STATE OF NEW MEXICO
ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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

CASE NO. 13142
ORDER NO. R-12152

APPLICATION OF THE NEW MEXICO OIL CONSERVATION DIVISION FOR AN ORDER REQUIRING MARALO, L.L.C. TO REMEDIATE HYDROCARBON CONTAMINATION AT AN ABANDONED WELL AND BATTERY SITE, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on November 20, 2003, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 9th day of June, 2004, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) The New Mexico Oil Conservation Division ("Division") seeks an order requiring Maralo, L.L.C. ("Maralo") to remediate hydrocarbon contamination at the site of the Humble State Well No. 3 **(API** No. **30-025-09831)** located 660 feet from the North and East lines (Unit A) of Section 36, Township 25 South, Range 36 East, NMPM, Lea County, New Mexico.

(3) Maralo appeared at the hearing in opposition to the application.

(4) Jay Anthony, the owner of the surface on which the Humble State Well No. 3 is located, appeared at the hearing in support of the Division's application.

(5) Division records and evidence presented in this case show that:

(a) the Humble State Well No. 3 was drilled in 1945 by Ralph Lowe. The well was initially completed as an oil well in the Seven Rivers formation through perforations from 2,915 feet to 2,945 feet. The well was later recompleted as a gas well in the Yates formation, Jalmat (Tansill-Yates-Seven Rivers) Pool *(previously designated as the Cooper Jal Pool;)*

(b) at or near the location of the Humble State Well No. 3 Ralph Lowe constructed a production facility to separate, process and store the oil produced from the subject well and from at least one other well it operated in this area. This production facility contained two 250-barrel and two 500-barrel capacity tanks for oil storage (tank battery area), two unlined surface pits located to the west of the tank battery area, and one unlined surface pit located to the south of the tank battery area. Also present at this facility was a fresh water well and an access road;

(c) on April 19, 1974 Maralo, Inc. assumed operatorship of the Humble State Well No. 3 from Ralph Lowe;

(d) Maralo Inc., plugged and abandoned the Humble State Well No. 3 on October 15, 1988; and

(e) Maralo Inc. is the current operator of record for the Humble State Well No. 3.

CHRONOLOGY OF EVENTS

(6) The contamination issue first came to the attention of the Division in October, 1999 at which time Jay Anthony filed a complaint with the Hobbs District Office of the Division ("Hobbs OCD").

(7) On October 6, 1999 an environmental inspector with the Hobbs OCD investigated the area in which the Humble State Well No. 3 and related surface production facilities had been located, (hereinafter referred to as the "site"). The inspector found "asphalty material" throughout the location.

(8) Subsequent investigations of the site by Division personnel found chunks of asphalt ranging from smaller pieces to softball size or larger pieces spread across the location. It appeared that the material had been spread across or disked across the area. The Division also found three pits that had been covered or buried at some point in time. A hard asphalt substance was present on the outer perimeter or rim of each pit. The pit located on the south side of the tank battery area measured approximately 75 feet square, and the two pits located to the west of the tank battery area measured approximately 150 feet square.

(9) On November 15, 1999, the Hobbs OCD wrote to Maralo and requested that they perform an investigation at the site to determine the extent of the contamination. The Division also requested that Maralo provide a site assessment and a plan for remediation of the site by December 1, 1999.

(10) Maralo did not conduct an investigation or submit a site assessment or remediation plan in response to the Division's letter dated November 15, 1999.

(11) In response to additional information provided to the Division by Jay Anthony, the Division conducted an investigation of the fresh water well located on the site. The results of the Division's water sampling indicated chloride contamination of the water well above New Mexico Water Quality Control Commission standard. The analysis did not confirm any petroleum contamination of the well.

(12) On April 11, 2001 the Division sent a letter to Maralo requesting that it submit an abatement plan pursuant to 19.15.1.19NMAC (Division Rule 19). Division Rule 19 focuses on prevention and abatement of water pollution.

(13) Maralo did not submit an abatement plan in response to the Division's letter dated April 11, 2001; however, by letter to the Division dated April 23, 2001 Maralo stated that since it ceased operations at the site prior to the establishment of Rule 19 (February, 1997), any attempt by the Division to apply the rule retroactively would be unconstitutional.

(14) Subsequently, the Division expanded its investigation to possible soil contamination at the site.

(15) In May, 2001 the Division took soil samples from various locations within the tank battery area and pit locations at the site. The soil samples were taken at depths ranging from the surface to a depth of approximately eight feet.

(16) In May, 2002 the Division drilled two boreholes for soil samples. One of the boreholes was located at the north end of the tank battery area ("North area") and the other borehole was located in one of the pits west of the tank battery area ("Southwest area"). The soil samples were taken at depths ranging from two feet to twenty-eight feet.

(17) In March, 2003 Jay Anthony hired a private company to evaluate soil contamination at the site. The company drilled two new boreholes, taking soil samples at various depths to a final depth of approximately eighty feet. The boreholes were drilled at separate locations at or near the tank battery area of the site.

(18) By letter dated April 22, 2003 the Division advised Maralo that since no appreciable concentrations of chlorides had been found in the soil at the site, the Division was rescinding its earlier requirement that Maralo submit an abatement plan; however, the Division did request that Maralo submit a work plan to eliminate surface damage at the site.

(19) By letter to the Division dated May 5, 2003 Maralo reiterated its position that Rule 19 was not applicable to the site.

(20) By letter dated July 9, 2003, the Division again advised Maralo that a plan to address the surface contamination at the site would be required. The Division further stipulated that Maralo submit this plan no later than August 15, 2003.

(21) By letter to the Division dated July 16, 2003, Maralo declined to submit a plan to address surface contamination at the site on the basis that the Division does not have the authority to require the remediation of a site that has not been utilized for 15 years.

(22) On August 11, 2003 the Division filed this application for hearing before a Division examiner.

(23) Prior to the hearing, the various parties involved in this case filed the following-described documents: (i) Maralo filed a motion to dismiss Case No. 13142 during the first week in September, 2003; (ii) the Division filed a response to Maralo's motion to dismiss Case No. 13142 on October 7, 2003; (iii) Jay Anthony filed a response to Maralo's motion to dismiss Case No. 13142 on October 15, 2003; and (iv) Maralo filed a reply to the Division's and Jay Anthony's response on October 28, 2003.

(24) On November 18, 2003 Examiner Michael E. Stogner denied Maralo's motion to dismiss Case No. 13142 and directed that the case proceed to hearing on November 20, 2003.

DIVISION EVIDENCE

(25) The Division contends that Maralo violated Division Rules No. 310 and 313, and consequently, it should be required to clean up the hydrocarbon contamination at the site. The applicable provisions of Rules No. 310 and 313 state that:

Rule 310 "Oil shall not be stored or retained in earthen reservoirs, or in open receptacles."

Rule 313 "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 fresh waters or cause surface damage."

(26) The three sets of soil samples, two collected by the Division and one collected by the private contractor hired by Jay Anthony, were tested for volatile organic compounds (benzene, toluene, ethylbenzene and M, P, O-xylene ("BTEX")), total petroleum hydrocarbons ("TPH") and chlorides.

(27) In determining acceptable levels of TPH, the Division utilized a three-tiered system based upon the following factors: (i) depth to groundwater; (ii) the distance to water wells; and (iii) the distance to surface water bodies. Utilizing these factors, acceptable levels of TPH within high, moderate and low risk areas would be defined as follows:

(a) the maximum acceptable amount of TPH in a high-risk area is 100 milligrams per kilogram (mg/Kg);

(b) the maximum acceptable amount of TPH in a moderate risk area is 1,000 mg/Kg; and

(c) the maximum acceptable amount of TPH in a low risk area is 5,000 mg/Kg.

(28) The Division testified that the three-tiered system it utilized for evaluating acceptable levels of TPH was developed in 1993 for use in closure of unlined pits as well as for remediation of subsurface spills and releases. Prior to 1993, the guidance level of TPH allowed by the Division was 100 mg/Kg in all circumstances.

(29) The Division further testified that based upon its examination of the factors in this area, it has defined the site as a low risk area. Accordingly, the Division has applied a TPH concentration of 5,000 mg/Kg as the standard at this site.

(30) Six soil samples were collected during the Division's investigation of the site in May, 2001. One soil sample was taken from the tank battery area and the remaining five soil samples were taken from the three pit areas. The soil sample depths ranged from the surface to a depth of eight feet. The result of this sampling shows that:

(a) the soil taken from a depth of approximately 1 foot within the tank battery area showed the highest TPH concentration of 35,700 mg/Kg;

(b) the soil sample taken from a depth of approximately 4 feet within one of the pits located to the west of the tank battery area showed the lowest TPH concentration of less than 10 mg/Kg;

(c) the remaining soil samples, which were taken from depths ranging from the surface to 8 feet deep within the three pit areas showed TPH concentrations ranging from 7,500-23,900 mg/Kg;

(d) all soil samples showed relatively low levels of BTEX; and

(e) all soil samples showed levels of chloride well below the state groundwater standard.

(31) Twelve soil samples were collected during the Division's investigation of the site in May, 2002. Seven soil samples were taken from the borehole located near the tank battery area at various depths ranging from two feet to 27 feet. The remaining five soil samples were taken from the borehole located in one of the pits west of the tank battery area at various depths ranging from five feet to 28 feet. The result of this sampling shows that:

(a) the TPH concentration within the borehole located near the tank battery area ranged from 8,710-14,900 mg/Kg. The highest TPH concentration, 14,900 mg/Kg, occurred within the 15-17 feet depth range;

(b) the TPH concentration within the borehole located within the west pit area ranged from 143-25,400 mg/Kg. The highest TPH concentration, 25,400 mg/Kg occurred within the 10 foot depth range, while the lowest TPH concentration, 143 mg/Kg occurred within the 27-28 feet depth range;

(c) all soil samples showed relatively low levels of BTEX; and

(d) all soil samples showed levels of chloride well below the state groundwater standard.

(32) Ten soil samples from the site were collected by the private contractor hired by Jay Anthony in March, 2003. Five soil samples were taken from the borehole located on the south side of the tank battery area at various depths ranging from ten feet to 80 feet. The remaining five soil samples were taken from the borehole located on the north side of the tank battery area at various depths ranging from ten feet to 80 feet. The result of this sampling shows that:

(a) the TPH concentration within the borehole located on the south side of the tank battery area ranged from 2,580-8,250 mg/Kg. The highest TPH concentration, 8,250 mg/Kg occurred within the 40 foot depth range, while the lowest TPH concentration, 2,580 mg/Kg occurred within the 60 foot depth range;

(b) the TPH concentration within the borehole located on the north side of the tank battery area ranged from 999-16,600 mg/Kg. The highest TPH concentration, 16,600 mg/Kg occurred within the 10-foot depth range while the lowest TPH concentration, 999 mg/Kg occurred within the 60-foot depth range;

(c) all soil samples showed relatively low levels of BTEX; and

(d) all soil samples showed levels of chloride below the state groundwater standard.

(33) The Division's expert hydrologist testified that, in his opinion, the pits at the site have contained oily material, most likely waste oils and possibly tank bottoms. He based his opinion on the following:

(a) the various soil samples from the site contain high TPH levels;

(b) the thick rims of asphaltic material surrounding the pits suggest a large amount of hydrocarbons were placed in the pits; and

(c) his observations of similar pits at other tank battery locations within Lea County.

(34) The Division's expert hydrologist further testified that, in his opinion the pits at the site were not used for produced water. He based his opinion on the following:

(a) Division water samples from the Yates and Seven Rivers formation in this area typically show chloride concentrations of 5,000 milligrams per liter (mg/l); however he did acknowledge that wells producing from the same formation may have different chloride levels;

(b) typically, chlorides concentrate up toward the surface because they wick up to the top three feet and form a salty crust. They would also be found in the soil profile, and would not evaporate or dissipate;

(c) elevated chloride levels would be expected in the pit areas of the site if produced water with any significant chloride level had been placed there; and

(d) none of the soil samples from the pit areas of the site showed significant chloride levels.

(35) The Division's expert hydrologist further testified that, in his opinion, the source of the asphaltic material found in the area of the tank battery was either tank material that had been disked and spread on the site, or leaks and spills around the tank battery.

MARALO EVIDENCE

(36) Maralo contends that: (i) it complied with Division Rules No. 310 and 313; (ii) it was not the operator of the Humble State Well No. 3 during the period of time when fluids were placed in the pits on site; and (iii) it is not the responsible person because it plugged and abandoned the Humble State Well No. 3 in 1988 in accordance with Division rules and subsequently ceased all operations at the site.

(37) In support of its position, Maralo presented as a witness, Mr. William B. Hunt ("Mr. Hunt"), a previous employee of Ralph Lowe and Maralo.

(38) Mr. Hunt worked for Ralph Lowe from 1955 until 1974, at which time the ownership of the Humble State Well No. 3 changed over to Maralo. During that period of time, Mr. Hunt worked as a drilling rig roughneck, and ultimately as the assistant production foreman. During the time that he was assistant production foreman, Mr. Hunt was responsible for overseeing the production from various Ralph Lowe wells, including the Humble State Well No. 3. Mr. Hunt subsequently worked for Maralo from 1974 until his retirement. During the period from 1974 to 1981, Mr. Hunt worked as a production foreman, and in 1981 began working in drilling operations.

(39) Mr. Hunt testified that:

(a) during the period from 1955 to 1968, produced water from the Humble State Well No. 3, and from two additional Ralph Lowe wells in this area was placed in the pits at the site. Mr. Hunt believes that this same method of water disposal was utilized by Ralph Lowe during the period from 1945 to 1955, prior to his employment;

(b) the chloride content of the produced water from these wells was low, as evidenced by his recollection that the oil and the produced water were difficult to separate, and that the produced water would freeze in cold weather;

(c) the volume of water placed in the pits was significant;

(d) the separation process is not 100% effective, therefore produced water placed within the pits contained slight amounts of oil. At such times as this oil accumulated within the pits, it would be removed by vacuum truck;

(e) no tank bottoms were ever intentionally placed within the pits;

(f) in 1968, Ralph Lowe converted a nearby well to a disposal well. After this well conversion occurred, all produced water from the Humble State Well No. 3 and from other wells Ralph Lowe owned in this area was disposed of in the disposal well. No additional produced water or any other fluids were placed in the pits subsequent to 1968. This included the time period from 1974 through 1988 when Maralo operated the Humble State Well No. 3; and

(g) oil that may be present in the soil in the area of the tank battery was probably due to tank overflow; however, at such times as this overflow occurred, Ralph Lowe and Maralo cleaned up the oil in accordance with Division rules.

(40) Jay Anthony testified that he is the owner of a 20,000-acre cattle ranch on which the Humble State Well No. 3 is located. Jay Anthony further testified that due to the contamination at the site, he is unable to utilize this land for growing vegetation.

DIVISION FINDINGS

(41) The evidence presented and Division records demonstrate that Maralo is the operator of record of the Humble State Well No. 3, and of the site.

(42) Since 1986, and likely prior to that time, the Environmental Bureau of the Division has enforced a policy whereby the current operator of a facility is responsible for environmental compliance. It is further their position that any dispute regarding environmental liability between two or more parties that may have operated a given site is a civil matter.

(43) Maralo presented no evidence to demonstrate that an exception to this policy is warranted in this case.

(44) There is hydrocarbon contamination of the soil at the tank battery area of the site. The evidence shows that this soil contamination was caused by leaks or spills from the oil tanks.

(45) The Division presented no evidence to demonstrate that Maralo either intentionally or unintentionally placed waste oil or tank bottoms within the pit areas of the site; however, there is hydrocarbon contamination of the soil at the pit areas of the site. The evidence shows that this soil contamination was likely caused by the disposal of produced water containing various amounts of hydrocarbons. Production data from 1948 shows that for every barrel of oil produced from the Jalmat Pool, approximately 12.7 barrels of water was produced. In 1948, the Humble State Well No. 3 produced 16,055 barrels of oil. Water production was not reported to the Division for this well in 1948; however, the approximate water production from the Humble State Well No. 3, utilizing the 12.7:1 ratio, was approximately 203,898 barrels of water. Maralo testified that the pits at the site were utilized for water disposal from three Ralph Lowe wells, including the Humphreys and Shell State wells. Production data from 1948 further shows that the volumes of oil produced by the Humphreys and Shell State wells was similar to the volume produced by the Humble State Well No. 3. Given this data, the approximate amount of water that was potentially placed within the pits at the site during a one-year period (1948) was 51,000 barrels per month, or 1,700 barrels per day. These pits were utilized for water disposal for a period of approximately 23 years.

(46) By Order No. R-3221 issued in Case No. 3551 on May 1, 1967, the Division prohibited the disposal of produced water into unlined surface pits. Prior to that time, Division rules did not prohibit this type of surface water disposal.

(47) Although no data was presented at the hearing regarding the water quality of the produced water from the Humble State Well No. 3, an examination of Division records shows that:

(a) in 1967, Ralph Lowe filed a Division Form C-108 (Application for Authorization to Inject) to utilize its Humble State Well No. 1, located in Unit G of Section 36, Township 25 South, Range 36 East, NMPM, as a disposal well; and

(b) within the application was a water analysis of Yates formation water obtained from the Humble State Well No. 1. This analysis shows that the Yates produced water contained 2,320 parts per million of chlorides.

(48) This water quality data, and testimony by Maralo that the produced water was relatively fresh, tends to support Maralo's contention that only produced water was placed within the pit areas of the site. It also tends to explain why the chloride level in the soil at the site was relatively low.

(49) An examination of Division records shows that the provisions of Rules No. 310 and 313 applicable in this case have been in effect, virtually unchanged, since 1946 or earlier.

(50) Regardless of the process by which it occurred, the soil at the site of the Humble State Well No. 3 has been contaminated by hydrocarbons.

(51) The evidence presented in this case shows that Maralo is the party responsible for causing hydrocarbon contamination of the soil at the site of the Humble State Well No. 3.

(52) The evidence presented further shows that Maralo failed to adequately clean up the site during the operation of the Humble State Well No. 3, and upon the final plugging and abandonment of the well.

(53) Maralo violated Division Rule No. 313 by allowing hydrocarbons to cause surface damage at the site.

(54) The application of the Oil Conservation Division should be approved.

(55) Maralo should be required to submit to the Environmental Bureau of the Division for its approval a plan to delineate the lateral and vertical extent of the hydrocarbon contamination existing at the site of the Humble State Well No. 3 in Unit A of Section 36, Township 25 South, Range 36 East, NMPM, Lea County, New Mexico.

(56) Within six months after the Environmental Bureau's approval of the work plan, Maralo should be required to complete remediation of the site in accordance with the work plan.

IT IS THEREFORE ORDERED THAT;

(1) The application of the New Mexico Oil Conservation Division for an order requiring Maralo, L.L.C. to remediate contamination at the site of the Humble State Well No. 3 (API No. 30-025-09831) located 660 feet from the North and East lines (Unit A) of Section 36, Township 25 South, Range 36 East, NMPM, Lea County, New Mexico, is hereby approved.

(2) Within 30-days from the date of this order Maralo L.L.C. shall submit to the Environmental Bureau of the Division for its approval a plan to delineate the lateral and vertical extent of the hydrocarbon contamination existing at the site of the Humble State Well No. 3 in Unit A of Section 36, Township 25 South, Range 36 East, NMPM, Lea County, New Mexico.

(3) Within six months after the Environmental Bureau's approval of the work plan, Maralo L.L.C. shall complete remediation of the site in accordance with the work plan.

(4) Jurisdiction is hereby 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

MARK E. FESMIRE, P.E.
Director

SEAL