

MEMORANDUM

April 10, 1967

To: Chief, Water Rights Division
(Through Chief, Technical Division)

From: Chief, Hydrology Section, Technical Division

Subject: Designation of fresh-water supplies to be protected against contamination, as authorized by Section 65-3-11(15), New Mexico Statutes Annotated, 1953 Compilation, 1965 Supplement.

Section 65-3-11(15), New Mexico Statutes Annotated, 1953 Compilation, 1965 Supplement, is concerned with prevention of contamination of fresh-water supplies resulting from disposal of water produced or used in connection with the drilling for or production of oil or gas.

Sections 65-3-11(1) and 65-3-11(2) appear to make adequate provision for the protection of ground waters from hazards incident to wildcat and oil-well drilling and in completion of production wells.

It is believed that the intent of the legislation pertinent here is to provide reasonable protection against deterioration of the chemical quality of water presently usable or being used for domestic, irrigation, or stock-water supplies and water that could be made usable for such purposes by treatment methods now generally employed by municipalities and methods commonly used in treating individual household supplies. Such water is considered to be "fresh" within the meaning of the subject legislation.

Many irrigation water supplies in the Pecos Valley and in the Tularosa area contain more than 3,000 ppm dissolved solids and some water containing as much as 5,000 ppm dissolved solids is used. Water containing more than about 3,000 ppm dissolved solids ordinarily is considered to be too highly mineralized for use as irrigation water but evidently may be used beneficially in favorable environmental situations.

Numerous stock-water supplies in the State contain between 2,000 and 3,000 ppm dissolved solids and many contain as much as 5,000 ppm dissolved solids. A number of stock wells in southeastern New Mexico are known to produce water containing between 5,000 ppm and 9,260 ppm dissolved solids and one stock well produces water containing 17,200 ppm dissolved solids. Water containing much more than 5,000 ppm dissolved solids probably could not be practically used continuously for stock-watering purposes but water containing more than 10,000 ppm dissolved solids may be used temporarily in special or emergency circumstances (see California Water Quality Control Board Publication No. 3A, "Water Quality Criteria," 1963, pp. 112-113).

It would appear, then, that waters containing 5,000 ppm or less dissolved solids should be afforded definite protection against possible deterioration of chemical quality and it is suggested that provision for protection of supplies containing 10,000 ppm dissolved solids or less be

BEFORE EXAMINER STOGNER

OIL CONSERVATION DIVISION

OCD/SEO EXHIBIT NO. D

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made in those areas where water of better quality is not available and where such water is usable or is currently being used for livestock watering purposes.

Deterioration of chemical quality of existing water supplies may occur directly or indirectly in several ways as a result of disposal of oil-field wastes:

1) Oil-field wastes placed in unlined pits will seep through the bottoms and sides of the pits and enter shallow fresh-water aquifers (such as occur in the Ogalalla formation and other Cenozoic formations found in widespread areas of New Mexico). The wastes, upon reaching the saturated zone, will tend to move to the lower parts of the aquifer because the density of the wastes is usually greater than that of the water in the aquifer. The wastes may then spread laterally as they move downward or they may be primarily confined to topographic erosion channels. Obviously the degree of deterioration of fresh waters that will result will depend upon the rate at which wastes are disposed, the length of time the disposal operations are continued, the quality of the disposed wastes, the local geohydrology in each instance and the degree of pumping of fresh water in the vicinity of the pits.

2) Direct injection of wastes into the fresh-water zones of an aquifer by means of disposal wells would have much the same effect as pit disposal operations except that relatively deep as well as near-surface water supplies could be affected and the effects might spread more rapidly than in the case of pit disposal, other things being equivalent.

3) As an example of indirect deterioration of fresh-water supplies as a result of displacement of water of poor quality, consider a formation which contains water of both good and poor chemical quality in different areas or zones. If wastes are introduced into the areas or zones containing the poor quality water, or even into adjacent formations hydraulically connected, the poor quality water will migrate because of displacement into the areas or zones of good quality water. Obviously, as for 1) above, the impairment that would result in the areas or zones of good quality water will depend upon the magnitude of the disposal operation, its time of continuance, and the hydraulic and hydrologic properties of the formation under consideration.

4) Consider next a formation which discharges water of poor quality to a stream through springs or seeps, or indirectly through other formations. Introduction of wastes into such formations, even in areas of poor quality water, will increase the rate of accretion of poor quality water to the stream and could result in serious impairment to the quality of the stream water, particularly during periods of low flow.

All formations, deposits, or rocks younger than Cretaceous in age at most places in the State of New Mexico contain fresh-water supplies (if they contain water at all) which should be afforded protection.

The attached map shows on a broad formation-area basis the areas in which fresh-water supplies commonly are found in formations of Cretaceous age and older in the areas delineated. It must be realized that the facts pertinent to many of the areas shown on the map are incompletely known and that revision from time to time as information is gained will be desirable. In the meantime, however, the map should serve as a guideline to interested persons.

Although this memorandum is primarily oriented to a discussion of ground-water supplies, the effect of disposal of oil-field wastes on surface-water supplies used for domestic, stock, municipal, industrial, irrigation and recreation purposes must be considered also. In general, all surface-water supplies of the State can be considered "fresh" under the definition stated above. Some reaches of some streams may have part-time flows wherein the stream waters will contain more than 5,000 ppm dissolved solids but these conditions should not be aggravated.



P. D. Akin

PDA:mmm
Attachment

History: Laws 1925, ch. 118, § 3; C.S. 1929, § 97-303;
1941 Comp., § 69-105; 1953 Comp., § 65-2-5.

ARTICLE 2

Oil Conservation Commission; Division; Regulation of Wells

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|--|--|
| <p>Sec.
70-2-1. Short title.
70-2-2. Waste prohibited.
70-2-3. Waste; definitions.
70-2-4. Oil conservation commission; members; term; officers; quorum; power to administer oaths.
70-2-5. Oil conservation division; director; state petroleum engineer.
70-2-6. Commission's and division's powers and duties.
70-2-7. Rules of procedure in hearings; manner of giving notice; record of rules, regulations and orders.
70-2-8. Subpoena power; immunity of natural persons required to testify.
70-2-9. Failure or refusal to comply with subpoena; refusal to testify; body attachment; contempt.
70-2-10. Perjury; punishment.
70-2-11. Power of commission and division to prevent waste and protect correlative rights.
70-2-12. Enumeration of powers.
70-2-13. Additional powers of commission or division; hearings before examiner; hearings de novo.
70-2-14. Bonding requirement.
70-2-15. Allocation of allowable production among fields when division limits total amount of production.
70-2-16. Allocation of allowable production in field or pool.
70-2-17. Equitable allocation of allowable production; pooling; spacing.
70-2-18. Spacing or proration unit with divided mineral ownership.
70-2-19. Common purchasers; discrimination in purchasing prohibited.
70-2-20. Penalty for violations.</p> | <p>Sec.
70-2-21. Purchase, sale or handling of excess oil, natural gas or products prohibited.
70-2-22. Rules and regulations to effectuate prohibitions against purchase or handling of excess oil or natural gas; penalties.
70-2-23. Hearings on rules, regulations and orders; notice; emergency rules.
70-2-24. Reports of governmental departments or agencies as to market demand to be deemed prima facie correct.
70-2-25. Rehearings; appeals.
70-2-26. Review of oil conservation commission decision; appeals.
70-2-27. Temporary restraining order or injunction; grounds; hearing; bond.
70-2-28. Actions for violations.
70-2-29. Actions for damages; institution of actions for injunctions by private parties.
70-2-30. Violation of court order grounds for appointment of receiver.
70-2-31. Penalties for violations; accessories.
70-2-32. Seizure and sale of illegal oil or gas or products; procedure.
70-2-33. Definitions of words used in act.
70-2-34. Regulation, conservation and prevention of waste of carbon dioxide gas.
70-2-35. Legal representation before the federal power commission.
70-2-36. Removing or altering marks of identification; penalty.
70-2-37. Oil and gas reclamation fund created; disposition of fund.
70-2-38. Oil and gas reclamation fund administered; plugging wells on federal land; right of indemnification; annual report; contractors selling equipment for salvage.</p> |
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70-2-1. Short title.

Sections 70-2-1 through 70-2-36 NMSA 1978 may be cited as the "Oil and Gas Act."

History: 1953 Comp., § 65-3-1.1, enacted by Laws 1977, ch. 237, § 1.

Law review. — For article, "New Mexican

Nationalism' and the Evolution of Energy Policy in New Mexico," see 17 Nat. Resources J. 283 (1977).

70-2-2. [Waste prohibited.]

The production or handling of crude petroleum oil or natural gas of any type or in any form, or the handling of products thereof, in such manner or under such conditions or in such amounts as to constitute or result in waste is each hereby prohibited.

History: Laws 1935, ch. 72, § 1; 1941 Comp., § 69-202; Laws 1949, ch. 168, § 1; 1953 Comp., § 65-3-2.

Cross-reference. — As to regulation and conservation of carbon dioxide gas, see 70-2-34 NMSA 1978.

Legislative intent. — Primary concern of oil and gas

legislation is eliminating and preventing waste in the pool so far as it can practicably be done, and also the protection of correlative rights of producers from the pool. *El Paso Natural Gas Co. v. Oil Conservation Comm'n*, 76 N.M. 268, 414 P.2d 496 (1966).

Two fundamental powers and duties of commis-

History: Laws 1935, ch. 72, § 4; 1941 Comp., § 69-205; Laws 1949, ch. 168, § 4; 1953 Comp., § 65-3-5; Laws 1965, ch. 58, § 2; 1977, ch. 255, § 41;

1979, ch. 175, § 1.

The 1979 amendment added the second sentence in Subsection B.

70-2-12. Enumeration of powers.

A. Included in the power given to the division is the authority to collect data; to make investigations and inspections; to examine properties, leases, papers, books and records; to examine, check, test and gauge oil and gas wells, and tanks, plants, refineries and all means and modes of transportation and equipment; to hold hearings; to provide for the keeping of records and the making of reports and for the checking of the accuracy thereof; to limit and prorate production of crude petroleum oil or natural gas, or both, as in this act [this section] provided; to require either generally or in particular areas certificates of clearance or tenders in connection with the transportation of crude petroleum oil or natural gas or any products thereof, or both such oil and products, or both such natural gas and products.

B. Apart from any authority, express or implied, elsewhere given to or existing in the division by virtue of this act [this section] or the statutes of this state, the division is hereby authorized to make rules, regulations and orders for the purposes and with respect to the subject matter stated herein, viz.:

- (1) to require dry or abandoned wells to be plugged in such a way as to confine the crude petroleum oil, natural gas or water in the strata in which they are found, and to prevent them from escaping into other strata; the division shall require a corporate surety bond in a sum not to exceed fifty thousand dollars (\$50,000) conditioned for the performance of such regulations;
- (2) to prevent crude petroleum oil, natural gas or water from escaping from strata in which they are found into another stratum or other strata;
- (3) to require reports showing locations of all oil or gas wells, and for the filing of logs and drilling records or reports;
- (4) to prevent the drowning by water of any stratum or part thereof capable of producing oil or gas, or both oil and gas, in paying quantities, and to prevent the premature and irregular encroachment of water, or any other kind of water encroachment, which reduces or tends to reduce the total ultimate recovery of crude petroleum oil or gas, or both such oil and gas, from any pool;
- (5) to prevent fires;
- (6) to prevent "blow-outs" and "caving" in the sense that the conditions indicated by such terms are generally understood in the oil and gas business;
- (7) to require wells to be drilled, operated and produced in such manner as to prevent injury to neighboring leases or properties;
- (8) to identify the ownership of oil or gas producing leases, properties, wells, tanks, refineries, pipelines, plants, structures and all transportation equipment and facilities;
- (9) to require the operation of wells with efficient gas-oil ratios and to fix such ratios;
- (10) to fix the spacing of wells;
- (11) to determine whether a particular well or pool is a gas or oil well, or a gas or oil pool, as the case may be, and from time to time to classify and reclassify wells and pools accordingly;
- (12) to determine the limits of any pool or pools producing crude petroleum oil or natural gas or both, and from time to time redetermine such limits;
- (13) to regulate the methods and devices employed for storage in this state of oil or natural gas or of any product thereof including subsurface storage;
- (14) to permit the injection of natural gas or of any other substance into any pool in this state for the purpose of repressuring, cycling, pressure maintenance, secondary or any other enhanced recovery operation;
- (15) to regulate the disposition of water produced or used in connection with the drilling for or producing of oil or gas, or both, and to direct surface or subsurface disposal of such water in a manner that will afford reasonable protection against contamination of fresh water supplies designated by the state engineer;

(16) to determine the limits of any area containing commercial potash deposits and from time to time redetermine such limits;

(17) to regulate and where necessary prohibit drilling or producing operations for oil or gas within any area containing commercial deposits of potash where such operations would have the effect unduly to reduce the total quantity of such commercial deposits of potash which may reasonably be recovered in commercial quantities or where such operations would interfere unduly with the orderly commercial development of such potash deposits; or

(18) to spend the oil and gas reclamation fund and do all acts necessary and proper to plug dry and abandoned oil and gas wells in accordance with the provisions of the Oil and Gas Act [70-2-1 to 70-2-36 NMSA 1978] and the Public Purchases Act [13-1-1 to 13-1-27 NMSA 1978] including disposing of salvageable equipment and material removed from oil and gas wells being plugged by the state.

History: 1953 Comp., § 65-3-11, enacted by Laws 1978, ch. 71, § 1.

Repeals and reenactments. — Laws 1978, ch. 71, § 1, repeals 65-3-11, 1953 Comp. (former 70-2-12 NMSA 1978), relating to enumeration of powers, and enacts the above section.

Effective dates. — Laws 1978, ch. 71, § 2, makes the act effective on March 31, 1978.

Emergency clauses. — Laws 1978, ch. 71, § 3, makes the act effective immediately. Approved February 24, 1978.

70-2-13. Additional powers of commission or division; hearings before examiner; hearings de novo.

In addition to the powers and authority, either express or implied, granted to the oil conservation commission or division by virtue of the statutes of the state of New Mexico, the division is hereby authorized and empowered in prescribing its rules of order or procedure in connection with hearings or other proceedings before the division to provide for the appointment of one or more examiners to be members of the staff of the division to conduct hearings with respect to matters properly coming before the division and to make reports and recommendations to the director of the division with respect thereto. Any member of the commission or the director of the division or his authorized representative may serve as an examiner as provided herein. The division shall promulgate rules and regulations with regard to hearings to be conducted before examiners, and the powers and duties of the examiners in any particular case may be limited by order of the division to particular issues or to the performance of particular acts. In the absence of any limiting order, an examiner appointed to hear any particular case shall have the power to regulate all proceedings before him and to perform all acts and take all measures necessary or proper for the efficient and orderly conduct of such hearing, including the swearing of witnesses, receiving of testimony and exhibits offered in evidence subject to such objections as may be imposed, and shall cause a complete record of the proceeding to be made and transcribed and shall certify the same to the director of the division for consideration together with the report of the examiner and his recommendations in connection therewith. The director of the division shall base the decision rendered in any matter or proceeding heard by an examiner upon the transcript of testimony and record made by or under the supervision of the examiner in connection with such proceeding, and such decision shall have the same force and effect as if the hearing had been conducted before the director of the division. When any matter or proceeding is referred to an examiner and a decision is rendered thereon, any party of record adversely affected shall have the right to have the matter heard de novo before the commission upon application filed with the division within thirty days from the time any such decision is rendered.

History: 1953 Comp., § 65-3-11.1, enacted by Laws 1956, ch. 235, § 1; 1961, ch. 62, § 1; 1977, ch. 255, § 48; 1981, ch. 63, § 1.

The 1981 amendment substituted "of" for "or" preceding "order" near the middle of the first sen-

tence, substituted "the" for "said" preceding "hearing" near the end of the fifth sentence and preceding "matter" near the middle of the last sentence and inserted "of record" following "party" near the middle of the last sentence.