposal of residual waste, including contaminated drill cuttings, shall comply with § 78a.62. Disposal of residual waste, including contaminated drill cuttings, by land application shall comply with § 78a.63.

(d) **[Unless a permit under The Clean Streams Law (35 P.S. §§ 691.1—691.1001) or approval under § 78a.57 or § 78a.58 (relating to control, storage and disposal of production fluids; and existing pits used for the control, storage and disposal of production fluids) has been obtained for the pit, the] The** owner or operator shall remove or fill the pit within 9 months after completion of drilling, or in accordance with the extension granted by the Department under section **[206(g) of the act (58 P.S. § 601.206(g))] 3216(g) of the act (relating to well site restoration) and § 78a.65(d) (relating to site restoration)**. Pits used during servicing, plugging and recompleting the well shall be removed or filled within 90 **calendar** days of construction.

§ 78a.57. Control, storage and disposal of production fluids.

(a) Unless a permit has been obtained under § 78**a**.60(a) (relating to discharge requirements), the operator shall collect the brine and other fluids produced during operation**[, service and plugging]** of the well in a tank**[, pit]** or a series of **[pits or]** tanks, or other device approved by the Department for subsequent disposal or reuse. **Open top structures may not be used to store brine and other fluids produced during operation of the well.** Except as allowed in this subchapter or otherwise approved by the Department, the operator may not discharge the brine and other fluids on or into the ground or into the waters of this Commonwealth.

(b) Except as provided in § 78**a**.56 (relating to pits and tanks for temporary **[containment] storage**), the operator may not use a pit for the control, handling or storage of brine and other fluids produced during operation, service or plugging of a well **[unless the pit is authorized by a permit under The Clean Streams Law (35 P.S. §§ 691.1—691.1001) or approval to operate the pit as an impoundment under The Clean Streams Law is obtained from the Department under subsection (c)]**.

[(c) **The operator may apply for approval from the Department to operate a pit as an impoundment under The Clean Streams Law, as indicated by the Department's issuance of a pit approval number in accordance with this section. No pit will be eligible for approval under this subsection unless the capacity of any one pit or of any two or more**

interconnected pits is less than 250,000 gallons, or the total capacity contained in pits on one tract or related tracts of land is less than 500,000 gallons. Compliance with this subsection does not relieve the operator from the obligation to comply with section 308 of The Clean Streams Law (35 P.S. § 691.308) and the requirements for obtaining a permit for the erection, construction and operation of treatment works promulgated under that section.

(1) A request for approval under this subsection shall be made on forms furnished by the Department and, at a minimum, shall include the following:

(i) A description of the operator's plan that demonstrates compliance with this subsection for the construction or reconstruction of the pit.

(ii) A description of the operator's program for operation and maintenance of the pit.

(iii) A description of the method for subsequent disposal or reuse of the brine or other fluids produced during operation of the well.

(iv) A description of the operator's program for the closure of the pit and restoration of the site.

(2) The operator shall design, construct, operate and maintain the pit in accordance with the approval and the following:

(i) The pit approval number is posted at the pit in a legible and visible manner.

(ii) The pit is not located within 100 feet of a stream, wetland or body of water unless a waiver is granted by the Department.

(iii) The bottom of the pit is a minimum of 20 inches above the seasonal high groundwater table.

(iv) At least 2 feet of freeboard remain at all times.

(v) The pit is structurally sound and the inside slopes of the pit are not steeper than a ratio of 2 horizontal to 1 vertical.

(vi) The pit is impermeable and is lined with a synthetic flexible liner or alternate material that has a coefficient of permeability of no greater than 1×10^{-7} cm/sec. The liner shall be of sufficient strength and thickness to maintain the integrity of the liner. The thickness of a synthetic liner shall be at least 30 mils. Adjoining sections of liners shall be sealed together in accordance with the manufacturer's directions to prevent leakage.

(vii) The physical and chemical characteristics of the liner shall be compatible with the waste and the liner is resistant to physical, chemical and other failure during transportation, handling, installation and use. Liner compatibility shall satisfy EPA

Method 9090, *Compatibility Test for Wastes and Membrane Liners*, or other documented data approved by the Department.

(viii) The pit shall be constructed so that the liner subbase is smooth, uniform and free of debris, rock and other material that may puncture, tear, cut, rip or otherwise cause the liner to fail. The liner subbase and subgrade shall be capable of bearing the weight of the material above the liner without settling in an amount that will affect the integrity of the liner. If the pit bottom or sides consist of rock, shale or other material that may cause the liner to leak, a subbase of at least 6 inches of soil, sand or smooth gravel, or a sufficient amount of an equivalent material shall be installed over the area as the subbase for the liner.

(ix) Prior to placing brine or other fluids in the pit, the operator shall inspect the liner and correct all damage or imperfections that may cause the liner to leak.

(x) Surface water which may drain into the pit shall be diverted away from the pit.

(xi) The pit is reasonably protected from unauthorized acts of third parties.

(3) Upon abandonment of the well or revocation of the approval by the Department, the operator shall restore the pit in accordance with the following:

(i) The free liquid fraction of the pit contents shall be removed and disposed under § 78a.60(a) and the remaining pit contents and liner shall be removed and disposed under §§ 78a.62 and 78a.63 (relating to disposal of residual waste—pits; and disposal of residual waste—land application), or the Solid Waste Management Act.

(ii) The pit shall be backfilled to the ground surface and graded to promote runoff with no depression that would accumulate or pond water on the surface. The stability of the backfilled pit shall be compatible with the adjacent land.

(iii) The surface of the backfilled pit area shall be revegetated to stabilize the soil surface and comply with § 78a.53 (relating to erosion and sedimentation control). The revegetation shall establish a diverse, effective, permanent, vegetative cover which is capable of self-regeneration and plant succession. Where vegetation would interfere with the intended use of the surface by the landowner, the surface shall be stabilized against accelerated erosion.]

(c) Secondary containment capable of preventing tank contents from entering waters of the Commonwealth is required for all new, refurbished or replaced tanks or other aboveground containment structures approved by the Department, including their associated manifolds, that contain brine and other fluids produced during operation of the well. If one tank in a series of tanks is added, refurbished or replaced, secondary containment is required for the entire series of tanks. The secondary containment area provided by dikes or other methods of secondary containment open to the atmosphere must have containment capacity sufficient to hold the volume of the largest single tank, plus an additional 10% of volume for precipitation. Compliance with § 78a.64 (relating to

containment around oil and condensate tanks) or using double walled tanks capable of detecting a leak in the primary container fulfill the requirements in this subsection.

(d) Tanks, series of tanks or other above ground storage structures approved by the Department used to store brine or other fluids produced during operation of the well shall be designed, constructed and maintained to be structurally sound in accordance with sound engineering practices adhering to Nationally recognized industry standards and the manufacturer's specifications. Tanks that are manifolded together shall be designed in a manner to prevent the uncontrolled discharge of multiple manifolded tanks.

(e) Underground or partially buried storage tanks may not be used to store brine or other fluids produced during operation of the well unless approved by the Department. Existing underground or partially buried storage tanks shall be removed by _____ (*Editor's Note*: The blank refers to 3 years after the effective date of adoption of this proposed rulemaking.)**. A well operator utilizing underground or partially buried storage tanks as of _____,** (*Editor's Note*: The blank refers to the effective date of adoption of this proposed rulemaking.) **shall provide the Department with a list of the well sites where the underground or partially buried storage tanks are located and schedule for removal of the tanks by _____** (*Editor's Note*: The blank refers to 6 months after the effective date of adoption of this proposed rulemaking.)

(f) All new, refurbished or replaced tanks that store brine or other fluid produced during operation of the well must comply with the applicable corrosion control requirements in §§ 245.531—245.534 (relating to corrosion and deterioration prevention).

(g) All new, refurbished or replaced tanks storing brine or other fluids produced during operation of the well must be reasonably protected from unauthorized acts of third parties. Unless the tank is surrounded by a fence, tank valves and access lids must utilize locks, open end plugs or removable handles and ladders on tanks must be retractable or other measures that prevent access by third parties.

§ 78a.58. [Existing pits used for the control, storage and disposal of production fluids.

For pits in existence on July 29, 1989, the operator may request approval for an alternate method of satisfying the requirements of § 78.57(c)(2)(iii) (relating to control, storage and disposal of production fluids), the angle of slope requirements of § 78.57(c)(2)(v) and the liner requirement of § 78.57(c)(2)(vi)—(viii) by affirmatively demonstrating to the Department's satisfaction, by the use of monitoring wells or other methods approved by the Department, that the pit is impermeable and that the method will provide protection equivalent or superior to that provided by § 78.57. The operator shall request approval under § 78.57(c)(1).

Onsite processing.

(a) The operator may request approval by the Department to process fluids generated by the development, drilling, stimulation, alteration, operation or plugging of oil or gas wells

at the well site where the fluids were generated or at the well site where all of the fluid is intended to be beneficially used to develop, drill or stimulate a well. The request shall be submitted on forms provided by the Department and demonstrate that the processing operation will not result in pollution of land or waters of the Commonwealth.

(b) Approval from the Department is not required for the following activities conducted at a well site or centralized impoundment permitted under § 78a.59c (relating to centralized impoundments):

(1) Mixing fluids with freshwater.

(2) Aerating fluids.

(3) Filtering solids from fluids.

(c) The operator may request to process drill cuttings only at the well site where those drilling cuttings were generated by submitting a request to the Department for approval. The request shall be submitted on forms provided by the Department and demonstrate that the processing operation will not result in pollution of land or waters of the Commonwealth.

(d) Processing residual waste generated by the development, drilling, stimulation, alteration, operation or plugging of oil or gas wells other than as provided for in subsections (a) and (b) shall comply with the Solid Waste Management Act (35 P.S. §§ 6018.101—6018.1003).

(e) Processing of fluids in a manner approved under subsection (a) will be deemed to be approved at subsequent well sites provided the operator notifies the Department of location of the well site where the processing will occur prior to the beginning of processing operations. The notice shall be submitted electronically to the Department through its web site and include the date activities will begin.

(f) Sludges, filter cake or other solid waste remaining after the processing or handling of fluids under subsection (a) or (b), including solid waste mixed with drill cuttings, shall be characterized under § 287.54 (relating to chemical analysis of waste) before the solid waste leaves the well site.

§ 78a.59. [Reserved].

§ 78a.59a. Impoundment embankments.

Embankments constructed for freshwater and centralized impoundments for oil and gas activities must meet the following requirements:

(1) The foundation for each embankment must be stripped and grubbed to a minimum depth of 2 feet below existing contour prior to any placement and compaction of fill.

(2) Any springs encountered in the embankment foundation area shall be drained to the downstream toe of the embankment with a drain section 2 foot by 2 foot in dimension consisting of PennDOT Type A sand, compacted by hand tamper. Geotextiles may not be used around sand. The last 3 feet of this drain at the downstream slope must be constructed of AASHTO #8 material.

(3) The minimum top width of the embankment must be 12 feet.

(4) The inside and outside slope must have a slope no steeper than 3 horizontal to 1 vertical.

(5) Soils to be used for embankment construction must be classified in accordance with ASTMD-2487 (Unified Soils Classification). Soil samples must be classified at a minimum rate of 1 sample per 1,000 cubic yards of placed fill. Results of testing of materials shall be provided to the Department upon request.

(6) The embankment must be constructed out of soils designated as GC, GM, SC, SM, CL or ML, only. Soils with split designations when one of the designations is not GC, GM, SC, SM, CL or ML may not be used. Soils must contain a minimum of 20% of No. 200 sieve materials or larger. Results of testing of materials shall be provided to the Department upon request.

(7) Particles greater than 6 inches in any dimension may not be used for embankment construction.

(8) Soil used in embankment construction must be compacted. Soil compaction shall be conducted in accordance with the following:

(i) Compaction shall be conducted with a sheepsfoot or pad roller.

(ii) The maximum loose lift thickness must be 9 inches.

(iii) Soil shall be compacted until visible nonmovement of the embankment material.

(9) Exposed embankment slopes shall be permanently stabilized using one or a combination of the following methods:

(i) Exposed embankments shall be limed, fertilized, seeded and mulched and permanent vegetative ground covering in compliance with § 102.22 (relating to site stabilization) shall be established upon completion of construction of the impoundment.

(ii) Compacted rockfill or riprap placed on the downstream face of the embankment as a cover having a minimum depth of 2 feet. The rockfill must be durable, evenly distributed and underlain by a Class 2, Type A geotextile.

§ 78a.59b. Freshwater impoundments.

(a) In addition to meeting the requirements of § 78a.59a (relating to impoundment embankments), freshwater impoundments must be in compliance with this section.

(b) A well operator that constructed a freshwater impoundment shall register the location of the freshwater impoundment by _____, (*Editor's Note*: The blank refers to the 60 days after the effective date of adoption of this proposed rulemaking.) **by providing the Department, in writing, with the GPS coordinates, township and county where the freshwater impoundment is located. A well operator shall register the location of a new freshwater impoundment prior to construction. Registration of the freshwater impoundment may be transferred to another operator. Registration transfers shall utilize forms provided by the Department.**

(c) Freshwater impoundments shall be constructed with a synthetic impervious liner.

(d) Unless an individual is continuously present at a freshwater impoundment, a fence must completely surround the freshwater impoundment to prevent unauthorized acts of third parties and damage caused by wildlife.

(e) The bottom of the impoundment shall be at least 20 inches above the seasonal high groundwater table. The applicant may maintain the required separation distance of 20 inches by artificial means such as an under-drain system throughout the lifetime of the impoundment. In no case shall the regional groundwater table be affected. The operator shall document the depth of the seasonal high groundwater table, the manner in which the depth of the seasonal high groundwater table was ascertained, the distance between the bottom of the impoundment and the seasonal high groundwater table, and the depth of the regional groundwater table if the separation between the impoundment bottom and seasonal high groundwater table is maintained by artificial means. The operator shall submit records demonstrating compliance with this subsection to the Department upon request.

(f) Freshwater impoundments shall be restored by the operator that the impoundment is registered to by removing excess water and the synthetic liner and returning the site to approximate original conditions, including preconstruction contours, and can support the land uses that existed prior to oil and gas activities to the extent practicable within 9 months of completion of drilling the last well serviced by the impoundment. A 2-year restoration extension may be requested under section 3216(g) of the act (relating to well site restoration). If written consent is obtained from the landowner, the requirement to return the site to approximate original contours may be waived by the Department if the liner is removed from the impoundment.

(g) Prior to storing mine influenced water in a freshwater impoundment, the operator shall develop a mine influenced water storage plan and submit it to the Department for approval.

(1) The mine influenced water storage plan shall be submitted on forms provided by the Department and include the following:

(i) A demonstration that the escape of the mine influenced water stored in the freshwater impoundment will not result in air, water or land pollution, or endanger persons or property .

(ii) A procedure and schedule to test the mine influenced water. This testing shall be conducted at the source prior to storage in the impoundment.

(iii) A records retention schedule for the mine influenced water test results.

(2) An operator with an approved mine influenced water storage plan shall maintain records of all mine influenced water testing prior to storage. These records shall be made available to the Department upon request.

(h) The Department may require the operator to test water sources proposed to be stored in a freshwater impoundment prior to storage.

§ 78a.59c. Centralized impoundments.

(a) A well operator proposing to build a centralized impoundment that is also classified as hazard potential category 4 and size category C under § 105.91 (relating to classification of dams and reservoirs) shall obtain a permit on forms provided by the Department prior to construction of the impoundment and comply with this section. An operator proposing to build a centralized impoundment that is also classified as hazard potential category 1, 2 or 3 or size category A or B under § 105.91 shall obtain a permit from the Department prior to construction of the impoundment and comply with Chapter 105 (relating to dam safety and waterway management).

(b) The embankment of the centralized impoundment shall meet the requirements of § 78a.59a (relating to impoundment embankments).

(c) Centralized impoundments may not be constructed in any portion of the following areas:

(1) In a floodplain of waters of the Commonwealth as defined in section 3215(f)(5) of the act (relating to well location restrictions) .

(2) In or within 100 feet measured horizontally of a wetland greater than 1 acre in size.

(3) In areas underlain by limestone or carbonate formations where the formations are greater than 5 feet thick and present at the uppermost geologic unit. These areas include areas mapped by the Pennsylvania Geological Survey as underlain by the formations, unless competent geologic studies demonstrate the absence of limestone and carbonate formations.

(4) Within 500 feet measured horizontally from an occupied dwelling without the written consent of the owner of the building.

(5) Within 100 feet measured horizontally from any solid blue line stream, spring or body of water, except wetlands, identified on the most current 7.5 minute topographic quadrangle map of the United States Geological Survey.

(6) Within 500 feet measured horizontally of a private water supply without the written consent of the owner of the water supply.

(7) Within 1,000 feet measured horizontally of an existing water well, surface water intake, reservoir or other water supply extraction point used by a water purveyor without the written consent of the water purveyor.

(d) The bottom of the impoundment must be at least 20 inches above the seasonal high groundwater table. The applicant may request approval from the Department to use an alternative that maintains the required separation distance of 20 inches by artificial means such as an under-drain system throughout the lifetime of the impoundment, by submitting a request to the Department for approval. In no case shall the regional groundwater table be affected.

(e) Centralized impoundments shall be constructed with a liner system composed of the following components:

(1) A sub-base that:

(i) Bears the weight of the liner system, impounded fluid and equipment operating on the impoundment without causing or allowing a failure of the liner system.

(ii) Accommodates potential settlement without damage to the liner system.

(iii) Is compatible with the impounded fluid.

(iv) Covers the bottom and sidewalls of the impoundment.

(v) Is covered with nonwoven geotextile fabric to cushion the secondary liner and allow for adequate venting between the secondary liner and sub-base to prevent entrapment of gases beneath the liner system.

(vi) Is constructed of a natural clay material and include an upper 6 inches that is:

(A) Free of coarse rock fragments greater than 0.75 inch in diameter.

(B) Hard, uniform, smooth and free of debris, rock fragments, plant materials and other foreign material.

(C) No more permeable than 1.0 x 10-6 cm/sec. based on laboratory and field testing. Soil compaction and permeability testing shall be conducted on the bottom and sides at a minimum rate of once per 2,500 square feet.

(D) Compacted to a density of at least 95% standard proctor.

(2) A secondary liner that:

(i) Prevents the migration of fluid from the impoundment.

(ii) Is designed, constructed and maintained so that the physical and chemical characteristics of the liner are not adversely affected by the impounded fluid, and the liner is resistant to physical, chemical and other failure during transportation, handling, installation and use. Liner compatibility must satisfy ASTM Method D5747, Compatibility Test for Wastes and Membrane Liners.

(iii) Covers the bottom and sidewalls of the impoundment.

(iv) Is composed of a synthetic material with a coefficient of permeability not greater than 1.0×10^{-10} cm/sec. based on laboratory testing.

(v) Has a minimum thickness of 40 mil unless a greater thickness is recommended by the manufacturer's specifications.

(vi) Is installed according to manufacturer's specifications under the supervision of an authorized representative of the manufacturer. A Department-approved quality assurance and quality control plan shall be implemented in the field during the installation of the liner.

(vii) Is inspected for uniformity, damage and imperfections during construction and installation.

(viii) Uses of a composite secondary liner may not be substituted for a separate primary liner.

(3) A leak detection system that meets the following:

(i) Rapidly detects and collect liquid entering the leak detection zone, and rapidly transmit the liquid to a sump.

(ii) Withstands chemical attack from the water or wastewater being impounded.

(iii) Withstands anticipated loads, stresses and disturbances from impounded liquid.

(iv) Functions without clogging.

(v) Does not affect the primary or secondary liner by puncturing, cracking, tearing, stretching or otherwise losing its physical integrity.

(vi) Covers the bottom and sidewalls of the impoundment.

(vii) Creates a flow zone between the secondary liner and the primary liner equal to, or more permeable than 1.0 x 10^{-2} cm/sec. based on laboratory testing and, when required under the Department, field testing.

(viii) Contains a perforated piping system capable of detecting and intercepting liquid within the leak detection zone and conveying the liquid to a collection sump.

(A) The collection sump must be equipped with a sump pump with a switch to automatically activate the pump if a leak occurs.

(B) Discharge from the sump pump shall be directed back into the impoundment or other suitable containment. The sump may not have an outlet other than the sump pump discharge.

(C) The pump and sump must be of sufficient size and capacity to convey any leak that may occur back into the impoundment without a discharge.

(ix) A piping system that meets the following requirements:

(A) The slope, size and spacing of the piping system must ensure that liquids drain from the leak detection zone.

(B) The pipes shall be installed as close to perpendicular to the flow as practicable and must have a minimum post-settlement grade of at least 2%.

(C) The minimum diameter of the perforated pipe must be 4 inches with a wall thickness of Schedule-80 or greater as specified by ASTM, or equivalent.

(D) The pipes shall be cleaned and maintained as necessary to ensure the effectiveness of the system.

(x) A minimum bottom slope of 2%.

(xi) Designed to allow the operator to monitor and record leakage rates.

(xii) Not contain carbonate stones or aggregate with sharp edges.

(xiii) The operator shall monitor the leak detection zone weekly to determine whether liquid is flowing from the zone. These records shall be made available to the Department upon request.

(4) A primary liner that meets the following:

(i) The effectiveness of the primary liner may not be adversely affected by the physical or chemical characteristics of the impounded fluids from the impoundment.

(ii) Designed, constructed and maintained so that the physical and chemical characteristics of the liner are not adversely affected by the impounded fluid and be resistant to physical, chemical and other failure during transportation, handling, installation and use. Liner compatibility must satisfy ASTM Method D5747, Compatibility Test for Wastes and Membrane Liners, or other compatibility tests approved by the Department.

(iii) Cover the bottom and sidewalls of the impoundment.

(iv) Composed of a synthetic material with a coefficient of permeability not greater than 1.0 x 10^{-10} cm/sec. based on laboratory testing.

(v) A minimum thickness of 40 mil unless a greater thickness is required under manufacturer recommendations.

(vi) Installed according to manufacturer's specifications under the supervision of an authorized representative of the manufacturer. A Department-approved quality assurance and quality control plan shall be implemented in the field during the installation of the liner.

(vii) Inspected for uniformity, damage and imperfections during construction and installation.

(viii) Use of a composite primary liner does not relieve the operator of responsibility for a separate secondary liner.

(ix) Allowable leakage rates through the primary liner shall be determined based upon the maximum depth of the impounded fluid as specified in Table 1. The area shall be calculated as the area of the liner in contact with the impounded fluid. Weekly leakage rates shall be documented and provided to the Department upon request. These records shall be made available to the Department upon request.

Table 1

Fluid Height (ft)	***Allowable Leakage Rate (gallons/acre/day)***
h≤10	**340**
10<h≤15	**420**
15<h≤20	**490**
20<h≤25	**550**

25<h≤30	**610**
h>30	**case by case**

(x) In the event that the flow rate of leakage through the primary liner, as collected in the leak detection sump, exceeds the value in Table 1 for a given fluid depth, the operator shall notify the Department within 24 hours, drain the impoundment to the extent necessary to repair the impoundment and shall repair the impoundment. The notice shall be made electronically to the Department through its web site.

(f) An operator that intends to construct a centralized impoundment shall initially complete a baseline hydrogeologic investigation to document background conditions under this subsection.

(1) The investigation shall determine the groundwater flow beneath the site and adjacent area, based on an initial round of water quality testing, a groundwater elevation study and a review of reasonably available secondary source information. The results of the initial round of water quality testing shall be submitted with the permit application.

(2) A second round of testing, including water quality testing and water level measurements, shall also be completed. The second round of testing shall be conducted between 90 and 120 calendar days from the initial round of testing. The results of the second round of water quality testing may be submitted after the permit application is submitted. The Department will not make a decision on the permit application until the operator submits the results of the second round of water quality testing.

(3) The water quality testing required under this subsection must include the constituents in subsection (i)(6).

(4) If during the groundwater elevation study, soil mottling is apparent within the intended confines of the impoundment or within 20 inches of its base, or if the seasonal high water table will be adjusted using engineering controls to accommodate the impoundment, the requirements of §§ 289.121—289.123 (relating to description of geology, soils and hydrology; general requirements; geology and groundwater description; and groundwater quality description) shall be followed and the groundwater monitoring period will be extended to four quarterly tests.

(5) Only passive drainage systems that lower the seasonal high water table and do not alter the supply of receiving water bodies or downgradient groundwater users may be utilized to adjust the seasonal high groundwater table.

(g) An operator that operates a centralized impoundment shall install, operate and maintain a water quality monitoring system that can detect the entry of regulated substances into the groundwater or surface water. The water quality monitoring system must accurately characterize groundwater flow, groundwater chemistry and flow systems on the site and adjacent area. The system must include the following:

(1) A minimum of one monitoring well at a point hydraulically upgradient from the impoundment area in the direction of increasing static head that is capable of providing representative data of groundwater not affected by the impoundment, except when the impoundment occupies the most upgradient position in the flow system. In that case, sufficient down gradient monitoring wells shall be placed to determine the extent of adverse effects on groundwater from the impoundment in the event of a liner system failure.

(2) A minimum of three monitoring wells at points hydraulically downgradient in the direction of decreasing static head from the area around a centralized impoundment. In addition to the downgradient wells, the Department may allow one or more springs for monitoring points if the springs are hydraulically downgradient from the impoundment, if the springs are developed and protected in a manner approved by the Department and if the springs otherwise meet the requirements of this subchapter.

(h) The upgradient and downgradient monitoring wells must be:

(1) Sufficient in number, location and depth to accurately characterize water quality.

(2) Located so that they do not interfere with routine operations.

(3) Located within 200 feet of the permitted centralized impoundment and at least 100 feet closer to the centralized impoundment than the nearest private drinking water well, except as necessary to comply with paragraph (4).

(4) Upgradient monitoring wells must be located so that they will not be affected by adverse effects on groundwater from the impoundment.

(5) Downgradient monitoring wells must be located so that they provide early detection of adverse effects on groundwater from the impoundment.

(6) Decontaminated prior to installation.

(i) Monitoring wells and casing of monitoring wells shall be constructed as follows:

(1) The casing must maintain the integrity of the monitoring well borehole and shall be constructed of material that will not react with the groundwater being monitored.

(2) The minimum casing diameter must be 4 inches unless otherwise approved by the Department in writing.

(3) The well shall be constructed with a screen that meets the following requirements:

(i) The screen shall be factory-made.

(ii) The screen may not react with the groundwater being monitored.

(iii) The screen must maximize open area to minimize entrance velocities and allow rapid sample recovery.

(iv) The well shall be filter-packed with chemically inert clean quartz sand, silica or glass beads. The material must be well rounded and dimensionally stable.

(v) The casing must be clearly visible and protrude at least 1 foot above the ground, unless the Department has approved flush mount wells.

(vi) The annular space above the sampling depth must be sealed to prevent contamination of samples and the groundwater.

(vii) The casing shall be designed and constructed in a manner that prevents cross contamination between surface water and groundwater.

(viii) Alternative casing designs for wells in stable formations may be approved by the Department.

(4) Monitoring well casings shall be enclosed in a protective casing that:

(i) Is of sufficient strength to protect the well from damage by heavy equipment and reasonably protected from the unauthorized acts of third parties.

(ii) Is installed for at least the upper 10 feet of the monitoring well, as measured from the well cap, with a maximum above grade surface of 3 feet, unless otherwise approved by the Department in writing.

(iii) Is cemented and placed with a concrete collar at least 3 feet deep to hold it firmly in position.

(iv) Is numbered for identification with a label capable of withstanding field conditions and painted in a clearly visible color.

(v) Protrudes above the monitoring well casing.

(vi) Has a lockable cap.

(vii) Is made of steel or another material of equivalent strength.

(5) Analyses of data collected shall be submitted to the Department within 60 calendar days of sampling or 15 calendar days after completion of analyses, whichever is sooner, unless the Department approves another time period.

(6) Water samples shall be collected from monitoring wells on a minimum frequency of once per calendar quarter and at a minimum, analyzed for the following parameters:

(i) Total dissolved solids.

(ii) Total chloride.

(iii) Total sulfates.

(iv) pH.

(v) Specific conductance.

(vi) Total iron.

(vi) Other parameters specified by the Department.

(j) Plans, specifications and reports for site characterization and groundwater testing systems required under this section shall be prepared and sealed by a registered professional geologist.

(k) The design engineer shall provide oversight for all aspects of impoundment construction to ensure that construction is completed in accordance with the design and quality assurance and quality control plan.

(l) Plans, specifications and reports for centralized impoundments required under this section must reasonably ensure mechanical integrity of the structure and function, be prepared by a registered professional engineer and be affixed with the engineer's seal and a certification which reads as follows:

> **I (name) do hereby state to the best of my knowledge, information and belief that the information contained in the plans specifications and reports have been prepared in accordance with accepted environmental practices and the design and construction standards for centralized impoundment dams and Chapters 105 and 78 of the Rules and Regulations of the Department of Environmental Protection and is true and correct.**

(m) Upon completion of construction of the impoundment, a facility completion and final certification report shall be submitted to the Department. The report must be completed and sealed by the licensed Pennsylvania professional engineer who provided oversight for construction and must contain the following items at a minimum:

(1) A statement that the engineer provided oversight for all aspects of construction.

(2) Soils classification testing results for the embankments.

(3) Soil compaction testing results for the sub-base, and for the clay portion of the secondary liner if a natural or remolded clay liner is used.

(4) As-built drawings noting any deviation from the original plans approved by the Department.

(5) Quarry tickets for drain material.

(6) Quality assurance and quality control test results.

(7) Color photographs of the following, at a minimum:

(i) The cleared and grubbed foundation.

(ii) Leak detection system installation.

(iii) Placement and compaction of fill.

(iv) The completed embankments.

(v) The completed sub-base.

(vi) The completed secondary liner

(8) The impoundment may not be used until the facility completion and final certification report is received and approved by the Department. The Department will make a determination on the facility completion and final notification report within 30 business days.

(n) Centralized impoundments shall be restored according to the following requirements:

(1) Within 9 months of completion of drilling the last well serviced by the impoundment or the expiration of the last well permit that the impoundment was intended to service. The impoundment shall be restored by removing any impermeable membrane, concrete and earthen liner so that water movement to subsoils is achieved. A 2-year restoration extension may be requested under section 3216(g) of the act (relating to well site restoration).

(2) The site shall be restored to approximate original conditions including preconstruction contours.

(3) The site shall support the land uses that existed prior to oil and gas activities to the extent practicable.

(4) Excavated impoundments shall be backfilled above finished grade to allow for settlement and so the impoundment will no longer impound water.

(o) The owner or operator may request approval from the Department to deviate from the requirements in this section in the permit application. The request must demonstrate that the alternate practice provides equivalent or superior protection to the requirements of this section.

§ 78a.60. Discharge requirements.

(a) The owner and operator may not cause or allow a discharge of a substance**, fill or dredged material** to the waters of this Commonwealth unless the discharge complies with this subchapter and Chapters 91—93, 95 **[and],** 102 **and 105**, The Clean Streams Law (35 P.S. §§ 691.1—691.1001), **the Dam Safety and Encroachments Act (32 P.S. §§ 693.1—693.27)** and the act.

(b) The owner and operator may not discharge tophole water or water in a pit as a result of precipitation by land application unless the discharge is in accordance with the following requirements:

(1) No additives, drilling muds, pollutional materials or drilling fluids other than gases or fresh water have been added to or are contained in the water, unless otherwise approved by the Department.

(2) The pH is not less than 6 nor greater than 9 standard units, or is characteristic of the natural background quality of the groundwater.

(3) The specific conductance of the discharge is less than 1,000 µmHos/cm.

(4) There is no sheen from oil and grease.

(5) The discharge water shall be spread over an undisturbed, vegetated area capable of absorbing the tophole water and filtering solids in the discharge, and spread in a manner that prevents a direct discharge to surface waters and complies with § **78a.**53 (relating to erosion and sedimentation control).

(6) Upon completion, the area complies with § **78a.**53.

(7) The area of land application is not within 200 feet of a water supply or within 100 feet of a **[stream,] watercourse or** body of water **[or a wetland]** unless approved as part of a waiver granted by the Department under section **[205(b) of the act (58 P.S. § 601.205(b))] 3215(b) of the act (relating to well location restrictions).**

(8) If the water does not meet the requirements of paragraph (2) or (4), the Department may approve treatment prior to discharge to the land surface.

(c) Compliance with subsection (b) shall be documented by the operator and made available to the Department upon request while conducting activities under subsection (b) and submitted under § 78a.65(f)(1) (relating to site restoration).

§ 78a.61. Disposal of drill cuttings.

(a) *Drill cuttings from above the casing seat—pits.* The owner or operator may dispose of drill cuttings from above the casing seat determined in accordance with **[§ 78.83(b)] § 78a.83(c)** (relating to surface and coal protective casing and cementing procedures) in a pit at the well site if the owner or operator satisfies the following requirements:

(1) The drill cuttings are generated from the well at the well site.

(2) The drill cuttings are not contaminated with **[pollutional material] a regulated substance**, including brines, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids or drilling fluids other than tophole water, fresh water or gases.

(3) The disposal area is not within 100 feet of a **[stream, or a wetland] watercourse or** body of water unless approved as part of a waiver granted by the Department under section **[205(b) of the act (58 P.S. § 601.205(b))] 3215(b) of the act (relating to well location restrictions)**.

(4) The disposal area is not within 200 feet of a water supply.

(5) The pit is designed, constructed and maintained to be structurally sound.

(6) The free liquid fraction of the waste shall be removed and disposed under § **78a.**60 (relating to discharge requirements).

(7) The pit shall be backfilled to the ground surface and graded to promote runoff with no depression that would accumulate or pond water on the surface. The stability of the backfilled pit shall be compatible with the adjacent land.

(8) The surface of the backfilled pit area shall be revegetated to stabilize the soil surface and comply with § 78**a**.53 (relating to erosion and **[sedimentation] sediment** control). The revegetation shall establish a diverse, effective, permanent, vegetative cover which is capable of self-regeneration and plant succession. Where vegetation would interfere with the intended use of the surface of the landowner, the surface shall be stabilized against erosion.

(b) *Drill cuttings from above the casing seat—land application.* The owner or operator may dispose of drill cuttings from above the casing seat determined in accordance with **[§ 78.83(b)] § 78a.83(c)**by land application at the well site if the owner or operator satisfies the following requirements:

(1) The drill cuttings are generated from the well at the well site.

(2) The drill cuttings are not contaminated with **[pollutional material] a regulated substance**, including brines, drilling muds, stimulation fluids, well servicing fluids, oil, production fluids or drilling fluids other than tophole water, fresh water or gases.

(3) The disposal area is not within 100 feet of a **[stream,]** **watercourse or** body of water **[or wetland]** unless approved as part of a waiver granted by the Department under section **[205(b) of the act (58 P.S. § 601.205(b))]** **3215(b) of the act (relating to well location restrictions)**.

(4) The disposal area is not within 200 feet of a water supply.

(5) The soils have a minimum depth from surface to bedrock of 20 inches.

(6) The drill cuttings are not spread when saturated, snow covered or frozen ground interferes with incorporation of the drill cuttings into the soil.

(7) The drill cuttings are not applied in quantities which will result in runoff or in surface water or groundwater pollution.

(8) The free liquid fraction is disposed in accordance with § **78a.**60.

(9) The drill cuttings are spread and incorporated into the soil. **The loading and application rate of drill cuttings may not exceed a maximum of drill cuttings to soil ratio of 1:1.**

(10) The land application area shall be revegetated to stabilize the soil surface and comply with § 78**a**.53. The revegetation shall establish a diverse, effective permanent vegetative cover which is capable of self-regeneration and plant succession. Where vegetation would interfere with the intended use of the surface by the landowner, the surface shall be stabilized against erosion.

(c) *Drill cuttings from below the casing seat.* After removal of the free liquid fraction and disposal in accordance with § 78**a**.60, drill cuttings from below the casing seat determined in accordance with **[§ 78.83(b)]** **§ 78a.83(c)** may be disposed of as follows:

(1) In a pit that meets the requirements of **[§ 78.62(a)(5)—(18)]** **§ 78a.62(a)(5)—(16)** and (b) (relating to disposal of residual waste—pits).

(2) By land application in accordance with § **78a.**63(a)(5)—(20) and (b) (relating to disposal of residual waste—land application).

(d) The owner or operator may request to use solidifiers, dusting, unlined pits, attenuation or other alternative practices for the disposal of uncontaminated drill cuttings by submitting a request to the Department for approval. The request shall be made on forms provided by the Department and shall demonstrate that the practice provides equivalent or superior protection to the requirements of this section. **The Department will maintain a list of approved solidifiers on its web site. The operator does not need to request approval from the Department for use of approved solidifiers.**

(e) A pit used for the disposal of residual waste, including contaminated drill cuttings, shall comply with § 78**a**.62. Land application of residual waste, including contaminated drill cuttings, shall comply with § 78**a**.63.

(f) The owner or operator shall notify the Department at least 3 business days before disposing of drill cuttings under this section. This notice shall be submitted electronically to the Department through its web site and include the date the cuttings will be disposed. If the date of disposal is extended, the operator shall re-notify the Department of the date of disposal, which does not need to be 3 business days in advance.

§ 78a.62. Disposal of residual waste—pits.

(a) After the removal and disposal of the free liquid fraction of the waste under § **78a.**60(a) (relating to discharge requirements), the owner or operator may dispose of residual waste, including contaminated drill cuttings, in a pit at the well site if the owner or operator satisfies the following requirements:

(1) The **residual** waste is generated by the drilling **[or production] or stimulation** of an oil or gas well that is located on the well site where the **residual** waste is disposed. **Solid waste generated by hydraulic fracturing of unconventional wells and solid waste generated by processing of fluids under § 78a.58 (relating to onsite processing), may not be disposed of on the well site.**

(2) The well is permitted under section **[201 of the act (58 P.S. § 601.201)] 3211 of the act (relating to well permits)** or registered under section **[203 of the act (58 P.S. § 601.203)] 3213 of the act (relating to well registration and identification)**.

(3) The requirements of section **[215 of the act (58 P.S. § 601.215)] 3225 of the act (relating to bonding)** are satisfied by filing a surety or collateral bond for wells drilled on or after April 18, 1985.

(4) Compliance is maintained with the act and this title.

(5) The owner or operator shall notify the Department at least 3 business days before disposing residual waste according to this section. This notice shall be submitted electronically to the Department through its web site and include the date the residual waste will be disposed. If the date of disposal changes, the operator shall re-notify of the new proposed date of disposal.

[(5)] (6) The disposal area is not within 200 feet measured horizontally from an existing building, unless the current owner thereof has provided a written waiver consenting to the disposal closer than 200 feet. The waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the current owner.

[(6)] (7) The disposal area is not within 100 feet of a **[stream,] watercourse or** body of water **[or wetland]**.

[(7)] (8) The disposal area is not within 200 feet of a water supply.

[(8)] **(9)** The bottom of the pit is a minimum of 20 inches above the seasonal high groundwater table. **The well operator shall determine that the pit bottom is at least 20 inches above the seasonal high groundwater table prior to using the pit. The determination shall be made by a soil scientist or other similarly trained person using accepted and documented scientific methods. The individual's determination shall contain a statement certifying that the pit bottom is at least 20 inches above the seasonal high groundwater table according to observed field conditions. The name, qualifications and statement of the individual making the determination and the basis of the determination shall be provided to the Department upon request.**

[(9)] **(10)** The pit is designed, constructed and maintained to be structurally sound and impermeable.

[(10) The pit is lined with a synthetic flexible liner that is compatible with the waste and has a coefficient of permeability of no greater than 1 x 10^{-7} cm/sec. The liner shall be of sufficient strength and thickness to maintain the integrity of the liner. The liner thickness shall be at least 30 mils. Adjoining sections of liners shall be sealed together in accordance with the manufacturer's directions to prevent leakage. The operator may use an alternate liner or natural materials, if the material and the installation procedure to be used are approved by the Department. Notice of the approved liners and installation procedures will be published by the Department in the *Pennsylvania Bulletin*.

(12) The liner shall be designed, constructed and maintained so that the physical and chemical characteristics of the liner are not adversely affected by the waste and the liner is resistant to physical, chemical and other failure during transportation, handling, installation and use. Liner compatibility shall satisfy EPA Method 9090, *Compatibility Test for Wastes and Membrane Liners*, or other documented data approved by the Department.

(13) The pit shall be constructed so that the liner subbase is smooth, uniform and free of debris, rock and other material that may puncture, tear, cut, rip or otherwise cause the liner to fail. The liner subbase and subgrade shall be capable of bearing the weight of the material above the liner without settling. If the pit bottom or sides consist of rock, shale or other material that may cause the liner to fail and leak, a subbase of at least 6 inches of soil, sand or smooth gravel, or sufficient amount of an equivalent material shall be installed over the area as the subbase for the liner.

(14) Prior to placing material in the pit, the liner shall be inspected for lack of uniformity, damage and other imperfections that may cause the liner to leak. The owner or operator shall correct damages or imperfections before placing waste in the pit, and shall maintain the pit until closure of the pit.]

(11) The pit and liner meet the requirements of § 78a.56(a)(8)—(10) (relating to temporary storage).

[(14)] **(12)** Prior to encapsulating the **residual** waste within the liner, the free liquid fraction of the **residual** waste shall be removed and disposed under § 78**a**.60(a).

[(15)] **(13)** The liner shall be folded over, or an additional liner shall be added, to completely cover the **residual** waste and the **residual** waste is shaped so that water does not infiltrate the liner and is not confined above the liner.

[(16)] **(14)** Puncturing or perforating the liner is prohibited.

[(17)] **(15)** The pit shall be backfilled to at least 18 inches over the top of the liner and graded to promote runoff with no depressions that would accumulate or pond water on the surface. The stability of the backfilled pit shall be compatible with the adjacent land.

[(18)] **(16)** The surface area of the backfilled pit area shall be revegetated to stabilize the soil surface and comply with § 78**a**.53 (relating to erosion and **[sedimentation]** **sediment** control). The revegetation shall establish a diverse, effective permanent vegetative cover which is capable of self-regeneration and plant succession. Where vegetation would interfere with the intended use of the surface by the landowner, the surface shall be stabilized against erosion.

(b) A person may not dispose of **residual** waste, including contaminated drill cuttings, at the well site unless the **residual** waste meets the following requirements:

(1) The concentration of contaminants in the leachate from the **residual** waste does not exceed 50% of the maximum concentration in **[§ 261.24 Table I (relating to characteristic of toxicity)]** **40 CFR 261.24 Table 1 (relating to maximum concentration of contaminants for the toxicity characteristic)**.

(2) The concentration of contaminants in the leachate from the **residual** waste does not exceed 50 times the primary maximum contaminant level in effect under § 109.202 (relating to State MCLs, MRDLs and treatment technique requirements).

(3) For other health related contaminants, the concentration of contaminants in the leachate from the **residual** waste does not exceed 50 times the safe drinking water level established by the Department.

(4) Leachate characteristics are determined in accordance with methods approved by the Department.

(c) The owner or operator may request to use solidifiers or other alternate practices for the disposal of residual waste, including contaminated drill cuttings, by submitting a request to the Department for approval. The request shall be made on forms provided by the Department and shall demonstrate that the practice provides equivalent or superior protection to the requirements of this section.

§ 78a.63. Disposal of residual waste—land application.

(a) The owner or operator may dispose of residual waste, including contaminated drill cuttings, at the well site by land application of the waste if the owner or operator satisfies the following requirements:

(1) The **residual** waste is generated by the drilling **[or production]** of an oil or gas well that is located on the well **[side] site**. **Residual waste generated by hydraulic fracturing of unconventional wells and residual waste generated by processing under § 78a.58 (relating to onsite processing), may not be disposed of by land application.**

(2) The well is permitted under section **[201 of the act (58 P.S. § 601.201)] 3211 of the act (relating to well permits)** or registered under section **[203 of the act (58 P.S. § 601.203)] 3213 of the act (relating to well registration and identification)**.

(3) The requirements of section **[215 of the act (58 P.S. § 601.215)] 3225 of the act (relating to bonding)** are satisfied by filing a surety or collateral bond for wells drilled on or after April 18, 1985.

(4) Compliance with the act and this title is maintained.

(5) The owner or operator shall notify the Department **electronically through its web site** at least 3 **[working] business** days before the land application activity is to occur. **The notification must include the date on which the land application is to occur. If the date of land application is extended, the operator shall re-notify the Department of the new proposed date, which does not need to be 3 business days in advance.**

(6) The waste application area is not within 200 feet measured horizontally from an existing building, unless the current owner thereof has provided a written waiver consenting to the application closer than 200 feet. The waiver shall be knowingly made and separate from a lease or deed, unless the lease or deed contains an explicit waiver from the current owner.

(7) The waste application area is not within 100 feet of a stream, body of water or wetland.

(8) The waste application area is not within 200 feet of a water supply and is not within 1,000 feet upgradient from an uncased well or spring being used as a water supply.

(9) At a minimum, the seasonal high groundwater table is 20 inches from the surface.

(10) The soils located within and immediately adjacent to the application area shall fall within the United States Department of Agriculture textural classes of sandy loam, loam, sandy clay loam, silty clay loam or silt loam.

(11) The soils have a minimum depth from surface to bedrock of 20 inches.

(12) Ground slopes to be utilized for waste applications do not exceed 25%.

(13) The waste is not spread when the ground is saturated, or when snow or frozen ground would interfere with incorporation of the waste into the soil.

(14) Prior to land application of the waste, the free liquid fraction of the waste is removed and disposed under § **78a.**60(a) (relating to discharge requirements).

(15) The waste is not applied in quantities which will result in surface or groundwater pollution.

(16) The waste is not applied in quantities that will adversely affect the intended use of the vegetation.

(17) The waste is spread and incorporated into the top layer of the soil to a depth of at least 6 inches.

(18) The loading and application rate of waste is consistent with the Departmental guidelines for the proposed operation and may not exceed a maximum waste to soil ratio of 1:1.

(19) To determine compliance with this section, the Department may require the owner or operator to conduct soil surveys, monitoring or chemical analysis.

(20) The land application area shall be revegetated to stabilize the soil surface and comply with **[§ 78.53]** **Chapter 102** (relating to erosion and **[sedimentation]** **sediment** control). The revegetation shall establish a diverse, effective permanent vegetative cover which is capable of self-regeneration and plant succession. Where vegetation would interfere with the intended use of the surface by the landowner, the surface shall be stabilized against erosion.

(21) If **[a chemical]** **additional** analysis **conducted under paragraph (19)** fails to show compliance with **[paragraph (18)]** **this section**, the owner or operator shall remediate the land application area until compliance is demonstrated.

(b) A person may not dispose of residual waste, including contaminated drill cuttings, at the well site unless the concentration of contaminants in the leachate from the waste does not exceed the maximum concentration stated in **[§ 261.24 Table I (relating to characteristic of toxicity)]** **40 CFR 261.24 Table 1 (relating to maximum concentration of contaminants for the toxicity characteristic)**.

(c) The owner or operator may request to dispose of residual waste, including contaminated drill cuttings, in an alternate manner from that required in subsection (a) by submitting a request to the Department for approval. The request shall be made on forms provided by the Department and shall demonstrate that the practice provides equivalent or superior protection to the requirements of this section.

(d) The operator shall document compliance with subsection (b) and be made available to the Department upon request while conducting activities under subsection (a) and shall be submitted under § 78a.65(f)(7) (relating to temporary storage).

§ 78**a**.64. Containment around oil **and condensate** tanks.

(a) If an owner or operator uses a tank with a capacity of at least 660 gallons or tanks with a combined capacity of at least 1,320 gallons to contain oil **or condensate** produced from a well, the owner or operator shall construct and maintain a dike or other method of secondary containment which satisfies the requirements under 40 CFR 112 (relating to oil pollution prevention) around the tank or tanks which will prevent the tank contents from entering waters of this Commonwealth.

(b) The containment area provided by the dikes or other method of secondary containment shall have containment capacity sufficient to hold the volume of the largest single tank, plus a reasonable allowance for precipitation based on local weather conditions and facility operation.

(c) Prior to drainage of accumulated precipitation from containment structures, the containment area shall be inspected and accumulations of oil picked up and returned to the tank or disposed of in accordance with approved methods.

(d) After complying with subsection (c), drainage of containment facilities is acceptable if:

(1) The accumulation in the containment facility consists of only precipitation directly to the containment facility and drainage will not cause a harmful discharge or result in a sheen.

(2) The containment drain valve is opened and resealed, or other drainage procedure, as applicable, is conducted under responsible supervision.

§ 78a.64a. Containment systems and practices at unconventional well sites.

(a) This section applies to unconventional well sites.

(b) Well sites shall be designed and constructed using containment systems and practices that prevent spills of regulated substances to the ground surface and to prevent spills from leaving the well site.

(c) All regulated substances, including solid wastes and other regulated substances in equipment or vehicles, shall be managed within a containment system. This subsection does not apply to fuel stored in equipment or vehicle fuel tanks unless the equipment or vehicle is being refueled at the well site.

(d) Pits and centralized impoundments that comply with this chapter are deemed to meet the requirements of this section.

(e) Containment systems must meet all of the following:

(1) c be used on the well site when any equipment that will be used for any phase of drilling, casing, cementing, hydraulic fracturing or flowback operations is brought onto a well site and when regulated substances including drilling mud, drilling mud additives,

hydraulic oil, diesel fuel, hydraulic fracturing additives or flowback are brought onto or generated at the well site.

(2) A containment system must have a coefficient of permeability no greater than 1 x 10^{-10} cm/sec.

(3) The physical and chemical characteristics of all liners, coatings or other materials used as part of the containment system, that could potentially come into direct contact with regulated substances being stored, must be compatible with the regulated substance and be resistant to physical, chemical and other failure during handling, installation and use. Liner compatibility shall satisfy ASTM Method D5747, Compatibility Test for Wastes and Membrane Liners, or other standards as approved by the Department.

(f) An operator shall utilize secondary containment when storing additives, chemicals, oils or fuels. The secondary containment must have sufficient containment capacity to hold the volume of the largest container within the secondary containment area plus 10% to allow for precipitation, unless the container is equipped with individual secondary containment such as a double walled tank. Tanks that are manifolded together shall be designed in a manner to prevent the uncontrolled discharge of multiple manifolded tanks. A well site liner that is not used in conjunction with other containment systems does not constitute secondary containment for the purpose of this subsection.

(g) Subsurface secondary containment systems may be employed at the well site. Subsurface secondary containment must meet the following requirements:

(1) Subsurface secondary containment systems must have a coefficient of permeability of no greater than 1 x 10^{-10} cm/sec with sufficient strength and thickness to maintain the integrity of the containment system. The thickness of a subsurface containment system must be at least 30 mils. Adjoining sections of the subsurface containment system must be sealed together, in accordance with the manufacturer's directions, to prevent leakage. All seams of the adjoining sections shall have their integrity tested prior to being covered.

(2) Subsurface secondary containment systems must be designed to allow for the management or removal of stormwater.

(3) Subsurface secondary containment systems must be designed and installed in a manner that prevents damage to the system by the sub-base or the movement of equipment or other activities on the surface.

(4) Subsurface secondary containment systems may not be used to store regulated substances.

(5) A written standard of operational procedure for the inspection, maintenance and repair of the subsurface secondary containment system shall be included in the preparedness, prevention and contingency plan.

(h) All surface containment systems shall be inspected weekly to ensure integrity. If the containment system is damaged or compromised, the well operator shall repair the containment system as soon as practicable. The well operator shall maintain records of any repairs until the well site is restored. Stormwater shall be removed as soon as possible and prior to the capacity of secondary containment being reduced by 10% or more.

(i) Regulated substances that escape from primary containment or are otherwise spilled onto a containment system shall be removed as soon as possible. After removal of the regulated substances the operator shall inspect the containment system. A Department-approved leak detection system capable of rapidly detecting a leak shall satisfy the requirement to inspect the integrity of a subsurface containment system. Groundwater monitoring wells do not constitute a leak detection system for the purpose of this subsection. If the containment system did not completely contain the material, the operator shall notify the Department and remediate the affected area in accordance with § 78a.66 (relating to reporting and remediating releases).

(j) Stormwater that comes into contact with regulated substances stored within the secondary containment area shall be managed as residual waste.

(k) Inspection reports and maintenance records shall be available at the well site for review by the Department.

(l) Documentation of chemical compatibility of containment systems with material stored within the system shall be provided to the Department upon request.

§ 78a.65. Site restoration.

[In addition to complying with section 206 of the act (58 P.S. § 601.206), an owner or operator shall meet the following requirements:]

(a) The owner or operator shall restore the land surface within the area disturbed under section 3216 of the act (relating to well site restoration) and Chapter 102 (relating to erosion and sediment control).

[(1)] (b) A drill hole or bore hole used to facilitate the drilling of a well shall be filled with cement, soil, **uncontaminated** drill cuttings or other earthen material before moving the drilling equipment from the well site.

[(2)] (c) If a well site is constructed and the well is not drilled, the well site shall be restored within 30 **calendar** days after the expiration of the well permit unless the Department approves an extension for reasons of adverse weather or lack of essential fuel, equipment or labor.

(d) Within 9 months after completion of drilling a well, the owner or operator shall restore the well site, remove or fill all pits used to contain produced fluids or residual wastes and remove all drilling supplies, equipment and containment systems not needed for production. When multiple wells are drilled on a single well site, post-drilling restoration is

required within 9 months after completion of drilling all permitted wells on the well site or 30 calendar days after the expiration of all existing well permits on the well site, whichever occurs later. Drilling supplies and equipment not needed for production may only be stored on the well site if express written consent of the surface landowner is obtained and, for unconventional well sites, the supplies or equipment are maintained in accordance with § 78a.64a (relating to containment systems and practices at unconventional well sites).

(1) An area is restored under this subsection if the following are met:

(i) All permanent post-construction stormwater control features as identified in the PCSM plan or site restoration plan are in place consistent with § 102.8 (relating to PCSM requirements.).

(ii) Remaining impervious areas are minimized. Impervious areas include areas where the soil has been compacted, areas where the soil has been treated with amendments to firm or harden the soil and areas where soil is underlain with an impermeable liner.

(iii) All areas of the site not needed to safely operate the well are restored to approximate original conditions, including preconstruction contours, and can support the land uses that existed prior to oil and gas activities to the extent practicable. The areas needed to safely operate the well include to the following:

(A) Areas used for service vehicle and rig access.

(B) Areas used for storage tanks and secondary containment facilities.

(C) Areas used for wellheads and appurtenant processing facilities.

(D) Area used for any necessary safety buffer limited to the area surrounding equipment that is physically cordoned off to protect the facilities.

(E) Area used to store any supplies or equipment consented to by the surface landowner.

(F) Area used for operation and maintenance of long-term PCSM best management practices.

(iv) Earth disturbance associated with oil and gas activities that are not included in an approved site restoration plan, and other remaining impervious surfaces, must comply with all post-construction stormwater management requirements in Chapter 102.

(v) The site is permanently stabilized according to § 102.22(a) (relating to site stabilization).

(2) The restoration period in this subsection may be extended by the Department for an additional period of time, not to exceed 2 years, upon demonstration by the well owner or operator of either of the following:

(i) The extension will result in less earth disturbance, increased water reuse or more efficient development of the resources.

(ii) Site restoration cannot be achieved due to adverse weather conditions or a lack of essential fuel, equipment or labor.

(3) The demonstration under paragraph (2) shall be submitted on forms provided by the Department 6 months after the completion of drilling for approval by the Department. The demonstration must include a site restoration plan that must provide for:

(i) The timely removal or fill of all pits used to contain produced fluids or residual wastes.

(ii) The removal of all drilling supplies and equipment not needed for production, including containment systems.

(iii) The stabilization of the well site that includes interim post-construction storm water management best management practices in compliance with § 102.8, including §§ 102.8(a)–(m).

(iv) Other measures to be employed to minimize accelerated erosion and sedimentation in accordance with The Clean Streams Law (35 P.S. §§ 691.1—691.1001).

(v) A minimum uniform 70% perennial vegetative cover over the disturbed area, with a density capable of resisting accelerated erosion and sedimentation, or a best management practice which permanently minimizes accelerated erosion and sedimentation.

(vi) The return of the portions of the site not occupied by production facilities or equipment to approximate original conditions, including preconstruction contours, and can support the land uses that existed prior to oil and gas activities to the extent practicable.

(4) Written consent of the landowner on forms provided by the Department satisfies the restoration requirements of this section provided the operator develops and implements a site restoration plan that complies with paragraph (3)(i)—(vi) and all PCSM requirements in Chapter 102.

(e) Within 9 months after plugging a well, the owner or operator shall remove all production or storage facilities, supplies and equipment and restore the well site to approximate original conditions, including preconstruction contours, and can support the land uses that existed prior to oil and gas activities to the extent practicable.

[(3)] (f) Within 60 **calendar** days after the restoration of the well site, the operator shall submit a well site restoration report to the Department. The report shall be made on forms provided by the Department and shall identify the following:

[(i)] (1) The date of land application of the tophole water, the results of pH and specific conductance tests and an estimated volume of discharge.

[(ii)] **(2)** A description of the method used for disposal or reuse of the free liquid fraction of the waste, and the name of the hauler and disposal facility, if any.

[(iii)] **(3)** The location**, including GPS coordinates,** of the pit in relation to the well, the depth of the pit, the type and thickness of the material used for the pit subbase, the type and thickness of the pit liner, the type and nature of the waste, **the type of any approved solidifier,** a description of the pit closure procedures used and the pit dimensions.

[(iv)] **(4)** The location of the area used for land application of the waste, and the results of a chemical analysis of the waste soil mixture if requested by the Department.

[(v)] **(5)** The types and volumes of waste produced and the name and address of the waste disposal facility and waste hauler used to dispose of the waste.

(6) The name, qualifications and basis for determination that the bottom of a pit used for encapsulation is at least 20 inches above the seasonal high groundwater table.

(7) The test results required under §§ 78a.62 and 78a.63 (relating to disposal of residual waste—pits; and disposal of residual waste—land application) for all unconventional wells [~~or any conventional wells with a horizontal well bore~~].

(g) The well operator shall forward a copy of the well site restoration report to the surface landowner if the well operator disposes of drill cuttings or residual waste at the well site.

§ 78**a**.66. Reporting **and remediating** releases.

[(a) A release of a substance causing or threatening pollution of the waters of this Commonwealth, shall comply with the reporting and corrective action requirements of § 91.33 (relating to incidents causing or threatening pollution).

(b) If a reportable release of brine on or into the ground occurs at the well site, the owner or operator shall notify the appropriate regional office of the Department as soon as practicable, but no later than 2 hours after detecting or discovering the release.

(c) The notice required under subsection (b) shall be by telephone and describe:

(1) The name, address and telephone number of the company and person reporting the incident.

(2) The date and time of the incident or when it was detected.

(3) The location and cause of the incident.

(4) The quantity of the brine released.

(5) Available information concerning the contamination of surface water, groundwater or soil.

(6) Remedial actions planned, initiated or completed.

(d) If, because of an accident, an amount of brine less than the reportable amount as described in § 78.1 (relating to definitions), spills, leaks or escapes, that incident does not have to be reported.

(e) Upon the occurrence of any release, the owner or operator shall take necessary corrective actions to:

(1) Prevent the substance from reaching the waters of this Commonwealth.

(2) Recover or remove the substance which was released.

(3) Dispose of the substance in accordance with this subchapter or as approved by the Department.]

(a) *Scope.* This section applies to reporting and remediating spills or releases of regulated substances on or adjacent to well sites and access roads.

(b) *Reporting releases*.

(1) An operator or responsible party shall report the following spills and releases of regulated substances to the Department in accordance with paragraph (2):

(i) A spill or release of a regulated substance causing or threatening pollution of the waters of this Commonwealth, shall comply with the following reporting and corrective action requirements:

(ii) A spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely contained by a containment system.

(2) In addition to the notification requirements of § 91.33 (relating to incidents causing or threatening pollution), the operator or responsible party shall contact the appropriate regional Department office by telephone or call the Department's Statewide toll free number at (800) 541-2050 as soon as practicable, but no later than 2 hours after discovering the spill or release. To the extent known, the following information shall be provided:

(i) The name of the person reporting the incident and telephone number where that person can be reached.

(ii) The name, address and telephone number of the responsible party.

(iii) The date and time of the incident or when it was discovered.

(iv) The location of the incident, including directions to the site, GPS coordinates or the 911 address, if available.

(v) A brief description of the nature of the incident and its cause, what potential impacts to public health and safety or the environment may exist, including any available information concerning the contamination of surface water, groundwater or soil.

(vi) The estimated weight or volume of each regulated substance spilled or released.

(vii) The nature of any injuries.

(viii) Remedial actions planned, initiated or completed.

(3) Upon the occurrence of any spill or release, the operator or responsible party shall take necessary corrective actions to prevent:

(i) The regulated substance from reaching the waters of the Commonwealth.

(ii) Damage to property.

(iii) Impacts to downstream users of waters of the Commonwealth.

(4) The Department may immediately approve temporary emergency storage or transportation methods necessary to prevent or mitigate harm to the public health, safety or the environment. Storage may be at the site of the incident or at a site approved by the Department.

(5) After responding to a spill or release, the operator shall decontaminate equipment used to handle the regulated substance, including storage containers, processing equipment, trucks and loaders, before returning the equipment to service. Contaminated wash water, waste solutions and residues generated from washing or decontaminating equipment shall be managed as residual waste.

(c) *Remediating releases.* Remediation of an area affected by a spill or release is required. The operator or responsible party shall remediate a release in accordance with one of the following:

(1) Spills or releases to the ground of less than 42 gallons at a well site that do not impact or threaten to pollute of waters of the Commonwealth may be remediated by removing the soil visibly impacted by the release and properly managing the impacted soil in accordance with the Department's waste management regulations. The operator or responsible party shall notify the Department of its intent to remediate a spill or release in accordance with this paragraph at the time the report of the spill or release is made. Completion of the

cleanup should be documented through the process outlined in § 250.707(b)(1)(iii)(B) (relating to statistical tests).

(2) For spills or releases to the ground of more than 42 gallons or that impact or threaten pollution of waters of the Commonwealth, the operator or responsible person may satisfy the requirements of this subsection by demonstrating attainment of one or more of the standards established by Act 2 and Chapter 250 (relating to administration of land recycling program).

(3) For releases of more than 42 gallons or that impact or threaten pollution waters of the Commonwealth, as an alternative to paragraph (2), the responsible party may remediate a spill or release using the Act 2 background or Statewide health standard in the following manner:

(i) Within 15 business days of the spill or release, the operator or responsible party shall provide an initial written report that includes, to the extent that the information is available, the following:

(A) The regulated substance involved.

(B) The location where the spill or release occurred.

(C) The environmental media affected.

(D) Impacts to water supplies, buildings or utilities.

(E) Interim remedial actions planned, initiated or completed.

(ii) The initial report must also include a summary of the actions the operator or responsible party intends to take at the site to address the spill or release such as a schedule for site characterization, to the extent known, and the anticipated timeframes within which it expects to take those actions. After the initial report, any new impacts identified or discovered during interim remedial actions or site characterization shall also be reported in writing to the Department within 15 calendar days of their discovery.

(iii) Within 180 calendar days of the spill or release, the operator or responsible party shall perform a site characterization to determine the extent and magnitude of the contamination and submit a site characterization report to the appropriate Department regional office describing the findings. The report must include a description of any interim remedial actions taken. For a background standard remediation, the site characterization must contain information required under § 250.204(b)—(e) (relating to final report). For a Statewide health standard remediation, the site characterization must contain information required under § 250.312(a) (relating to final report).

(iv) This report may be a final remedial action report if the interim remedial actions meets all of the requirements of an Act 2 background or Statewide health standard remediation

or combination thereof. Remediation conducted under this section may not be required to meet the notice and review provisions of these standards except as described in this section.

(v) If the site characterization indicates that the interim remedial actions taken did not adequately remediate the release the operator or responsible party shall develop and submit a remedial action plan to the appropriate Department regional office for approval. The plan is due within 45 calendar days of submission of the site characterization to the Department. Remedial action plans should contain the elements outlined in § 245.311(a) (relating to remedial action plan).

(vi) Once the remedial action plan is implemented, the responsible party shall submit a final report to the appropriate Department regional office for approval. The Department will review the final report to ensure that the remediation has met all the requirements of the background or Statewide health standard, or combination thereof, except the notice and review provisions. Relief from liability will not be available to the responsible party, property owner or person participating in the cleanup.

(vii) An operator or responsible party remediating a release under this paragraph may elect to utilize Act 2 at any time.

§ 78a.67. Borrow pits.

(a) An operator who owns or controls a borrow pit that does not require a permit under the Noncoal Surface Mining Conservation and Reclamation Act (52 P.S. §§ 3301—3326) under the exemption in section 3273.1(b) of the act (relating to relationship to solid waste and surface mining), regarding noncoal borrow areas for oil and gas well development, shall operate, maintain and reclaim the borrow pit in accordance with the performance standards in Chapter 77, Subchapter I and Chapter 102 (relating to environmental protection performance standards; and erosion and sediment control), and other applicable laws.

(b) Operators shall register the location of their existing borrow pits by _____, (*Editor's Note*: The blank refers to 60 calendar days the effective date of adoption of this proposed rulemaking.) **by providing the Department, in writing, with the GPS coordinates, township and county where the borrow pit is located. The operator shall register the location of a new borrow pit prior to construction.**

(c) Borrow pits used for the development of oil and gas well sites and access roads that no longer meet the conditions under section 3273.1 of the act (relating to relationship to solid waste and surface mining) must meet one of the following:

(1) Be restored within 9 months after completion of drilling all permitted wells on the well site or 30 calendar days after the expiration of all existing well permits on the well site, whichever occurs later in time.

(2) Obtain a noncoal surface mining permit for its continued use, unless relevant exemptions apply under the Noncoal Surface Mining Conservation and Reclamation Act and regulations promulgated thereunder. A 2-year extension of the restoration requirement may be approved under § 78a.65(d) (relating to site restoration).

§ 78a.68. Oil and gas gathering lines.

(a) All earth disturbance activities associated with oil and gas gathering line installations and supporting facilities are limited to the construction right-of-way, work space areas, pipe storage yards, borrow and disposal areas, access roads and other necessary areas identified on the erosion and sediment control plan.

(b) Highly visible flagging, markers or signs must be used to identify the shared boundaries of the limit of disturbance, wetlands and locations of threatened or endangered species habitat prior to land clearing. The flagging, markers or signs shall be maintained throughout earth disturbance activities and restoration or PCSM activities.

(c) The operator shall maintain topsoil and subsoil during excavation under the following, unless otherwise authorized by the Department:

(1) Topsoil and subsoil must remain segregated until restoration.

(2) Topsoil and subsoil must be prevented from entering watercourses and bodies of water.

(3) Topsoil cannot be used as bedding for pipelines.

(4) Native topsoil or imported topsoil must be of equal or greater quality to ensure the land is capable of supporting the uses that existed prior to earth disturbance.

(d) Backfilling of the gathering line trench shall be conducted in a manner that minimizes soil compaction to ensure that water infiltration rates of the soil have not been decreased.

(e) Equipment may not be refueled within the jurisdictional floodway of any watercourse or within 50 feet of any body of water.

(f) Materials staging areas shall be outside of a jurisdictional floodway of any watercourse or greater than 50 feet from any body of water.

(g) The gathering line operator shall maintain the pipeline right-of-way, service roads and points of access to minimize the potential for accelerated erosion and sedimentation and to manage post-construction stormwater and minimize impacts to existing riparian buffers in accordance with Chapter 102 (relating to erosion and sediment control).

(h) All buried metallic gathering lines shall be installed and placed in operation in accordance with 49 CFR Part 192 or 195 (relating to transportation of natural and other

gas by pipeline: minimum Federal safety standards; and transportation of hazardous liquids by pipeline).

§ 78a.68a. Horizontal directional drilling for oil and gas pipelines.

(a) Any horizontal directional drilling associated with pipeline construction related to oil and gas operations, including gathering and transmission pipelines, that occurs beneath any body of water or watercourse will be authorized by the Department in accordance with Chapters 102 and 105 (relating to erosion and sediment control; and dam safety and waterway management).

(b) Prior to beginning of any horizontal directional drilling activity, the directional drilling operator shall develop a PPC plan under § 102.5(l) (relating to permit requirements). The PPC plan must include a site specific contingency plan that describes the measures to be taken to control, contain and collect any discharge of drilling fluids and minimize impacts to waters of the Commonwealth. The PPC plan must be present onsite during drilling operations and made available to the Department upon request.

(c) The Department shall be notified at least 24 hours prior to beginning of any horizontal directional drilling activities, including conventional boring, beneath any body of water or watercourse. Notice shall be made electronically to the Department through its web site and include the name of the municipality where the activities will occur, GPS coordinates of the entry point of the drilling operation and the date when drilling will begin.

(d) All required permits and Material Safety Data Sheets shall be on site during horizontal directional drilling operations and be made available to the Department upon request.

(e) Materials staging areas shall be outside of a floodway, as defined in § 105.1 (relating to definitions), of any watercourse or greater than 50 feet from any body of water.

(f) Drilling fluid additives other than bentonite and water must be approved by the Department prior to use. All approved horizontal directional drilling fluid additives will be listed on the Department's web site.

(g) Horizontal directional drilling operations shall be monitored for pressure and loss of drilling fluid returns. Bodies of water and watercourses over and adjacent to horizontal directional drilling operations shall also be monitored for any signs of drilling fluid discharges. Monitoring shall be in accordance with the PPC plan.

(h) Horizontal directional drilling activities may not result in a discharge of drilling fluids to waters of the Commonwealth. If a discharge occurs during horizontal directional drilling activities, the drilling operator shall immediately implement the contingency plan developed under subsection (b).

(i) When a drilling fluid discharge or loss of drilling fluid circulation is discovered, the loss or discharge shall be immediately reported to the Department, and the operator shall request an emergency permit under § 105.64 (relating to emergency permits), if necessary.

(j) Any water supply complaints received by the operator shall be reported to the Department within 24 hours through the Department's web site.

(k) Horizontal directional drilling fluid returns and drilling fluid discharges shall be contained, stored and recycled or disposed of in accordance with Article IX (relating to residual waste management).

§ 78a.68b. Temporary pipelines for oil and gas operations.

(a) Temporary pipelines must meet applicable requirements in Chapters 102 and 105 (relating to erosion and sediment control; and dam safety and waterway management).

(b) Temporary pipelines that transport fluids other than fresh ground water, surface water, water from water purveyors or approved sources shall be installed aboveground except when crossing pathways, roads or railways where the pipeline may be installed below ground surface.

(c) Temporary pipelines cannot be installed through existing stream culverts, storm drain pipes or under bridges without approval by the Department under § 105.151 (relating to permit application for construction or modification of culverts and bridges).

(d) The section of a temporary pipeline crossing over a watercourse or body of water, except wetlands, may not have joints or couplings. Temporary pipeline crossings over wetlands must utilize a single section of pipe to the extent practicable. Shut off valves shall be installed on both sides of the temporary crossing.

(e) In addition to the requirements of subsection (c), temporary pipelines used to transport fluids other than fresh ground water, surface water, water from water purveyors or approved sources, must have shut off valves, check valves or other method of segmenting the pipeline placed at designated intervals, to be determined by the pipeline diameter, that prevent the discharge of no more than 1,000 barrels of fluid. Elevation changes that would effectively limit flow in the event of a pipeline leak shall be taken into consideration when determining the placement of shut off valves and be considered effective flow barriers.

(f) Highly visible flagging shall be placed at regular intervals, no greater than 75 feet, along the entire length of the temporary pipeline.

(g) Temporary pipelines shall be pressure tested prior to being first placed into service and after the pipeline is moved or altered. A passing test is holding 125% of the anticipated maximum pressure for 2 hours. Leaks or other defects discovered during pressure testing shall be repaired prior to use.

(h) Water used for hydrostatic pressure testing shall be discharged in a manner that does not result in a discharge to waters of the Commonwealth unless approved by the Department.

(i) Temporary pipelines shall be inspected prior to and during each use. Inspection dates and any defects and repairs to the temporary pipeline shall be documented and made available to the Department upon request.

(j) Temporary pipelines not in use for more than 7 calendar days shall be emptied and depressurized.

(k) Flammable materials may not be transported through a temporary pipeline.

(l) Temporary pipelines shall be removed in accordance with the required restoration timeline of the well site it serviced under § 78a.65 (relating to site restoration).

(m) An operator shall keep records regarding the location of all temporary pipelines, the type of fluids transported through those pipelines and the approximate period of time that the pipeline was installed. The records shall be made available to the Department upon request.

§78a.69. Water management plans.

(a) *WMPs for unconventional well operators.* An unconventional well operator shall obtain a Department-approved WMP under section 3211(m) of the act (relating to well permits) prior to withdrawal or use of water sources for drilling or completing an unconventional well.

(b) *Implementation.*

(1) The requirements imposed by the Susquehanna River Basin Commission pertaining to:

(i) Posting of signs at water withdrawal locations.

(ii) Monitoring of water withdrawals or purchases.

(iii) Reporting of withdrawal volumes, in-stream flow measurements and water source purchases and.

(4) Recordkeeping shall be implemented in the Ohio River Basin. Reports required in all river basins of the Commonwealth shall be submitted electronically to the Department.

(c) *Reuse plan*. An unconventional well operator submitting a WMP application shall develop a reuse plan for fluids that will be used to hydraulically fracture wells. A wastewater source reduction strategy in compliance with § 95.10(b) (relating to treatment requirements for new and expanding mass loadings of Total Dissolved Solids (TDS)) will

satisfy the reuse plan requirement. An unconventional well operator shall make the reuse plan available for review by the Department upon request.

(d) *Approval.* When applicable, the requirements of this section are presumed to be achieved for those portions of a WMP for which there is an approval from the Susquehanna River Basin Commission, the Delaware River Basin Commission or the Great Lakes Commission. This subparagraph does not affect the requirement in subsection (a) for a WMP approved by the Department.

(e) *Expiration*. Individual water sources within a WMP are valid for 5 years.

(f) *Renewal*. A WMP renewal application shall be submitted at least 6 months prior to the expiration of the 5-year term for withdrawal or use of a water source under a WMP.

(g) *Suspension and revocation*. The Department may suspend or revoke an approved water source within a WMP for failure to comply with the WMP or for any reasons in sections 3211(m), 3252 and 3259 of the act (relating to well permits; public nuisances; and unlawful conduct).

(h) *Termination.* A WMP holder may terminate approval of any water source within an approved WMP by submitting a letter to the Department's Oil and Gas District Office requesting termination of the water source approval.

(i) *Denial*. The Department may deny approval of a WMP for any of the following reasons:

(1) The WMP application is administratively incomplete.

(2) The WMP will adversely affect the quantity or quality of water available to other users of the same water sources.

(3) The WMP does not protect and maintain the designated and existing uses of the water sources.

(4) The WMP will cause an adverse impact to water quality in the watershed as a whole.

§ 78a.70. Road-spreading of brine for dust control and road stabilization.

[~~(a) Road-spreading of brine from oil and gas wells for dust suppression and road stabilization shall be conducted under a plan approved by the Department and may not result in pollution of the waters of the Commonwealth.~~]Only production brines from conventional wells, not including coalbed methane wells, may be used for dust suppression and road stabilization under this section. The use of drilling, hydraulic fracture stimulation flowback, plugging fluids or production brines mixed with well servicing or treatment fluids, except detergents, may not be used for dust suppression and road stabilization.

[~~(b) Road-spreading of brine for dust control and road stabilization shall only be conducted on unpaved roads.~~

~~(c) Road-spreading plans shall be submitted annually to the Department for approval and must include the following:~~

~~(1) The name, address and telephone number of the plan applicant and of each person who will conduct the actual road-spreading.~~

~~(2) The license plate number of each road-spreading truck.~~

~~(3) An original signed and dated statement from the person that owns or maintains the roads where road-spreading will be conducted authorizing the use of brine on roads and that that person will supervise the frequency of road-spreading.~~

~~(4) A National wetland inventory map identifying the following:~~

~~(i) Roads where the road-spreading be conducted.~~

~~(ii) Any brine storage areas not located on a well site.~~

~~(iii) Bodies of water and watercourses within 150 feet of the roads identified in subparagraph (i).~~

~~(5) A description of how road-spreading will be conducted, including the equipment to be used and the method for controlling the rate of application of the brine.~~

~~(6) The proposed rate and frequency of application.~~

~~(7) The name of each well and the associated geologic formation from which the brine is produced.~~

~~(8) A chemical analysis of the brine using parameters provided by the Department. A representative sample of the brine may be used, provided that the operator demonstrates that the representative sample is equivalent to the brine being used for road-spreading.~~

~~(d) Plans approved under this section will expire on December 31st of each year.~~

~~(e) Road-spreading shall be conducted according to the following:~~

~~(1) The application of production brine to unpaved roads shall be performed in accordance with the Department-approved plan.~~

(2) The brine shall only be applied at a rate and frequency necessary to suppress dust and stabilize the road, but in no event at a rate or frequency greater than the rate and frequency contained in the approved plan.

(3) The road-spreading must prevent direct infiltration to groundwater.

(4) Brine may not enter bodies of water or water courses.

(f) The road shall initially be spread at a rate up to one-half gallon per square yard. The road shall subsequently be spread at a rate of up to one-third gallon per square yard. The application rate for race tracks and mining haul roads should be determined for each site and may not exceed one gallon per square yard.

(g) Road-spreading must meet the following:

(1) Free oil shall be separated from the brine before spreading.

(2) Brine may not be applied within 150 feet of bodies of water or watercourses.

(3) Brine shall be spread by use of a spreader bar with shut off controls in the cab of the truck.

(4) Brine may not be spread on roads or sections of roads which have a grade in excess of 10%.

(5) Brine may not be spread on wet or frozen roads, during precipitation events or when precipitation is imminent.

(h) Trucks utilized to spread brine must have signs identifying plan applicant's name and business address on both sides of the vehicle. The signs must have lettering that is at least six inches in height.

(i) A copy of the current Department-approved road-spreading plan shall be kept in the road-spreading vehicle any time road-spreading is being conducted and made available to the Department upon request.

(j) Except for storage at the well site, all storage of brine shall be in tanks in a manner that complies with Chapter 299 (relating to storage and transportation of residual waste).

(k) The Department shall be notified at least 24 hours before road-spreading will begin. This notice shall be submitted electronically to the Department through its web site and include the date the road-spreading will occur and where the activity will occur. If the date of road-spreading changes, the operator shall re-notify the Department in accordance with this subsection.

~~(l) The person identified on the road-spreading plan shall submit a monthly report to the Department on forms provided by the Department listing the locations, frequency and amounts of brine spread during the previous month. Monthly brine spreading reports shall be received by the Department on the 15th day of the month that follows the month the brine was spread. These reports shall be submitted to the Department on a monthly basis even if road-spreading of brine did not take place during the previous month.~~

~~(m) Any changes to the approved road-spreading plan shall be submitted to the Department for approval. Approval shall be obtained from the Department in writing prior to deviating from the plan or implementing any revisions to the plan.~~

~~(n) Failure to comply with this section may result in the Department rescinding the plan approval.~~

~~(o) Persons conducting road-spreading of brine for dust control and road stabilization activities will be deemed to have a residual waste permit by rule if those activities comply with the requirements of this section.~~**]**

§ 78a.70a. Pre-wetting, anti-icing and de-icing.

[~~(a) Use of brine from oil and gas wells for pre-wetting, anti-icing and de-icing shall only be conducted under a plan approved by the Department and may not result in pollution of the waters of the Commonwealth.~~] Only production brines from conventional wells, not including coalbed methane wells or wells drilled in hydrogen sulfide areas, may be used for pre-wetting, anti-icing and de-icing under this section. The use of drilling, hydraulic fracture stimulation flowback, plugging fluids, or production brines mixed with well servicing or treatment fluids, except detergents, may not be used for pre-wetting, anti-icing and de-icing activities.

[~~(b) Use of brine for pre-wetting, anti-icing and de-icing shall only be conducted on paved roads to address winter driving conditions.~~

~~(c) Plans required under subsection (a) shall be submitted annually to the Department for approval and must include the following:~~

~~(1) The name, address and telephone number of the plan applicant and of each person who will conduct the actual road-spreading.~~

~~(2) The license plate number of each road-spreading trucks.~~

~~(3) An original signed and dated statement from the person that owns or maintains the roads where road-spreading will be conducted authorizing the use of brine on roads and that that person will supervise the frequency of road-spreading.~~

~~(4) A National wetland inventory map identifying the following:~~

(i) Roads where the road-spreading be conducted.

(ii) Any brine storage areas not located on a well site.

(iii) Bodies of water and watercourses within 150 feet of the roads identified in subparagraph (i).

(5) A description of how the brine will be applied including the equipment to be used and the method for controlling the rate of application of the brine.

(6) The proposed rate and frequency of the application.

(7) The name of each well and the associated geologic formation from which the brine is produced.

(8) A chemical analysis of the brine for the parameters required under subsection (e). A representative sample of the brine to be spread may be used, provided that the operator demonstrates that the representative sample is equivalent to the brine being used for pre-wetting, anti-icing and de-icing.

(d) All plans will expire on June 30th of each year.

(e) Brines used for pre-wetting, anti-icing and de-icing activities must meet the following:

Allowable Level Pre-wetting	*Parameter*	*Allowable Level Anti-icing/De-icing*
>170,000 mg/l	TDS	>170,000 mg/l
>80,000 mg/l	Chloride	>80,000 mg/l
>40,000 mg/l	Sodium	>40,000 mg/l
>20,000 mg/l	Calcium	>20,000 mg/l
5 to 9.5	pH	5 to 9.5
<500 mg/l	Iron	<500 mg/l
<100 mg/l	Barium	<30 mg/l
<10 mg/l	Lead	<5 mg/l
<1,000 mg/l	Sulfate	<400 mg/l
<15 mg/l	Oil and grease	<15 mg/l
<0.5 mg/l	Benzene	<0.5 mg/l
<0.7 mg/l	Ethylbenzene	<0.7 mg/l
<1 mg/l	Toluene	<1 mg/l
<1 mg/l	Xylene	<1 mg/l

(f) The application rates for use of the natural gas well brines are limited to 10 gallons per ton for pre-wetting use, less than 50 gallons per lane per mile for anti-icing use and less than 100 gallons per lane per mile for de-icing.

(g) Brines may not be mixed with other types of solid wastes except bottom ash from the combustion of coal.

(h) Brine shall only be applied to the antiskid material immediately prior to roadway application. Application of brine to uncontained antiskid storage piles is prohibited.

(i) Anti-icing, de-icing and the spreading of pre-wetted antiskid material may not be conducted on wooden or grated deck bridges.

(j) Brine may not enter bodies of water or water courses.

(k) Except for storage at the well site, all storage of brine shall be in tanks in a manner that complies with Chapter 299 (relating to storage and transportation of residual waste).

(l) Every 3 years each source of brine used for pre-wetting, anti-icing and de-icing shall be analyzed for the parameters in subsection (e) prior to submittal of the plan required under subsection (a). The analysis shall be for each individual well utilized or it may be a composite of one or more samples of brines from wells, which produce gas from the same formation. The well permit number and producing formations shall be submitted with the analysis. If the brines used are obtained from a permitted brine treatment facility, the analysis of a representative composite sample shall be submitted along with the facility's National Pollutant Discharge Elimination System permit number.

(m) For each new source of brine, the applicant shall submit an analysis of a representative sample of the brine including all parameters in subsection (e) to the Department. The brine analysis shall be submitted no less than 30 calendar days prior to use. The applicant may utilize the brine in accordance with this section 30 calendar days after submittal of the brine analysis unless otherwise instructed by the Department.

(n) Records of the analytical evaluations conducted on brine under subsections (e) and (l) shall be maintained by the applicant for a minimum of 5 years at the applicant's place of business and shall be available to the Department for inspection. At a minimum, these records must include information on the dates of testing, each parameter tested, the results, the laboratory sampling procedures, analytical methodologies and the chain of custody.

(o) Trucks utilized to spread brine or pre-wetted antiskid material must have signs identifying the person's name and business address on both sides of the truck. The signs must have lettering that is at least 6 inches in height. Controls for spreading brine and pre-wetted anti-skid material must be located in the cab of the truck.

(p) A copy of the current Department-approved plan shall be kept in the spreading truck any time brine or pre-wetted antiskid material spreading is being conducted and shall be made available to the Department upon request.

(q) The Department shall be notified at least 24 hours before brine or pre-wetted antiskid material spreading will begin. This notice shall be submitted electronically to the

~~Department through its web site and include the date the activity will occur and the location where the activity will occur. If the date changes, the operator shall re-notify the Department in accordance with this subsection.~~

~~(r) The responsible person identified on the approved plan shall submit a monthly report to the Department on forms provided by the Department listing the locations, frequency and amounts of brine or pre-wetted antiskid material spread during the previous month. Monthly brine spreading reports shall be received by the Department on or before the 15th day of the month that follows the month production brine was spread. These reports shall be submitted to the Department on a monthly basis even if activity did not take place in the previous month.~~

~~(s) Any changes to the approved plan shall be submitted to the Department for approval. Approval shall be obtained from the Department in writing prior to deviating from the plan or implementing any revisions to the plan.~~

~~(t) Failure to comply with this section may result in the Department rescinding the plan approval.~~

~~(u) Persons using brine for pre-wetting, anti-icing and de-icing activities in accordance with this section will be deemed to have a residual waste permit by rule.~~**]**

Subchapter D. WELL DRILLING, OPERATION AND PLUGGING

GENERAL

§ 78a.71. Use of safety devices—well casing.

(a) The operator shall equip the well with one or more strings of casing of sufficient cemented length and strength to attach proper well control equipment and prevent blowouts, explosions, fires and casing failures during installation, completion and operation.

(b) The operator shall determine the amount and type of casing to be run and the amount and type of cement to be used in accordance with current prudent industry practices and engineering. In making the determinations, the operator shall consider the following:

(1) Successful local practices for similar wells.

(2) Maximum anticipated surface pressure.

(3) Collapse resistance.

(4) Tensile strength.

(5) Chemical environment.

(6) Potential mechanical damage.

(7) Manufacturing standards, including American Petroleum Institute or equivalent specifications for pipe used in wells drilled below the Onondaga formation or where blow-out preventers are required.

§ 78a.72. Use of safety devices—blow-out prevention equipment.

(a) The operator shall use blow-out prevention equipment after setting casing with a competent casing seat in the following circumstances:

(1) When drilling a well that is intended to produce natural gas from an unconventional formation.

(2) When drilling out solid core hydraulic fracturing plugs to complete a well.

(3) When well head pressures or natural open flows are anticipated at the well site that may result in a loss of well control.

(4) When the operator is drilling in an area where there is no prior knowledge of the pressures or natural open flows to be encountered.

(5) On wells regulated by the Oil and Gas Conservation Law (58 P. S. §§ 401—419).

(6) When drilling within 200 feet of a building.

(b) Blow-out prevention equipment used must be in good working condition at all times.

(c) Controls for the blow-out preventer shall be accessible to allow actuation of the equipment. Additional controls for a blow-out preventer with a pressure rating of greater than 3,000 psi, not associated with the rig hydraulic system, shall be located at least 50 feet away from the drilling rig so that the blow-out preventer can be actuated if control of the well is lost.

(d) The operator shall use pipe fittings, valves and unions placed on or connected to the blow-out prevention systems that have a working pressure capability that exceeds the anticipated pressures.

(e) The operator shall conduct a complete test of the ram type blow-out preventer and related equipment for both pressure and ram operation before placing it in service on the well. The operator shall test the annular type blow-out preventer in accordance with the manufacturer's published instructions, or the instructions of a professional engineer, prior to the device being placed in service. Blow-out prevention equipment that fails the test may not be used until it is repaired and passes the test.

(f) When the equipment is in service, the operator shall visually inspect blow-out prevention equipment during each tour of drilling operation and during actual drilling operations test the

pipe rams for closure daily and the blind rams for closure on each round trip. When more than one round trip is made in a day, one daily closure test for blind rams is sufficient. Testing shall be conducted in accordance with American Petroleum Institute publication API RP53, ‘‘API Recommended Practice for Blowout Prevention Equipment Systems for Drilling Wells,’’ or other procedure approved by the Department. The operator shall record the results of the inspection and closure test in the drillers log before the end of the tour. If blow-out prevention equipment is not in good working order, drilling shall cease when cessation of drilling can be accomplished safely and not resume until the blow-out prevention equipment is repaired or replaced and retested.

(g) All lines, valves and fittings between the closing unit and the blow-out preventer stack must be flame resistant and have a rated working pressure that meets or exceeds the requirements of the blow-out preventer system.

(h) When a blowout preventer is installed or required under subsection (a), there shall be present on the well site an individual with a current certification from a well control course accredited by the International Association of Drilling Contractors or other organization approved by the Department. The certification shall be available for review at the well site. The Department will maintain a list of approved accrediting organizations on its web site.

(i) Well drilling and completion operations requiring pressure barriers, as identified by the operator under **[§ 78.55(b) (relating to control and disposal plan)]** **§ 78a.55(d) (relating to control and disposal planning; emergency response for unconventional wells**), shall employ at least two mechanical pressure barriers between the open producing formation and the atmosphere that are capable of being tested. The mechanical pressure barriers shall be tested according to manufacturer specifications prior to operation. If during the course of operations the operator only has one functioning barrier, operations must cease until additional barriers are added and tested or the redundant barrier is repaired and tested. Stripper rubber or a stripper head may not be considered a barrier.

(j) A coiled tubing rig or a hydraulic workover unit with appropriate blowout prevention equipment must be employed during post completion cleanout operations in horizontal unconventional formations.

(k) The minimum amount of intermediate casing that is cemented to the surface to which blow-out prevention equipment may be attached, shall be in accordance with the following:

Proposed Total Vertical Depth (in feet)	*Minimum Cemented Casing Required (in feet of casing cemented)*
Up to 5,000	400
5,001 to 5,500	500
5,501 to 6,000	600
6,001 to 6,500	700
6,501 to 7,000	800
7,001 to 8,000	1,000

8,001 to 9,000	1,200
9,001 to 10,000	1,400
Deeper than 10,000	1,800

(l) Upon completion of the drilling operations at a well, the operator shall install and utilize equipment, such as a shut-off valve of sufficient rating to contain anticipated pressure, lubricator or similar device, as may be necessary to enable the well to be effectively shut-in while logging and servicing the well and after completion of the well.

§ 78a.73. General provision for well construction and operation.

(a) The operator shall construct and operate the well in accordance with this chapter and ensure that the integrity of the well is maintained and health, safety, environment and property are protected.

(b) The operator shall prevent gas, oil, brine, completion and servicing fluids, and any other fluids or materials from below the casing seat from entering fresh groundwater, and shall otherwise prevent pollution or diminution of fresh groundwater.

(c) Orphaned or abandoned wells identified under § 78a.52a (relating to abandoned and orphaned well identification) that likely penetrate a formation intended to be stimulated shall be visually monitored during stimulation activities. The operator shall immediately notify the Department of any change to the orphaned or abandoned well being monitored and take action to prevent pollution of waters of the Commonwealth or discharges to the surface.

(d) An operator that alters an orphaned or abandoned well by hydraulic fracturing shall plug the orphaned or abandoned well.

[(c)] (e) After a well has been completed, recompleted, reconditioned or altered the operator shall prevent surface shut-in pressure and surface producing back pressure inside the surface casing or coal protective casing from exceeding the following pressure: 80% multiplied by 0.433 psi per foot multiplied by the casing length (in feet) of the applicable casing.

[(d)] (f) After a well has been completed, recompleted, reconditioned or altered, if the surface shut-in pressure or surface producing back pressure exceeds the pressure as calculated in subsection **[(c)] (e)**, the operator shall take action to prevent the migration of gas and other fluids from lower formations into fresh groundwater. To meet this standard the operator may cement or install on a packer sufficient intermediate or production casing or take other actions approved by the Department. This section does not apply during testing for mechanical integrity in accordance with State or Federal requirements.

[(e)] (g) Excess gas encountered during drilling, completion or stimulation shall be flared, captured or diverted away from the drilling rig in a manner that does not create a hazard to the public health or safety.

[(f)] (h) [~~Except for gas storage wells, the~~] THE well must be equipped with a check valve to prevent backflow from the pipelines into the well.

§ 78a.74. Venting of gas.

The venting of gas to the atmosphere from a well is prohibited when the venting produces a hazard to the public health and safety.

§ 78a.75. Alternative methods.

(a) A well operator may request approval from the Department to use an alternative method or material for the casing, plugging or equipping of a well under section **[211 of the act (58 P.S. § 601.211)] 3221 of the act (relating to well permits)**.

(b) A well operator seeking approval under this section shall file an application with the Department on forms furnished by the Department. The application shall:

(1) Describe the proposed alternative method or material, in reasonable detail.

(2) Indicate the manner in which the alternative will satisfy the goals of the act and this chapter.

(3) Include a drawing or schematic of the alternative method, if appropriate.

(c) The well operator shall notify all coal owners and operators and gas storage operators of record of the proposal, by certified mail. The well operator shall state in the application that he has sent the certified mail notice to the coal owners and operators and gas storage operators of record, either simultaneously with or prior to submitting the proposal to the Department.

(d) The coal owners and operators and gas storage operators of record shall have up to 15 days from their receipt of the notice to file objections or to indicate concurrence with the proposed alternative method or material.

(e) If no objections are filed within 15 days from receipt of the notice, and if none are raised by the Department, the Department will make a determination whether to allow the use of the proposed alternative method or material.

§ 78a.75a. Area of alternative methods.

(a) A well operator may request approval from the Department to use an alternative method or material for the casing, plugging or equipping of a well under section **[211 of the act (58 P.S. § 601.211)] 3221 of the act (relating to well permits)**.

(b) To establish an area of alternative methods, the Department will publish a notice in the *Pennsylvania Bulletin* of the proposed area of alternative methods and provide the public with an opportunity to comment on the proposal. After reviewing any comments received on the

proposal, the Department will publish a final designation of the area and required alternative methods in the *Pennsylvania Bulletin*.

(c) Wells drilled within an area of alternative methods established under subsection (b) must meet the requirements specified by the Department unless the operator obtains approval from the Department to drill, operate or plug the well in a different manner that is at least as safe and protective of the environment as the requirements of the area of alternative methods.

§ 78a.76. Drilling within a gas storage reservoir area.

(a) An operator proposing to drill a well within a gas storage reservoir area or a reservoir protective area to produce gas or oil shall forward by certified mail a copy of the well location plat, the drilling, casing and cementing plan and the anticipated date drilling will commence to the gas storage reservoir operator and to the Department for approval by the Department and shall submit proof of notification to the gas storage reservoir operator to the Department with the well permit application.

(b) The storage operator may file an objection with the Department to the drilling, casing and cementing plan or the proposed well location within 15 **calendar** days of receipt of the notification and request a conference in accordance with section **[501 of the act (58 P.S. § 601.501)] 3251 of the act (relating to conferences)**.

§ 78a.77. Wells in a hydrogen sulfide area.

(a) An operator proposing to drill a well within a 1-mile radius of a well drilled to or through the same formation where hydrogen sulfide has been found while drilling shall install monitoring equipment during drilling at the well site to detect the presence of hydrogen sulfide in accordance with American Petroleum Institute publication RP49, ‘‘Recommended Practices for Safe Drilling of Wells Containing Hydrogen Sulfide.’’

(b) When hydrogen sulfide is detected in concentrations of 20 ppm or greater, the well shall be drilled in accordance with American Petroleum Institute publication API RP49, ‘‘Recommended Practices for Safe Drilling of Wells Containing Hydrogen Sulfide.’’

(c) An operator who operates a well in which hydrogen sulfide is discovered in concentrations of 20 ppm or greater shall operate the well in a way that presents no danger to human health or to the environment.

(d) When an operator discovers hydrogen sulfide in concentrations of 20 ppm or greater during the drilling of a well, the operator shall notify the Department and identify the location of the well and the concentration of hydrogen sulfide detected. The Department will maintain a list of all notices that will be available to operators for their reference.

§ 78a.78. Pillar permit applications.

(a) The Department will use recommendations for coal pillar size and configuration set forth in the coal pillar study, listed in the Department's *Coal Pillar Technical Guidance* Number 550-2100-006 (October 31, 1998) and any updates or revisions, as a basis for approval or disapproval of coal pillar permit applications submitted by underground coal mine operators.

(b) Where proposed coal pillar size and configuration does not conform to the recommendations of the coal pillar study referenced in subsection (a), the underground coal mine operator may request Department approval for an alternate coal pillar size and configuration.

CASING AND CEMENTING

§ 78a.81. General provisions.

(a) The operator shall conduct casing and cementing activities under this section and §§ 78a.82—78a.87 or an approved alternate method under § 78a.75 (relating to alternative methods). The operator shall case and cement a well to accomplish the following:

(1) Allow effective control of the well at all times.

(2) Prevent the migration of gas or other fluids into sources of fresh groundwater.

(3) Prevent pollution or diminution of fresh groundwater.

(4) Prevent the migration of gas or other fluids into coal seams.

(b) The operator shall drill through fresh groundwater zones with diligence and as efficiently as practical to minimize drilling disturbance and commingling of groundwaters.

§ 78a.82. Use of conductor pipe.

If the operator installs conductor pipe in the well, the following provisions apply:

(1) The operator may not remove the pipe;

(2) Conductor pipe shall be installed in a manner that prevents the subsurface infiltration of surface water or fluids by either driving the pipe into place or cementing the pipe from the seat to the surface;

(3) Conductor pipe must be made of steel unless a different material is approved for use by the Department.

§ 78a.83. Surface and coal protective casing and cementing procedures.

(a) For wells drilled, altered, reconditioned or recompleted after February 5, 2011, surface casing or any casing functioning as a water protection casing may not be utilized as production casing unless one of the following applies:

(1) In oil wells where the operator does not produce any gas generated by the well and the annulus between the surface casing and the production pipe is left open.

(2) The operator demonstrates that the pressure in the well is no greater than the pressure permitted under **78a.**73(c) (relating to general provision for well construction and operation), demonstrates through a pressure test or other method approved by the Department that all gas and fluids will be contained within the well, and installs a working pressure gauge that can be inspected by the Department.

(b) If the well is to be equipped with threaded and coupled casing, the operator shall drill a hole so that the diameter is at least 1 inch greater than the outside diameter of the casing collar to be installed. If the well is to be equipped with plain-end welded casing, the operator shall drill a hole so that the diameter is at least 1 inch greater than the outside diameter of the casing coupling.

(c) The operator shall drill to approximately 50 feet below the deepest fresh groundwater or at least 50 feet into consolidated rock, whichever is deeper, and immediately set and permanently cement a string of surface casing to that depth. Except as provided in subsection (f), the surface casing may not be set more than 200 feet below the deepest fresh groundwater except if necessary to set the casing in consolidated rock. The surface hole shall be drilled using air, freshwater, or freshwater-based drilling fluid. Prior to cementing, the wellbore shall be conditioned to ensure an adequate cement bond between the casing and the formation. The surface casing seat shall be set in consolidated rock. When drilling a new well or redrilling an existing well, the operator shall install at least one centralizer within 50 feet of the casing seat and then install a centralizer in intervals no greater than every 150 feet above the first centralizer.

(d) The operator shall permanently cement the surface casing by placing the cement in the casing and displacing it into the annular space between the wall of the hole and the outside of the casing.

(e) Where potential oil or gas zones are anticipated to be found at depths within 50 feet below the deepest fresh groundwater, the operator shall set and permanently cement surface casing prior to drilling into a stratum known to contain, or likely containing, oil or gas.

(f) If additional fresh groundwater is encountered in drilling below the permanently cemented surface casing, the operator shall document the depth of the fresh ground water zone in the well record and protect the additional fresh groundwater by installing and cementing a subsequent string of casing or other procedures approved by the Department to completely isolate and protect fresh groundwater. The string of casing may also penetrate zones bearing salty or brackish water with cement in the annular space being used to segregate the various zones. Sufficient cement shall be used to cement the casing to the surface. The operator shall install at least one centralizer within 50 feet of the casing seat and then install a centralizer in intervals no greater than, if possible, every 150 feet above the first centralizer.

(g) The operator shall set and cement a coal protective string of casing through workable coal seams. The base of the coal protective casing shall be at least 30 feet below the lowest workable coal seam. The operator shall install at least two centralizers. One centralizer shall be within 50 feet of the casing seat and the second centralizer shall be within 100 feet of the surface.

(h) Unless an alternative method has been approved by the Department in accordance with § 78**a.**75 (relating to alternative methods), when a well is drilled through a coal seam at a location where the coal has been removed or when a well is drilled through a coal pillar, the operator shall drill to a depth of at least 30 feet but no more than 50 feet deeper than the bottom of the coal seam. The operator shall set and cement a coal protection string of casing to this depth. The operator shall equip the casing with a cement basket or other similar device above and as close to the top of the coal seam as practical. The bottom of the casing must be equipped with an appropriate device designed to prevent deformation of the bottom of the casing. The interval from the bottom of the casing to the bottom of the coal seam shall be filled with cement either by the balance method or by the displacement method. Cement shall be placed on top of the basket between the wall of the hole and the outside of the casing by pumping from the surface. If the operator penetrates more than one coal seam from which the coal has been removed, the operator shall protect each seam with a separate string of casing that is set and cemented or with a single string of casing which is stage cemented so that each coal seam is protected as described in this subsection. The operator shall cement the well to isolate workable coal seams from each other.

(i) If the operator sets and cements casing under subsection (g) or (h) and subsequently encounters additional fresh groundwater zones below the deepest cemented casing string installed, the operator shall protect the fresh groundwater by installing and cementing another string of casing or other method approved by the Department. Sufficient cement shall be used to cement the casing to the surface. The additional casing string may also penetrate zones bearing brackish or salt water, but shall be run and cemented prior to penetrating a zone known to or likely to contain oil or gas. The operator shall install at least one centralizer within 50 feet of the casing seat and then, if possible, install a centralizer in intervals no greater than every 150 feet above the first centralizer.

(j) If it is anticipated that cement used to permanently cement the surface casing cannot be circulated to the surface a cement basket may be installed immediately above the depth of the anticipated lost circulation zone. The casing shall be permanently cemented by the displacement method. Additional cement may be added above the cement basket, if necessary, by pumping through a pour string from the surface to fill the annular space. Filling the annular space by this method does not constitute permanently cementing the surface or coal protective casing under § **78a.**83b (relating to casing and cementing-lost circulation).

§ 78a.83a. Casing and cementing plan.

(a) The operator shall prepare and maintain a casing and cementing plan showing how the well will be drilled and completed. The plan must demonstrate compliance with this subchapter and include the following information:

(1) The anticipated depth and thickness of any producing formation, expected pressures, anticipated fresh groundwater zones and the method or information by which the depth of the deepest fresh groundwater was determined.

(2) The diameter of the borehole.

(3) Casing type, whether the casing is new or used, depth, diameter, wall thickness and burst pressure rating.

(4) Cement type, yield, additives and estimated amount.

(5) The estimated location of centralizers.

(6) The proposed borehole conditioning procedures.

(7) Alternative methods or materials as required by the Department as a condition of the well permit.

(b) The plan shall be available at the well site for review by the Department.

(c) Upon request, the operator shall provide a copy of the well-specific casing and cementing plan to the Department for review and approval.

(d) Revisions to the plan made as a result of onsite modification shall be documented in the plan and be available for review by the Department. The person making the revisions to the plan shall initial and date the revisions.

§ 78a.83b. Casing and cementing—lost circulation.

(a) If cement used to permanently cement the surface or coal protective casing is not circulated to the surface despite pumping a volume of cement equal to or greater than 120% of the calculated annular space, the operator shall determine the top of the cement, notify the Department, and meet one of the following requirements as approved by the Department:

(1) Run an additional string of casing at least 50 feet deeper than the string where circulation was lost and cement the additional string of casing back to the seat of the string where circulation was lost and vent the annulus of the additional casing string to the atmosphere at all times unless closed for well testing or maintenance. Shut-in pressure on the casing seat of the additional string of casing may not exceed the requirements of § 78a.73(c) (relating to intermediate and production casing).

(2) Run production casing and set the production casing on a packer in a competent formation below the string where circulation was lost and vent the annulus of the production casing to the atmosphere at all times unless closed for well testing or maintenance.

(3) Run production casing at least to the top of the formation that is being produced and cement the production casing to the surface.

(4) Run intermediate and production casing and cement both strings of casing to the surface.

(5) Produce oil but not gas and leave the annulus between the surface casing and the production pipe open.

(b) In addition to meeting the requirements of subsection (a), the operator may also pump additional cement through a pour string from the surface to fill the annular space.

§ 78a.83c. Intermediate and production casing.

(a) Prior to cementing the intermediate and production casing, the borehole, mud and cement shall be conditioned to ensure an adequate cement bond between the casing and the formation.

(b) If the well is to be equipped with an intermediate casing, centralizers shall be used and the casing shall be cemented to the surface by the displacement method. Gas may be produced off the intermediate casing if a shoe test demonstrates that all gas will be contained within the well and a relief valve is installed at the surface that is set less than the shoe test pressure. The shoe test pressure shall be recorded in the completion report.

(c) Except as provided in § 78a.83 (relating to surface and coal protective casing and cementing procedures), each well must be equipped with production casing. The production string may be set on a packer or cemented in place. If the production casing is cemented in place, centralizers shall be used and cement shall be placed by the displacement method with sufficient cement to fill the annular space to a point at least 500 feet above true vertical depth or at least 200 feet above the uppermost perforations, whichever is greater.

§ 78a.84. Casing standards.

(a) The operator shall install casing that can withstand the effects of tension, and prevent leaks, burst and collapse during its installation, cementing and subsequent drilling and producing operations.

(b) Except as provided in subsection (c), all casing must be a string of new pipe with an internal pressure rating that is at least 20% greater than the anticipated maximum pressure to which the casing will be exposed.

(c) Used casing may be approved for use as surface, intermediate or production casing but shall be pressure tested after cementing and before continuation of drilling. A passing pressure test is holding the anticipated maximum pressure to which it will be exposed for 30 minutes with not more than a 10% decrease in pressure.

(d) New or used plain end casing, except when being used as conductor pipe, that is welded together for use must meet the following requirements:

(1) The casing must pass a pressure test by holding the anticipated maximum pressure to which the casing will be exposed for 30 minutes with not more than a 10% decrease in pressure. The operator shall notify the Department at least 24 hours before conducting the test. The test results shall be entered on the drilling log.

(2) The casing shall be welded using at least three passes with the joint cleaned between each pass.

(3) The casing shall be welded by a person trained and certified in the applicable American Petroleum Institute, American Society of Mechanical Engineers, American Welding Society or equivalent standard for welding casing and pipe or an equivalent training and certification program as approved by the Department. The certification requirements of this paragraph shall take effect August 5, 2011. A person with 10 or more years of experience welding casing as of February 5, 2011, who registers with the Department by November 7, 2011, is deemed to be certified.

(e) When casing through a workable coal seam, the operator shall install coal protective casing that has a minimum wall thickness of 0.23 inch.

(f) Casing which is attached to a blow-out preventer with a pressure rating of greater than 3,000 psi shall be pressure tested after cementing. A passing pressure test must be holding the anticipated maximum pressure to which the casing will be exposed for 30 minutes with not more than a 10% decrease. Certification of the pressure test shall be confirmed by entry and signature of the person performing the test on the driller's log.

§ 78a.85. Cement standards.

(a) When cementing surface casing or coal protective casing, the operator shall use cement that meets or exceeds the ASTM International C 150, Type I, II or III Standard or API Specification 10. The cement must also:

(1) Secure the casing in the wellbore.

(2) Isolate the wellbore from fresh groundwater.

(3) Contain any pressure from drilling, completion and production.

(4) Protect the casing from corrosion from, and degradation by, the geochemical, lithologic and physical conditions of the surrounding wellbore. For wells employing coal protective casing, this includes, but is not limited to, formulating cement to withstand elevated sulfate concentrations and other geochemical constituents of coal and associated strata which have the potential to adversely affect the integrity of the cement.

(5) Prevent gas flow in the annulus. In areas of known shallow gas producing zones, gas block additives and low fluid loss slurries shall be used.

(b) After the casing cement is placed behind surface casing, the operator shall permit the cement to set to a minimum designed compressive strength of 350 pounds per square inch (psi) at the casing seat. The cement placed at the bottom 300 feet of the surface casing must constitute a zone of critical cement and achieve a 72-hour compressive strength of 1,200 psi and the free water separation may be no more than 6 milliliters per 250 milliliters of cement. If the surface casing is less than 300 feet, the entire cemented string constitutes a zone of critical cement.

(c) After any casing cement is placed and cementing operations are complete, the casing may not be disturbed for a minimum of 8 hours by doing any of the following:

(1) Releasing pressure on the cement head within 4 hours of cementing if casing equipment check valves did not hold or casing equipment was not equipped with check valves. After 4 hours, the pressure may be released at a continuous, gradual rate over the next four hours provided the floats are secure.

(2) Nippling up on or in conjunction to the casing.

(3) Slacking off by the rig supporting the casing in the cement sheath.

(4) Running drill pipe or other mechanical devices into or out of the wellbore with the exception of a wireline used to determine the top of cement.

(d) Where special cement or additives are used, the operator may request approval from the Department to reduce the cement setting time specified in subsection (d).

(e) The operator shall notify the Department a minimum of 1 day before cementing of the surface casing begins, unless the cementing operation begins within 72 hours of commencement of drilling.

(f) A copy of the cement job log shall be available at the well site for inspection by the Department during drilling operations. The cement job log must include the mix water temperature and pH, type of cement with listing and quantity of additive types, the volume, yield and density in pounds per gallon of the cement and the amount of cement returned to the surface, if any. Cementing procedural information must include a description of the pumping rates in barrels per minute, pressures in pounds per square inch, time in minutes and sequence of events during the cementing operation.

(g) The cement job log shall be maintained by the operator after drilling operations for at least 5 years and be made available to the Department upon request.

§ 78<u>a</u>.86. Defective casing or cementing.

In a well that has defective, insufficient or improperly cemented casing, the operator shall report the defect to the Department within 24 hours of discovery by the operator and shall correct the defect. The operator shall correct the defect or submit a plan to correct the defect for approval by

the Department within 30 days. If the defect cannot be corrected or an alternate method is not approved by the Department, the well shall be plugged under §§ **78a.**91—**78a.**98 (relating to plugging).

§ 78a.87. Gas storage reservoir protective casing and cementing procedures.

(a) In addition to the other provisions in this subchapter, a well drilled through a gas storage reservoir or a gas storage reservoir protective area shall be drilled, cased and cemented as follows:

(1) An operator shall use drilling procedures capable of controlling anticipated gas flows and pressures when drilling from the surface to 200 feet above a gas storage reservoir or gas storage horizon.

(2) An operator shall use drilling procedures capable of controlling anticipated gas storage reservoir pressures and flows at all times when drilling from 200 feet above a gas storage reservoir horizon to the depth at which the gas storage protective casing will be installed. Operators shall use blow-out prevention equipment with a pressure rating in excess of the allowable maximum storage pressure for the gas storage reservoir.

(3) To protect the gas storage reservoir, an operator shall run intermediate or production casing from a point located at least 100 feet below the gas storage horizon to the surface. The operator shall cement this casing by circulating cement to a point at least 200 feet above the gas storage reservoir or gas storage horizon.

(4) When cementing casing in a well drilled through a gas storage reservoir, the operator shall insure that no gas is present in the drilling fluids in an amount that could interfere with the integrity of the cement.

(b) A request by an operator for approval from the Department to use an alternative method or material for the casing, plugging or equipping of a well drilled through a gas storage reservoir under section **[211 of the act (58 P.S. § 601.211)]** **3221 of the act (relating to well permits)** shall be made in accordance with § **78a.**75 (relating to alternative methods).

OPERATING WELLS

§ 78a.88. Mechanical integrity of operating wells.

(a) Except for wells regulated under Subchapter H (relating to underground gas storage) and wells that have been granted inactive status, the operator shall inspect each operating well at least quarterly to ensure it is in compliance with the well construction and operating requirements of this chapter and the act. The results of the inspections shall be recorded and retained by the operator for at least 5 years and be available for review by the Department and the coal owner or operator.

(b) At a minimum, inspections must determine:

(1) The well-head pressure or water level measurement.

(2) The open flow on the annulus of the production casing or the annulus pressure if the annulus is shut in.

(3) If there is evidence of gas escaping from the well and the amount escaping, using measurement or best estimate of quantity.

(4) If there is evidence of progressive corrosion, rusting or other signs of equipment deterioration.

(c) For structurally sound wells in compliance with § 78**a**.73(c) (relating to surface and coal protective casing and cementing procedure), the operator shall follow the reporting schedule outlined in subsection (e).

(d) For wells exhibiting progressive corrosion, rusting or other signs of equipment deterioration that compromise the integrity of the well, or the well is not in compliance with § 78**a**.73(c), the operator shall immediately notify the Department and take corrective actions to repair or replace defective equipment or casing or mitigate the excess pressure on the surface casing seat or coal protective casing seat according to the following hierarchy:

(1) The operator shall reduce the shut-in or producing back pressure on the casing seat to achieve compliance with § 78**a**.73(c).

(2) The operator shall retrofit the well by installing production casing to reduce the pressure on the casing seat to achieve compliance with § 78**a**.73(c). The annular space surrounding the production casing must be open to the atmosphere. The production casing shall be either cemented to the surface or installed on a permanent packer. The operator shall notify the Department at least 7 days prior to initiating the corrective measure.

(3) Additional mechanical integrity tests, including, but not limited to, pressure tests, may be required by the Department to demonstrate the integrity of the well.

(e) The operator shall submit an annual report to the Department identifying the compliance status of each well with the mechanical integrity requirements of this section. The report shall be submitted on forms prescribed by, and available from, the Department or in a similar manner approved by the Department.

§ 78a.89. Gas migration response.

(a) When an operator or owner is notified of or otherwise made aware of a potential natural gas migration incident, the operator shall immediately conduct an investigation of the incident. The purpose of the investigation is to determine the nature of the incident, assess the potential for hazards to public health and safety, and mitigate any hazard posed by the concentrations of stray natural gas.

(b) The investigation undertaken by the operator under subsection (a) must include, but not be limited to, the following:

(1) A site visit and interview with the complainant to obtain information about the complaint and to assess the reported natural gas migration incident.

(2) A field survey to assess the presence and concentrations of natural gas and aerial extent of the stray natural gas.

(3) If necessary, establishment of monitoring locations at potential sources, in potentially impacted structures, and the subsurface.

(c) If combustible gas is detected inside a building or structure at concentrations equal to or greater than 10% of the L.E.L., the operator shall do the following:

(1) Immediately notify the Department, local emergency response agency, gas and electric utility companies, police and fire departments and, in conjunction with the Department and local emergency response agencies, take measures necessary to ensure public health and safety.

(2) Initiate mitigation measures necessary to control and prevent further migration.

(3) Implement the additional investigation and mitigation measures as provided in subsection (e)(1)—(5).

(d) The operator shall notify the Department and, in conjunction with the Department, take measures necessary to ensure public health and safety, if sustained detectable concentrations of combustible gas satisfy any of the following:

(1) Greater than 1% and less than 10% of the L.E.L., in a building or structure.

(2) Equal to or greater than 25% of the L.E.L. in a water well head space.

(3) Detectable in the soils.

(4) Equal to or greater than 7 mg/l dissolved methane in water.

(e) The Department may require the operator to take the following additional actions:

(1) Conduct a field survey to assess the presence and concentrations of combustible gas and the areal extent of the combustible gas in the soils, surface water bodies, water wells, and other potential migration pathways.

(2) Collect gas or water, or both, samples at a minimum for molecular and stable carbon and hydrogen isotope analyses from the impacted locations such as water wells, and from potential sources of the migration such as gas wells.

(3) Conduct an immediate evaluation of the operator's adjacent oil or gas wells to determine well cement and casing integrity and to evaluate the potential mechanism of migration. This evaluation may include assessing pressures for all casing intervals, reviewing records for indications of defective casing or cement, application of cement bond logs, ultrasonic imaging tools, geophysical logs, and other mechanical integrity tests as required. The initial area of assessment must include wells within a radius of 2,500 feet and may be expanded if required by the Department.

(4) Take action to correct any defect in the oil and gas wells to mitigate the stray gas incident.

(5) Establish monitoring locations and monitoring frequency in consultation with the Department at potential sources, in potentially impacted structures, and the subsurface.

(f) If concentrations of stray natural gas as defined in subsection (c) or (d) are not detected, the operator shall notify the Department, and do the following if requested by the Department:

(1) Conduct additional monitoring.

(2) Document findings.

(3) Submit a closure report.

(g) If concentrations of stray natural gas are detected inside a building or structure at concentrations equal to or greater than 10% of the L.E.L., the operator and owner shall file a report with the Department by phone and email within 24 hours after the interview with the complainant and field survey of the extent of stray natural gas. Additional daily or weekly reports shall be submitted if requested by the Department.

(h) For all stray natural gas migration incidents, a final written report documenting the results of the investigation shall be submitted to the Department for approval within 30 days of the close of the incident, or in a time frame otherwise approved by the Department. The final report must include the following:

(1) Documentation of all results of the investigation, including analytical data and monitoring results.

(2) Operational changes established at the operator's oil and gas wells in this Commonwealth.

(3) Measures taken by the operator to repair any defects at any of the investigated oil and gas wells.

(i) Reports submitted in accordance with this section that contain an analysis of geological or engineering data shall be prepared and sealed by a geologist or engineer licensed in this Commonwealth.

PLUGGING

§ 78**a**.91. General provisions.

(a) Upon abandoning a well, the owner or operator shall plug the well under §§ **78a.**92—**78a.**98 or an approved alternate method under section **[211 of the act (58 P.S. § 601.211)]** **3221 of the act (relating to well permits)** to stop the vertical flow of fluids or gas within the well bore unless one of the following applies:

(1) The Department has granted inactive status under §§ **78a.**101—**78a.**105 (relating to inactive status).

(2) The well is part of a plugging schedule that has been approved by the Department and the operator is complying with that schedule, and the schedule takes into account potential harm that the well poses to the environment or public health and safety.

(3) The Department has approved the identification of the well as an orphan well under section **[203 of the act (58 P.S. § 601.203)]** **3213 of the act (relating to well registration and identification)**, and the Department has not determined a prior owner or operator received economic benefit after April 18, 1979, from this well other than economic benefit derived only as a landowner or from a royalty interest.

(b) The operator shall plug a well where a radioactive logging source has been lost under §§ 78**a**.92—78**a**.98 and 78**a**.111.

(c) When a well is being plugged from the attainable bottom, the operator shall install a 50-foot plug of cement at the attainable bottom and plug the remainder of the well under §§ 78**a**.92—78**a**.98.

(d) If the production casing cannot be retrieved, the operator shall plug strata bearing or having borne oil, gas or water by perforating the casing and squeezing cement into the annulus or other method approved by the Department. The maximum distance the stub of the uncemented production casing may extend is 100 feet below the surface casing seat or coal protective casing seat, whichever is deeper. The uncemented portion of the casing left in the well above the total depth or attainable bottom may not extend through a formation bearing or having borne oil, gas or water or extend to a point where it interferes with subsequent plugging requirements of §§ 78**a**.92(a)(2) and 78**a**.93(a)(2) and (b)(4) (relating to wells in coal areas—surface or coal protective casing is cemented; and wells in coal areas—surface or coal protective casing anchored with a packer or cement). The remainder of the well shall be plugged under §§ 78**a**.92—78**a**.98.

(e) When plugging a well, an operator shall insure that no gases are present in the well in an amount that could interfere with cementing the well.

(f) When plugging a well with a casing string cemented through a gas storage reservoir or reservoir protective area, an operator shall use bridge plugs immediately above and below the gas storage reservoir unless an alternate plugging plan has been approved by the Department.

(g) When a well located in a coal area is plugged to allow mining through it, the person authorized by the Department to plug the well under the act or section 13 of the Coal and Gas Resource Coordination Act (58 P.S. § 513) shall clean out the gas well to a depth of at least 200 feet below the coal seam which will be mined and, unless impracticable, to a point 200 feet below the deepest minable coal seam the well penetrates.

(h) In lieu of the plugging requirements of §§ 78**a**.92—78**a**.95 and 78**a**.97, an operator may cement a well from the total depth or attainable bottom to the surface. Wells in coal areas still shall meet the venting requirements of § 78**a**.92 or § 78**a**.93 (relating to wells in coal areas—surface or coal protective casing is cemented; and wells in coal areas—surface or coal protective casing anchored with a packer or cement).

§ 78a.92. Wells in coal areas—surface or coal protective casing is cemented.

(a) In a well underlain by a workable coal seam, where the surface casing or coal protective casing is cemented and the production casing is not cemented or the production casing is not present, the owner or operator shall plug the well as follows:

(1) The retrievable production casing shall be removed by applying a pulling force at least equal to the casing weight plus 5,000 pounds or 120% whichever is greater. If this fails, an attempt shall be made to separate the casing by cutting, ripping, shooting or other method approved by the Department, and making a second attempt to remove the casing by exerting a pulling force equal to the casing weight plus 5,000 pounds or 120% of the casing weight, whichever is greater. The well shall be filled with nonporous material from the total depth or attainable bottom of the well, to a point 50 feet below the lowest stratum bearing or having borne oil, gas or water. At this point there shall be placed a plug of cement, which shall extend for at least 50 feet above this stratum. Each overlying formation bearing or having borne oil, gas or water shall be plugged with cement a minimum of 50 feet below this formation to a point 50 feet above this formation. The zone between cement plugs shall be filled with nonporous material. The cement plugs shall be placed in a manner that will completely seal the hole. The operator may treat multiple strata as one stratum and plug as described in this subsection with a single column of cement or other materials approved by the Department. Where the production casing is not retrievable, the operator shall plug that portion of the well under § 78**a**.91(d) (relating to general provisions).

(2) After plugging strata bearing or having borne oil, gas or water, the well shall be filled with nonporous material to a point approximately 100 feet below the surface or coal protective casing seat, whichever is deeper. At this point, a 100-foot plug of cement shall be installed.

(3) After the plug has been installed below the casing seat, the inner casing shall be emptied of liquid from the surface to the plug of cement. A vent or other device approved by the Department shall then be installed on top of the inner string of casing to prevent liquids and solids from entering the well but permit access to the full internal diameter of the inner casing when

required. The vent or other device approved by the Department must extend, when finally in place, a distance of at least 72 inches above ground level and the permit or registration number must be permanently affixed.

(b) The owner or operator shall plug a well, where the surface casing, coal protective casing and production casing are cemented, as follows:

(1) If the total depth or attainable bottom is deeper than the cemented production casing seat, the operator shall plug that portion of the well under subsection (a)(1).

(2) Cement plugs shall be set in the cemented portion of the production casing so that the plugs will extend from at least 50 feet below each stratum bearing or having borne oil, gas or water, to a point at least 100 feet above each stratum bearing or having borne, oil, gas or water. A Department-approved mechanical plug may be set 20 feet above each stratum bearing or having borne oil, gas or water as a substitute for the plug of cement. Nonporous material must separate each cement plug or mechanical plug. The operator may treat multiple strata as one stratum and plug as described in this subsection with a single column of cement or other materials as approved by the Department.

(3) Following the plugging of the cemented portion of the production casing, the uncemented portion of the production casing shall be separated from the cemented portion and retrieved by applying a pulling force at least equal to the casing weight plus 5,000 pounds or 120% whichever is greater. If this fails, an attempt shall be made to separate the casing by cutting, ripping, shooting or other method approved by the Department, and making a second attempt to remove the casing by exerting a pulling force equal to the casing weight plus 5,000 pounds or 120% of the casing weight, whichever is greater. The maximum distance the stub of the uncemented portion of the production casing may extend is 100 feet below the surface or coal protective casing whichever is lower. In no case may the uncemented portion of the casing left in the well extend through a formation bearing or having borne oil, gas or water. Other stratum above the cemented portion of the production casing bearing or having borne oil, gas or water shall be plugged by filling the hole with nonporous material to 20 feet above the stratum and setting a 50-foot plug of cement. The operator may treat multiple strata as one stratum and plug as described in this subsection with a single column of cement or other material as approved by the Department. When the uncemented portion of the production casing is not retrievable, the operator shall plug that portion of the well under § 78**a**.91(d).

(4) After plugging all strata bearing or having borne oil, gas or water, the well shall be filled with nonporous material to a point approximately 100 feet below the surface or coal protective casing seat, whichever is deeper. At this point a 200-foot cement plug shall be placed so that the plug extends from 100 feet below the casing seat to a point at least 100 feet above the casing seat.

(5) After the 200-foot plug has been installed, the remainder of the well shall be plugged and vented as described in subsection (a)(3).

(c) A person authorized by the Department under the act or section 13 of the Coal and Gas Resource Coordination Act (58 P.S. § 513) to plug a gas well that penetrates a workable coal

seam that was drilled prior to November 30, 1955, or which was permitted after that date but not plugged in accordance with the act, shall plug the well to mine through it in the following manner:

(1) The gas well shall be cleaned out to a depth of at least 200 feet below the coal seam which is proposed to be mined and, unless impracticable, to a point 200 feet below the deepest mineable coal seam that the well penetrates.

(2) The gas well shall be plugged in accordance with section 13(a)(1), (2), (3) or (4) of the Coal and Gas Resource Coordination Act.

§ 78a.93. Wells in coal areas—surface or coal protective casing anchored with a packer or cement.

(a) In a well where the surface casing or coal protective casing and production casing are anchored with a packer or cement, the owner or operator shall plug the well as follows:

(1) The retrievable production casing shall be removed by applying a pulling force at least equal to the casing weight plus 5,000 pounds or 120% whichever is greater. If this fails, an attempt shall be made to separate the casing by cutting, ripping, shooting or other method approved by the Department, and making a second attempt to remove the casing by exerting a pulling force equal to the casing weight plus 5,000 pounds or 120% of the casing weight, whichever is greater. The well shall be filled with nonporous material from the total depth or attainable bottom of the well, to a point 50 feet below the lowest stratum bearing or having borne oil, gas or water. At this point there shall be placed a plug of cement, which must extend for at least 50 feet above this stratum. Each overlying formation bearing or having borne oil, gas or water shall be plugged with cement a minimum of 50 feet below this formation to a point 50 feet above this formation. The zone between cement plugs shall be filled with nonporous material. The cement plugs shall be placed in a manner that will completely seal the hole. The operator may treat multiple strata as one stratum and plug as described in this subsection with a single column of cement or other material as approved by the Department. When the production casing is not retrievable, the operator shall plug this portion of the well under § 78a.91(d) (relating to general provisions).

(2) The well shall then be filled with nonporous material to a point approximately 200 feet below the lowest workable coal seam, or surface or coal protective casing seat, whichever is deeper. Beginning at this point a 100-foot plug of cement shall be installed.

(3) After it has been established that the surface casing or coal protective casing is free and can be retrieved, the surface or coal protective casing shall be retrieved by applying a pulling force at least equal to the casing weight plus 5,000 pounds or 120% whichever is greater. If this fails, an attempt shall be made to separate the casing by cutting, ripping, shooting or other method approved by the Department, and making a second attempt to remove the casing by exerting a pulling force equal to the casing weight plus 5,000 pounds or 120% of the casing weight, whichever is greater. A string of casing with an outside diameter of at least 4 1/2 inches for gas wells, or at least 2 inches for oil wells, shall be run to the top of the 100-foot plug described in paragraph (2) and cemented to the surface.

(4) If the surface or coal protective string is not free and cannot be retrieved, it shall be perforated or cut below the lowest workable coal to allow the cement used to cement the 4 1/2-inch or 2-inch casing to communicate between the surface casing or coal protective casing, or both, and the well bore. A string of casing of at least 4 1/2 inches for gas wells or at least 2 inches for oil wells shall be run to the top of the 100-foot plug described in paragraph (2) and cemented to the surface.

(5) The inner casing shall then be emptied of liquid and cement from the base of the casing to the surface and a vent or other device approved by the Department shall be installed on the top of the casing to prevent liquids and solids from entering the well, but permit ready access to the full internal diameter of the inner casing. The inner string of casing and the vent or other device approved by the Department must extend, when finally in place, a distance of at least 72 inches above ground level and the permit or registration number must be permanently affixed to the vent.

(b) The owner or operator shall plug a well, where the surface casing and coal protective casing is anchored with a packer or cement and the production casing is cemented, as follows:

(1) If the total depth or attainable bottom is deeper than the cemented production casing seat, the operator shall plug that portion of the well under subsection (a)(1).

(2) A cement plug shall be set in the cemented portion of the production casing so that the plugs extend from at least 50 feet below each stratum bearing or having borne oil, gas or water, to a point at least 100 feet above each stratum bearing or having borne, oil, gas or water. A Department approved mechanical plug may be set 20 feet above the stratum bearing or having borne oil, gas or water as a substitute for the plug of cement. Nonporous material shall separate each cement plug or mechanical plug. The operator may treat multiple strata as one stratum and plug as described in this subsection with a single column of cement or other materials as approved by the Department.

(3) Following the plugging of the cemented portion of the production casing, the uncemented portion of the production casing shall be separated from the cemented portion and retrieved. The maximum distance the stub of the uncemented portion of the production casing may extend is 100 feet below the surface or coal protective casing whichever is lower. In no case may the uncemented portion of the casing left in the well extend through a formation bearing or having borne oil, gas or water. Other stratum above the cemented portion of the production casing bearing or having borne oil, gas or water shall be plugged by filling the hole with nonporous material to 20 feet above the stratum and setting a 50-foot plug of cement. The operator may treat multiple strata as one stratum and plug as described in this paragraph with a single column of cement or other material approved by the Department. When the uncemented portion of the production casing is not retrievable, the operator shall plug that portion of the well under § 78**a**.91(d).

(4) The well shall be filled with nonporous material to a point approximately 300 feet below the bottom of the surface casing or coal protective casing, whichever is deeper. In this case, a 100-

foot plug of cement shall then be placed in the well beginning at that point and extending to a point approximately 200 feet below the bottom of the casing seat.

(5) After it has been established that the surface casing or coal protective casing is free and can be retrieved, the surface or coal protective casing shall be retrieved and a string of casing with an outside diameter of not less than 4 1/2 inches for gas wells, or not less than 2 inches for oil wells, shall be run to the top of the 100-foot plug described in paragraph (4) and cemented to the surface.

(6) If the surface or coal protective string is not free and cannot be retrieved, it shall be perforated or cut below the lowest workable coal seam to allow the cement used to cement the 4 1/2-inch or 2-inch casing to communicate between the surface casing or coal protective casing, or both, and the well bore. A string of casing of not less than 4 1/2 inches for gas wells or not less than 2 inches for oil wells shall be run to the top of the 100-foot plug described in paragraph (4) and cemented to the surface.

(7) The inner casing shall then be emptied of liquid and cement from the base of the casing to the surface and a vent or other device approved by the Department shall be installed on the top of the casing to prevent liquids and solids from entering the well, but permit ready access to the full internal diameter of the inner casing. The inner string of casing and the vent or other device approved by the Department shall extend, when finally in place, a distance of not less than 72 inches above ground level and the permit or registration number shall be permanently affixed to the vent.

(c) A person authorized by the Department under the act or section 13 of the Coal and Gas Resource Coordination Act (58 P.S. § 513) to plug a gas well that penetrates a workable coal seam which was drilled prior to November 30, 1955, or which was permitted after that date but not plugged in accordance with the act shall plug the well to mine through it in the following manner:

(1) The gas well shall be cleaned out to a depth of at least 200 feet below the coal seam which is proposed to be mined and, unless impracticable, to a point 200 feet below the deepest minable coal seam which the well penetrates.

(2) The well shall be plugged in accordance with section 13(a)(2) or (4) of the Coal and Gas Resource Coordination Act.

§ 78<u>a</u>.94. Wells in noncoal areas—surface casing is not cemented or not present.

(a) The owner or operator shall plug a noncoal well, where the surface casing and production casing are not cemented, or is not present as follows:

(1) The retrievable production casing shall be removed by applying a pulling force at least equal to the casing weight plus 5,000 pounds or 120% whichever is greater. If this fails, an attempt shall be made to separate the casing by cutting, ripping, shooting or other method approved by the Department, and making a second attempt to remove the casing by exerting a pulling force

equal to the casing weight plus 5,000 pounds or 120% of the casing weight, whichever is greater. The well shall be filled with nonporous material from the total depth or attainable bottom of the well, to a point 50 feet below the lowest stratum bearing or having borne oil, gas or water. At this point there shall be placed a plug of cement, which must extend for at least 50 feet above this stratum. Each overlying formation bearing or having borne oil, gas or water shall be plugged with cement a minimum of 50 feet below this formation to a point 50 feet above this formation. The zone between cement plugs shall be filled with nonporous material. The cement plugs shall be placed in a manner that will completely seal the hole. The operator may treat multiple strata as one stratum and plug as described in this paragraph with a single column of cement or other materials as approved by the Department. When the production casing is not retrievable, the operator shall plug this portion of the well under § 78**a**.91(d) (relating to general provisions).

(2) After plugging strata bearing or having borne oil, gas or water, the well shall be filled with nonporous material to approximately 100 feet below the surface casing seat and there shall be placed another plug of cement or other equally nonporous material approved by the Department extending at least 50 feet above that point.

(3) After setting the uppermost 50-foot plug, the retrievable surface casing shall be removed by applying a pulling force at least equal to the casing weight plus 5,000 pounds or 120% whichever is greater. If this fails, an attempt shall be made to separate the casing by cutting, ripping, shooting or other method approved by the Department, and making a second attempt to remove the casing by exerting a pulling force equal to the casing weight plus 5,000 pounds or 120% of the casing weight, whichever is greater. The hole shall be filled from the top of the 50-foot plug to the surface with nonporous material other than gel. If the surface casing is not retrievable, the hole shall be filled from the top of the 50-foot plug to the surface with a noncementing material.

(b) The owner or operator shall plug a well, where the surface casing is not cemented or not present, and the production casing is cemented as follows:

(1) If the total depth or attainable bottom is deeper than the cemented production casing seat, the operator shall plug that portion of the well under subsection (a)(1).

(2) Cement plugs shall be set in the cemented portion of the production casing so that each plug extends from at least 50 feet below each stratum bearing or having borne oil, gas or water, to a point at least 100 feet above each stratum. A Department-approved mechanical plug may be used as a substitute for the plug of cement. The mechanical plug shall be set 20 feet above each stratum having borne oil, gas or water. The operator may treat multiple strata as one stratum and plug as described in this subsection with a single column of cement or other material approved by the Department.

(3) Following the plugging of the cemented portion of the production casing, the uncemented portion of the production string shall be separated from the cemented portion and retrieved. The maximum distance the stub of the uncemented portion of the production casing may extend is 100 feet below the surface casing. In no case may the uncemented portion of the production casing left in the hole extend through stratum bearing or having borne oil, gas or water. Other stratum bearing or having borne oil, gas or water shall be plugged by filling the hole with

nonporous material to 20 feet above the stratum and setting a 50-foot plug of cement. When the uncemented portion of the production casing is not retrievable, the operator shall plug that portion of the well under § 78**a**.91(d).

(4) The remainder of the well shall be plugged under subsection (a)(2) and (3).

§ 78a.95. Wells in noncoal areas—surface casing is cemented.

(a) The owner or operator shall plug a well, where the surface casing is cemented and the production casing is not cemented or not present, as follows:

(1) The retrievable production casing shall be removed by applying a pulling force at least equal to the casing weight plus 5,000 pounds or 120% whichever is greater. If this fails, an attempt shall be made to separate the casing by cutting, ripping, shooting or other method approved by the Department, and making a second attempt to remove the casing by exerting a pulling force equal to the casing weight plus 5,000 pounds or 120% of the casing weight, whichever is greater. The well shall be filled with nonporous material from the total depth or attainable bottom of the well, to a point 50 feet below the lowest stratum bearing or having borne oil, gas or water. At this point there shall be placed a plug of cement, which extends for at least 50 feet above this stratum. Each overlying formation bearing or having borne oil, gas or water shall be plugged with cement a minimum of 50 feet below this formation to a point 50 feet above this formation. The zone between cement plugs shall be filled with nonporous material. The cement plugs shall be placed in a manner that will completely seal the hole. The operator may treat multiple strata as one stratum and plug as described in this subsection with a single column of cement or other materials as approved by the Department. When the production casing is not retrievable, the operator shall plug this portion of the well under § 78**a**.91(d) (relating to general provisions).

(2) After plugging all strata bearing or having borne oil, gas or water, the well shall be filled with nonporous material to approximately 100 feet below the surface casing seat. Another plug of cement, or other equally nonporous material approved by the Department, shall be placed extending at least 50 feet above that point.

(3) After setting the 50-foot plug, the hole shall be filled from the top of the 50-foot plug to the surface with a noncementing material or the operator shall set a 100-foot cement plug which extends 50-feet into the surface casing and fill the hole to the surface with noncementing material.

(b) The owner or operator shall plug a noncoal well, where the surface casing and production casing are cemented, as follows:

(1) If the total depth or attainable bottom is deeper than the cemented production casing seat, the operator shall plug that portion of the well under subsection (a)(1).

(2) Cement plugs shall be set in the cemented portion of the production casing so that each plug extends from at least 50 feet below each stratum bearing or having borne oil, gas or water, to a point at least 100 feet above the stratum. A Department-approved mechanical plug may be used

as a substitute for the plug of cement. The mechanical plug shall be set 20 feet above each stratum having borne oil, gas or water. The operator may treat multiple strata as one stratum and plug as described in this subsection with a single column of cement or other materials approved by the Department.

(3) Following the plugging of the cemented portion of the production casing, the uncemented portion of the production string shall be separated from the cemented portion and retrieved. The maximum distance the stub of the uncemented portion of the production casing may extend is 100 feet below the surface casing. In no case may the uncemented portion of the production casing left in the hole extend through stratum bearing or having borne oil, gas or water. Other stratum bearing or having borne oil, gas or water shall be plugged by filling the hole with nonporous material to 20 feet above the stratum and setting a 50-foot plug of cement. When the uncemented portion of the production casing is not retrievable, the operator shall plug that portion of the well under § 78**a**.91(d).

(4) The remainder of the well shall be plugged under subsection (a)(2) and (3).

§ 78a.96. Marking the location of a plugged well.

Upon the completion of plugging or replugging a well, the operator shall erect over the plugged well a permanent marker of concrete, metal, plastic or equally durable material. The marker must extend at least 4 feet above the ground surface and enough below the surface to make the marker permanent. Cement may be used to hold the marker in place provided the cement does not prevent inspection of the adequacy of the well plugging. The permit or registration number shall be stamped or cast or otherwise permanently affixed to the marker. In lieu of placing the marker above the ground surface, the marker may be buried below plow depth and shall contain enough metal to be detected at the surface by conventional metal detectors.

§ 78a.97. Plugging a well stimulated with explosives.

Where strata bearing or having borne oil, gas or water in the well have been stimulated with explosives, thereby creating cavities which cannot be readily filled as described in §§ 78**a**.92—78**a**.95, the well operator shall place at the nearest suitable point, but at least 20 feet above the stratum, a plug of cement which extends at least 50 feet above that point. If the stimulation has been done above one or more strata bearing or having borne oil, gas or water in the well, plugging in the applicable manner specified in §§ 78**a**.92—78**a**.95 shall be done at the nearest suitable points, to at least 20 feet below and at least 20 feet above the stratum stimulated. From a point immediately above and below these plugs, the well shall be plugged under §§ 78**a**.94 and 78**a**.95 (relating to wells in noncoal areas—surface casing is not cemented or not present; and wells in noncoal areas—surface casing is cemented).

§ 78a.98. Restricting surface water from the well bore.

When casing, including conductor pipe, is left in the well at the surface, the area between the casings or the casing and the well bore shall be permanently filled to the surface with a nonporous material to restrict surface water from the well bore.

INACTIVE STATUS

§ 78a.101. General provisions.

Upon application, the Department will grant inactive status for 5 years for a permitted or registered well if the application meets the requirements of section **[204 of the act (58 P.S. § 601.204)]** **section 3214 of the act (relating to inactive status)** and §§ 78**a**.102—**78a.**105. The Department may require information to demonstrate that the conditions imposed by § 78**a**.102 (relating to criteria for approval of inactive status) are satisfied.

§ 78a.102. Criteria for approval of inactive status.

To obtain inactive status, the applicant shall affirmatively demonstrate to the Department's satisfaction that:

(1) The condition of the well is sufficient to:

(i) Prevent damage to the producing zone or contamination of fresh water or other natural resources or surface leakage of substances.

(ii) Stop the vertical flow of fluid or gas within the well bore.

(iii) Protect fresh groundwater.

(iv) Pose no threat to the health and safety of persons, property or the environment.

(2) The well complies with one of the following:

(i) The well meets casing and cementing requirements of §§ 78**a**.81—78**a**.86 (relating to casing and cementing).

(ii) For wells not drilled in conformance with casing and cementing requirements of §§ **78a.**81—78**a**.86, and for the purpose of the annual monitoring of wells granted inactive status as required by § 78**a**.103 (relating to annual monitoring of inactive wells), the applicant demonstrates that:

(A) For oil and gas wells equipped with surface casing, the operator shall demonstrate that the liquid level in the well bore is maintained at a level at no higher than the water protection depth. For purposes of this clause where oil or gas bearing formations are encountered less than 100 feet below the surface casing seat, the water protection depth shall be that point midway between the top of the oil or gas bearing formation and the surface casing seat.

(B) If the liquid level in an oil or gas well equipped with surface casing stands above the water protection depth and below the groundwater table depth, the operator shall test the liquid to determine its quality. If the liquid has a total dissolved solids content or conductivity generally equivalent to fresh groundwater in the immediate area, the casing is assumed to be either leaking

or not set deep enough to shut off groundwater, and mechanical integrity is not demonstrated and inactive status will not be granted unless the operator demonstrates that the well is in compliance with the shut-in portion of the mechanical integrity test requirements of the Under Ground Injection Control program under the Safe Drinking Water Act (21 U.S.C.A. § 349; 42 U.S.C. §§ 201, 300f—300j-11). If the liquid has a total dissolved solids content or conductivity equivalent to the production formation or production liquid, mechanical integrity is considered to be demonstrated.

(C) For oil wells not equipped with surface casing or for oil wells equipped with surface casing that cannot be approved for inactive status under paragraph (2)(ii)(A) or (B), the operator shall modify the well to meet one of the following:

(I) The operator shall set a string of casing on a packer sufficiently deep to isolate the fresh groundwater system. The casing shall be set to the water protection depth for wells in the area, and the requirements of paragraph (2)(ii)(A) or (B) shall be met.

(II) The operator has set a temporary plug or mechanical seal at the water protection depth and isolated the fresh groundwater system. The operator may demonstrate the integrity of the plug by demonstrating that water standing above the plug is, and continues to be, fresh water not contaminated by production fluids, or by other means acceptable to the Department.

(III) The operator shall fill the well with a freshwater bentonite gel or other material approved by the Department which will restrict vertical migration of gas or fluids in the well bore. The operator shall monitor the gel level and report significant changes to the Department on an annual basis and take remedial action approved by the Department.

(D) For gas wells equipped with production casing separate from the surface casing, the annulus between the surface or coal protective casing and the production casing is vented to the atmosphere. The owner or operator of a well granted inactive status under this clause shall monitor the annular vents for gas flow volumes. If the gas flow volume exceeds 5,000 cubic feet per day, the owner or operator shall notify the Department and take remedial action approved by the Department.

(E) For gas wells not equipped with separate production casing, but with cemented or uncemented surface casing present, the produced gas shut-in pressure is less than the pressure necessary to cause gas migration into the adjacent formation at the surface casing seat. Compliance with this condition may be demonstrated by mechanical tests of the casing and by evidence that the gas wellhead shut-in pressure does not exceed 0.433 psi per foot of surface or coal protective casing depth.

(3) If gas exists at an inactive oil well, the operator may vent the gas to the atmosphere or equip the well to confine the gas to the producing formation. If this gas flow is greater than 5,000 cubic feet per day, the owner or operator shall notify the Department and take remedial action approved by the Department.

(4) The applicant shall certify that the well is of future utility and shall present a viable plan for utilizing the well within a reasonable time. In addition to providing information to demonstrate compliance with paragraphs (1) and (2), the application for inactive status shall include the following:

(i) A plan showing when the well will be used.

(ii) A certification identifying that one of the following applies:

(A) Significant reserves remain in place and the operator plans to produce the well.

(B) The well will be used as a disposal well.

(C) The well will be used as a storage well.

(D) The well will be used as an observation well.

(E) The well will be used as a secondary or tertiary recovery injection well or that the well will be used for other purposes specified by the applicant.

(iii) Other information necessary for the Department to make a determination on inactive status.

§ 78a.103. Annual monitoring of inactive wells.

The owner or operator of a well granted inactive status shall monitor the integrity of the well on an annual basis and shall report the results to the Department. The owner or operator shall give the Department 3 **[working]** **business** days prior notice of the annual monitoring and mechanical integrity testing. For wells that were drilled in accordance with the casing and cementing standards of §§ 78**a**.81—78**a**.86 (relating to casing and cementing), the operator shall monitor the integrity of the well by using the method described in § 78**a**.102(2)(ii)(A), (B), (D) or (E) (relating to criteria for approval of inactive status), as appropriate. For a well that was not drilled in accordance with the casing and cementing standards, the wells shall be monitored in accordance with § 78**a**.102(1). To qualify for continued inactive status, the owner or operator shall demonstrate, by the data in the monitoring reports, that the condition of the well continues to satisfy the requirements of § 78**a**.102. The owner or operator shall submit the report by March 31 of the following year.

§ 78a.104. Term of inactive status.

Approval of inactive status for a well is valid for 5 years unless revoked. After 5 years, the owner or operator shall plug or return to active status a well granted inactive status unless the Department grants an application for a 1-year extension. The operator of a well granted inactive status may apply for renewal of inactive status by demonstrating that the well continues to satisfy the conditions imposed on the well by §§ **78a.**102 and **78a.**103 (relating to criteria for approval of inactive status; and annual monitoring of inactive wells).

§ 78a.105. Revocation of inactive status.

The Department may revoke inactive status and may order the immediate plugging of a well if one of the following applies:

(1) The well is in violation of the act or regulations administered by the Department.

(2) The operator of the inactive well has become insolvent, to the extent that the plan provided under § **78a.**102 (relating to criteria for approval of inactive status) is no longer viable to return the well to active status, or the operator otherwise demonstrates a lack of ability or intention to comply with applicable laws and regulations.

(3) The condition of the well no longer satisfies the requirements of section **[204 of the act (58 P.S. § 601.204)] section 3214 of the act (relating to inactive status)** and §§ **78a.**102—**78a.**104 (relating to criteria for approval of inactive status; annual monitoring of inactive wells; and term of inactive status).

(4) The owner or operator is unwilling or unable to perform his obligations under the act.

RADIOACTIVE LOGGING SOURCES

§ 78a.111. Abandonment.

(a) The owner or operator may not abandon a radioactive source licensed by the Commonwealth for logging purposes without consent of the Department. Approval of a plan of abandonment may be arranged with the Department by telephone and is to be followed by a written report to the Department within 30 days after abandonment of the radioactive source. The plan shall be approved by the Department.

(b) The operator shall notify the Department of his intention to leave a radioactive source in a well.

(c) The operator shall mechanically equip a well in which a radioactive source is abandoned to prevent the accidental or intentional mechanical disintegration of the radioactive source.

(1) The operator shall cover the radioactive source being abandoned in the bottom of a well with a substantial standard color-dyed cement plug on top of which a mechanical stop or deflector shall be set. The dye shall contrast with the color of the formation to alert a re-entry operator prior to encountering the source.

(2) In a well where a logging source has been cemented in place behind a casing string and above total depth, upon plugging the well, a color-dyed cement plug shall be placed opposite the abandoned source inside the well bore and a mechanical stop or deflector shall be placed on top of the plug.

(3) If, after expending a reasonable effort, the operator cannot comply with paragraph (1) or (2) because of hole conditions, the operator shall request Department approval to cease efforts to comply with paragraph (1) or (2) and shall obtain approval for an alternate method for abandoning the source and plugging the well.

(d) Upon plugging a well in which a radioactive source is left in the hole, the operator shall place a permanent plaque by welding or bolting or cementing it to the top of the bore hole in a manner approved by the Department that re-entry cannot be accomplished without disturbing the plaque. The plaque shall serve as a visual warning to a person re-entering the hole that a radioactive source has been abandoned in-place in the well. The plaque shall depict the trefoil radiation symbol with the words ‘‘Caution, Radioactive Material’’ under § 219.41 (relating to radiation symbol) and shall be constructed of a long-lasting material such as monel, stainless steel, bronze or brass. The marker shall bear the following information:

(1) Farm name.

(2) Permit number.

(3) Name and address of operator.

(4) The type and strength of radioactive material abandoned in the well.

(5) The total well depth.

(6) Depth at which the source was abandoned.

(7) A warning not to drill below the plug-back depth or to enlarge the casing.

(e) Prior to workover or re-entry activity, if a radioactive source is present, the operator shall have the plan of operation approved by the Department before the workover or re-entry is permitted.

(f) This section does not relieve the licensee, owner or operator from the obligation to comply with Federal regulations and this title, including Chapters 225 and 226 (relating to radiation safety requirements for industrial radiographic operations; and licenses and radiation safety requirements for well logging).

Subchapter E. WELL REPORTING

§ 78a.121. Production reporting.

(a) **[~~The well operator shall submit an annual production and status report for each permitted or registered well on an individual basis, on or before February 15 of each year.~~] [The operator of a well permitted to produce gas from the Marcellus shale formation]** **Each operator of an unconventional well** shall submit a production and status report for each well on an individual basis, on or before February 15 and August 15 of each year. Production shall be

reported **[~~for the preceding calendar year or in the case of [a Marcellus shale] an unconventional well,~~]** for the preceding **[6 months] reporting period**. When the production data is not available to the operator on a well basis, the operator shall report production on the most well-specific basis available. The [**~~annual~~]** **FEBRUARY 15** production report must include information on the amount and type of waste produced and the method of waste disposal or reuse. Waste information submitted to the Department in accordance with this subsection is deemed to satisfy the residual waste biennial reporting requirements of § 287.52 (relating to biennial report).

(b) The production report shall be submitted electronically to the Department through its web site.

§ 78a.122. Well record and completion report.

(a) For each well that is drilled or altered, the operator shall keep a detailed drillers log at the well site available for inspection until drilling is completed. Within 30 calendar days of cessation of drilling or altering a well, the well operator shall submit a well record to the Department on a form provided by the Department that includes the following information:

(1) Name, address and telephone number of the permittee.

(2) Permit number, and farm name and number.

(3) Township and county.

(4) Date drilling started and completed.

(5) Method of drilling.

(6) Size and depth of conductor pipe, surface casing, coal protective casing, intermediate casing, production casing and borehole.

(7) Type and amount of cement and results of cementing procedures.

(8) Elevation and total depth.

(9) Drillers log that includes the name and depth of formations from the surface to total depth, depth of oil and gas producing zone, depth of fresh water and brines and source of information.

(10) Certification by the operator that the well has been constructed in accordance with this chapter and any permit conditions imposed by the Department.

(11) Whether methane was encountered other than in a target formation.

(12) The country of origin and manufacture of tubular steel products used in the construction of the well.

(13) The borrow pit used for well site development, if any.

[(11)] (14) Other information required by the Department.

(b) Within 30 calendar days after completion of the well, **when the well is capable of production,** the well operator shall **[submit] arrange for the submission of** a completion report to the Department on a form provided by the Department that includes the following information:

(1) Name, address and telephone number of the permittee.

(2) Name, address and telephone number of the service companies.

(3) Permit number and farm name and number.

(4) Township and county.

(5) Perforation record.

(6) Stimulation record which includes the following:

(i) A descriptive list of the chemical additives in the stimulation fluid, including any acid, biocide, breaker, brine, corrosion inhibitor, crosslinker, demulsifier, friction reducer, gel, iron control, oxygen scavenger, pH adjusting agent, proppant, scale inhibitor and surfactant.

(ii) The percent by **[volume] mass** of each chemical additive in the stimulation fluid.

(iii) **[A list of the chemicals in the Material Safety Data Sheets, by name and chemical abstract service number, corresponding to the appropriate chemical additive.] The trade name, vendor and a brief descriptor of the intended use or function of each chemical additive in the stimulation fluid.**

(iv) **[The percent by volume of each chemical listed in the Material Safety Data Sheets.] A list of the chemicals intentionally added to the stimulation fluid, by name and chemical abstract service number.**

(v) The maximum concentration, in percent by mass, of each chemical intentionally added to the stimulation fluid.

[(v)] (vi) The total volume of the base fluid.

[(vi)] (vii) A list of water sources used under an approved water management plan and the volume of water used from each source.

[(vii)] (viii) The total volume of recycled water used.

[(viii)] (ix) The pump rate and pressure used in the well.

(7) Actual open flow production and shut in surface pressure.

(8) Open flow production and shut in surface pressure, measured 24 hours after completion.

(9) The freshwater and centralized impoundment, if any, used in the development of the well.

(c) When the well operator submits a stimulation record, it may designate specific portions of the stimulation record as containing a trade secret or confidential proprietary information. The Department will prevent disclosure of the designated confidential information to the extent permitted under the Right-to-Know Law (65 P.S. §§ 67.101—**[67.3103] 67.3104**) **or other applicable State law**.

[(d) In addition to submitting a stimulation record to the Department under subsection (b), and subject to the protections afforded for trade secrets and confidential proprietary information under the Right-to-Know Law, the operator shall arrange to provide a list of the chemical constituents of the chemical additives used to hydraulically fracture a well, by chemical name and abstract service number, unless the additive does not have an abstract service number, to the Department upon written request by the Department.]

§ 78a.123. Logs and additional data.

a) If requested by the Department within 90 calendar days after the completion **[of drilling]** or recompletion **[of a well] of drilling**, the well operator shall submit to the Department a copy of the electrical, radioactive or other standard industry logs run on the well.

(b) In addition, if requested by the Department within 1 year of the completion **[of drilling]** or recompletion **[a well] of drilling**, the well operator shall file with the Department a copy of the drill stem test charts, formation water analysis, porosity, permeability or fluid saturation measurements, core analysis and lithologic log or sample description or other similar data as compiled. No information will be required unless the operator has had the information described in this subsection compiled in the ordinary course of business. No interpretation of the data is to be filed.

[(b)] (c) Upon notification by the Department prior to drilling, the well operator shall collect additional data specified by the Department, such as representative drill cuttings and samples from cores taken, and other geological information that the operator can reasonably compile. **Interpretation of the data is not required to be filed.**

[(c) The information requested by the Department under subsections (a) and (b) shall be provided to the Department by the operator, within 3 years after completion of the well unless the Department has granted an extension or unless the Department has requested information as described in subsection (d). If the Department has granted an extension, the

information shall be submitted in accordance with the extension, but in no case may the extension exceed 5 years from the date of completion of the well.

(d) In accordance with the request of the Department, the operator shall submit the information described in this section for use in investigation or enforcement proceedings, or in aggregate form for statistical purposes.]

(d) Data required under subsections (b) and (c) shall be retained by the well operator and filed with the Department no more than 3 years after completion of the well. Upon request, the Department will extend the deadline up to 5 years from the date of completion of the well.

(e) The Department is entitled to utilize information collected under this section in the enforcement proceedings, in making designations or determinations under section 1927-A of The Administrative Code of 1929 (71 P.S. § 510-27) and in aggregate form for statistical purposes.

§ 78a.124. Certificate of plugging.

(a) Within 30 calendar days after the well has been plugged, the owner or operator of the well shall submit a certificate of plugging to the Department and each coal operator, lessee or owner who was sent notice by certified mail of the intent to plug the well.

(b) The certificate of plugging shall be on a form provided by the Department and contain information required by the Department.

(c) The certificate of plugging shall be prepared and signed by two experienced and qualified people who participated in the work, and shall also be signed by the well owner or operator.

[§ 78a.125. Disposal and enhanced recovery well reports.

~~(a) The operator of a disposal or enhanced recovery well shall submit to the Department, upon request, a copy of the annual monitoring report submitted to the EPA summarizing the results of the operator's monitoring as required by 40 CFR Part 146 (relating to underground injection control program) when these reports are submitted to the EPA. This summary, at a minimum, shall include the following:~~

~~(1) Monthly records of major changes in characteristics or sources of injected fluids.~~

~~(2) Reports of volumes and pressures of injection fluids.~~

~~(3) Reports of mechanical integrity testing.~~

~~(4) Other information or reports required to be submitted to the EPA under 40 CFR Part 146.~~

~~**(b) The operator of a disposal or enhanced recovery well shall submit to the Department copies of periodic monitoring reports or reports of failures, releases, accidents or other incidents required to be submitted to the EPA under 40 CFR 146 when these reports are submitted to the EPA.**~~

~~**(c) The operator of a disposal well or enhanced recovery well may submit monitoring reports to the Department on a field or project basis rather than on an individual well basis provided manifold monitoring is used.]**~~

Subchapter F. [Reserved]

§ 78a.141—78a.146. [Reserved].

Subchapter G. BONDING REQUIREMENTS

§ 78a.301. Scope.

In addition to the requirements of section 215 of the act (58 P. S. § 601.215), this subchapter specifies certain requirements for surety bonds, collateral bonds, replacement of existing bonds, maintaining adequate bond and bond forfeiture.

§ 78a.302. Requirement to file a bond.

For a well that has not been plugged, the owner or operator shall file a bond or otherwise comply with the bonding requirements of section **[215 of the act (58 P.S. § 601.215)]** **3225 of the act (relating to bonding)[**~~**, section 1606-E of The Fiscal Code (72 P.S. § 1606-E)**~~**]** and this chapter. A bond or bond substitute is not required for a well drilled before April 18, 1985.

§ 78a.303. Form, terms and conditions of the bond.

(a) The following types of security are approvable:

(1) A surety bond as provided in § 78a.304 (relating to terms and conditions for surety bonds).

(2) A collateral bond as provided in §§ 78a.305—78a.308**. [For individuals who meet the requirements of section 215(d.1) of the act, a phased deposit of collateral bond as provided in § 78.309(b) (relating to phased deposit of collateral).]**

(b) A person submitting a bond shall comply with the Department guidelines establishing minimum criteria for execution and completion of the bond forms and related documents.

(c) A bond shall be conditioned upon compliance with the drilling, water supply replacement, restoration and plugging requirements in the act, this chapter and permit conditions relating thereto. The bonds are penal in nature and are designed to ensure compliance by the operator to protect the environment, public health and safety affected by the oil and gas well.

d) The person named in the bond or other security shall be the same as the person named in the permit.

[(e) The bond amounts required under section 215 of the act are as follows:

(1) Two thousand five hundred dollars for a single well.

(2) Twenty-five thousand dollars for a blanket bond.]

§ 78a.304. Terms and conditions for surety bonds.

(a) The bond of a surety company that has failed, refused or unduly delayed to pay, in full, on a forfeited surety bond is not approvable.

(b) Only the bond of a surety authorized to do business in this Commonwealth is approvable. If the principal place of business of the surety is outside of this Commonwealth, or if the surety is not a Pennsylvania corporation, the surety bond shall also be signed by an authorized resident agency of the surety that maintains an office in this Commonwealth.

(c) The surety may cancel the bond by filing written notice of cancellation with the Department, the operator and the principal on the bond, only under the following conditions:

(1) The notice of cancellation shall be sent by certified mail, return receipt requested. Cancellation may not take effect until 120 days after receipt of the notice of cancellation by the Department, the operator and the principal on the bond as evidenced by return receipts.

(2) Within 30 days after receipt of a notice of cancellation, the operator shall provide the Department with a replacement bond under § 78a.310 (relating to replacement of existing bond).

(d) The Department will not accept surety bonds from a surety company when the total bond liability to the Department on the bonds filed by the operator, the principal and related parties exceeds the surety company's single risk limit as provided by The Insurance Company Law of 1921 (40 P S. §§ 341—991).

(e) The bond shall provide that the surety and the principal shall be jointly and severally liable for payment of the bond amount.

(f) The bond shall provide that the amount shall be confessed to judgment and execution upon forfeiture.

(g) The Department will retain, during the term of the bond, and upon forfeiture of the bond, a property interest in the surety's guarantee of payment under the bond which is not affected by the bankruptcy, insolvency or other financial incapacity of the operator or principal on the bond.

(h) The surety shall give written notice to the Department, if permissible under law, to the principal and the Department within 10 days of a notice received or action filed by or with a regulatory agency or court having jurisdiction over the surety alleging one of the following:

(1) The insolvency or bankruptcy of the surety.

(2) A violation of regulatory requirements applicable to the surety, when as a result of the violation, suspension or revocation of the surety's license to do business in this Commonwealth or another state is under consideration by a regulatory agency.

§ 78a.305. Terms and conditions for collateral bonds—general.

(a) Collateral documents shall be executed by the owner or operator.

(b) The market value of collateral deposited shall be at least equal to the required bond amount with the exception of United States Treasury Zero Coupon Bonds which shall have a maturity date of not more than 10 years after the date of purchase and at maturity a value of at least $25,000.

(c) Collateral shall be pledged and assigned to the Department free from claims or rights. The pledge or assignment shall vest in the Department a property interest in the collateral which shall remain until release as provided by law and is not affected by the bankruptcy, insolvency or other financial incapacity of the operator.

(d) The Department's ownership rights to deposited collateral shall be such that the collateral is readily available to the Department upon forfeiture. The Department may require proof of ownership, and other means, such as secondary agreements, as it deems necessary to meet the requirements of this subchapter. If the Department determines that deposited collateral does not meet the requirements of this subchapter, it may take action under the law to protect its interest in the collateral.

§ 78a.306. Collateral bonds—letters of credit.

(a) Letters of credit submitted as collateral for collateral bonds shall be subject to the following conditions:

(1) The letter of credit shall be a standby or guarantee letter of credit issued by a Federally insured or equivalently protected financial institution, regulated and examined by the Commonwealth or a Federal agency and authorized to do business in this Commonwealth.

(2) The letter of credit shall be irrevocable and shall be so designated. However, the Department may accept a letter of credit for which a limited time period is stated if the following conditions are met and are stated in the letter:

(i) The letter of credit is automatically renewable for additional time periods unless the financial institution gives at least 90 days prior written notice to both the Department and the operator of its intent to terminate the credit at the end of the current time period.

(ii) The Department has the right to draw upon the credit before the end of its time period, if the operator fails to replace the letter of credit with other acceptable means of compliance with section **[215 of the act (58 P.S. § 601.215)]** **3225 of the act (relating to bonding)** within 30 **calendar** days of the financial institution's notice to terminate the credit.

(3) Letters of credit shall name the Department as the beneficiary and be payable to the Department, upon demand, in part or in full, upon presentation of the Department's drafts, at sight. The Department's right to draw upon the letter of credit does not require documentary or other proof by the Department that the customer has violated the conditions of the bond, the permit or other requirements.

(4) A letter of credit shall be subject to 13 Pa.C.S. (relating to the Uniform Commercial Code) and the latest revision of *Uniform Customs and Practices for Documentary Credits* as published in the International Chamber of Commerce Publication No. 400.

(5) The Department will not accept a letter of credit from a financial institution which has failed, refused or unduly delayed to pay, in full, on a letter of credit or a certificate of deposit previously submitted as collateral to the Department.

(6) The issuing financial institution shall waive rights of set-off or liens which it has or might have against the letter of credit.

(b) If the Department collects any amount under the letter of credit due to failure of the operator to replace the letter of credit after demand by the Department, the Department will hold the proceeds as cash collateral as provided by this subchapter. The operator may obtain the cash collateral after he has submitted and the Department has approved a bond or other means of compliance with section **[215]** **3225** of the act.

§ 78a.307. Collateral bonds—certificates of deposit.

A certificate of deposit submitted as collateral for collateral bonds is subject to the following conditions:

(1) The certificate of deposit shall be made payable to the operator and shall be assigned to the Department by the operator, in writing, as required by the Department and on forms provided by the Department. The assignment shall be recorded upon the books of the financial institution issuing the certificate.

(2) The certificate of deposit shall be issued by a Federally-insured or equivalently protected financial institution which is authorized to do business in this Commonwealth.

(3) The certificate of deposit shall state that the financial institution issuing it waives rights of setoff or liens which it has or might have against the certificate.

(4) The certificate of deposit shall be automatically renewable and fully assignable to the Department. Certificates of deposit shall state on their face that they are automatically renewable.

(5) The operator shall submit certificates of deposit in amounts which will allow the Department to liquidate those certificates prior to maturity, upon forfeiture, for the full amount of the bond without penalty to the Department.

(6) The Department will not accept certificates of deposit from financial institutions which have failed, refused or unduly delayed to pay, in full, on certificates of deposit or letters of credit which have previously been submitted as collateral to the Department.

(7) The operator is not entitled to interest accruing after forfeiture is declared by the Department, until the forfeiture declaration is ruled invalid by a court having jurisdiction over the Department, and the ruling is final.

§ 78a.308. Collateral bonds—negotiable bonds.

Negotiable bonds submitted and pledged as collateral for collateral bonds under section **[215(a)(3) of the act (58 P.S. § 601.215(a)(3))]** **3225(a)(3) of the act (relating to bonding)** are subject to the following conditions:

(1) The Department will use the current market value of governmental securities, other than United States Treasury Zero Coupon Bonds, for the purpose of establishing the value of the securities for bond deposit.

(2) The current market value shall be at least equal to the amount of the required bond.

(3) The Department may periodically evaluate the securities and may require additional amounts if the current market value is insufficient to satisfy the bond amount requirements for the oil or gas well operations.

(4) The operator may request and receive the interest accruing on governmental securities filed with the Department as the interest becomes due and payable. An operator will not receive interest accruing on governmental securities until the full amount of the bond has been accumulated. No interest may be paid for postforfeiture interest accruing during appeals and after resolution of the appeals, when the forfeiture is adjudicated, decided or settled in favor of the Commonwealth.

§ 78a.309. **[Phased deposit of collateral] (Reserved)**.

[(a) ***Operators.***

(1) *Eligibility.* An operator who had a phased deposit of collateral in effect as of November 26, 1997, may maintain that bond for wells requiring bonding, for new well permits and for wells acquired by transfer.

(i) An operator may not have more than 200 wells.

(ii) Under the following schedule, an operator shall make a deposit with the Department of approved collateral prior to the issuance of a permit for a well or the transfer of a permit for a well, and shall make subsequent annual deposits and additional well payments. For the purpose of calculating the required deposit, all of the operator's wells are included in the number of wells.

Number of Wells	*Annual Deposit*	*Per Additional Well*
1-10 with no intention to operate more than 10	**$50/well**	**N.A.**
11-25 or 1-10 and applies for additional well permits	**$1,150**	**$ 150**
26-50	**$1,300**	**$ 400**
51-100	**$1,500**	**$ 400**
101-200	**$1,600**	**$1,000**

(iii) An operator shall make the phased deposits of collateral as required by the bond.

(2) *Termination of eligibility.* An operator is no longer eligible to make phased deposits of collateral when one or more of the following occur:

(i) The operator shall fully bond the wells immediately, if an operator has more than 200 wells.

(ii) If the operator misses a phased deposit of collateral payment, the operator shall do one of the following:

(A) Immediately submit the appropriate bond amount in full.

(B) Cease all operations and plug the wells covered by the bond in accordance with the plugging requirements of section 210 of the act (58 P. S. § 601.210).

(b) *Individuals.*

(1) *Eligibility.*

(i) An individual who seeks to satisfy the collateral bond requirements of the act by submitting phased deposit of collateral under section 215(d.1) of the act (58 P. S. §

601.215(d.1)), may not drill more than ten new wells per calendar year. A well in which the individual has a financial interest is to be considered one of the wells permitted under this section. A partnership, association or corporation is not eligible for phased deposit of collateral under this subsection.

(ii) The individual shall deposit with the Department $500 per well in approved collateral prior to issuance of a new permit.

(iii) The individual shall deposit 10% of the remaining amount of bond in approved collateral in each of the next 10 years. Annual payments shall become due on the anniversary date of the issuance of the permit, unless otherwise established by the Department. Payments shall be accompanied by appropriate bond documents required by the Department.

(iv) The individual shall make the phased collateral payments as required by the bond.

(2) *Termination of eligibility.* If the individual misses a phased deposit of collateral payment, the individual will no longer be eligible to make phased deposits of collateral and shall do one of the following:

(i) Immediately submit the appropriate bond amount in full.

(ii) Cease operations and plug the wells covered by the bond in accordance with the plugging requirements of section 210 of the act.

(c) *Interest earned.* Interest earned by collateral on deposit by operators and individuals under this section shall be accumulated and become part of the bond amount until the operator completes deposit of the requisite bond amount in accordance with the schedule of deposit. Interest earned by the collateral shall be retruned to the operator or the individual upon release of the bond. Interest may not be paid for postforfeiture interest accruing during appeals and after resolution of the appeals, when the forfeiture is adjudicated, decided or settled in favor of the Commonwealth.]

§ 78<u>a</u>.310. Replacement of existing bond.

(a) An owner or operator may replace an existing surety or collateral bond with another surety or collateral bond that satisfies the requirements of this chapter, if the liability which has accrued against the bond, the owner or operator who filed the first bond and the well operation is transferred to the replacement bond. An owner or operator may not substitute a phased deposit of collateral bond under section **[215(d) and (d.1) of the act (58 P.S. § 601.215(d) and (d.1))]** **<u>3225(d) and (d.1) of the act (relating to bonding)</u>** for a valid surety bond or collateral that has been filed and approved by the Department.

(b) The Department will not release existing bonds until the operator has submitted and the Department has approved acceptable replacement bonds.

§ 78a.311. Failure to maintain adequate bond.

The permittee shall maintain a bond in an amount and with sufficient guarantee as provided by this chapter. If a surety company that had provided surety bonds, or a financial institution that had provided certificates of deposit or letters of credit for an operator enters into bankruptcy or liquidation, has its license suspended or revoked or for another reason indicates an inability or unwillingness to provide an adequate financial guarantee of the obligations under the bond, the operator shall submit a bond within 45 days of notice from the Department.

§ 78a.312. Forfeiture determination.

(a) A collateral or surety bond may be forfeited when the Department determines that the operator fails or refuses to comply with the act, this title, an order of the Department, or the terms or conditions of the permit relating to drilling, water supply replacement, plugging and site restoration.

(b) If forfeiture of the bond is required, the Department will:

(1) Send written notification by mail to the permittee, and the surety, if any, of the Department's intent to forfeit the bond and describe the grounds for forfeiture. The notification will also provide an opportunity to take remedial action or submit a schedule for taking remedial actions acceptable to the Department within 30 days of the notice of intent to forfeit, in lieu of collecting the bond.

(2) If the permittee and surety, if any, fail either to take remedial action or to submit a plan acceptable to the Department within 30 days of the notice of the intent to forfeit, the bond will be subject to forfeiture and collection up to the face amount thereof. The Department will issue a declaration to forfeit the bond.

(3) The declaration to forfeit is an action which may be appealable to the Environmental Hearing Board under section 4 of the Environmental Hearing Board Act (35 P. S. § 7514).

§ 78a.313. Incapacity of operators.

An owner or operator shall notify the Department by certified mail within 10 calendar days after commencement of a voluntary or involuntary proceeding under 11 U.S.C.A. §§ 101—1330, known as the Federal Bankruptcy Act, naming the owner or operator as debtor.

§ 78a.314. Preservation of remedies.

Remedies provided or authorized by law for violation of statutes, including the act, the applicable environmental protection acts, this title, the terms and conditions of permits and orders of the Department, are expressly preserved. Nothing in this subchapter is an exclusive penalty or remedy for the violations. No action under this subchapter waives or impairs another remedy or penalty provided in law or equity.

[Subchapter H. UNDERGROUND GAS STORAGE

§ 78a.401. Storage well construction.

(a) In addition to the casing and cementing requirements of Subchapter D (relating to well drilling, operation and plugging), when constructing new gas storage wells the operator shall:

(1) Cement the surface and intermediate casings with sufficient cement to circulate cement to the surface or to equal at least 120% of the calculated volume to fill the annular space on the outside of the casing.

(2) Cement the production casing with sufficient cement to fill the calculated annular space with cement to a point at least 500 feet above the casing shoe and at least 200 feet above the upper most perforations.

(b) Gas storage wells being reconditioned shall meet the requirements of this section unless an alternate method of casing and cementing has been approved by the Department under § 78a.75 (relating to alternative methods).

(c) The storage operator shall give the Department notice at least 15 days prior to reconditioning or altering a gas storage well and describe the procedure that the operator will use to recondition or alter the gas storage well. If no objections are raised by the Department within 10 days, the operator may proceed to recondition or alter the well as proposed. The operator shall submit an updated well record within 30 days of completing a reconditioning or alteration.

§ 78a.402. Inspections by the gas storage operator.

(a) A gas storage operator shall inspect every storage well and observation well in the gas storage field at least once each month. The results of the inspections shall be recorded and retained by the operator and shall be available for review by the Department and the coal owner or operator.

(b) Inspections at a minimum shall determine:

(1) The well-head pressure or water level measurement, as appropriate.

(2) The open flow on the annulus of the production casing or the annulus pressure if the annulus is shut in.

(3) If there is evidence of gas escaping from a well using measurement or best estimate of quantity.

(4) If there is evidence of progressive corrosion, rusting or other signs of equipment deterioration.

(c) Storage operators shall inspect the gas storage reservoir and storage protective area at least annually to discover if material changes have occurred that require an amendment or supplement of the map and data as required in section [301(a) and (b) of the act (58 P.S. § 601.301(a) and (b))] 3231(a) and (b) of the act (relating to reporting requirements for gas storage operations). As part of that inspection, gas storage operators shall inspect known abandoned wells and plugged wells within the gas storage reservoir area and the gas storage protective area, subject to the right of entry, at the end of the injection season when the storage pressure is at its highest. The inspection record shall include observed evidence of gas leaking and other conditions that may be hazardous to the public or property.

(d) Evidence of a new gas leak and leaks that exceed 5,000 cubic feet per day shall be reported to the Department within 24 hours. Following notification, the gas storage reservoir operator shall file a written report including corrective action taken, or planned, and a detailed explanation of the problem within 10 days. Subsequent reports describing additional corrective action and acquired data may be requested by the Department.

§ 78a.403. Gas storage well integrity testing.

(a) A gas storage reservoir operator shall develop an integrity monitoring and integrity testing program for each gas storage field.

(b) A gas storage reservoir operator shall test the integrity of each gas storage well at least once every 5 years. By June 15, 1995, each gas storage operator shall submit, for Department approval, an integrity testing plan for each gas storage field.

(c) The testing program may consist of geophysical well logging, pressure testing or other procedures approved by the Department. The testing program shall indicate a well's integrity, whether there has been gas loss in quantities in excess of those amounts in § 78a.402(d) (relating to inspections by the gas storage operator), and whether there is a well condition that requires reconditioning, plugging or other remedial action.

(d) Gas storage field monitoring may consist of annular and tubing pressure monitoring, reservoir engineering evaluation in the form of pressure/volume inventory studies, gauge calibration programs, wellsite inspection programs, casing inspection programs, pressure and flow testing programs, internal and external inventory auditing programs or a combination of monitoring procedures approved by the Department that verify the gas storage reservoir's integrity.

(e) The gas storage reservoir operator shall retain the information gathered in subsections (a)—(d) and shall make the information available to the Department for 15 years.

(f) For an observation well for which a gas storage operator does not retain monitoring data, the gas storage operator shall plug the well or apply for inactive status.

~~(g) The Department may require the operator to perform additional tests it deems necessary after a conference is held under section [501 of the act (58 P.S. § 601.501)]~~ 3251 ~~of the act (relating to conferences).~~

~~§ 78a.404. Maximum storage pressure.~~

~~A gas storage reservoir operator, who has not requested approval of a maximum storage pressure for a gas storage reservoir, shall request, by February 15, 1995, Department approval of a maximum gas storage reservoir pressure in accordance with the following:~~

~~(1) The maximum shut-in wellhead pressure (psig) may not exceed the highest shut-in wellhead pressure (psig) found to exist during the production history of the reservoir, unless a higher pressure is established through testing of caprock and pool containment. The methods used for determining the higher pressure shall be determined in conference with the Department in accordance with section [501]~~ 3251 ~~of the act.~~

~~(2) If the original discovery shut-in wellhead pressure (psig) is not known, or the highest production shut-in wellhead pressure (psig) is not known, or a higher pressure has not been established through a method as approved by the Department as established in paragraph (1), the maximum storage reservoir pressure shall be limited to a freshwater hydrostatic gradient.~~

~~§ 78a.405. Emergency repairs.~~

~~When emergency repairs are necessary, prior notification under § 78a.401(c) (relating to storage well construction) is not required. The operator shall give notice to the Department within 24 hours of the repairs. Within 5 days of the emergency, the operator shall submit a written explanation of the emergency and the corrective action taken, or planned. If corrective action requires a permit, an application shall be filed within 10 days.~~

~~§ 78a.406. Recordkeeping.~~

~~(a) The gas storage reservoir operator shall retain records for each gas storage well and shall make these records available to the Department. These records shall include, but not be limited to, the following:~~

~~(1) Well inspection results and pressure data for the preceding 7 years.~~

~~(2) Integrity testing data for each gas storage well required by § 78a.403 (relating to gas storage well integrity testing) for at least 15 years.~~

~~(b) The gas storage reservoir operator shall retain data for at least 7 years gathered during inspections of abandoned wells and plugged wells as required by § 78a.402 (relating to inspections by the gas storage operator) and shall make these records available to the Department.~~

~~§ 78a.407. Plugging gas storage wells.~~

~~In addition to complying with the plugging requirements in §§ 78a.91—78a.98 (relating to plugging), the gas storage reservoir operator shall:~~

~~(1) Notify the Department of an intent to plug a gas storage well at least 15 days before beginning to plug the well. This notice shall describe the intended plugging procedure.~~

~~(2) Clean out the portions of the well that penetrate the storage horizon.~~

~~(3) Set cement across the perforations in a manner that prevents the migration of gas or other fluids within or outside of the well.~~

~~(4) For an open hole, set a bridge plug immediately above the storage horizon followed by a 500 foot cement plug, or use another method approved by the Department.~~]

Subchapter X. STATEMENTS OF POLICY

INSPECTION POLICY REGARDING OIL AND GAS WELL ACTIVITIES

§ 78a.901. [Reserved].

§ 78a.902. Policy.

(a) This statement of policy sets forth the policy of the Department in regard to inspections of oil and gas well locations, sites, property, facilities, operations or activities governed by the act, the Coal and Gas Resource Coordination Act (58 P. S. §§ 501—518) or the Oil and Gas Conservation Law (58 P. S. §§ 401—419). This policy does not create a duty or obligation upon the Department to conduct a minimum or maximum number of inspections per year or during a certain period of time.

(b) Inspections are conducted to administer, implement, enforce and determine compliance with the statutes set forth in subsection (a) and with Article XIX-A of The Administrative Code of 1929 (71 P. S. §§ 510-1—510-108), The Clean Streams Law (35 P. S. §§ 691.1—691.1001) and the Solid Waste Management Act (35 P. S. §§ 6018.101—6018.1003) and other statutes administered by the Department that apply to activities associated with gas and oil operations.

§ 78a.903. Frequency of inspections.

The Department, its employes and agents intend to conduct inspections at the following frequencies:

(1) At least once prior to the issuance of a permit, if a waiver or exception is requested by the permit applicant.

(2) At least once in verifying or resolving objections or determining the Department's response to objections, when objections are raised to a permit application.

(3) At least once during each of the phases of siting, drilling, casing, cementing, completing, altering and stimulating a well.

(4) At least once during, or within 3 months after, the time period in which the owner or operator is required to restore the site, after drilling the well.

(5) At least once prior to the authorization to use an alternate method for plugging, casing or equipping the well.

(6) At least once during the periods that an alternative method for plugging, casing or equipping the well is being used or installed.

(7) At least once when a well is being reconditioned or repaired or when casing is being replaced.

(8) At least once prior to a well being granted inactive status.

(9) At least once during the plugging of the well.

(10) At least once during, or within 3 months after, the period in which the owner or operator is required to restore the site, after the well is plugged or abandoned.

(11) At least once before the bond or other financial security is released.

(12) At least once a year, if there is onsite brine disposal or residual waste disposal subject to the statutes referenced in § 78**a**.902 (relating to policy).

(13) At least twice a year if the well is located in a gas storage reservoir or in a gas storage reservoir protective area.

(14) At least once a year to determine whether compliance with the statutes administered by the Department has been achieved.

(15) If there is a violation, at least once to determine whether the violation has been corrected, or whether there is a continuing violation.

(16) At least once, in response to a complaint.

§ 78a.904. Manner of inspection.

The inspections described in this subchapter may be conducted separately, or in combination, whichever manner is deemed by the Department to permit maximum efficiency, accuracy and thoroughness in implementing the statutes administered by the Department.

§ 78a.905. Additional inspections.

The Department, its employes and agents may conduct additional inspections, including follow-up inspections, inspections to observe a practice or condition related to the public health or safety and inspections to determine compliance with the statutes set forth in § 78**a**.902 (relating to policy), with the laws administered by the Department, with the Department's regulations, with the terms or conditions of a permit or with the requirements of an order.

§ 78a.906. Limitation.

The provisions of this statement of policy are subject to the availability of personnel and financial resources. This statement of policy does not create a duty or obligation upon the Department to conduct a minimum or maximum number of inspections per year or during a certain period.