

NM - 21

ORDER

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION COMMISSION

IN THE MATTER OF THE HEARING CALLED BY
THE OIL CONSERVATION COMMISSION OF NEW
MEXICO FOR THE PURPOSE OF CONSIDERING:

REHEARING
CASE No. 8781 DE NOVO
Order No. R-8161-B

APPLICATION OF PETRO-THERMO CORPORATION
FOR AN EXCEPTION TO DIVISION ORDER NO. R-3221,
AS AMENDED, AND FOR AUTHORIZATION TO DISPOSE
OF ASSOCIATED WASTE HYDROCARBONS AND OTHER
SOLIDS, OBTAINED IN CONJUNCTION WITH THE
DRILLING AND PRODUCTION OF OIL AND GAS INTO
UNLINED PITS, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on September 18, 1986, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 23rd day of October, 1986, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) The applicant, Petro-Thermo Corporation, seeks an exception to the provisions of Order No. R-3221 to permit the commercial disposal of produced salt water into unlined surface pits and authorization to dispose of associated waste hydrocarbons and other related solids obtained in conjunction with the drilling and production of oil and gas into separate unlined pits all to be located in the SW/4 SE/4 of Section 16, Township 20 South, Range 32 East, NMPM, Lea County, New Mexico.

(3) The matter originally came on for hearing at 8 a.m. on December 18, 1985, at Santa Fe, New Mexico, before Oil Conservation Division Examiner Michael E. Stogner and, pursuant to his hearing, Order No. R-8161 was entered on February 13, 1986, granting the application.

(4) On March 4, 1986, application for Hearing De Novo was filed with the Commission by Snyder Ranches, Inc. and Pollution Control, Inc. (Protestants)

(5) The matter came on for hearing De Novo on April 10, 1986.

(6) On May 20, 1986, the Commission entered its Order No. R-8161-A granting the application.

(7) On June 9, 1986, Protestants filed an application for rehearing citing ten general areas as grounds therefore.

(8) On June 19, 1986, the Commission granted a partial rehearing of this case for the purpose of accepting additional testimony relative to the following allegations in the application for rehearing:

- (a) Grounds 5 - The findings are not supported by substantial evidence - the applicant failed in its burden to prove that the contaminated discharge water can be safely deposited in the facility without adversely affecting fresh water.
- (b) Grounds 6 - Order No. R-8161-A decretory Paragraph 2 denies Protestants' procedural due process - such paragraph does not afford Protestants the opportunity to contest the monitoring system to be established by the applicant in consultation with the Oil Conservation Division.
- (c) Grounds 7 - The migration of contaminated waste water will destroy the grazing grasses and vegetation under the ownership and control of Snyder Ranches, Inc.

(8) Testimony and evidence was received relative to each of said grounds for rehearing.

(9) In granting the application of Petro Thermo in Order No. R-8161-A, the Commission relied heavily on the existence of a high TDS spring located at the northwest corner of the proposed pit disposal area and the water level elevation data presented on Figure 3 of applicant's Exhibit 9 to show that there is no usable fresh water in proximity to the proposed facility and that fluids disposed of therein will move toward and discharge to Laguna Plata.

(10) Subsequent to the April 9th Commission hearing a second high TDS spring was located in proximity to that described in Finding No. (9) above, further confirming applicant's position that the subsurface movement of water in the area of the proposed facility is toward Laguna Plata.

(11) At the September 18 rehearing, Protestants presented the analysis of a sample taken from one of said springs in September 1986, indicating the water therein was fresh.

(12) This anomalous sample may have resulted from rainfall in the area of said springs flushing the high TDS water from the collection pool of such spring prior to this recent sampling.

(13) Prior to use of the proposed disposal facility additional sampling and testing should be performed to confirm that such springs indeed naturally contain waters having TDS levels above the limits for fresh water established by the State Engineer.

(14) Such confirmation may be made by re-sampling said springs and by drilling to the aquifer and sampling the water in such drill hole or holes.

(15) The preponderance of evidence presented in this case otherwise establishes that there is no fresh water in the vicinity of the proposed site which may be affected by its use for disposal as proposed by the applicant.

(16) Protestants proposed an elaborate system of eight monitor wells to be emplaced around and in proximity to the proposed facility.

(17) The purpose of such wells would be to predict and monitor the movement of disposed fluids in the subsurface to detect the subsurface movement of heavy metals, soluble hydrocarbons, or other potentially deleterious materials from the pits in sufficient time to assure the protection of fresh water, the protection of grasses and vegetation on the Snyder Ranch to the east in adjoining Section 15, and the lake surface in order that appropriate action may be taken if needed.

(18) Given the absence of fresh water in the area, the number of monitor wells proposed by Protestants is excessive.

(19) Evidence indicates that disposed fluids are expected to move in a northerly direction from the facility, the northernmost monitor wells should be located more distant (approximately 200 feet) from the facility to better evaluate

the rate and direction of fluid movement and the impact of attenuation, volatilization, and other natural action tending to improve the quality of the disposed fluid in the subsurface.

(20) One monitor well to the West, two to the North, and one to the East should be drilled into the redbeds surrounding the proposed disposal site and a sample log should be prepared for each.

(21) Said monitor wells should be located approximately as shown for wells B, D, F, and G on Exhibit "A" attached to this order except that wells D and F should be located 200 feet north of the northernmost pit.

(22) Said wells should be completed in such a manner as to be able to intercept any fluids moving in the subsurface at a depth of from four feet to the top of the redbeds, unless such redbeds are shallower.

(23) Additional monitor wells may be required by the Director based upon lithologic logs or the results of water quality sampling performed at the four monitor wells to be completed.

(24) The Snyder Ranch, Inc. grasses and vegetation in question in this case are located in the West half of said Section 15.

(25) The benefit of such grasses and vegetation are derived from a grazing lease between Snyder Ranches, Ltd. and the United States Bureau of Land Management, the surface owner.

(26) The evidence presented in this case indicated that any subsurface movement of the disposed fluid which would harm such grasses and vegetation would take from a few years to 700 years.

(27) Should such fluids move toward said Section 15 in such a manner as to harm said grasses and vegetation, it should be detected in the monitoring wells in sufficient time to halt the operation of the facility or to require remedial action, if necessary, before said grasses and vegetation are impacted.

(28) Findings Nos. (6) through (31), Nos. (33) through (36), and No. (38) in said Order No. R-8161-A should be affirmed and readopted by the Commission.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Petro-Thermo Corporation, is hereby granted an exception to Decretory Paragraph No. (3) of Division Order No. R-3221, as amended, to dispose of water produced in conjunction with the production of oil or gas, or both, and oil-field waste products, including drill cuttings and drilling muds in unlined pits adjacent to Laguna Plata in the SW/4 SE/4 NE/4 of Section 16, Township 20 South, Range 32 East, NMPM, Lea County, New Mexico;

PROVIDED HOWEVER THAT, the disposal facility shall be constructed and maintained in accordance with the engineering plat and topographic map presented at the time of the hearing and marked as Petro-Thermo Corporation Exhibit No. 8;

PROVIDED FURTHER THAT, the facility shall have adequate fencing, gates, and cattle guards installed and maintained to preclude livestock and unauthorized persons from entering the facility;

PROVIDED FURTHER THAT, the applicant shall take the steps necessary to prohibit disposal by any person other than itself at any time the facility is unattended.

PROVIDED FURTHER THAT, the total disposal volume at the facility shall not exceed 30,000 barrels per day and the maximum fill level in each pit at the facility shall not exceed a plane three feet below the crest of the dikes surrounding the pits.

PROVIDED FURTHER THAT, no disposal shall take place in the facility until re-sampling and testing has confirmed that the water in the two springs referenced in this order exceeds the State Engineer's TDS limit for fresh water.

(2) Prior to operation, the applicant shall drill four monitor wells around the facility at the approximate locations shown as "B", "D", "F", and "G" on Exhibit "A" attached to this order except that wells "D" and "F" shall be located approximately 200 feet north of the northernmost pit.

(3) Said monitor wells shall be drilled, completed, and tested in accordance with the "Monitoring Plan" described on Exhibit "B" attached to this order.

(4) Monitor well lithologic logs and results of initial testing shall be submitted to the Director of the Division at least three weeks prior to use of the facility.

(5) The Director of the Division may by administrative order rescind the authorization and/or require additional conditions be met, or additional monitor wells drilled, if it is determined that such rescission or additional conditions would serve to protect fresh water supplies from contamination, assure the protection of human health and property, and prevent waste.

(6) Jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JIM BACA, Member

ED KELLEY, Member



R. L. STAMETS, Chairman and
Secretary



S E A L

WELL NO. 1

WELL NO. 2

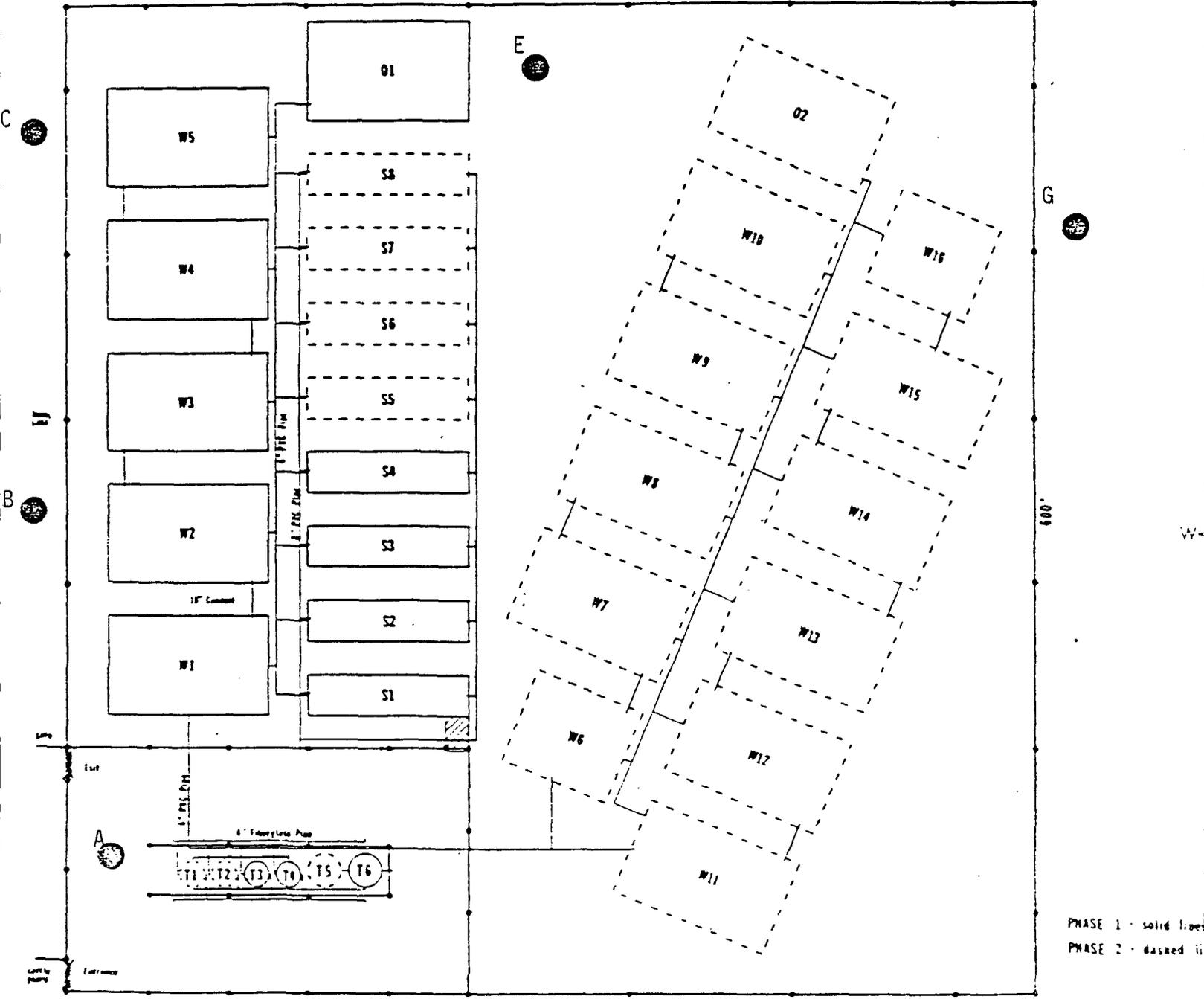
See REHEARING WELL PROGRAM

W - WATER PIT
 S - SOLIDS PIT
 O - OVERFLOW PIT
 T - TANK BATTERY

Proposed Monitoring Well Sites



1'-Strand Barbed Wire Fence



PHASE 1 - solid lines
 PHASE 2 - dashed lines

MONITORING PLAN

1. Four monitoring wells shall be drilled at approximate locations shown as "B", "D", "F" and "G" as shown on Exhibit "A", except that wells "D" and "F" shall be located approximately 200 feet north of the northermost pit.
2. Monitoring wells shall be drilled through the alluvium with the base completed in the first clay, claystone or shale in the redbeds. The wells shall be constructed of 4-inch diameter PVC pipe which is slotted or perforated from a distance of 4 feet beneath the surface to total depth, and shall be adequately gravel packed or otherwise completed to allow fluids to enter the well for sampling, but to prevent silting. The wells shall have the upper four feet cemented to prevent surface fluid entry.
3. The wells shall be checked upon completion for fluids and monthly once the facility begins operation. The results shall be reported monthly to the Division's office in Santa Fe.
4. Upon detection of fluids in any of the monitoring wells, sampling of these fluids shall take place and be repeated at six-month intervals. Samples shall be analyzed for heavy metals and purgeable aromatic hydrocarbons as listed on the attached sheet. A copy of the results shall be submitted to the Division office in Santa Fe for review as to the nature and threat to human health, if any, of allowing such seepage movement to continue towards Laguna Plata or other locations. This review will take into consideration the fact that Laguna Plata is not, and does not have the potential to be, a drinking water source.

CASE NO. 8781 DE NOVO
ORDER NO. R-8161-B
EXHIBIT "B"

Water samples from the monitoring wells shall be analyzed for the following dissolved hydrocarbons (BTX):

Benzene	o-xylene
Ethylbenzene	m-xylene
Toluene	p-xylene

The suggested method is EPA Method 602 which is a purgeable aromatic scan and costs less than the use of a gas chromatograph/mass spectrometer. Minimum detection limit should be 10 ppb (or 0.01 mg/l). The standard sample is 40 ml collected in a glass vial with a teflon septum seal. No air should be trapped between the water and the seal.

Water samples should be analyzed using an inductively coupled argon plasma scan (ICAP) with a minimum detection limit of 100 ppb (0.1) mg/l). One scan provides concentrations for the following elements:

Aluminum	Lead
Barium	Magnesium
Beryllium	Manganese
Boron	Molybdenum
Cadmium	Nickel
Calcium	Silicon
Chromium	Silver
Cobalt	Strontium
Copper	Tin
Iron	Vanadium
	Zinc

In addition samples shall be analyzed for arsenic and mercury using atomic adsorption methods. Minimum detection levels should be 10 ppb (0.01 mg/l) for arsenic and 1 ppb (0.001 mg/l) for mercury. A single one quart plastic container should be sufficient for all of the heavy metal analyses. Samples should be preserved with 5 ml of concentrated nitric acid.

The use of scans will provide much information on contaminants but is very much less time consuming and expensive than individual analyses. Your consultant can provide you with the names of several laboratories that will provide these services at a reasonable cost. The laboratory selected should also provide further information on sampling and preservation procedures. Contact the OCD or your consultant for the desired method of sampling to prevent false results from being obtained.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION COMMISSION

IN THE MATTER OF THE HEARING CALLED BY
THE OIL CONSERVATION COMMISSION OF NEW
MEXICO FOR THE PURPOSE OF CONSIDERING:

CASE NO. 8781 DE NOVO
Order No. R-8161-A

APPLICATION OF PETRO-THERMO CORPORATION
FOR AN EXCEPTION TO DIVISION ORDER NO. R-3221,
AS AMENDED, AND FOR AUTHORIZATION TO DISPOSE
OF ASSOCIATED WASTE HYDROCARBONS AND OTHER
SOLIDS, OBTAINED IN CONJUNCTION WITH THE
DRILLING AND PRODUCTION OF OIL AND GAS INTO
UNLINED PITS, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 9, 1986, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 20th day of May, 1986, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS THAT:

- (1) Due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) The applicant, Petro-Thermo Corporation, seeks an exception to the provisions of Order No. R-3221 to permit the commercial disposal of produced salt water into unlined surface pits and authorization to dispose of associated waste hydrocarbons and other related solids obtained in conjunction with the drilling and production of oil and gas into separate unlined pits all to be located in the SW/4 SE/4 NE/4 of Section 16, Township 20 South, Range 32 East, NMPM, Lea County, New Mexico.
- (3) The matter originally came on for hearing at 8 a.m. on December 18, 1985, at Santa Fe, New Mexico, before Oil Conservation Division Examiner Michael E. Stogner and, pursuant to his hearing, Order No. R-8161 was entered on February 13, 1986, granting the application.

(4) On March 4, 1986, application for Hearing De Novo was filed with the Commission by Snyder Ranches, Inc., and Pollution Control Inc.

(5) The matter came on for hearing De Novo on April 10, 1986.

(6) Petro-Thermo Corporation is the operator of a common carrier trucking company which transports produced water and various liquids and solids related to the drilling for and production of oil and gas.

(7) The applicant seeks authority to dispose of such liquids and solids in surface pits to be located at a disposal facility to be constructed in said Section 16.

(8) Said Section 16 is State land subject to the regulation and control of and leasing by the Commissioner of Public Lands.

(9) The applicant has filed for a business lease in said Section 16 for its proposed disposal operation.

(10) Decretory Paragraph No. (3) of Division Order No. R-3221, as amended, prohibits in that area encompassed by Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico, the disposal, subject to minor exceptions, of water produced in conjunction with the production of oil or gas, or both, on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any water course, or in any other place or in any manner which would constitute a hazard to any fresh water supplies.

(11) The aforesaid Order No. R-3221 was issued in order to afford reasonable protection against contamination of fresh water supplies designated by the State Engineer through disposal of water produced in conjunction with the production of oil or gas, or both, in unlined surface pits.

(12) The State Engineer has designated all underground water in the State of New Mexico containing 10,000 parts per million or less of dissolved solids as fresh water supplies to be afforded reasonable protection against contamination; except that said designation does not include any water for which there is no present or reasonably foreseeable beneficial use that would be impaired by contamination.

(13) The applicant proposes to install and operate an effective system, consisting of separating tanks, up to eleven water disposal pits, eight solids disposal pits, two overflow

pits, and associated skimming equipment for the removal and reclamation of oil and basic sediments from the produced water to be disposed of and a dispersal area to dispose of other solid waste, all in the E/2 NE/4 of said Section 16.

(14) A naturally occurring salt lake (Laguna Plata) is located in the general area including the northern portion of Section 16, Township 20 South, Range 32 East, NMPM, Lea County, New Mexico, and is approximately one quarter mile from the proposed disposal area.

(15) The applicant presented hydrogeologic evidence in this case to demonstrate that:

(a) Triassic rebeds, comprised of the Chinle Shale, Santa Rosa sandstone and the Dewey Lake formation, underlie both Laguna Plata and the proposed water disposal site;

(b) Shales within the Triassic rebeds underlying the proposed waste disposal site and Laguna Plata are virtually impermeable and therefore prevent vertical seepage of the waters from the site and Laguna Plata into sand stringers within the rebeds which may contain fresh water;

(c) The surface of the Triassic rebeds is depressed in the vicinity of the waste disposal site and Laguna Plata, sometimes described as a "collapse feature";

(d) The major flow of surface and subsurface water within the boundaries of the "collapse feature" is toward Laguna Plata;

(e) Seepage from the impoundments at the proposed waste disposal site will infiltrate into the subsurface and migrate toward Laguna Plata;

(f) After the seepage reaches Laguna Plata, practically all of the seepage will evaporate;

(g) The evaporation of Laguna Plata is more than 60 times the highest estimated maximum sustained rate of fluid waste disposal, which should be approximately 30,000 barrels per day;

(h) The concentration of total dissolved solids in the seepage from the impoundments is less than that in the waters of Laguna Plata;

(i) The concentration of total dissolved solids in the waters of Laguna Plata is 335,108 parts per million. There

is no present or reasonably foreseeable beneficial use of the waters of Laguna Plata;

(j) Due to fracturing in this collapse feature, a minor amount of seepage may filtrate through this impermeable layer; however, there are no known sources of potable ground water in sediments underlying the Triassic redbeds at Laguna Plata;

(k) The utilization of the proposed Petro-Thermo Corporation disposal site adjacent to Laguna Plata for the disposal of water produced in conjunction with the production of oil or gas, or both, and oil-field waste products, including drill cuttings and drilling muds should not constitute a hazard to any fresh water supplies.

(16) Snyder Ranches, Inc. is the owner of federal grazing leases adjacent to the applicant's proposed facility, is an interested party affected by this application, and appeared in opposition to the application.

(17) Pollution Control, Inc. has an approved surface disposal facility located at Laguna Gatuna in Section 18, Township 20 South, Range 32 East, Lea County, New Mexico, approximately four miles from the applicant's requested facility and is also an interested party affected by this application and appeared in opposition to the application.

(18) Snyder Ranches and Pollution Control (protestants) sought dismissal of this case as the applicant had not yet received a business lease from the State of New Mexico on the acreage to be used for disposal and was therefore not an operator, producer, or a person with a property interest and as such is not entitled to initiate a hearing under Division Rule 1203.

(19) While at the time of the hearing, Petro-Thermo had no property interest in said Section 16, other than that held by citizens of the State in State Trust Lands, it did possess other property in the State related to its business and is entitled to a hearing in this case.

(20) Protestants presented hydrogeologic evidence designed to cast doubt on the suitability of the proposed site for the intended disposal operations.

(21) Protestants' geohydrologic testimony questioned the sufficiency of the applicant's case in the following areas:

(a) Within Section 16, the thickness of the alluvial cover ranges from zero feet to 130 feet, but is completely unknown at the proposed site itself.

(b) In the absence of accurate data concerning the thickness and composition of the alluvial cover from the surface to the redbeds, hydrologists are unable to accurately project the direction and rate of subsurface migration of the discharged water.

(c) There is no evidence presented by the applicant which confirms that the redbed surface slopes directly toward Laguna Plata.

(d) In the absence of accurate data about the slope of the redbeds, it is not possible to accurately project that the discharged water will flow only into Laguna Plata and not elsewhere.

(e) Applicant failed to rebut available hydrology reports (Reed-1969) that there would be a westward migration of ground water from Laguna Plata that eventually migrates into Nash Draw and eventually into the Pecos River.

(f) Applicant's opinion that Laguna Plata is a closed depression is not supported by the data and the hydrology study conducted by Hunter (1985) or by Geohydrology Assoc. (1979).

(g) No evidence was presented by applicant to substantiate that the disposal ponds will function properly.

(h) The applicant and its experts are without prior experience in the design, construction, and operation of a surface disposal facility.

(i) Should the facility function as proposed by applicant, the discharge water will cause hydrocarbons to be introduced into Laguna Plata.

(22) The best geohydrologic evidence at the time of the hearing included the existence of a high TDS spring located at the northwest corner of the proposed pit disposal area and the water level elevation data presented on Figure 3 of applicant's Exhibit 9.

(23) Each of the above confirmed the position that fluids infiltrating from the surface will move toward, discharge to and eventually evaporate from, Laguna Plata.

(24) Should dissolved hydrocarbons move in the subsurface toward Laguna Plata, they would be detected at monitor wells north of the pits in time to monitor their progress toward the laguna and permit planning of any necessary corrective action.

(25) Soluble hydrocarbons should rapidly volatilize in the shallow salt lake environment and should pose no risk.

(26) There was no showing that prior experience is necessary to operate the proposed facility.

(27) The Bureau of Land Management appeared in the subject case and presented a statement in opposition to the proposed facility on the following grounds:

(a) the facility could impact a surface salt mining operation in the laguna;

(b) the facility will threaten wildlife use of spring water in the southeastern margin of the laguna;

(c) numerous archaeological sites are located in proximity to the laguna; and,

(d) the Bureau is concerned that the site will be used for disposal of hazardous waste.

(28) No party representing the salt mining company appeared at either the examiner hearing or the De Novo hearing to object to the proposed disposal operation.

(29) It was not demonstrated that the proposed disposal operation would in fact impact wildlife or the springs in the southeastern margin of the laguna.

(30) There was no evidence that the proposed disposal operation would impact archaeological sites on the surrounding federal lands. However, archaeological artifacts are protected by State law on State lands and the operator should post warning signs concerning removal of such artifacts.

(31) Because of the concerns raised about disposal of hazardous wastes, disposal of any fluids or materials at the site by any person other than the applicant should not be permitted during any period the site is unattended.

(32) To further assure that disposed fluids move only toward Laguna Plata, additional monitor wells should be completed to the west of the facility in accordance with a plan approved by the Director of the Division.

(33) The applicant should be authorized to utilize unlined pits as described in Finding Paragraph (2) above, which are within one quarter of a mile from Laguna Plata for the disposal of water produced in conjunction with the production of oil or gas, or both, and oil-field waste products, including drill cuttings and drilling muds.

(34) The proposed disposal system should be constructed and maintained in accordance with the engineering plat and topographic map presented at the time of the hearing and marked as Petro-Thermo Corporation Exhibit No. 8 for the case and in accordance with such additional conditions and requirements as the Division Director may deem necessary.

(35) The maximum fill level in all of the above-mentioned pits should be limited to a plane three feet below the crest of the dikes surrounding the pits.

(36) Said facility should have adequate fencing, gates, and cattle guards installed and maintained to preclude livestock and unauthorized persons from entering the property.

(37) In order to assure that the Division should have an opportunity to assess the potential for migration of heavy metals, soluble hydrocarbons, or other deleterious materials in the subsurface from the disposal pits to the lake surface, the development of a monitor well and sampling program satisfactory to the Division Director should be required.

(38) The granting of this application should not endanger designated fresh water supplies, and should prevent waste by permitting production of oil associated with large amounts of water.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Petro-Thermo Corporation, is hereby granted an exception to Decretory Paragraph No. (3) of Division Order No. R-3221, as amended, to dispose of water produced in conjunction with the production of oil or gas, or both, and oil-field waste products, including drill cuttings and drilling muds in unlined pits adjacent to Laguna Plata in the SW/4 SE/4 NE/4 of Section 16, Township 20 South, Range 32 East NMPM, Lea County, New Mexico;

PROVIDED HOWEVER THAT, the disposal facility shall be constructed and maintained in accordance with the engineering plat and topographic map presented at the time of the hearing and marked as Petro-Thermo Corporation Exhibit No. 8;

PROVIDED FURTHER THAT, the facility shall have adequate fencing, gates, and cattle guards installed and maintained to preclude livestock and unauthorized persons from entering the facility;

PROVIDED FURTHER THAT, the applicant shall take the steps necessary to prohibit disposal by any person other than itself at any time the facility is unattended.

PROVIDED FURTHER THAT, the total disposal volume at the facility shall not exceed 30,000 barrels per day and the maximum fill level in each pit at the facility shall not exceed a plane three feet below the crest of the dikes surrounding the pits.

(2) Prior to operation of the disposal facility, the applicant shall submit a revised plan acceptable to the Director of the Oil Conservation Division, for installation and sampling of monitor wells such that the subsurface migration of fluids in a westerly direction may be detected or that the movement of heavy metals, soluble hydrocarbons, or other deleterious materials from the pits to the lake surface may be detected in sufficient time prior to their arrival at the lake surface in order that appropriate action may be taken, if needed.

(3) The Director of the Division may by administrative order rescind the authorization and/or require additional conditions be met if it is determined that such rescission or additional conditions would serve to protect fresh water supplies from contamination, assure the protection of human health and property, and prevent waste.

(4) Jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

Case No. 8781 De Novo
Order No. R-8161-A

DONE at Santa Fe, New Mexico, on the day and year
hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JIM BACA, Member

Ed Kelley
ED KELLEY, Member

R. L. Stamets
R. L. STAMETS,
Chairman and Secretary

S E A L



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONY ANAYA
GOVERNOR

February 14, 1986

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Maddox, Renfrow & Saunders
Attorneys at Law
Post Office Box 5370
Hobbs, New Mexico 88241

Re: Case No. 8781
Order No. R-8161
Petro-Thermo Corporation

Dear Mr. Weber:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Please note that decretory paragraph (2) provides for submittal of a satisfactory monitoring and sampling plan prior to operation of the facility approved by this order. I understand that such a plan has been worked out between Mr. Dave Boyer, OCD Environmental Bureau Chief, and Dr. Daniel Stephens. The details of the plan will be forwarded to you early next week.

Sincerely,

A handwritten signature in dark ink, appearing to read "R. L. Stamets", with a horizontal line extending to the right.

R. L. STAMETS
Director

RLS/fd

cc: Thomas Kellahin
Ernest L. Padilla
Nancy Wood
Fran Cherry BLM Carlsbad

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
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CASE NO. 8781
Order No. R-8161

APPLICATION OF PETRO-THERMO
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SOLIDS, OBTAINED IN CONJUNCTION WITH THE
DRILLING AND PRODUCTION OF OIL AND GAS
INTO UNLINED PITS, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8 a.m. on December 18, 1985, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 13th day of February, 1986, the Division Director, having considered the testimony, the record, and the recommendation of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) Decretory Paragraph No. (3) of Division Order No. R-3221, as amended, prohibits in that area encompassed by Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico, the disposal, subject to minor exceptions, of water produced in conjunction with the production of oil or gas, or both, on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any water course, or in any other place or in any manner which would constitute a hazard to any fresh water supplies.

(3) The aforesaid Order No. R-3221 was issued in order to afford reasonable protection against contamination of fresh water supplies designated by the State Engineer through disposal of water produced in conjunction with the production of oil or gas, or both, in unlined surface pits.

(4) The State Engineer has designated all underground water in the State of New Mexico containing 10,000 parts per million or less of dissolved solids as fresh water supplies to be afforded reasonable protection against contamination; except that said designation does not include any water for which there is no present or reasonably foreseeable beneficial use that would be impaired by contamination.

(5) The applicant, Petro-Thermo Corporation, seeks as an exception to the provisions of Order No. R-3221 to permit the commercial disposal of produced salt water into unlined surface pits to be located in the SW/4 SE/4 NE/4 of Section 16, Township 20 South, Range 32 East, NMPM, Lea County, New Mexico.

(6) The applicant further seeks authorization to dispose of associated waste hydrocarbons and other related solids obtained in conjunction with the drilling and production of oil and gas into separate unlined pits also located within the above-described area.

(7) The applicant proposes to install and operate an effective system, consisting of separating tanks, 5 water disposal pits, 4 solids disposal pits, one overflow pit, and associated skimming equipment for the removal and reclamation of oil and basic sediments from the produced water to be disposed of and a dispersal area to dispose of other solid waste.

(8) A naturally occurring salt lake (Laguna Plata) is located in the northern portion of Section 16, Township 20 South, Range 32 East, NMPM, Lea County, New Mexico, and is approximately one quarter mile from the proposed disposal area.

(9) The hydrogeologic evidence presented in this case established that:

(a) Triassic redbeds, comprised of the Chinle Shale, Santa Rosa sandstone and the Dewey Lake formation, underlies both Laguna Plata and the proposed water disposal site;

(b) Shales within the Triassic redbeds underlying the proposed waste disposal site and Laguna Plata are virtually impermeable and therefore prevent vertical seepage of the waters from the site and Laguna Plata into sand stringers within the redbeds which may contain fresh water;

(c) The surface of the Triassic redbeds is depressed

in the vicinity of the waste disposal site and Laguna Plata thus creating a "collapse feature";

(d) The major flow of surface and subsurface water within the boundaries of the "collapse feature" is toward Laguna Plata;

(e) Seepage from the impoundments at the proposed waste disposal site will infiltrate into the subsurface and migrate toward Laguna Plata;

(f) After the seepage reaches Laguna Plata, practically all of the seepage will evaporate.

(g) The evaporation of Laguna Plata is more than 60 times the proposed estimated average sustained rate of fluid waste disposal, which should be approximately 30,000 barrels per day;

(h) The concentration of total dissolved solids in the seepage from the impoundments is less than that in the waters of Laguna Plata;

(i) The concentration of total dissolved solids in the waters of Laguna Plata is 335,108 parts per million. There is no present or reasonably foreseeable beneficial use of the waters of Laguna Plata;

(j) Due to fracturing in this collapse feature a minor amount of seepage may filtrate through this impermeable layer; however, there are no known sources of potable groundwater in sediments underlying the Triassic redbeds at Laguna Plata.

(k) The utilization of the proposed Petro-Thermo Corporation disposal site adjacent to Laguna Plata for the disposal of water produced in conjunction with the production of oil or gas, or both, and oil-field waste products, including drill cuttings and drilling muds should not constitute a hazard to any fresh water supplies.

(10) The applicant should be authorized to utilize unlined pits as described in Finding Paragraph (7) above, which are within one quarter of a mile from Laguna Plata for the disposal of water produced in conjunction with the production of oil or gas, or both, and oil-field waste products, including drill cuttings and drilling muds.

(11) The proposed disposal system should be constructed and maintained in accordance with the engineering plat and topographic map presented at the time of the hearing and marked as Petro-Thermo Corporation Exhibit No. (8) for the case and in accordance with such additional conditions and requirements as the Division Director may deem necessary.

(12) At the time of the hearing the applicant stated that the maximum fill level in all of the above-mentioned pits is to be limited to a plane three feet below the crest of the dikes surrounding the pits.

(13) Said facility should have adequate fencing, gates, and cattle guards installed and maintained to preclude livestock and unauthorized persons from entering the property.

(14) In order to assure that the Division should have an opportunity to assess the potential for migration of heavy metals, soluble hydrocarbons, or other deleterious materials in the subsurface from the disposal pits to the lake surface, the development of a monitor well and sampling program satisfactory to the Division Director should be required.

(15) The granting of this application should not endanger designated fresh water supplies, and should prevent waste by permitting production of oil associated with large amounts of water.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Petro-Thermo Corporation, is hereby granted an exception to Decretory Paragraph No. (3) of Division Order No. R-3221, as amended, to dispose of water produced in conjunction with the production of oil or gas, or both, and oil-field waste products, including drill cuttings and drilling muds in unlined pits adjacent to Laguna Plata in the SW/4 SE/4 NE/4 of Section 16, Township 20 South, Range 32 East, NMPM, Lea County, New Mexico;

PROVIDED HOWEVER THAT, the disposal facility shall be constructed and maintained in accordance with the engineering plat and topographic map presented at the time of the hearing and marked as Petro-Thermo Corporation Exhibit No.(8);

PROVIDED FURTHER THAT, the facility shall have adequate fencing, gates, and cattle guards installed and maintained to preclude livestock and unauthorized persons from entering the facility;

PROVIDED FURTHER THAT, the total disposal volume at the facility shall not exceed 30,000 barrels per day and the maximum fill level in each pit at the facility shall be limited to a plane three feet below the crest of the dikes surrounding the pits.

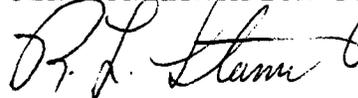
(2) Prior to operation of the disposal facility, the applicant shall submit a plan acceptable to the Division Director, for installation and sampling of monitor wells such that the subsurface movement of heavy metals, soluble hydrocarbons, or other deleterious materials from the pits to the lake surface may be detected in sufficient time prior to their arrival at the lake surface in order that appropriate action may be taken if needed.

(3) The Director of the Division may by administrative order rescind the authorization and/or require additional conditions be met if it is determined that such rescission or additional conditions would serve to protect fresh water supplies from contamination, assure the protection of human health or livestock, and the prevention of waste.

(4) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



R. L. STAMETS
Director

S E A L



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

M E M O R A N D U M

TO: R. L. STAMETS, TECHNICAL SUPPORT CHIEF

FROM: D. G. BOYER, HYDROGEOLOGIST 

SUBJECT: CASE 8292, POLLUTION CONTROL
AMENDMENT TO DIVISION ORDER NO. R-3725

1. My main question of Mr. Tim Kelly of Geohydrology Associates, Inc., was directed at clarifying the statement made in Mr. Kelly's report, that Laguna Gatuna is a natural groundwater discharge point (P.29, 30). However, the Figure 3 (P.25) water-table contour map could be interpreted as showing groundwater flow from Laguna Gatuna northwest towards Laguna Plata, which would appear to contradict the first statement. Both statements may in fact be correct given the information presented in Figure 2 (P.4). Briny groundwater associated with the collapse features discharges into the lake where it almost always evaporates. These springs are at a higher topographic elevation than the lake. Regional water levels indicate flow (including perhaps some subsurface spring contribution) to the northwest. In other words, a closed contour line (about 3500 feet) might have been drawn around Laguna Gatuna indicating local flow into the lake from springs on the bank walls while regional flow outside this boundary but near the lake is to the north and west. Springs flowing into Laguna Plata from the southeast (from the direction of Laguna Gatuna) are also naturally highly mineralized (in excess of 10,000 mg/l TDS) indicating that subsurface seepage (if any) from additional discharges to Laguna Gatuna would not impact the poor existing water quality in and around Laguna Plata.
2. Since the windmill at the well in the NW/2 of Section 21, Township 20 South, Range 33 East, was inoperative, Kelly could not get a sample. However, if a conductivity probe with a long lead (50 feet or so) was available,

Page 2
Memorandum to R. L. Stamets
August 10, 1984

an indication of current water quality in that area could have been obtained. This measurement (and any made at other inoperative windmills near the site) would be useful for comparison with future samples taken after the site has been in operation for some length of time.

3. Regarding the TDS level at which water is protected under WQCC Regulations, if the existing level is between 1,000 and 10,000 TDS, that is the level of protection.

With exception of the clarifying comments and suggestions given above, I support Mr. Kelly's conclusions given in his report on pages 30 to 31.

August 10, 1984
fd/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 8292
Order No. R-3725-A

APPLICATION OF POLLUTION CONTROL INC.
FOR AN AMENDMENT TO DIVISION ORDER
NO. R-3725, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:00 a.m. on August 8, 1984, before Examiner Richard L. Stamets.

NOW, on this 20th day of August, 1984, the Division Director, having considered the testimony, the records, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Pollution Control Inc., has been operating a surface salt water disposal facility at Laguna Gatuna and more specifically at the NE/4 NW/4 of Section 18, Township 20 South, Range 32 East, NMPM, Lea County, New Mexico, as an exception to Division Order No. R-3221, under the terms and conditions of Division Order No. R-3725.
- (3) That the applicant now seeks the amendment of said Order No. R-3725 to permit the use of a second salt water disposal site on Laguna Gatuna in the SW/4 SW/4 of Section 17 in said township and for authorization to dispose of solid oil-field waste products including drilling mud and cuttings at either or both sites.
- (4) That applicant proposes to utilize the expanded facility at a rate combined with its existing Laguna Gatuna facility so that the total combined discharge from both sites does not exceed 30,000 barrels of salt water per day.

(5) That the geohydrologic evidence presented in this case reaffirms or establishes that:

(a) Laguna Gatuna is sited within the confines of a collapse structure;

(b) naturally occurring highly mineralized springs are located on the periphery of Laguna Gatuna;

(c) the water in Laguna Gatuna is not fresh water;

(d) that portion of the Triassic red beds underlying said Laguna Gatuna is virtually impermeable and therefore prevents seepage from said lake into the sand stringers within said red beds which may contain fresh water;

(e) as to sands that are in communication with said lake, the major flow of surface and subsurface water within the boundaries of said collapse structure is towards Laguna Gatuna;

(f) the evidence indicates that there is no leakage of water from Laguna Gatuna into the adjoining formations containing fresh waters;

(g) the salt springs and brine associated with Laguna Gatuna are more highly mineralized than water collected from oil wells in the immediate area;

(h) Laguna Gatuna is a suitable disposal site for as much as 30,000 barrels of brine per day;

(i) there is no evidence that the fifteen years of operation by Pollution Control Inc has adversely impacted the hydrological system in the vicinity of Laguna Gatuna and that continued operations as proposed will not endanger the pre-1969 conditions;

(j) Laguna Gatuna is a satisfactory repository for solid oil-field waste products; and,

(k) the utilization of Laguna Gatuna for the disposal of water produced in conjunction with the production of oil or gas, or both, and oil field waste products, including drill cuttings and drilling muds will not constitute a hazard to fresh water supplies that may exist in the vicinity of said lake.

(6) That the applicant should be authorized the proposed expansion of its disposal operations at Laguna Gatuna.

IT IS THEREFORE ORDERED:

(1) That the applicant, Pollution Control Inc., is hereby authorized the expansion of its Laguna Gatuna disposal operation by approval of a second disposal site located in the SW/4 SW/4 of Section 17, Township 20 South, Range 32 East, NMPM, Lea County, New Mexico, and for disposal of solid oil-field wastes including drilling mud and cuttings at this and/or the original disposal site.

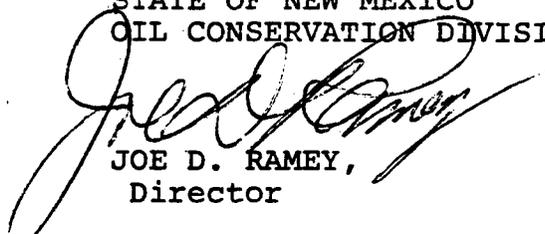
PROVIDED HOWEVER, that the total disposal rate of salt water into Laguna Gatuna at both sites shall not exceed 30,000 barrels per day.

PROVIDED FURTHER, that the applicant shall not permit any oil from the disposal operations to migrate to the surface of Laguna Gatuna and shall contain any oil contaminated waste products in earthen structures at the disposal sites.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY,
Director

S E A L

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5864
Order No. R-5137-C

APPLICATION OF AGUA, INC. FOR THE
AMENDMENT OF ORDER NO. R-5137, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 16, 1977, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 15th day of March, 1977, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That by Commission Order No. R-5137, dated December 17, 1975, the applicant, Agua, Inc., was authorized to dispose of produced salt water into the San Andres formation through the open-hole interval from approximately 4,000 feet to 5,000 feet in its Blinebry-Drinkard SWD System Well No. A-22, located 817 feet from the North line and 965 feet from the East line of Section 22, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That in order to ensure that the disposed water would remain confined to the San Andres formation and not migrate through fractures or otherwise into other formations, said Order No. R-5137 required that the aforesaid Well No. A-22 be equipped with a pop-off valve or acceptable substitute which would limit the wellhead injection pressure to no more than one hundred (100) psi.

Lea County, New Mexico, at a surface injection pressure of up to 1500 psi is hereby denied.

(2) That Order No. (2) of Commission Order No. R-5137 is hereby further amended to read in its entirety as follows:

"(2) That the injection well or system shall be equipped with a pop-off valve or acceptable substitute which will limit the wellhead injection pressure on the injection well to no more than fourteen hundred (1400) psi."

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

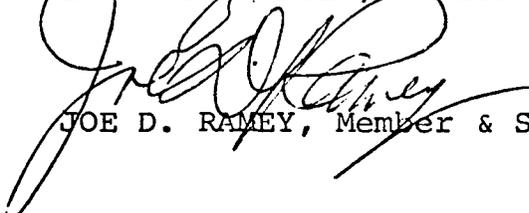
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

PHIL R. LUCERO, Chairman



EMBURY C. ARNOLD, Member



JOE D. RAMEY, Member & Secretary

S E A L

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5644
Order No. R-5137-B

APPLICATION OF AGUA, INC., FOR
THE AMENDMENT OF ORDER NO. R-5137,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 10, 1975, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 3rd day of August, 1976, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That by Commission Order No. R-5137, dated December 17, 1975, the applicant, Agua, Inc., was authorized to dispose of produced salt water into the San Andres formation through the open-hole interval from approximately 4,000 feet to 5,000 feet in its Blinebry-Drinkard SWD System Well No. A-22, located 817 feet from the North line and 965 feet from the East line of Section 22, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico.
- (3) That in order to ensure that the disposed water would remain confined to the San Andres formation and not migrate through fractures or otherwise into other formations, said Order No. R-5137 required that the aforesaid Well No. A-22 be equipped with a pop-off valve or acceptable substitute which would limit the wellhead injection pressure to no more than one hundred (100) psi.
- (4) That the applicant herein seeks the amendment of said Order No. R-5137 to permit disposal into Well No. A-22 at a surface injection pressure not to exceed 1200 psi.
- (5) That the applicant proposes to dispose of up to 12,000 barrels of produced salt water per day in the subject Well No. A-22.

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

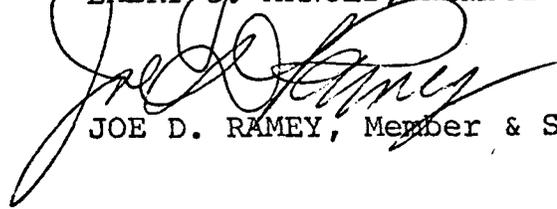
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



PHIL R. LUCERO, Chairman



EMERY C. ARNOLD, Member



JOE D. RAMEY, Member & Secretary

S E A L

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5592 (De Novo)
Order No. R-5137-A

APPLICATION OF AGUA, INC. FOR
SALT WATER DISPOSAL, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 21, 1976, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 27th day of January, 1976, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant's request for dismissal should be granted.

IT IS THEREFORE ORDERED:

- (1) That Case No. 5592 (De Novo) is hereby dismissed.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Phil R. Lucero
PHIL R. LUCERO, Chairman

Emery C. Arnold
EMERY C. ARNOLD, Member

Joe V. Ramey
JOE V. RAMEY, Member & Secretary

S E A L
jr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5592
Order No. R-5137

APPLICATION OF AGUA, INC. FOR SALT
WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 19, 1975, at Santa Fe, New Mexico, before Examiner, Daniel S. Nutter.

NOW, on this 16th day of December, 1975, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

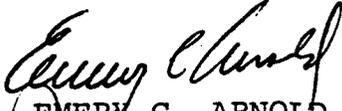
- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Agua, Inc., is the owner and operator of the Blinebry-Drinkard SWD System Well No. ~~22~~ 22 located 817 feet from the North line and 965 feet from the East line of Section 22, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico.
- (3) That the applicant proposes to utilize said well to dispose of produced salt water into the San Andres formation, with injection into the open-hole interval from approximately 4,000 feet to 5,000 feet.
- (4) That the injection should be accomplished through 5 1/2-inch plastic lined tubing hung at approximately 4000 feet; that the casing-tubing annulus should be filled with a hydrostatically balanced column of inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing or tubing.
- (5) That the injection well or system should be equipped with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than one hundred (100) psi, provided however, the Secretary-Director of the Commission should have authority to increase the aforesaid pressure limit if, in his judgement, conditions so warrant.

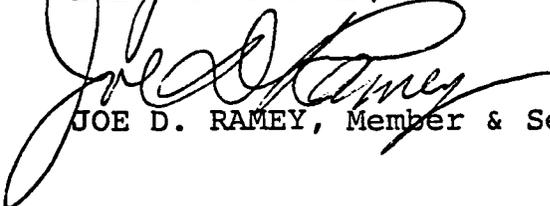
(6) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year herein-above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


PHIL R. LUCERO, Chairman


EMERY C. ARNOLD, Member


JOE D. RAMEY, Member & Secretary

S E A L

jr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4047
Order No. R-3725

APPLICATION OF LARRY C. SQUIRES
FOR AN EXCEPTION TO ORDER NO.
R-3221, AS AMENDED, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 19, 1969, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 16th day of April, 1969, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That effective January 1, 1969, Order (3) of Commission Order No. R-3221, as amended, prohibits in that area encompassed by Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico, the disposal, subject to minor exceptions, of water produced in conjunction with the production of oil or gas, or both, 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 would constitute a hazard to any fresh water supplies and said disposal has not previously been prohibited.

(3) That the aforesaid Order No. R-3221 was issued in order to afford reasonable protection against contamination of fresh

water supplies designated by the State Engineer through disposal of water produced in conjunction with the production of oil or gas, or both, in unlined surface pits.

(4) That the State Engineer has designated, pursuant to Section 65-3-11 (15), N.M.S.A., 1953 Compilation, all underground water in the State of New Mexico containing 10,000 parts per million or less of dissolved solids as fresh water supplies to be afforded reasonable protection against contamination; except that said designation does not include any water for which there is no present or reasonably foreseeable beneficial use that would be impaired by contamination.

(5) That the applicant, Larry C. Squires, seeks an exception to the provisions of the aforesaid Order (3) to permit the disposal of water produced in conjunction with the production of oil or gas, or both, in three natural salt lakes located in Lea County, New Mexico, as follows:

Laguna Plata, sometimes referred to as Laguna Grande, located in Sections 2, 3, 9, 10, and 11, Township 20 South, Range 32 East, NMPM;

Laguna Gatuna, sometimes referred to as Salt Lake, located in Sections 7, 17, 18, 19, and 20, Township 20 South, Range 33 East, NMPM;

Laguna Tonto, located in Sections 32 and 33, Township 19 South, Range 33 East, and Section 4, Township 20 South, Range 33 East, NMPM.

(6) That the subject lakes are situated within the confines of a synclinal feature.

(7) That the water in the aforesaid three lakes is not fresh water.

(8) That that portion of the Triassic red beds underlying said three lakes is virtually impermeable and therefore prevents seepage from said lakes into the sand stringers within said red beds which may contain fresh water.

(9) That as to sands that are in communication with said lakes, the evidence indicates that the major flow of surface and subsurface water within the boundaries of said synclinal feature is toward the subject lakes.

-3-

CASE No. 4047

Order No. R-3725

(10) That the evidence indicates that there is no leakage of water from said Laguna Plata and Laguna Gatuna into the adjoining formations.

(11) That the evidence indicates that there may be some leakage of water from said Laguna Tonto into the adjoining formations to the southeast, thence southwestward toward Laguna Gatuna.

(12) That the utilization of Laguna Plata and Laguna Gatuna for the disposal of water produced in conjunction with the production of oil or gas, or both, will not constitute a hazard to fresh water supplies that may exist in the vicinity of said lakes.

(13) That the utilization of Laguna Tonto for the disposal of water produced in conjunction with the production of oil or gas, or both, may constitute an additional threat of contamination of fresh water supplies as designated by the State Engineer existing to the southeast of said lake.

(14) That the evidence indicates that commercial deposits of sodium sulphate ($\text{Na}_2 \text{SO}_4$) may exist in and/or near the three subject lakes.

(15) That disposal of produced salt water into Laguna Plata and Laguna Gatuna will not interfere with the testing required to determine if there are commercial deposits of sodium sulphate in and/or near the said three lakes.

(16) That said disposal prior to actual mining operations will not impair the value of said sodium sulphate nor render its recovery more difficult.

(17) That this case should be reopened upon the motion of the Commission or any other interested party whenever tests have been conducted which indicate to a substantial degree that commercial deposits of sodium sulphate probably exist in and/or near the subject lakes, at which time all interested parties should be prepared to appear and show cause why continued disposal in said lakes should or should not be allowed.

(18) That the applicant should be authorized to utilize Laguna Plata and Laguna Gatuna for the disposal of water produced in conjunction with the production of oil or gas, or both.

(19) That the request of the applicant to utilize Laguna Tonto for the disposal of water produced in conjunction with the production of oil or gas, or both, should be denied.

IT IS THEREFORE ORDERED:

(1) That the applicant, Larry C. Squires, is hereby granted an exception to Order (3) of Commission Order No. R-3221, as amended, to dispose of water produced in conjunction with the production of oil or gas, or both, in two natural salt lakes located in Lea County, New Mexico, as follows:

Laguna Plata, sometimes referred to as Laguna Grande, located in Sections 2, 3, 9, 10, and 11, Township 20 South, Range 32 East, NMPM;

Laguna Gatuna, sometimes referred to as Salt Lake, located in Sections 7, 17, 18, 19, and 20, Township 20 South, Range 33 East, NMPM.

(2) That the application of Larry C. Squires to utilize Laguna Tonto, located in Sections 32 and 33, Township 19 South, Range 33 East, and Section 4, Township 20 South, Range 33 East, NMPM, Lea County, New Mexico, for the disposal of water produced in conjunction with the production of oil or gas, or both, is hereby denied.

(3) That the Commission may by administrative order rescind such authority whenever it reasonably appears to the Commission that such rescission would serve to protect fresh water supplies from contamination.

(4) That this case shall be reopened upon the motion of the Commission or any other interested party whenever tests have been conducted which indicate to a substantial degree that commercial deposits of sodium sulphate probably exist in and/or near the aforesaid lakes, at which time all interested parties should appear and show cause why continued disposal in said lakes should or should not be allowed.

(5) That the first person to determine to a substantial degree by tests that commercial deposits of sodium sulphate probably exist in and/or near said lakes shall so notify the Commission, setting forth in writing the supporting facts,

-5-

CASE No. 4047
Order No. R-3725

whereupon the Commission shall give notification for the reopening of this case.

(6) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

S E A L

A. L. PORTER, Jr., Member & Secretary

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