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. 8781
Order No. R-8161

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 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