PROPOSED RULE ADDITIONS AND AMENDMENTS

RULE 0.1 DEFINITIONS

Additional Definitions

FRESH WATER (to be protected) includes all surface waters and includes all underground waters containing 10,000 milligrams per liter or less of total dissolved solids except for which, after notice and hearing, it is found there is no reasonably foreseeable beneficial use which would be impaired by contamination of such waters.

PRODUCED WATER shall mean those waters produced in conjunction with the production of crude oil and/or natural gas and commonly collected at field storage, processing, or disposal facilities including but not limited to: lease tanks, commingled tank batteries, burn pits, LACT units, and community or lease salt water disposal systems and which may be collected at gas processing plants, pipeline drips and other processing or transportation facilities.

B - MISCELLANEOUS RULES

RULE 1. SCOPE OF RULES AND REGULATIONS

(a) The following General Rules of statewide application have been adopted by the Oil Conservation Division of the New Mexico Energy and Minerals Department to conserve the natural resources of the State of New Mexico, to prevent waste, ~~[and]~~ to protect correlative rights of all owners of crude oil and natural gas, and to protect fresh waters. Special rules, regulations and orders have been and will be issued when required and shall prevail as against General Rules, Regulations and Orders if in conflict therewith. However, whenever these General Rules do not conflict with special rules heretofore or hereafter adopted, these General Rules shall apply.

(b) The Division may grant exceptions to these rules after notice and hearing, when the granting of such exceptions will not result in waste but will protect correlative rights or prevent undue hardship.

RULE 2. ENFORCEMENT OF LAWS, RULES AND REGULATIONS DEALING WITH CONSERVATION OF OIL AND GAS

The Division, its agents, representatives and employees are charged with the duty and obligation of enforcing all rules and statutes of the State of New Mexico relating to the conservation of oil and gas, including the related protection of fresh waters. However, it shall be the responsibility of all the owners or operators to obtain information pertaining to the regulation of oil and gas and protection of fresh waters before operations have begun.

RULE 3. WASTE PROHIBITED/ GENERAL OPERATIONS

(a) 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 a manner or under such conditions or in such amount as to constitute or result in waste is hereby prohibited.

(b) All operators, contractors, drillers, carriers, gas distributors, service companies, pipe pulling and salvaging contractors, treating plant operators or other persons shall at all times conduct their operations in or related to the drilling, equipping, operating, producing, plugging and abandonment of ~~[and gas wells]~~ oil, gas, injection, disposal, and storage wells or other facilities in a manner that will prevent waste of oil and gas, the contamination of fresh waters and shall not wastefully utilize oil or gas, or allow either to leak or escape from a natural reservoir, or from wells, tanks, containers, pipe or other storage, conduit or operating equipment.

RULE 7. AUTHORITY TO COOPERATE WITH OTHER AGENCIES

The Division may from time to time enter into arrangements with State and Federal governmental agencies, industry committees and individuals, with respect to special projects, services and studies relating to conservation of oil and gas and the associated protection of fresh waters.

RULE 8. LINED PITS/BELOW GRADE TANKS (New Rule)

After January 1, 1986, lined pits and below grade tanks may be used to contain produced water, sediment oil, tank bottoms, miscellaneous hydrocarbons, or other fluids subject to the jurisdiction of the Division under the Oil and Gas Act only upon prior approval of the Division. Applications for approval of lined pits or below grade tanks should be made in accordance with applicable special rules or, in the absence of special rules, in accordance with Division "Guidelines".

C - DRILLING

RULE 102. NOTICE OF INTENTION TO DRILL

(a) Prior to the commencement of operations, notice shall be delivered to the Division of intention to drill any well for oil or gas or for injection purposes and approval obtained on Form C-101. A copy of the approved Form C-101 must be kept at the well site during drilling operations.

(b) No permit shall be approved for the drilling of any well within the corporate limits of any city, town, or village of this state unless notice of intention to drill such well has been given to the duly constituted governing body of such city, town or village or its duly authorized agent. Evidence of such notification shall accompany the application for a permit to drill (Form C-101).

(c) Prior to staking a well, the operator shall make a reasonably diligent attempt to give notice to the land owner and, if different, notice to the tenant or lease.

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RULE 108. DEFECTIVE CASING OR CEMENTING

In any well that appears to have a defective casing program or faultily cemented or corroded casing which will permit or may create underground waste or contamination of fresh waters, the operator shall give immediate notice to the Division and proceed with diligence to use the appropriate method and means to eliminate such hazard. ~~[of underground waste.]~~ If such hazard of waste or contamination of fresh water cannot be eliminated, the well shall be properly plugged and abandoned.

For purposes of this rule, "immediate notice" shall be as defined in Rule 116.

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RULE 111. DEVIATION TESTS AND DIRECTIONAL DRILLING

(a) Any well which is drilled or deepened with rotary tools shall be tested at reasonably frequent intervals to determine the deviation from the vertical. Such tests shall be made at least once each 500 feet or at the first bit change succeeding 500 feet. A tabulation of all deviation tests run, sworn to and notarized, shall be filed with Form C-104, Request for Allowable and Authorization to Transport Oil and Natural Gas. When the deviation averages more than five degrees in any 500-foot interval, the operator shall include the calculations of the maximum possible horizontal displacement of the hole and the Division Director may require that a directional survey be run to establish the location of the producing interval(s).

RULE 113. SHOOTING AND CHEMICAL TREATMENT OF WELLS

If injury results to the producing formation or injection interval casing or casing seat from shooting, fracturing, or treating a well, the operator shall notify the Division and proceed with diligence to use the appropriate method and means for rectifying such damage. If shooting or chemical treating results in irreparable injury to the well the Division may require the operator to properly plug and abandon the well.

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RULE 308. [SALT OR SULPHUR WATER]

~~[Operators shall report monthly on Form C-115 the amount of percentage of salt or sulphur water produced with the oil by each well making 2 percent or more water.]~~

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RULE 709. REMOVAL OF PRODUCED WATER FROM LEASES AND FIELD FACILITIES

~~[(a) "Produced Water" is defined as those waters produced in conjunction with the production of crude oil and/or natural gas and commonly collected at field storage or disposal facilities including: lease tanks, commingled tank batteries, burn pits, LACT units, and community or lease salt water disposal systems.)~~]

~~[(b)~~] (a) Transportation of any produced water by motor vehicle from any lease, contral tank battery, or other facility, without an approved Form C-133 (Authorization to Move Produced Water) is prohibited.

~~[(c)~~] (b) Authorization to transport produced water may be obtained by filing three copies of Form C-133 with the Director of the Division in Santa Fe.

~~[(d)~~] (c) No owner or operator shall permit produced water to be removed from it leases or field facilities by motor vehicle except by a person possessing an approved Form C-133.

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RULE 710. DISPOSITION OF ~~[TRANSPORTED]~~ PRODUCED WATER

(a) No person, including any transporter, may dispose of ~~[such]~~ produced water on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any watercourse, or in any other place [or] in any manner which will constitute a hazard to any fresh water supplies.

Delivery of produced water to approved salt water disposal facilities, secondary recovery or pressure maintenance injection facilities, or to a drillsite for use in drilling fluid will not be construed as constituting a hazard to fresh water supplies provided the produced waters are placed in tanks or other impermeable storage at such facilities.

(b) The supervisor of the appropriate district office of the Division may grant temporary exceptions to paragraph (a) above for emergency situations and for use of produced water in road construction or maintenance or for use of produced waters for other construction purposes upon request and a proper showing by a holder of an approved Form C-133 (Authorization to Move Produced Water).

(c) Vehicular movement or disposition of produced water in any manner contrary to these rules shall be considered cause, after notice and hearing, for cancellation of Form C-133.

N - RULES ON PROCEDURE

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RULE 1204. METHOD OF GIVING LEGAL NOTICE FOR HEARING

Notice of each hearing before the Commission and notice of each hearing before a Division Examiner shall be ~~[given by personal service on the person affected or]~~ by publication once in a newspaper of general circulation published at Santa Fe, New Mexico, and once in a newspaper of general circulation published in the county or each of the counties, if there be more than one, in which any land, oil, or gas, or other property which may be affected is situated.

RULE 1205 CONTENTS OF NOTICE OF HEARING

~~[Such notice]~~ Published notices shall be issued in the name of "The State of New Mexico" and shall be signed by the Director of the Division, and the seal of the Commission shall be impressed thereon.

The notice shall specify whether the case is set for hearing before the Commission or before a Division Examiner and shall state the number and style of the case and the time and place of hearing and shall briefly state the general nature of the order or orders, rule or rules, regulation or regulations to be promulgated or effected. The notice shall also state the name of the petitioner or applicant, if any, and unless the

contemplated order, rule, or regulation is intended to apply to and affect the entire state, it shall specify or generally describe the common source or sources of supply which may be affected by such order, rule, or regulation.

~~[RULE 1206. PERSONAL SERVICE OF NOTICE~~

~~Personal service of the notice of hearing may be made by any agent of the Division or by any person over the age of 18 years in the same manner as is provided by law for the service of summons in civil actions in the district courts of this state. Such service shall be complete at the time of such personal service or on the date of publication, as the case may be. Proof of service shall be by the affidavit of the person making personal service or of the publisher of the newspaper in which publication is had. Service of the notice shall be made at least 10 days before the hearing.]~~

RULE ~~[1207]~~ 1206. PREPARATION OF NOTICES

After a motion or application is filed with the Division the notice ~~[or notices]~~ required under Rule 1205 shall be prepared by the Division and ~~[service and]~~ publication thereof shall be taken care of by the Division without cost to the applicant.

RULE 1207. ADDITIONAL NOTICE REQUIREMENTS (New Rule Alternative No. 1)

(a) Each applicant for hearing before the Division or Commission shall give additional notice as set forth below:

1. In cases of applications filed for compulsory pooling under Section 70-2-17 NMSA 1978, as amended, or statutory unitization under Section 70-7-1, et. seq. NMSA 1978, as amended: Actual notice shall be given to each known individual owning an uncommitted leasehold interest, an unleased and uncommitted mineral interest, or royalty interest not subject to a pooling or unitization clause in the lands affected by such application which interest must be committed and has not been voluntarily committed to the area proposed to be pooled or unitized. Such individual notice in compulsory pooling or statutory unitization cases shall be by certified mail (return receipt requested).

2. In cases of applications for hearing for approval of unorthodox well locations:

   Actual notice shall be given to any offset operator in those adjoining spacing/proration units of the same size that is adversely affected by the proposed unorthodox location, or any potash operator in an adjoining proration or spacing unit in the R-111-A area provided the subject well be closer to that potash operator than the closest standard location allows. Such notice shall be given by certified mail (return receipt requested).

3. In the case of applications for the approval of any non-standard proration unit:

   Actual notice shall be given to all operators owning a leasehold interest to be excluded from the proration unit in the quarter-quarter section (for 40-acre pools or formations), the quarter section (for 160-acre pools or formations) the half section (for 320-acre pools or formations), or in the section (for 640-acre pools or formations) in which the non-standard unit is located and to each operator on any proration unit, if there be such, or tract which adjoins or corners such quarter-quarter, quarter, half, or whole section. Such notice shall be by certified mail (return receipt requested).

4. In the case of applications for adoption of, or amendment of, special pool rules:

   Actual notice shall be given to all operators within the existing, or proposed pool boundaries and those of operators within one (1) mile of such boundaries. Such notice may be provided by regular mail.

5. In the case of applications to amend R-111-A, the Potash-Oil Area and Special Rules, actual notice shall be given to any affected potash operator or oil or gas operator or owner. Such notice shall be provided by certified mail (return receipt requested).

6. In the case of applications for approval of downhole commingling of the product of multiple formations: Actual notice shall be given to all offset operators. Such notice shall be provided by regular mail.

7. In the case of any other application which may diminish or adversely affect

royalty interests: Actual notice shall be given to the applicant's royalty interest owners immediately affected. Such notice shall be provided by certified mail (return receipt requested).

At each hearing, the applicant shall cause to be made a matter of record, either by testimony at the hearing or by an affidavit signed by applicant or its authorized representative, that the notice provisions of this Rule 1207 have been complied with, that applicant has conducted a good-faith diligent effort to find the correct address of all interested persons entitled to receive notice, and that pursuant to Rule 1207, notice has been given at that correct address as provided by rule. In addition, such certificate shall contain the name and address of each interested person to whom such notice was sent and, where proof of receipt is available, a copy of same.

Evidence of failure to provide notice as provided in this rule may, upon a proper showing, be considered cause for reopening the case.

(b) Any notice required by this rule shall be to the last known address of the party to whom notice is to be given at least 20 days prior to the date of hearing of the application.

RULE 1207. ADDITIONAL NOTICE REQUIREMENTS (New Rule Alternative No. 2)

Each applicant for hearing before the Division or Commission shall give additional notice to any party expected to be adversely affected by granting of the application, any party whose interest would be pooled to form a spacing or proration unit, and any of applicant's royalty owners immediately affected by the granting of the application.

The notice required by this rule shall be mailed at least 20 days prior to the date of the hearing on the application.

At each hearing, the applicant shall cause to be made a matter of record, either by testimony or by an affidavit signed by the applicant or its authorized representative, the method used in determining the parties who received the additional notice required by this rule, the names and addresses of all such parties and a statement or proof that a good faith effort has been made to notify such parties of the purpose of the application and the date and time of the hearing.

Evidence of failure to provide notice as provided in this rule may, upon a proper showing, be considered cause for reopening the case.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 8643-8649 Exhibit No. 1
Submitted by Division
Hearing Date 7-10-85

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

May 15, 1985

BATAAN MEMORIAL BUILDING
STATE CAPITOL
SANTA FE, NEW MEXICO 87503

Dick Stamets
New Mexico Oil
Conservation Division
Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Stamets:

In response to your letter dated March 15, 1985, this is to advise you that all underground waters in the State of New Mexico containing 10,000 milligrams/liter or less of dissolved solids is hereby designated by the State Engineer pursuant to Section 70-2-12-B. (15) NMSA, 1978. This designation supercedes all previous designations pertaining to underground water.

The water in water table lakes should not be contaminated even though they contain more than 10,000 milligrams/liter of total dissolved solids unless it can be shown that contamination of the lake will not adversely affect the underground water hydrologically connected to the lake.

The surface waters of all streams within the State of New Mexico regardless of the quality of the water within any given reach should be protected.

For your information I am attaching a memorandum dated April 10, 1967, and the map mentioned therein which shows the areas and formations in which water of 10,000 parts per million or less commonly occur. This is the same information which was submitted to your office by Frank Irby on April 13, 1967.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
No. 8643 Exhibit No. 2
8644, 8647 Submitted by Boyer
Hearing Date 7-10-85

Sincerely,

S. E. Reynolds
State Engineer

By: M. B. Compton
M. B. Compton, Chief
Water Rights Division

MBC:rav

April 13, 1967

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission
Santa Fe, New Mexico

Dear Mr. Porter:

All underground water in the State of New Mexico containing 10,000 parts per million or less of dissolved solids is hereby designated by the State Engineer pursuant to Section 65-3-11.(15) N.M.S.A., 1953 Compilation; except that this designation shall not include any water for which there is no present or reasonably foreseeable beneficial use that would be impaired by contamination. This designation supercedes all previous designations pertaining to underground water.

For your information I am attaching a memorandum dated April 10, 1967 and the map mentioned therein which shows the areas and formations in which water of 10,000 parts per million or less commonly occurs.

The surface water designation previously made remains unchanged.

FEI/ma
encl.

Yours truly,

S. E. Reynolds
State Engineer

By:
Frank E. Irby
Chief
Water Rights Div.

ADDITIONAL OCD PROPOSED RULE CHANGES, OCC HEARING 7/10/85

RULE 308. PRODUCED WATER

Operators shall report monthly on Form C-115 the amount of [~~percentage of salt or sulphur~~] water produced with the oil and gas from each well [~~making 2 percent or more water~~].

RULE 313. EMULSION, BASIC SEDIMENTS, AND TANK BOTTOMS

Wells producing oil shall be operated in such a manner as will reduce as much as practicable the formation of emulsion and basic sediments. These substances and tank bottoms shall not be allowed to pollute [~~streams~~] fresh waters or cause surface damage. If tank bottoms are removed to surface pits, the pits shall be fenced and the fence shall be kept in good repair.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 8643 Exhibit No. 3
Submitted by 8644, 8647 Boyer
7-10-85

GUIDELINES FOR THE DESIGN AND CONSTRUCTION OF LINED EVAPORATION PITS

(Revised 5/85)

NEW MEXICO OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

PREFACE

The following specifications shall be used as a guide to the preparation of plans and specifications for lined evaporation ponds to be used to contain those liquid discharges regulated by the Oil Conservation Division. All plans and specifications shall be submitted to the Oil Conservation Division for approval prior to construction. Designs may deviate from the following specifications if it can be shown that the design integrity is such that the construction of that pit will not affect any present or future sources of usable ground water. Please note that this guide does not take precedence over any specifications outlined in the Oil Conservation Commission's Order No. R-3221-C.

1. LOCATION

(A.) Evaporation pits shall not be located in any watercourse, lakebed, sink-hole, or other depression. Pits adjacent to any such watercourse or depression shall be located safely above the high-water level of such watercourse or depression.

2. DESIGN AND CONSTRUCTION

(A.) Evaporation pits shall be so designed and constructed to provide the minimum evaporative surface area needed for the maximum yearly volume of liquid to be discharged to the pit. This design parameter shall be based upon local climatological data. Such data and calculations used for the pit design shall be submitted with any proposed plans and specifications. Special care should be taken when calculating the pit volume to account for the decrease in the evaporation rate during the winter months.

(B.) Pits shall be located on level ground and shall be rectangular. Excavated material may be used to form levees around the pit. The levees shall rise a minimum of 18 inches above ground level.

(C.) The design freeboard allowance shall take wave action into account to prevent overtopping due to wave action. A determination of the wave type (breaking or non-breaking) shall be made to determine the forces acting upon the levee. Such calculations shall be submitted with the details for pit construction.

(D.) The pit is to be constructed so that the inside grade of the levee is no steeper than 2:1. Levees shall have an outside grade no steeper than 3:1 (See Figure 1).

(E.) The top of the levees shall be level and shall be at least 18 inches wide.

(F.) The pit shall incorporate a double liner system with a leak detection system installed between the primary (top) and secondary (bottom) liner.

3. MATERIALS

(A.) Materials used for lining evaporation pits shall be impermeable and may be rigid, semi-rigid, or flexible.

(B.) If rigid or semi-rigid materials are used, leak-proof expansion joints shall be provided, or the material shall be of sufficient thickness and strength to withstand (without cracking) expansion, contraction, and

settling movements in the underlying earth.

(C.) If flexible membrane materials are used, they shall be of at least 30 mil thickness and shall have good resistance to tears or punctures.

(D.) All materials used for lining evaporation pits shall be resistant to hydrocarbons, salts, and acidic and alkaline solutions. The liners shall also be resistant to fungus and rot. The primary liner shall be resistant to ultra-violet light or provision made to protect the material from the sun as specified in Section 6 (F).

4. LEAK DETECTION SYSTEM

(A.) A leak detection system of an approved design shall be installed between the primary and secondary liner, and shall be inspected and approved by the OCD prior to installation of the primary liner.

(B.) Leak detection systems may consist of, but are not necessarily limited to, approved fail-safe electric detection systems or drainage and sump systems.

(C.) If an electric grid detection system is used, provision must be made for adequately testing all components to ensure the system remains functional.

(D.) If the drainage and sump system is to be used, a network of slotted or perforated drainage pipes shall be installed between the primary and secondary liners. The network shall be of sufficient density so that no point in the pit-bed is more than 20 feet from such drainage pipe or lateral thereof. The material placed between the pipes and laterals shall be sufficiently permeable to allow transport of the fluids to the drainage pipe. The slope for all drainage lines and laterals shall be at least 6 inches per 50 feet. The slope of the pit-bed shall also conform to these values to assure fluid flow towards the leak detection system. The drainage pipe shall convey any fluids to a concrete or corrosion-proof sump located outside the perimeter of the pond (See Figure 2).

5. PREPARATION OF PIT-BED FOR INSTALLATION OF LINERS

(A.) The bed of the pit and inside grade of the levee shall be smooth and compacted, free of holes, rocks, stumps, clods, or any other debris which may rupture the liner. In extremely rocky areas, it will probably be necessary to cover the pit-bed with a compacted layer of sand or other suitable material.

(B.) A trench shall be excavated on the top of the levee the entire perimeter of the pit for the purpose of anchoring

flexible liners. This trench shall be located a minimum of 9 inches from the slope break and shall be a minimum of 12 inches deep. (See Fig. 3).

6. INSTALLATION OF FLEXIBLE MEMBRANE LINERS

(A.) Prior to installation of the secondary liner, the appropriate OCD district office should be notified at least 24 hours in advance of the scheduled installation to afford the opportunity for a Division representative to inspect the pit-bed and levee walls.

(B.) The pit liner shall be installed and joints sealed according to manufacturer's specifications and with approval of the Division representative.

(C.) The liner shall rest smoothly on the pit-bed and the inner face of the levees, and shall be of sufficient size to extend down to the bottom of the anchor trench and come back out a minimum of two inches from the trench on the side furthest from the pond. (See Fig. 3). In locations where temperature variations are significant, wrinkles or folds shall be placed at each corner of the pit to allow for the contraction and expansion of the membrane due to temperature variations. The membrane manufacturer should be consulted on this matter.

(D.) Certain conditions require the venting of gas that may accumulate beneath a liner. If organic matter exists in the soils under the liner, or if natural gas is present in the region, gas production is likely. When a fluctuating water table is present immediately below the pond bottom, pockets of air may also accumulate below the liner. The net result of gas or air accumulation below the liner may be the "floating" of the liner to the pond surface. Two possible vent designs are illustrated in Fig. 4. The need to vent this accumulated gas can be accomplished by providing a uniform layer of sand (which less than 5% will pass the 200 sieve) or a geotextile beneath the liners. To achieve the best results from either of these media, the slope from the lowest point of the pond to the toe of the dike must be at least 2%. The venting medium is carried across the entire bottom and up the side slopes. Vents should be located approximately one foot down from the crown of the dike. (See Figure 3).

(E.) An anchor of used pipe or other similar material shall be placed over the liner in the anchor trench and said trench back-filled. The anchor trench shall extend the entire perimeter of the pond.

(F.) If the lining material used for the primary liner is not sun-resistant, at least one inch of sand or other suitable material shall be spread uniformly to cover the liner over the floor of the pit. Gravel or other wave-resistant

material with sufficient angle of repose to remain in place shall be used to cover the sloping inner wall of the levee. A geotextile liner shall be placed beneath any gravel layer to provide protection for the membrane liner. Any gravel or sand layers used to protect the membrane liner from the sun shall extend to the anchor trench.

(G.) Any sand or gravel layers placed on top of a membrane liner shall be done so in such a manner that the risk of tearing the liner is minimized.

7. SKIMMER PONDS/TANKS

(A.) A skimmer pond or tank shall be used to separate any oil from the water prior to allowing the water to discharge to the evaporation pond, except for the following cases:

1) It can be shown that the water being discharged to the pond contains no oil or grease.

2) The discharge to the pond is from an oil or natural gas processing facility where the discharge has already passed through a skimmer basin, skimmer tank, decanter, or API Separator.

(B.) The skimmer pond/tank shall be designed to allow for a one-hour fluid residence time prior to discharge to the pond. The flow rate basis for the design volume shall be the maximum discharge to the pond in a one-hour period.

(C.) If a skimmer pond is to be used, the pond shall conform to the same specifications as the evaporation pond.

(D.) If a skimmer tank is to be used, the materials of construction and/or design shall provide for corrosion resistance.

(E.) If a skimmer pond is to be used, syphons or other suitable means shall be employed to draw water from the oil water interface for transfer to the evaporation pond. The siphon shall be located as far as possible from the inlet to the skimmer pond.

(F.) The skimmer pond/tank shall at all times be kept free of appreciable oil build-up to prevent oil flow to the evaporation pond.

(G.) Figures 5- a & b illustrate general design criteria for skimmer ponds and tanks, respectively.

8. FENCES AND SIGNS

(A.) A fence shall be constructed and maintained in good condition around the evaporation pit installation. The fences shall be

constructed so as to prevent livestock from entering the pit area. Fences shall not be constructed on the levees.

(B.) A sign not less than 12" x 24" with lettering of not less than two inches shall be posted in a conspicuous place on the fence surrounding the evaporation pit installation. The sign shall be maintained in legible condition and shall identify the operator of the evaporation system, the location of the system by quarter-quarter section, township, and range.

9. MAINTENANCE

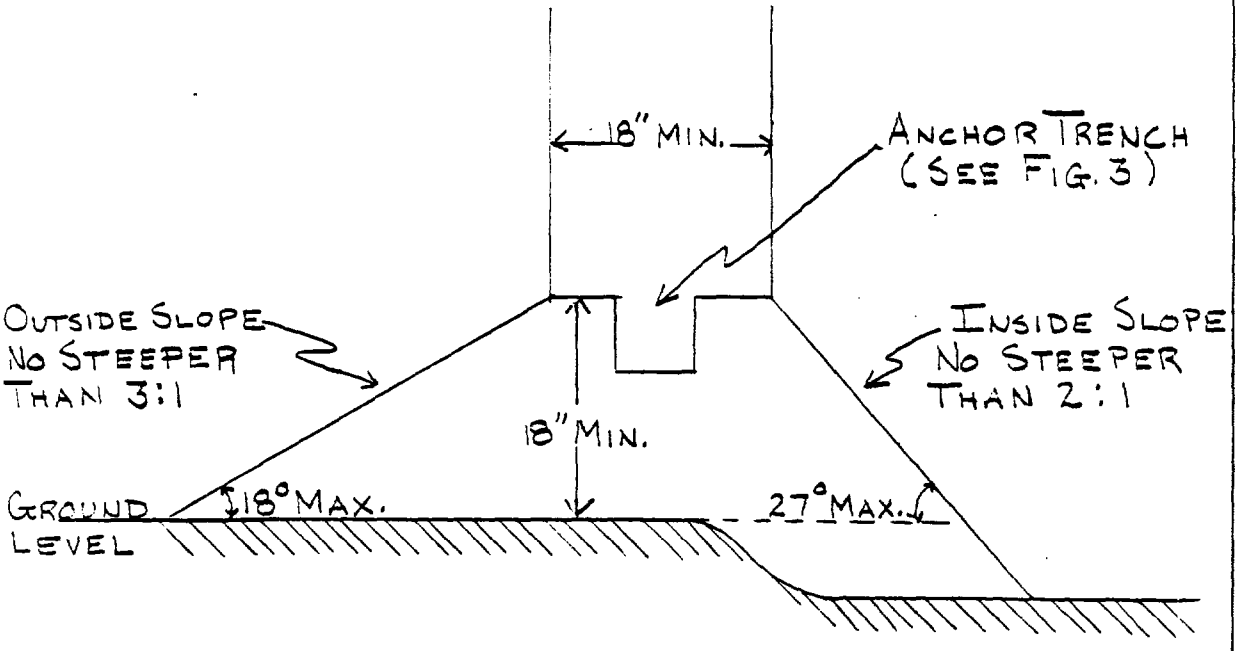
(A.) The leak detection sump shall be inspected at least weekly.

(B.) The outside walls of the levee shall be maintained in such a manner to prevent erosion. Inspections of the outside wall of the levee shall be made after any rainfall of consequence.

10. CONTINGENCY PLAN

(A.) A contingency plan in the event of a leak shall be submitted for approval along with the details for pit construction. The contingency plan will outline a procedure for making repairs to the pit in the most expeditious manner possible.

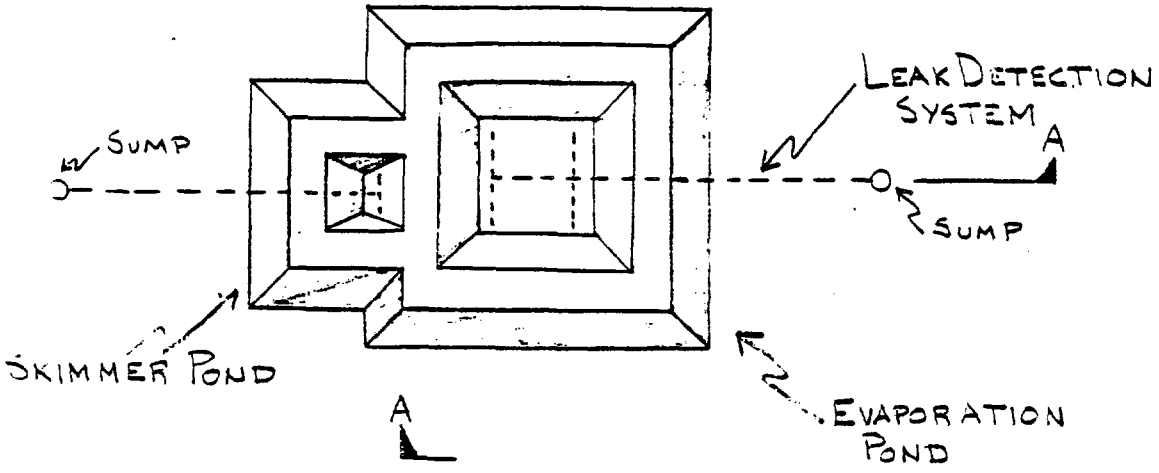
FIGURE 1- PIT CONSTRUCTION



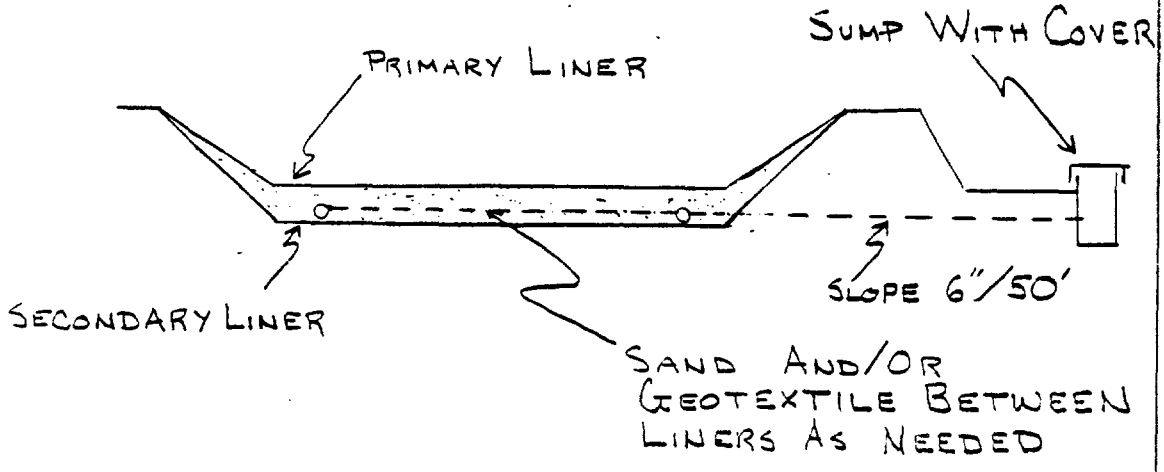
NOTE: LEVEE TO BE CONSTRUCTED IN A MANNER SUCH THAT DESIGN COMPACTION AND DIMENSIONS PROVIDE FOR A MINIMUM SAFETY FACTOR OF TWO FOR FORCES ACTING AGAINST THE LEVEE.

FIGURE 2 - LEAK DETECTION SYSTEM

PLAN



SECTION A-A



NOTE: SKIMMER POND TO HAVE SEPARATE LEAK DETECTION SYSTEM AND SUMP.

FIGURE 3 - ANCHOR TRENCH

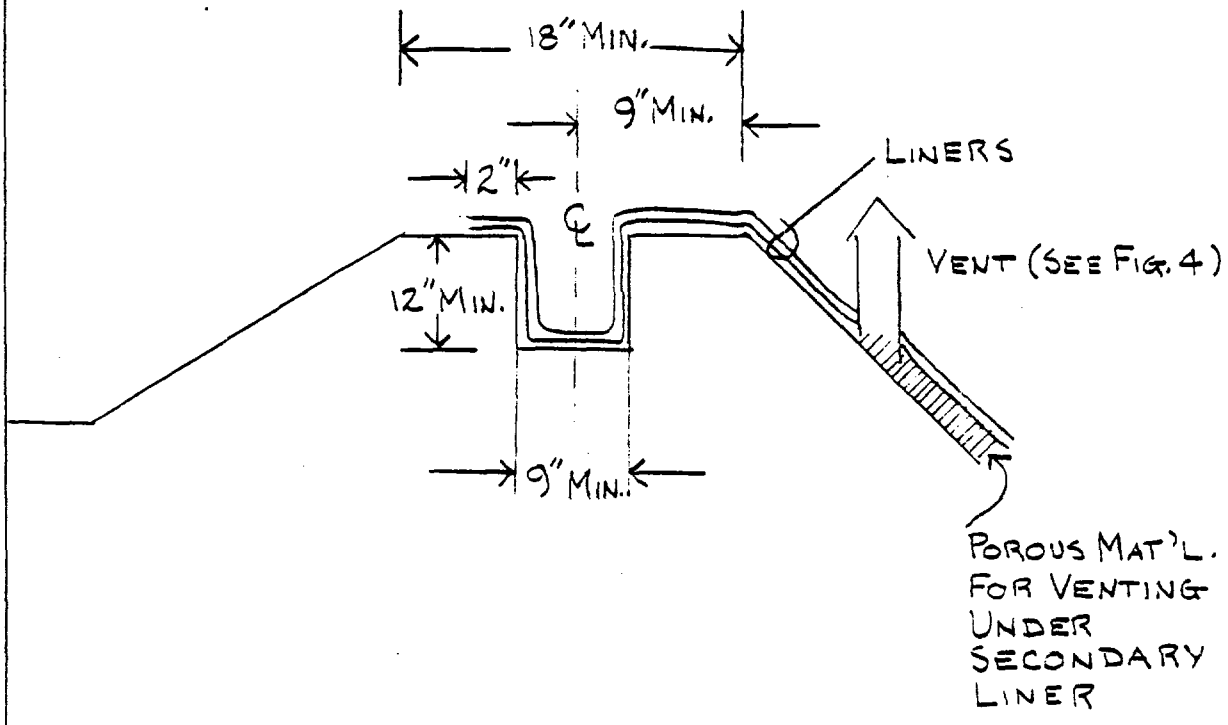
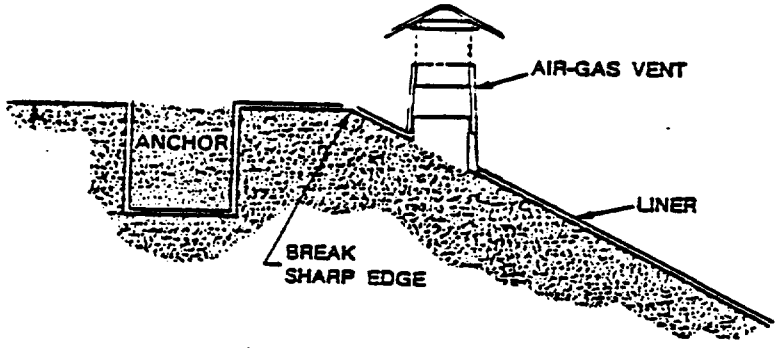


FIGURE 4 - TWO EXAMPLES OF VENT DESIGNS

SOURCE: EPA REPORT #SW-870, "LINING OF WASTE IMPOUNDMENT FACILITIES", PG. 260



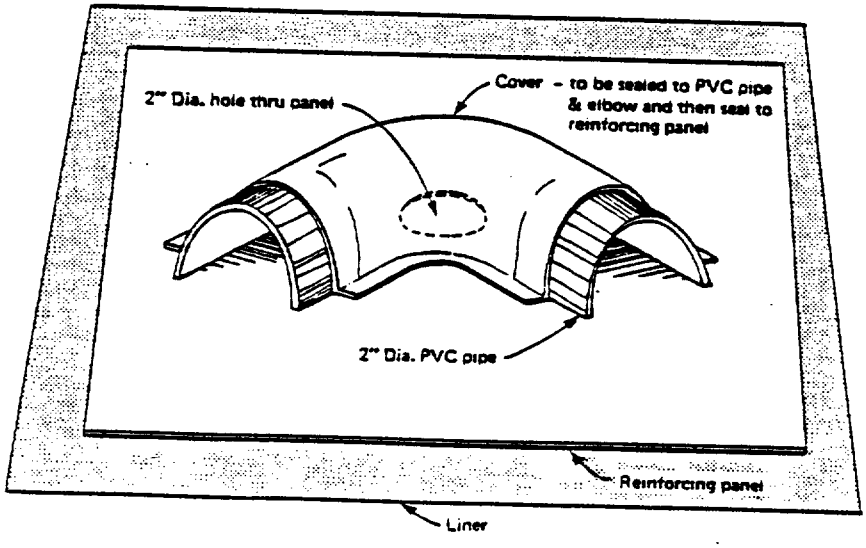
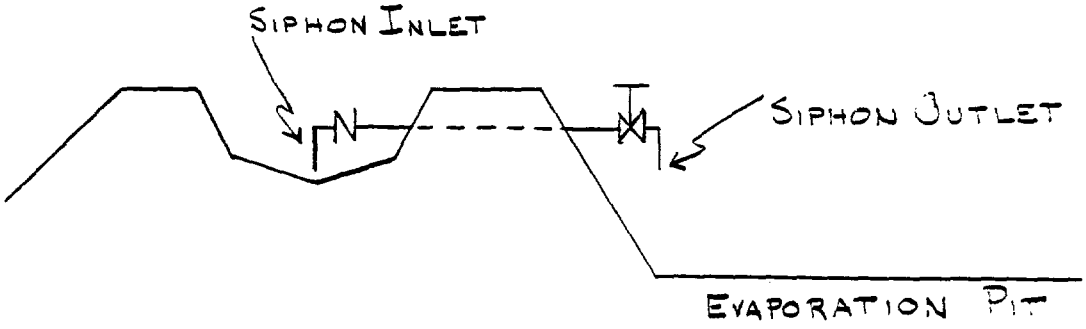
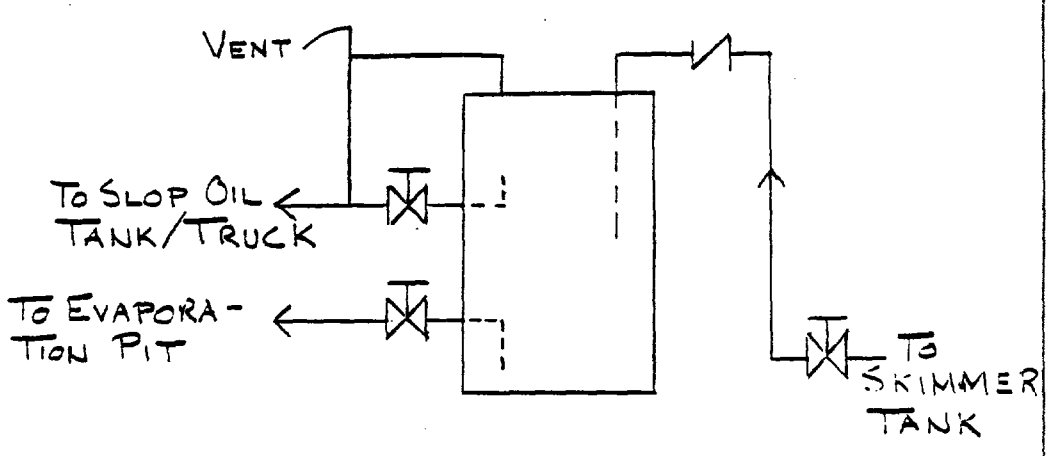


FIGURE 5: SKIMMER POND/TANK

(A.) SKIMMER POND



(B.) SKIMMER TANK



NOTE: BEFORE BEGINNING DISCHARGES TO SKIMMER POND/TANK, FILL WITH FRESH WATER TO SIPHON INLET.

GUIDELINES FOR THE SELECTION AND INSTALLATION OF BELOW GRADE PRODUCED WATER TANKS IN THE SAN JUAN BASIN'S VULNERABLE AREA

NEW MEXICO OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

(6/85)

PREFACE

The following specifications shall be used as a guide to the preparation of plans and specifications for the selection and installation of below grade tanks to be used to contain those liquid discharges regulated by the Oil Conservation Division. At this time, the following guideline applies only to below grade tanks that are affected by the Oil Conservation Commission's Order R-7940. Existing tanks installed in the vulnerable area before Order R-7940 came into effect need not comply with the following guidelines if the mechanical integrity of such installations can be shown in a manner acceptable to the Division. All plans and specifications shall be submitted to the Oil Conservation Division for approval prior to installation. Designs may deviate from the following specifications if it can be shown that the design integrity is such that the installation will not affect any present or future sources of usable ground water. If a number of tanks are to be installed in the same manner, only one set of plans and specifications need to be submitted provided that a list of all locations to be involved is included.

1. TANK SELECTION

(A.) The tank capacity shall be selected in such a manner that sufficient volume is available to contain all the water produced during periods of inclement weather when it is not possible to drain the tank on a regular schedule. If the proposed plan submitted for OCD approval is to be used at a number of sites, a list of those sites and the estimated daily discharge of produced water from each site shall be submitted with the plans and specifications.

(B.) The materials of construction selected for the tank shall exhibit strong corrosion resistance to those fluids the tank will store. If fiber reinforced plastic tanks are to be used, the material shall be resistant to sunlight and its design shall allow for expansion and contraction due to wide temperature shifts. If ferrous tanks are to be used, protective coatings and/or cathodic protection should be used to inhibit corrosion. The plans and specifications submitted for approval shall include the type of material selected and its thickness.

2. INSTALLATION

(A.) The surface upon which a tank rests shall be free of rocks and shall be level to prevent cracking or indentation of the tank bottom.

(B.) All tanks with bottoms not resting within the ground water shall have a leak detection system which may consist of an electric grid system or a drainage and sump system. If a drainage and sump system is to be used, the design shall include the following criteria listed below and illustrated by Fig. 1:

1. An impermeable layer of clay or other suitable material (e.g., synthetic) shall first be placed upon the surface that will support the tank.

2. Slotted or perforated drainage pipe shall be placed upon the impermeable layer at a slope of at least 6 inches per 50 feet.

3. The drainage pipe shall then be covered by gravel or other material with sufficient permeability to convey fluids to the drainage pipe.

4. The tank shall then be placed upon this surface and the perimeter of the tank back-filled with impermeable material to ground level.

(C.) Tanks with bottoms resting within the ground water shall also contain a leak detection system; however, the addition of an impermeable layer as described in Section 2.B and illustrated in Fig. 1 will not be required. The use of a leak detection system for such a situation will be discussed in Section 3.C.

(D.) A tank resting within the ground water shall be adequately anchored to prevent floating.

(E.) If a split tank is to be installed, the seam shall be adequately sealed to prevent leakage. The manufacturer should be consulted on this matter.

(F.) If a split tank is to be joined by the use of ferrous bolts and screws, they shall be coated to prevent corrosion.

3. MAINTENANCE

(A.) The leak detection sumps shall be inspected on a routine basis. The proposed frequency shall be included with the plans and specifications submitted for approval.

(B.) For tanks not resting in the ground water, the detection of fluid within the sump will require reporting the detection to the appropriate OCD district office, obtaining a sample of the fluid, and having the sample analyzed for benzene, toluene, the xylenes, and conductivity. A copy of the analysis shall be sent to the appropriate OCD district office. If the presence of fluid is due to a tank leak, the contingency plan shall be implemented.

(C.) For tanks resting within the ground water, the sumps shall also be checked on a routine basis using at least one of the methods described below:

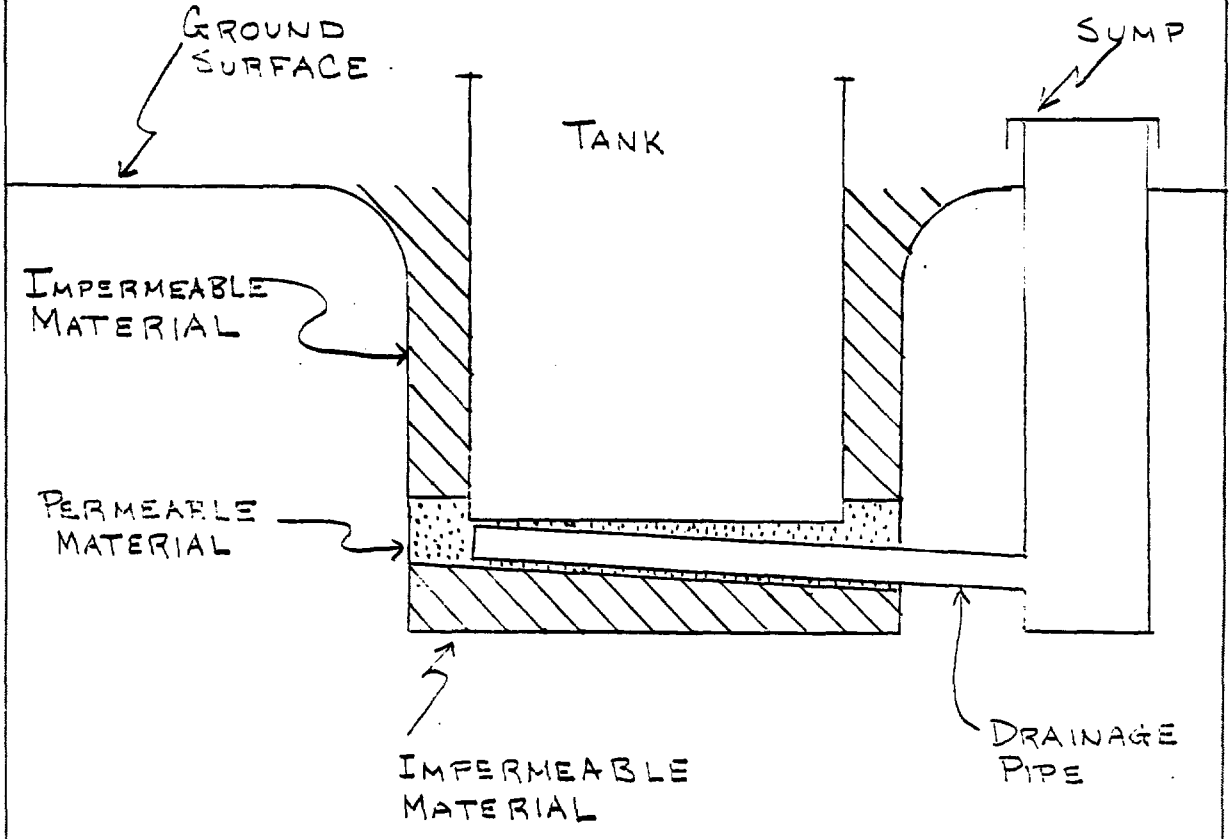
1. Obtain a water sample on a routine basis and have it analyzed for benzene, toluene, the xylenes, and conductivity. A logbook of the results shall be maintained and be available to OCD personnel. If the presence of benzene, toluene, or a xylene is detected, the appropriate OCD district office shall be notified.

2. Dye may be put into the tank each time it is pumped out and if a color change is noted in the sump during routine inspections, the appropriate OCD district office shall be notified. If this method is to be employed, the type of dye to be used shall be submitted with the plans and specifications. Methylene blue, rhodamine, or the fluorescein dyes may be considered. Contact the OCD's Environmental Bureau in Santa Fe if more information is required.

4. CONTINGENCY PLAN

(A.) A contingency plan in the event of a tank leak shall be submitted for approval along with the details for tank selection and installation. The contingency plan shall outline a procedure for making repairs to the tank in the most expeditious manner possible.

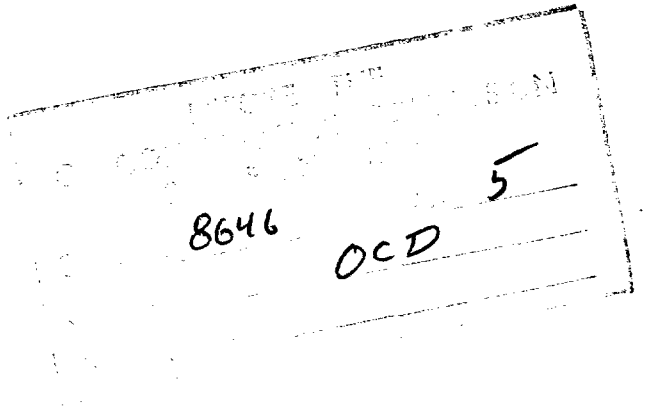
FIGURE 1: TANK INSTALLATION



6/85

RULE 108. DEFECTIVE CASING OR CEMENTING

If [~~In~~] any well [~~that~~] appears to have a defective casing program or faultily cemented or corroded casing which will permit or may create underground waste or contamination of fresh waters, the operator shall give written notice to the Division within five (5) working days and proceed with diligence to use the appropriate method and means to eliminate such hazard. [of underground waste.] If such hazard of waste or contamination of fresh water cannot be eliminated, the well shall be properly plugged and abandoned.



which would result in waste

RULE 113. SHOOTING AND CHEMICAL TREATMENT OF WELLS

If injury results to the producing formation, injection interval, casing or casing seat from shooting, fracturing, or treating a well, the operator shall give written notice to the Division within five (5) working days and proceed with diligence to use the appropriate method and means for rectifying such damage. If shooting, fracturing, or chemical treating results in irreparable injury to the well the Division may require the operator to properly plug and abandon the well.

8646 OCD 6

CITIES SERVICE OIL AND GAS CORPORATION
P.O. BOX 300 TULSA, OKLAHOMA 74102

BRENTON B. MOORE
Senior Attorney

LEGAL DIVISION

June 14, 1985

VIA AIRBORNE

The State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

ATTN: R. L. Stamets, Director

Re: Proposed Rule Changes

Gentlemen:

Submitted herein are an original and three copies of the comments of Cities Service Oil and Gas Corporation with respect to the proposed rules considered under your memorandum No. 1-85 issued on May 9, 1985.

We respectfully request that you notify this office of the hearing on these proposals as soon as a date has been set.

Very truly yours,

Brenton B. Moore

BBM/tmm

Enclosures

BEFORE THE
OIL CO
Case 8643 et seq 1
Cities Service
7-10-85

Additional Definitions

Cities Service recommends that the proposed definitions for Produced Water be amended to read:

> PRODUCED WATER shall mean those waters produced in conjunction with the production of crude oil and/or natural gas, including carbon dioxide and commonly collected at field storage or disposal facilities including: lease tanks, commingled tank batteries, burn pits, LACT units, and community or lease salt water disposal systems and which may be collected at gas processing plants, pipeline drips and other processing or transportation facilities.

Rule 102. Notice of Intention to Drill

Cities Service recommends that the proposal for subparagraph (c) be completely rewritten as follows:

> ~~(c) Prior to staking a well, the operator shall give notice to the land owner and, if different, notice to the tenant or lease.~~

(c) Prior to the commencement of operations, the operator shall give notice of intention to drill to the surface owner, or owners.

Rule 1207. Additional Notice Requirements
(New Rule Alternative No. 1)

Cities Service recommends that the proposal submitted for paragraph 2, 3 and 7 of this Rule be amended to read:

2. In cases of applications for hearing for approval of unorthodox well locations: Actual notice shall be given to ~~any affeet~~ the operator ~~in these adjoining~~ of a well on each adjoining or cornering tract of land or spacing/proration unit~~,s of the same size that is adversely affeeted by the proposed unorthodox location~~ toward which the well location is proposed to be moved, or to any potash operator in an adjoining proration or spacing unit in the R-111-A area, provided the subject well be closer to that potash operator than the closest standard location allows. Such notice shall be given by certified mail (return receipt requested).

and to which the well is to be located closer than a standard location

3. In the case of applications for the approval of any non-standard proration unit: Actual notice shall be given to ~~all operators owning a leasehold interest~~ each lessee in the quarter-quarter section (for 40-acre pools or formations), the quarter section (for 160-acre pools or formations), the half section (for 320-acre pools or formations), or in the section (for 640-acre pools or formations) in which the non-standard unit is located and to each operator ~~on any proration unit; if there be such; or tract which adjoins or corners such quarter-quarter; quarter; half; or whole section~~ of each adjoining or cornering tract of land or spacing/proration unit.

7. In the case of any other application which ~~may diminish or adversely affect royalty interests~~ will, if granted, alter any owner's or any royalty interest owner's percentage interest in an existing well: Actual notice shall be given to the owners and applicant's royalty interest owners in such existing well. ~~immediately affected.~~ Such notice shall be provided by certified mail (return receipt requested). Any notice required by this rule

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shall be mailed at least 10 days prior to the date of hearing on the application.

Rule 1207. Additional Notice Requirements
(New Rule Alternative No. 2)

Cities Service recommends that the proposal submitted for this Rule be deleted in its entirety.

CITIES SERVICE OIL AND GAS CORPORATION

INTEROFFICE LETTER

June 6, 1985

TO: Mr. C. R. Mitchell

FROM: R. L. Pitre RLP

SUBJECT: New Mexico Proposed Rule Changes

New Mexico has defined "fresh water" as waters containing 10,000 parts per million (ppm) or less dissolved solids. However, water of such quality is not "fresh" but is normally referred to as "brackish waters". In fact, brackish waters are usually defined as being between 5,000 and 15,000 ppm dissolved solids.

Most states are requiring protection of water with 10,000 ppm dissolved solids. They normally refer to these waters as "treatable waters".

Attached is a table indicating that the recommended concentration limit of drinking waters for Total Dissolved Solids is 500 mg/l (i.e. ppm). Therefore, it is not realistic to classify water with Total Dissolved Solids concentrations of 10,000 ppm as "fresh water".

jkp

8643 et seq. 2
Cities Service

63-130 (6-84)

Table 9.1 Drinking Water Standards

Constituent	Recommended concentration limit* (mg/ℓ)
Inorganic	
Total dissolved solids	500
Chloride (Cl)	250
Sulfate (SO_4^{2-})	250
Nitrate (NO_3^-)	45†
Iron (Fe)	0.3
Manganese (Mn)	0.05
Copper (Cu)	1.0
Zinc (Zn)	5.0
Boron (B)	1.0
Hydrogen sulfide (H_2S)	0.05
	Maximum permissible concentration‡
Arsenic (As)	0.05
Barium (Ba)	1.0
Cadmium (Cd)	0.01
Chromium (Cr^{VI})	0.05
Selenium	0.01
Antimony (Sb)	0.01
Lead (Pb)	0.05
Mercury (Hg)	0.002
Silver (Ag)	0.05
Fluoride (F)	1.4–2.4§
Organic	
Cyanide	0.05
Endrine	0.0002
Lindane	0.004
Methoxychlor	0.1
Toxaphene	0.005
2,4-D	0.1
2,4,5-TP silvex	0.01
Phenols	0.001
Carbon chloroform extract	0.2
Synthetic detergents	0.5
Radionuclides and radioactivity	Maximum permissible activity (pCi/ℓ)
Radium 226	5
Strontium 90	10
Plutonium	50,000
Gross beta activity	30
Gross alpha activity	3
Bacteriological	
Total coliform bacteria	1 per 100 mℓ

SOURCES: U.S. Environmental Protection Agency, 1975 and World Health Organization, European Standards, 1970.

*Recommended concentration limits for these constituents are mainly to provide acceptable esthetic and taste characteristics.

†Limit for NO_3^- expressed as N is 10 mg/ℓ according to U.S. and Canadian standards; according to WHO European standards, it is 11.3 mg/ℓ as N and 50 mg/ℓ as NO_3^-.

CITIES SERVICE OIL AND GAS CORPORATION
P.O. BOX 300 TULSA, OKLAHOMA 74102

BRENTON B. MOORE
Senior Attorney

LEGAL DIVISION

June 14, 1985

VIA AIRBORNE

The State of New Mexico
Energy and Minerals Department
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BBM/tmm

Enclosures

8A3 et seq 1
Cities Service
7-10-85

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